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Special Midsummer Edition

Oregon : Mining : Journal

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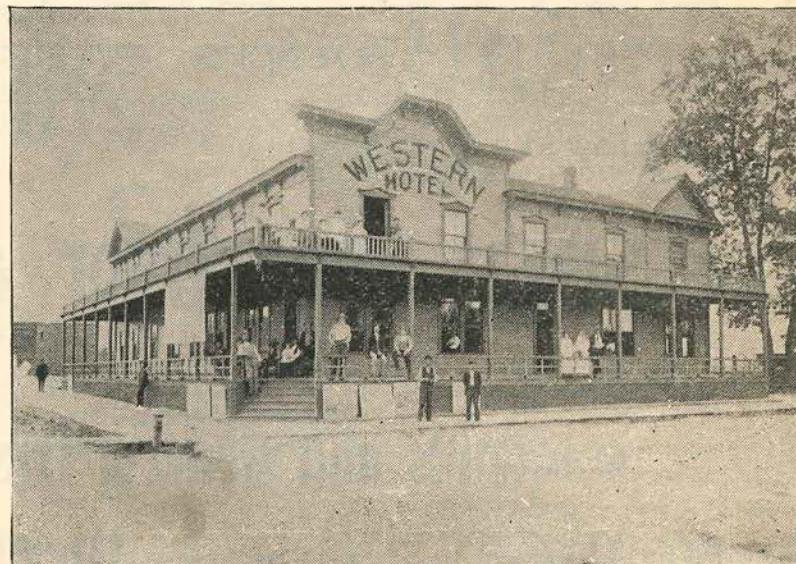
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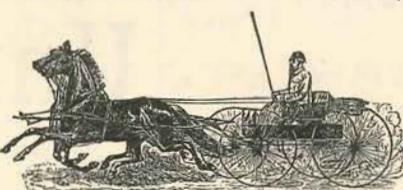
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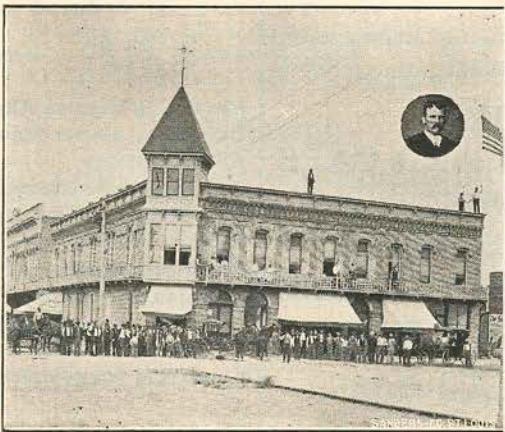
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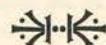
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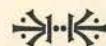
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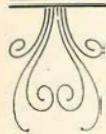
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Narrow Folks

and short-sighted dealers, don't like to be criticized. We do, if there is the least shadow of a pretext for it. By listening for years for the faintest notes of discontent, we've learned to give people what they want, need, or expect. If there is ever apparent cause for dissatisfaction, tell it. You will find us taking your part.

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W. F. KREMER, M. D., Proprietor

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Assayer...

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\$1.00
For
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Gold,
Silver,
Lead
or
Copper



YOU can depend upon learning just what your ore is worth.

PARTIES having work done are always welcome to see their assays made.

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Pork Packing
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J. H. AHLF, Proprietor

Finest Quality
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Grant's Pass Lumber Co.

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OREGON

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BLACKSMITHSMAKE A
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WAGON WORK AND HORSESHOEING

MAKERS OF

FOUR-SPRING MOUNTAIN HACKS

DELIVERY WAGONS TRUCKS, ETC.

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HARNESS... OF ALL
KINDS

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Pack Saddles .

Whips, Robes .

Blankets, etc. .

Takes Orders for Tents and Awnings... Repairs Shoes
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Rubber Cement

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FURNITURE, STOVES

CARPETS, TOOLS, ETC.

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Always Prepared to do Miners' Work

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ISAAC STAUFFER

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Is prepared to supply to the

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Clothiers ^{and} Tailors

For Grants Pass, and all of
Southern Oregon

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SPECIAL MIDSUMMER EDITION

OREGON MINING JOURNAL

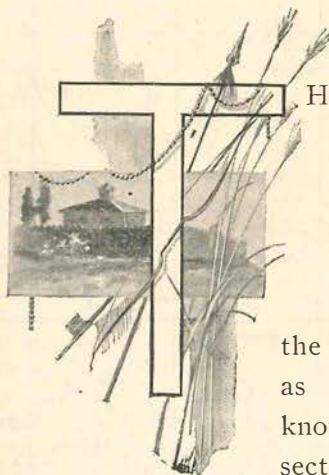
A Weekly Publication



DEVOTED TO THE MINING INDUSTRIES OF THE PACIFIC COAST AND THE INTERESTS OF SOUTHERN OREGON.

Grants Pass, Oregon, Midsummer, 1897

INTRODUCTION



THE object of the publication of the following pages is two-fold: First, to arrest the attention of the outside capitalist by presenting to him the resources, crude as well as developed, of the best known and most promising section of country for mining

investments in the known world; and secondly, to produce a work which will prove both instructive and useful to local miners and the general public.

To accomplish the first end, we aim to set forth what has already been accomplished in the way of the equipment of hydraulic mines, the discovery and development of mineral-bearing ledges and the production of gold and other metals in the section, and to show the opportunities which exist, in a country still in the main, raw and crude, to obtain handsome returns upon a moderate investment. Having accomplished this purpose, we hope to answer in the following pages all inquiries that an outsider might ask touching the facilities for mining, water, fuel, lumber, food supplies, labor—and the advantages—schools, churches, climate, of the several principal towns within the section as places of residence. To those persons disposed to explore beneath the surface, the account of the geology and the history of the mining operations of the past, within the

section, will prove of especial interest, and to the general public the code of mining laws contained in the publication, as well as the miscellaneous matter set forth, will undoubtedly prove of value.

In all that will be said the purpose will be to be fair and accurate. This is not a boom publication. Its aim is, rather, to make others see us as we are. Things are not all as we would wish. The past has shown some mistakes and much bad management, and these have not been spared.

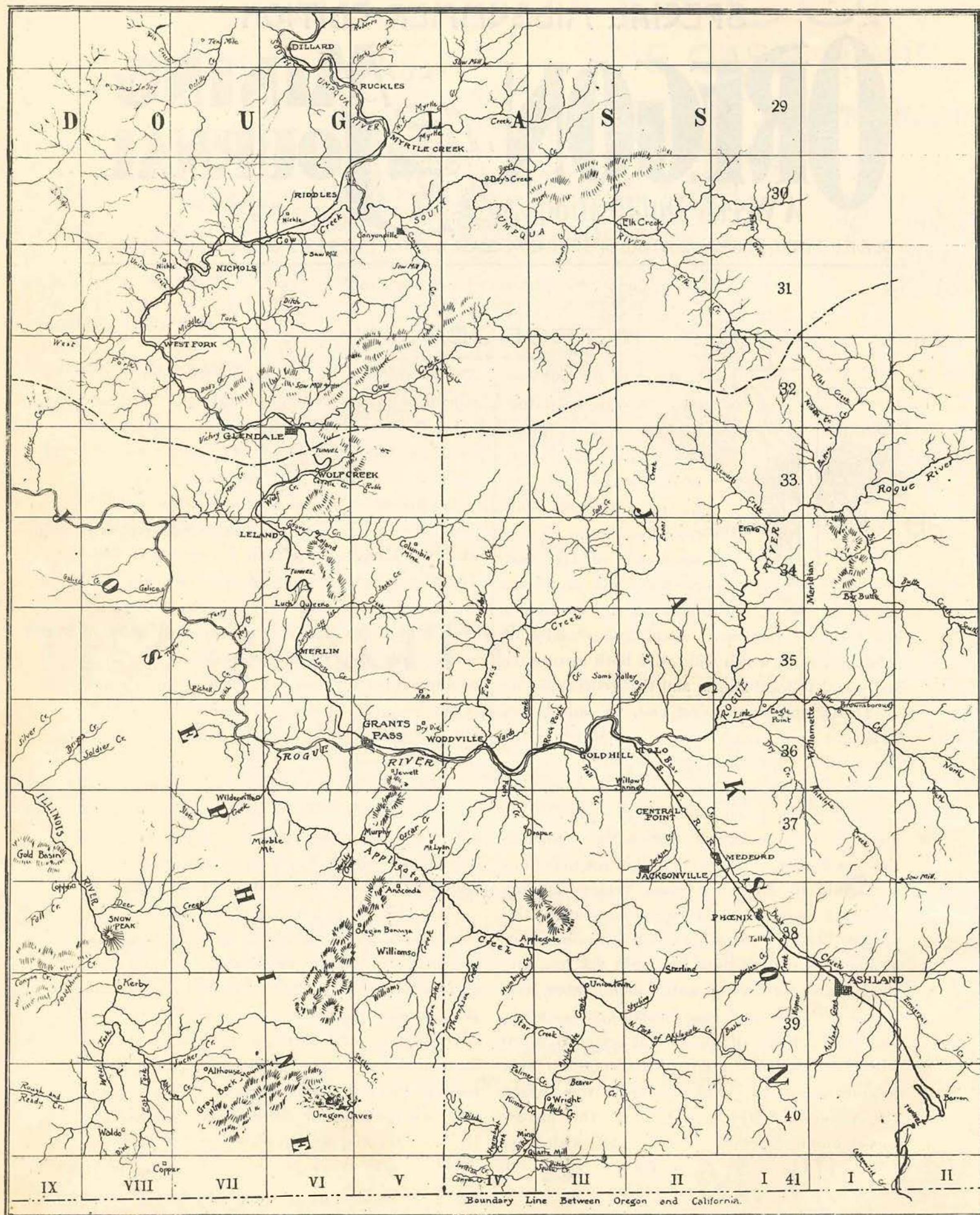
We do not expect that the work will be found entirely free from error, and we know that some mining properties have been omitted on account of not being able to get the desired information, but so far as possible we have tried to cover the district faithfully.

The material classified in the following pages has been largely obtained from original sources, and only as the fruit of much labor and by the assistance of many friends, to whom an acknowledgement of thanks is cheerfully made.

We desire to give credit to the Pacific N. W. Immigration Board, and S. P. Ry. Co., for the use of some half-tone cuts of Southern Oregon scenery; to the O. R. & N. Co. for the use of some sketches illustrating mining; to C. E. Tebbs for cover design; Luke Stougie for photographs of some of the mines; and to the wide-awake advertisers in this midsummer edition, we owe especial acknowledgement, for, without their financial aid, this edition could not have been published.

MAP OF THE MINING DISTRICT

(Especially drawn for Midsummer Special Edition)



Boundary Line Between Oregon and California.

SOUTHERN OREGON

A Brief Outline of its History



HE DISTRICT commonly known as Southern Oregon embraces the seven counties of Douglas, Josephine, Jackson, Coos, Curry, Klamath and Lake, but more particularly those of Douglas, Josephine and Jackson.

It contains an area in the southwestern part of the state of approximately twenty-five thousand square miles, which, on account of the Cascade and Coast range mountains, together with their many spurs, renders the country thoroughly diversified.

In the three counties west of the Cascade mountains, of which this article will treat, there are two large valleys, the Rogue river, in Jackson county, and the Umpqua, in Douglas county, besides many smaller valleys, in which the agriculturist and the horticulturist have long since demonstrated the productiveness of the soil. Historians inform us that Cabrillo, a Spanish explorer, sailed along the Pacific coast in 1542, but the English explorer, Sir Francis Drake, is credited with having landed near the mouth of the Umpqua river, on his expedition around the world, and there placed his Spanish pilot ashore to find, if he could, his way to the Spanish settlement in Mexico. He must have done so as the narrative is taken from Spanish records. Hence Drake might be called the real discoverer of this section of Oregon. Zedediah Smith, who stands in history as being the first white man to lead a party overland to California, passed along the coast in 1827 to the mouth of the Umpqua river, and while stopping at that place to construct a raft with which to convey their effects across the river they were attacked by Indians who killed all of the party but three—Smith himself being one of the survivors. These three men finally reached the Hudson Bay Company's headquarters on the Columbia river.

In 1828 or 1829 a party of trappers from Vancouver, led by Alexander McLeod, and guided by one of the survivors of the Umpqua massacre, were sent to penetrate into California. They passed through Rogue river valley into the Sacramento, where they

lost themselves and came very nearly starving to death. But after wandering around for a time and suffering many hardships, they finally reached Vancouver again. From this time on Rogue river valley was traversed often by the Hudson Bay Company's agents who did an extensive trapping business in Northern California.

Fort Umpqua, in Douglas county, was headquarters for the company in this section.

In 1837 the Willamette Cattle Company was organized, and it sent to California about twenty men, led by Ewing Young, to undertake the hazardous task of driving seven hundred head of cattle from the Sacramento valley through the Rogue river country to the Willamette valley. These men had a great deal of trouble with the Indians in Southern Oregon, but they reached their destination with six hundred head of the cattle.

Shortly after the drove of cattle passed through this section emigrants began to travel over this route from California to Northern Oregon. In 1846 a party of settlers from the Willamette valley, among whom was Lindsay Applegate, made an eye survey of the country through Southern Oregon to Fort Hall, Idaho, with the view of making a wagon road for the emigrants from the states.

Mr. Applegate gave a detailed account of this trip, which is very interesting.

Such is very briefly the history of Southern Oregon prior to the time of permanent settlement, which began in Jackson county about the time of the discovery of the rich placer mines on Jackson creek in January, 1852, by Messrs. Sykes, Kluggage and Poole. In March of the same year, there were no less than 150 men working in the vicinity of Jackson creek, and by the middle of the summer there were fully 1,000 miners in the Rogue river valley. With the opening of the placers and the influx of the miners began the active progress and development of Jackson county. There naturally sprang up a demand for the necessities of life, from which trade took root and flourished. The beautiful valley, with its waving plains of grass, offered inducements to those who were not subject to the mining fever to till the soil and produce abundantly.

In February, 1852, Appler and Kennedy, packers from Yreka, pitched their tent and began trade with the miners. But in March, W. W. Fowler built a log cabin, the first building of any description in Jacksonville.

Clap-board houses soon took the places of the many tents, and Jacksonville became the first permanent settlement in Jackson county. Gamblers and sharpers of every description began to flock to this new El Dorado, saloons and gambling dens increased rapidly and disorder and confusion were fast taking the place of quiet. There was no law until the miners constituted themselves a tribunal of justice, and, after giving a murderer a fair trial, they found him guilty, hanged him to a tree and thus quieted all disorder for the time. This hint to the reckless was sufficient.

The miners made their own laws and held their own courts until September, 1853, when a regular court was held by Matthew P. Deady, who had just been appointed United States district judge for the territory of Oregon.

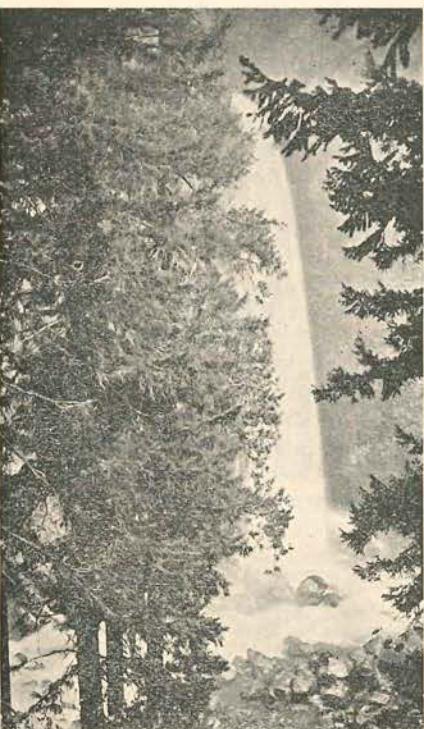
Not long after the settlements in Jacksonville, the now beautiful site of Ashland became a point of attraction to the passer-by—not because of the discovery of gold, but perhaps on account of the beautiful stream of water that comes dashing and splashing down from Ashland butte. Here Messrs. Hargadine and Peas located and built the first dwelling house. A sawmill by Emery and others and a flouring mill by A. D. Helman and others, constituted the beginning of the city. Other places of historical interest in Jackson county are the three ferries, or rather, where there used to be ferries, on Rogue river, settlements made in 1851; Phoenix, settled in 1852 by Samuel Culver; Willow Springs, settled about the same time as Phoenix, by N. C. Dean, and later by John Kennedy; Foot's Creek, named for O. G. Foot, who discovered gold there in 1851, and which a year later became a noted mining center.

The county of Jackson was organized by an act of the territorial legislature in January, 1852. Miners and settlers came flocking into the county in such numbers that in October, 1855, Jackson county could boast herself the most populous and wealthiest in the territory of Oregon.

To Josephine county belongs the credit of first revealing the glittering particles of gold dust on Canyon and Josephine creeks, to the anxious seeker in 1857.

In the spring of 1852, during the rush for Jacksonville, Philip Althouse discovered gold on the creek which bears his name—this is said to have been the richest in the country, hence Josephine county claims to have been first and best.

The principal historical interest of this county relative to settlements is found in Waldo, situated between the two forks of the Illinois river and Kerbyville, on the Illinois river. These two places were centers of trade for the hundreds of miners in and around the Illinois valley. Waldo was named in honor of a California politician, as the place was thought to be in that state. It has the distinction of being the first county seat, but afterwards the seat of county government was changed to Kerbyville and later to the now thriving and beautiful city of Grants Pass. Since there is not so much tillable land in Josephine as in Jackson county, many miners, when they thought the gold fields of this section were exhausted, did not turn their attention to home-making, but sought other gold fields. The gold fields were not exhausted, however, for this county today can boast, perhaps, without fear of contradiction, of being the best mining county in the state.



Rogue River Falls, near Crater Lake

TOPOGRAPHY AND CLIMATE

Western Oregon, separated from Eastern Oregon by the Cascade range of mountains, is divided by the Calipooia hills into the Willamette valley and Southern Oregon. The latter section embraces the counties of Douglas, Josephine, Jackson, Curry and Coos. It is of the counties of Douglas, Josephine and Jackson that we shall mainly treat in this publication.

A glance at the map will show that the counties above named are well watered. The two principal streams are the Umpqua, in the north, and the Rogue river, in the south, each with numerous tributaries, and feeders. Rogue river is the great river of the counties of Jackson and Josephine. It rises in the vicinity of Crater Lake and flows in a circuitous course in a general direction, at first, northwest, then southwest, emptying into the Pacific ocean. It is an impetuous, unnavigable stream, winding sometimes through wild and rough canyons and at other times through narrow valleys. Its principal tributaries are Bear creek, in Jackson county; the Applegate, in Jackson and Josephine counties; and the Illinois, in Josephine county. Each of these streams drains valleys varying from three to ten miles in width, and in each of these valleys many fine farms and orchards are found. Below Grants Pass, too, the valley of Rogue river for some ten to twelve miles widens out into a valley three to five miles in width, well studded with farms and orchards. Into the Applegate flows Williams creek, which drains a beautiful valley of the same name, while the Althouse, Sucker and Deer creeks also flow through beautiful valleys, all the seat of numerous farms and orchards, and all, save the last, for 40 years and now the scene of many mining enterprises. Besides these streams, there are many others whose waters are devoted, in the main, to hydraulic mining. On the north lie Cow creek, and—proceeding south—Grave creek, with its tributary, Wolf creek; Jump-Off-Joe, with its tributary, Louse creek; Evans creek, with its tributary, Saxe creek; Sardine creek and Sam's creek. All these lie on the east side of the Rogue river. The western tributaries of Rogue river, not already mentioned,

again proceeding from the north to the south, are Mt. Reuben creek, Galice creek, Pickett creek, Foots creek, Galls creek and Kanes creek. Canyon creek, Josephine creek and Briggs creek, in the south end of Josephine county, are all important tributaries of the Illinois river.

It may be surmised from what has been said, that only a mountainous country could be so well cut up by different rivers and creeks. And such is the case. From the California line to the Calipooia hills the landscape presents an alternating series of mountain, valley, hill and dale. Geologists identify the mountains with the "Klamath group" of mountains, in Northern California, but to the uninitiated it appears that the Siskiyou, the Coast range and the Cascades have here intermingled their tall cones and lost their identity.

The Oregon & California railroad passes about midway through the the counties of Josephine and Jackson, and connects with each other San Francisco and Portland, the towns of Roseburg, in Douglas county, Grants Pass, in Josephine county, and Gold Hill, Medford and Ashland, in Jackson county. Thirty miles southwest of Grants Pass is Kerby, the old county seat of Josephine county, and ten miles further is Waldo. Jacksonville lies six miles west of Medford, on a branch railroad.

The climate of Southern Oregon is the golden medium between that of California and Northern Oregon, and varies but little from that of Southern France. The four seasons are definitely marked, with none of them extreme. The winters are mild, snow seldom lying in the valleys more than a few hours at a time. The summers are warm, but great discomfort is prevented by the invariably cool nights and generally, cool breezes from the Pacific ocean. The seasons may be otherwise divided into the wet and dry. The rainy season begins about November 1, though steady rains seldom are seen before Christmas, and they continue until about June 1. However, during all this period there are frequent spells of bright, sunshiny weather, sometimes lasting as long as six weeks at a time.

GRANTS PASS

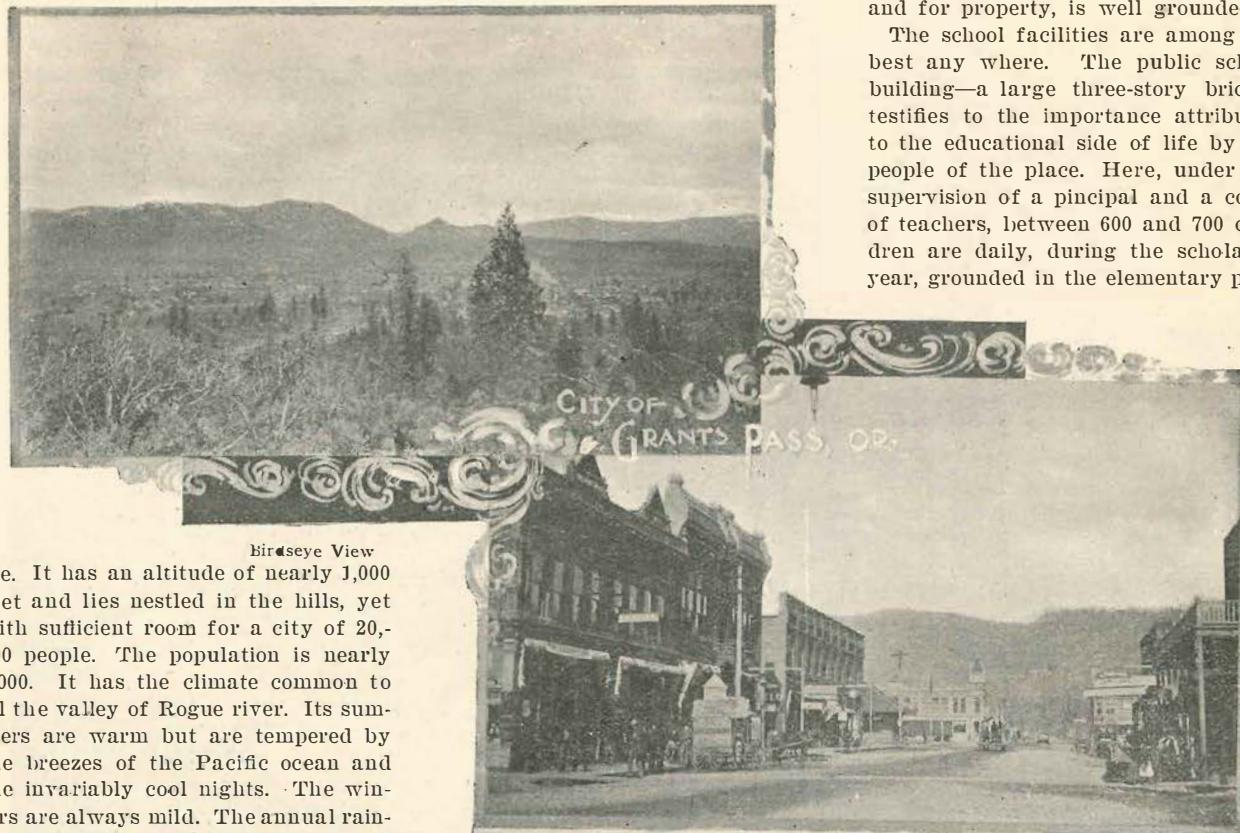
Grants Pass is the county seat of Josephine county and lies 296 miles south of Portland, and 475 miles north of San Francisco, with both of which cities it is connected by the O. & C. R. R. It lies on the north bank of Rogue river, which, together with the railroad, here runs for a short distance east and west, and at the head of a beautiful, but narrow valley extending some 12 miles down the river. It is an incorporated town and has all the facilities to render life comforta-

breezes, yet shelter from the ocean fogs. For these reasons the equable climate of the locality stands without a superior for the cure of all inflammatory diseases of the nose, throat and lungs.

Grants Pass is, as before stated, an incorporated town and has a progressive corps of officers. It is the shipping point for almost the entire business of the county. Its chief support is the great mineral wealth found all around it and, indeed, almost within

should take up his abode in Grants Pass would find an exceedingly intelligent and cultured population—one keeping well abreast of the world in all lines of thought. It is safe to say that no place of the same population has a greater amount of musical talent. It is, too, on the whole a religious community. Eight of the principal Christian denominations maintain church buildings and an equal number of ministers. This means that the city has a healthy moral tone and that respect for human life and liberty, and for property, is well grounded.

The school facilities are among the best any where. The public school building—a large three-story brick—testifies to the importance attributed to the educational side of life by the people of the place. Here, under the supervision of a principal and a corps of teachers, between 600 and 700 children are daily, during the scholastic year, grounded in the elementary prin-



ble. It has an altitude of nearly 1,000 feet and lies nestled in the hills, yet with sufficient room for a city of 20,000 people. The population is nearly 3,000. It has the climate common to all the valley of Rogue river. Its summers are warm but are tempered by the breezes of the Pacific ocean and the invariably cool nights. The winters are always mild. The annual rainfall ranges from 19 to 30 inches and averages about 25 inches. The extreme limit of the thermometer in the summer is 100 degrees, while in winter it sinks as low as 10 degrees above zero. The average temperature for winter is 40 degrees and for summer, 60 degrees. Snow seldom falls in the valley and rarely remains more than a few hours. The whole Rogue river section is one of the most salubrious in the world, but in some places, where the drainage is defective, malarial fevers are found. The air is scented with pine, fir and cedar, and the mountains which separate Grants Pass from the ocean, 50 miles distant, while not cutting off the ocean

the corporate limits; but the lumbering, manufacturing, agricultural and fruit-raising interests which also contribute to its support, are not small and are capable of greater development.

All lines of commercial and professional life are well represented. However, there is room for a foundry for the manufacturing of milling machinery and hydraulic pipe, for a creamery and for a cannery. These new enterprises have lately been under consideration by the board of trade.

The mining investor or operator who

ciples of knowledge. The school has three departments—primary, grammar, and high school. In the first two named such branches are taught as are usually maintained in graded public schools, each grade requiring a four years' course. The high school covers a two years' course and embraces instruction in the higher branches of education.

Grants Pass has a well equipped system of water works, the source of supply being the ice-cold currents of Rogue river. It also maintains a system of electric lights.

SPECIAL MIDSUMMER EDITION

A daily line of stages connects "the Pass" with Crescent City, Cal., 100 miles to the southwest, and with the intermediate points of Waldo and Kerby. A similar line of stages leave daily for Williams valley, to the south.

The First National bank of Southern Oregon has its place of business in Grants Pass and does a large business. It is one of the best managed institutions anywhere and deservedly stands high in the public regard. There are three newspapers in the city, the Oregon Mining Journal, the Courier and the Observer. There are also a circulating library, a brick opera house,

two brickyards. A half-mile racetrack and fair grounds are other attractions of the place. The Sugar Pine, Door & Lumber Co. operates a large fac-



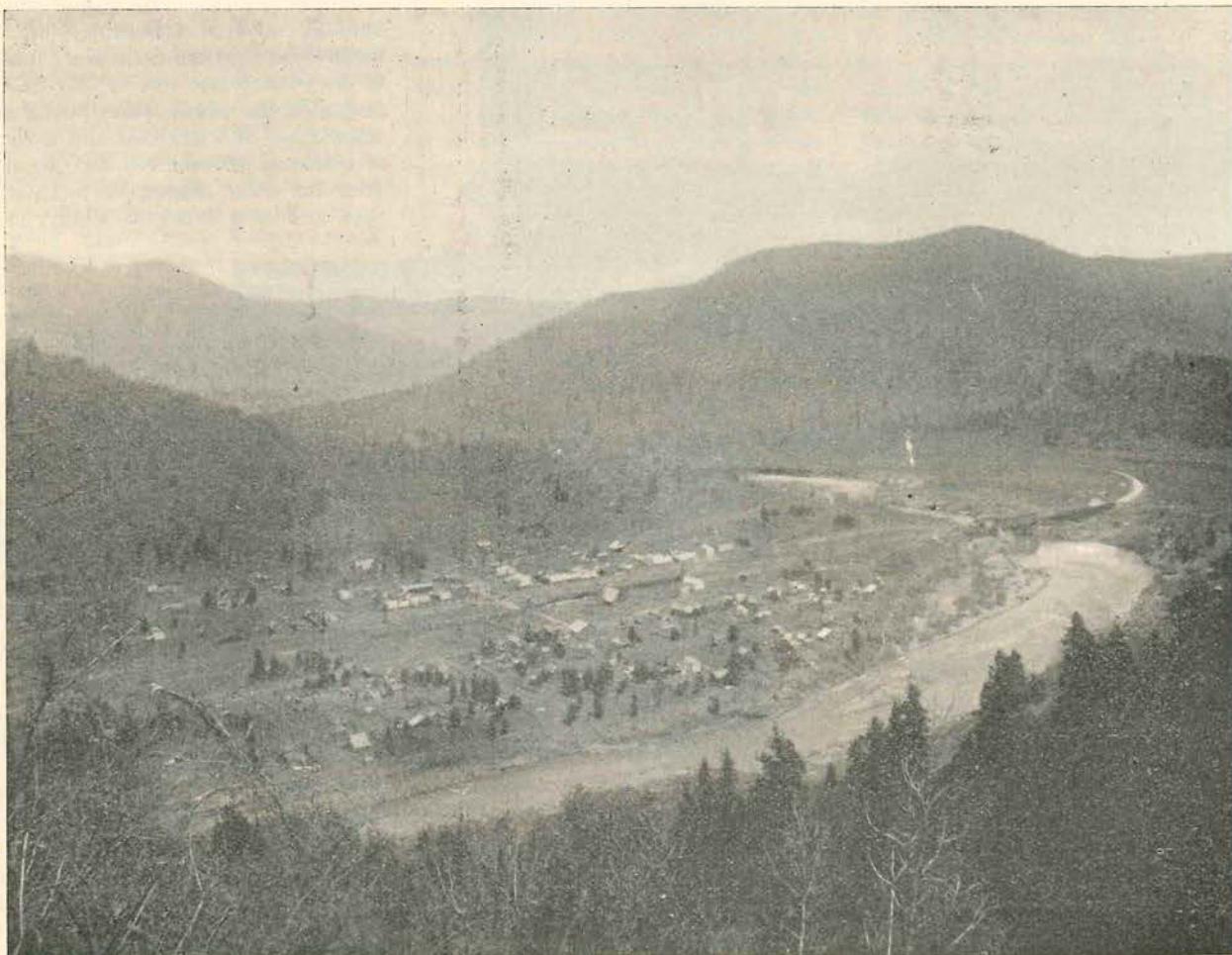
Grants Pass Brick School House

tory, manufacturing boxes, doors, windows and all kinds of builders' materials.

Property in and around Grants Pass can be bought at very reasonable prices. Town lots range in price from \$20 up to \$100 per lot, for residence property, and business lots, from \$100 up. The size of these lots are generally 50 feet by 100 feet, but in Lincoln Park and Riverside additions, very pretty and desirable locations, the lots run from 50 feet by 115 feet, to 50 feet by 185 feet.

Some of the finest vegetable, grain and fruit farms adjoin Grants Pass.

GOLD HILL



Birdseye View of Gold Hill and Rogue River

The town of Gold Hill is beautifully situated on the banks of Rogue river. It has made much solid progress during the last year, and is still marching onward.

It has now a population of 450 and is steadily increasing. The best part of Rogue river valley is tributary to it. It is connected by rail with Portland and San Francisco, on the main

line. The town is well supplied with stores, among which may be mentioned the Gold Hill Mercantile Company, an enterprising firm doing a large business with the miners and ranchers of the district. A. R. Merritt and others carry large stocks and do an extensive business. The Rogue River Mills are fitted with machinery "up to date," and manufacture a fine

quality of flour, etc. The town is well supplied with hotels, livery stables, good schools, churches, etc.

Gold Hill has a good future before it, being the center of very extensive placer deposits. It only requires the introduction of capital to utilize the water of Rogue river for mining, irrigating and manufacturing purposes to yield enormous profits.

CENTRAL POINT

This town is situated on the line of the Southern Pacific railroad, 5 miles north of Medford and $4\frac{1}{2}$ miles northeast of Jacksonville, in the most central part of the valley, and is surrounded by good agricultural land, and much grain, corn and hay are raised and shipped from this point. Several large fruit orchards lie close to the town, the largest of which belongs to Messrs. Ollwell & Sons, who have some 200 acres in fruit trees of different varieties. From its position and location it becomes the center of the mail routes for the country east of Rogue river and north of Central Point, distributing the mails to Eagle Point, Brownsboro, Leed, Climax, etc.

The town is well supplied with business houses, a flouring mill, warehouse, good hotel, and with a good school and church, and a population of some 600.

The town commands a

very picturesque view of the valley, and from here Table Rock and Mount Pitt are plainly seen. It is favorably located to become a lively trade center.

The other railroad towns in the Rogue river valley are Woodville, Phoenix and Talent.

Woodville is situated 11 miles east of Grants Pass, and is the key to the Evan's Creek country, where some fine land and orchards may be found,

also where considerable mining is going on. Some 16 miles up this creek is Bybee Springs, where many people go for health and pleasure.

Phoenix is some 5 miles south of Medford, and was before the era of the railroad, quite a settlement. Weeks Bro.'s furniture factory is located here, on account of the water power. It still has a population of some 300, with good school and church privileges.

Talent is some 5 miles north of Ashland, a rich agricultural settlement, and is the shipping point for fruit for Anderson and Wagner creek country.

It has a population of some 200, with a good school and a Baptist church.

Considerable mining centers at this point, making it a live center in some respects. It also has the distinction of being one of the oldest towns in the valley.

Barclay & Sons are the merchants of this place.



View of Pine Street, Central Point

JACKSONVILLE

Jacksonville, the seat of Jackson county, is the oldest town in Southern Oregon and one of the oldest in the state in point of settlement. The first settlement was made in 1851. It lies about six miles west of Medford, on the main railroad line, with which town it is connected by a motor line. When the Oregon & California railroad was built through the Rogue river valley, some 15 years ago, a bonus of \$25,000 was demanded by the company before coming to Jacksonville. This was refused, and in consequence the town was left off the main line and Medford sprang rapidly into existence.

The present population of Jacksonville is about 900. The main support of the town is the agricultural and mineral resources of the adjacent country. The output of gold from the mines in the neighborhood is still

great, although not equal to the returns of the mines in early days. The bank of Jacksonville still yearly handles several hundred thousand dollars of the precious metal. The mines are both quartz and placer. Last year a new quartz mill was erected close to the town by Beekman & Huffer, and it finds plenty of ore to keep it busy from the quartz leads on Jackson creek and elsewhere.

The business interests of Jacksonville are principally in the hands of the early settlers. The people live a happy and easy existence, well assured that the town will grow with the development of the mining resources found so abundantly in all directions close at hand. The town has good schools, good churches, and one newspaper—the Times—published by Charles Nickell.

The town is built on the side of the sloping hills, and is plainly seen from Medford and Central Point. It is finely shaded by trees through the residence portion. It is said that all the ground on which Jacksonville is located is rich enough to mine and there are instances where miners have in their greed for gold, dug under cellars of their neighbors houses before discovered. So in buying a lot you become a mine-owner.



Birdseye View of Jacksonville

MEDFORD

Medford is one of the new towns which sprang into existence with the completion of the Oregon & California railroad. It is located in the Rogue river valley, on the railroad, and is 328 miles south of Portland and 444 miles north of San Francisco. It has a population of about 2,500. A motor line connects it with Jacksonville, six miles distant.

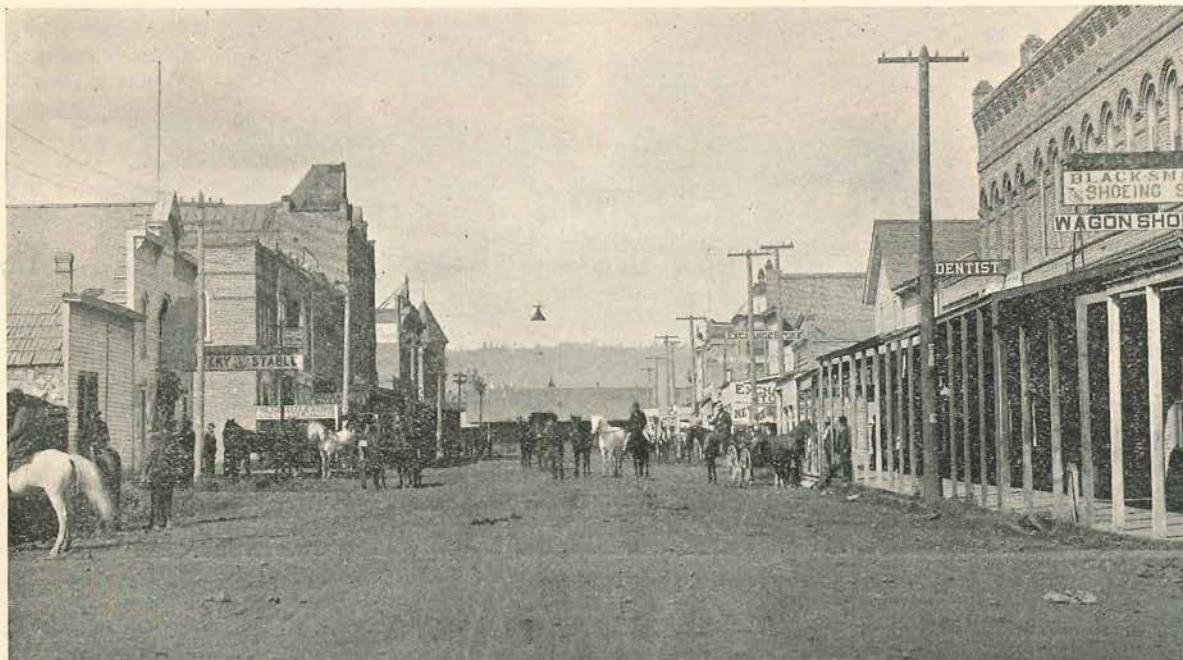
The country in the immediate vicinity of Medford is devoted almost entirely to the raising of corn, wheat,

manufacturing industries, among which is a pork-packing establishment, a planing mill, a flouring mill, a brewery and an ice plant. The farmers in the immediate vicinity of Medford and elsewhere have found a valuable market for their hogs at the pork-packing plant in the town.

Medford justly prides herself upon possessing a number of fine brick blocks, which line the main street. The business community is fairly prosperous, notwithstanding the "hard times,"

churches which possess their own buildings. Two newspapers are supported—the Mail and the Monitor-Miner. The first is non-partisan and the other populist.

Medford also boasts of a fine opera house, and in the Hotel Nash has a hostelry which would be a credit to any place of the same population. It has a wide-awake, energetic, population, which is ever reaching out after trade. The counties of Klamath and Lake are partially tributary to Med-



View of Seventh Street

rye, barley, fruits and vegetables. Almonds, grapes, figs and fruits of a semi-tropical nature are raised here to perfection, and the fruit industry is conducted on a scale that has made this one of the best known fruit-producing belts on the coast.

Medford supports a number of man-

and a number of the leading stores carry heavy stocks of goods. These goods find a ready sale, not only in the surrounding agricultural communities, but among the miners on the Applegate.

Good public schools are maintained. The town is also well supplied with

ford, and a good many thousand dollars worth of goods is yearly sold to the farmers and stock-raisers of those two counties. Located in the midst of the largest body of agricultural land in Southern Oregon, with a superb climate, the place has an assured future.

ASHLAND

A plain-spoken and more or less noted preacher wrote recently after several visits to Ashland: "God strained a point when he made Ashland." Nestled under the foothills of the Siskiyous, at the head of the beautiful and fertile Rogue river valley, with a stream of the purest, coldest mountain water coursing through its very heart and refreshing everything about it, surrounded by native groves and prolific orchards of famed fruit,

with its verdant lawns and well-kept homes, it is indeed not surprising that the thought above was suggested to an observant visitor. Ashland has been and is much admired by those who see it.

Ashland is a thriving city on the Southern Pacific railway, 341 miles south of Portland and 415 miles north of San Francisco and has a population of about 2,500 people, who are enterprising, intelligent, social and ready

to welcome all worthy home-seekers. The town is credited with being the largest in the Rogue river valley and within a radius of 200 miles, though it is very nearly approached in population by both Grants Pass and Medford. Elevation, nearly 2,000 feet above the sea level. Rainfall, 15 to 25 inches per annum. Its pure air, even temperature, medium rainfall and grand scenery make it a most delightful place for a home or for health.

Ashland has an enviable reputation as a school center. The excellent public schools, which occupy three buildings and employ a corps of twelve trained teachers, are the pride of its people and are unsurpassed in the state. The Southern Oregon State Normal school is also located at this point and attracts pupils from distant parts of the state as well as from the Southern Oregon counties.

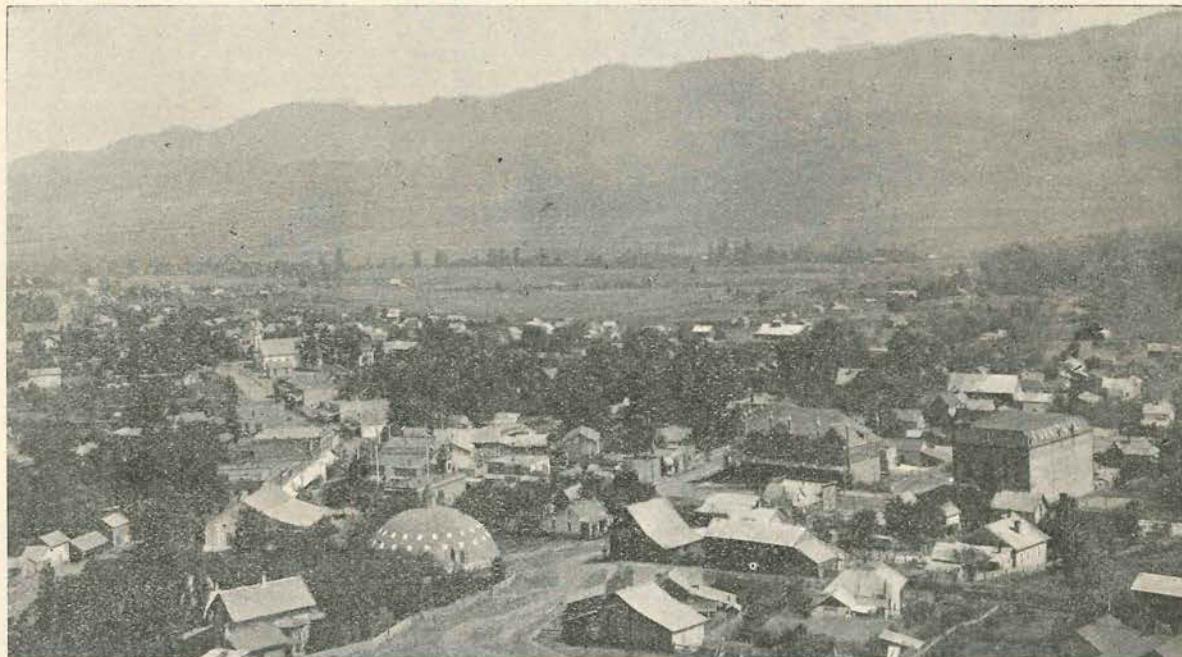
A woolen factory is one of the manufacturing industries of the city in active operation. We have also an iron foundry and machine shops, two planing mills, a successful creamery, a 5-

holds assemblies for ten days in July of each year. The beautiful Chautauqua Park and buildings are much admired by visitors. Mineral springs abound and fine sulphur springs rise within the corporate limits. Without, in close proximity, are found splendid soda springs, rich in magnesia, iron and other valuable medicinal qualities, where many people each year are attracted.

Within a radius of a few miles of Ashland placer mines have been operated for many years to a limited extent. During the past few years much attention has been attracted to quartz

which flourish, is that of fruitgrowing. Ashland peaches took the first premium at the Chicago World's fair, than which there could be no higher recommend for excellence. The crop of peaches in the immediate vicinity of Ashland for the year 1897 is estimated at 300,000 boxes, many of which will doubtless find their way East in search of a market. Other fruits thrive, including apples, plums, pears, prunes, apricots, nectarines, cherries, as well as all kinds of berries, almonds, etc., all of which are grown in considerable quantities.

Ashland is also a railroad town in



View of a portion of Ashland

stamp quartz mill, saw mill, a steam laundry, electric light plant, brick-yard, large opera house, three hotels, one being the finest brick hotel in Oregon south of Portland; bank, newspapers, seven churches, besides a representation in every line of mercantile industry, flouring mills, etc. Its splendid gravity water system covers every part of the city.

Ashland is also the location of the Southern Oregon Chautauqua, which

deposits in the surrounding country and from the "Ashland" \$100,000 in gold has been taken. A number of propositions are now being developed within a few miles of town which are full of promise to their owners and seem sure to add to the wealth of this section and make Ashland a rich mining center.

One of the chief industries of the territory about Ashland, aside from general farming and stock-raising

so far as being the terminus of freight and passenger divisions on the Southern Pacific. The company has built a large eating house and hotel here, costing \$30,000, as well as a large brick roundhouse and other buildings. The company has a considerable payroll here each month.

Ashland has made progress during the past few years of hard times and bids fair to continue a steady and healthy development for years to come.

RESOURCES

The Timber and Lumber

The forests of Southern Oregon, in common with those of the whole region west of the Rocky mountains, are composed chiefly of coniferous trees.

The average of the belt line of timber through Douglas, Josephine and Jackson counties is about 40 miles,

through the Rogue river basin it averages about 35 miles. The timber interests of Oregon has made our state famous among the sisterhood, and has advertised us among the commercial nations of the world.

The one tree, beyond doubt of greatest commercial and economic value,

in all the region west of the Rocky mountains, by reason of its wide distribution, is the Douglas spruce, usually called red fir and yellow fir. Next comes the sugar pine known and found only in the southern part of the state, the yellow pine, red cedar, white cedar, spruce, larch, yew, oak,

maple, ash, laurel, and a species of cottonwood, are the woods of this section.

Josephine county is the only one that manufactures its timber into lumber, to any considerable extent, and the only one to export this valuable and widely-sought material, which is now shipped as far East as Salt Lake City, Utah.

Sugar pine for the purpose of manufacturing it into doors, sash, shelving, fine counter work, patterns, etc., has no equal.

Agriculture

In character the agricultural lands of the Rogue river valley are table or heavy rolling, with some small tracts of low and comparatively flat lands immediately along the river and its tributaries. The soil is very much the same as that of Umpqua and Willamette valleys, and adapted to the same purposes. Wheat, rye, oats, and barley grow well on all soils and yield fine crops. The straw is generally bright and clean, free from rust or mildew, and the grain full,

and this valley is the best section for Indian corn west of the Cascade mountains. The summers being dry, less labor is required to keep the land free of weeds than in other sections further north. Farm grasses, such as timothy, clover, blue grass, alfalfa, etc., are not a success on common uplands, but on bottom lands, where the soil is more damp or where the land can be irrigated, all farm grasses grow in abundance. The poorest sandy, gravelly soil, favored by irrigation, will produce two or three



A Summer day at a Mountain Forest Home

A large number of saw mills are located throughout Southern Oregon, and lumbering is one of its principal industries, and will be for many years to come. Several large factories are located in this section, the largest of which is the Sugar Pine Door & Lumber Co., at Grants Pass. It will not be amiss to mention that the manufacturing of fruit boxes has become a very extensive industry in this section, and keeps many mills running summer and winter, as many million boxes are shipped to California.

plump and well matured. The best lands will average 30 to 35 bushels of wheat and from 40 to 50 bushels of oats per acre. Common grade land will average 20 to 25 bushels of wheat and 35 to 40 bushels of oats per acre. Fields under high cultivation often produce from 50 to 60 bushels of wheat per acre and a corresponding amount of oats. As in other sections, much depends upon the manner of cultivation. Indian corn grows well on all good soil and yields on an average from 30 to 50 bushels to the acre,

crops of alfalfa each season. This valley is also admirably adapted to fruits of all kinds.

Southern Oregon as a Fruit-Growing Section

By A. H. Carson, Fruitgrower.

During the sixties, while Jackson creek, Sterling, Williams creek, Alt-house, Sailor Diggings, (Waldo now) and other mining camps of Jackson and Josephine counties were flourishing and yielding large quantities of gold from their shallow gravel beds, Wil-

lamette farmers reaped a rich harvest in selling to these prosperous camps the surplus from their orchards.

In those days, as now, the miner craved fruit to give variety to his pork and beans, and the prices he paid then for the large red apples of the Willamette valley attested that craving. Miners of that period will tell you that they have paid from 10 to 20 cents per pound for green apples, while the dried product, quartered and strung on strings and cured over the kitchen stove amid swarms of flies, readily sold at 75 cents to \$1 a pound. Southern Oregon then was too new a country to know or realize her adaptability to the growing of fruits.

Since then time has demonstrated that Jackson and Josephine counties are of the best fruit-producing localities on the Pacific coast. Today these two counties have vast orchards that annually produce tons of fruit for export.

The apple—the king of fruit—is grown in large quantities in Southern Oregon, and is sold in car-load lots, going south to California markets and thence to Australian ports, as it has been demonstrated that the apple raised in Southern Oregon has keeping qualities that makes it safe for dealers to ship to distant markets. Apples are shipped from Southern Oregon to Denver, Chicago, New Orleans, and all Eastern markets at a fair profit to the grower.

It must not be supposed because I put the apple at the head of Southern Oregon fruits that it is the only kind of fruit grown here; there are grown also in large quantities the peach, plum, prune, nectarine, apricot, almond and pear, and in their season our markets are stocked with all of these fruits in abundance, besides blackberries, raspberries, strawberries, currents, and gooseberries. The prune is one of the leading fruits grown in Southern Oregon, and is becoming one of the many sources of profit to the residents of the section, as the cured product is shipped to Eastern markets in car-load lots and brings the grower from 4 to 5 cents per pound.

The grape, both of the American and foreign varieties, grows here to perfection. Of the foreign varieties the writer has 12 acres in bearing, such as the Flame Tokey, Rose of Perne, Mission, Malaga, Black Hamburg, Black Malvoisie and White Muscat, which yield annually tons of choice table grapes as are grown in the famed vineyards of California.

There are thousands of acres of grape lands lying adjacent to the mines of Southern Oregon, and time and enterprise will make this section famous as a grape and wine country.

The seasons of Southern Oregon are such that the miner, if he has the taste, can, with profit to himself, engage to an extent in fruitgrowing.

A Sportsman's Paradise

Rogue river has long been noted for the number and variety of its game fish. Any where along the course of this noble stream, from its headwaters in the neighborhood of Crater Lake to its embouchure into the Pacific ocean, and in all its affluents, the Chinook salmon may be found in season, to be caught with rod and line. Twice a year this noble fish swarm in great numbers towards the spawning beds at the headwaters of the river and its tributaries. The ascension is made a short time before the fish are ready to deposit the spawn, and then they lie in deeper water until the the spawn ripens.

There are many varieties of salmon. The principal species is the Royal Chinook salmon; then comes the steelhead and next the silverside. The Chinook of the Northwest is superior to all other varieties of salmon in the world. It weighs as much as 89 pounds, its average weight being from 10 to 20 pounds. It has a delicious flavor. The Chinook begins running in April. The steelhead enters fresh water in October, and it is distinguished from the Chinook by its slender body, pale flesh and tapering tail.

The salmon enters fresh water only when fully grown and for the purpose of spawning. The young salmon desert the streams for the ocean in the spring freshets, and in about four years they reach their maturity. It is said that this fish eats nothing in fresh water. Thus it is useless to attempt to catch it with bait in any of the rivers. The consensus of opinion is that few, if any, of the full grown salmon that enter the rivers ever return to the ocean. This is borne out by the fact that they are never caught heading down stream. They are often found at the headwaters of the streams in great numbers, cut and bruised, with broken fins and tails, the marks of their many struggles with the rapids and currents of the stream below.

An expert Rogue river fisherman thus describes his art:

"I usually take with me two rods, one an 18-foot cane rod for salmon,

and the other a 6½-ounce split bamboo for salmon trout. Just before sun set and just before sun rise are the golden hours for fishing with the fly, and I use my light rod at that time, devoting the hours of sunshine to the heavier work of taking the salmon. And heavy work it is too, if they are striking freely. I have caught eleven in one day, hardly any below twenty pounds, and some weighing as much as forty pounds. I have chopped and sawed wood, shoveled up bed rock, roped Texas steers, swung the cradle in the grain field and at midnight in the nursery, but I never put my hand to any work that more completely tired me out for the time being than did a tussle with a healthy, vigorous, forty-pound salmon."

It is an historical fact that the Indians of Southern Oregon lived almost entirely on the salmon. This fish is still a common dish on the tables of poor and well-to-do in this section. In season the banks of the river and its tributaries are well lined with fishermen, and it is seldom that one returns without a mess of delicious fish.

For the nimrod Southern Oregon presents many attractions. This whole section was not many years ago, swarming with the legitimate prey of the sportsman. With, however, the settlement of the country, the larger game were driven back into the mountains, and immediately around the towns and cities only quail, squirrels and rabbits are to be found. A few hours' ride, however, brings one to the haunts of the bear, panther, elk, deer, and antelope, among the larger game, and of the wildcat, fox, coyote, raccoon, mountain quail, pheasant, grouse and duck, among the smaller animals and birds. Not infrequently panthers, pumas, jaguars, and mountain lions, as they are differently called, are killed within a few miles of the towns.

In the heart of the Coast and Cascade ranges is the hunter's paradise. This is the haunt of the bear, deer, elk and panther. The country is rugged, full of narrow canyons and gorges, and well covered with timber and bushes. The hunter who enters these wild precincts of nature may be assured that he will have plenty to eat and no end of sport.



A Day's Sport

AN ARTICLE ON GEOLOGY

By C. B. WATSON

A distribution of the mining wealth of the Pacific coast may be easily discovered by the student who is careful and observant, to correspond with certain physical and geological facts, which ought to or might be made useful by the miner. For instance, it is well known that the high Sierras in Central and Southern California, the "Klamath group" of mountains in Northwestern California and Southwestern Oregon, and the Blue mountains in Northeastern Oregon, have been the scenes of the most active and profitable mining in these two states. One having made this observation, if interested in the study, would naturally seek for some corresponding features in these three sections. First he would perhaps notice that granite enters largely into the structure of each and that each is surrounded by formations entirely different.

The Blue mountains are surrounded by the Great Basin which also lies to the east of the other two. Lapping up against the edges of each of these groups of mountains, lie stratified formations consisting of gravel, sandstone, etc. It would also be observed that in many places these beds are auriferous. The character of the gravel also shows the sources of these beds to be the older and higher mountains against which they rest. The lapping of sandstone shows that its bedding was covered with water at the time the sand was deposited, and the marine shells which are now the fossils contained in the sandstone show the water to have been the ocean or an arm of it. The gravel and conglomerate upon which the sandstone rests consists of rounded pebbles indicative of stream action, as distinguished from beach action. The beds contain the rounded fragments of granite and other rock peculiar to that portion, or the portions of the mountains whence they came. If these beds contain granite and no granite can be found except in the direction of the higher mountains, we would naturally look in that direction for our granite formation. If the gravel contains gold we would for the same reason seek its source in the same direction. It is a pretty well settled fact that broken and eroded gold bearing ledges constitute the sources from which placer deposits have been

fed; then we trace the indications from an auriferous gravel deposit toward its source in search of gold-bearing quartz. These general observations will apply equally to each of the groups of mountains mentioned. Without too much of detail it will be sufficient to suggest the conclusions of geologists who have made it their study, that the Blue mountains and the "Klamath group," better known as Scotts mountains, the Wooly Bally mountains, the Rogue river mountains and the Siskiyou mountains, were islands, and the High Sierras a continent or perhaps a larger island at a period in the distant past when the waves of the Pacific ocean rolled over the spot where Mount Shasta now stands and washed the western base of the Rocky mountains. What is known as High Sierras had its northern limit at a point between Feather river and Pitt river, leaving a broad stretch of water between them and Scotts mountains of the Klamath group. This stretch of water is designated by the United States Geological Department as Lasson Straits, which formed the outlet to the great inland sea, which at that time was being formed by the gradual emergence of the Cascade range of mountains above the waters of the Pacific ocean. This outlet had its course near the present line of the Sacramento river. A careful study of the country, its formation and shore lines has enabled the United States Department of Geology, with the efficient assistance of the California department to reconstruct the old shore lines and give us a reasonable idea of that time when the Wooly Bally mountains, Scotts mountains, the Siskiyou and Rogue river mountains constituted an island in the upper cretaceous period. Its southern shore line is the present northern boundary of the Sacramento valley. Yreka stands at its eastern shore line, Ashland and Jacksonville, in Oregon, on its northeastern shore. Its course carries it across the Siskiyou mountains near where the Southern Pacific railroad crosses the same mountain, thence its course is irregularly toward the northwest until it reaches the present Pacific coast near Coos Bay, while on the south its course from the north end of the Sacramento valley is toward

the northwest also, and reaches the present coast near the mouth of the Klamath river. This old shore line can be easily traced throughout a great part of its length. At the time the briny waves washed the pebbly beach of this old island, Ashland butte and the other high peaks reared smoking heads high into the blue ether and their flaming summits lit up the broad expanses of the shipless sea that surrounded them. In those primeval days the leviathans of the deep played in sportive mood where now are fields of waving grain and the marts of commerce. The miner now toiling with pick and shovel uncovers the remains of mastodon or mammoth without a thought of the story they tell. They break up great slabs of sandstone rich with fossil of a species now extinct without a thought of the formation they bear. Shasta valley was then a bay, where if vessels had then existed, safe anchorage could have been found in a splendid land-locked harbor where the town of Yreka now stands.

With this old island I desire to deal briefly. The mining fields of Northwestern California and Southwestern Oregon, lie within its limits. From Redding, in California, to Coos Bay, in Oregon, miners have toiled and sweated in search of the yellow metal and millions of dollars have yielded them reward around the shores and in the interior of this prehistoric home of myriads of animals now extinct. Geologically, no country offers more inducements to the student; none is richer in the history it furnishes, nor in the value of this history to the miner. Shasta valley is covered with numerous hummocks which on examination are seen to be extinct volcanoes. Mount Shasta is the king of the group and in the upheaval of the Cascade range it performed an important part. This old island is seamed and scarred in every direction by evidences of very early and violent volcanic action, and has been eroded and scratched by glaciers. The seas that washed it received the deposits brought down by streams and other agencies for long periods of ages. The earlier of these deposits of sand that now constitute the great sandstone lappings and cliffs to be found along the shoreline. On the top of these de-

posits of sandstone, in such places as Yreka, Cottonwood, Jacksonville, Willow Springs and many others, rich placer gold mines have been worked with great profit for more than forty years. In each of these places it has from time to time been discovered that underneath the sandstone there are beds of gravel, bearing gold and corresponding in richness with the places directly above and sometimes much richer. In every instance it is found that these sub-deposits correspond in character with those on the surface, carrying granite, prophyry, quartz, etc. The formations from whence these gravels have come are only found in the high mountains that form this old stand. Therefore the source of the deposits on top and under the sandstone is the same and only to be found on the land side of the old shore line. As we leave this shore and proceed seaward, as we may term it, we find, first, sandstone which further to seaward is capped with lava. This is especially true from the upper end of the Sacramento valley, northward. At Yreka, Cottonwood, the summit of the Siskiyous, where the Southern Pacific railroad crosses the mountain, and at Jacksonville, Ashland, Willow Springs, and other points, we find the sandstone lapping up on the mountain of granite, with gold deposits, both on top and underneath the sandstone, imbedded in the gravel which has come from this old mountain. Near the foot of this old island and between it and the Cascade range, lies the Shasta valley, Cottonwood valley and the Rogue river valley. The edges of each of these valleys border upon the Siskiyous mountains and have been productive of placer gold, while the edges of the same valleys further away from these same mountains have produced none. The Siskiyous mountains skirting the opposite sides of the valleys named, consists of basalt and other lava products, which, in many places have flown out over the sandstone that once formed the floor of these valleys, but which has since been greatly eroded and in many places entirely worn away leaving a feather edge resting against the Siskiyous and fantastically worn, cut and carved cliffs as nature's ornaments decorating the opposite mountains. These cliffs rest on bases of conglomerate, consisting of pebbles of various kinds rounded by stream action. Many of these cliffs are fantastically carved and worn by the action of wind,

weather and water. This lava capping off these sandstone cliffs, shows active volcanic action after the deposit of the sandstone and gravel. In some of these cliffs on the border of the Rogue river valley, may be found the petrified bodies of large tree trunks, with two hundred feet of cliff above them. As stated above these sandstone cliffs are on the opposite side of the valley from the Siskiyous mountains and are of material entirely different.

These gravels are practically barren of gold, while the gravels both on top and underneath the sandstone at the foot of the Siskiyous mountains has in many places been found to be rich in that metal. From these observations one would naturally conclude that the Cascade range opposite the Siskiyous is not a profitable section for the prospector and that the Siskiyous mountains constitute the source of supply for that region. The Cascade range is a much newer formation than the Siskiyous. If prospectors generally understood these facts much profitless work would be saved to them.

Parallel lines of beach action are easily traced from Rogue river valley up the sides of the Cascade mountains and its western spur until near the top where the flow of lava has obliterated them.

The soil of the valley nearest the Cascade range is largely adobe, the product of basalt and the mud from volcanic springs, while the soil nearest to the old island is chiefly granite and clay. Everywhere that gold is found in the region under treatment it is found in the soils and gravels coming from the old island. In fact, all gold-bearing ledges, in paying quantities, are found in the limits of this old island and in similar formations elsewhere. The "Jillson" mine in Northern California, which has generally been designated as the "old blue gravel channel," is no channel at all, but the old shore line. No gold has ever been found, so far as I have heard, above the Cottonwood creek which flows into the Klamath river just below the Southern Pacific railroad crossing of that stream. This stream flows almost parallel with the old shore line and from a few hundred yards to two miles distant from it, the stream being east of the line. This and its tributaries coming from the west have all been rich while its eastern branches have been barren of gold. The Klamath has no gold above

the mouth of the Cottonwood and but little below for about one and one-half miles at which point it crosses the old shore line at the Jillson mine, from which point to its mouth the Klamath has been very rich and has been worked diligently since the early mining days of Northern California. The workings at the Jillson mine afford a very interesting study and fully illustrate the ideas intended to be shown by this paper. There will be seen the old bed rock of the shore line, then lying upon it comes the "Blue gravel," next above is a cement gravel, then a sandstone, then another stratum of cement gravel and last a stratum of sandstone, which is the bed rock of the old surface placer mines of that section. The two strata of cement gravel also bear gold but in quantities that do not pay under present methods of working. The old bed rock dips east of southeast on an angle of from 20 to 30 degrees and at the lower section of the work near the river the bank is nearly 100 feet high, bringing out in fine relief the stratifications above. Everywhere in this deposit is seen the wash from the "old island"; i. e., granite, porphyry, quartz, etc. Near by and lying directly on top of the old shore line are well preserved terminal moraines of ancient glaciers. These glacial deposits also bear evidence of their source in the old island.

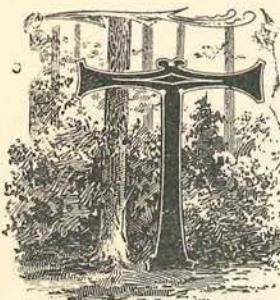
From these facts and many others that might be brought forward the contention that this was an island around which the waters of the Pacific ocean surged long before the Cascade mountains appeared above the surface, seems to be well established and that this old island is also the source of the rich gold deposits of Northwest California and Southwestern Oregon.



MINING IN SOUTHERN OREGON

The Discovery of Quartz and Placer in Earlier Days

A History of Wonderful Gold Production



THE colonization of the "Oregon Country" is one of the marvels of the age. A little over a half century ago this great Western empire, with its peerless climate and with its varied and inexhaustible resources, was a veritable "no man's land," untrod by the foot of white men, save a few trappers in the employ of a trading company. Yet, it is today the seat of a high civilization and the abode of 400,000 people possessing colleges, schools, railroads, telegraphs and all the institutions of the oldest states. No reading is more fascinating to the student of human affairs than the story that recounts the details of this modern miracle. It is to depict the part played by the pioneer miners in the development of a portion—Southern Oregon—of this great empire that this article is written.

The discovery of gold in Southern Oregon, and the resulting settlement of the section was one of the many after-effects of the mad rush of the Argonauts to California. To understand the cause and force of that movement, it must be borne in mind that the world's production of gold had fallen so low that the old ratio of production had changed, during the previous half century, from 16-to-1 to nearly three of silver to one of gold. The panic of 1837 was yet oppressive in its effects on commerce, and many hundreds of thousands of young men were, everywhere, in Europe and America, ripe for any adventure.

It was under such circumstances that the discovery of gold in California was, in 1848, flashed around the world by one of those subtle currents of intelligence as marvelous as the submarine cable. The rush to California from all quarters of the globe began, and every river, stream and gulch in that state were, in a few months, the abode of thousands of young men in search of the yellow metal. It is not our purpose to dilate on the wonderful riches unearthed by them, nor on the stimulating effects upon commerce of the millions of new money poured through every mint into the channels of trade. It is, rather, to trace the influence of these pioneer gold-hunters

upon the development of the mining industry of Southern Oregon that this article is written.

Had, in 1849, an eagle in the midst of his lofty soaring among the clouds cast a glance over the territory lying between the Calipooia hills and the California line, he would have beheld not as yet a single human habitation. Passing along the trail running into California he would, perhaps, have beheld an occasional traveler, a seeker after furs—going from, or returning to, the fort at Vancouver. Along the banks of Rogue river, the Illinois, the Applegate, the Umpqua, and their tributaries, there would be seen scattered bands of short, copper-colored Indians, nude as when born, fishing for salmon, or, perhaps, pursuing some animal along the foothills. He would have seen great herds of deer and elk, numberless coyotes and many gray wolves, prowling among the mountains.

This was the panorama exhibited just 48 years ago. But, a year and a half later a magic change had taken place. One day in April, 1851, among the many hundred miners scattered along the streams of Northern California it became noised about that "rich diggings" had been discovered in Oregon, and the next day, with that restless energy characteristic of the period, several hundred men were on their way to Jackson county, which then extended from the California line to the southern border of Douglas county. These men crossed the Siskiyous near Ashland and scattered in a few months into every part of the new gold fields. At the same time rumors of the new discoveries penetrated the Willamette valley, and like reports met the trains of immigrants on their way from the East by way of old Fort Klamath to the "Oregon country." So that, in 1851-2, these converging streams of gold-seekers met in the Rogue river valley and intermingled. Scottsburg, at the head of navigation on the Umpqua, became an entrepot of importance, and long trains of mules laden with goods for the new mining camps filed daily along the precipitous path which was dignified by the name of road, their tinkling bells sounding musically to the many travelers in search of the new diggings.

The first discovery of gold in Jackson, then including Josephine county, was in the south end of what is now Josephine county. In May, 1851, four miners, Dusenberry, Collins, Lawrence and Rodam, known as Dusenberry & Co., discovered gold on the creek now called Josephine creek, and a month later the metal was discovered on Canyon creek, a tributary. The first rush of miners was to those creeks. Among those who came from the South at that time was James P. Tuffs, who is still living at Grants Pass, enjoying a ripe old age. Mr. Tuffs came with a party of several hundred from Yreka in April, 1851. The course of travel was over the Siskiyous, down Rogue river, which was crossed at the Perkins' ferry, located on the place of Col. G. B. Currie, just above Grants Pass, thence up Slate creek in the bed of the stream, and over to the Illinois. On a knoll situated about two miles south of Kerby, this party on their arrival found several hundred men encamped, with numerous pack animals. The gold-seekers quickly scattered along the Illinois and its numerous tributaries; but, as little was found, many of them disposed of their provisions and returned to their old claims in California.

In a few weeks gold was discovered in Scott's and Allen gulches at what is now known as Waldo. This discovery was made by some sailors, who, putting into Crescent City, became infected with the prevailing craze for gold, deserted their ship and passed over the mountains into the interior. The place was long known as Sailor Diggings. These discoveries did not attract very much attention, however, at the time, as they were eclipsed by richer strikes made almost simultaneously on Jackson creek, about one mile west of the present town of Jacksonville, on the Althouse and on Galice creek.

JACKSON CREEK.

The discoveries on Jackson creek were made by a man named Sykes in December, 1851, and a little later Skinner and Pool, two packers, made like discoveries in Rich gulch, one half mile north of Sykes' claim. These streams were found to be marvelously rich, and for many years they produced an immense amount of gold.

Within a few weeks there were over 300 men working on these creeks, and the present town of Jacksonville sprung into existence.

Among those who came to Jacksonville in 1853 was "Uncle Billy" Saunders, the surveyor, who has been ever since a resident of Josephine county, and who is still living in Grants Pass. "Uncle Billy's" account of the conditions prevailing on Jackson creek in the winter of 1853-4 is an interesting story and illustrates the vicissitudes to which the pioneer miners were subject. In the winter of 1853 a continuous fall of snow occurred all over Southern Oregon for a period of six weeks, and far to the north the ground lay covered with two feet of snow. In consequence, all travel was impeded, packers from Scottsburg, the Willamette valley and Yreka were everywhere snow-bound, and for several months not a pound of flour or potatoes, or a grain of salt found its way into camp. In a few weeks every one was on half rations, and many were on the verge of starvation. There was plenty of money, or, rather gold dust and nuggets, but neither flour nor salt could be had for any amount of gold. The last sack of flour sold for \$75.00. The want of salt was, above all, most keenly felt. Men became salt-famished, and many were the expedients adopted to secure a substitute. The two feet of snow deprived both cattle and horses of their usual pasture, and many hundred cattle died in the Rogue river valley. Meat was sold by the butchers at 35 cents per pound. But such meat! Only a little sinew and grizzle hanging to the bones, and this was suspected to have been cut from the dead animals out on the snow. Still it was thankfully received, and when boiled with mackerel, of which there happened to be a small quantity in the town, it was highly relished. Salt became as valuable as gold, and was exchanged at the stores for an equal weight of gold as long as it lasted.

ALTHOUSE.

The Althouse placers were discovered by Phil. Althouse. They proved marvelously rich. In them were found many large nuggets. "Uncle Billy" Saunders, before mentioned, picked up one in June, 1856, on his claim that "weighed" \$1,080. But in the following year an even larger one was discovered by Matthew Collins and James Casey, two young Irishmen. It "weighed" \$3,100. In the winter of

1852-3 there were at least 1,500 miners on the Althouse and its tributaries. There were also many miners on Sucker creek. Brownstown was laid out in 1852 and at once became a lively, typical mining town. It was named after "Webfoot" Brown, who was the butcher of the camp. As early as March, 1853, there were ten or twelve stores, several saloons, and a good hotel in the town. This old town was located just below Walker gulch. It has long since disappeared, though New Brownstown just above, perpetuates the name. Among those prominent in the camp at that time was Jack McDougal, who is still living in the south end of the county. John Elder, who is now ranching on Elder creek, packed into the new camp from Crescent City. Judge P. P. Prim, of Jacksonville, kept a store there in 1852. James Little, who is now ranching near Waldo, was also there at that time. Dr. D. S. Holton was the physician of the camp and a few years later became a prominent politician, being several times a member of the legislature. J. B. Hickox, or "Hicks," as he is called, was also there. Judge Walker, who died about a year ago in Grants Pass, was the justice of the peace in 1853.

SAILOR DIGGINGS OR WALDO.

Did not attract much attention until about 1855, though between 1851 and that date there was considerable mining going on there. In the year 1855 the camp experienced a veritable "boom" and attracted many miners from Althouse. In the first two years of the camp's existence no quicksilver was used in mining operation; but it was introduced in 1853 and did much to stimulate mining enterprises. In the year first named there were 500 miners in the district, and the town contained four general merchandise stores, several saloons, a brass band, and many gamblers, fast women and dance-houses.

The surface of the Waldo claims consisted of loose gravel, and it yielded readily to the pick and shovel. This was the ground worked by the early miners there and elsewhere. The under strata contained considerable clay and were, in consequence, so sticky that they could not be worked by the simple methods then in vogue. It yields, however, readily to the giant.

The first piping was done about 1854 in Scott's gulch, by Col. Steven's company. An inch-and-a-half nozzle was used under 300 feet of pressure. The same giant is still in use in Scott's

gulch. The first attempt to open an outlet-race to the deep ground at Waldo was made by George Temple and others in Butcher gulch, now Wimer outlet. This was in the latter '50s. Rim rock was struck by them twenty feet from the surface at the river. A mile-and-a-quarter flume was constructed, which came to the surface almost where the Wimer giants are now set. This company paid \$80.00 per day for 500 inches of water and \$4.00 per day for men mining with sluice boxes, picks and shovels. Waldo has, also, the distinction of having possessed the first church constructed in the county. It was built by the Catholics and fell down in 1889. The early merchants of the town were Logan & Thompson, Work & Crandall, A. B. McIlwaine, John Bolt and Mr. Coyle. These, like other pioneer merchants, made their "pile" in a few years and departed, with the exception of Mr. Bolt, with their money to spend it elsewhere. It was in the spring of 1853 that the trail between Waldo and Crescent City was first constructed. This trail was built by "Bullhead" Smith, long afterwards a resident of Smith River Corners, in Del Norte county. From this date nearly all supplies for Southern Oregon came in by way of Crescent City, which, in consequence, soon became a place of considerable commercial activity. The extent of the traffic may be estimated from the fact that within a year there were 3,000 mules on the trail carrying supplies. A short time afterwards John Mann began a pony express to and from Crescent City to connect with the steamers, and large shipments of gold to San Francisco were made by that means. A few years later came the daily six horse Concord coach. This did not last long, however. The postoffice department reduced the service to twice a week, then raised it to thrice a week, and it did not again



become a daily until 1883, when J. Wimer & Sons built a new road over the mountains to connect with that built by Horace Gasquet, deceased.

Waldo has another distinction. In 1856 the territorial legislature created the county of Josephine, and Waldo became the first county seat. In the fall of that year the first court held in the county was held at Waldo, with Matthew P. Deady, afterwards United States district judge, as the presiding magistrate. The first sheriff of the new county was James Hendershott, and Dr. D. S. Holton was his deputy. At this time Judge H. K. Hanna was a common miner at Waldo. Other familiar figures were W. R. Willis, now of Roseburg, Judge Williams, of Portland, afterwards United States attorney-general, and J. D. Fay, Sr.

KERBY.

The act creating the county of Josephine provided for an election to determine the permanent seat of the county government. The county took its name from Josephine creek, which, in turn was named in honor of Josephine Rawlins, who, then a girl of 16, came from California in 1853 with her father. The election occurred in June, 1856, and Kerby was chosen. At this time there was scarcely a house in the place, but a large amount of open ground, the proximity of the Illinois river, and its central location with reference to the new camps were conclusive arguments with the electorate. It was soon a lively town and for 28 years continued to be the county seat. Among the first merchants was Sam Sawyer who also built and kept a hotel there. Mr. Sawyer died six years ago, after he had made a fortune at Kerby and had lived for many years a retired life at Oakland, Cal. The hotel now kept by N. Delamater, who is also a pioneer miner, was built and kept by

S. Vining, who also kept a store at the place.

Up to the removal of the county seat to Grants Pass, in 1884, Kerby participated in the ups and downs of the mining industry of the county. It is still a growing town and ships large quantities of goods over to Happy Camp, down the Illinois and in other directions. For several years John Howard, the pioneer merchant of Grants Pass, has kept a store there which has enjoyed a large trade.

GALICE CREEK.

The Galice creek placers were discovered in 1851 by Louis Galice, a Frenchman, who was in the following year murdered, with six others, by the Indians. This district proved quite rich, and during the 40-odd years it has been mined it has produced an immense amount of gold.

OTHER DIGGINGS.

Big Bar, on Rogue river, in Jackson county, was also much mined in early days. Sterlingville became a lively camp in 1854. Much mining was also done on Evan's creek and its tributaries, on Foots creek, Galls creek, Humbug, Steamboat, Grave creek and Wolf creek. Williamsburg, in Williams valley, was another lively camp. It took its name from Col. Bob Williams, an old miner and noted Indian fighter, who, in the wars of 1853 and 1855-6 achieved considerable distinction as the colonel of the Southern Battalion of Volunteers. At this camp there were, in 1855-6, 500 men mining. The town at the present time has, however, but little to show of its former activity.

Strange as it may appear, all of these streams are still being extensively worked, save Big Bar, and are producing large amounts of gold every year.

INDIAN WARS AND OTHER EM-BARRASSMENTS.

It must not be assumed that the pioneers met with no embarrassments. The Indian outbreaks of 1853 and 1855-6 were a source of great annoyance and much anxiety. The murder by the Indians of Louis Galice and his companions was the ultimate cause of the first outbreak, though for two years preceding the natives had shown an increasing hostility. The aggressions were not all on one side, however. The native women were often the victims of the incontinence of irresponsible parties, and occasionally an Indian was wantonly killed by some

white man. On the other hand, the Indian quickly acquired the love of gold, which he could exchange for guns, pistols and ammunition, and the "piles" of gold often recklessly exhibited by the miners excited his cupidity and led to treacherous assault. For the Galice murders Chief Taylor, the head of a piratical band of Indians from the mouth of Rogue river, was apprehended and hung, in 1854, with three others by a self-constituted jury, at Vannoy's Ferry, which was located six miles below Grants Pass. This act precipitated the outbreak of 1853. During this and subsequent outbreaks, "forts" were erected by the miners, and into which they would at times crowd for protection. These "forts" consisted of log buildings surrounded by a stockade. Such "forts" were erected near the mouth of Deer creek, on the Anderson ranch, opposite Kerby, and at other places.

The mining seasons of 1853-4 and 1854-5 proved unprofitable; the rainfall was unusually light and, together with the Indian wars, tended to keep many men out of the mines.

THE EXODUS OF 1858 AND 1861.

These embarrassments and the reports of rich diggings on Fraser river, in British Columbia, seriously impeded the growth of the country. In the year first named a stampede to the new diggings occurred. Several thousand miners abandoned their claims in all the different camps and took the road for the north. So precipitous was this stampede that for several years thereafter almost any article of household furniture could be picked up around the several mining camps, and even band instruments and clocks. This excitement was followed in 1862 by an almost as great a rush to the Salmon river diggings, in Idaho. These two excitements almost depleted Southern Oregon of miners and for ten or more years the industry languished. However, many of these old Fraser and Salmon river pioneers came back in subsequent years, and even at this late date one occasionally returns, astonished at the changes that have taken place in his absence.

THE CHINAMAN.

With the departure of the white miner came the Chinaman, who took the place vacated by the former, and during the next few years took out from the various districts many tons of gold. With the exception of Gin Linn, who still operates an hydraulic on the Little Applegate, these Orien-



tals never made a permanent improvement in the country, and it is now difficult to find a vestige of the thousands who once occupied the streams.

It may be surmised that the advent of these leeches was not beheld with complacency by the remaining white miners. Numerous protests were made and after a somewhat heated controversy, they were finally forced out of the country. They were aliens, who had no legal right whatever to mine on the public domain, and history now approves as wise the course then taken by the miners.

EARLY MINING METHODS.

With the departure of the Chinamen came a new era. The miners of the early period confined their labors to the creek beds and low bars. The high bars and channels, which are now being extensively worked, did not escape their attention, but the amount of labor and capital required in the construction of the necessary ditches precluded their working; these were left for a later day. The long-tom, Hungarian sluice and rocker were the exclusive mining devices. The first-named consisted of a piece of "tom" iron extended from the lower and narrower end of a sluice-box, so perforated as to permit the gold, when the gravel was stirred with a shovel, to drop through the interstices below. The Hungarian sluice differed from the sluices of the present day, in this, that the riffles ran parallel with the course of the water and were not made, as now, with blocks. Quicksilver was not used at all at first, but it came in vogue in 1853, and greatly facilitated the extraction of gold.

Claims in the bed of the creeks were generally limited to 50 yards, extending on each side to high water mark, and banks or bar claims to 40 feet on the creek, running back to the hill or mountain. All claims became generally "jumpable" at the end of five days from cessation of work, and all disputes touching these matters were submitted to arbitration. It is an interesting fact that the first "code" embracing these provisions was adopted in April, 1852, under a large oak tree on Canyon creek, at a meeting of some 40 miners gathered for the purpose.

A NEW ERA.

But, as before stated, with the departure of the Chinamen came a new era. A large hydraulic mine was opened up and equipped on the high

channels of Galice creek by Bowen and others. This led to the construction of the Sterling ditch by Captain Ankeny and D. P. Thompson, of the Squaw Lake ditch by Judges H. K. Hanna, C. B. Bellinger, J. K. Kelly, J. C. Hawthorne, ex-Governor Thayer and Henry Klipper, of the Grand Applegate ditch by W. R. Willis and Sol Abraham, and of other large ditches. The successful operation of these plants provoked a revolution in the methods of mining, and, while ground sluicing is still quite common, the hydraulic giant has been ever since the great agent for moving the gravel banks.

QUARTZ MINING.

The original source of the large quantities of gold found in all the streams of Southern Oregon has always been a matter of interesting speculation. Much of this gold is coarse, and it is frequently found adhering to or commingling with quartz. This fact has led to the general adoption of the theory that the gold deposits are due to the disintegration of ledges in the surrounding mountains, exposed by the eroding forces of nature. The great number of rich ledges of varying width found in all the mountains confirms this theory. Quartz mining had its beginning in the discovery of the Hicks' ledge on Jackson creek, in 1859. It proved to be a pocket, but quite a snug little sum was taken out of it by Secora Hicks and S. R. Taylor. Gold Hill was the next noted find in the way of quartz. It was discovered in January, 1860, by J. Hays and a Mr. Graham, who took T. Chavner, George Ish and A. J. Long and John C. Miller in with them. Within a week the mine passed into the hands of Henry Klipper and two others, who erected an arastrra to treat the ores. The dividends of the company averaged for a while 1,000 ounces of gold per week, and before it was abandoned it yielded its owners \$150,000 in gold. In April, 1860, a 12-stamp mill was, at great expense and labor, erected to take the place of the arastrra, and the arastrra tailings yielded in this mill the first week \$10,366. This was the first stamp mill erected in Oregon. It was afterwards sold to the owners of the Jewett mine, three miles from Grants Pass, where it did good work for several years.

The discovery of the Gold Hill ledge quickly led to other quartz discoveries and, among others, the Fowler, which yielded \$315,000; the Jew-

ett, \$40,000; Blackwell, \$10,000; Holman, \$10,000, and Davenport, \$8,000. Some of these mines are still being worked at this time, notably the Jewett.

The Southern Oregon prospectors have heretofore, as a rule, sought only free-milling ledges, and if the gold was not plainly visible to the eye the find was considered of no value. The section still presents, in this respect, a practically unexplored field and offers tempting opportunities to experienced prospectors.

The copper ledges in the south end of Josephine county, which are numerous and extensive, at an early date attracted attention; but they have never as yet been profitably worked. The first of these enterprises was that of the Queen or Bronze, near Waldo, on which a French doctor and his associates spent \$30,000. It subsequently became the property of Henry Villard, who purchased it of John C. Elder and James Lytle for \$10,000. Another enterprise was that made in 1862 by a number of San Francisco men to work the copper ledges at the junction of Falls creek and the Illinois. They erected an old-fashioned mill on the ledge, but after spending \$20,000 upon the property, abandoned it. Both of these properties are still considered valuable; but as they and others worked in early days are still "going" mines and are elsewhere described, further mention in this article is not deemed necessary.

THE PIONEER HIMSELF.

The men who, in early days, flocked to Southern Oregon in such numbers and laid so well and deep the foundations of the present social, political and industrial fabric, were no common men. They were, with hardly an exception, men under 25, well grounded in republican institutions, many of them college graduates, some of them lawyers and doctors who abandoned a lucrative practice in the East and South—and all of them courageous, resourceful, hardy and strong. They were, above all, law-abiding and lovers of justice. Without constitutional courts, they administered punishment to those who broke the divine ordinances summarily, but yet with all the forms and deliberations characteristic of courts of law, and so well was their work done that homicides were rare and but few assaults on the integrity of property were ever reported. All hail! to the Southern Oregon pioneer.

THE PRESENT CONDITION OF MINING IN SOUTHERN OREGON

Southern Oregon produces gold, silver, copper, iron, coal, asbestos and many other valuable minerals. The section is, however, essentially a placer or hydraulic gold-mining country and is, in this respect, second on the Pacific coast to California only, to which, in its physical features, it bears a striking resemblance. But it is a placer or hydraulic country for the reason that more attention has been paid to that class of mining than to any other. The reasons for this are patent. The miners, of both the early and late period, have been men whose necessities forced them to seek mineral wealth by that channel which assured the quickest returns with the least expenditure of money. Prospecting for quartz ledges is a pursuit full of embarrassments, and the prospector necessarily has a precarious mode of existence. In Southern Oregon, in early days, the mountain sides were kept comparatively clear of undergrowth by the fires set out by the Indians; but such fires are now forbidden by law, so that the country has become covered with an undergrowth of bushes and trees, which interferes with travel and conceals the surface from view. The landscape is much broken and in many places there are rugged and steep mountains. When a ledge has been discovered, its value must be determined by exploration, and after this value has been ascertained a road has to be constructed, a cabin built and a mill erected—or, else, there must be a patient and uncertain waiting for the arrival of a purchaser. In the meantime the question of "grub" and other supplies is an ever-present one, and both money and credit are likely to become exhausted. On the other hand, the nearest gulch invites the gold-seeker to enter, with no capital save pick and shovel and sluice-box, and assures him of at least moderate remuneration for his toil. Ultimately his labors may well disclose a rich bank of gravel—a high bar or an old channel. A longer and larger ditch is constructed, the water supply is increased, and thenceforth and for many years the hydraulic giant affords him an income of several, perhaps many, thousands a year. In other words, the miner, as others, moves along the line of least resistance, and that line has directed his

footsteps into placer and hydraulic mining rather than into the more uncertain field of quartz mining.

But, off and on, for the past thirty years, the desire to discover the source of the immense quantities of gold found in the creek beds and bars of Southern Oregon has proven a strong temptation to the prospector, and as a result of his labors many large bodies of ore have been uncovered, as well as unnumbered ledges of varying width, a considerable number of which are yearly adding their quota to the world's production of gold.

The source of the gold supply of Southern Oregon has always been, and still is, an interesting subject of speculation. As to the source of a part of this gold supply a theory has been propounded which appears at least to be plausible. Geologists concur in the statement that far back in mesozoic time all Southern Oregon and the Pacific slope, as far east as the Rocky mountains, were parts of the ocean depths, save a mountainous island, whose eastern shore line, crossing the Siskiyous near Ashland, extended northwesterly to Coos Bay and southwesterly to the mouth of the Klamath river. Upon the beaches of this island, out of the mountains above, the eroding elements, through countless ages, washed and deposited with the sand and gravel, immense quantities of gold. They further tell us that during this period not less than 3,000 feet of sediment were deposited, covering the territory tributary to the Rogue, Umpqua and Coquille rivers. Later the Cascade mountains emerged, and still later the mountain chains with which we are now familiar. This last emergence drained off the water and in places left the ancient shore line high on the tops of mountains and in other places buried deep beneath mountain slides. The newly formed rivers and creeks then began to cut their channels to the sea, and wherever one of these streams struck this shore line it scattered the gold contents all along its course. This theory accounts for much in Southern Oregon which would otherwise be inexplicable. It accounts for the numerous "ancient channels," with their marine shells, washed gravel and huge boulders, found in numerous places high up on many mountain tops, notably on Briggs

creek and at the Gold Basin. It also accounts for the many tons of gold taken out of such streams as the Alt-house, Sucker creek, Galice creek and others. It should be remembered, too, that in the beginning the streams did not occupy their present beds, nor were there deep canyons in existence. But there were numerous lakes and ponds and into these the currents bore their burden and deposited immense beds of auriferous gravel.

This theory does not explain, however, the fact of the existence of the large nuggets, found almost daily, attached to or commingled with quartz, little worn and broken off at a comparatively recent date. That these nuggets came from ledges in the surrounding mountains was, and is, a conclusion which would be irresistible even were it not supported by the discovery, as before stated, of so many well-defined gold bearing ledges in all directions.

The attempt, however, to work these ledges has not always proven satisfactory or profitable. Failures have occurred, but it is patent to the most casual observer that many of them have been due to inexperience, and some to wasteful and extravagant management; the expense of procuring machinery has been great, and the capital has often been small. But after making all allowance for these failures, the showing made for Southern Oregon quartz mining is well worthy of consideration, and as experience enlarges from year to year, better results are being obtained. It should be remembered, too, that the process of extracting gold from quartz is a discovery of very recent years and that the problem has not yet been solved with entirely satisfactory results.

The vein matter of Southern Oregon ledges varies but little throughout a wide extent of territory, and, with some exceptions, may be described as a hard, white and compact quartz carrying metallic sulphides and gold (with some silver) in varying degrees. This quartz, where within reach of the action of air and water and thus oxidized, was alone worked by the early miners and is still all that is sought to be utilized by many persons. This class of ore yields its gold contents readily in the arastræ and in the stamp mill and battery, and these

simple devices may be found all throughout the section in operation, generally with water power. From the practice of working only the oxidized, free-milling ores it has resulted that many gold mines may be found with all the surface ore extracted and with rich ledges of sulphides exposed in the tunnels and shafts. Knowledge is, however, ever increasing and the art of concentration or "ore dressing" is being learned. The mills are being equipped with true-vanners and other concentrating machinery, and within a short period a much larger yield from the quartz mines may be anticipated.

But it is not enough to concentrate the ore and ship the sulphurets; the expense of shipment of the concentrates to San Francisco, which is the most available point for treatment, and the charges for such treatment are so great that when added to the cost of mining and milling, much of the profit to the mine-owner is sacrificed, and in many cases the mine is closed altogether. A chlorination plant, or some other suitable form of reduction works, is greatly needed and if erected at a convenient point would greatly stimulate the development of the industry.

Much has been said about the "pockety" nature of the quartz mines of Southern Oregon. This characterization is, however, in the estimation of many competent men, largely undeserved. In the first place, it should be remembered that gold ledges everywhere are never of uniform width but contract and expand and are often broken. In the next place, the gold is never uniformly disseminated throughout the ledge matter, but occurs in chutes of varying lengths. This is true of Southern Oregon quartz mines, and to it is due, in a large measure, the exaggerated impression existing on this subject. This impression is particularly unfortunate, as it has deterred many persons from investing in promising quartz mines and others from exploring the lower strata. It should be borne in mind that there has as yet been but little deep mining in Southern Oregon. There are numerous mines containing hundreds of feet of tunneling close to the surface, undertaken to secure the free-milling ore; but only in one or two instances have perpendicular shafts been sunk to a depth of even two hundred feet, and in those instances good, substantial ledges have been disclosed. Many well-informed men are confident that when the temptation to mine only the free-gold ores shall be overcome and shafts shall be sunk to a depth of 500

or 600 feet, as is done with little-ado in other sections, large, well defined paying ledges will be disclosed, and such will probably be the case.

Mining in Southern Oregon at the present time takes many forms. The hydraulic mine is most in evidence and produces the greatest amount of gold. However, much ground sluicing may be found, and the gold extracted by this means gives a support to many men. This elementary form of mining is not, however, one of choice; it requires but little capital, and insufficient means precludes the use of the hydraulic giant. Much ground is thus profitably mined which would, under pipe and giant, yield a fortune. This ground can be had at reasonable prices, and as it is physically possible, in most cases, by the construction of ditches from three to twenty miles in length to get sufficient water upon it for hydraulicking, the field for investment on the part of men with moderate capital is an inviting one. A still larger field is the consolidation of various small properties on the several creeks and the working of the same under one management with larger water facilities. Several such consolidations are now under consideration.

It should be borne in mind that hydraulic mining is far less hazardous than any other form of mining, as all the factors entering into the problem can be accurately estimated in advance, while, when once equipped, no great amount of skill or expense is required, comparatively, to obtain successful results.

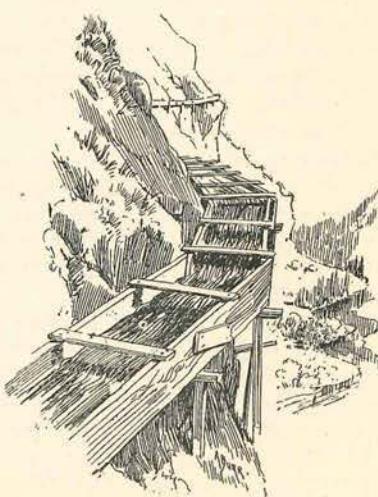
Another form of mining is by wing-damming the rivers. This method of mining has been in vogue along Rogue river for the past two years and has proven profitable. Of course, it is only applicable in the summer season, when the water is low. The question, too, of placing dredges on Rogue river is receiving considerable attention.

A new method by pumping water directly against the adjacent bank by means of a steam pumping plant has lately been inaugurated by Messrs. Baylor & Iliff, on Rogue river, just above Grants Pass. This enterprise has now been long enough in existence to demonstrate its practicability, and its promoters pronounce it a decided success. A description of this plant will be found elsewhere. A like plant is now being erected on the same river opposite Woodville, and other parties have the establishment of similar enterprises in view. Should the assurance of success now being given as to

these enterprises be verified by further experience, the problem of extracting the gold from the auriferous banks of Rogue river and other streams, will, in the judgment of mining men generally, have been permanently solved, and it will result in the establishment of many such enterprises.

The gold out-put of Oregon last year amounted to \$1,950,204, the largest for twenty years. Of this sum nearly one-half came from Southern Oregon. It is a noteworthy fact that this output of the state was nearly six times that of the state of Washington, and that it was, besides, in excess of that of British Columbia, and nearly one-half as much as that of Montana. Previous to 1896 the greatest annual output of Oregon's gold mines was in 1877, when the value of the yield approximated \$1,192,000. From 1877 to 1883 there was noted a steady decrease in figures representing the yearly output of gold till 1884, when Oregon produced but \$552,472 in gold. Each successive year since 1888 has shown a steady increase in the output. In 1891 it reached the million mark, and in the five years since that time it has practically doubled in volume. The greatest increase has been made since 1893, when depression in other lines forced the people's attention to the business they practically ignored during the period of greatest advancement in the Pacific Northwest.

These figures bear testimony to the increasing activity of the chief industry of Southern Oregon. This activity, begun so auspiciously some three years ago, may be counted upon to continue and to increase in force in proportion as the mineral wealth of the section becomes known.



THE MINES OF SOUTHERN OREGON

Douglas County

There has been and still is, less mining in Douglas county than in either Josephine or Jackson counties. The county is, however, within the Southern Oregon mineral belt and the formations are similar to those existing in the other counties named. In early days considerable gold was obtained on the South Umpqua and Cow creek, and their tributaries, and both of those streams are still the seat of considerable mining.

On Steamboat Creek

In the northwestern part of the county is the farthest point north where gravel has been worked for gold. This creek is an affluent of the north Umpqua. On all the other tributaries of the North Umpqua gold can be found. However, but little mining has ever been done in that section. Some prospecting has been done there, and some good quartz has been found. The district also contains some copper, found in serpentine.

South Umpqua District

The South Umpqua, with its tributary creeks, Coffee, Elk, Bear, Cougar, Deadman's, Myrtle and Day's, was in early days a region of considerable note. On all these streams washed gold was, and still is, found. The most of the shallow deposits were, however, washed out long ago, but some deep gravels suitable for hydraulic mining still remain. At the present time, the greatest amount of activity exists on Coffee creek, at a point about 22 miles east of Canyonville. One Alex. Du more has the distinction of first discovering gold on this creek, in 1857. The gold was coarse, many nuggets of the value of \$20 having been found. Various attempts have been made to discover the source of this gold, but so far without success. On Granite creek, a tributary of Coffee creek, is the only hydraulic in operation in the district. This is the property of the Granite Creek Placer Mining Company, of which Captain J. P. Shaw, of Portland, is president. It has been in operation only a short time. The company has excellent water facilities and a good dump. The gravel yields from 15 to 50 cents per cubic yard in gold. There are also, some ten other

locations in the district, which are worked by ground sluicing.

Cow Creek District

A still more noted tributary of the Umpqua is Cow creek. The gravel of this creek has been worked for over 30 years. The placers are still extensive, and some noted bodies of deep gravel are found. On Tennessee gulch, some 20 miles up the creek, some good mining ground is also found. Another affluent of Cow creek is Quine's creek. On this creek there is said to be a silver-bearing quartz ledge, three or

dale, the property of the A. B. C. Co., a corporation whose chief stockholders are residents of Chicago. The president of the company is John Addison. This property, until lately, was operated by the Victory Placer Mining Company, of which Col. Taylor was manager and promoter. There are several hundred acres of rich gravel, but the difficulty has heretofore been insufficiency of water. To supply this, Col. Taylor undertook to erect large pumps; but before he could demonstrate his ability to mine profitably by this means, the company became in-



The Victory Mine, near Glendale, Oregon

four feet in width. Considering that silver ledges are rare in Southern Oregon, this discovery is noteworthy. Just above the mouth of Tennessee gulch is the Union quartz mine, which has been extensively worked, producing some very rich ore, treated in an arastrum. The vein is small, however. It was in this vicinity that the "Starve out strike," otherwise called the "Green Mountain Mine," was discovered some years ago. It is a well defined ledge some six feet in width. Another discovery on this creek is an iron mine. There is also found considerable copper, in ore or native.

But the principal enterprise on Cow creek is the Victory mine, near Glen-

volved in financial difficulties, with the result that the property was sold under a judicial decree and purchased by Mr. Addison and his associates. To increase the water supply, the new company is now constructing a system of ditches, 25 miles in extent, which will tap several creeks putting into Cow creek, and which, it is claimed, will furnish ample water for the greater part of the year.

Olalla District

Another noteworthy enterprise is that of the Paradise Mining Company, a Portland concern, which owns 700

acres of rich gravel near Olalla. This is a new enterprise. It will be equipped with pipe and giant during the coming summer.

Hogum Gulch

Was first discovered in 1859, when it paid \$50 a day to the man. The creek channel has been partially worked out; but the creek bars and high rims furnish good ground for piping. The principal claims on the gulch are those of Hobert & Grimes and Eleff & Booth, both of which are composed of blue gravel and are equipped with pipe and giant. The former has a mile-and-a-half ditch completed and other ditches under construction. It has, also, 900 feet of 18-inch flume.

Dodson Butte District

About nine miles east of the railroad is the Dodson Butte district, in which are found several very promising ledges. Of these most development work has been done on the Black Republican mine, owned by S. C. Flint and others, of Roseburg. A 250-foot

tunnel has been run and an 8-foot ledge cross-cut. This ledge carries gold and copper and assays from \$40 to \$400 per ton.

The Yankee Boy and the Lucky Boy, owned by H. M. Oatman, adjoin the Black Republican. Several cross-cuts have been made on the ledges in these mines, showing an 8-foot vein of "peacock" copper and some gold, which assay about \$45.00 a ton.

Brushy Butte District

In this district, also, there are several good quartz mines. The 16-to-1 mine, owned by Smith Baily and others, contains an 150-foot tunnel and several cross-cuts. It shows a 12-foot ledge carrying gold and copper, assaying about \$60 per ton. The Eagle mine and the Eagle Extension are the most developed mines in the district. They are the property of William Lough and others. A 16-foot ledge has been exposed, carrying gold and copper of an assay value of \$40.00. The Brushy Butte Copper & Gold mine has

had considerable development. It is the property of S. A. Clarke, H. W. Miller and others. A ledge, varying from six to fifteen feet in width, carrying gold and copper of an assay value of from \$10 to \$40 per ton has been exposed. This ledge can be traced on the surface fully 7,500 feet. All these mines are about ten miles from the railroad.

The brevity of this article might lead one to the conclusion that the mining industry of Douglas county is insignificant. This would be a false impression, however. In all the districts mentioned, and in others not mentioned, will be found many small mines in operation, and, also, many promising quartz ledges. Inasmuch, however, as the latter are as yet little developed, and the space allotted to cover a large territory is limited, a further notice is not permissible. Douglass county, like other parts of Southern Oregon, feels the need of capital for the development of her mineral resources and offers a profitable field for such investments.

Mines in Josephine County

Rugged mountains, alternating with steep canyons and narrow valleys, make up the northern portion of Josephine county, a region that is good for little else than mining. The rocks contain many auriferous quartz veins, and placer mining is carried on on nearly all the streams. The water courses connect with Rogue river, the streams having a westerly course.

Mt. Reuben District

The Mt. Reuben district is situated in the northwest corner of Josephine county, about sixteen miles northwest of Leland station. This district appears to be a continuation of the Galice creek district, and commences on the north side of Rogue river. It lies north of Rogue river. Mt. Reuben is a high ridge running almost due north from Rogue river. It expands from Reuben creek, on the east, to Whisky creek, on the west, there being about five miles between the mouths of the creeks. The ridge extends back north from Rogue river, about eight miles. The whole mountain seems to be highly mineralized, and it is a continuous network of ledges and small veins. The general course of the veins seems to be northeast and southwest. The for-

mation is porphyry and the ledges are a mica-schist.

After crossing Reuben creek, going west, the first mine encountered is the Ajax, owned by Clark & Williams. This mine is opened by a tunnel, tapping a strong, gold-bearing ledge, four feet wide at a depth of about 100 feet perpendicular measurement. The main chute is exposed and is continuous for 200 feet. This mine shows some ore milling into the thousands of dollars. The mine is equipped with one of I. B. Hammand's improved triple discharge mills, which is giving very satisfactory results.

The next mine west is the Copper Stain, owned by J. B. Wetherell & Co. It is equipped with a Tremain mill, and is operated by tunnel and shaft. The ore is high grade. The company owns four full claims. About one-fourth mile south is the Sandoz mine, owned by Louis Sandoz. It is also equipped with a Tremain mill. The mine is operated by tunnel and shaft. The vein is about four feet wide, at a depth of 100 feet. The ore has an assay value of \$20 per ton, with \$5 free on the plates. Further north on the west side is the Ramsey group, owned by Stroud, Ramsey and Decker. It consists of six claims. This prop-

erty is opened by several tunnels, one of which is 350 feet long, tapping the ore at a depth of 150 feet. The ore is continuous, showing an average width of 12 inches, with an average assay value of \$13 per ton. This is a milling and concentrating proposition. Further north and east are a number of fine, strong ledges, showing low-grade milling values, with little or no development work. Still further east is a group of claims owned by Geo. Berglund & Co. It shows some high-grade ore.

About two miles south, on the summit, is located the Albany group, consisting of eight claims. This property is prospected entirely by shafts. The greatest depth being 110 feet, perpendicular measurement. It shows a strong 4-foot vein of \$20.00, free-milling ore. Some milling tests of 20-ton lots show a milling value of \$48.20 per ton. One mile west of the Albany group is located the Goldbug, owned by R. A. Jones. It is being developed by a tunnel. This vein shows it to be the richest continuous pay-chute yet found in the district. One and one-half miles further south and east are several locations recently made, showing milling values on the surface.

The district has an abundance of

wood and water. More men are mining on Whisky and Reuben creeks now than at any time for many years. A company has leased Briggs & Clark's mine, below the mouth of Whisky creek. The veteran miner, Charley Bear, is still taking out nuggets from his mine at the mouth of the creek. The Root Brothers are working different mines with success. In fact, every claim is being worked from the mouth of the creek as far up as there is sufficient water.

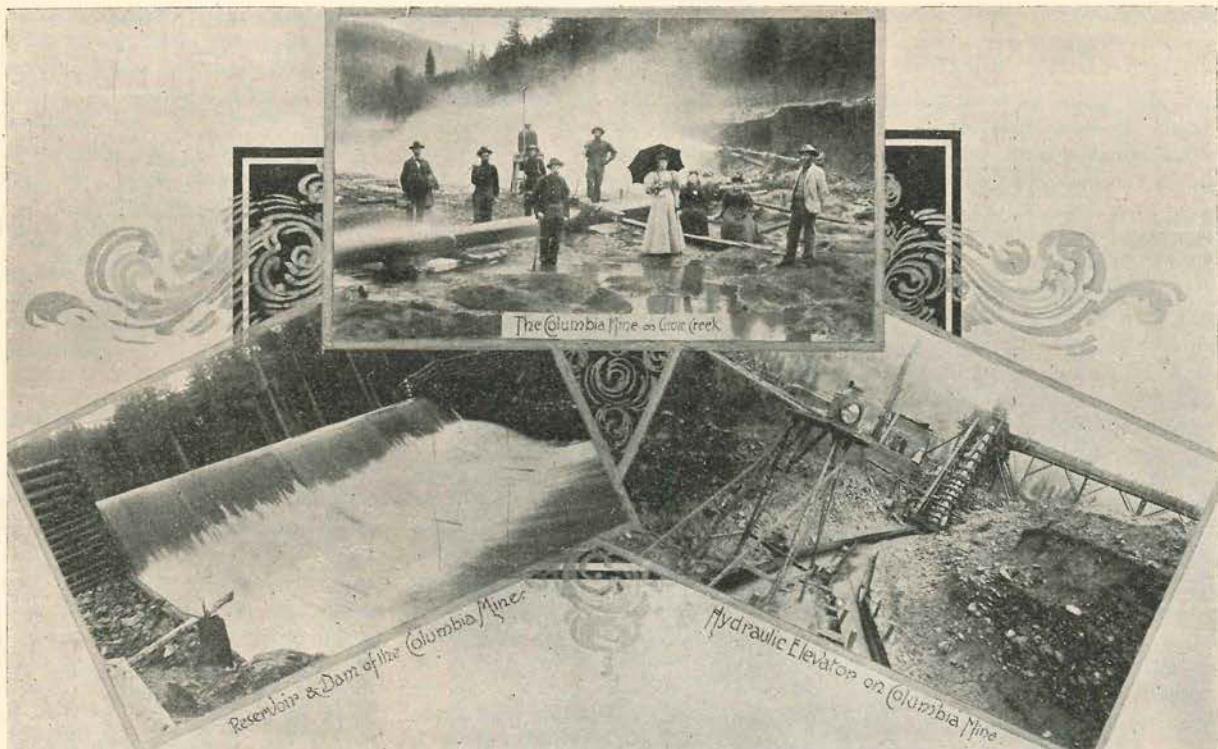
Grave Creek District

This is another historic district, having been in early days the seat of great mining activity, and it has never

THE COLUMBIA MINE.

This is, par excellence, the hydraulic mine of the district. It lies about eight miles from Leland, the nearest point on the railroad. The owners are L. A. Lewis, of Portland, and William Huntley Hampton, the eminent engineer. This property is worthy of more than a casual notice. It has been only operated during the past two seasons, but the returns the very first season were so satisfactory that the owners felt justified in expending many thousands of dollars in getting the ground in proper shape for working. Fifteen miles of ditch furnishes a pressure of 350 feet and affords water enough to operate two giants the greater part of

the ground now being worked, with which it is connected by a 1,200-foot cut, in which are placed the sluice boxes. The elevator consists of a 40-foot pipe, $2\frac{1}{2}$ feet in diameter, supported at an angle of about 45 degrees. At the base of this pipe a giant implanted in the ground forces the gravel as it comes through the flume up through the pipe, where it passes in an elevated flume to a point several hundred feet below. Another elevated flume furnishes by-water. This elevator was worked during the past season and with entirely satisfactory results. It has the distinction of being one of the largest of the kind ever constructed. The force of the giant operating



ceased to furnish its quota of gold. It was about three years ago that it experienced renewed activity. This was due to the establishment of several large hydraulic enterprises on the creek. At the present time it is, from one end to the other, the seat of much mining activity, and a large scheme is on foot to consolidate several of the large properties and greatly increase the water supply.

At the head of the creek Mose Hopwood & Co., and Watts & Keating are ground sluicing. Just below —. — Smoker is working a creek bar with one giant, with a pressure of 80 feet. He gets his water from Bowlder creek. Other ground sluicers are Keeney & Co., and David Johnson & Co.

the year. There are two distinguishing features of the Columbia mine: the first is the thoroughness with which everything has been done—the quarters built for the owners and workmen—the commissary and dining apartments, and the engineering skill displayed in the construction of the ditches, dams, sluice-ways and flumes. All this has been done under the supervision of Professor Hampton, who has worked out every detail and superintended the work from the beginning. The chief distinguishing feature of the mine is, however, the hydraulic elevator.

This was constructed to overcome the embarrassment of a deficient dump. It lies about 1,200 feet below

this elevator can hardly be appreciated by one who has not seen the giant in operation. Some idea of this force may be gathered from the fact that it will toss an 800-pound boulder up the pipe like a marble. All this force is not due to one giant, however, for, penetrating the pipe about midway, is another giant, which adds its strength to the one below. This structure has, of course, been an expensive one, and only a large property would justify its construction. However, Messrs. Lewis & Hampton have built not for one year, but for many years, and from near the junction of Tom East creek and Grave creek, where they are now mining, two miles or more of ground lie above them on the first

named stream, which will keep them busy mining for several decades.

BLALOCK BROS.

This mine has been in operation for the past three seasons only, and it is operated with a four-mile ditch, 2,250 feet of pipe and two giants. It has a good water pressure for seven months in the year. These improvements have been made with an expenditure of about \$5,000. The bank consists of a heavy marine wash, 25 feet in depth, with about five feet of red loam on top. The owners were the original locators of a part of the ground, but large additions were made by purchase. Starting the work of equipment with little capital other than muscle and courage, Messrs. Blalock Bros. persevered in their design, and although the mine is not fairly developed as yet, it has yielded them not less than \$3,000 a year during the time it has been in

which they will equip with a giant during the coming season.

At Leland

Between the Columbia mine and the railroad station at Leland no hydraulic mines exist, although the ground is all known to be rich in gold. At Leland are two noted hydraulic mines, those of John C. Lewis, of Portland, and the Steam Beer, owned by E. Nicodemus. The Lewis mine was only equipped during the past season. The Steam Beer has been in operation for several years. Both mines have the reputation of being excellent producers.

WILKE & PORTER,

FORMERLY HALE BROS. & CO.

About 1½ miles below Leland is the hydraulic mine of Hale Bros. & Co., which has been profitably mined for several seasons. The gravel is red and like all similar ground on Grave

eral seasons. The gravel is blue, and the banks stand up 80 feet in height. The dump facilities cannot be surpassed anywhere, and the water facilities are better than are generally found elsewhere. This ground has been mined for years; but it is only within the last few years that it has fallen into the hands of the present owner. Mr. Archer is an old California hydraulic miner, and everything about the mine testifies to his skill and thoroughness. He has two or three hundred acres of ground, 3½ miles of ditch, three reservoirs, and a 4-foot flume, through which the tailings are dumped into Grave creek. Two giants are used.

The other prominent mines below are those of Klum & Goss, J. B. Lawler, Halsey & Co., and the Harris Flat Mining Company, with J. W. Virtue, the former owner of the Virtue mine, near Baker City, as part owner and general manager. So far, little effort has been made to pipe this ground; the effort has rather been by the sinking of shafts and running drifts, to determine the extent and richness of the ground before expending any considerable sum in the construction of ditches.

We come now to the

HARTH & SMITH MINE,

owned by P. H. Harth & Son, the Grants Pass clothing merchants, and L. S. Smith. This property was worked during the past season by lessees. The water supply is sufficient to operate two giants during the mining season, and the pressure is good. The mine produces much coarse gold and is considered a valuable property.

Wolf Creek District

The northernmost district is that of Wolf creek, which is a tributary of Grave creek, and which is from 15 to 20 miles in length. On Sailor creek, near the upper waters of this creek, is the hydraulic mine of H. D. Slutter, which was equipped with pipe and giant about two years ago. Mr.



Steam Beer Hydraulic

operation. When fully opened up a much larger revenue may be anticipated, and the last of the ground will not be reached in the life-time of any of the owners.

Below Blalock Bros. is the claim of George Pease, operated for the past two seasons by ground sluicing. This ground will be equipped with pipe and giant in the coming fall. Other ground sluicing claims in the neighborhood are those of Rose & Johnson, Joe Strollburg, Dan Wilson, William Thomson, Ed. Richards, and Ernest Briggs & Co.

Browning & Sons have also a profitable mine located on Jordan gulch. They have 80 acres, and operate one giant with a pressure of 80 feet. This ground has produced some unusually large nuggets.

On Slate creek, a tributary, Cross & Keen have a ground-sluicing claim

creek, is rich in gold. The mine has good dumping facilities; however, the water facilities at present are not adequate to produce the best results. A new ditch will have to be constructed for this purpose, and this will be done shortly. One giant is operated at present and about an acre of ground has been piped off. This mine lies close to the railroad track, and is a constant source of interest to travelers, as its operations can be plainly seen from the passing trains.

Passing on down Grave creek seven or eight good paying hydraulic mines are seen. On the right hand side of the creek is that of G. Karg, which has been extensively operated for years with one giant. A mile or so below, on the opposite side of the creek lies the hydraulic mine of

GEO. B. ARCHER,

which has been in operation for sev-



Wilke & Porter, formerly Hale Bros.

S. has 80 acres of red gravel, and a 3-mile ditch gives him an ample pressure for five or six months. This mine has also three small reservoirs and good facilities for dumping. Mr. Sluter has also a quartz claim in the neighborhood.

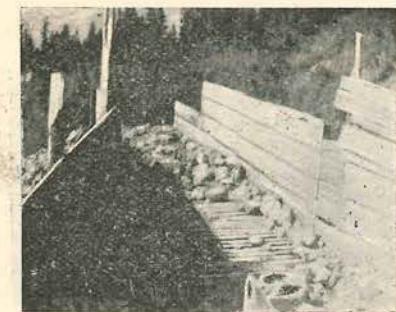
Below on the creek is the placer mine of J. B. Hannum. Mr. Hannum is a pioneer miner of the year 1852 and has lived 15 years on this creek. He is, besides, a horticulturist of no average success, for around his cabin grow the finest apples, peaches and plums. He has 40 acres of ground, red and blue gravel, located on a basin with an altitude several hundred feet above the railroad station at Wolf creek. This ground has been considerably mined and is undoubtedly a good piece of property. The water facilities are limited, but could, with a small expenditure, be greatly increased.

Next below is the hydraulic claim of J. E. Farmer, the local railroad agent. This claim is equipped with pipe and giant and is, in its general nature, very similar to that of J. B. Hannum's.

On Manhattan gulch, which here puts into Wolf creek, are the claims of John Saunders and Herbert Burleigh & Co. Neither is as yet equipped with pipe and giant.

Passing on down the creek, the mine of Lehman Bros. is reached. This has the general characteristics of the other mines on Wolf creek. The present owners have worked the ground for many years, with satisfactory results.

Between Lehman Bros. and the mine of Jack Layton, below, Messrs. Booth & Tuffs have considerable ground not now being mined, but which is known to be rich. The Layton mine is equipped with pipe and giant and has the general features of the hydraulic mines on Wolf creek. The pressure is fairly good, and sufficient water is obtained in an ordinary season to afford six months of mining.



Rubles Grizzly, on Coyote Creek

Other mines on the creek below are those of T. E. Wallace, Daniel Matthews and J. McGuire. Richardson & Son, of Stayton, Oregon, are the latest arrivals on the creek. They have only within the last few months put in a pipe and giant. Among the quartz ledges on the creek is one owned by Flynn & Son. Considerable development work has been done on the ledge, and the amount of ore exposed has been so great that the owners feel justified in erecting a 5-stamp mill for its reduction.

Coyote Creek District

Coyote creek is the most important tributary of Wolf creek, and it has been the seat of considerable mining for the past 40 years. At present there are two hydraulic mines on the creek. The uppermost is that of Ruble Bros.—

William N. and S. C. Ruble—whose

20 degrees. Over this floor about one foot are placed cross rails of wood, supported underneath and faced on top with steel straps projecting a little over the wood on each side. These are placed so as to leave 2-inch openings between the strips, through which the gold, sand and fine gravel drop through on to the floor beneath and are washed into the flume. One giant placed in front, plays on the elevator at a distance of 60 to 100 feet from the lower end. Another giant is set so as to drive the gravel near enough for the first giant to drive it over the screen. These giants can both be operated at once, or if there is not sufficient water for both giants, they can be used separately, say, 12 hours each at a time. It will be seen that this grizzly is designed for working flat, gravelly ground, when the larger rock has to be handled. Messrs. Ruble Bros., the inventors, claim for it that



Geo. B. Archer Hydraulic, on Grave Creek

ground covers a couple of miles of the creek and back-channels. The gravel is similar to that on Wolf creek and has a depth of about twenty feet. Much coarse gold is found. The water rights appurtenant to the mine are very valuable and afford a pressure of about 300 feet for two giants. The drawback to this mine was formerly lack of dump facilities. The owners have, however, obviated this difficulty by an ingenious contrivance which is

RUBLE BRO.'S ELEVATOR.

This is a structure which is both an elevator and separator combined, and consists of a plank floor 10 feet wide and 26 to 40 feet long, with side boards 6 to 8 feet high to prevent gravel and gold from splashing over the sides. This structure is set at right angles to the flume, with the lower end resting on the flume at a rising angle of 15 to

with it twice as much gravel and rock can be moved in a given space of time and with a given amount of water, as can be moved by running the gravel and rock through a flume, in the same period of time and with the same water. As to water, at least 100 feet of pressure is needed to do good work. Bowlders weighing from 100 to 500 pounds, owing to pressure and water, and stumps, logs and roots, all pass over the grizzly; so that only the very large rocks have to be handled. It is also claimed that not so much sluice water is needed as where all the rock and gravel are passed through the flume. It saves the gold better, as the flume seldom clogs and no rock reaches the flume to cause the sand and gold to boil out of the riffles, and it can be operated on any ground, if a drain can be opened to carry away the muddy water. All the debris can be placed

on the ground that has been worked. In proof of the utility of this invention, the owners point to their four years' use of it, and they stand ready to place a like contrivance for operation on any mine of good reputation, to be paid for in installments, or they will sell mine rights on reasonable terms. Writing of this invention in a recent communication, the owners say: "We think so much of it that we would not part with the use of it for half the value of the mine."

BENNETT & McINTOSH.

Below, about one mile and a half above the junction of Coyote and Wolf creeks, are the hydraulic mines of Bennett & McIntosh, where two giants are operated. This ground is very similar to that of the Ruble Bro's, save that the natural dumping facilities are good. The difficulty heretofore has been, however, lack of water. But

Galice Creek District

This district—one of the oldest in the country—lies about 25 miles west of Grants Pass, which is the source of supplies for the district. Merlin is the nearest point on the railroad. From there a wagon road runs for six miles to Crow's ranch, where a trail covers the residue of the distance. The miners of this district have long felt the need of a wagon road in lieu of this trail; but it is only lately that any steps have been taken to have it constructed. Within a year, however, it is anticipated that this road will be built, and the importance of the mining interests of the district certainly justify the labor and expense. In this district are several good quartz, as well as hydraulic mines. We can enumerate only the most important.

is fitted up with all necessary buildings for mining. There is also a fine orchard on the property, and enough hay is raised to keep two horses and a cow. Two giants are run day and night throughout the mining season, that is, from seven to nine months in the year.

These mines have been worked continuously for over 15 years, and there is no danger of their being "worked out" for 50 years to come. About two years ago they first came into the possession of the present owners. Before that time they were owned and operated by Frank Ennis and Tod Cameron, of Jackson county, who are popularly credited with receiving from them an annual revenue of \$20,000. All things considered, it is doubtful if there are any better hydraulic mines anywhere than these. Besides the advantages already enumerated, there is a water pressure of from 335 to 500 feet and a dump which cannot be excelled. The mine is also equipped with a sawmill, which furnishes all necessary lumber. During the absence of the owners their interests are entrusted entirely to Benjamin E. Stahl, who is an old and experienced California miner. Many improvements have been made on the mine under the present owners, and the success which has so far been had is largely to be attributed to Mr. Stahl's experience and good judgment.

THE ROCKY GULCH MINE.

It is owned and operated by an incorporated company, the chief stockholders of which are L. L. Jewell, J. W. Sherer and S. S. Prentiss, all residents of Grants Pass. The property lies just north of that of Alexander and Bent's, and is on the same old channel, high up above Rogue river, which cuts through it. The ground covers 140 acres and includes five distinct channels lying along the mountain side, one above another. This ground has been worked off and on for the past 20 years, with varying success. The present owners have done much to equip the property; a ditch several miles in extent has been built and a large reservoir constructed. With these facilities one giant can be operated for the whole year, and two giants for a part of the time. The gravel banks are not as deep as those of the Alexander & Bent mines, but it is stated that the gold is more evenly distributed.

The other hydraulic mines in the district are Elwell & Gass, who have only recently partially equipped their prop-



J. B. Lawler's Hydraulic, on Grave Creek

this difficulty is being gradually overcome by the extension of ditches into the near gulches and draws.

Besides these two larger hydraulic plants, there are a number of other claims on the creek, which are ground-sluiced during the winter.

COYOTE CREEK QUARTZ MINES.

On this creek there are also several good quartz mines, notably the Marshall, the Sarah Bell, the Queen Ann, Little Anaconda, and the St. Lawrence—all having good strong veins. On these ledges considerable work has been done in the past, but as they are now not being operated, save the Sarah Belle, they will not be described at length. It is sufficient to say that the owners still regard them as very valuable and are careful to preserve their rights.

ALEXANDER & BENT MINES.

The largest, most prominent and best-equipped hydraulic mines in this district are those of Judson Bent and Adin Alexander, both of whom reside in Southern California. They are commonly called the Alexander & Bent mines. These mines are located near the junction of Galice creek and Rogue river. They consist of 757.89 acres of gold-bearing gravel covered by United States patent. The ground covers a channel four miles in length, and is divided by the right hand fork of Galice creek into two separate mines, each having an independent water supply. The upper property, which is at the head of the channel, is supplied with water by a ditch, seven miles in length, from the left fork of Galice creek. The lower property is supplied by an 8-mile ditch from the right fork of the creek and by a $\frac{3}{4}$ -mile ditch from Rock creek. The lower property

SPECIAL MIDSUMMER EDITION

erty on Stratton creek; J. Bartley, E. E. Merrill and Harmon & Green. The first named have excellent water rights, and all of them possess good dump facilities.

THE SUGAR PINE QUARTZ MINE.

In this district are several producing quartz mines, the oldest of which is the Sugar Pine, Green or Bolt mine, and which is the property of John Bolt, of Jackson county. This is one of the oldest quartz mines in Southern Oregon, and has been worked, perhaps, more extensively than any other quartz mine in the section. There are 1,800 feet of tunnels, the longest of which is 700 feet. It lies close to the right hand fork of Galice creek and not far from the hydraulic mines of Alexander & Bent. The vein is in slate, stands nearly vertical, with a strike nearly north and south, and it averages in width one foot. The vein matter is white, splintery quartz, accompanied by much talc, with occasional deposits of calespar. The metallic constituents are chiefly iron pyrites, copper pyrites and a very little galena. The sulphurets of copper and iron occasionally occur in large masses, forming considerable part of the vein at the point, and these massive pyrites carry a very high percentage of gold. This property has been worked off and on for the past 30 years. The ore is treated in an arastras and until lately no effort has been made to save the sulphurets. The ore averages probably \$30 a ton.

THE LOST FLAT MINE.

This mine is at the present time the greatest quartz producer in the district. Every few weeks a carload of ore is taken out, shipped on mule-back to Crow's, thence by wagon to Merlin, and thence by rail to Ashland for treatment. During the past few months it has netted its owners, J. C. Taylor and William Crow, some \$9,000 or \$10,000. It takes its name from the fact that for many years the ledge could not be found, although many shafts were sunk and tunnels run to find it. These explorations were due to the fact that the surface was well covered with quartz-boulders lying in red dirt. Many of these boulders and the surface quartz were treated in an arastras built for the purpose, and the yield was good. The discovery of the ledge was mainly due to J. C. Taylor. After making numerous cuts and shafts, a small quartz seam was discovered, and this led to the dis-

covery of three distinct parallel veins, about 150 feet apart, each about four feet in width, all three of which carry gold in paying quantities. There is much soft, oxidized ore which yields not less than \$125 to the ton. In fact, much of this ore has been so rich and so easily worked that the gold has been mortared out by hand, yielding over \$100 a ton by this method. It is probable that a mill for the treatment of the ores will be erected during the coming fall, at the mine.

THE GOLDEN WEDGE MINE.

On Rogue river, about four miles below the mouth of Galice creek, lies another group of quartz mines, the most interesting of which is the Golden Wedge Mine. This mine exhibits a deposit of 700 feet of ore lying on the side of a hill to a depth of 30 inches. It is as if a ledge had stood up several hundred feet above the surface and

it as valuable, and are willing to spend some money on it to determine its true worth.

THE BIG YANK.

A striking feature of the Galice district is the Big Yank ledge, which is 250 feet wide and is to be traced for 40 miles over the country. It crosses Rogue river three miles below Galice creek. It is a contact vein, with a slate hanging wall and hyposyenite on the foot wall. The vein matter is mainly a bluish quartz colored by copper, which is plentiful, existing as copper pyrites. Assays of the quartz show from \$2.00 to \$36.00 per ton in gold and silver, with a small percentage of copper. This is an inviting proposition to large capitalists. For over 30 years it has attracted attention, but, as it will require considerable money to erect the necessary works, no one has as yet made any serious effort to turn this immense ledge to account.



Hydraulic Mine of Eugene Merrill, on Galice Creek

had ultimately fallen, scattering its fragments over the ground. The owner of this interesting deposit is Henry Hutchins, an old and experienced miner. Mr. Hutchins spent much time in searching for this ledge, and it was only a few months ago that he located it. In the meantime, an arastras has been at work on the hill deposit, and the ore has paid well. There are many thousand dollars in this deposit, and Mr. Hutchins has an assurance of many years' work before him, without counting on the lately discovered ledge.

The other mines in the neighborhood are those of F. Duff, on Rocky gulch, a promising ledge, not much as yet developed, and the Bybee mine, now the property of Turner & Sanders, the Galice creek merchants. This mine has been worked off and on for 30 years and has had many vicissitudes. The present owners still regard

Jump-Off-Joe District

On the upper part of this creek is the Lucky Queen mine, which was extensively worked several years ago. It has over a thousand feet of shafts and tunnels. It belonged originally to an incorporated company, which erected a 10-stamp mill, with pans, etc., and for several years endeavored to make the property pay. After spending \$25,000, or more, their patience gave out in 1879 and the mine was abandoned. Afterwards it was jumped, but the new locators have never attempted to do anything with the property. The ore is base, containing a large percentage of metallic sulphides. This failure may be attributed to a selection of the wrong process for reducing the ore.

THE ESTHER.

Another quartz mine that ran on to breakers several years ago was the Esther. This mine produced over \$25,-

000, though the expenses were fully as much. It had a 5-stamp mill, three amalgamating pans, boiler, etc., all of which cost nearly \$7,000. It is not now worked.

THE HAMMERSLEY.

At the head of Jump-Off-Joe lies a group of mines, the most prominent of which is the Hammersley. This is another wreck, though it is conceded on all sides that the fault does not lie with the mine. It has always exhibited, and still exhibits, a strong vein of high-grade ore, the values increasing with depth. But this showing has been the means of dazzling the eyes and benumbing the conscience of nearly every one ever connected with it, with the consequence that it has been constantly in litigation and is not yet out of the hands of the courts. It was originally the property of Hammersley and others, who sold to David Goodsell, T. D. Drew and others. These put on a steam stamp-mill which was afterwards changed for a 5-stamp mill of another pattern. But shortly afterwards the company became involved in litigation with the Hammersleys, who had not received all of the original purchase price, and a receiver was appointed. The property fell back into the hands of the Hammersleys, who later sold to the Hammersley Mining Company, incorporated, the principal stockholder of which was Morton Lindley. John C. Quinn was the manager. In a short time these, too, were at loggerheads; liens for labor were filed by the workmen, Jones & Otten, the Woodville merchants, attached, sold and bought it in—undertook to work it, failed and quit. This is a brief history of the mine. The underground workings consist of an inclined shaft and about 1,000 feet of drifts and tunnels. This is one of the few mines worked to a depth of 200 feet, and it refutes the statement that the ledges of Southern Oregon do not hold out with depth. The mine can now be bought for a small sum compared to its worth, and it offers a bonanza to some experienced man with a small amount of capital.

J. W. AND M. A. ROBINSON.

On Brass Nail gulch, a tributary of Jump-Off-Joe, and about 500 yards below the Hammersley, lies the hydraulic mine of J. W. and M. A. Robinson. This is a mountain gravel deposit, covered over with a heavy flow of surface rock. The bedrock is of slate and porphyry. The mine is fitted up

with one giant, a good derrick and a car for handling the rock. The ground is very rocky, and as it lies close up to the source of the creek, the piping is done almost entirely with reservoir heads. This mine was originally discovered by J. J. Holcomb, in 1891, who worked it by ground-sluicing for two years, taking out about \$4,000. In 1893 J. W. Robinson, the Wimer merchant, bought a half interest and took out about \$2,000. Afterwards M. A. Robinson bought out Holcomb, and a giant was put on. The sum of \$1,300 was the net profit that season. The season of 1896-7 proved very unfavorable on account of the limited rainfall; yet a profit of from \$600 to \$800 was secured, and the cleaning up is not yet finished. The distinguishing feature of this mine is its coarse gold. Nuggets of large size have been found; one picked up weighed 13 ounces and another 9 ounces. Many have been found worth \$100. With proper allowance for the shortness of the mining season, this is one of the richest mines in Southern Oregon.

SEXTON AND NIDAY.

Just below is the placer claim of C. D. Sexton and Frank Niday, a claim which is also noted for its large nuggets and which, in other respects, is very similar to the Robinson claim. This property is better known as the "Old Wines' place." It formerly belonged to Henry Wines, an eccentric German who met a tragic death, and while in his custody yielded many a nugget which was the wonder of the country. Messrs. Sexton and Niday operate one giant under a pressure of 125 feet. They have about two miles of ditch.

BEN. TABOR & CO.

Further down the creek are two promising quartz ledges, only one of which is now, however, being operated. The first is owned by Ben Tabor & Co., and consists of a 2-foot vein of high grade, free-milling ore. The development work consists of an 85-foot shaft and a 60-foot tunnel. The ore is worked in an arastras. The other ledge is known as the "Old Tex ledge" and is the property of Jones & Otten, the Woodville merchants.

DYCERT & MILLER.

On Jack's creek, a tributary of Jump-Off-Joe, is the noted hydraulic mine of Jos. C. Dycert and R. F. Miller, embracing 415 acres of ground. The claim lies about one mile above the junction of the two creeks. The

ground consists of black gravel and rotten wash, with red soil above. The claim is equipped with pipe and giant, has one ditch completed and another 4-mile ditch nearly so, good buildings and good flumes. This gravel is very rich and in spite of the deficiency of water has been a good producer. When the ditch now under construction shall be finished, the income derived from the mine will run up into many thousands.

PHILLIPS & CONNOLLY.

There is another noted hydraulic mine on Jack's creek, that of Phillips and Connolly. This claim is very similar to that of Dycert and Miller and is equipped with pipe and giant.

THE ORO FINO QUARTZ MINE.

On the divide between Jump-Off-Joe and Louse creek are two "going" quartz mines. The first, the Oro Fino, is the property of H. C. Boynton, Fred Turner and L. L. Jewell. It exhibits a 2-foot ledge of high-grade, free-milling ore, which is treated in an arastras and a 2-stamp mill on the ground. Considerable development work has been done, and the work is still being vigorously pushed.

REESER, TURNHAM & LYMAN.

On the same vein is another mine, the property of C. D. Reeser, William Turnham and George Lyman. The ore is the same as that of the Oro Fino mine and is also treated in an arastras. The development work consists of a tunnel 250 feet in length.

The proximity of these two mines and the facilities for working them together has suggested the idea of consolidating them, and this will probably be done at no distant day.

THE BABY QUARTZ MINE.

Another good mine on this creek is the Baby mine owned by Joseph Pollock and L. L. Jewell. The ore is high-grade and free-milling, and is operated in an arastras. The development work consists of two tunnels—one 80 feet in length and another 100 feet in length, also a winze. The vein in the upper tunnel is about two feet in width, but in the lower tunnel it shows a width of not less than four feet. The size of these ore bodies makes the mine unusually valuable.

Louse Creek District

At the head of this creek Hull & Beck operate a placer mine, which is equipped with one giant. The gravel is red and well filled with rocks.

The banks are about 30 feet high, and the water facilities fairly good. Messrs. Hull & Beck have been operating this property for several years, and their income has been popularly estimated to be from \$10,000 to \$15,000.

THE JUNCTION MINE.

Just below, is the Junction mine, the property of Messrs. Younglove and Green, of Santa Cruz, Cal. This property embraces 100 acres of ground. It takes its name from the fact that it lies at the junction of the three forks of the creek, which furnish the very best water facilities. The equipment consists of pipe and giant, ditches and a large reservoir, besides quarters for

SEXAUER BROS.' QUARTZ MINE.

About one mile from the Junction mine Sexauer Bros. have for several years successfully operated a quartz mine. The vein is small, but exceedingly rich. The ore is treated in an arastræ.

THE FOREST QUEEN PLACER MINE.

On the lower part of Louse creek is a well-equipped hydraulic mine now operated by Gen. R. G. O'Brien, of Olympia, Wash. It was formerly known as the "Lance Property," and has always been conceded to be rich. Since Gen. O'Brien secured possession of the property he has made many

which have been the seat of mining operations for more than 30 years. This ground has paid from 25c to 30c per cubic yard. It is apparently a granite slide from the over-hanging mountains and is fed by numerous ledges, of varying width, lying in the hills above.

The name might imply that there is a total absence of water, but this would be erroneous. Jones creek flows through it and furnishes in the winter considerable water, which is partly utilized.

The most valuable part of this ground is owned by the Dry Diggings Mining Company, a close corporation, of which H. A. Corliss is manager. This company owns 400 acres of



The Junction Mine, on Louse Creek

the men. It was only last season that any effort was made to operate the giant. So far the energies of the company have been mainly directed towards overcoming the difficulties arising from the lack of adequate dump facilities. To overcome these difficulties a 1,200-foot flume was constructed, 900 feet of which lie under ground. This engineering feat was accomplished under the direction of Captain Thos. R. Muir, who has had wide experience as a miner in the mines of California. It may be said that no mine now has better dump facilities, and it may be anticipated that Messrs. Younglove and Green will, during the next season, begin to receive handsome returns on their investment.

improvements. There are four ditches, with a capacity of 4,000 inches of water, 1,500 feet of hydraulic pipe, two giants, 1,400 feet of 4-foot flume, six houses, one barn, 100 full-bearing trees of choice fruit, a garden patch of four acres and a 10-acre pasture.

The bank presents on top a layer of red clay; then follows a stratum of red and gray gravel, and lastly a deposit of blue and gray gravel, lying on the bedrock.

Dry Diggings District

Opposite and on the east side of Rogue river and extending back into the hills are the noted Dry Diggings, covering 1,000 or more acres, and

ground and also possesses the most valuable water rights. The water is, of course, taken from Jones creek. There are three or four miles of ditch and two small reservoirs. These furnish water, under 330 feet of pressure, for about three months in the year for one giant, but an extension of the ditch for about 3½ miles—which is partly completed—will provide a sufficiency of water for about five months in the year.

The marvel of this claim has been the number and size of the nuggets found. One of these nuggets "weighed" \$308, and a number have been found approximating in value \$100. Even with such a short run, the income of the company has heretofore been

about \$3,000. The extent and richness of this ground has stimulated inquiry as to the possibility of increasing the water supply. At the foot of it is that magnificent stream, Rogue river, with its perennial flow of water, and the suggestion has been made to secure water from it by a series of force pumps. This will require some capital, however. But it is under consideration by the Dry Diggings Company.

About one mile above the ground of the Dry Diggings Company and on Bloody Run, Gunning & Spencer operate one giant.

Back on Jones creek are several promising ledges—the most important of which is that of Meade & Smith. This ledge is six feet in width and will yield \$10 per ton in gold, besides the sulphurets. It has an 80-foot shaft and some drifts. The ores are treated in a Tremaine mill, located on the ground, the sulphurets being shipped.

cal and in part from California. This company began its work of equipment a little over a year ago, and this work is being rapidly advanced. Several miles of ditch have already been constructed, and other ditches are now being excavated. When completed the company will possess some of the richest ground in Southern Oregon with ample pressure and water for the greater part of the year. John Aiton and Geo. I. Brown are the local representatives of the company. The first named is the general manager, while Mr. Brown has solved the engineering problems. One giant only is now operated.

THE BIG FOUR MINE.

Another important hydraulic enterprise in the same neighborhood is that of the Big Four Mining Co., also incorporated; the principal stockholders of which are T. P. Judson, Jeff Own-

lies right on the bank of Rogue river and the dump is into that stream. This is an old mine and has always paid well. The present lessees express themselves well satisfied with the returns of last season's operations, although the run was a short one.

SNOWGOOSE BROS. & TREFREN.

This is a new enterprise, and the description of it is taken from the Oregon Mining Journal of June 19th:

Messrs. Snowgoose Bros. and Trefren, of Ashland, have just started an enterprise on a low river bar, about 14 miles below Grants Pass, which is deserving of some consideration. This bar is about nine feet below the present river bed. The ground will run from 75 cents to \$3 a cubic yard. However, the gold is very fine, and the difficulty heretofore met with has been the inability of saving this gold and at the same time handling enough dirt to make the enterprise profitable. Besides, there is about 20 feet of sand on the top of this pay gravel. Another obstacle has been the lack of dump and also the lack of water. To obviate these difficulties it is proposed to put in an engine, boiler and pump, which will be used in pumping water from the river into the sluice-boxes. A hoist consisting of a cable attached to a large scoop and running around a reel attached to the engine is operated by the engine, one man being required to handle the scoop. It is proposed to move the surface sand with a hose attached to the pump. The gravel will then be scooped into the sluice-boxes. It is claimed that by this apparatus from 600 to 700 cubic yards of gravel can be handled every 24 hours.

Grizzlies will be put into the sluice-boxes. These grizzlies will be about 18 inches in width and eight feet long. With these the sand will be separated from the gravel, the former passing into one sluice box and the gravel into another. This sand, it should be remembered, is the black magnetic iron so common along the river. It is, as a rule, heavier than the gold, and unless some process be devised for separating the gold from it, the sand will pack so hard that the gold will run over it and be lost. To obviate this difficulty, a device consisting of a series of perforated silver plates, placed at different angles in the boxes, has been made use of. It is claimed that no gold can pass over or through these plates without coming in contact with the quicksilver. This device is an invention of Snowgoose Bros. and is protected by patent. It has



Gen. R. G. O'Brien's Hydraulic, on Louse Creek

Grants Pass District

Below Grants Pass and on the opposite side of Rogue river from Merlin, lies a group of hydraulic mines which are just coming into active operation. These mines lie on Big Pickett and Little Pickett creeks, from which streams and their affluents the necessary water is obtained for mining. The ground subject to these streams is quite extensive and has been mined in a desultory way for 30 or more years in a primitive fashion. The two creeks obtain their name from Captain Pickett, an old pioneer, who once kept a ferry close by on the river.

The most important of the enterprises in this neighborhood is that of the

PICKETT CREEK MINING CO.

This is an incorporated company and the capital invested is in part lo-

bey, and Morford John. One giant is operated. This ground is very similar to that of the Pickett Creek Company. The water supply is not so abundant, but is capable of further development.

OTHER MINES.

in this neighborhood are those of Alfred & Delavan, and J. B. Oviatt, both partially equipped. In this region, too, are several fine copper ledges, none of which are, as yet, developed.

THE JOSEPHINE MINE.

On the same side of the river and nearly opposite Merlin is the Josephine mine. It is the property of William Bybee, of Jacksonville, but is operated by the Josephine Mining Company, Oregon City capitalists, who have this and other mines of Mr. Bybee under a contract of purchase. One giant is used. The ground

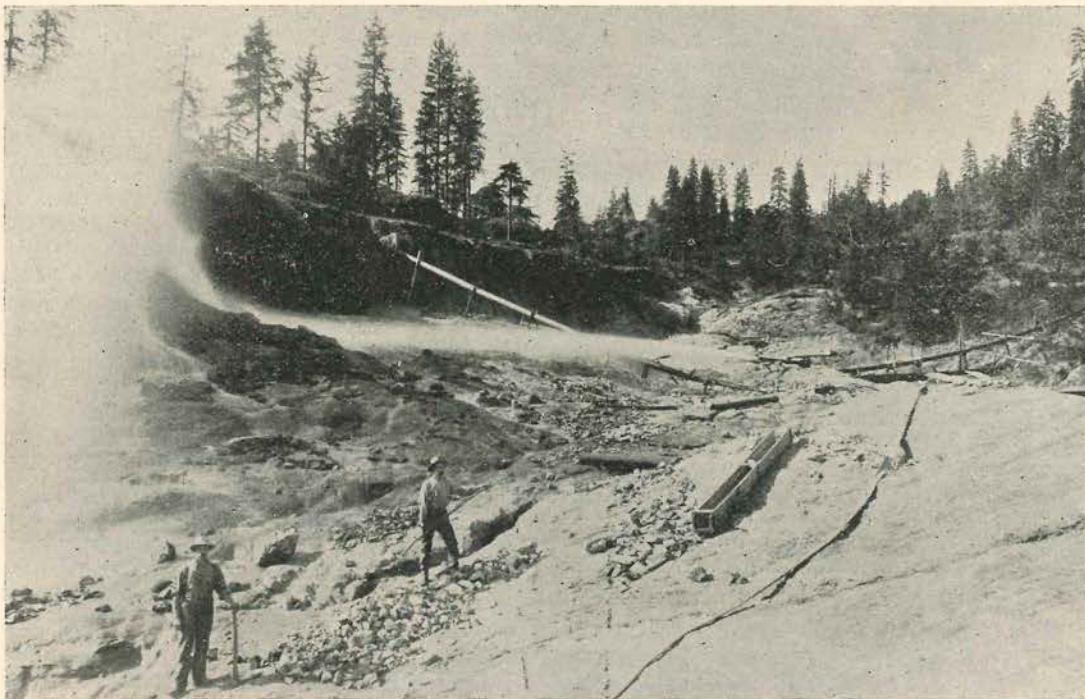
been experimented with sufficiently to demonstrate its practicability. Considering that there are billions of tons of this gold-bearing black sand on Rogue and other rivers, the enterprise just inaugurated will be watched with great interest, as it offers a method of not only saving the fine gold, but of handling and disposing of the gravel on a large scale. The machinery for this plant has been brought from the Risdon Iron Works, of San Francisco, and will be erected under the supervision of J. O. Rusby, of that company.

THE JEWETT QUARTZ MINE.

This is one of the earliest discovered quartz mines in Southern Oregon. It

a large kidney of ore, which is popularly estimated to have yielded not less than \$50,000. The property now belongs to Geo. W. Dorwin. Mr. Dorwin is an old Nevada and California assayer and smelterer. He brought to the mine a practical knowledge of mining and ore-treatment which it never before possessed. Considerable exploration has been done by him. The ground under the "big chamber" has been opened, exhibiting a large body of ore worth about \$15 a ton, besides running high in gold-bearing sulphurets. These developments justified the discarding the old Huntington mill long in use at the mine and the purchase of a new 5-stamp mill, with concentrator attachments, and this

Like the Jewett mine, the ore has been found mainly in kidneys, and the mine has at various times yielded a large amount of gold. The present owners are W. I. Dowell and W. P. Belding. The latter, like Mr. Dorwin, is an old and experienced mill man and miner. The new development work has been systematically pursued. A tunnel has been run into the mountain some distance below the old workings, and considerable ore of a good quality has been exposed. As a result of this development, the owners have only lately placed a mill on the property. This is now running, and there is enough ore in sight to warrant the statement that the owners will find the venture profitable.



Hydraulic Mine of the Dry Diggings Company, Three Miles from Grants Pass

was first located in 1861, and it has been worked off and on ever since. It has produced a large amount of ore, which has generally been found in kidneys. This fact accounts for the spasmodic manner in which the mine has been worked. After a kidney was worked out the owners would conclude that the ore was exhausted and would abandon the mine, when some one with new hopes and more energy would assume control and discover another kidney. The first owners, the Jewett Bros., who were among the first Rogue river ferrymen, made several thousand dollars out of the surface workings. Afterwards, they ran a tunnel and struck what has been termed the "big chamber." This was

mill is now in successful operation, with ore enough in sight to keep the mill occupied for many months. This mine lies about four miles south of Grants Pass and on the west side of Old Baldy, at an altitude of about 2,000 feet.

THE MOUNTAIN EAGLE QUARTZ MINE.

On the north side of Old Baldy, on a gulch running into Green's creek, lies the Mountain Eagle mine, which is very similar in many respects to the Jewett mine. It, too, is a very old mine. Since its first location in 1860 it has passed through many hands and at times was entirely abandoned.

CAMERON AND PAIRAN.

Another quartz mine on Green's creek is that of Cameron and Pairan, which joins the Mountain Eagle. This is a new discovery, comparatively, but the development work has disclosed a good sized vein of high grade ore. This ore is being shipped for treatment.

THE CAMPBELL & GOULD HYDRAULIC.

In the same neighborhood, on Green's creek, is situated the hydraulic plant of Campbell & Gould, who are residents of Portland and men of some means. Under their management, a reservoir with a capacity of

several million gallons of water has been constructed at a point about a mile above the workings. This gives a pressure of about 200 feet for several months in the year. An old channel is being worked, and as the work has been done in a very cautious and miner-like manner, the enterprise will doubtless meet with success.

THE BAYLOR & ILIFF PUMPING PLANT.

On Rogue river, nearly opposite, is the hydraulic pumping plant of Baylor & Iliff, known as the Goldbug mine. This enterprise was inaugurated in its present form some six months ago. It was preceded by a smaller plant operated by Mr. Iliff and Major

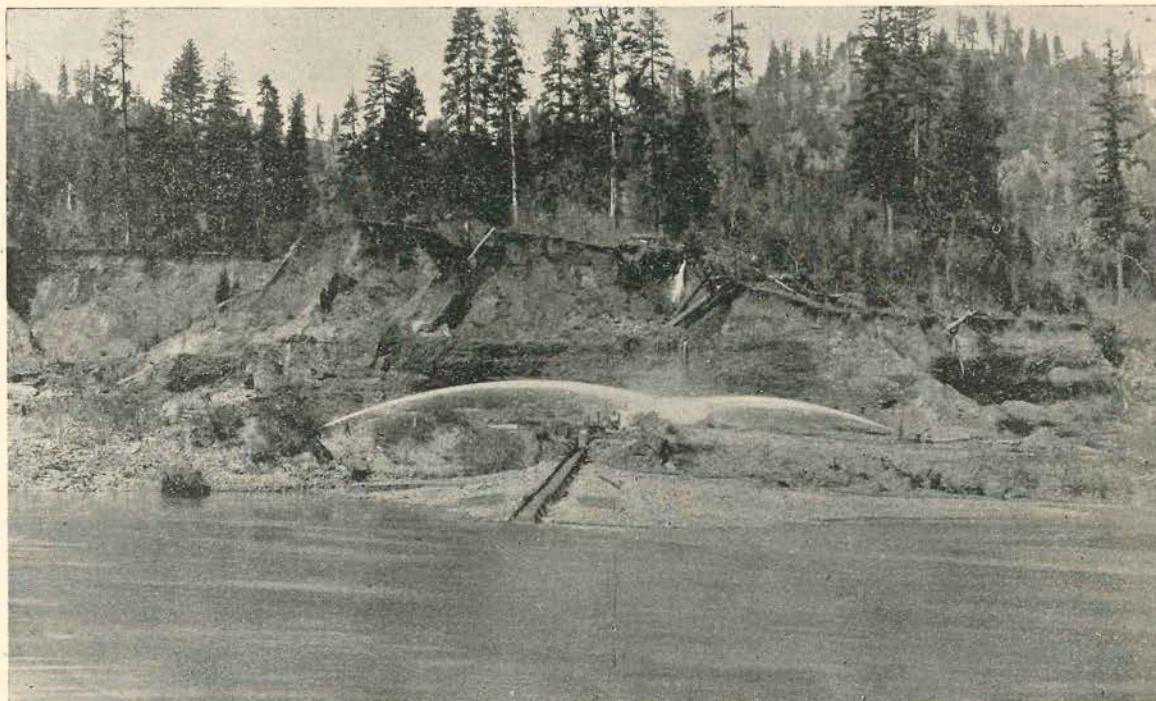
This pump has two 10-inch suction pipes and one 15-inch discharge pipe. The pumps are operated by two 80-horse power boilers. The Gardner pump has a capacity of 65 horse power. The centrifugal pump has a capacity, with its engine, of 110 horse power. So far, only 45 horse power has been used on the centrifugal pump and 35 horse power on the Gardner pump.

Messrs. Baylor & Iliff are pioneers in this class of mining in this section, and the success they have had has already stimulated the placing of a similar plant higher up on the river.

No enterprise established in Southern Oregon promises more for the development of the country than this.

JACK LAYTON'S MINES.

Jack Layton, one of the oldest and most successful of Southern Oregon miners, has two mines in this section, out of which he gets an income estimated at from \$15,000 to \$30,000. The first lies on Bamboo gulch, a tributary of Williams creek. At this point he possesses 80 acres of rich, red gravel and operates one giant for ten months in the year. Across the ridge, about two miles distant, lies the other mine. It is on Farris gulch, which puts in to the Applegate. In this gulch Mr. Layton possesses 400 acres of red gravel, running up the creek, and which is from ten to thirty feet deep. Both of these mines are operated with water



The Josephine Mine, on Rogue River

C. Newell, of Portland. This proved such a success that the present large plant was established. Both enterprises were suggested by the auriferous nature of the lands lying on both sides of the river. The plant consists of two pumps—a No. 12 centrifugal pump, and a Gardner force pump, with an 18-inch steam cylinder, 12-inch stroke, 14-inch water cylinder, 12-inch stroke, 12-inch suction pipe and a 10-inch discharge. It is operated by a direct application of the steam from the boiler. It throws 200 inches of water under a pressure of 150 feet. The centrifugal pump with the application of 35 horse power raises 500 inches of water to an elevation of 30 feet, which is used for a sluice-head.

Its significance lies in the fact that it has been demonstrated that the banks along Rogue river can be thus profitably worked. With continued success many similar plants will unquestionably be established on the banks of the river and its tributaries.

Williams District

This district lies about 20 miles south of Grants Pass. Williams valley is a broad and beautiful valley, interspersed with beautiful farms. Numerous quartz mines are found in the hills on each side and there are several good hydraulic mines.

from Williams creek, by means of two ditches, 13 and 22 miles, respectively, in length. The Farris gulch mine is also equipped with a large reservoir, and two giants are operated. This reservoir covers three acres and is enclosed by walls 50 feet high. This mine has been operated for the past 25 years, and it is not likely to be worked out in half a century.

C. H. STRATTON.

On Munger gulch, which puts into Williams creek, C. H. Stratton is operating one giant on a high bar. Water is obtained from the ditches of Jack Layton. Mr. Stratton is a Portland man and the season just closed was his second in operating the mine.

SPECIAL MIDSUMMER EDITION

ALEX. WATTS.

On Horsehead creek, which also puts into Williams creek, Alex. Watts, another pioneer miner, operates one giant. He has 160 acres of ground and two ditches, six miles and two miles, respectively, in length, which afford a pressure of about 100 feet for the usual mining season. This ground has been mined for over 30 years.

MORRIS, SHARP BROS. & HOSLER

On Powell creek, another tributary, is the hydraulic mine of I. S. Morris, L. L. Sharp, J. E. Sharp and M. A. Hosler. Powell creek is a stream six miles in length. It was worked many years ago near the mouth, but the bars being wide and deep it was not extensively worked. About six years ago I. S. Morris began to work the

to \$15 are frequently found, and some have been picked up worth from \$20 to \$85.

KIESSLING AND KREMER.

On Horsehead creek, above the claims of Alex Watts, is the mine of E. H. Kiessling and Dr. W. J. Kremer. One giant is operated from a short ditch, with a 50-foot pressure. The need of this mine has been a more abundant water supply, and the owners are now preparing to secure this by means of a new ditch from Powell creek.

THE RISING STAR.

On the right hand side of Horsehead is the Rising Star quartz mine, the property of S. Messinger & Sons. The vein is from 12 to 15 feet in width. All the upper surface for a distance of

THE TIPTOP.

On the divide between Powell and Horsehead creeks lies the Tiptop mine, also owned by S. Messinger & Sons. This shows a 13-foot ledge of free-milling ore, running from \$5 to \$7 per ton. The development consists of a tunnel 150-feet in length, running along the ledge. This mine lies on the top of the mountain, and its development is retarded by the lack of a road to reach it.

THE IONE.

On the same mountain, but considerably lower, is the Ione mine, the property of E. N. Provolt. The ledge varies from 18 inches to four feet and the ore, which is free-milling, runs from \$10 to \$25 per ton. The development consists of a tunnel 150 feet in length and of a shaft 75 feet in depth.

THE MOUNTAIN KING MINE.

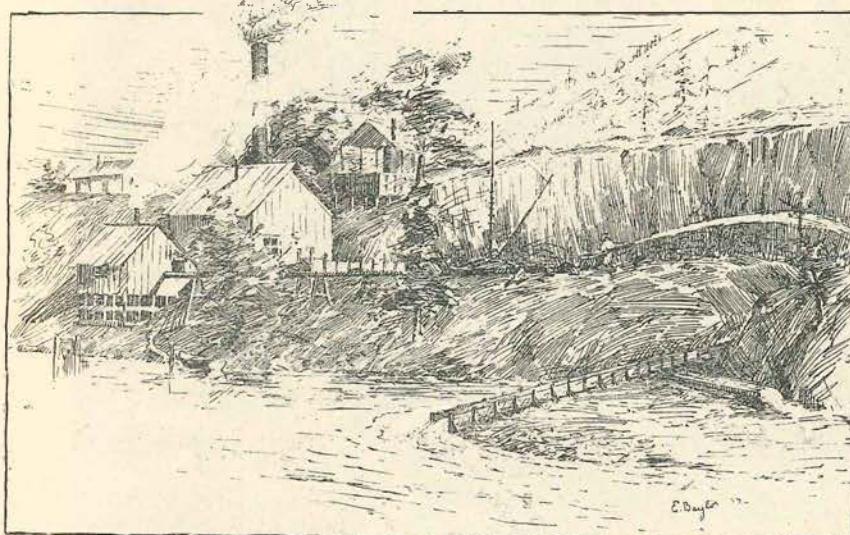
On the north side of Powell creek is the Mountain King mine owned by a company from Eugene, Or. The ledge varies from 18 inches to 36 inches in width, and the ore runs from \$50 to \$80 per ton. At the present time the ore is being milled at the Mountain Lion mill, four miles distant, but the company expects to erect their own mill shortly.

THE BONE OF CONTENTION AND LITTLE FRITZ.

These mines are located on the same ledge on the east side of Williams valley. So also are the Rosebud and Goldbug claims. Considerable development work has been done on all these mines. The Bone of Contention has a 400-foot tunnel. The ledge is from 24 inches to 48 inches in width, and the ore runs from \$5 to \$15 per ton. Close at hand is the Bone of Contention mill, an 8-stamp mill operated by water power. Neither the mill nor any of these mines are now in operation.

THE OREGON BONANZA CO.

This company is incorporated under the laws of Oregon. C. A. Macomber, of San Francisco, is the president and general manager. The company has three mines located on the mountain between Powell and Horsehead creeks—one of which, the Oregon Bonanza, has produced a large amount of gold. The milling has been done in part at the Bone of Contention mill, and in part at the Anderson mill. The vein has been of varying width—at



Pumping Plant of Baylor & Duff, on Rogue River

ground at a point about three miles above the mouth. He found it rich, with only from two to five feet of gravel. From that time there were many men working on the creek, each owning a small piece of ground. But this fact operated against an advantageous use of the water and the ground, and it led to the purchase of nearly all these small claims by the present company. This company now own over 200 acres of ground in one body, and the bulk of the water. They have equipped it with pipe and giant and a derrick for moving the boulders. With this equipment, large returns may be expected for many years to come, for the ground is so rich that it paid \$5.00 a day to the man, on an average, during the mining season, with pick and shovel. The gold is coarse. Nuggets "weighing" from \$2

700 feet and to a depth of 60 feet has been worked out. This space enclosed all the free-milling ore, and the vein now contains only sulphurets, which average \$15 to \$20 per ton. The free-milling ore yielded from \$10 to \$20 per ton.

THE ECCENTRIC.

One half mile above, on the left hand side of the gulch, is the Eccentric mine, owned by William Fitzpatrick and J. P. Anderson. This mine has been in operation for the past two years. It shows a fair-sized vein carrying free-milling ore worth about \$35.00 a ton. The development work consists of a tunnel 255 feet in length, running along the ledge. About one mile below is the Anderson mill—a 5-stamp mill operated by water power—where the ores are treated.

times as narrow as six inches and again as wide as three feet. All the ore in the upper levels was free-milling and in places enormously rich. In the lower levels sulphurets were struck. This property has been well equipped with shaft houses, ore bins, blacksmith shop and houses for the men, and the work of development under the direction of John King, who is also a stockholder in the company, has been done in a systematic manner.

THE HIDDEN TREASURE.

Close to the Oregon Bonanza is the Hidden Treasure, the property of the same company. This is a wide ledge of low-grade ore and it cuts the vein in the Oregon Bonanza diagonally.

Mr. Macomber to erect a mill at an early date.

THE EXCHEQUER QUARTZ MINE.

In the Williams district and about 12 miles south of Grants Pass, is a group of mines which deserves particular mention. Of these perhaps the most important is the Exchequer, which is the property of Dr. W. H. Flanagan, of Grants Pass. This is a well-defined ledge showing at the present time from two to five feet of ore in the bottom of the shafts. The ledge will average two feet of solid ore. The development consists of several shafts—the largest being 160 feet in length. There is also 700 feet of tunneling. This mine presents the

ore in the upper levels was free-milling, but the values now lie in the sulphurets. The ledge varies from 12 inches to 36 inches in width. The development consists of one 80-foot shaft and several hundred feet of drifts.

THE FIDELITY.

Another partially developed mine in the same group is the Fidelity, the property of Sharp Bros., of Powell creek. The ledge is very similar to those of the Exchequer and Anaconda, and the ore hardly differs in any respect.

This group of quartz mines presents an inviting proposition to any experienced mining man with some capital. If consolidated and worked under one



Powell Creek Hydraulic Mine and Derrick of Morris, Sharp Bros. & Hosler

This ledge has not been as yet much developed, but from its size and strength much is expected of it.

THE ECLIPSE.

The last of the properties of this company is the Eclipse, which lies on the Powell creek side of the mountain. This is considered the most valuable of the possessions of the company. The vein has been wider and stronger than that of the Oregon Bonanza and if anything, richer. These three claims are undoubtedly among the best in the Williams district, and they will undoubtedly do much to enhance the reputation of the mines in that section. It is the intention of

usual characteristics of the mines in the district, that is to say, the ore in the upper levels is free-milling while in the lower levels the gold values are contained in the sulphurets. These sulphurets will average \$200 a ton. On the Exchequer ground is another good, strong vein running parallel with the main ledge and lying about 50 feet north. This has been opened up for a distance of 100 feet and runs about \$5.50 in free gold.

THE ANACONDA.

Close to the Exchequer is the Anaconda, another strong ledge. It is the property of A. C. Taylor, of Grants Pass. This ledge has had considerable development work done upon it. The

plan, they would furnish an unlimited amount of ore. This ore can be handled at a very small cost, and the proximity to the Applegate will permit of excellent water power. However, the sulphurets are hardly rich enough to ship, and before the ore can be profitably mined there must be a reduction in the existing transportation and smelter charges, or else the erection of a plant for treatment on the ground.

Missouri Flat District

West of the Applegate is found a group of mines, some quartz and others placer, which have yielded considerable gold.

THE MOUNTAIN LION.

The most prominent of these mines is the Mountain Lion—a quartz ledge, on which considerable work has been done. It is the property of Bailey & Co. It was first discovered in 1887, after which it was worked for several years, yielding in an arastras some \$12,000. It has several shafts and many hundred feet of drifts. The owners are also possessed of a 5-stamp mill, with a Woodbury concentrator, run by steam power, with which they treat their ores.

Bailey & Co. are also possessed of other mines in the same neighborhood—the Big Mountain mine and the Homestake—neither of which has so far been extensively developed. Of these two the last named is as yet a mere prospect, though a most promising one. It has a 70-foot tunnel, which shows a ledge varying in width from three feet to seven feet. The ore runs about \$15 in free gold and sulphurets.

THE BLACK POCKET MINE.

Another quartz mine on Missouri Flat is the Black Pocket mine, the property of L. L. Jewell, Carty Davidson and Jay Davidson. The pay streak is quite small. The gold occurs in scales and flakes and occasionally in sheets. At one time \$2,700 was taken out of a small place and this was done with a pan only.

MILLER AND SAVAGE.

On Miller creek, which flows into the Applegate, is the hydraulic mine of Fred Miller and Lincoln Savage. This property was equipped with a giant about two years ago, and it has paid its owners fairly well. They have 60 acres of ground.

DAVIDSON BROS.

Another placer on Missouri Flat equipped with pipe and giant is that of Davidson Bros. This property is also on Miller creek.

LEW HANSON.

On the same creek Lew Hanson also has an hydraulic plant, but no giant. All this ground was mined for years by ground-sluicing, and it paid so well that the owners felt encouraged to put in larger plants.

On Oscar Creek

This creek is also a tributary of the Applegate. It lies just ten miles south of Grants Pass. The creek is only a

short one, but it is remarkable for its large nuggets. The great drawback is lack of water, and unfortunately it is so situated that a sufficiency cannot be had without a large expenditure of money. The important mine on this creek is the Treasure Trove, the property of Frank Hayes, L. L. Jewell and Dr. J. S. Moore. It is situated close to the source of the creek. Out of this ground some noteworthy nuggets have been taken within the last few months. These nuggets run from two to twenty ounces, and the gravel will yield about 30 cents per cubic yard. In the short time the mine has been operated by the present owners it has yielded from \$5,000 to \$10,000. In view of the fact that the run is limited to a few months in the year, this is an excellent showing. The equipment consists of a reservoir, constructed last year, 250 feet of pipe, and one giant. Frank Hayes is the manager. Mr. Hayes is an excellent miner, and all the work done testifies to his skill.

The Kerby District

This district contains a good number of hydraulic mines and several quartz ledges, now being developed.

On the north fork of

Canyon Creek

is an hydraulic mine owned by J. F. Stith, of Kerby, and lately operated under lease. It is equipped with a No. 2 giant and has a mile-and-a-half ditch. The gravel is red and from 4 to 12 feet deep. The water facilities are good for six months.

THE BYBEE MINE.

About three miles below is the Bybee mine, another of the mines under contract of sale to the Josephine Mining Co., which operated it during the last season with satisfactory results, under the management of A. N. Ashley. This claim was formerly owned by H. Wittrock, who secured from it, as claimed, \$10,000 before he sold it. It has been worked off and on for many years. The present company has made great improvements upon it, re-built the old ditch and put in 1,000 feet of 6-foot flume. It now controls nearly all the water of the creek. It is said that the company last year took out with pick and shovel enough gold to cover the cost of erecting this flume. The claim has, also, 2½ miles of ditch, with a pressure of 375 feet, two giants, and a hand derrick, with a 60-foot boom.

THE HAVILAND CLAIM.

At the junction of Canyon and Josephine creeks, is the Haviland claim, owned by Nauke & Stith. This claim is equipped with one No. 3 giant and has a pressure of 280 feet. It was operated last season under lease by Jack Fox.

On Josephine Creek

About one mile below, on Josephine creek, is a ground-sluicing claim owned by Kerby parties. This claim embraces a high channel and is noted for its coarse gold, many ounce-nuggets having been found. Plenty of water can be had at a comparatively small expense for operating a giant.

YOKUM BAR.

On the right hand side, a short distance below, is a claim lately equipped by J. F. Stith. It has a 2½-mile ditch and one giant. However, with the present facilities the water is scarce.

THE CHINESE GULCH.

A mile and a quarter below is the Chinese Gulch claim, the property of Frank Desserger, but operated last season by C. E. Tebbs & Co., of San Francisco, under a bond for purchase. This claim was only equipped last fall. It has two miles of new ditch, 2,000 feet of pipe, two No. 3 giants and bunk houses. This claim shows coarse gold on bed-rock.

ALEX. WATTS.

On a high channel just below Alex. Watts has a claim also equipped with pipe and giant. This claim was operated during the last season by W. Raimy.

THE MUD FLAT CLAIM.

One mile below is the Mud Flat claim owned and operated by William Lytle and William Ghores. It is equipped with pipe and giant, and has two miles of ditch, with a pressure of 180 feet. It has been worked for two seasons.

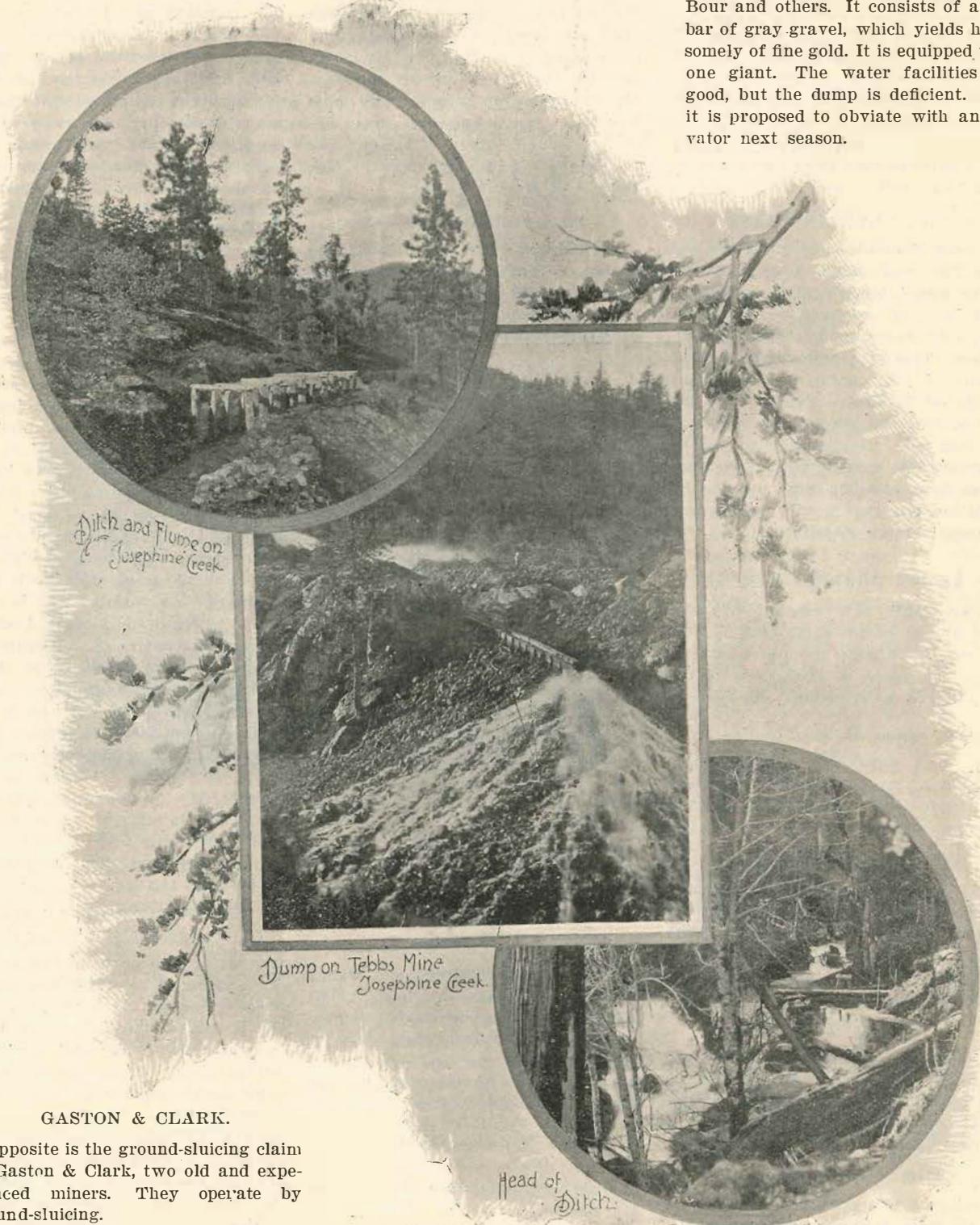
MORRISON & SONS.

Just opposite is another claim only opened last season. It is the property of Morrison & Sons and is equipped with pipe and giant. The water is scarce, but the owners are reported to have made last season more money than any other person or company on the creek. It is noteworthy that this claim lies just below the Free and Easy quartz mine, described below.

PORTER AND HUNT.

Another claim only equipped last season is that of Porter & Hunt, lying $1\frac{1}{4}$ miles below. The gold is coarse.

owners are Californians. At the present time the water facilities are very limited; however, a ditch has been lately surveyed to bring in water from



GASTON & CLARK.

Opposite is the ground-sluicing claim of Gaston & Clark, two old and experienced miners. They operate by ground-sluicing.

Illinois District

At the mouth of Josephine creek is the claim of Ray & Dalton, also equipped with pipe and giant. Both the

Sucker creek, 18 miles, which, when completed, will give an ample supply. An application has also been made for patents to the ground.

COW FLAT MINE.

One mile below is the Cow Flat mine, owned by Mr. Hopkins and operated during the last season by Geo. Bour and others. It consists of a low bar of gray gravel, which yields handsomely of fine gold. It is equipped with one giant. The water facilities are good, but the dump is deficient. This it is proposed to obviate with an elevator next season.

H. S. WOODCOCK & SON.

Opposite is the mine of H. S. Woodcock & Son. It also consists of a low bar of gray gravel. This mine was

first operated last season, and it is reported that the owners took out \$350 in less than four months' run with one giant. Here also the dump is defective.

On Tennessee Gulch

is a quartz mine owned by Samuel White, Sr., and James Davison. This consists of a large porphyry dyke carrying free gold in the upper workings and sulphurets in the lower levels. The ore is treated in an arastræ, and it is believed that the owners are doing quite well.

THE FREE AND EASY.

About two miles west of Kerby lies the Free and Easy, another quartz mine, owned by J. F. Stith and others, but for some time operated by A. W. Fox and others under a bond for purchase. This is a wide ledge, having many of the characteristics of the ledge on Tennessee gulch. It is believed that the ore will run about \$5 in free gold, besides the sulphurets. Considerable development work has been done upon the mine, and the indications are that it will prove a permanent, paying investment.

Lower Illinois District

This district is a comparatively new one and it shows great activity. It covers the Illinois and its tributaries from the mouth of Deer creek to the junction of the river with Rogue river.

Below Deer Creek

one finds several low bars being worked by ground sluicing. There are still a few undeveloped bars in that section which would pay under the giant.

FRANK BURNS & SONS.

At the mouth of Six-mile creek is a hydraulic mine opened up last fall by Burns & Sons. The ground lies about 300 feet above the Illinois and has a splendid dump. It is equipped with pipe and one giant.

AT DORRS' RANCH

James McGuire has for several seasons mined on a low bar with very inadequate facilities—a small pipe and hose; yet the returns have been very satisfactory.

THE SPRING BAR CO.

operates a mine below on a high bar of the river. It has three claims, which are equipped with pipe and giant.

THE HORN-SILSBY MINE.

On a high bar of the Illinois, just above Brigg's creek, is the hydraulic

mine of W. F. Horn, A. W. Silsby and others. This mine was only equipped last season and is still in active operation. Sufficient work has not yet been done to determine by pipe tests the full value of the ground, but such tests have been made by panning and the sinking of shafts to satisfy every one that the owners have a remarkably rich piece of ground. The mine has, also, great advantages in an all-the-year-round supply of water and the best of dumping facilities. One giant is at present operated.

PANTHER GULCH CO.

Another mine just being opened up is that of the Panther Gulch Mining Co., owned and operated by George B. Ward and Oregon City parties. It is equipped with pipe and giant.

NELSON & RILEY.

On the left bank of the Illinois, Nelson & Riley have been mining for some time. They are now preparing to put in a large flume, by which they will divert the waters of the river and secure an ample water supply.

THE WAXAHATCHIE MINE.

This is a hydraulic property owned by C. L. Mangum, William Stock, Joseph Wolke and other residents of Grants Pass. It was only equipped with pipe and giant last season. The water facilities are excellent and the ground very rich.

Upper Briggs Creek

On the upper part of this creek there are a large number of men ground-sluficing, but who contemplate putting in hydraulic plants in a short time. Among them are Nassett & Son, M. Davis, Clum Bros., Charles Swartum, Bennett & Wilson, Block & Casmy, A. L. Henson, and Louark & Co.

BRIGG'S VALLEY MINING CO.

On this creek the Brigg's Valley Mining Co. operates one giant. The company has about 200 acres of a high channel, and a 2½-mile ditch gives 170 feet of pressure for one giant during the mining season. The gravel is red and blue and contains some cement.

THE WOODCOCK MINE.

At the mouth of Red Dog creek is another hydraulic mine operated by Mr. Woodcock with one giant. All the facilities for mining are good.

THE COPPER MINES.

The conspicuous feature of this district are the copper mines owned and operated by the Siskiyou Mining Co., a

Maryland corporation. This company obtained control of these mines some two years ago, through Captain A. M. Brown. A smelter was erected and considerable development work done. The company met, however, considerable bad luck; the first season the expensive bridge built across the Illinois was taken out by the high water just at the beginning of winter and for many months the mine was shut down on account of the inability to get supplies in. Next year the early advent of the rainy season stopped operations, and finally after some \$15,000 worth of ore had been extracted a receiver was appointed by the circuit court. At this writing, however, arrangements have been made for a resumption of work under a guarantee of ample capital advanced by Pittsburg capitalists, and it is confidently anticipated that in a short time the receiver will be discharged and the work on the mine prosecuted with intelligent vigor. The mines are located on Fall's creek, just above its entrance into the Illinois and all the facilities for mining exist in abundance, wood, water and mill-site. It is generally conceded that there is a great deal of high-grade ore in these mines. The ore is found, however, in serpentine and has been found so far quite bunchy. Under the new management it is anticipated that the extent and character of the ore bodies will be promptly ascertained by intelligent explorations, and if these anticipations should be verified a large reduction plant will be constructed, a road—perhaps a railroad—built to Chetco Bay, on the coast, whence all shipments in and out will be made by sea. The mines are 37 miles from Grants Pass and about an equal distance from the sea.

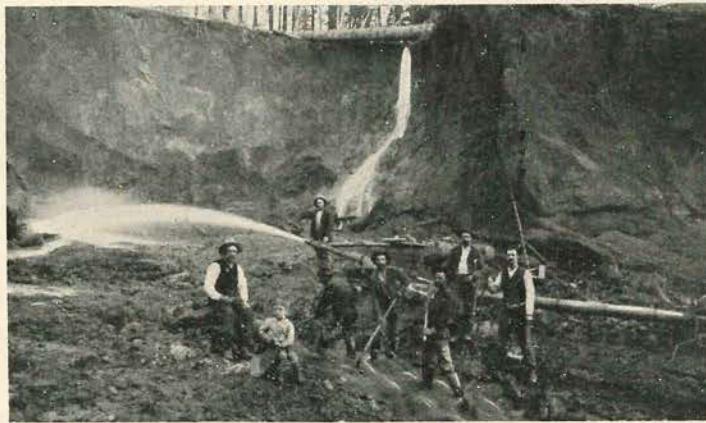
THE DENVER CITY LEDGE.

On Soldier creek is a ledge which has attracted a great deal of attention on account of its width and the richness of the ore. It is the property of W. H. Miller. This ledge shows a face about 30 feet wide, with a rich pay streak about two feet in width abutting against one of the walls. So far very little work has been done upon it, but it has been traced for several hundred feet up the mountain side. The owner is an eccentric character, who has a very high idea of the value of his discovery, and although its apparent great value has attracted many mining men from all quarters, no one has as yet been able to make satisfactory terms with him. Meantime he sits with a mortar and pestle, and

secures all the gold necessary for his maintenance, seemingly determined to wait until some one comes who will be willing to take the mine on his terms.

Sucker Creek District

Sucker creek is another tributary of the Illinois river. Like the Althouse it has its source in the Siskiyou mountains. Between California Bar, which stands at the mouth of Sucker creek canyon and nine miles above the mouth of the creek, and the Illinois is a valley from two to four miles wide, studded with beautiful farms. This is an ideal farming country, but the whole valley is also good for mining. This fact is so well recognized that it is reported that some Oakland capitalists have been for the past year endeavoring to get control of the farms, with a view of subjecting them to the pipe and giant.



The Big Four Hydraulic, on Pickett Creek

KEATON AND DEAN BROS.

Above California bar Keaton & Dean Bros. have the lowest mining claim of importance. This ground has been mined for the past six years. It embraces about 60 acres, including an upper channel. A No. 1 giant is used. The ground has a good dump, but its water facilities are limited. It produces coarse as well as fine gold.

J. B. CARR.

Above and partly running into Anderson gulch is the 120-acre claim of J. B. Carr, which is also equipped with an hydraulic plant. This claim produces much coarse gold, and at one time a nugget weighing \$365 was picked up on the ground. This gold is supposed to have come from Anderson gulch. The mine has a splendid dump, but the water facilities are at present limited.

HENRY BENCKE.

The next claim is that of Henry Bencke. This embraces 40 acres and lies one and a half miles above. It also includes an old upper channel. This ground has proven itself to be quite rich. The mining at present is carried on with a pipe and hose.

R. C. TURNER.

At the mouth of Boland creek, another noted stream, is the claim of R. C. Turner. This claim has a good dump, but it is only ground-sluiced at present.

A. J. SMITH & CO.

This claim embraces 100 acres of ground. Mining is carried on at present only by ground-sluicing, but the ground can be easily made subject to pipe and giant. There are good water rights appurtenant, and a 3-mile ditch will furnish water all the year round

TOM FENTON.

On Boland creek, a tributary of Sucker creek, has some rich ground, which has heretofore been worked by drifting. It is generally understood that even by this primitive method of mining the claim has paid from \$2.50 to \$3 a day per man.

ULM AND REESE BROS.

Another piece of rich ground on Boland creek is that of Ulm and Reese Bros. This is also an old upper channel. It has been so far mined only by ground-sluicing.

CHARLIE YEAGER.

On a back channel of Boland creek, Charlie Yeager is mining by ground-sluicing. This ground is deemed to be very rich. In early mining times a \$900 nugget was picked up on the claim.

JAKE KLIPPEL.

On McDonald gulch is a piece of ground, the property of Jake Klippe, which is notoriously rich. Within its confines, in early times, a \$1,600 nugget was picked up, and on another occasion a boulder was unearthed which yielded \$1,100. It was only last summer that Mr. Klippe himself picked up a nugget valued at \$157. The claim is equipped with pipe and giant. McDonald gulch is a very small affair in itself—just large enough to embrace three 20-acre claims—but it is a matter of current knowledge that in early times it increased the gold output to the extent of \$3,000,000.

FITZSIMMONS & CO.

On Democrat gulch, another tributary, Fitzsimmons & Co., representing San Francisco capital, have 40 acres of ground. This claim was equipped with pipe and giant for the first time last season. The claim has a good dump and good water facilities for about six months in the year.

ALLEN HIGH.

There are two quartz ledges in this district that are well worthy of attention. The first is the property of Allen High and lies on the ridge between Deadhorse and Silver gulches. This is an 8-foot ledge, carrying copper and silver. It is as yet but little developed.

A. J. SMITH & CO.

On McDonald gulch, just above the claim of Jake Klippe, is the quartz claim of A. J. Smith & Co. This is a ledge of large dimensions, carrying gold, silver and copper in large quan-

GEORGE BENSON.

On Tennant gulch, George Benson has 40 acres of good ground. He has a good dump and water for about six months in the year. This ground will be equipped with pipe and giant during the coming season.

ties. The formation is porphyry and syenite. The development consists of a shaft 25 feet in depth and a tunnel 35 feet in length, run from a point 140 feet above the creek. There are many reasons to think that this ledge has been the feeder of the rich claims below on the creek and the source of the large nuggets found, as before noted, on the Klippe claims.

Althouse District

The Althouse is a tributary of the Illinois and has its source high up in the Siskiyou mountains. A stranger going into this old camp today and seeing the miles of rock piles and boulders might conclude, if he knew nothing about mining, that the creek had been struck by a cyclone. If a mining man, he might conclude that the country was worked out. But this would be an erroneous impression. Many of the old pioneers themselves are "worked out" or have passed away, but the fountain-head and feeders of all this vast district, from the summit of the Siskiyous to the Illinois river, a distance of over 20 miles, are still hidden in the mountains and hills.

THE HANSEN CLAIM.

The lowest worked claim on the creek is the Hansen hydraulic claim. This consists of 320 acres of ground, which is good for either mining or farming. As far back as 1862 the owners of this ground attempted to open it up for mining by constructing a tunnel from Democratic gulch through the dividing ridge. They found good pay, but the works caved in upon their flume, which so discouraged them that they have never resumed work upon it. However, the richness of the ground and the facilities for mining have lately attracted the attention of outside capitalists, and the chances are good for a resumption of work upon the claim.

L. LEONARD.

Adjoining the Hansen claim is that of L. Leonard, embracing some 60 acres. This ground was also worked for a while through a tunnel made on the Hansen claim. But the owners made the mistake of running it too high and it was not a success, although there is some good pay in the creek bed.

THE FORBES GROUND.

Continuing up the creek, one finds the major part of the foot hills worked until is reached the Forbes ditch and

flume, which crosses the creek from east to west.

THE ALTHOUSE MINING CO.

This company owns claims both above and below the Forbes ground. The latter is the property of Clem & Co. These two companies have lately consolidated their claims, so that they now possess 380 acres of ground, extending up the creek and on the hillsides. An abundance of water for nearly all of the year is obtained by means of a ditch and flume from the main creek. These claims have long been known as the Gold Lead and Slug Bar.

THE ENTERPRISE COMPANY.

Up Walker gulch, on the east, just below where the town of Brown town once stood, is the property of the En-

time ago, Doney Bros. put in a 400-foot bedrock flume, but they failed to find the pay channel they were seeking.

OTHER CLAIMS BEING WORKED.

Next above Grass Flat is the ground of the Morie Co. This property is just being opened up. Still farther above is the ground of Riggs & Russ, where an attempt is being made to work the cement on the old Hansen hydraulic claim.

CHARLIE DECKER.

Above the forks of the creek is the Charlie Decker mine, which is being worked with pipe and giant, water being secured from the Trimby ditch, on the south side of the East Fork.

THE TACOMA OR SISKIYOU CO.

Passing by the claims of Roderigo Marteen, Astermann and Schofield, on the right hand fork of the creek, where some good piping ground is seen, one reaches the claim of Frank Husted, on Iron gulch, which puts into the East Fork. Several men are employed at this mine. The next claim is that of the Tacoma or Siskiyou Mining Company. This claim is equipped with pipe and giant. However, the claim is located so high up the creek that the water supply is very limited. Some five men have been given employment.

THE SUMMIT MINE.

On the mountain ridge dividing Oregon from California, is the Summit quartz mine, the property of J. H. Weston. This is a tunnel location. On the apex of this mountain is the Griffin ledge, a small but very rich vein which has been worked, when the snow would permit, for years, the ore being treated in an arastrum. The existence of this vein suggested to Mr. Weston the idea of his tunnel location. This was made somewhat over a year ago. A tunnel, well down towards the base of the mountain, was run in to a distance of about 450 feet, when a 10-foot ledge of sulphurets was struck. How high these sulphurets run is as yet only a matter of conjecture. Mr. Weston, is, however, confident that he has a bonanza. The formation and other conditions are very similar to those surrounding the mother lode of California, and this fact gives an appearance of permanency to the discovery. Another significant feature of this discovery is that it discloses that large, well-defined gold-bearing ledges are to be found by sinking to greater depths than is customary in Southern Oregon.



Thos Gilmore Quartz Mine, on Indian Creek

terprise company. This consists of a quartz claim and a mill-site. The claim embraces two veins. The larger of these veins contains an 180-foot tunnel and one or more shafts. There is also an 80-foot cross tunnel. Only one wall has been found of this ledge. Further south is another tunnel 160 feet in length. This tunnel exposes quartz the entire distance. The ore thus exposed is not high-grade, but it is free-milling. At the present time a new tunnel is being opened, which is already in over 100 feet. This is designed to intersect the ledge. This, when completed, will afford from 250 to 300 feet of "backs" with a large vein to stope on.

DONEY BROS.

Continuing up the creek one passes much ground which has never yet been prospected. At Grass Flat, some

Waldo District

In the south end of the county, also, is the Waldo district, which has not many, but several, very noted and highly-productive hydraulic mines. These mines are all on the upper Illinois or its tributaries.

WIMER BROS. & CO.'S MINE.

Twenty years ago ground was first broken on the outlet-race to the Wimer mine. This year it has been completed. This race is 1 1-3 miles long and

contains probably 2,000 acres more of mineral land. The water supply consists of two ditches, each having head boxes 4x6 feet, one being two miles long, the other, when completed, to be about 3 1/4 miles long, and affording an abundance of water for mining purpose for at least nine months in each year. This mine is equipped with four giants, three locomotive headlights, 8,000 feet of pipe, ranging in size from 11 to 60 inches in diameter, the major part of which is from 17 to

gets picked up around the giants outside of the main race and flumes. At this writing the regular annual cleanup has not been made. Some of the nuggets picked up have "weighed" \$6, \$8 and \$44. The gold from this mine assays as high as \$19.10 and is always worth, over and above transfer expenses and mint charges, \$18.50 per ounce, there being but little silver in it. One remarkable feature of this property is, that the outlet-race, over a mile long, and necessary to reach



Wimer Bros. & Co.'s, Hydraulic Mine at Waldo

60 feet deep. It runs through low hills and heavy timber and has a 268-foot tunnel through bed-rock. The work has cost over \$100,000. This opening is the natural outlet to all the famous deep and rich gravel deposits in the Waldo district.

The company owns 400 acres of mining ground, which, it may be truthfully said, "prospects" from the grass roots to the bed-rock, and this being the lowest place in the camp

22 inches. There are also over 3,000 feet of 4x5 outlet flume. This mine is worked at least 11 months in each year, employing about a dozen men and using from two to four giants. From this time on the number of men and giants can be doubled.

Up to this year it was generally supposed that this basin carried but little heavy gold, it being classed as a fine gold-bearing mine. The last run, however, yielded handsomely in nug-

and work the main deposit, has "paid" all along its entire length and more than double all expenses of construction.

Besides these extensive deposits that lie high enough for the pipe, there is also connected with this property one of the richest drifting propositions ever discovered on this coast. This is a dry channel 90 feet from the surface, lying on rotten, purple, boulder formation bed-rock and about six

feet thick, which prospects from 25c to 95c to the pan in heavy scale gold. There are but few rocks and they are not large, the formation being brownish, yellow clay, with porphyry streaks of black, and is so tight that water does not penetrate it. This channel is unlike any formation ever seen in this country and at first was not taken for "pay dirt" by the most experienced miners. Development work will begin on this deep ground as soon as it can be reached by its owners.

SIMMONS AND CAMERON.

Just over the ridge from the road leading from Grants Pass into Waldo is the hydraulic mine of George Simmons and Tod Cameron. It consists of 740 acres of ground. The water facilities are good and have been provided at great expense. Like the mine of Wimer Bros. & Co., a long and expensive cut had to be made as an outlet for the tailings. The mine is operated nine or ten months in the year, and from eight to ten men are employed. The gold is generally fine. Mr. Cameron lives in Jacksonville, but Mr. Simmons has erected for himself a handsome residence close to the mine.

THE BYBEE MINE.

There is another hydraulic mine, the property of William Bybee, but now under contract of purchase by the Josephine Mining Co. All the equipments on this mine are about to be renewed and added to by the latter company, and it will be in operation during the coming season.

WONG BACK FAWN & CO.

At the mouth of Sailor creek a number of Chinese have operated with pipe and giant on a good piece of ground for the past ten years. The leading member of the company, Wong Back Fawn, has a Chinese wife, married with all approved formalities, and is a fixture in the country. The gravel is red and quite deep. The owners say that the ground pays well and will average 25 cents per pan on bed-rock. A feature of the

mine is a derrick, with iron ropes and heavy tackle, used in removing the boulders.

THE COPPER LEDGES.

Extending from Indian river, in California, through to Curry county, is an extensive copper belt, and a number of wide ledges of high-grade ore have been exposed in this district.

THE QUEEN OF BRONZE.

The oldest of these ledges on which any work has been done is the Queen of Bronze. This mine was worked some twenty or thirty years ago, but the attempt to make it pay proved disastrous. Later it passed into the hands of Henry Villard, of railroad fame, but he concluded that at the prices then prevailing for copper, together with the expense of getting in machinery and supplies, it could not be

discovered beyond a peradventure the extent of the ore bodies. However, all competent men declare the claims to be a magnificent surface prospect, and with the high price now prevailing for copper as an inducement, it may well be anticipated that the work of development will be resumed at no distant day.



Simmons & Cameron Hydraulic Mine, at Waldo

profitably worked. It is now the property, it is believed, of the estates of Hughes, Brandt and Chadwick. The ground is all patented.

KELLY AND STRONG CLAIMS.

Next come the claims of Kelly and Strong, commonly known as the Waldo copper mines, and located about 5 miles from that place. These claims were bonded last year by the Elmer-Brown Copper Co., Maryland capital-

PHILLIPS & STRONG.

The latest copper discovery is that of Phillips & Strong, only a mile or two from Waldo. This ledge was discovered only a few months ago, while the owners were making a cut for a hydraulic mine. The ledge is about six feet wide and is said to contain much high-grade ore. At present a contract has been entered into to do considerable development work upon it.

Mines in Jackson County

Jackson county has a large area, a greater population and more varied resources than the adjoining county of Josephine. While mining is an important industry within its confines, yet it is not the chief industry. This

county has much more arable land than Josephine county, and it is, in consequence, much more of an agricultural and horticultural community. The major part of the flour and of much else consumed by the miners of

Josephine county comes from Jackson county. Stock-raising is also a profitable industry in that county and the fruit-growing industry is a very extensive one. Still the county has many mines, some of them among the

most productive anywhere, and much mining ground and many claims as yet untouched.

Gold Hill District

In the western part of the county lies the Gold Hill district, which embraces the mines along a number of creeks flowing into Rogue river, not far from the town of Gold Hill. On all of these creeks mining has been carried on for the past forty years and yet the industry there may be said to be in its infancy. Over \$50,000 was produced in this district last season.

Foot's Creek

Among the most important of these creeks is Foot's creek, which is about six miles in length and flows into Rogue river from the south, close to Woodville. The Foot's creek valley is about two miles in width. It has a slate bedrock and gray gravel. This gravel will yield 50 cents to the cubic yard. The gold is coarse and dark.

COOK & SONS.

At the head of the valley is the hydraulic mine of Cook & Sons—ground that has been mined for more than 30 years. The firm operates three giants and has water for six months in the year, with a pressure of 200 feet.

BLACK GOLD CHANNEL CO.

Next below is the property of the Black Gold Channel Co.—Seattle capital. This company owns 900 acres of ground on the creek and the connecting gulches. It has water for about six months in the year. For the first two seasons after this property fell into the hands of the present company, the mining was carried on by running tunnels and by drifting and sluicing. But last winter a giant was put on. The company takes its name from the color of the gold found on the creek.

GEO. W. LANCE & SONS.

On the right hand fork of the creek is the property of Geo. W. Lance & Sons. This is another old mine. Two giants are operated under good pressure. The gravel is heavy.

OSMER & ROBINSON.

On the same fork, below, is the property of Osmer & Robinson, which has been in operation for several years. One giant is operated under good pressure.

On the left fork there is another claim where one giant is operated. It belongs to a Frenchman.

LANCE GOLD MINING CO.

One of the largest enterprises on Foot's creek is that of the Lance Gold Mining Co., a Portland concern, of which Professor H. A. Shorey is president and manager. This company has 700 acres of ground, running for about two miles along the creek. It has spent considerable money in equipping the property. There are 10 miles of ditch, 2,000 feet of sluice-way and a large reservoir. The dump is directly into Rogue river. A giant was operated by the company for the first time last winter. Next season will witness three giants in operation, however.

On Evans' Creek

This creek enters Rogue river from the north, close to Woodville. On the upper waters of the creek and on its feeders there is considerable mining. The auriferous nature of the creek was discovered in 1856, and from that time on it has been continuously mined. It has been estimated that Evans' creek yielded altogether over \$500,000 in early days. The gold was nearly all quartz gold, but although there were known to be numerous quartz ledges on the creek, no attempt was made to work them until 1892.

THE CON. SAXE CREEK CO.

On Saxe creek, a tributary, is a group of quartz mines owned by the Consolidated Saxe Creek Mining Co., of which G. D. Young is secretary. There are five claims in this group and the development consists of 600 feet of tunnels and 150 feet of shafts, besides numerous surface openings. The veins average from 3 to 5 feet in width, and it is said that mill tests have shown the ore to be quite rich in gold, besides silver. The company contemplates erecting a stamp mill shortly.

This company also has 110 acres of placer ground on the creek now under ditch, and which it is proceeding to equip with pipe and giant.

THE BROOKS CLAIM.

To the north of this ground lies the Brooks placer claim. This ground is equipped with pipe and giant and elevator, and is said to be a paying property.

THE HILLIS PROPERTY.

On the south side is the Hillis claim, also said to be a paying property.

On Pleasant creek and Murphy gulch are several other large properties, including those of Calvert &

Stephens and the Bart-Signoretti quartz claim.

THE HOMESTAKE.

One mile west of Woodville is the Homestake. This is a quartz mine and the property of W. J. Stanley, of Ashland. It has considerable development. The ore runs from \$7 to \$11 in free gold and \$200 in sulphurets. These are working tests. The vein is from 8 inches to 30 inches in width and is said to be a true fissure.

On Rogue River

Is the plant of the Coast Range Mining Co. This is a pumping plant, similar in its general features to that of the Baylor & Iliff pumping plant, near Grants Pass. It has only been in operation during the past few weeks, but there is no reason why it should not prove a success. The owners are Portlanders.

On Sardine Creek

The Sardine Creek Mining Co. operates one giant and took out about \$6,000 last season. Other hydraulic mines on this creek are those of C. Jeune, C. Vroman and R. L. Dusenbury, which produced last season with one giant each, \$1,500, \$1,800 and \$2,000, respectively. On this creek there were, also, last season some 25 different ground-sluicing enterprises.

THE NORTH STAR MINE.

On this creek are also several quartz mines, among them the North Star. This mine is the property of Dr. Jesse Hinkle, of Central Point. The formation is slate; the vein is about $3\frac{1}{4}$ feet in width, and the ore is free milling. The development consists of two tunnels—each about 90 feet in length and located about 200 feet below the summit of the mountain. There is plenty of wood and water and it is a mine that can be worked very cheap.

OTHER QUARTZ MINES

Are the Gray Eagle group, owned by H. A. Mears; the Shoestring group, owned by Hoffman & Allen, and the Rita and Lucky Barth, owned by J. Beeman and others. Of these, the first named is now in about 150 feet, showing a well-defined ore chute for a length of 75 feet—2 to 4 feet in thickness—of base ore averaging \$18 per ton in gold. The Shoestring group is now under bond to Messrs. Sears, White & Brown, of Portland, who have a force of eight men opening up the property, the ore being treated at the Lucky Barth mill. This mill is

kept in operation on ore from the Rita and Lucky Barth ledges.

On Water Gulch

Is another hydraulic mine equipped with pipe and giant. It is the property of Mr. Hays and produced about \$2,000 last season, besides \$600 taken out by ground-sluicing.

THE STRUCK AT LAST

Is a quartz mine owned by E. Ray and has exhibited some rich ore in chutes. It is now being actively developed.

On Kane's Creek

C. S. McDougal is operating one giant with good results. There are also several ground-sluicing enterprises on this creek.

On this creek and in the Blackwell hills there are also several good quartz mines. Among these is the Dardanelles mine, owned by E. E. Miner. It is opened by a shaft 110 feet in depth and several drifts, showing three feet of ore that will average \$16.00 per ton.

On Gall's Creek

Two giants are in operation and a

been excavated. It is 24 feet wide at bottom and 30 feet wide at top, and 7 feet deep—the largest mining canal in the world. The same company has in contemplation the construction of other large canals which will be subject to pipe and giant and the irrigation ditch will water all the lands along Rogue river from Gold Hill to far below Grants Pass. Should this plan be carried out it will revolutionize all industry in Southern Oregon, and bring big returns to the company for capital invested, as the bars on both sides of the river contain gold-bearing gravel in paying quantities.



The Sterling Hydraulic, on Sterling Creek

number of men are kept busy ground-sluicing during the rainy season.

THE ROGUE RIVER WATER & MINING CO.

This is an ambitious enterprise undertaken by San Francisco capitalists. Its purpose is to divert the waters of Rogue river at a point about three miles above Gold Hill into a large canal and carry the same to the mining lands below, for mining purposes. This enterprise was inaugurated last year under the management of J. W. Northup, of San Francisco. So far, about one mile of the canal has

THE OLD GOLD HILL MINE,
Which in early days produced such an immense amount of gold, is being opened up by a cross-cut tunnel which will tap the ledge at a depth of 260 feet. Mr. Rhinehart, who is in charge of the work, as superintendent, is daily expecting to cut the ledge and strike the ore chute which produced the big mass of gold.

THE BRADEN MINE

Is being worked under lease with ten men employed. The ore from this mine keeps a 5-stamp mill steadily running.

THE STERLING MINE.

On Sterling creek, eight miles south of Jacksonville, is the Sterling mine. This is the most productive hydraulic mine in Southern Oregon—not that the ground is any richer than other mines in the section, but it has been provided with greater water and other facilities for extracting the gold and in this way makes a better showing.

It is the property of the Sterling Mining Company, of which the chief stockholders are Henry Ankeny, of Jacksonville, and Vincent Cook, of Portland. The amount of gold pro-

duced by the Sterling mine can only be estimated, but it is safe to say that its annual yield is from \$125,000 to \$150,000.

The history of this property is interesting. In 1870 a part of the ground, $2\frac{1}{2}$ miles on Sterling creek, was secured by location or purchase by Tom Cameron and W. S. Hayden, and they worked it until 1877, with water from Sterling creek, when it was conveyed to the Sterling Mining Company, then composed of David P. Thompson, of Portland, Levi Ankeny and W. S. Burrell, for \$25,000. The new company thereupon paid out some \$70,000 for ditch and water from the Little Applegate, and some \$15,000 for contiguous ground. In making these improvements, J. S. Howard,

feet deep, blocked the entire distance, and with a water-power derrick with a 60-foot boom, operated by a Pelton wheel.

FARMER'S FLAT MINE.

This is another hydraulic mine, lying on the left-hand fork of Jackson creek and close to the Pierce & Sturgis, and the Owings & Blatt placer mines, on Forrest creek, and to the Beekman & Huffer quartz mines, on Jackson creek. It is the property of Mrs. Mary Miller, of Jacksonville, and has been in operation for the past 16 years. It is a rich gravel wash. The ground is fully equipped. It has eight miles of ditches, three reservoirs and 2,000 feet of pipe, which operates one No. 2 giant. This is a very desirable property. Besides the above improve-

on what is known as Dividend Bar, on Squaw creek. The gravel is red. The feature of this property is its water facilities. Squaw Lake, which covers about 125 acres of ground, is used as a reservoir and furnishes an abundance of water for piping. This water is conveyed to the ground through a 11-mile ditch. The mine is also equipped with an electric-light plant.

GRAND APPLEGATE CO.

The property of this company lies on the south side of the Applegate and is just being equipped. It has a 6-mile ditch, carrying 7,000 inches of water. This water is taken from the main Applegate, just below Elliott creek. This is an old enterprise which has taken on new life. Three miles of the Grand Applegate ditch was built years ago, but the early promoters gave up the enterprise and it lay dormant until resurrected by Messrs. Cool and Wade, of Portland, who are, respectively, the president and secretary of the new company. This project is an ambitious one; it is nothing less than to furnish an abundance of water with which to mine between 3,000 and 4,000 acres of ground on the Applegate.

ON STAR GULCH,

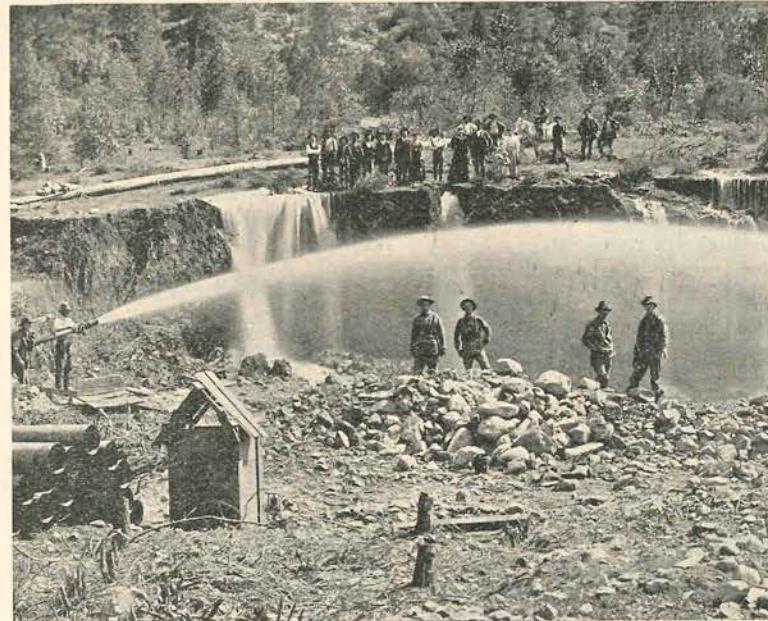
A tributary of the Applegate, are three hydraulic claims equipped with pipe and giant. Of these the most important, perhaps, is that of the Star Gulch Mining Co., of which B. E. Haney is manager and part owner. It is located at the head of the creek.

THE STEAMBOAT.

On the Main Applegate is the Steamboat hydraulic claim owned by Jacob Shearer & Sons, which should not be confounded with the great quartz mine of the same name and in the same section. It comprises 160 acres of ground and has been worked for many years. The equipment consists of an 8-mile ditch, 1,500 to 2,000 feet of pipe, with which one giant is operated under a pressure of 300 feet.

On Humburg Gulch

Is an extensive auriferous gravel deposit, the property of John Bolt. It is not yet equipped with pipe and giant, but has attracted the attention of many persons, and will one day add materially to the gold output of Jackson county. Mrs. Hines also owns some rich ground on this gulch.



The Sturgis Hydraulic, on Forrest Creek

the Medford surveyor, acted as engineer. In 1878 Thompson seems to have lost faith in the enterprise, for in that year he "swapped" his interest in the company to Captain Ankeny for what was known as the "New Market block" on First street, in Portland. Captain Ankeny died about four years ago and his interest fell to Henry Ankeny, who still owns it.

The feature of the Sterling mine is its 25-mile ditch, taken from the Little Applegate, and carrying 2,500 inches of water. This ditch gives water enough for two giants, nine months in the year, with a pressure of 250 feet. The gold is found in a red clay gravel deposit, about 80 feet in height. The mine is also equipped with three miles of flume, 4 feet wide and $2\frac{1}{2}$

ments, there are a residence, barns, large orchard and 40 acres of good farming land.

THE STURGIS.

Six miles southwest of Jacksonville, on Forrest creek, is another large hydraulic mine owned A. W. Sturgis. The property embraces 400 or 500 acres of ground—an old high channel running parallel with the creek. The gravel is red and the banks are about 40 feet high. This property has been in operation about eight years. It has water for about seven months in the year and produces about \$35,000 a year.

THE SQUAW CREEK CO.

This company has 160 acres of ground on the Applegate and 30 acres

Wagner Creek and Ashland District

This is a quartz rather than a hydraulic mining district. The general character of the ores is base, carrying auriferous and argentiferous galena, tellurides and heavy iron pyrites. There are exceptions to this characterization, but rarely so when depth is attained. The trend of the veins is generally from the northwest to the southeast. The district possesses good roads and an abundance of timber and water.

IN EARLY DAYS,

Placer mining was carried on in several localities around Ashland, gold being found in greater or less quantities on Emigrant, Bear and Wagner creeks and their tributaries. Probably the most extensive placer in this section was what was known as the French Diggings, two miles below Ashland, on Bear creek, where many thousands of dollars were taken out in the early '50s.

Later discoveries in quartz show why this large deposit of gold was found there, for to the southwest of this point and on practically the same lode is found the Mattern, Gold Bug, Ashland and Shorty-Hope mines, besides several quite well prospected claims that have no particular name.

THE MATTERN MINE

Is 1½ miles north of Ashland and the tunnel starts into the hill from the railroad tract, the mine proper being on land owned by G. F. Billings.

This mine is managed by H. Mattern, a miner of experience. The workings consist of over five hundred feet of tunneling and drifting, and since Mr. Mattern took hold of it the mine has paid its own development work and put some money into the pockets of the owners. Quite an amount of new improvements have gone into this mine lately and a larger output is expected.

THE GOLD BUG

Is also on land of G. F. Billings, the workings consisting of a tunnel and drifts from which good ore has been taken, and had it not been for transportation expenses the mine would have paid its way from the start. D. R. Billings and R. Lucas are the lessees of this mine and are pushing the work.

THE ASHLAND,

Two miles west of the city of the same name, has had the most work

done on it of any mine in this locality and has yielded the largest output of gold, there having been cleaned up from this mine over \$100,000, and doubtless there are other thousands to be taken out. But at the present time only development work is being carried on by the owners. Several hundred feet of tunnels and drifts, as well as a fine working shaft, with hoisting and pumping machinery constitute the workings of the Ashland.

THE SHORTY-HOPE

Is located on the east side of Wagner creek, about four miles from Ashland, the hyphenated name arising from the fact that the two mines, "Hope" and "Shorty," have been purchased and consolidated by a party of capitalists consisting of the Sanfords of New York, and Thomas James, of Ashland. D. S. Sanford is the active promoter of this enterprise and passes much of his time at Ashland, while Mr. James is the efficient manager. A detailed description of the work done on this property would be tedious, but the amount is large and the prospects of a heavy output are excellent.

The present five-stamp mill is about to be replaced by a twenty-stamp plant, and a force of men are now constructing a ditch from Wagner creek to furnish power for this mill.

A vein of ore of extraordinary richness has just been struck in the Shorty-Hope and it is hoped that shortly the circulating medium of the country will be largely augmented by the yellow boys from this mine.

On the same lode as the Ashland is a mine opened by B. Wagner, from which considerable pay ore has been taken, and as the work is pushed and new developments made, the indications are more than good.

In the Siskiyou range and running in nearly an east and west direction, occurs a series of veins or lodes of low grade, base ores, and considerable prospecting has been done in this section.

THE SUNSET,

Owned by the Snowgoose Brothers, is in this section, about eight miles southeast of Ashland. On this property two tunnels have been run, aggregating 250 feet, much of it through very hard rock, and a working shaft of large size has been sunk 60 feet. The ore is too low-grade to pay for shipping to the smelter, but grows better with depth, and the owners confidently expect that in time they will reap reward for their labor.

THE GOLDEN FLEECE.

North of Ashland about two miles is located what is known as the Golden Fleece mine, consisting of a blanket deposit of mineral-bearing ore which has been worked by different processes. But from the peculiar character of the material and its low grade, it has not been found to pay sufficiently to make working profitable. This property is owned by E. K. Anderson and has been operated by Z. Moody, a son of ex-Gov. Moody.

THE OREGON.

On the Little Applegate is the Oregon, owned by Carter and Garvin, now under bond to San Francisco parties. The vein is wide and mills between \$4 and \$5 per ton in free gold. A 160-foot tunnel has been run along the vein, showing in places bunches of high-grade sulphurets, besides the free gold.

THE LINCHPIN

Has a shaft 117 feet in depth and shows a large body of ore, which has heretofore been milled in an arastras, averaging \$22.50 per ton. It is the property of Gendar, Russell & West.

THE MIZPAL

Is the property of Gendar & Hatch. It is an extension of the Shorty-Hope mine. A shaft is being put down which shows a 4-foot ledge. The ore prospects well and if it continues to do so with depth the owners contemplate putting a mill on the property.

OTHER QUARTZ MINES

In this district, all of which have been more or less developed, are: The Morning Star, owned by J. Adams; the Lucky Queen, owned by B. Dyer; the Humbug, owned by Couch & Holderman; the Cleveland ledge, owned by Virgin & Stevenson; the Mary Jane, on Panther Butte, owned by H. L. & J. H. Hatch; the Growler, owned by Corbett, Shoup & Parker; the Little Pittsburgh, owned by J. Garvin and W. Illingsworth; the Pilgrim, owned by E. K. Anderson, and the Galena ledge, owned by Garvin & Brown.

CINNABAR.

On Arastra creek cinnabar has been found in the mine of T. W. Hills, and its croppings can be traced, it is said, for several miles. The extent or width of the vein in the mine have not as yet, however, been determined. The ore assays from 1 to 7 per cent. cinnabar and about \$1.50 per ton in gold.

The development of the mines of this district is much retarded by the lack of proper reduction works, as the ore will not, in general, stand transportation charges. It is the opinion of competent authorities that were a smelter erected close at hand its capacity would be taxed. New ledges are being continually discovered and

there are many tons of ore now in sight which would pay a local smelter to treat.

IN CONCLUSION.

In concluding this cursory description, or rather, enumeration of the mines of Jackson county, it is felt that

justice has not been done to the subject. Many of the properties mentioned have merited a lengthy notice, and many deserving others are not even mentioned. The task undertaken has proven impossible within the limits of this work, and we have been compelled to be content with the foregoing brief review.

THE LAW APPLICABLE TO MINES, MINING AND WATER RIGHTS

The congressional acts of July, 1866, and July, 1870, throw open to exploration and purchase by any citizen of the United States, or one who has declared his intention to become such, all mineral lands lying in the public domain.

This right gives to a locator the exclusive possession and enjoyment of all the surface ground included within the lines of the claim, and he is not limited to the necessary use of the ground for mining purposes.

A Mining Claim as Property

The general doctrine is that a mining claim, before as well as after patent, is real property and has in the matter of sale, seizure on execution and attachment, redemption, etc., all the characteristics of that class of property. In Oregon, however, the statute provides that a conveyance of a placer claim may be made by bill of sale, and this class of mining property is in other respects treated by the statutes of the state and by the courts as of the nature of a chattel real. Bills of sale must be recorded within 30 days from their delivery.

What Land May Be Located

Only the unoccupied and unappropriated mineral lands of the United States are open to exploration and purchase.

When a location has once been made, the ground covered thereby is not public mineral land, and no one can make another location thereon so long as the first location is a subsisting one—not even the first locator himself. But ground does not cease to be unoccupied, within the meaning of the acts of congress, when it is simply taken possession of by a party who does not proceed to comply with the requirements of the law relating to lo-

cations. In other words, mere occupancy of the public lands and making improvements thereon, or working them for ore, gives to the occupier no vested right as against one complying with the laws as to locating mineral lands. The right of possession comes only from a valid location, and mining ground cannot be held by possession alone against a valid location. It is equally so if the location has become forfeited by non-compliance with the provisions as to assessment work.

It has been held, however, in some cases, that as to lands, or a shaft, or a tunnel, actually held by a discoverer, no one can, by a later discovery, assert a superior title, even though the former has failed to comply with the law.

TIME TO PERFECT CLAIM.—The general doctrine is that the first discoverer has a reasonable time to perfect his claim, and statutes have been passed in many of the states designating the period of time within which the location must be perfected. In Oregon, however, it has been held by the supreme court, in a late case, that the discoverer has no given time after such discovery within which to make his location. In other words, a prior location will take precedence over an antecedent discovery and subsequent location.

HOW SUBJECT TO ENTRY.—Mineral lands are not subject to entry under the homestead acts, nor can title to land known at the time to be valuable for its minerals be obtained under any law except those especially pertaining to mineral lands, and a patent issued to such lands is void. If a patent issues for agricultural lands on which there is a known lode, title to such lode does not pass by the patent. Nor does the failure of the government surveyor to segregate such mineral land operate to defeat the rights

of one who has located the lode as a mining claim. The same rule applies where there is a placer on the land patented. But if the mineral deposits are discovered after the patent issues, they pass with the patent.

What Are Mineral Lands

It is held by the general land office that whatever is recognized as a mineral by the standard authorities, where the same is found in quantity and quality to render the land sought to be held under the mining laws more valuable, on this account, than for agricultural purposes, falls within the provision of the mining acts. Lands in which minerals are found, but not in such quantity as to justify expenditure in the effort to extract them, are not mineral in the sense of the statute.

LANDS WITHIN THE O. & C. GRANT.—The grant to the O. & C. R. Co. specially excludes from its operation all mineral lands, and such lands before, at least, the listing of the same by the company for patent are open to exploration and purchase under the mining laws to the same extent as if beyond the territorial limits of the grant. As to the status of such lands, however, after patent there is some difference of opinion. The patents to the company now being issued expressly exclude all mineral lands therein mentioned, "should any such be found." The construction generally given to this clause is that it applies only to such lands as were known to be more valuable for minerals than for other purposes at the date of the listing of the lands for patent, or perhaps, at the time of the delivery of the patent, and not to lands in which valuable minerals might be subsequently discovered. This construction would exclude from the patent all the valuable mineral lands described therein which were covered at the date of the

listing for patent by a valid subsisting location—and this irrespective of any proceedings taken before patent in protest of its issuance.

SCHOOL LANDS.—Sections 16 and 36 in each township are denominated school sections, and the title to the same, even, where mineral land, vested in the state at the time of the approval of the government survey, if the mineral character was not then known. These lands have generally been certified to the states in all cases where the public surveys have been extended over them. It follows, therefore, that such lands, except in the contingency above mentioned, are not open to exploration and purchase under the mining acts, but that title thereto must be secured by purchase from the state. Where the surveys have not been extended, such lands are open to exploration as other portions of the public domain.

Who May Locate Mineral Lands

Only a citizen, or one who has declared his intention to become such can make a valid location. A corporation organized under the laws of any state or territory is such a citizen and may make such location.

A minor may make such location. So, also, may a woman, married or single.

Every locator is presumed to be a citizen until the contrary is shown in a proper proceeding.

ALIENS AS LOCATORS.—Where an alien locator declares his intention to become a citizen before any adverse rights attach, his claim will relate back to the date of his discovery. If an alien convey his claim to a citizen before adverse rights attach, such citizen will acquire a valid right from the date of the conveyance. If one or more of several locators are citizens, the claim is good as to such as are citizens, though some of the others are aliens.

Placer and Quartz Locations

The statute defines a placer to be any form of deposit except veins of quartz or other rock in place. It is otherwise defined to be "ground containing mineral in its earth, sand or gravel; ground that includes valuable deposits not in place, but which are in a loose state and may in most cases be collected by washing or amalgamation, without milling."

A deposit of gold-bearing gravel, though it lies between clearly defined strata of rock, is nevertheless a placer and not a lode.

A lode or vein, within the meaning of the acts of congress, is applicable to any zone or belt of mineralized rock lying within boundaries clearly separating it from the neighboring rock.

SIZE OF CLAIMS.—No placer claim can exceed 160 acres, and no one individual can locate more than 20 acres, though he may locate less. It requires eight individuals to lawfully locate 160 acres; two to locate 40 acres; three to locate 60 acres, etc. Quartz claims are now limited by both the federal and state statutes to an area not to exceed 1,500 feet in length and 300 feet in width on each side of the middle of the vein. The purpose of these statutes is to give the locator not only the exclusive right of possession of a certain quantity of surface ground, but also of all veins, lodes or ledges which have their apexes within the surface lines. The Oregon statute also limits each person to one location upon each lead or lode, save the discoverer, who is allowed one additional claim.

However, there is no reason why a person cannot purchase any number of claims, quartz or placer, contiguous or otherwise, and have the same, if contiguous, embraced in one application for patent.

DUMMY LOCATORS.—The use of the names of nominal parties, or dummies, to locate placer ground has not been questioned in land office proceedings for patents; but in two cases, at least, it has been held that such use of names, with agreement to convey to the real locator, for a nominal consideration, is against public policy and void.

DISCOVERY AND LOCATION.—The preliminary step to a valid location is the discovery of mineral in the ground and a sufficient exploration to determine its value. This is true as to both quartz and placer ground.

A location made before actual discovery confers no rights on the locator. However, it is not necessary that the apex of the vein should come to the surface; if found at any depth and the lines on the surface enclose it, the claim may be held by such location.

It is a general principle that a location rests on what may be found in the discovery shaft. If nothing is found there, or if what is found does not extend beyond the limits of the shaft, the discovery of a body of ore elsewhere in the claim will not avail.

However, it has been held that a location is valid if such indications of minerals have been discovered that the prospector is willing to spend his time and money in following them in the expectation of finding ore. It is not essential to a valid discovery that the work by which the ledge was discovered and made visible should be done by the locator. If at the time of the location the vein or lead was exposed to view and its existence known to the locator, this is equivalent to a discovery.

A location cannot be made upon discovery and work done within the boundaries of another's claim. Such location is void, not only as to the party within whose claim the discovery was made, but as to all the world. The discovery must be made upon ground free and open to exploration. The law contemplates that the location of a mining claim shall consist of a number of distinct acts, which are independent of each other; and all must be performed before a legal location exists. He who first complies with the law as to location has the exclusive right to the ground, no matter who is entitled to the credit of the discovery.

SHOULD BE LENGTHWISE OF THE VEIN.—It is the intention of the law that a lode location shall be made lengthwise in the general direction of the vein, and that the end lines shall cross the vein; the location cannot be made crosswise of the vein. If the vein cannot be traced on the surface, and the locator cannot or will not make the explorations necessary to ascertain the true course of the vein, the marking of the boundaries should be postponed as long as possible until the true course can be determined by exploration.

If a location be made before discovery, but is followed by a discovery in the discovery shaft before any adverse rights attach, such subsequent discovery covers the original defect and the claim is valid.

It is not sufficient to find minerals which would yield something in a fragmentary condition in the slide or loose stuff on the surface of the mountain; but the locator must find it within closing rocks in the general mass of the mountain.

A location which by mistake encloses part of an adjoining claim is good as to the part which covers vacant ground.

LOCATION MADE BY AGENT.—To make a valid location it is not nec-

essary that the locator should be actually present on the ground. One may locate as agent of another, and one may locate for himself and others. A verbal authority to make such location is sufficient, and an unauthorized location is good if the agent's act is subsequently ratified. When a location has been once made for and in the name of another who is absent, the person making the location cannot change it; he cannot take out the name of the absent and insert that of another. The rights of the party in whose name the location is made are as definitely fixed as though he had made the location himself.

When several parties agree to prospect for minerals and locate mining claims for the benefit of all, and one of such prospectors, in fraud of the rights of others, locates in his own name, such location will inure to the benefit of the others.

POSTING NOTICE.—The acts of congress do not require that any notice shall be posted on the claim. But this point is covered as to quartz claims by the Oregon statute, which provides that a notice shall be posted on the vein or lead, and that such posting (if in proper form) shall protect the claim for 30 days.

There is in neither the federal nor state statutes any provision requiring such posting on placer claims; but the requirement, if it exists, rests on custom.

THE ESSENTIALS OF A VALID NOTICE.—The only statutory provision on this subject is found in the Oregon code, which merely provides that the notice shall have the name or names of the locators attached. Custom among miners requires, however, that the notice should contain, in addition, the description of the claim, the date of discovery and the date of location.

MARKING BOUNDARIES.—All that the federal statute requires on this point is that "the claim shall be so marked on the ground that its boundaries can be readily traced." Both the federal and state statutes are silent as to what markings on the ground are necessary; by the decisions of the courts they may be monuments of stones, or stakes, or blazed trees, or a written notice taken in connection with such markings. In case of dispute it is for a jury to determine whether the boundaries can be "readily traced" by any signs, marks, or writings on the ground.

THE RECORD.—Both the federal and state statutes provide for the recording of a certificate of the location of the claim. On this point the federal statute provides that the recorded certificate of location "shall contain the name or names of the locators, the date of the location and such description of the claim located by reference to some natural object or permanent monument as will identify the claim." The Oregon statute provides that before the expiration of said thirty days (from the date of posting the notice) he or they (the locator or locators) shall cause the claim or claims to be recorded, describing as near as may be the claim or claims and their location. But continuous working of the claim dispenses with the necessity of such record. But this applies only to quartz claims.

THE DESCRIPTION.—When the description of a claim is so vague that it affords no notice to a party making a subsequent entry, the first location is void.

It is only necessary that the claim should be identified with reasonable certainty, and so long as this can be done an erroneous addition will not vitiate it. An erroneous statement as to the quarter section in which the claim lies will not invalidate the claim if the remaining portions of the description sufficiently identify the ground. A description of a location by connecting it with another is not sufficient unless the location of the latter is accurate.

What is a sufficient "natural object or permanent monument" is, in case of dispute, a question for a jury to determine. Such natural object or permanent monument is not required to be on the ground located, though they may be. The "natural object" may consist of any fixed natural object. The "permanent monument" may consist of a permanent post or stake firmly planted in the ground, or of a shaft sunk in the ground. A tree readily distinguishable is a proper "natural object." A reference to the corner of another claim, upon which corner there is a monument of a durable character, is sufficient.

THE PURPOSE OF THE CERTIFICATE.—The purpose of a certificate of location is two-fold: First, when duly recorded it becomes notice to the world of the facts required to be therein set forth, and it is thus constructive notice of the claimant's possession; and, second, its execution and recording is made one of the steps requisite

to a perfect mining location. Technical accuracy in the execution of the certificate is not required.

LOCATION OF PLACER CLAIMS.

—Of course, no discovery shaft is required, but the statute implies that mineral shall have been found before the right to locate upon the same, as a placer claim, accrues, and the land office has lately held that a separate discovery is required on each 20 acres where the ground has been taken up by an association.

The federal statute provides that such claims, if made on surveyed lands, must be located so as to conform to the public surveys as near as practicable; but that where they cannot be so made, a survey and plat may be made as on unsurveyed land. Construing this provision, the land office has held that a placer claim should embrace legal subdivisions where the same can be done without interference with the rights of other claimants in the same tract. However, this provision is generally disregarded in the location of placer claims as impracticable, and it is apparently one that can be so disregarded without loss of any right. But whether observed or not, it is settled that the claim should, nevertheless, as in case of quartz locations, "be so marked on the ground that its boundaries can be readily traced."

A placer location confers no title to any lode within the boundaries of the claim; nor will, even, a patent confer such title where the lode was known to exist prior to the application for patent.

TUNNEL LOCATIONS.—The federal statute provides that any one running a tunnel for the development of a vein or for the discovery of mines shall have the same right of possession of all veins or lodes on the line of such tunnel, within 3,000 feet of the face thereof, which shall be discovered in such tunnel and which were not previously known to exist as if the discovery were made from the surface. If other parties shall, while such tunnel is being prosecuted with reasonable diligence, locate on the line of such tunnel any vein not appearing on the surface, such location shall be invalid. A failure for six months to prosecute work on the tunnel constitutes an abandonment of all undiscovered veins on the line thereof. Construing this statute, it has been held that the line of tunnel "means the width thereof and no more." It has also been held that the object of this

provision is to give the proprietors of a mining tunnel the possessory right to 1,500 feet of any and all blind lodes, cut, discovered or intersected by such tunnel, not previously known to exist, within 3,000 feet of the face of the tunnel and to prohibit other parties from prospecting for and making locations on the line thereof and within said 3,000 feet, unless such lodes appear on the surface or were previously known to exist.

AMENDING NOTICE AND CERTIFICATE.—No change of location nor amendment of the certificate or record can be made after the rights of third parties have intervened.

ABANDONMENT AND FORFEITURE.—The question of abandonment is principally one of intention, i. e., whether the ground was left by the locator without any intention of returning and making a further use of it.

Ordinarily, mere lapse of time does not constitute an abandonment, but it may be evidence of abandonment. Mere failure to do work, while it may cause a forfeiture, does not constitute an abandonment. Forfeiture means the loss of a previously acquired right to mine certain ground by a failure to perform certain acts or observe certain rules, and it differs from abandonment in that it involves no question of intention.

A failure to perform the annual work required by statute works a forfeiture of the mining claim, and the same becomes open to re-location, unless the original locators, their heirs, assigns or legal representatives, resume work upon such claim before a re-location has been made.

Where one tenant in common relies upon his co-tenant to do the assessment work and the latter fails to do it, the former forfeits his interest.

Mining ground which becomes forfeited is relegated to the condition of unappropriated mineral land of the United States. But there can be no forfeiture until some other party has entered and re-located.

If a re-locator has, after forfeiture, entered for the purpose of making a re-location, it is then too late for the first locator to resume work, even though the re-location is not then complete.

A re-location is made in the same manner as an original location, and it is an admission of the validity of the original claim, and also a claim of forfeiture as to the original locator.

ANNUAL WORK.—The federal statute provides that during each year,

until a patent issues, not less than \$100 worth of labor shall be performed or improvements made on each claim. But where claims are held in common such expenditure may be made on any one claim. If a tunnel is run for the purpose of developing a lode or lodes, the running of such tunnel shall dispense with the necessity of performing work on the surface.

The Oregon statute covering the same point is as follows: "Every person or company of persons, after locating such claim or claims shall, within one year next after the first day of January following the location or taking such claim or claims, work or cause to be worked, the said claim to the amount of one hundred dollars for each and every claim; provided, that any person or company, either joint or incorporate, owning claims on any lead or vein shall be allowed to work upon any one claim the whole amount required, as above, for all the claims and thereby be exempt from working on the rest of his or their claims on said lead or vein."

It will be observed that the provisions of the Oregon statute apply only to lode claims, but the federal provisions are substantially identical with the Oregon statute and provide not only that the work should be done on placer as well as lode claims, but permit all of the work to be done on one claim, whether lode or placer.

The work done or improvements made must be within the claim, or, if off of it, as a necessary means of extracting the metals it may contain. Working on adjoining land to construct a drain to enable the owners to work the claim is sufficient. Any work done for the purpose of discovering minerals is improvements within the meaning of the statute. Road or trail building may count as annual labor. Flumes, drains, or the turning of a stream will so count. The time and labor of a watchman has been held sufficient. However, traveling expenses in getting ready to go to work will not be considered as sufficient.

To allow work done on one to count on another the claims must be contiguous, and the expenditure of money or labor on this one must equal in value that which would be required on all the claims if they were separate or independent. The work or expenditure, too, must be for the purpose of developing all the claims. An expenditure upon one claim which has no reference to the development of the others will not answer.

WHEN THE WORK MUST BE DONE.—The period within which the annual work is required to be done begins on the first day of January succeeding the date of the location. If done prior to that date it is unnecessary and will not count for the succeeding year.

Work performed by any one of the parties in interest is available to preserve the claim. In determining the value of labor performed or improvements made the measure of value is the market price of the same. This value cannot be determined arbitrarily.

Threats of personal violence may, in some instances, excuse non-performance of labor. The necessity of making the annual expenditure does not cease with the application for patent. The entry at the land office alone terminates the necessity.

PRIORITY.—Priority of location confers the better title. Where veins intersect or cross each other the prior locator is entitled to all ore or mineral contained within the space of intersection, the subsequent locator being entitled to the right of way through said space. When two or more veins unite, the oldest location takes the vein below the point of union, including all the space of intersection.

THE APEX RULE.—One who has made a location in compliance with law is entitled, so long as he complies with the law, to all the veins, lodes or ledges throughout their entire depth, the top or apex of which lies inside of the surface lines of the claim extended downward vertically, although such veins, lodes or ledges may so far depart from a perpendicular in their downward course as to extend outside of the side lines of the location; but such right does not extend outside the end lines of the location projected in their own direction till they intersect the veins or ledges.

The right to follow the vein into adjoining land gives the locator no right to enter upon the surface of such adjoining claim. The same is true as to an older title under an agricultural patent.

The top or apex is the end, or edge, or terminal point of the lode nearest the surface of the earth.

When the location is made cross-wise of the vein the side lines are to be considered as the end lines. This will make the claim a parallelogram six hundred feet each way.

FORFEITURE TO CO-OWNER.—Upon the failure of any one of several

co-owners to contribute his proportion of the annual expenditure, the owners who have performed the labor or made the improvements, may at the expiration of the year give such delinquent co-owner personal notice in writing or notice by publication in the newspaper published nearest the claim for at least once a week for ninety days, and if at the expiration of ninety days after such notice in writing or by publication, such delinquent should fail or refuse to contribute his proportion of the expenditure, his interest in the claim becomes the property of his co-owners who have made the required expenditures.

Although one co-owner has expended more than enough to hold the claim, the delinquent co-owner to save forfeiture under the act of congress is only required to pay or tender his proportion of the amount which the law required to be expended upon the claim. The recovery of his proportion of additional expenditures depends upon other grounds and is to be enforced only by judicial proceedings involving the question of mining partnership, or the expressed or implied assent of the co-owner to the expenditure of the additional amount.

Mill Sites

Mill sites are located by posting notice and staking by a substantial post or stake at each angle, which ordinary prudence would require to be inscribed with the name of the mill site and the number of the corner. There are neither federal nor state regulations of the details of such location—indeed this is a subject probably beyond the power of the state—but their record should conform to the requirements applicable to the records of all classes of claims, that is, it should contain a sufficient description by reference to natural objects or permanent monuments. In other words, it should contain a description sufficient to identify the claim.

The federal statute provides for two classes of mill-site locations. The first class provides a method of securing surface ground for any mining use incidental to the working of the mine. The second class provides a method of securing ground to be actually used for milling or reduction purposes. In the first class, the locator must be the owner of a lode claim, and the ground must be iron-mineral and non-contiguous to the claim. In the second class the locator need not be the owner of a lode claim, but the ground must

be non-mineral. In each case the location is limited to five acres.

A MINING USE.—The building on the land of a pumping plant to carry water to the land is a sufficient mining use, or storing water for the same; or for storing ores; or for tailings, shops, or houses for workmen. But the location must be for the benefit of the particular lode in question. Such mill-site may be embraced in an application for a patent to the lode.

Ditches and Water Rights

The right of the miner to divert water on the public domain from its natural stream, was granted by the congressional act of 1866 and has been repeatedly confirmed by the decisions of the highest courts.

These decisions further recognize the right of "appropriation" as a necessity in placer mining districts.

The rule is that the person who first appropriates the water for mining purposes obtains the right both as to parties who attempt to take it by tapping the stream above or need it on the stream below.

A homestead claim is subject to the rights of a prior appropriator of the water. When ditch crosses ditch the latter claimant must adjust the crossings so as not to interfere with the full use of the prior ditch.

The change of locality where the water is used does not forfeit the right. The appropriator may change either the point of diversion or the place of use. If he has a prior right to the water he may take it to his ground by a new and different ditch. Where he has appropriated the water for the purpose of working particular mining claims, when these have been worked out he may extend his ditch and work other claims, or use the water for a different purpose. He may use the bed of a natural stream as his means of conducting water added to it by a ditch, without being considered as abandoning the water by mingling it with the original waters of the stream. Still his prior appropriation does not give him the exclusive use of the bed of the stream for such purpose.

After the water has been used it may be abandoned; it then becomes again subject to be appropriated by others.

When it has been appropriated for use upon a mining claim it must, after having served its purpose upon such claim, be discharged therefrom for the use of owners of claims be-

low, subject only to the reasonable diminution and deterioration by its necessary use on the first claim.

The appropriation of water is perfected only by a diversion from the natural stream, and such diversion must be accomplished within a reasonable time. What is a "reasonable time" varies with the circumstances of each case. After the lapse of such "reasonable time," the amount actually diverted is the measure of the appropriation—not the notice of appropriation. The practice of posting and recording such notice rests entirely on custom, and such notice is only evidence of intention on the part of the appropriator.

A ditch is a physical and visible monument, and the purchaser of land crossed by it buys with presumptive notice of its existence.

When a ditch is made for the appropriation of water, the right relates back to the commencement of work on the ditch, if the ditch shall be completed within a reasonable time. Not only must the diversion of the water from the natural stream be made within a reasonable time, but the work of construction of the ditch must be prosecuted with diligence. Neither sickness nor pecuniary embarrassments will excuse a failure to show such diligence.

If the ditch be not completed with due diligence the right only accrues from the time the water is actually appropriated.

RIGHT OF WAY.—The congressional act also recognizes and confirms the right of way over the public domain for the construction of ditches and flumes. As to private lands such right of way can apparently only be had by the consent of the owners, for it is questionable whether under the Oregon constitution proceedings will lie to condemn a right of way for a private ditch over the lands or mining claims of other parties. An incorporation of the ditch owners will not strengthen the right to maintain such proceedings, if such right exists.

ABANDONMENT OF DITCHES AND WATER RIGHTS.—The general rule as to abandonment applies to water rights, and a failure to use the water and allowing the ditch to go to decay are evidence tending to prove abandonment.

On this subject the Oregon statute provides: "Whenever any person, company, or corporation, being the owner or proprietor of any such ditch, flume or water right have or shall

abandon the same and who shall for one year thereafter cease to exercise ownership over said water right, ditch or flume, and every company, corporation or person who shall remove from this state, with the intent or purpose to change his or their residence, and shall remain one year without using or exercising ownership over such water right, ditch or flume by a legally authorized agent, shall be deemed to have lost all title, claim or interest."

The same act declares ditches and flumes when permanently attached to the soil to be real estate; they can, therefore, only be transferred by deed with the usual formalities as to conveyance of that class of property.

Ground for Dump

There is no statute providing any method for locating ground to be used as a dump; but a right to dump over unimproved and valueless surface ground undoubtedly exists as a necessary incident to the right to mine, and such right will be protected by the courts as a mining custom.

It has been held that a dump is real property and passes to a purchaser of the ground without special mention.

Dump deposited on the land of another and allowed to remain there indefinitely becomes parcel of the land, and the right to dump may be lost by allowing adverse possession of the ground for the statutory period.

Ground intended for use as a dump should be located and recorded with all the formalities prescribed for a mining claim.

Tailings

Tailings are the property of the miner who made them, so long as retained on his own land or under his control and not abandoned. When allowed to flow on the land of another the latter becomes entitled to them.

The general rule is that each miner must take care of his tailings or so discharge them as not to injure the property of others.

A right to use water does not confer the privilege of filling the water course with debris and tailings and allowing them to flow down on the ground of another.

Right to Timber

One locating a mining claim is permitted to cut and use the timber thereon for mining purposes.

Mining Partnerships

Where tenants in common of a mine unite and co-operate in working it they constitute a mining partnership. Such partnerships differ from ordinary partnerships in this, (amongst other things), that a change in the personnel of the partnership does not necessarily dissolve the relation; each member has power to dispose of his interest in the mine to any one, and is free to deal with his associates as with a stranger. New members who purchase such interest with knowledge of an outstanding partnership cannot repudiate the same.

In such partnerships the will of the majority will govern in the administration of the affairs of the company.

The managing partner has authority to defray the necessary and proper expenses out of the proceeds of the mineral or bullion sold, and is entitled to compensation. The implied power of a member of a mining partnership to borrow money so as to bind the firm depends on the question whether such an act is usual in the ordinary conduct of the business.

Patents

To entitle one to a patent to a mining claim or group of contiguous claims, he, or his grantor, must have expended at least \$500 on labor or improvements on or for the claim or claims or upon one of them.

There is no limit to the number of claims, whether lode or placer, if contiguous, that can be embraced in one application for patent.

An applicant for a patent to a lode claim or mill-site must pay \$5.00 per acre and to a placer claim \$2.50 per acre, besides the cost of making such application.

Forms

[No. 1.] PLACER LOCATION NOTICE.

Kid Glove Placer Claim.

The undersigned claims 1,320 feet in length along this gulch by 660 feet in breadth for placer mining purposes, as staked on this ground.

Discovered June 1, 1897.

Richard Roe.

[No. 2.] PLACER LOCATION CERTIFICATE.

Know all men by these presents: That I, Richard Roe, of the county of Josephine, state of Oregon, claim by right of discovery and location, the Kid Glove placer claim containing 20 acres (or 1,320 feet in length by 660 feet in width,) situate in the Galice creek mining district, county of Josephine, state of Oregon, and bounded

and described as follows: Beginning at stake at corner No. 1, etc. [Here insert description, giving a course to each line and tying one or more corners to a government corner, well-known natural object or permanent monument, etc.] Date of discovery, June 1, 1897. Date of location, June 1, 1897. Date of certificate, June 5, 1897.

Richard Roe.

[No. 3.]

NOTICE POSTED ON LODE CLAIM.

The Sunbeam Lode, discovered by C. V. Meade, February 18, 1894. Claim 750 feet easterly and 750 feet westerly from discovery. C. V. Meade.

[No. 4.]

LODE LOCATION CERTIFICATE.

Know all men by these presents: That I, C. V. Meade, of the county of Josephine, state of Oregon, claim by right of discovery and location 1,500 feet, linear and horizontal measurement, on the Sunbeam Lode, along the vein thereof, with all its dips, variations and angles, together with 300 feet in width on each side of the middle of said vein at the surface; and all veins, lodes, ledges, deposits and surface ground within the lines of said claim; seven hundred and fifty feet on said lode running north 88 degrees east from the center of the discovery shaft, and seven hundred and fifty feet running south 88 degrees west from said center of the discovery shaft.

Said claim is situate in the Dry Diggings mining district, Josephine county, Oregon, and is bounded and described as follows, to wit: [Here insert description as stated in form 2.] Date of discovery, February 18, 1894. Staked and located, February 20, 1894. Date of certificate, March 1, 1894.

C. V. Meade.

Attest: William Smith.

[No. 5.]

LOCATION OF DITCH AND WATER RIGHT.

To all whom these presents concern: Know ye, that the undersigned, do hereby declare and publish as a legal notice to all the world that have a valid right to the occupation, possession and enjoyment of, all and singular, that tract or parcel of land lying and being in mining district, in county, Oregon, for ditch and mining purposes, bounded and described as follows, to wit: the ditch: head of ditch tapping the waters of creek at a point indicated by notice there posted on the bank about

..... also claim miners' inches of the waters of said stream, to be conveyed by said ditch, with the exclusive right of way for said ditch, together with, all and singular, the hereditaments and appurtenances thereunto belonging or in any wise appertaining. Witness hand.. this day of 189...

Witnesses:

.....
.....
.....

[No. 6.]
**DEED CONVEYING QUARTZ
 CLAIM.**

This indenture, made the.....day of..... 189.., betweenof the county of.....and state of....., part.. of the first part, and.....of the county of.....and state of.....part.. of the second part, Witnesseth: That the said part.. of the first part, for and in consideration of the sum of.....dollars, lawful money of the United States of America, to.....in hand paid by the said part.. of the second part, the receipt whereof is hereby acknowledged, ha... granted, bargained, sold, remised, released and forever quit-claimed, and by these presents do.. grant, bargain, sell, remise,

release and forever quit-claim unto the said....., part.. of the second part, and to.....heirs and assigns, the.....mining claim situated in the.....mining district, county of.....state of....., and better known and described as follows:.....

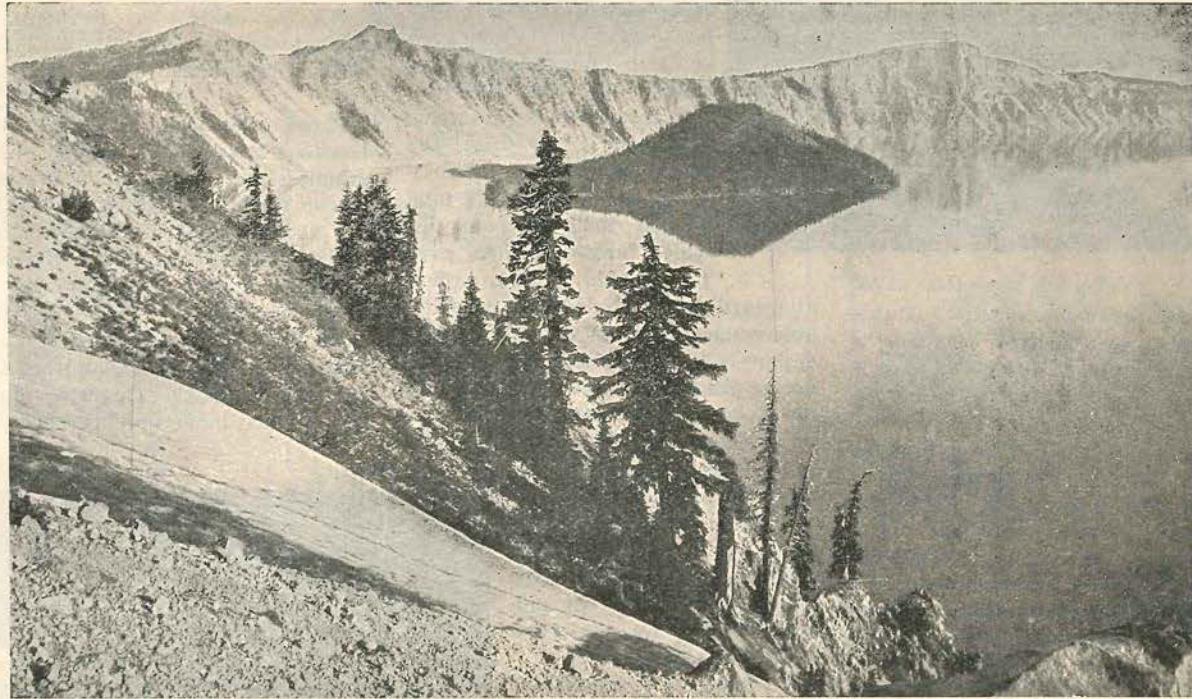
Together with all the dips, spurs and angles, and also all the metals, ores, gold and silver-bearing quartz, rock and earth therein; and all the rights, privileges and franchises thereto incident, appendant and appurtenant, or therewith usually had and enjoyed; and also, all and singular the tenements, hereditaments and appurtenances thereto belonging, or in any wise appertaining, and the rents, issues and profits thereof; and also all

the estate, right, title, interest property, possession, claim and demand whatsoever, as well in law as in equity, of the said part.. of the first part, of, in or to the said premises, and every part and parcel thereof, with the appurtenances.....

To have and to hold, all and singular the said premises, together with the appurtenances and privileges thereto incident, unto the said part.. of the second part.....heirs and assigns forever. In witness whereof, the said part.. of the first part ha.. hereunto set.....hand and seal the day and year above written.

.....[Seal.]
 Signed, sealed and delivered in presence of

THE WONDERFUL CRATER LAKE



In Southern Oregon, in the Cascades, lies Crater Lake, a natural phenomenon whose majestic and awe-inspiring beauty has attracted thousands of visitors from far and near. This lake was discovered in 1853-54 and was first known as Lake Mystery, afterwards as Lake Majesty, and, later, when its true character became known, as Crater Lake. It was not until 1886 that an exploring party established the fact that the lake occupies the crater of an extinct volcano—a burning mountain, which, in no distant period of geologic time, towered high among the giant peaks of America and from whose burning apex, through hundreds of years, cinders, ashes and lava were ejected upon the surrounding country. The summit of this volcano ultimately blew out, leaving a great hole in the mountain, 28 miles in circumference, 6½ miles long by 4½ miles wide. Then, in course of

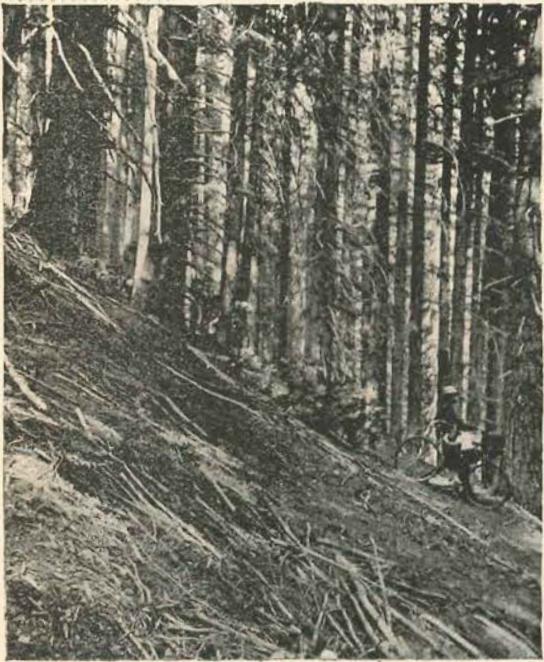
time, up from the bottom of this greater crater sprang another volcano—now known as Wizard Island—which in turn shot forth into the greater crater its lava, cinders and ashes and partially filled it. This, too, in time died out, leaving its crater standing 650 feet above the surrounding water. Then came the rains, which filled the great basin with water, until this water stood 2,000 feet deep and its level lay from 1,500 to 2,000 feet below the rim of the crater. Here at 8,000 feet stands this unique body of ice-cold water, with neither inlet nor outlet, fed by snows and springs, whose placid bosom reflecting with the clearness of a mirror, the precipitous sides of the crater, is big enough and many times deep enough to float all the fleets of the world. White man and red man have stood on its shores in speechless wonder. Artists have tried to catch its entrancing

views with the camera. Poets have drawn inspiration from its enchanting beauty, and numberless persons have endeavored to convey with pen and pencil, the impressions made by its grandeur. But all of these have admitted their failure to do justice to it. Here it stands one of nature's marvels, unrivaled in its majestic beauty, and visited annually by many persons from far and near.

It was in recognition of these facts that the government some years ago segregated it from the public domain and dedicated it with some 2½ of the surrounding townships, as a national park. The lake can be reached by private conveyance from any of the towns in Southern Oregon on the railroad, from which it is distant from 80 to 100 miles. A fairly good road leads to it and no more pleasant trip can be taken as a summer outing than a visit to Crater Lake.

THE FAMOUS JOSEPHINE CAVES

In Josephine County, Oregon

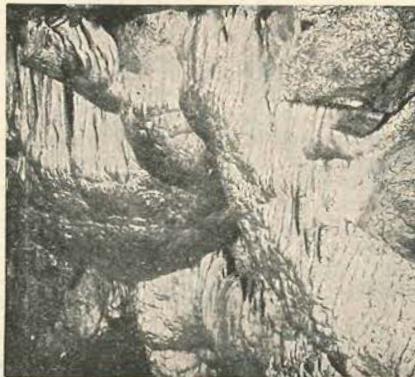


On the trail to Josephine Caves

About 45 miles due south of Grants Pass is another natural wonder—the mammoth caves of Josephine county. These caves lie high up in the bowels of old Gray Back, and may be reached by way of either Williams or Kerby—the last part of the journey to be made on foot or horseback. They were discovered several years ago by a hunter who was pursuing a bear, but they have never been thoroughly explored and have been visited by comparatively few persons. There are two entrances, one above the other, and about 300 feet apart. Each of these entrances is about 8 feet square. En-

tering, one discovers an endless labyrinth of passages—some wide enough to drive many teams abreast and high enough for the tallest ships, others so narrow and low as to be passed only on hands and knees. One of these caves—the devil's banquet hall—is 150 feet in length, 75 feet in width and 60 feet in height. The upper caves contain numerous stalactites, while in the lower caves are numerous piles of rock of great height, in endless confusion. From each chamber numerous passages ramify into the unknown. The formation is limestone, and it is likely that the whole mountain is like a honey-comb. One-half mile is the farthest point to which any one has ever penetrated. Indeed, exploration is always attended with considerable danger. Without a guide there is danger of losing one's record and wandering from passage to passage until death ends the struggle. Out of one of the caves flows a small stream of pure, ice-cold water, the only sound to disturb the eternal silence within. Out of these caves, too, flows a cold current of air, which gives assurance of a corresponding opening on the other side of the mountain.

A few years ago these caves attracted considerable attention in California. The rugged beauty of the surrounding mountains, the streams of pure water, the pine, fir and cedar, together with the marvel of the caves, formed a picture which would be irresistible, it was thought, in attracting the summer tourist. A company was formed, a road to the caves partially built, a cabin constructed near the caves, and plans were laid for a hotel and ultimately a railroad, but the ambitious scheme came to



naught, and the caves still lie, unclaimed by man, in their eternal solitude.

These caves are considered by tourists that have visited them, to be the grandest and largest limestone caves in the world. As stated, no one has yet thoroughly explored them. Parties who desire to see wonderful caves would be amply repaid for time and money expended.

Every summer a number of excursion parties visit them, and the Crescent City Stage Co., frequently during the summer, make up excursions.



Upper entrance to the Josephine Caves

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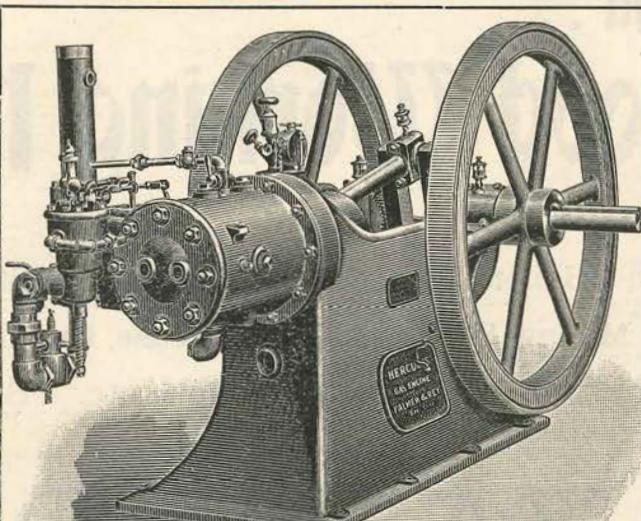
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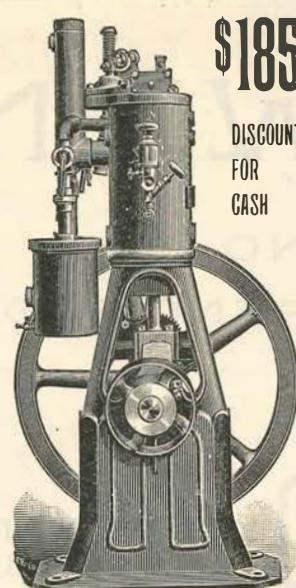
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Signed, JAS. M. FARNAM



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TESTIMONIALS

Office Triumph Mining Co.
Whitlocks Mariposa Co., Cal., Feb. 15, 1897
Hercules Gas Engine Works,

Gentlemen: Yours of the 12th received, and in answer will say that the pumping plant is in every way satisfactory. The engine does not consume more than six gallons of gasoline in twenty-four hours and demands comparatively no attention.

Yours truly,
Signed, KENNETH MACKINTOSH, Supt.

Tuttletown, Tuolumne Co., Cal., Feb. 15, 1897
Hercules Gas Engine Works, San Francisco,

Gentlemen: Your letter of the 11th inst. now before me, and in conformity with your request I hasten to say, I am more than pleased to announce my satisfaction in the use and working of your 12 H. P. (improved pattern) Hercules Gasoline Engine, now hoisting from the Anchor Mine. I find the cost will exceed by more economical power, as far as I can judge in the time I have been using it. The connecting of the engine and hoisting reel by cog gear and friction combined is a very good device for the purpose, and very effective, enabling the engine to start up the bucket (or skip) from bottom of the shaft as slow and easily as though done by hand—a point duly appreciated by miners and engineer. On the whole I am well pleased with the rig and its workings.

Very respectfully,
Signed, N. J. COLMAN, Supt. Anchor Mine

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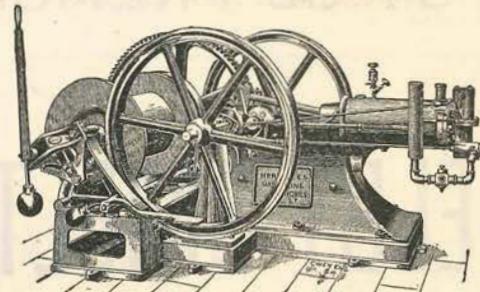
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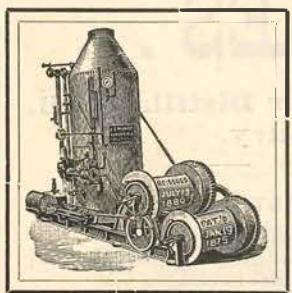


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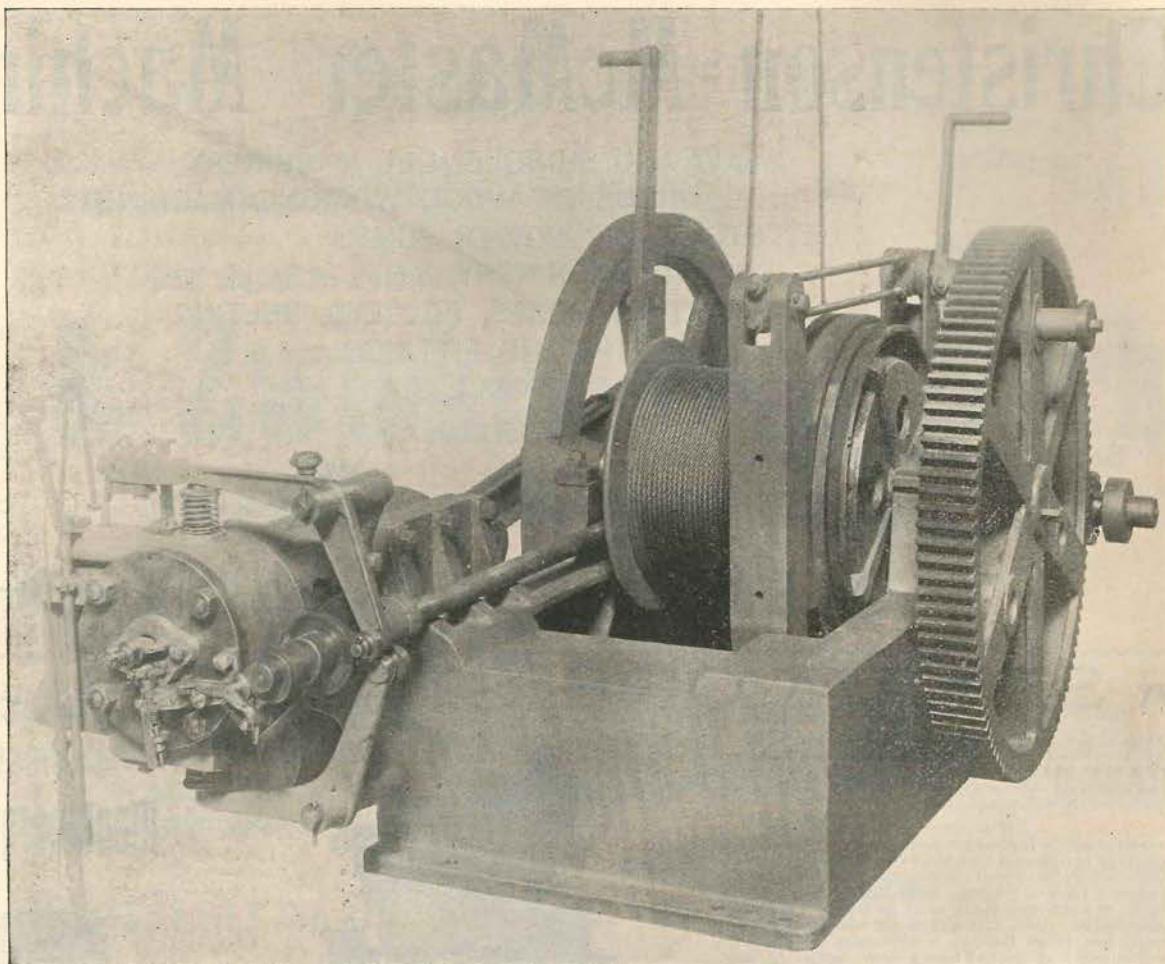
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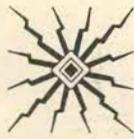
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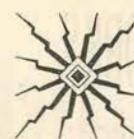
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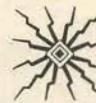
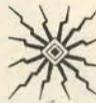


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HILL CITY, S. D., Feb. 2, 1897
 GENTLEMEN:—It gives me great pleasure in informing you of our success with the Tremain Steam Stamp Mill which we have been running since last July. We have been running on hard, white quartz, some of it of a flinty character and a small portion of it slightly decomposed. We average about ten tons every twenty-four hours through a forty-mesh screen. If our financial standing had been a little better, so we could have put in a small engine and rock crusher, I am confident we could put through fourteen to fifteen tons in twenty-four hours. The wear and tare is considerably less than an ordinary stamp mill, it all being on the shoes and dies. The last we used of these were of the aluminum steel, which are the best wearing shoes and dies I have ever seen. The parts are all well made and durable. I have failed to see any weak point about the machinery. We use one cord of pine wood in twenty-four hours, and run the mill with seventy to eighty pounds of steam; I have followed mining in connection with milling for thirty years, and have never seen its equal for convenience, durability and cheapness. To parties wishing to purchase a quartz mill, I cheerfully recommend the Tremain Steam Stamp Mill for its small cost, economy in operation and complete results of working.

Very truly yours,
 Signed JAMES C. McDONALD
 Supt. St. Elmo M. & M. Co

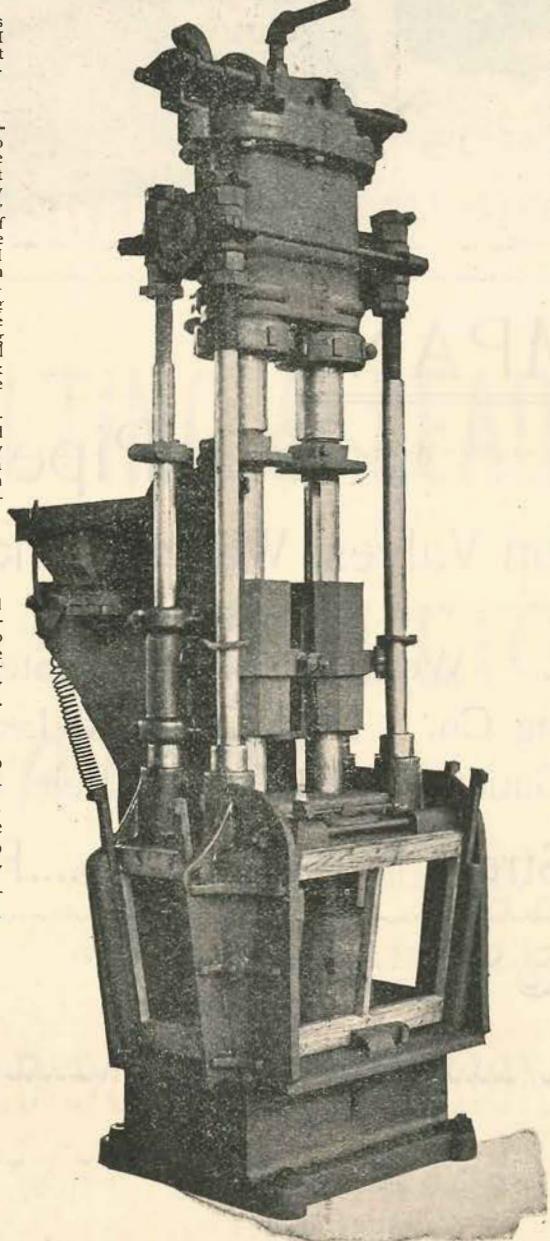
For the information of parties having used the old style Tremain Mill, we would say that the entire auxiliary valve arrangement has been changed and no more trouble is experienced in that particular. The mills are sold under a strong guarantee from our Eastern manufacturers; and on account of their many other improvements are now in use all over the world. *There is no better Quartz Mill on the market.*

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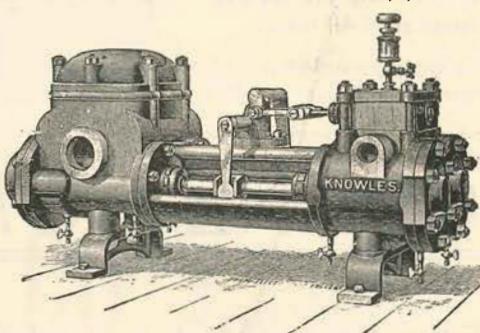
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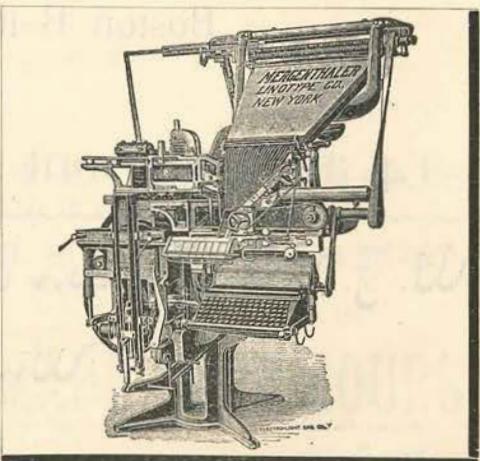
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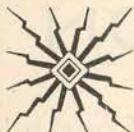


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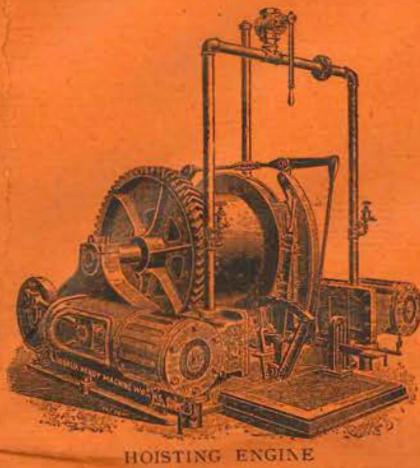
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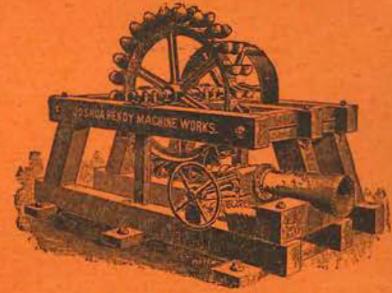
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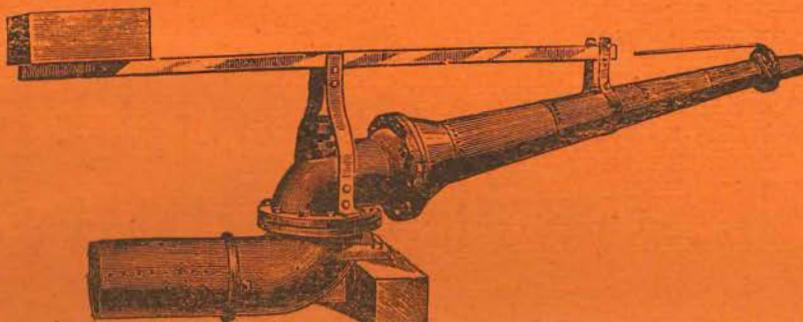
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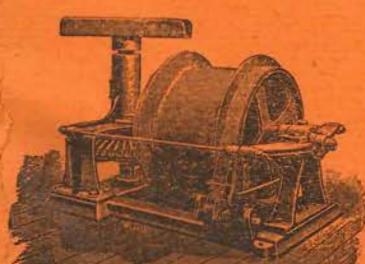
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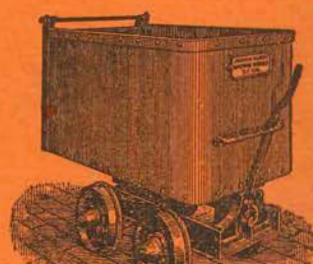
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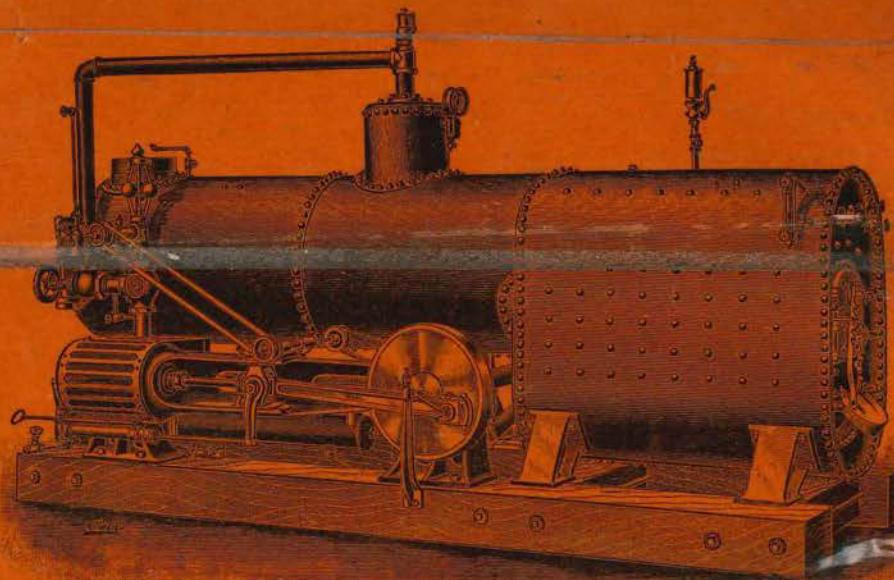


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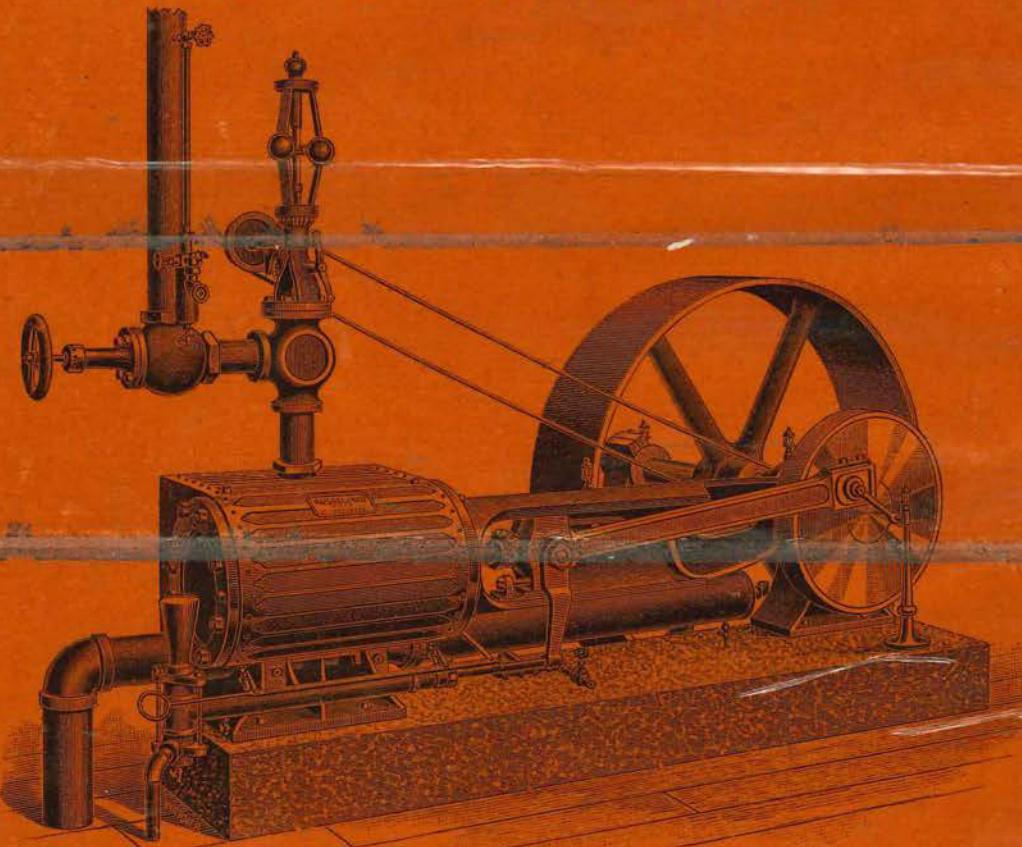
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