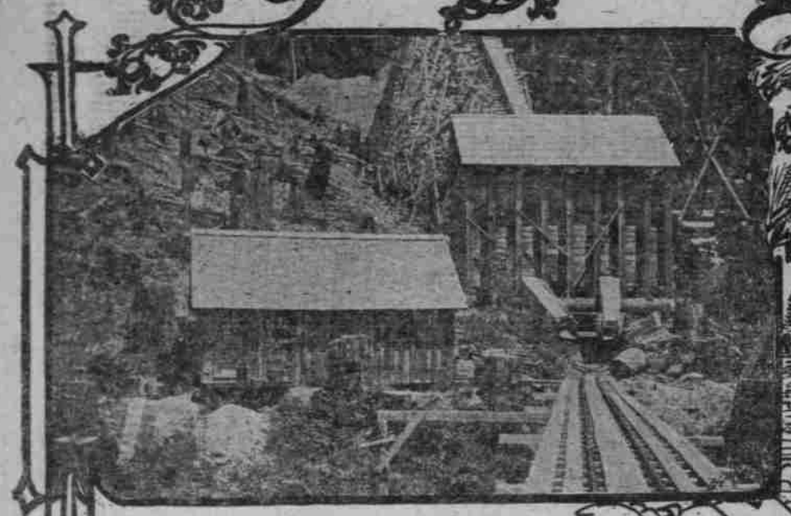
Mighty Ridges of Precious Rock

BOHEMIA DISTRICT, LANE COUNTY, WITH ITS WEALTH OF UNDEVELOPED GOLD, SILVER AND COPPER MINES



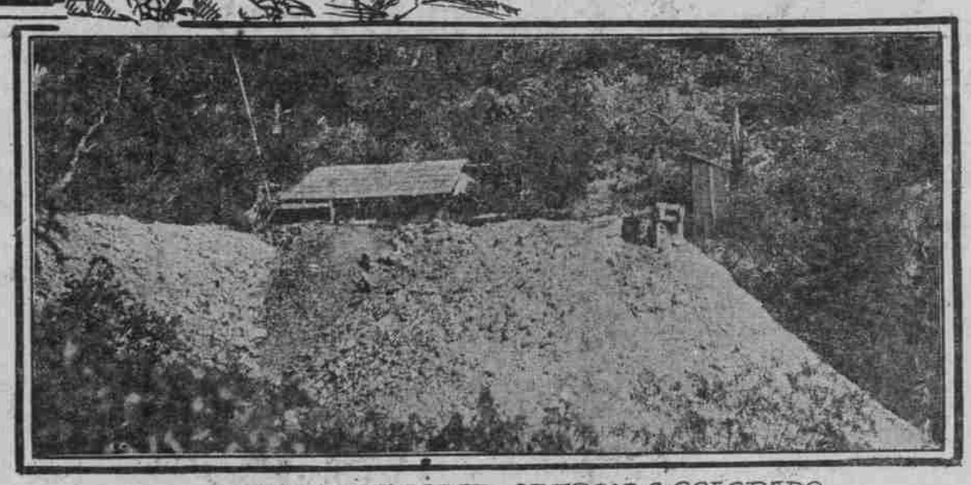
ASSAY OFFICE AND ORE BIN, VESUVIUS.

BRUNEAU AND F. J. HARD AT MOUTH OF TUNNEL, OREGON & COLORADO MINE

ON THE ROAD BETWEEN UTOPIAN AND VESUVIUS

TRESTLE, MILL IN DISTANCE. VESUVIUS CAMP

INSPECTING A NUGGET



THE ORE DUMP, OREGON & COLORADO

BY "EUGENE."

THE name itself fascinates. I had long wished to see that part of Lane County. Recently the opportunity came and the recollections linger pleasantly in the mind.

From Eugene one goes by the Southern Pacific train to Cottage Grove, the gateway to the Bohemia mining district. From there by the Oregon & Southeastern one is hurried along through gently rolling fields, golden with gathering harvests, past apple orchards green and regular, near commodious, old-style farmhouses with large barns, through pasture lands dotted with stock, by rail fences looking as familiar as if fresh from the Atlantic states half a century ago. But this delusion is soon rudely dissipated as the train begins to penetrate the edge of the mountain wilderness. The Row River plunges along by the side of the roadbed. Huge sawmills with great piles of Oregon fir lumber are passed as we begin to climb and penetrate the forest. We are catching the whiff of mountain air. Instead of the sweet smell of the harvest it is the breath of the pines. The way grows rugged. Few habitations appear. The valley is narrowing down. The gateway is shutting close now as we climb. The shriek of our engine echoes through the timber; we have reached the end of our journey by rail.

Now for the ride of a life time. Put it down as a red-letter day. Twelve or 14 miles into the heart of a primitive forest, winding to and fro up the narrow mountain valley, crossing and recrossing the mountain stream. There is a quick plunge into the shadows of the dense forest and all behind is lost to sight. The sunlight comes filtering down in wavering patches, lighting trunk and branch and foliage and leaf-mould with many a touch of silvery splendor. Twelve miles of forest, 12 miles of a scene that makes the blood throb and the heart sing. Bohemia is about and above us.

Now after a sumptuous dinner, the climb is on. Six miles more and every step a tug. Higher and higher we rise under the crack of the driver's whip and the thud and clatter of the horses' feet over the rocky way. Now the last switchback comes and in a few moments more, with an indescribable mountain scene spread before us, we step down at Bohemia Postoffice.

The Bohemia mining district has its peculiar characteristics. We note some of them as we gaze out over it from a towering point of view. Not a tree or hill-top obstructs our sight. The whole circle of the horizon is ours. From where we stand draw a circle with a radius of five miles and you have enclosed this district. It lies in sharp ridges, rising now and then into peaks, and deep, dark, narrow valleys, closing in occasionally so as to form precipitious gorges. It is a district formed for the most desirable mining processes. Not a shaft need be sunk in all this region to develop property save for ventilation purposes. All work may be done by tunnels. Such descents are everywhere that almost any desirable depth may be gained by running tunnels into the slopes. Great depth is gained in comparatively few feet, in these tunnels which give perfect drainage and easy movement of ore. Gravitation waits to propel all ore-cars in this favored region.

Stately and high tower the grand old trees. Felled and sawed on the spot, they serve to perfection every purpose for which the mining industry wants timber, from the building of a bunkhouse to the timbering of a tunnel, or the construction and fueling of a stamp-mill or smelter. Water for every need of a quartz mining community is in evidence on every hand.

These mountain slopes are dotted everywhere you look with the tunnel-dumps of prospector or miner. These square miles are closely covered with mining claims located or patented. Very little, if any, surface remains open. In nearly all of these properties the ground has been merely scratched. Assessment work and limited development has been done. Most of this ground is held by men of small means. Here and there a company is prosecuting systematic and expensive work. The ordinary miner of little capital is grievously hampered here. Stamp-mills and concentrators are the only process available. The gold and concentrates derived thereby are easily marketable. But few miners have the capital to push development and put up mills for reduction of ore. Hence the vast majority of these properties await concentrated capital of sufficient magnitude to successfully extract the ore and prepare the product for market.

Continuous, well-defined, often immense ledges of ore run through these hills and valleys, upon which are clustered large groups of claims covering the network of veins that follow these ledges, which groups in coming days will constitute mining properties of untold richness and duration. Depth here is synonymous with increased mineralization. These hills hold no disappointments for the deep miner. Every enterprise is demonstrating that the longer and deeper the work the richer the reward. Gold, silver and copper are the minerals found. Assays of fabulous values are not infrequent, but the usual ore encountered is a low-grade, substantial proposition bringing steady and uniform returns for investment.

* * *

The work already done as faintly suggested by the snapshots taken and here reproduced, is amazing.

Surely a prophet is not without honor save in his own land. Thousands of Oregonians are investing in mines in other states, while here in Bohemia, in the southeastern part of Lane County, lies untold wealth, known to but few, doubted by many who have never been on the spot, but by none who have taken the trouble to investigate.

Bohemia has never had a boom, its work has been carried on quietly, unostentatiously and some day there will be amazement among our own people, that they allowed Eastern investors to snap up what was lying so close to our doors.

One of the surprises was the splendid mountain roads and the abundance of rhododendrons. It was a sight never to be forgotten, whole mountains of magnificent rhododendrons, as if placed there by some primeval king on the terrace of his erstwhile palace.

Milling facilities, smelters and scrupulous management, backed by sufficient capital are the needs which cry out from these mighty ridges of precious rock.

Tramways Prove Their Worth in Oregon

Aerial Carriers Have Great Future in Transportation Fields of State—Review of Their History.

BY FRANK V. DRAKE.

Strangers in that locality, we camped on a desert plain one Summer evening. The atmosphere, dry and hot, hadn't strength sufficient to stir a leaflet. There were two glories, a great and a lesser. The greater was the sunset glow, the lesser a scant garden of cactus a-bloom. Nothing in organic nature excels the beauty and brilliance of the cactus flower in a dead and barren land. This is one of Nature's mysteries. Mirages sometimes paint green fields, rippling lakes, fantastic, monstrous forms on the horizons and in the sky above the waste places. These phantasmagoria are not of dreams. They are real, though deceptive.

On conclusion of our evening repast we noted strange things, monstrous and weird, moving in the horizon athwart our line of travel for the following day. They were passing forward and backward at regular intervals and with steady movement. All were of like dimension, but there occurred marked changes in the sizes of the things—sometimes large as houses, sometimes small as swallows, but they maintained a uniform speed, each passing the other and appearing, disappearing and reappearing at certain points on the horizon. Investigation was deferred until morning.

View Tramway in Action.

Next morning those things, now mere specks of uniform size, were still moving across our southerly route. Soon the mystery was solved. We stood under an aerial tramway in action. Suspended vehicles came successively and steadily out of the west, passed, and disappeared in the east; others came out of the eastern horizon to disappear in the west. We marveled still as to "how it was done." Nothing in view but a series of little towers, set tangent, cross-arms at apex of each, a grooved wheel (sheave) fixed at either terminal of each cross-arm, and a small steel rope moving westward over one set of those sheaves, and eastward over the other sheaves. At regular intervals, metallic buckets of peculiar form were suspended by bended bars of steel attached to the moving rope. These bars, called "hangers," are so constructed as to pass outside the sheaves without displacing the rope or the attachment in passing. Here, then, was an aerial tramway, conveying ore from some locality unknown to us, to another distant point equally mysterious. It seemed strange, almost uncanny.

The utility of the modern aerial tramway in its varied forms is understood by but few. It is adaptable to short and long lines of transportation, and to light and heavy loads. By its use various industrial enterprises have been made profitable. Often the cost of transportation marks the line between dividends and success, assessments and failure.

There is no factor in the industrial world of today that is receiving more intense investigation than is that of transportation, big and little. It presents problems of man's rivalling the feat of the huge spider swinging its bulk on invisible thread to distant points, leaving a bridge behind.

Four Systems of Cableways.

There are some four systems of cable tramways, of which two are in most general use; one the endless single-rope system, the other the double (or two-rope) pattern. In both these cases, the ropes, sometimes called cables, constructed of finely tempered wires, are supported at necessary elevations in saddles, or in grooved wheels (sheaves), fixed on towers, or posts with cross-arms, set at suitable intervals on a tangent. These ropes extend from points of loading to points of unloading, in some instances a distance of 20 or more miles. From the ropes carriages, or buckets, are suspended, in which ores, merchandise, grain, lumber, logs and, sometimes passengers are carried. Gravity, or power, if needed, move the ropes with the loads attached, and "transportation" results. The terminal sheaves (large horizontal wheels grooved around the periphery to receive and grip the rope), can be constructed with attachment for brake to control speed of loads on inclines, or for applying power in other cases. The ropes can be readily spliced and so extended to any required length.

In all cases heretofore these tramways have been successfully operated for various distances over undulating ground, uphill and down, and across streams and canyons so long as direct courses—tangents—could be maintained.

The chief obstacle to more general use of aerial trams has been the difficulty of changing the course, horizontally, from tangent to curve (turning corners) without establishing stations at the curves and placing men at each station to shift the loads or to unload and reload the freight. This obstacle has recently been successfully overcome, by a simple, mechanical device.

Nature the First Architect.

Nature, considerate of human needs, first constructed suspension bridges and aerial transportation lines. Long prior to the coming of Columbus, Pizzaro and Balboa, roots, vines and rushes in various localities in South America wove themselves into vegetable bridges across swamps and chasms and over these the inhabitants found passages sometimes a hundred feet in height.

When the Spaniards came they found bridges which had been constructed in the time of the Incas, of the fibers of the maguey and osier woven into cables as large as a man's body and stretched across streams often exceeding 200 feet wide. Several of these cables placed parallel and bound together supported planks for a roadway safe for passage of animals and vehicles. Some of these structures are still in existence.

Notwithstanding these examples of aboriginal engineering, centuries passed before succeeding engineers could be led to consider anything beyond orthodox abutments, piers, arches and trusses for bridges and expensive roadways for transportation lines.

Some 50 years ago American and German engineers began experimenting with "fibers" of iron and steel. They improved the quality of the wires and twined them into ropes and cables, of divers forms and sizes. The use of chains for structural and traction purposes was not satisfactory. They were heavy and difficult to adjust in place. Worse still, one defective link destroyed the efficiency of the whole chain—"the strength of a chain lies in its weakest link." A defect in a section of one wire interwoven with many others, is compensated by the uninjured wires and general efficiency maintained.

First Scoffed at Roebling.

When Roebling in New York City began use of his wire tramway to construct the then wonderful cables of the Brooklyn bridge and Hallidie at San Francisco designed his aerial tramway to convey ores from mines in the mountains to mills at their bases engineers and profanes scoffed and predicted failure. Fools and sluggards are scoffers.

"He who knows not, and knows not he knows not, is a fool—shun him.

"He who knows and knows he knows is wise, follow him."

Roebling at one edge of the continent and Hallidie at the other, scorned the scoffers, and led in the creation of one of the most useful aids to modern industrial progress—the tramway in the air.

In innumerable instances, where roadways are expensive, or impractical, often impossible, aerial trams can be installed and operated successfully and cheaply. And ordinarily the cost of construction and operation of such lines is far less than of any other class of trams. They could be made surpassingly useful for suburban traffic.

Used for Many Products.

All sorts of movable things; products of orchards, gardens and farms, coal, cordwood, merchandise, ores, blocks of marble, granite and slate, sawlogs, structural iron, lumber and even men and women, are daily being safely and cheaply transported by these means in various countries. Snow, rain, mud, sand and dust do not interrupt nor discommode traffic on the modern aerial tramway.

A few weeks ago 15,000 people assembled in a city in New Jersey on an extraordinary occasion. It was an official, industrial and commercial holiday. They unveiled a statue of heroic size; majestic figure seated, alert. On the massive pedestal an inscription to the honor and memory of "John A. Roebling, Civil Engineer." No soldier nor statesman ever earned worthier monument; never did so much for humanity and industrial advancement. He battled with obstructionists (professional), who scoffed and scorned his incomprehensible genius and mighty courage, and his "eighth wonder of the world," better now than at the first, still swings in grandeur, strength and beauty, the magical link between Brooklyn and New York.

Farmers in several localities in Idaho, Washington and Oregon send grain and fruits to rail or boat on these smoothly-running tramways. Many hundreds of thousands of bushels of wheat alone are so transported at great saving of money.

One of these tramways (for illustrative instance) is used at Wawawai, Wash. The terminals are about a mile apart, one at a considerable elevation above the other. The rope (small steel wire cable) is supported at intervals on vertical sheaves, as before described, and gravity does the work.

Simple in Its Operation.

There are some 150 of the carriers, evenly distributed and attached to the rope, which (making the endless circuit) is two miles long. The carriers, when loaded with sacks of grain, move downward, passing one side the towers, and pull the empty carriers up the other side. The carriers dump their loads automatically at the lower terminal. With one man at the brake on the upper terminal to control the speed and two men to load the carriers as they slowly pass around the upper terminal, this unpretentious device transports and delivers easily 200 tons in ten hours. By this means farmers of that locality avoid handling their supplies over rough and dusty roads from 15 to 20 miles to the nearest railway station.

To gardeners and fruitgrowers such means of moving their product is of great advantage over jolting vehicles on rough, hot and dusty roads.

No grading of lands for ties, rails and bridges is needed—nothing but foundations for the towers. Difficulties in procuring the needed right-of-way are scarce; cableways move above the plowman and growing crops, and every farmer on the line can have his station at convenience.

In Wyoming a single air line tramway 16½ miles in length, carrying 1000 metallic buckets, each having carrying capacity of 1000 pounds of copper ore, delivers daily 984 tons from mine to smelter. This capacity can be doubled when required—by attaching another 1000 buckets to the rope. In addition to the ore transported, supplies of all sorts and fuel for the mine are sent over the line. It is also a passenger route, and when a man is in a hurry, he boards a "returning" empty bucket, seats himself therein and makes a quick trip over the 16½-mile course. In parts of this line the cables cross canyons and streams in long spans, in one case a distance of 2000 feet. This line crosses the great "divide," the backbone of the continent, and was constructed over a rough uninhabited country and put into successful operation in less than six and one-half months. The "fall" between the terminals is insufficient to utilize gravity and the traction ropes are moved by power applied to friction sheaves set at long intervals.

Long Tramway in Utah.

At the Highland Boy mine, Bingham Canyon, Utah, the cost of transporting its ore to railroad was (after constructing a road) $1.25 per ton by wagons. The tonnage was large, 500 tons per ten hours. Conditions being favorable, the management installed an aerial tram, two and one-half miles long and reduced this expensive item of transportation to about seven cents per ton. This was in 1899, and the tramway is still making good.

The terrors of Chilkoot Pass, in Alaska, were surmounted by seven miles of tramway, operated in two sections. It carried passengers and merchandise for two years and until the building of the railroad.

The tramway of the Bunker Hill & Sullivan mine, which passed over the town of Wardner, Idaho, in a clear span of over 1100 feet transported buckets, each loaded with 750 pounds of ore, at the rate of two per minute. It moved 15,000 tons of ore a month a distance of nearly two miles at a cost of less than 5 cents a ton-mile, including labor, supplies and repairs.

Passengers Travel in Mid-Air.

In a few localities aerial trains have been utilized to transport passengers. One such is in Spain. These passenger carriages—usually accommodating six persons each—ascend and descend any gradient, move smoothly and are as safe as street railways; perhaps more so, because every foot of cable and rope and every wheel in use is available to inspection at the passage of every carriage or car; the entire line is easily "policed," and there are no collisions.

A prominent Portlander and owner of extensive estates in realty, who has seen mountain tramways in action, suggested, recently, the erection of a line up to and along the heights of Portland, for utility, as well as novelty and "notoriety"—it would beat balloons and boulevards. His confrere thought the plan "chimerical." Here was another instance of conservatism—"He knew not, and knew not he knew not."

By means of a recent device, of simplest construction, aerial tramways of any system can now be horizontally diverted in direction from one tangent to another tangent, obtuse or acute angles turned, with safety and ease, and automatically. I believe such a line along Portland Heights would furnish the city a popular, unique and useful feature of development and attractiveness. This is leading to a discussion I did not intend, but seriously, all Portland and all her visitors would enjoy the exhilarating experience of such a scenic ride and want it often. The entire line could be under perfect control, stop at stations and convey supplies, as well, to residents of that section of this already notable city.

Progress Made in Construction.

Very great improvements in the manufacture of the threadlike wires and construction of ropes and cables thereof have been made in recent years, and many subsidiary devices have added enormously to the primary uses of these aerial marvels of mechanical skill and genius. When conditions require a cable of enormous strength is fixedly supported on series of towers and the ends anchored. On this cable are placed carriages with wheels groved to loosely fit and ride the cable, as a track. Of course this track, so suspended, undulates but the carriages rise and descend therewith in passing, the wheels rolling continuously on the track.

Depending from the frame of each carriage is a platform, car or any device adapted to the use intended. Now, a smaller cable or wire rope, is, by simple device attached to each carriage at desired intervals and this rope, called the traction rope, is propelled by applied power on levels and up inclined planes, or by gravity of the loads when available, and moves the carriage, or carriages, with dependent load along the standing, or track, cable. So streams, gulches, swamps and even towns may be overpassed smoothly, noiselessly and safely.

These simple carriages have been improved and adapted to other appliances for various purposes. By one of these additions a "fall block and tackle" can be used to raise blocks of granite, marble, slate, gravel and the like from quarries or pits far below the line of the cable, up to the cable line, then moved along that cable to places prepared for their use.

AERIAL TRAMWAY OF PASSENGER-CARRYING TYPE.