BINGHAM

The Greatest Copper Tonnage Camp in the World

Twenty-five Miles from Salt Lake

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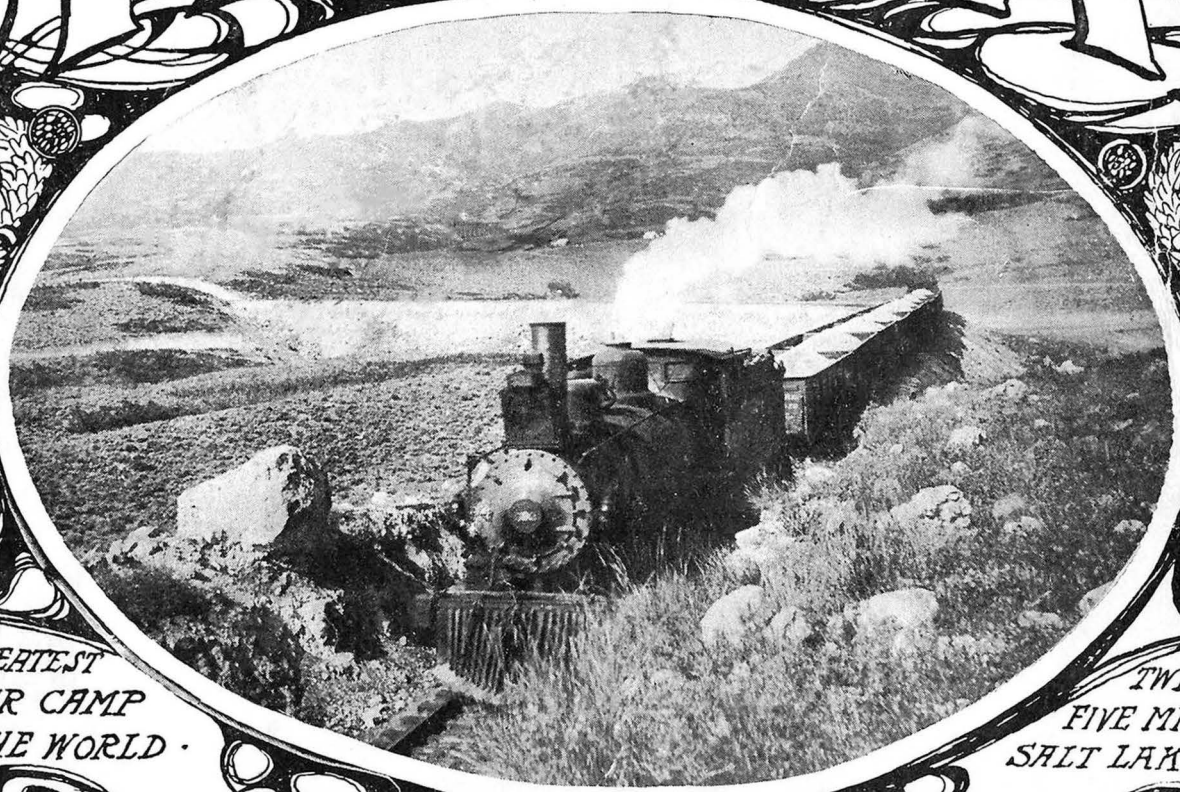

THE GREATEST COPPER CAMP IN THE WORLD.

TWENTY-FIVE MILES from SALT LAKE CITY

SCENE ON RIO GRANDE HIGH LINE

Souvenir of Bingham

Containing Illustrations and Descriptions of

THE GREATEST COPPER TONNAGE CAMP IN THE WORLD

PUBLISHED UNDER THE AUSPICES OF

The BINGHAM COMMERCIAL CLUB

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WERE it not for the splendid assistance graciously offered by Mr. P. M. McCree, Mr. W. J. Ridd, and a number of others, in securing data for this book, its authors would have failed signally in their purpose. Mention must also be made of Stevens Copper Hand Book, whose references have had much to do with making our figures accurate and authentic. The members of the Club join hands in expressing their gratitude to all those who in any manner aided in making this book interesting and its publication possible.

A Foreword

The prologue to this booklet might well be written with one word—"Progress." The Bingham camp commands a unique position in the copper world. The history of the various stages of its development, from the day the first mineral was found in the hills until the present time, when it has attained to the distinction of being the greatest copper tonnage camp in the world, reads like a romance. An attempt to chronicle facts and figures in full, relative to every phase of the camp's various activities during the three score years and more of its existence, would necessitate the compilation of a series of interesting volumes, too many for the ordinary bookshelf to hold. In this little volume, therefore, we must be brief and depend upon pictures rather than words to tell the wonderful story to the stranger, for pictures are more impressive than words and better understood.

The Bingham camp lies about twenty miles south of Salt Lake City, measured as the crow flies. It nestles deep in the heart of the Oquirrh Mountain Range some six thousand feet above the level of the sea. On all sides of the camp proper tower lofty mountains hundreds of feet high. A climb to the mountain tops will reveal a marvelous sight of grandeur and beauty. To the north one can see the towers and spires of Salt Lake City, and in the distance the snow-capped peaks of the Wasatch Mountains. To the east and sweeping in a crescent shape southward lie the fertile fields of the beautiful Salt Lake Valley, while to the south the eye can discern the blue waters of Utah Lake. Westward, and far beyond the horizon, stretch the waters of the Great Salt Lake, and on its shore at the base of the mountain upon which you stand lies the busy town of Garfield. A little to the west of the smelter town and built on the waters of the lake stands the beautiful resort, Saltair. Thus is Bingham surrounded on all sides by beauty and grandeur.

But far more interesting than its surroundings are the natural features of the camp, itself. Bingham lies in a narrow canyon some seven miles long. From both sides the hills rise abruptly. About five miles from the mouth of the canyon occurs a fork which shapes the canyon like the figure Y. Just at the fork lies the town of Bingham proper. At the head of the right fork is Highland Boy and up the left fork lies Upper Bingham, both fair-sized villages. Across the hill to the south lies Lark, a small village, the seat of the Ohio Copper workings and its giant mill. About three miles from the mouth of the main canyon and one mile

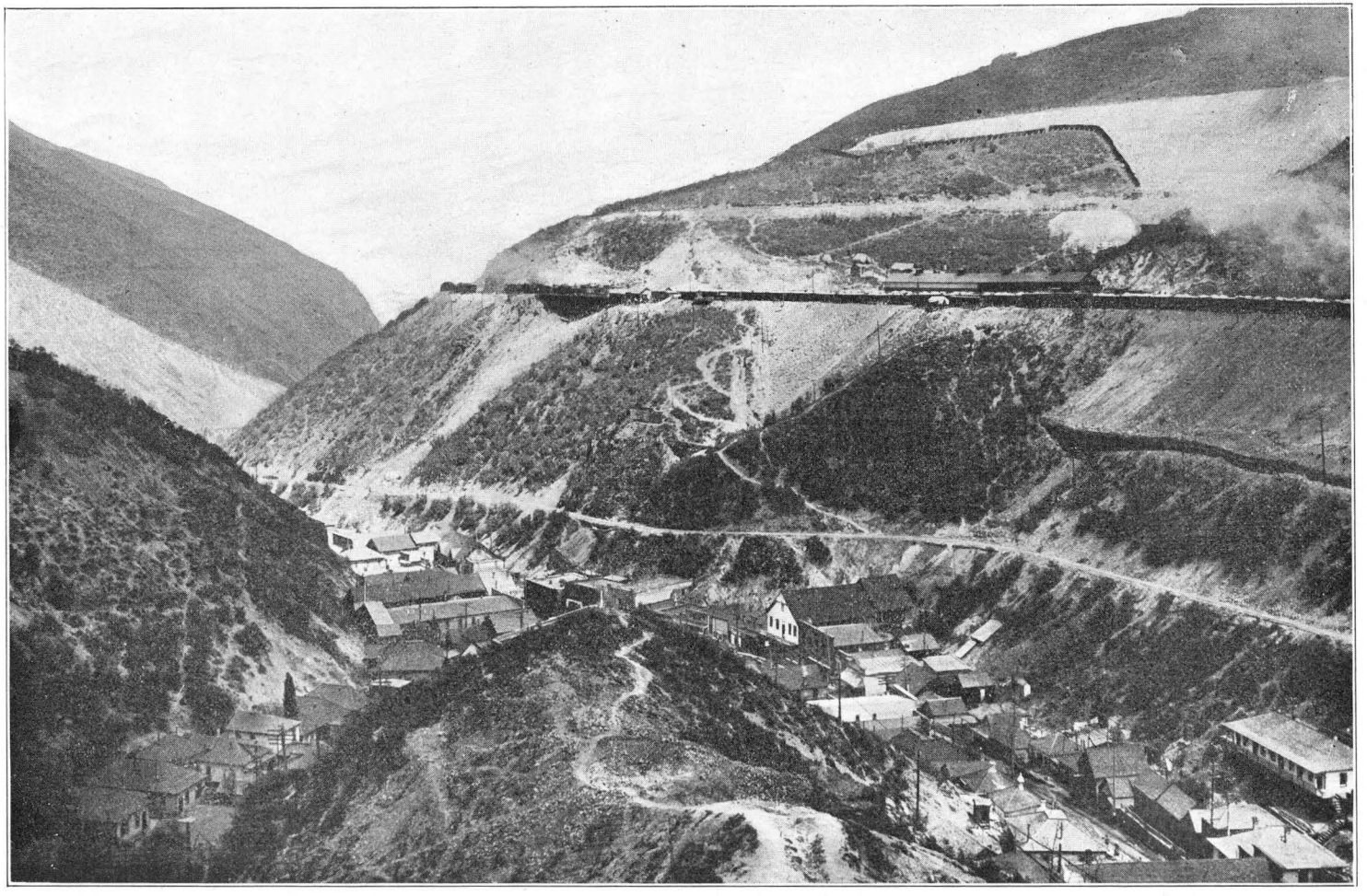
north of the depot, is Copperton, where is located one of the mills of the Utah Copper Company. Over the divide to the southwest lies Pine Canyon, soon to be the site of a new smelting plant. All these comprise the Bingham district.

In the early days Bingham was a lumber camp. The hills were then covered with timber and it is said that the first saw mill in the state was erected near the mouth of the canyon. Gold was discovered in the latter fifties and for a score of years placer mining was the chief industry, although considerable lead and silver were mined. It was not until the end of the past century that men began to see the possibilities of the camp as a copper producer. Less than fifteen years ago the first copper ore was shipped from the camp and in this short time it has become the greatest low grade copper producer on earth. The hills are heavily mineralized, the ore averaging from 1 to 4 per cent and there is no end to the immense copper deposits. The ore is as everlasting as the hills and so long as there is a demand for a single ounce of copper the camp will endure.

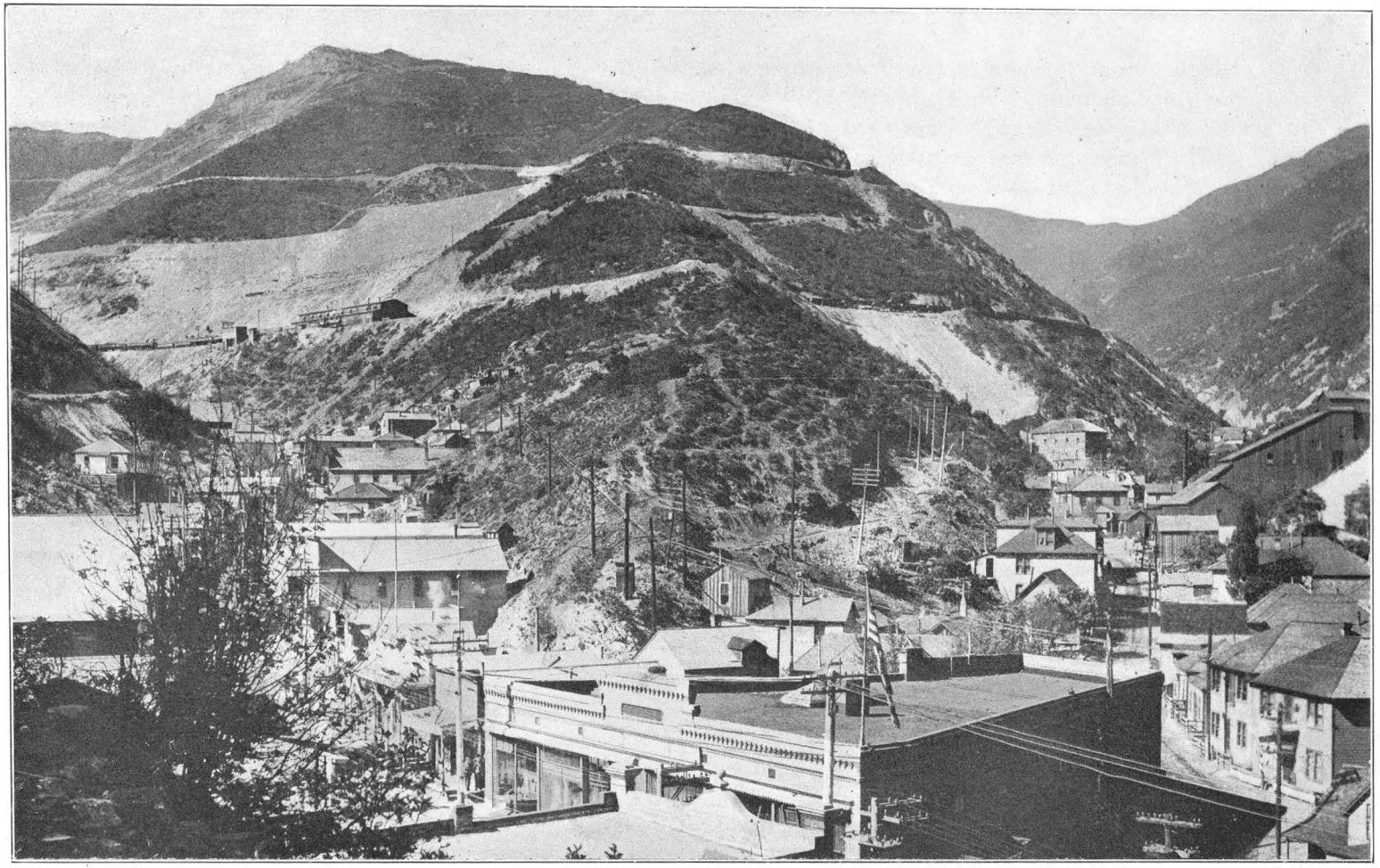
Bingham will be producing copper when every other camp has passed into oblivion. Copper mining here is no longer a prospect, it is a cold-blooded business proposition—a matter of dollars and cents. The industry has been mastered in scientific detail. Millions of tons of ore are in sight. The human mind cannot fathom what vast quantities of the red metal lie beyond and underneath the ore already blocked out. The ore lies high and is easily recovered whether by tunneling underground or by steam shovels on the surface. The main problems which have confronted the engineers are transporting and reducing the ore. Already these have been mastered to such a nicety that copper can be produced here at a lower figure than any other camp in existence, and each year increased facilities for transportation and improved methods and appliances for the mills and smelters will still further reduce the cost of production.

Bingham, even its youth, weathered the financial flurry of a few years ago and forged steadily ahead producing the red metal when practically every other camp in the country was forced to close down. This tells the story of its accomplishments at a time when it was really in its development stage. Now it has entered into the era of production and, judging the future by the past, no words can exaggerate the untold wonders in store for the camp. Surely there are big days ahead for Bingham.

Looking Up Main Canyon from Julia Dean Hill, showing Col. Wall's Mill in lower center, Copper Belt R. R. just beyond, The R. G. W. High Line and the Utah Copper Line up the mountain side. Utah Copper and Boston Con. surface workings in the distance.



Looking down Bingham Canyon, Copper Belt R.R. just above buildings, R.G. W. High Line above, and two lines of Utah Copper Co.



Portion of Bingham Canyon, showing Utah Copper (upper left), Car Fork to right, with Shawmut Mill (right center).

Historical Data of the Camp

Bingham was formerly a heavily forested wilderness, known only to the hunter and the hardy frontiersman. Red pine abounded, single trees of this wood often measuring three feet in diameter. Brigham Young and his followers believed the chief value of the locality to lie in its timber, and, it is said, persuaded pioneers bearing a saw mill from the east en route to Idaho by wagon train, to set up their saw mill in the canyon. The saw mill was erected in 1864, and was the first mill on record in Utah.

Early in the fall of 1863, G. B. Ogilvie, an apostate Mormon, engaged in farming, found specimens of ore in the canyon. He hastened to Camp Douglass and reported his discovery to Gen. P. E. Connor, the commanding officer. On September 17, 1863, the site of this discovery was formally located as the West Jordan claim by the discoverer and twenty-four others. This was the earliest claim located in the territory of Utah. On the following day, the Vidette claim was located about 300 feet above the West Jordan claim.

In December, 1863, the first mining district in the territory was organized and named the "West Mountain Mining District." This district embraced the extent of the Oquirrh Range from the Great Salt Lake to the extreme south end of the range, and to the present day, the entire eastern slope of the Oquirrh Range as far south as Camp Floyd, retains the name—"West Mountain District."

Several important locations were made during the year 1864, notable among them being the Galena, the Empire, the Kingston, the Julia Dean, and the Silver Hill. The last two were located in Markham Gulch near its mouth, and are indicative of the growth and extension of the interest in mining in the district.

In 1864 the West Jordan Mining Company was organized under the laws of California and the Jordan tunnel, estimated to cost $60 a foot, was started. Prospecting and exploration progressed rapidly for a time, and the showing of mineral was satisfactory, but contrary influences appear to have offset these favorable conditions. Without railroad or other means of economical transportation, prices were extravagant; powder cost $100 a keg, a shovel cost $2.50, etc. Thus, in the face of the effectual influences of the Church of the Latter-Day Saints to prevent its brethren from engaging in mining pursuits, and in the absence of necessary machinery and capital, the development of lode mines practically ceased until 1870.

Bingham Canyon, looking down from Copper Belt Trestle at Bingham Butte Mine. Showing Yampa Smelter and Winnamuck Mill

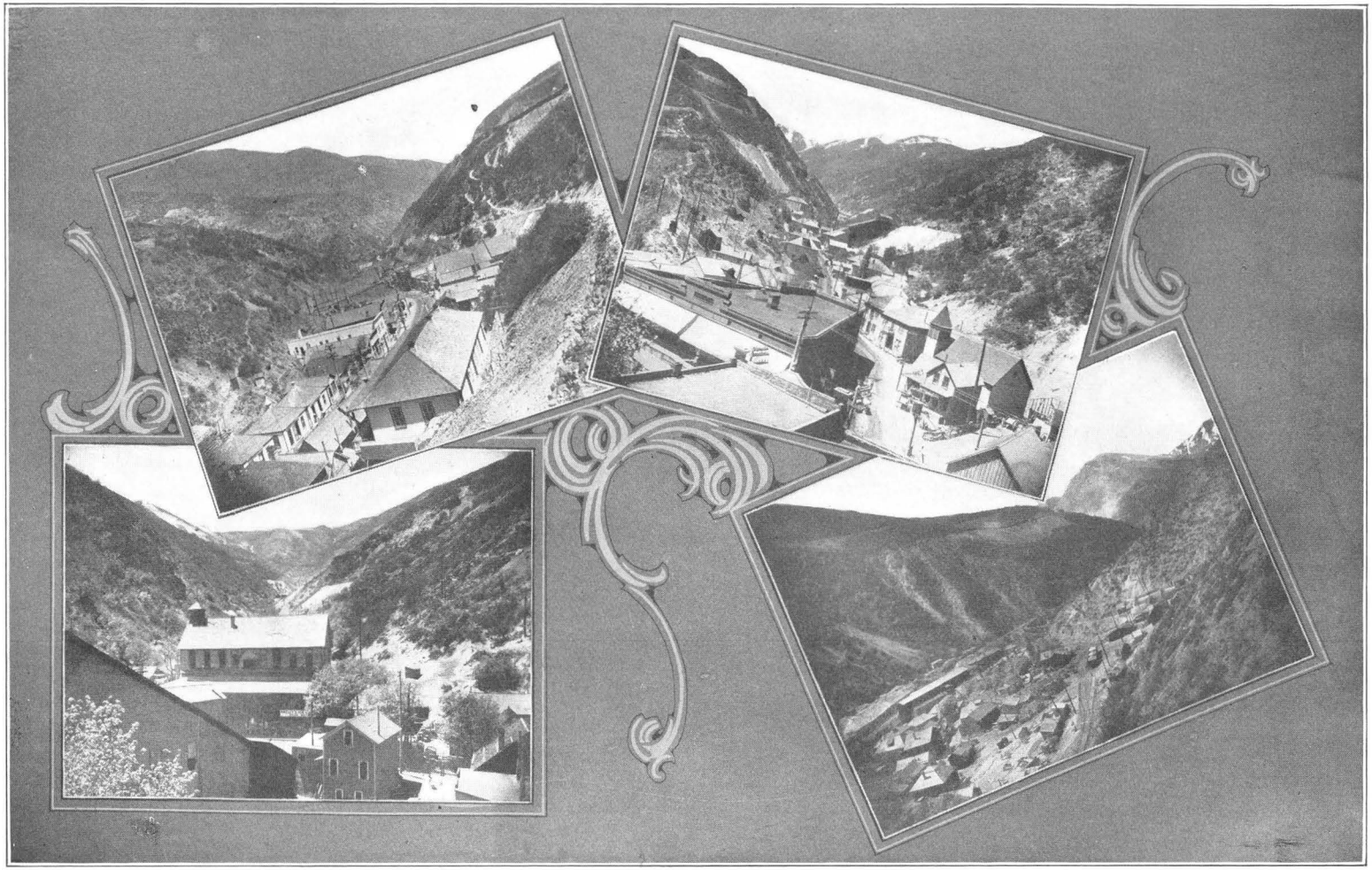
Discovery of Placer Gold: A party of Californians, returning from Montana to pass the winter in Salt Lake City, prospected the gravels in the canyon in the early part of 1863 and found free gold. In most mining localities placer gold led prospectors to its source, the metallic lodes. In Bingham, however, free gold was not discovered until after the discovery and location of ore in place. In the spring of 1865 gravel washing was actively taken up. A tunnel was driven up the canyon to Carr Fork to facilitate the working of the gravels at bed rock. It is estimated that during the opening period of placer mining in the district and up to the year 1870, over $2,000,000 in gold values was recovered from the gravels. Placer mines have been operated ever since in the canyon.

First Shipment of Ore: The first shipment of ore from Utah was a car load of copper ore from the canyon, hauled to Uintah on the Union Pacific, and forwarded by Walker Bros., now prominent bankers in Salt Lake City, to Baltimore, Maryland, in June, 1868.

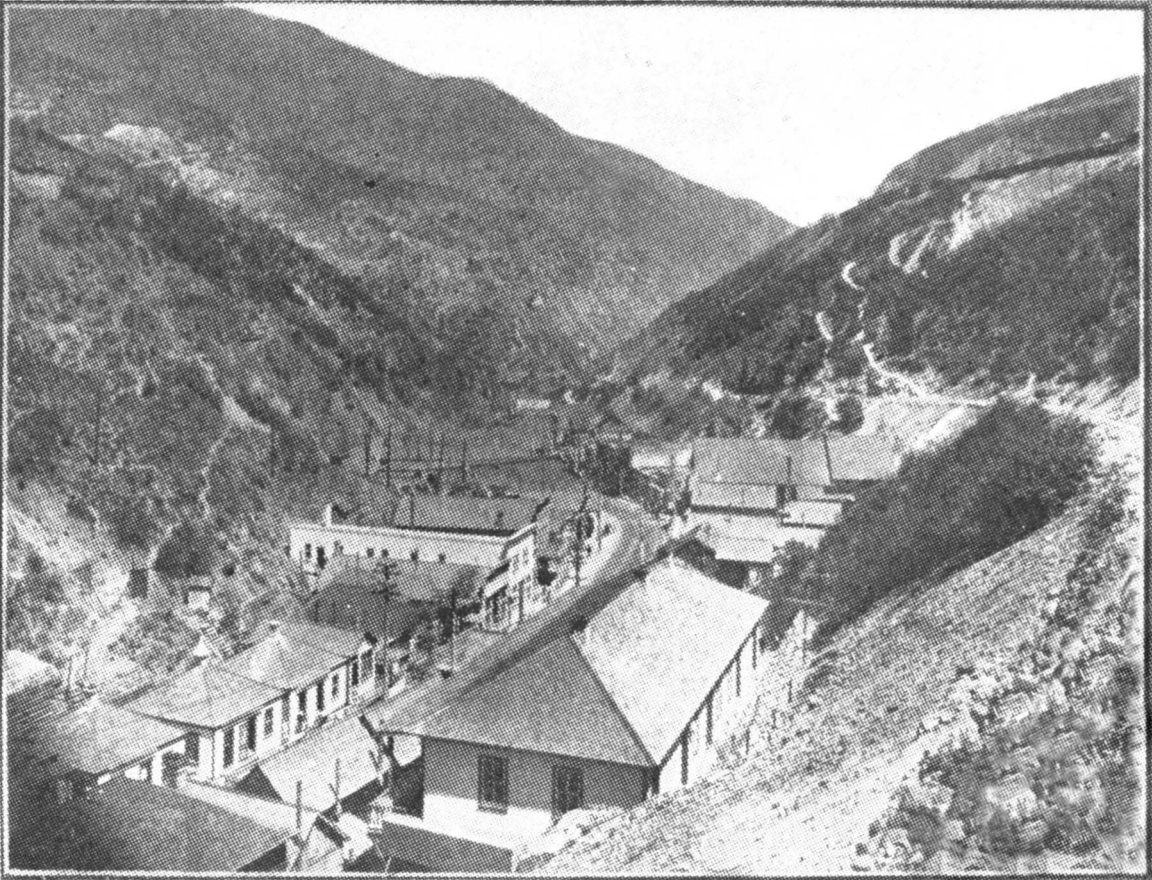
In the fall of 1870 mining began in earnest in the district. Messrs. Bristol & Daggett began active and efficient operations in the Spanish and Winnamuck mines. In the summer of 1873 exorbitant freight rates forced these men to erect a smelter of their own, which was successfully operated for a number of years. This plant was the first smelter erected in the territory and stood on the present site of the R. G. W. depot.

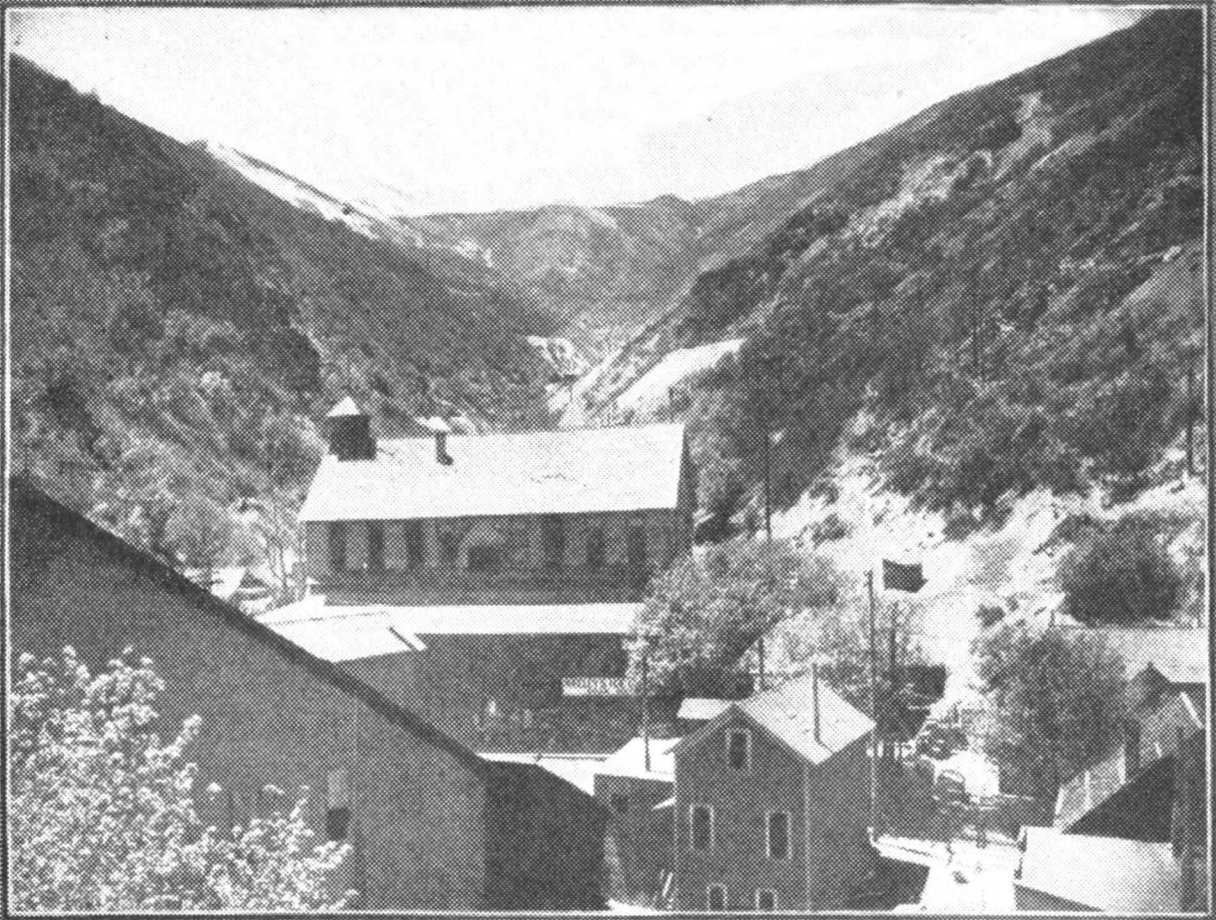
Epoch of Lead Mining: In the seventies many bodies of lead ore, mainly carbonate, were exploited, and on the Jordan and Galena was developed the largest body of argentiferous lead ore then known in Utah. During these years, heavy shipments were made from the West Jordan, Spanish, Jordan, Galena, Neptune, Kempton and Yosemite mines. Although this large and increasing output brought Bingham to the front as a producer of lead, it became a critical period in her history for the steady output was exhausting the lead carbonate ore, and the problem of reducing the sulphide ore still awaited solution.

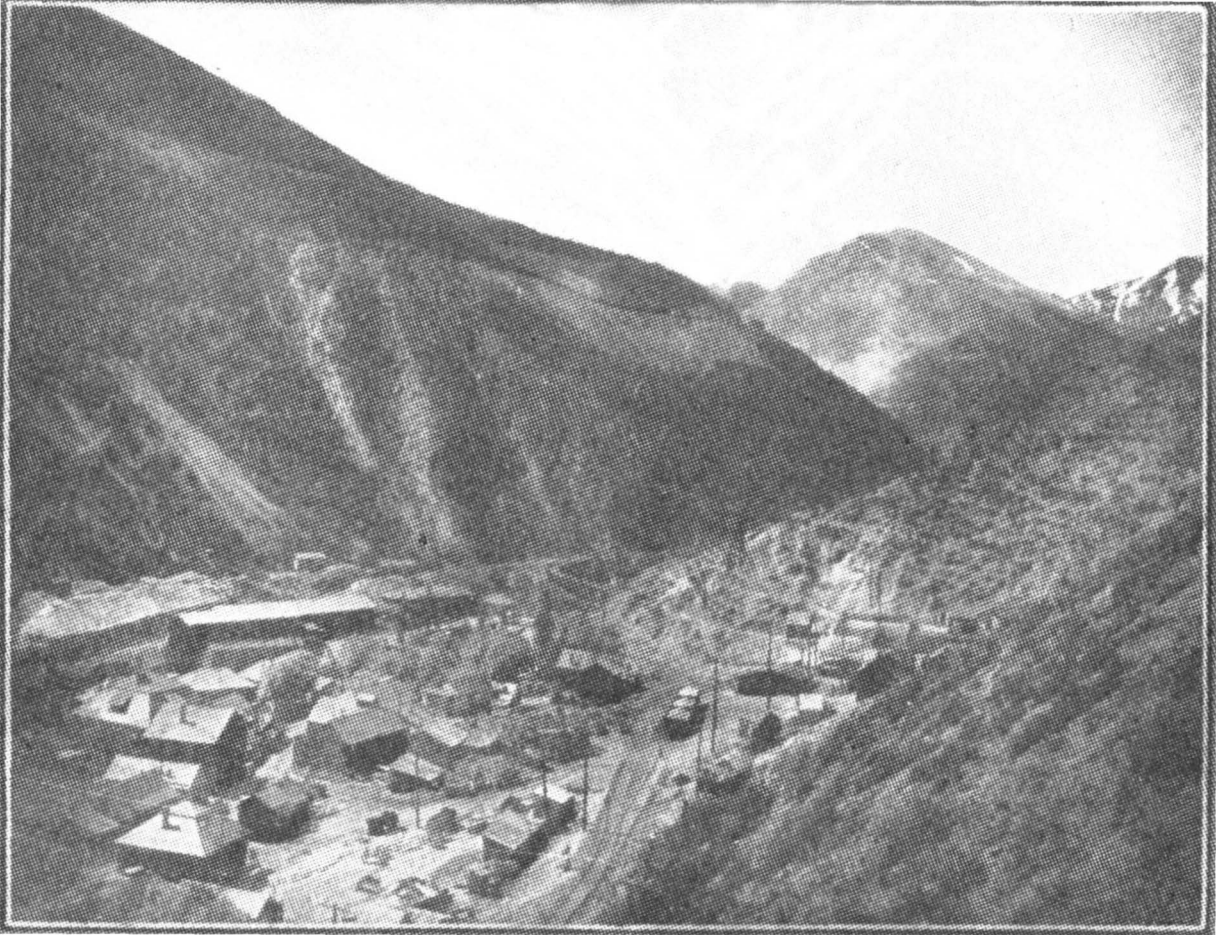
Epoch of Oxidized Gold Ore: At several previous periods, the gold in the upper oxidized portions of the shoots which formed in the massive limestones had been worked. Late in the seventies and in the early eighties, following the temporary exhaustion of the lead carbonate bodies, special attention was directed to the saving of this gold. By the year 1882 four stamp mills had been erected in the camp and were being operated, and later a cyanide plant was erected by the Highland Boy, now the Utah Consolidated Company, for the treatment of its oxidized gold ores.



Markham Gulch. View in Lower Bingham. Carr Fork. Lower Bingham at Freeman Gulch.







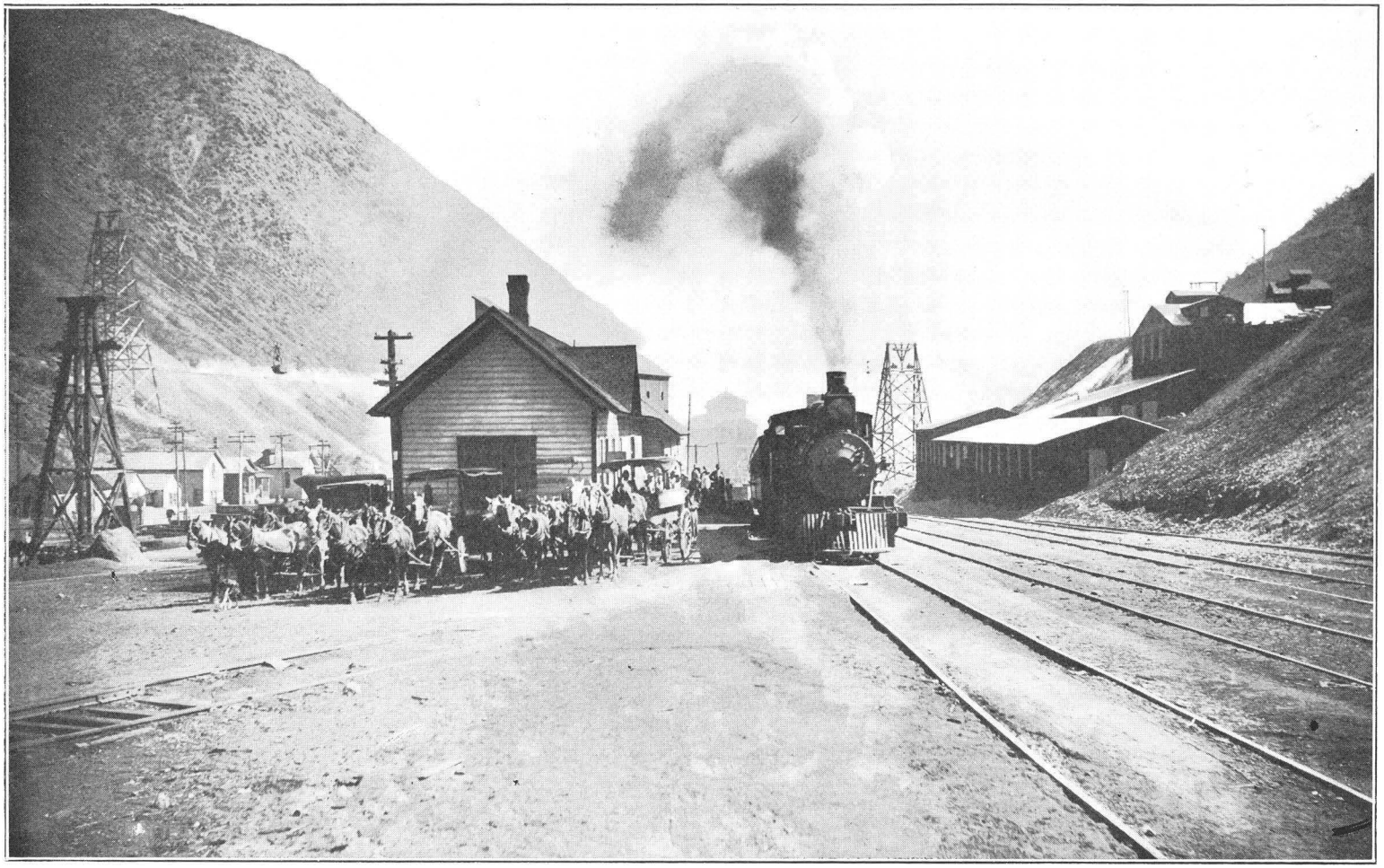
Continuation of Lead Mining: While the carbonate bodies in the main canyon were being worked out, extensive shoots of lead carbonate were being developed over the ridge near the mouth of Butterfield Canyon. In 1881 the mines in this locality were growing factors, and in 1884 the Brooklyn, Yosemite and Lead Mine headed the list of Bingham producers. An epoch of successful argentiferous lead mining now ensued and a steady output was maintained until the early nineties.

In 1891 there were 21 producing mines in the canyon, the more important being the Brooklyn, Highland Boy, Telegraph, York, Petro and Yosemite. The closing of the Indian mints to the free coinage of silver and repeal of the Silver Purchasing Act by the United States Congress dealt a serious blow to the silver mining industry and thus to Bingham.

Epoch of Copper Mining: The renaissance of mining in Bingham dates from the first consignment of copper-sulphide ore from the Highland Boy property in December, 1896. A 5000 ton shipment from this mine, at a time when copper was in demand, demonstrated the commercial value of copper-sulphide ore. Pay shoots of sulphide copper had long been encountered in all parts of the district but had hitherto been regarded as an unfavorable indication and were consequently concealed. The commercial value of the ore being once demonstrated, exploration and development of the copper ores were actively begun, and have since been handsomely rewarded.

Railroad Traffic in Bingham

The amount of traffic handled by railroads for any particular community is a good criterion of the business conditions of the place, and especially so when the community in question happens to be the terminal of the road. Bingham is the terminal of the Rio Grand Western railroad, and thus the amount of business it does may be gauged accurately from the figures of railroad shipments. The system of railroading in the camp is nothing short of marvelous, inasmuch as its physical features have placed unusual obstructions in the face of the railroad builder and operator. Rugged hills, overhanging cliffs and steep grades defied for a time the construction of the roads necessary to handle the immense tonnage of the camp, but rare engineering skill and an enormous expenditure of money finally surmounted these obstacles, and today the camp is equipped with transportation service which is the wonder of the railroad world.



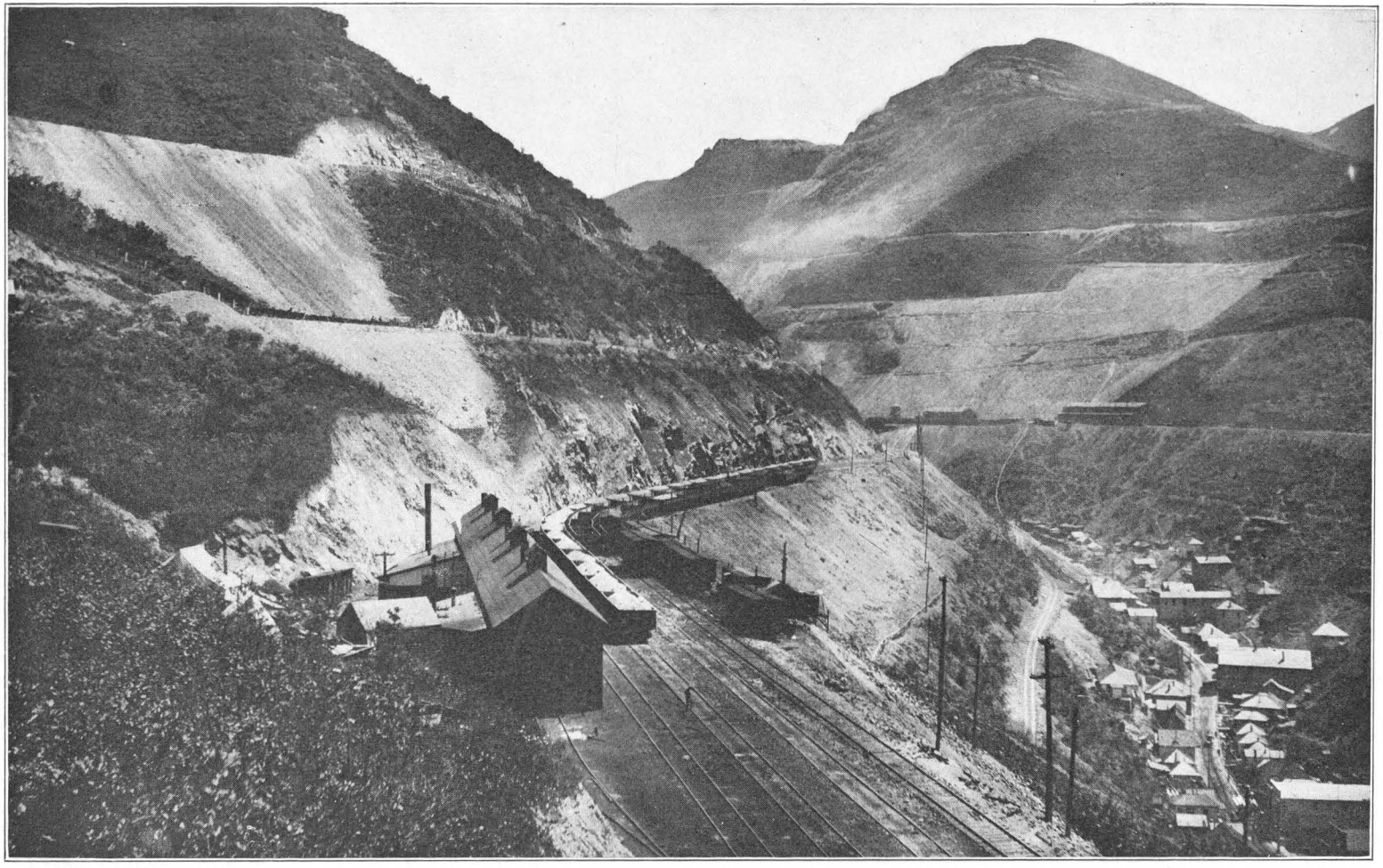
R. G. W. Passenger Depot at Bingham. The stages convey passengers to the various parts of the Canyon. Winnamuck Mill, site of first smelter built in State of Utah.

The terminal of the main line is in Lower Bingham at which place are located the passenger and freight depots, also the terminals of the United States and Highland Boy aerial tramways, illustrations of which are to be seen on another page of this book. The High Line, a branch of the Rio Grand Western, and constructed solely for the purpose of touching the higher workings in the camp, leaves the main line several miles below the mouth of the canyon on a two per cent grade and crosses the main line at the mouth of the canyon over a trestle seventy feet high. Thence it winds toward Lark and back again in the shape of a horseshoe to gain altitude. When it reaches the canyon it runs along the east wall high up on the mountain side to Cuprum, just above and overlooking the town of Bingham proper. Here are the assembly yards of the road where hundreds of cars of ore are daily formed into trains and dispatched to Garfield and to the valley below. To construct these yards it was necessary to blast away and notch out the mountain side sufficient to accommodate six tracks.

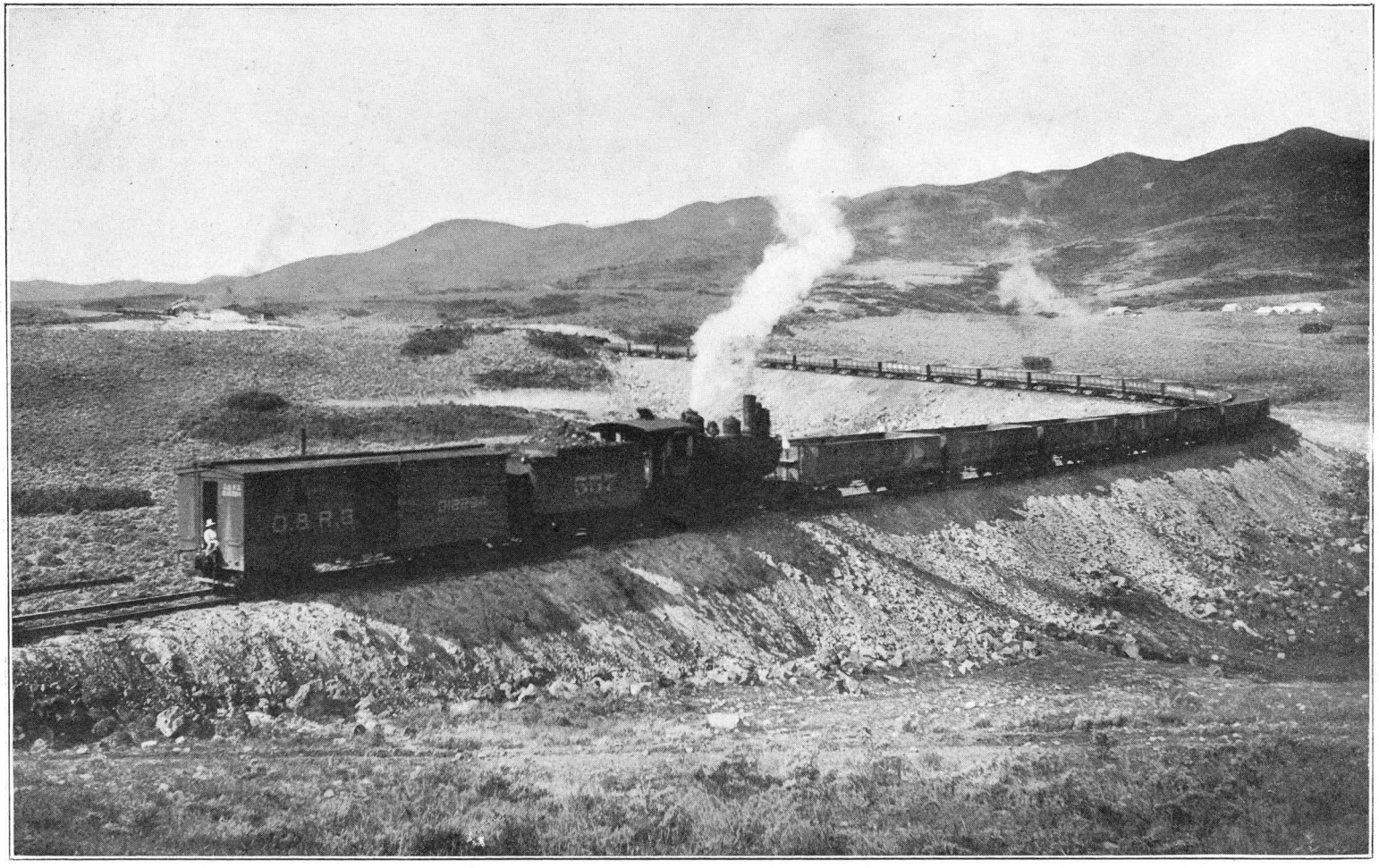
From Cuprum the High Line continues up the east side of the canyon to the Utah Copper workings, and thence further up the canyon on a seven per cent grade to the United States and Commercial mines. A branch of the High Line crosses the canyon just above the Utah Copper surface workings, winds around Boston Con. Hill into Carr Fork and continues up the fork to Highland Boy. This branch taps the Boston Con. ore bins, also the Yampa, Utah-Apex, Bingham-New Haven and Utah-Consolidated mines. This road which operates among the clouds is, notwithstanding its curves and trestles and grades, a model of modern railroad construction and handles the immense shipments with facility. At no time is the traffic congested save in exceptionally bad weather in the winter time. At present the service is perfect, every demand of the various companies being met promptly and without delay.

During the month of May, 1909, this road handled 15,000 cars of ore. This approximates 388,000 tons or 776,000,000 pounds. On June 21 were recorded the biggest shipments in the history of the road, over 38,900,000 pounds of ore being consigned from the Cuprum yards within twenty-four hours. With increased facilities, the road will be able to handle 20,000 tons daily without difficulty. Great credit is due C. G. Hamilton, the yard master, for the efficient manner in which the road is operated and trains dispatched. In addition to these figures of outgoing shipments, the camp is a heavy consumer and requires an immense amount of transportation service to meet its demands. Fifteen thousand pounds of powder are shipped into the camp daily, besides thousands of feet of lumber and hundreds of tons of fuel. Machinery, merchandise, etc., carry the total incoming shipments up into the thousands of tons. Sixty engines and train crews are required to handle the enormous tonnage of the camp.

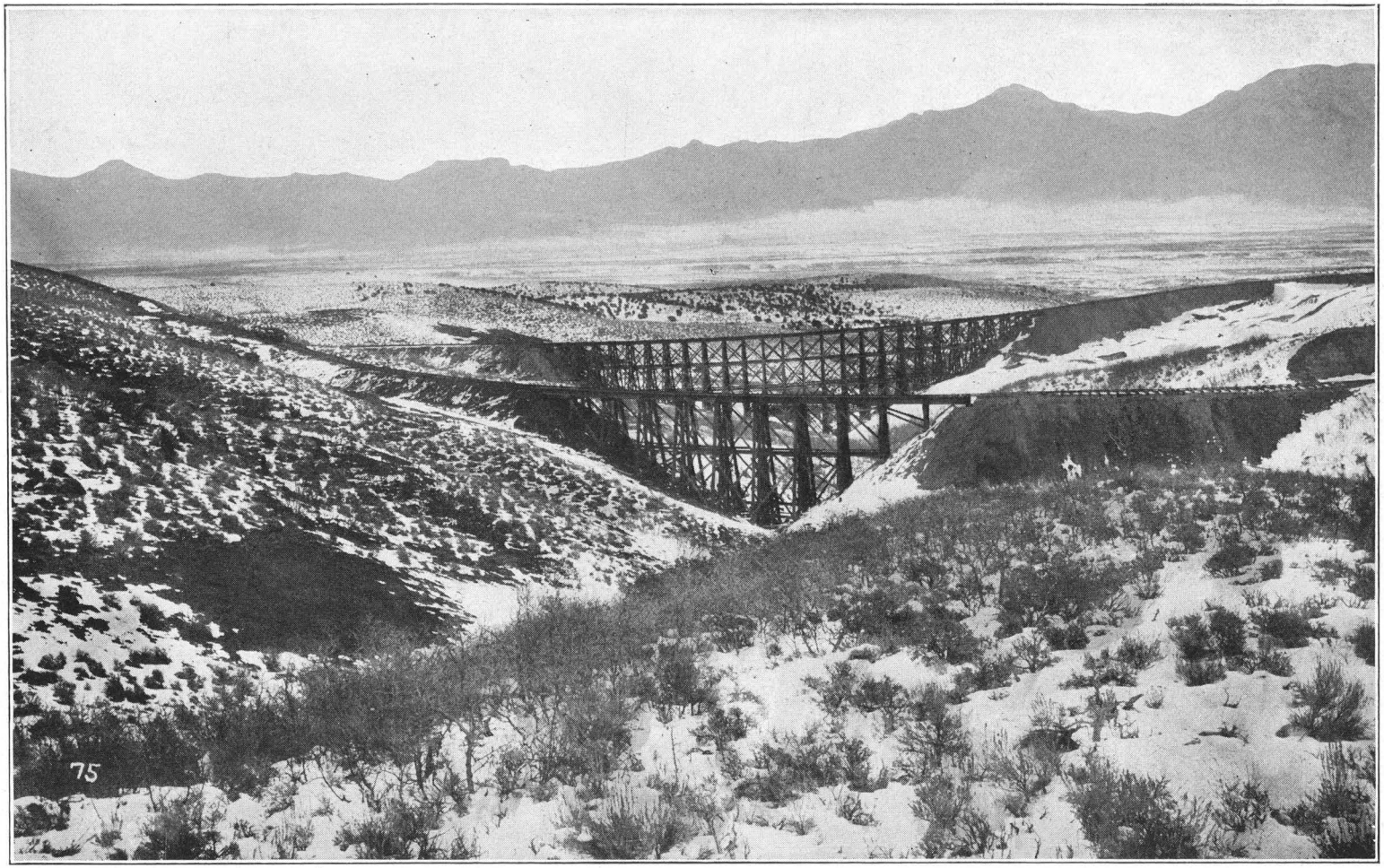
The Bingham section of the D. & R. G. R. R. is a seperate division with its own superintendent, dispatchers and other officials. The dispatching is done by telephone, the only exclusive telephone dispatching system in railway service. W. J. Ridd, station master and local agent for the company, is an old railroader of exceptional executive ability, and during his two years' incumbency in his present position, has thoroughly reorganized the system and improved the service. He is the master mind of the railroad service in Bingham and he has the situation absolutely in hand.



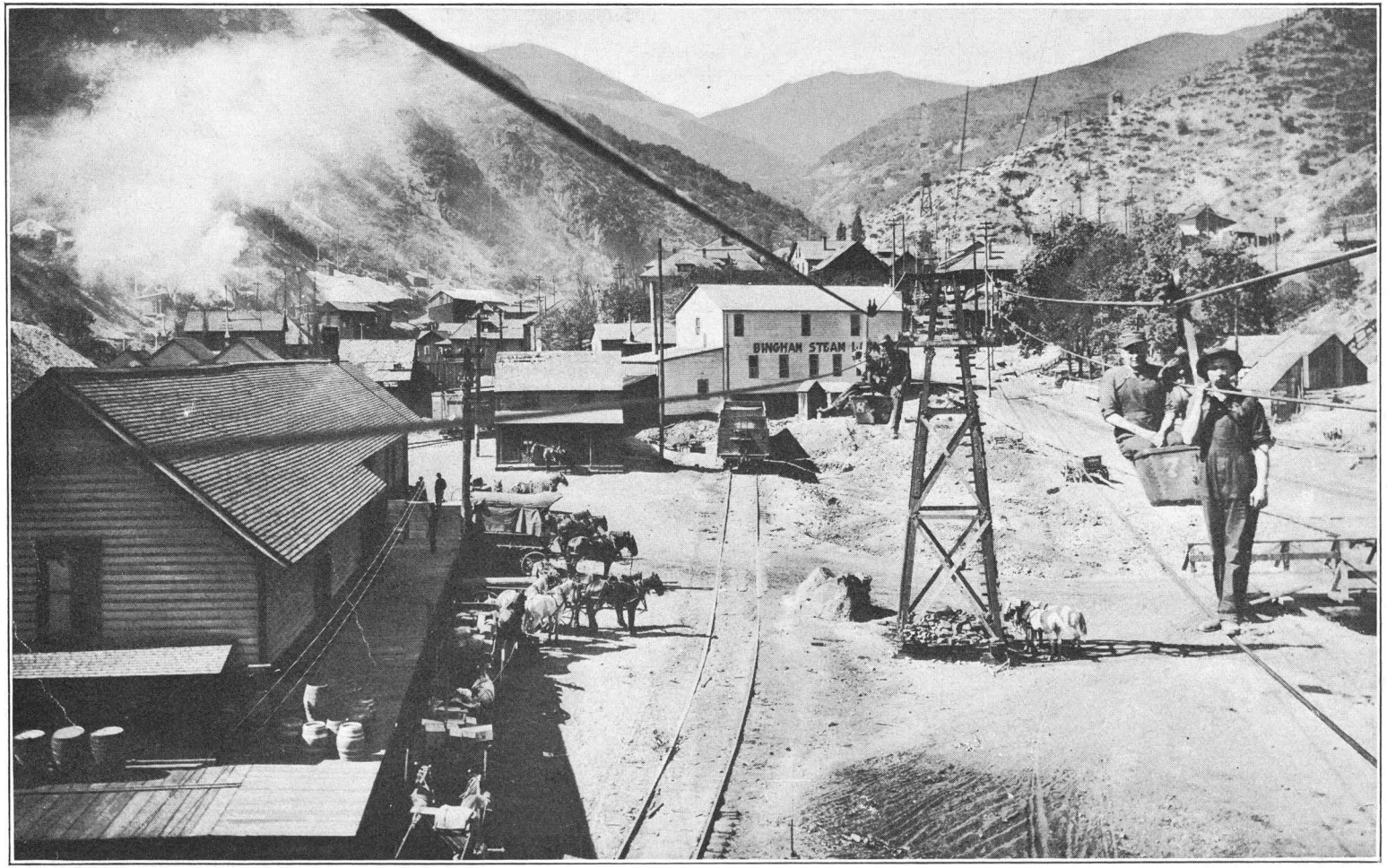
Cuprum—R. G. W. assembly yards and round house on High Line above the town. Utah Copper lines farther up the mountain—Utah Copper and Boston Con. properties in the distance.



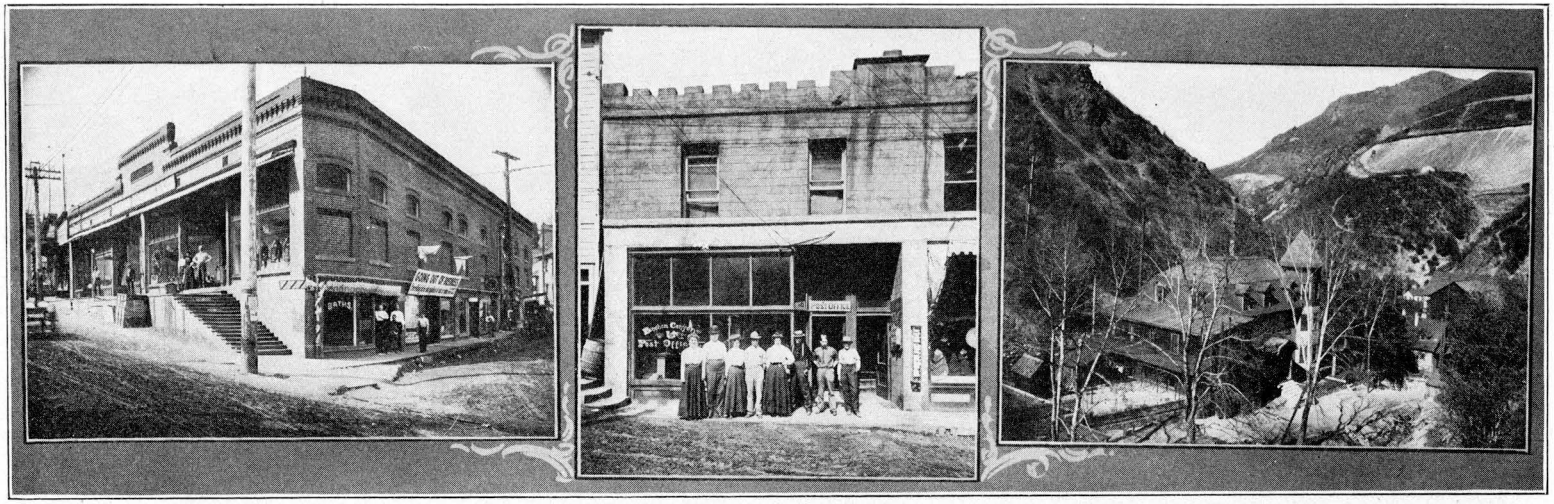
View on the Rio Grande Western Railroad near Bingham. Empty ore cars going up.



Horseshoe Bend on High Line of R. G. W. near Bingham—Wasatch Mountains in the distance.



Lower Bingham—R. G. W. freight depot and Utah-Con. tramway. Notice men in buckets and man standing on the cable 50 feet from the ground.



Bingham Mercantile Co. Post Office. Elmerton Hotel.

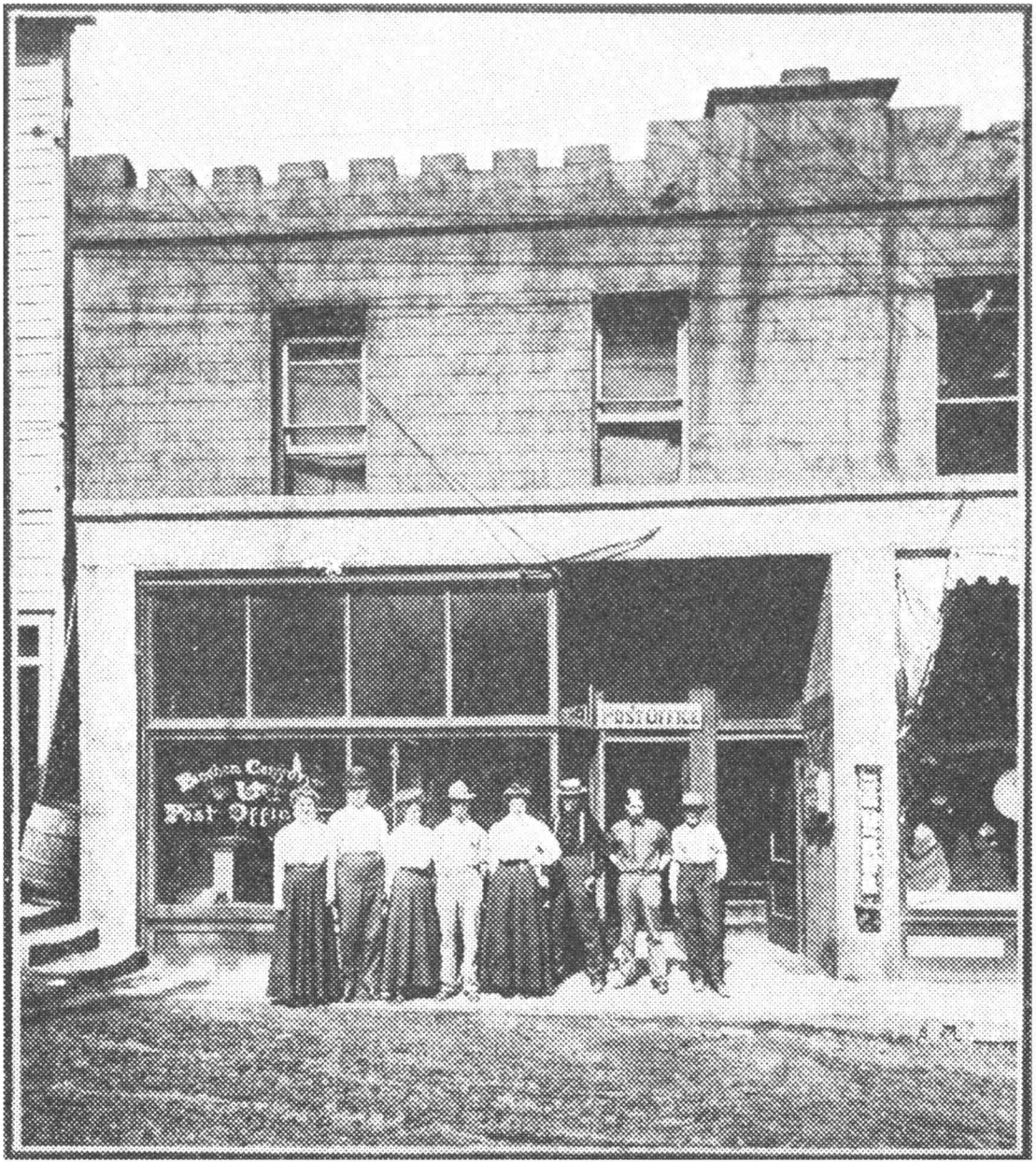
Bingham Post Office

The volume of business handled by the Bingham post office has shown a steady increase for a number of years and affords something of an index of the extent of the business done by the town. The office employs three clerks, besides the postmaster, Mr. C. H. Roberts, and three carriers engaged on the different routes. The Bingham postoffice ranks third in the state of Utah.

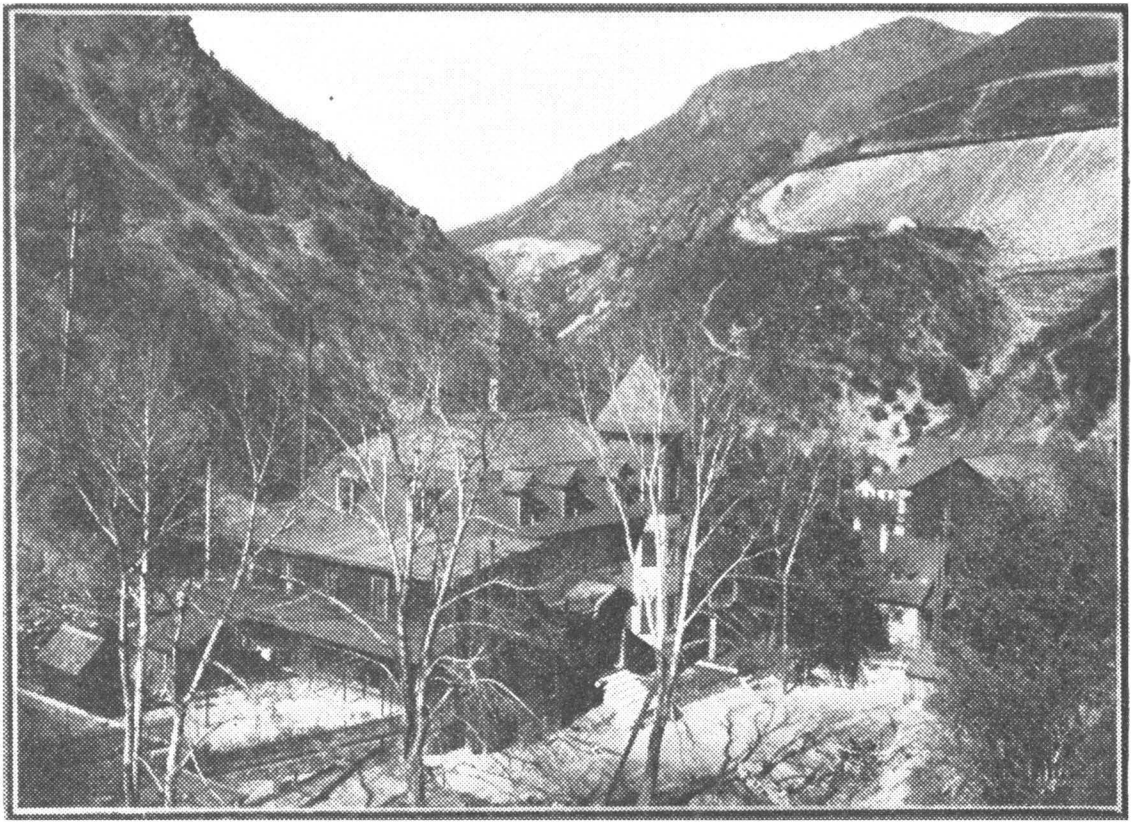
The following is a synopsis of business done during the fiscal year ending June 30, 1909:

9096	Domestic money orders issued amounting to	$132,005.40
4055	International money orders issued amounting to	175,512.25
1594	Money orders paid	
14745	Total Number Money Orders Handled	$307,517.65
8800	Register letters and parcels dispatched.	
4195	Register letters and parcels received.	
12995	Total.	
	Gross Postal Receipts for the Fiscal Year	$10,545.47

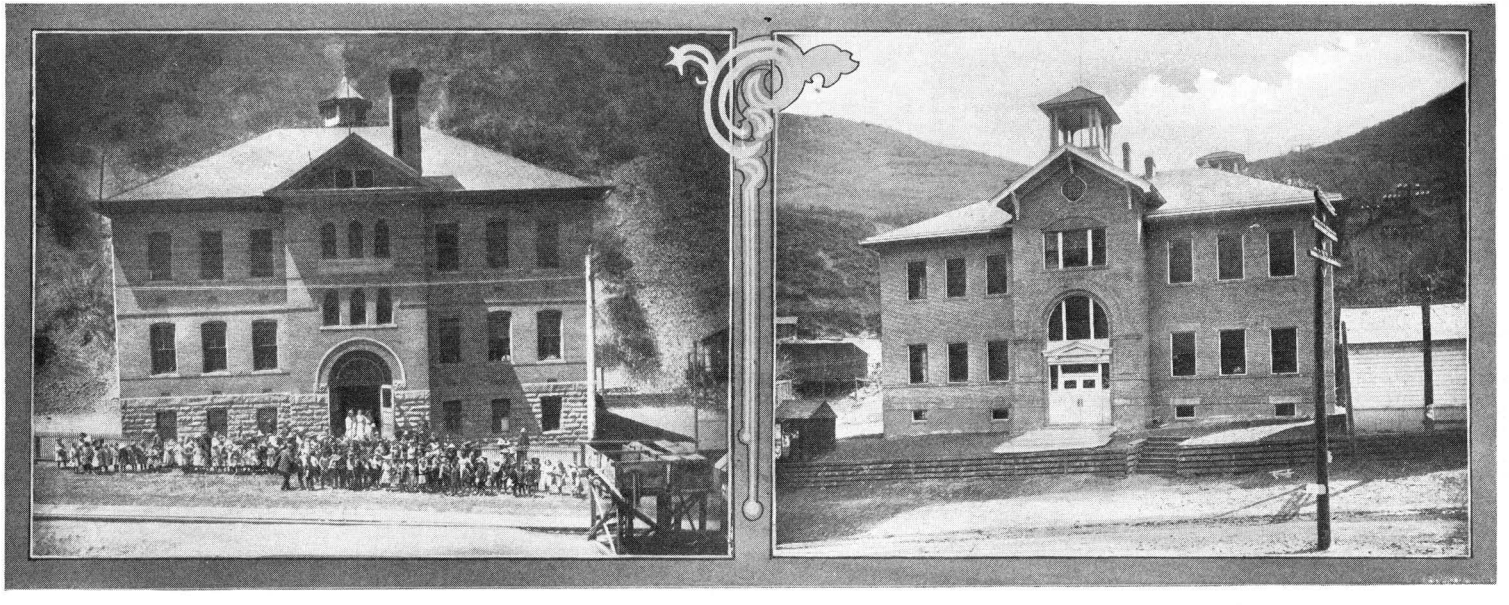
Bingham Mercantile Co.



Post Office.



Elmerton Hotel.



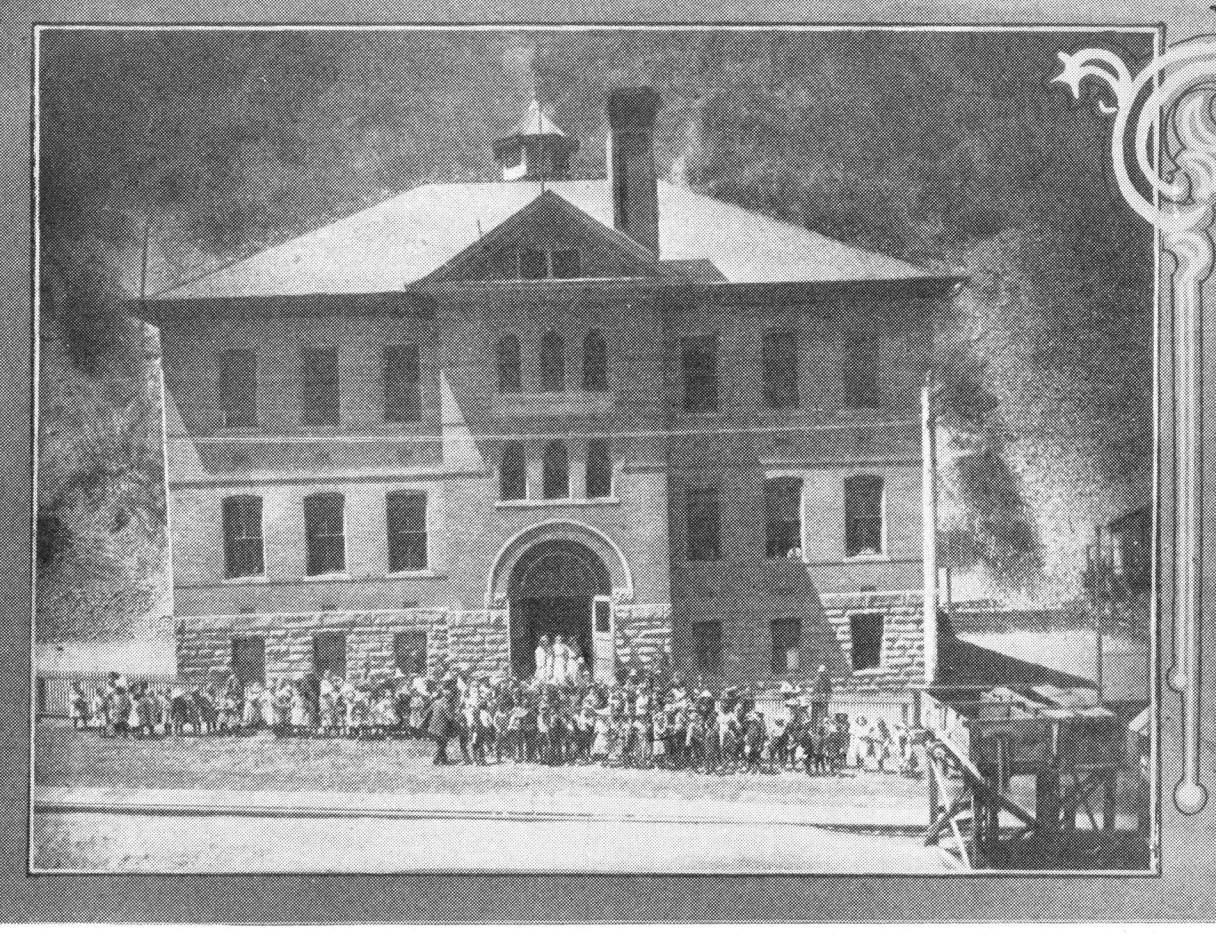
Upper Bingham School Building.

Main School Building—Bingham.

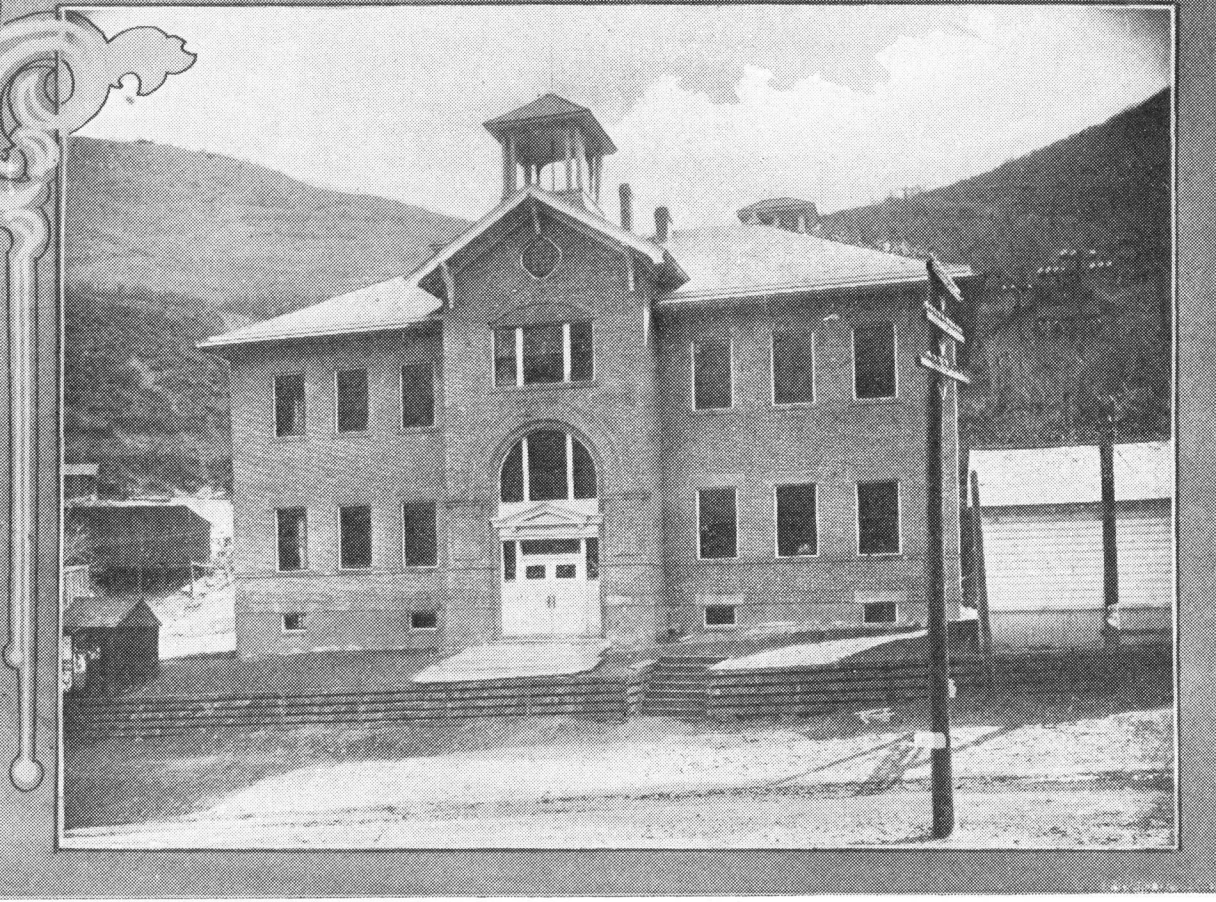
The Schools in the Bingham District

The school system in the Bingham District is highly developed, matters pertaining to education receiving first consideration at the hands of the public. Upwards of a thousand pupils are enrolled in the various grades and a corps of twenty-one teachers employed. The schools comprise part of the Jordan School District and represented by C. L. Countryman as trustee. They are under the supervision of Prof. E. E. Dudley, a graduate of Colby College, Maine, and one of the foremost educators in the West.

There are five commodious, modern equipped school buildings in the district. The large eight-room, two-story brick building in Main Bingham was erected at a cost of $30,000 and accommodates upwards of five hundred pupils. Highland Boy has a $10,000 brick school building of two rooms. A fine, two-story brick structure of three rooms was erected during the past year in Upper Bingham at a cost of $18,000. A new building is being erected at Lark to cost upwards of $15,000. One year ago the High School was established in spacious rooms over Canyon Hall. Thus is Bingham equipped with buildings and apparatus which would do credit to an older and better established community, and every advantage offered to secure a well-rounded education at home.



Upper Bingham School Building.



Main School Building—Bingham.

Statement of

Monthly Shipments of Ore from the Bingham District

Increase in Tonnage from January 1, 1905 to May 30, 1909

	1905 ton	1906 ton	1907 ton	1908 ton	1909 ton
January	72,404	88,106	66,462	149,055	223,781
February	65,798	69,479	69,774	161,962	236,613
March	77,891	85,905	80,791	165,412	310,723
April	90,063	86,120	120,404	177,165	368,275
May	80,063	90,955	118,094	203,598	385,305
June	89,330	83,955	121,764	227,682	
July	73,269	83,484	142,888	234,352	
August	89,523	84,694	163,219	231,757	
September	80,600	87,166	165,911	200,676	
October	87,166	88,177	182,427	238,700	
November	85,700	91,700	172,750	210,407	
December	83,603	79,900	153,665	268,723	
Totals	975,410	1,019,641	1,540,149	2,469,489	1,524,697

Grand total for four years and five months, 7,611,417 ton.

The month of May, 1909, broke all previous records with a total of 385,305 tons. A fair estimate will place June and July shipments close to this mark, and unusual activities during the present month indicate that August will pass the 400,000 ton mark.

The Utah Consolidated Mining Company

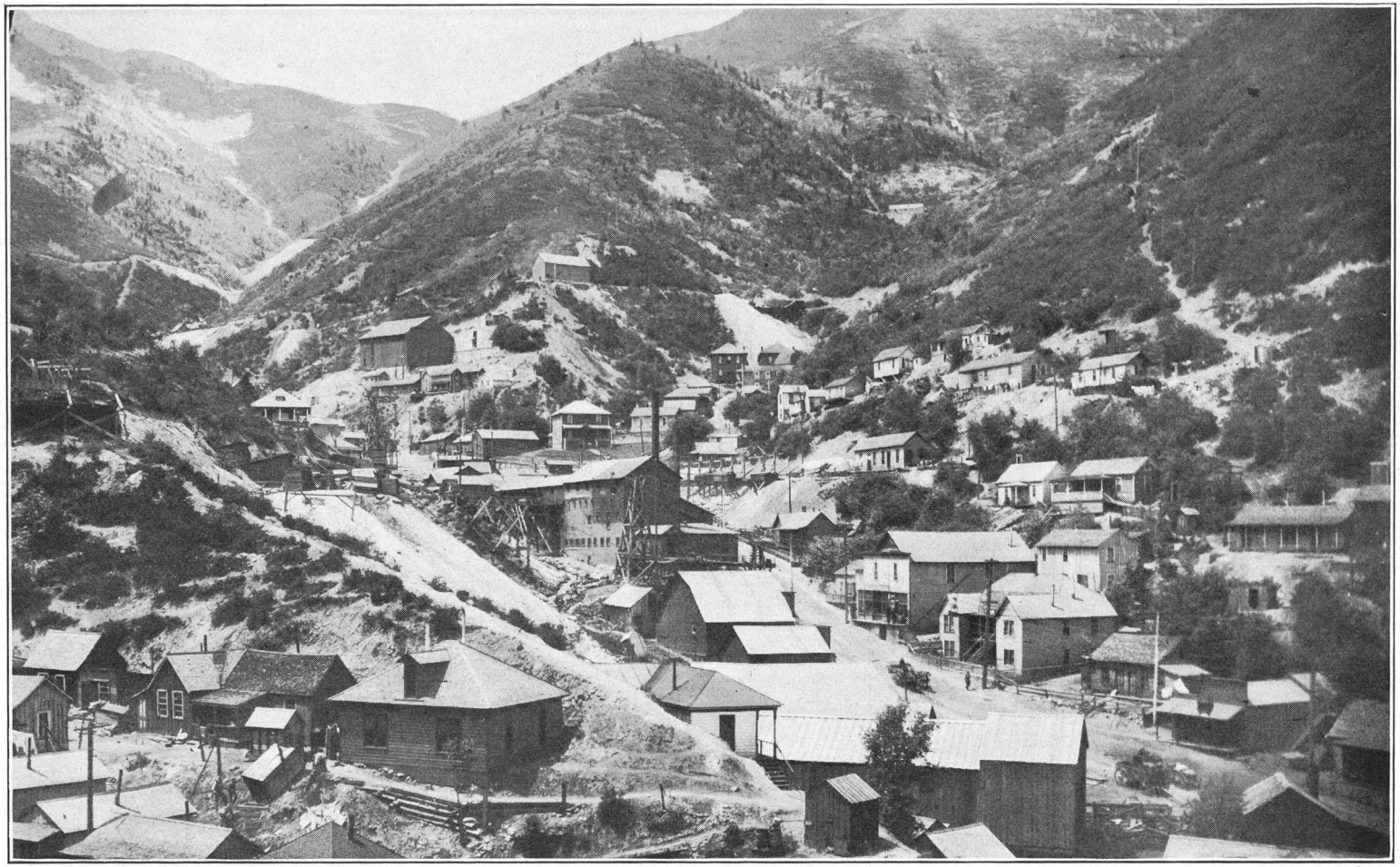
The Utah Consolidated Mining Company, or as it is known locally, The Highland Boy, is a corporation organized under the laws of New Jersey. The company owns 239 acres of patented ground at the head of Carr Fork, which comprise one of the most important copper mines in America. The company until recently, operated a most complete smelter at Murray, at a capacity of about 1000 tons daily, but litigation with the farmers caused its suspension. Upon the completion of the new International Smelter at Tooele the Highland Boy ore will be treated at that plant under a ten-year contract and the most advantageous conditions.

The mine is opened by seven tunnels of 1000 to 2500 feet in length, the lowest being 700 feet below the crest of the mountain. Two large electric hoists raise the ore from below the 700-foot elevl. A 12,700-foot aerial tramway conveys the ore from the mouth of the 700-foot level to the ore bins at the R. G. W. railway. The property is completely equipped with offices, large machine shops, framing mill, a 25-drill compressor, residences for superintendent, club house, etc.

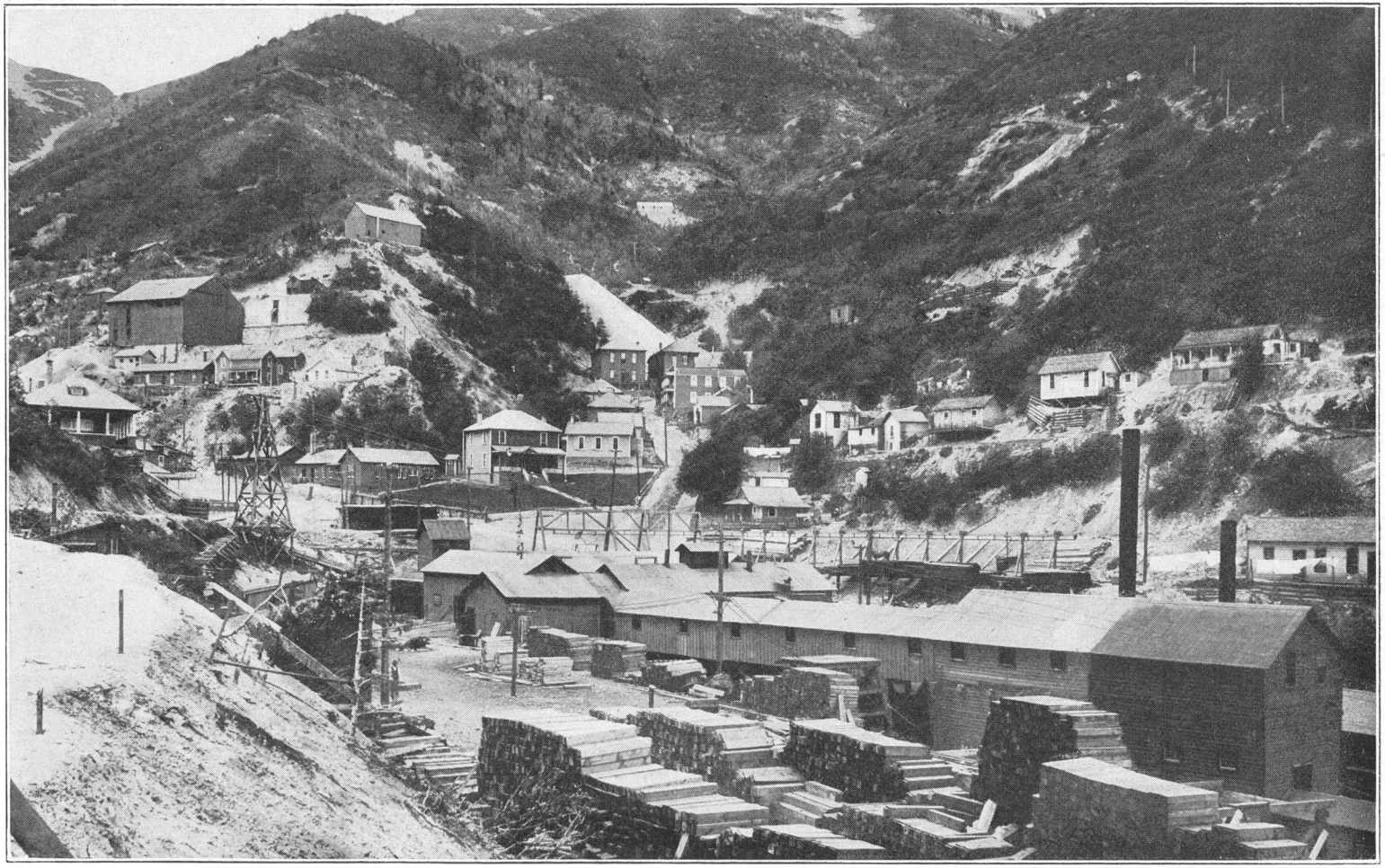
The ore bodies in the mine are largely metasomatic replacements in limestone and conceded to be the largest ore deposit of its character in America. The ores carry from 2 to 13 per cent copper and $2.50 combined gold and silver values per ton. Net costs of copper production in this mine average the lowest of any large mine in the world. There are six distinct ore bodies fully developed and several partially so. The largest of these being approximately 320 feet in width by 340 feet in length.

Under the experienced management of J. R. Risque four new ore bodies have been opened, any one of which at present shows years of ore in sight, the property well and economically sustained and development work in ratio with ore extraction. The work of extracting the enormous ore bodies is under the able superintendence of M. Riney, who combines the various systems of mining in a unique, safe, and economical method. The mine has upwards of fifteen miles of workings and a large area of ground yet to draw from. The present output is about 1000 tons daily, which is consigned to the Garfield Smelter and can be increased at any time to whatever amount the management may desire. The company has distributed to its shareholders $8,000,000.00 in dividends and is equal under the present management to all conditions in mining.

The revival and impetus of mining in Bingham dates to the time when Samuel Newhouse and Thomas Weir exploited "The Old Highland Boy." This was the first practical working of sulphide copper ore in Bingham and the success of this mine determined the future prosperity of the camp.



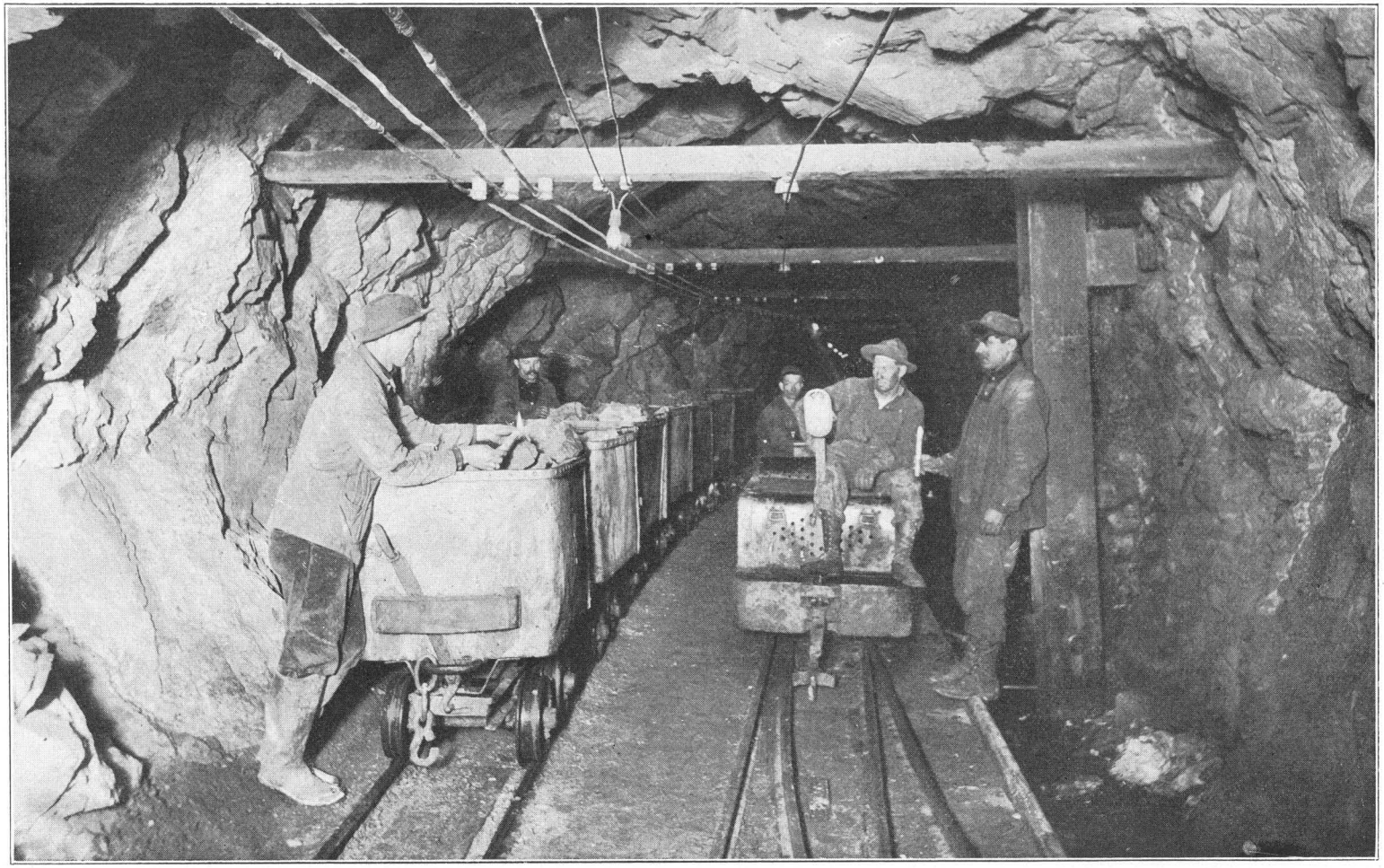
Central ridge and gulch to right showing Highland Boy area and a portion of town in foreground. Bingham & New Haven Co. in gulch to left.



Direct View of Highland Boy Offices, Superintendent's Residence, Club House, and Machine Shops and Tramway Headhouse at Mouth of 700-ft Level.

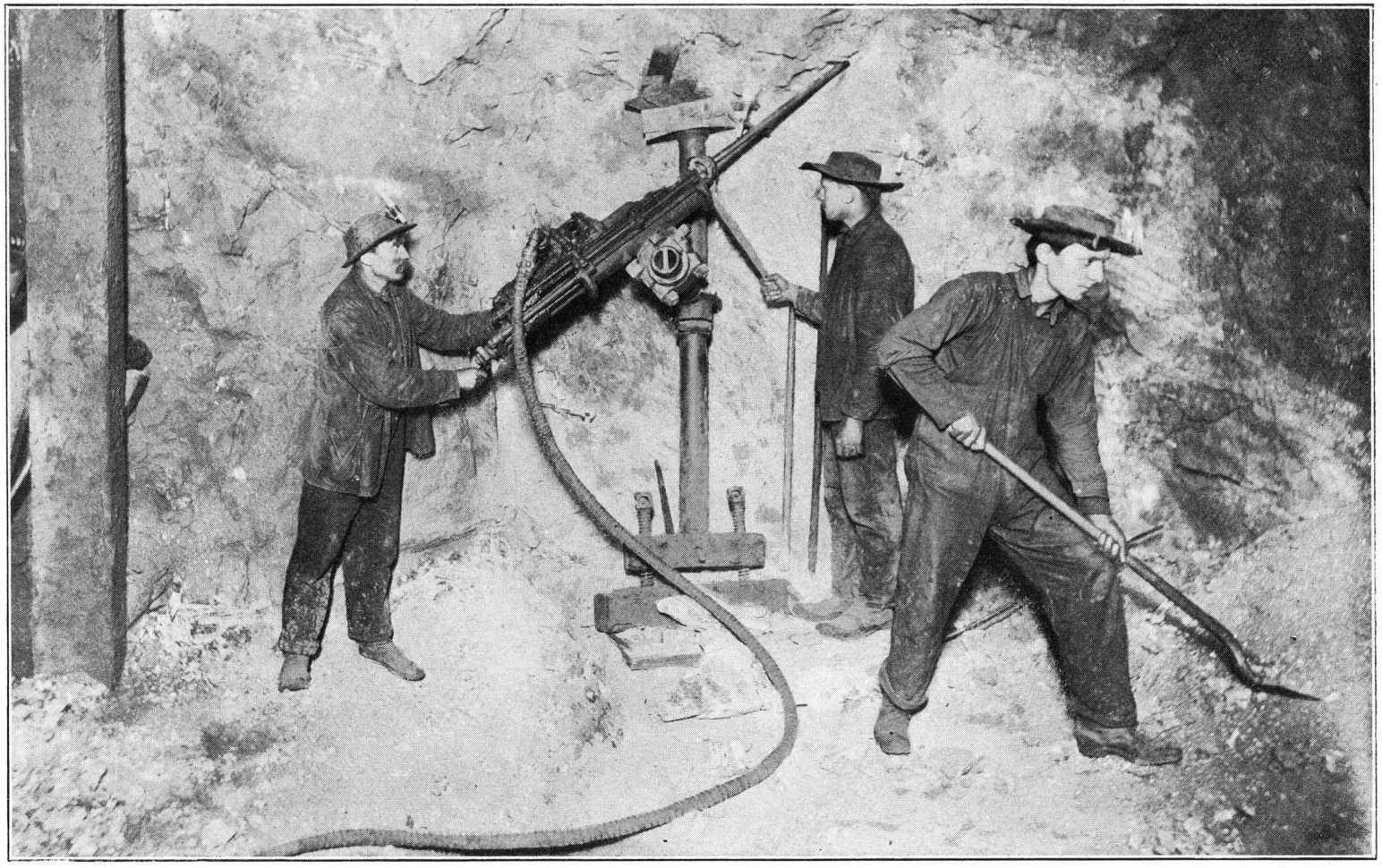
Town of Highland Boy.

Square Setting in Stope of Highland Boy Mine.

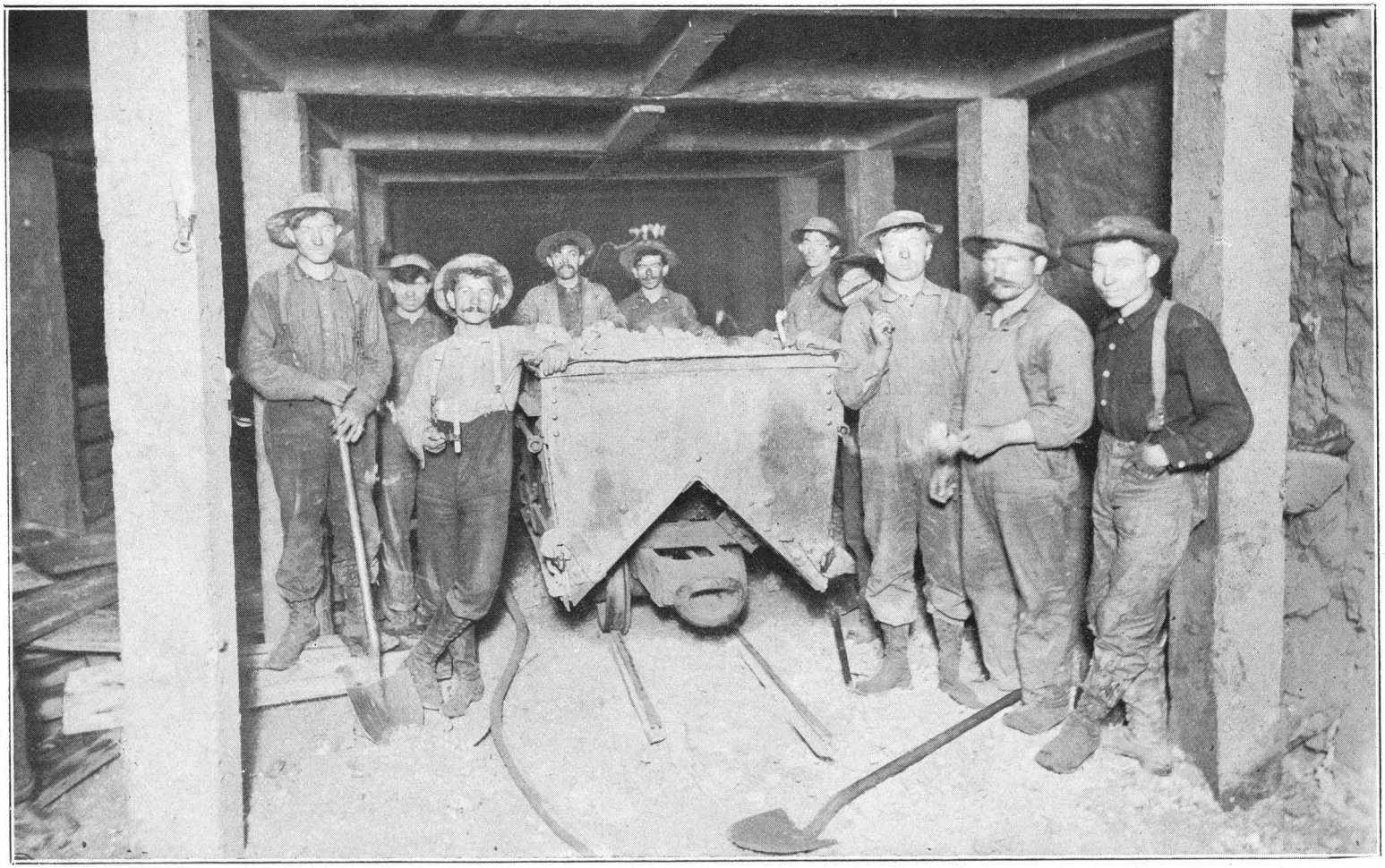


Ore Train in No. 7 level Highland Boy Mine.

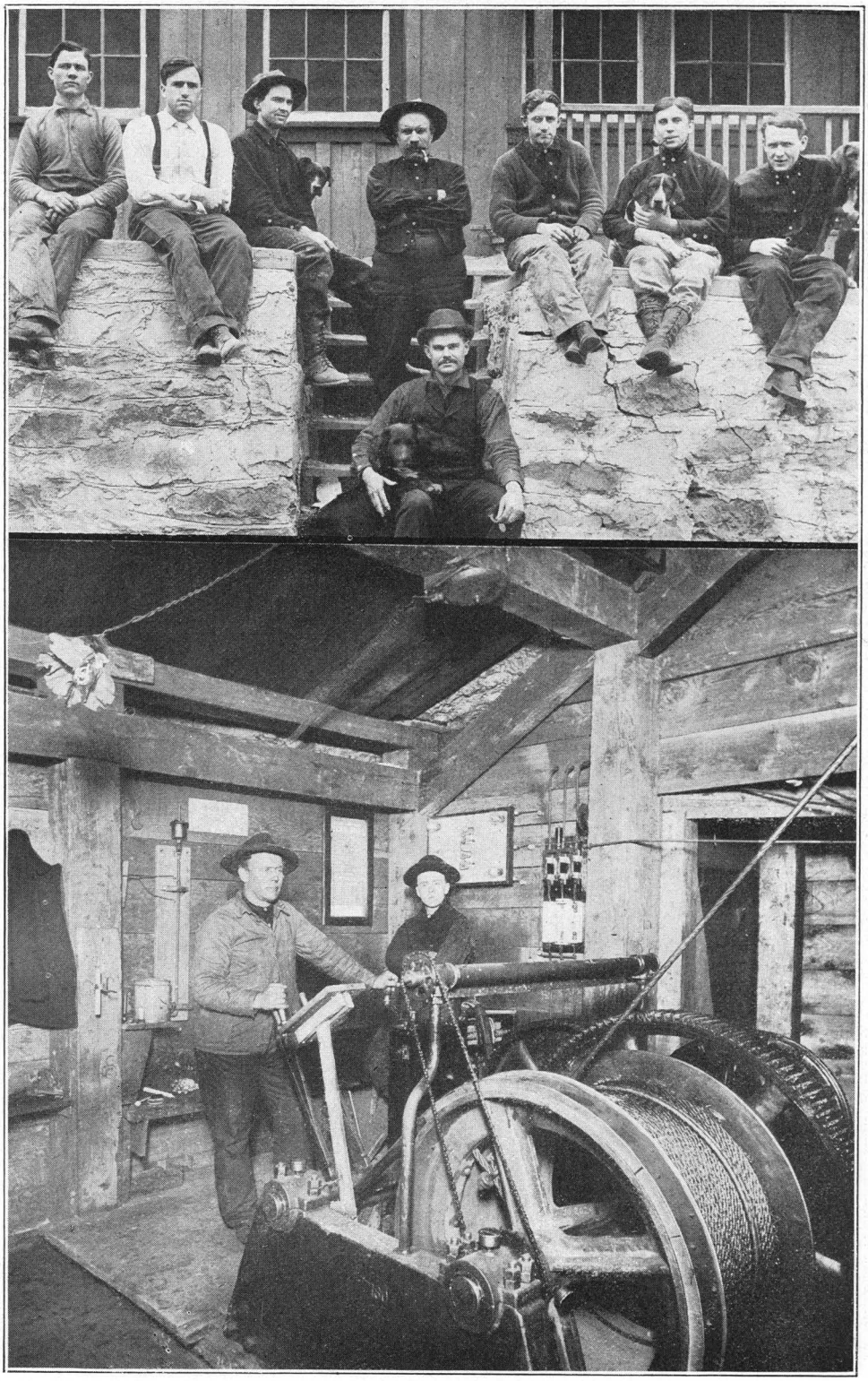
Underground Scene in Drifts of Highland Boy Mine.



Machine Drill in Operation Highland Boy Mine.

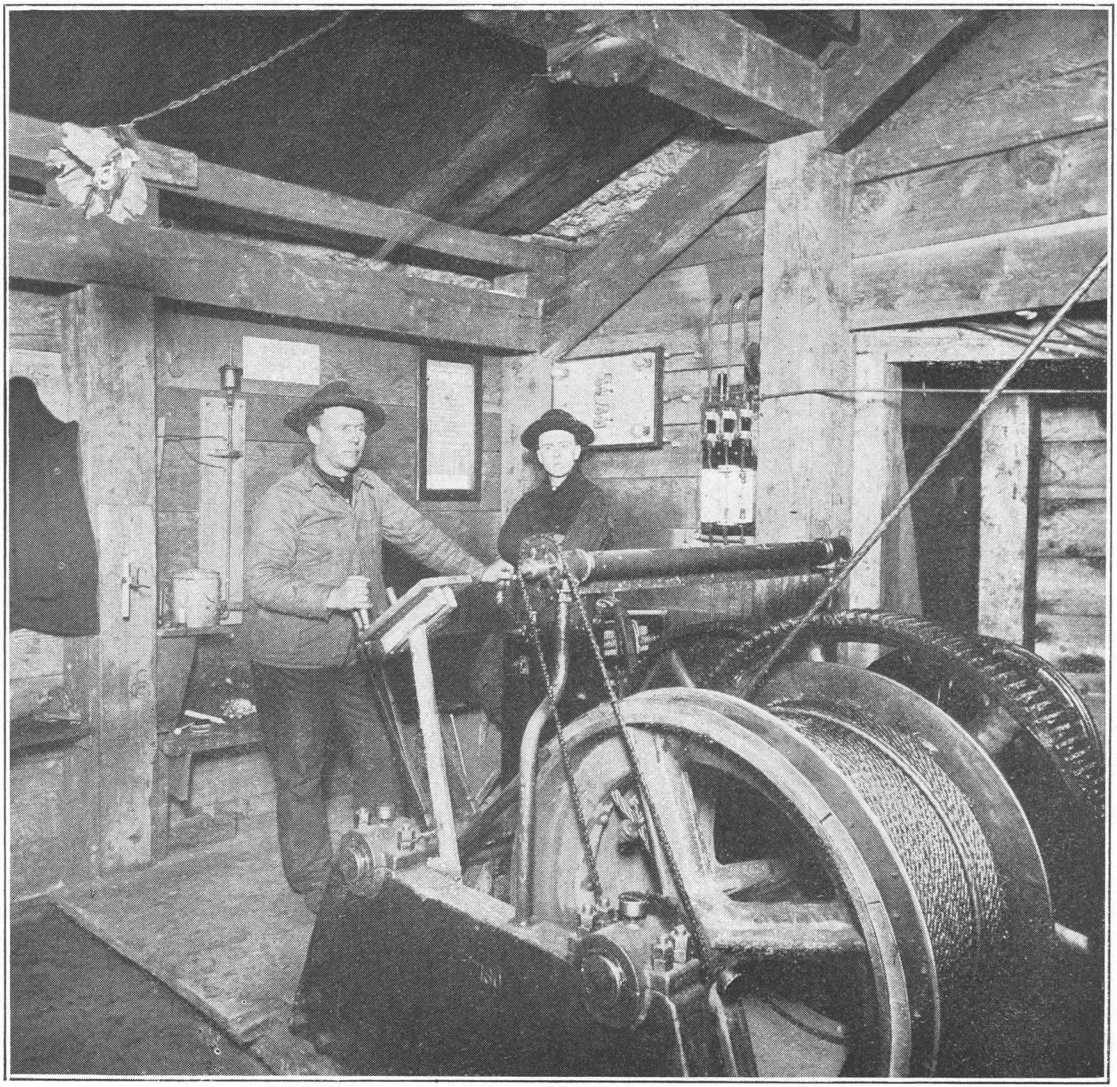


Scene in Stope of Highland Boy Mine.

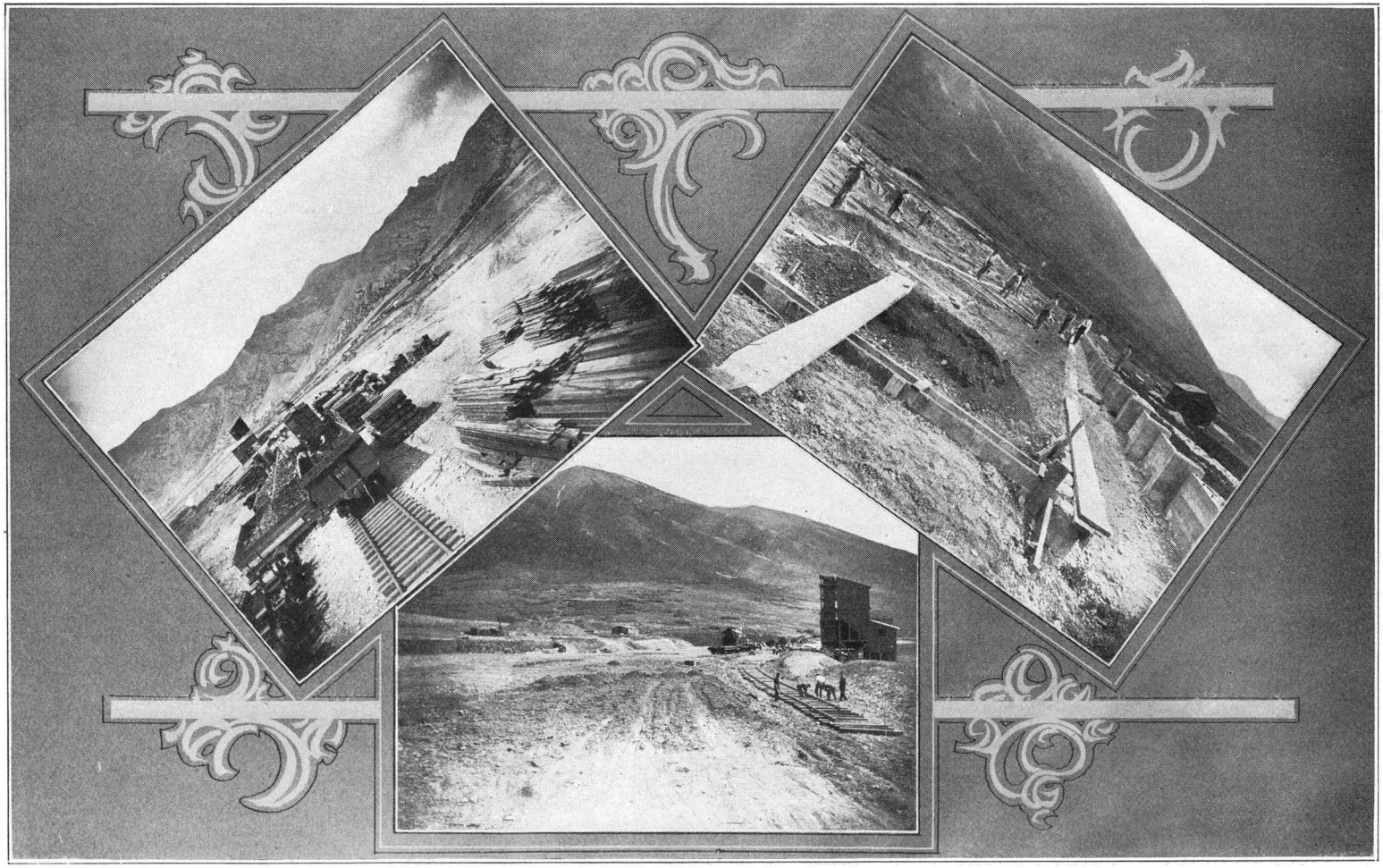


Superintendent and Clerks in Highland Boy Office.
Electric Hoist at Shaft in No. 7 Level.

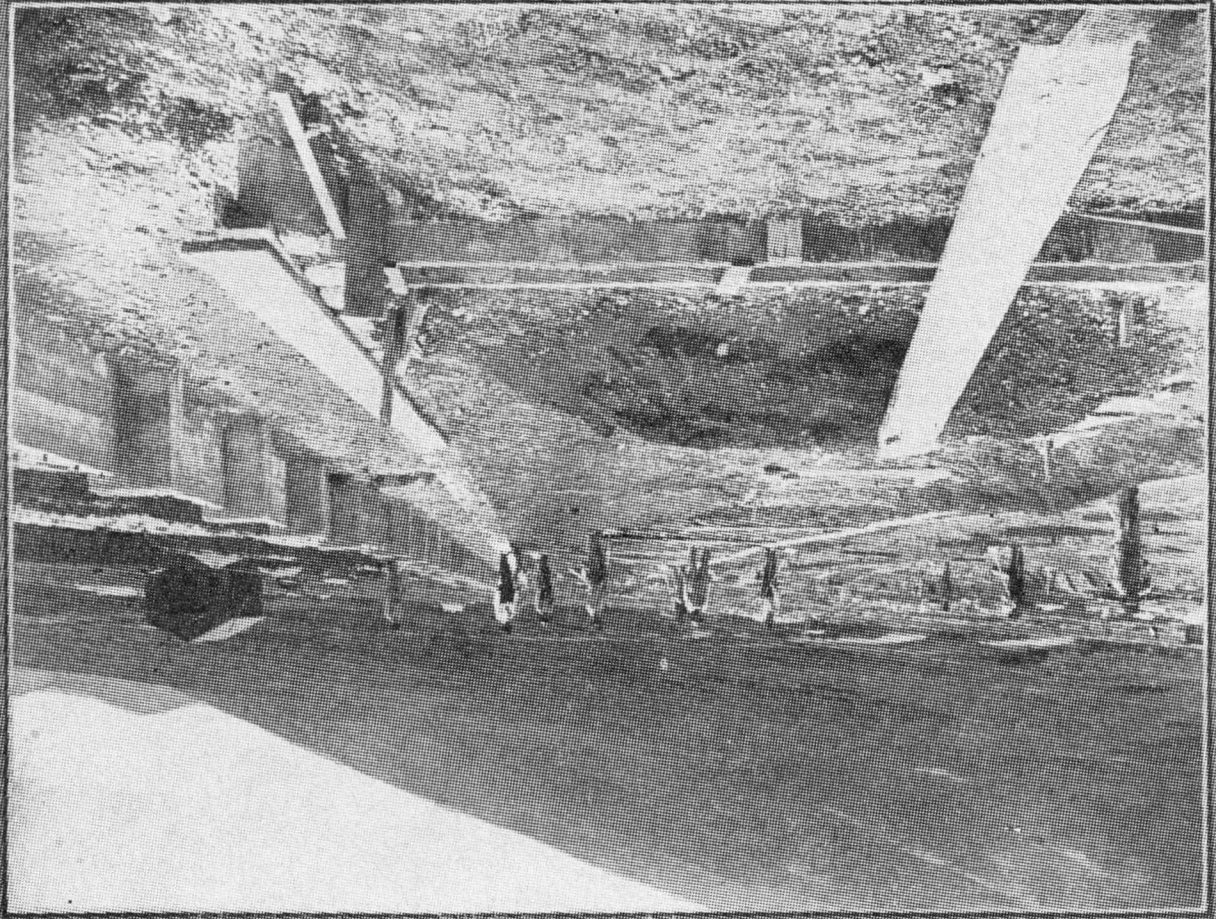
Superintendent and Clerks in Highland Boy Office.



Highland Boy Electric Hoist at Shaft in No. 7 Level.

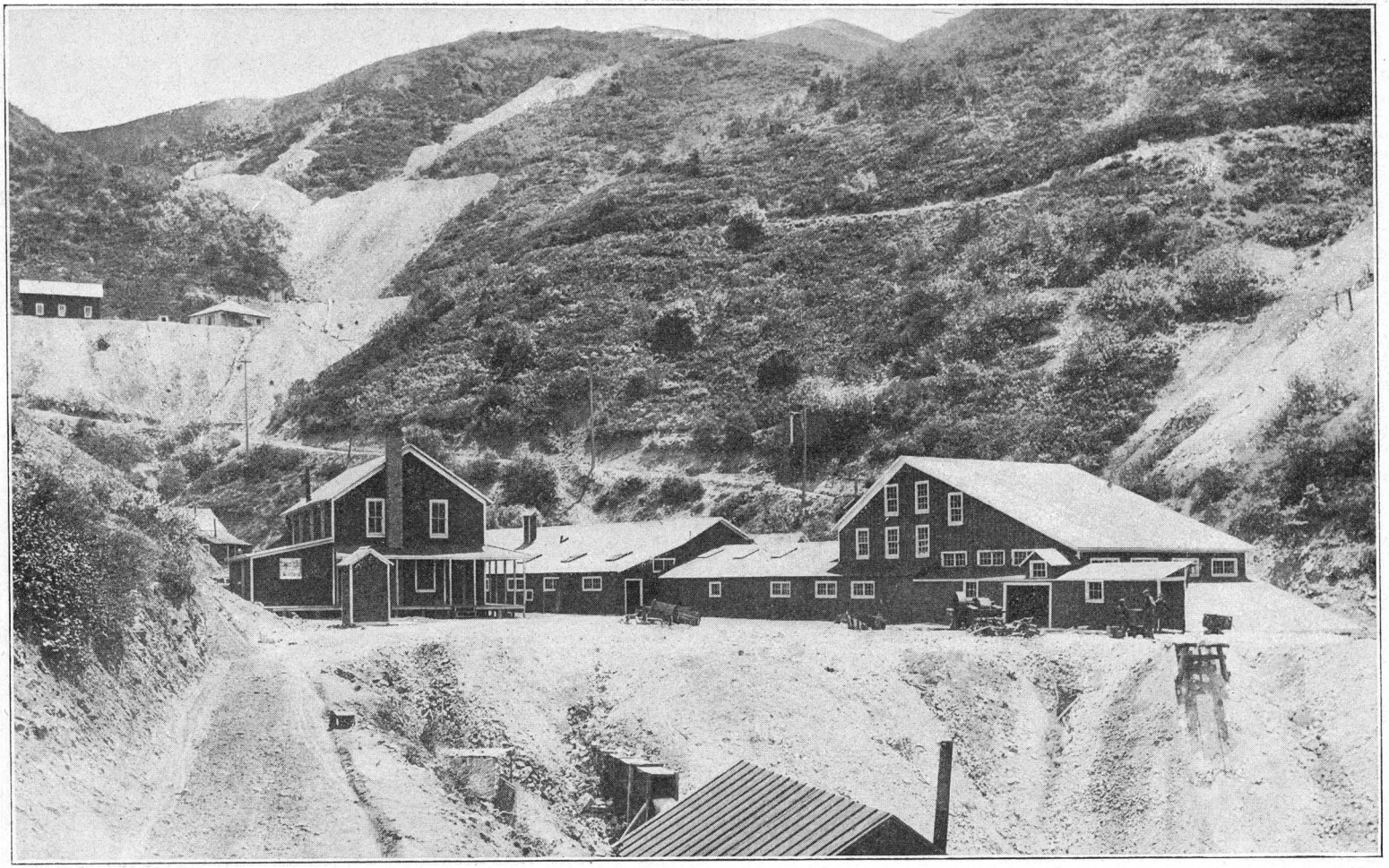


Site and Construction Work of International Smelting Co., Pine Canyon.

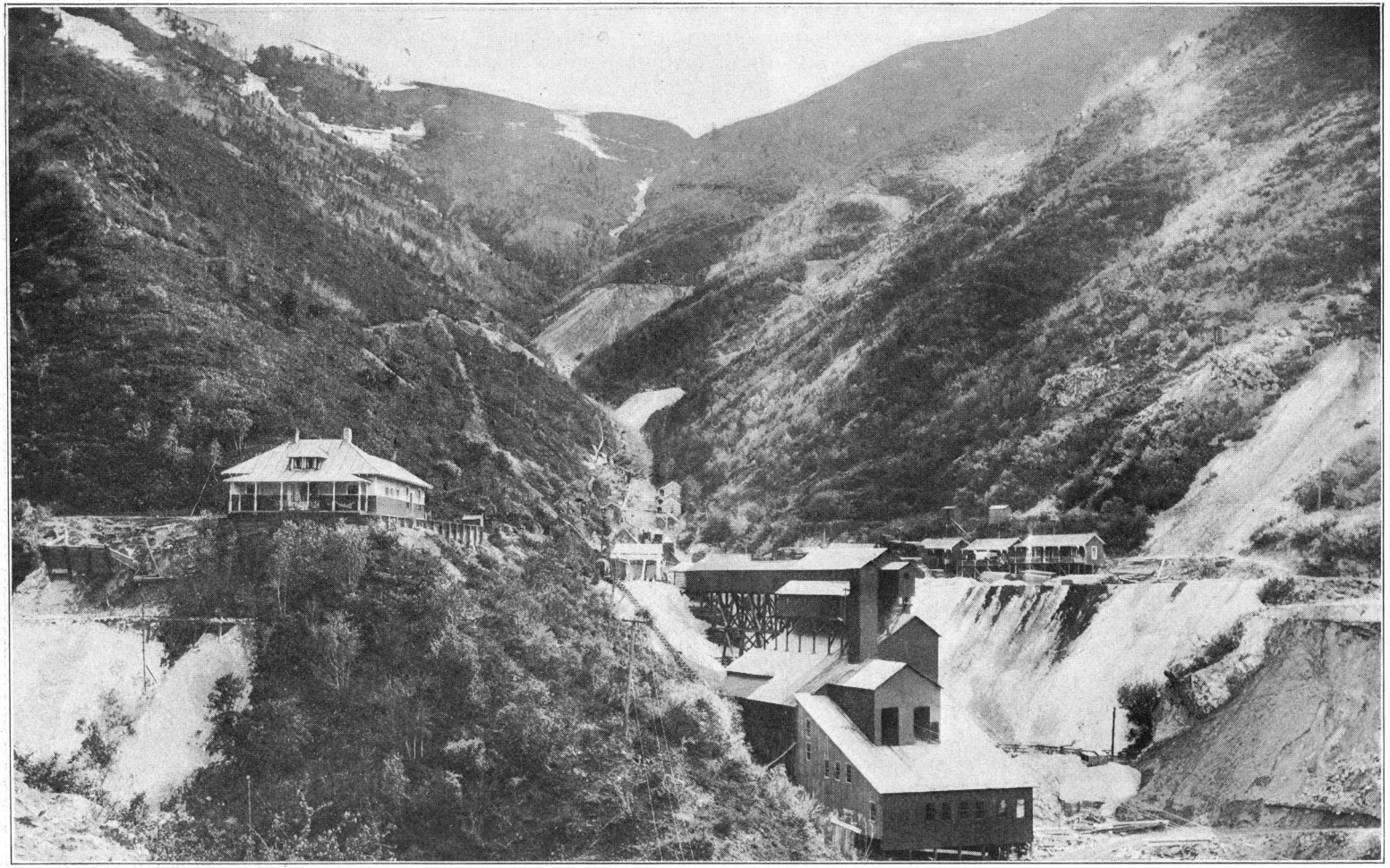


Scene in Highland Boy and Bingham-Central Standard Properties Up Gulch in the Center.

Muddy Gulch—Bingham-New England (center)—Standard-Central (upper right portion)—Last Chance (above the center)—Boston Con. (upper left.)



Mill and Offices of Bingham-New England Property.



Concentrating Mill and general view of property of the Bingham-New Haven Copper and Gold Mining Company.

New England Gold and Copper Mining Company

The property of this company embraces 110 acres of ground lying between the Highland Boy and Boston Consolidated. The workings consist of between four and five miles of tunnels, well timbered and scientifically worked.

The concentrating mill is well equipped with a crusher, rolls, Huntington mill, jiggs, tables, etc., driven by two 30-horse power motors. There is also an eight-drill compressor driven by a 100-horse power motor. Current for the various motors is furnished by the Telluride company. There is also a blacksmith shop, saw mill for preparing the timbers for the mine, superintendent's house, and other buildings, all of a substantial and convenient character.

The capacity of the mill is about 50 tons per day and the concentrates of gold, silver, lead and copper are of a very satisfactory value and are disposed of in the open market. Production goes on from year to year without interruption under the competent management of Superintendent David Cook.

The stockholders of the company are nearly all New England men. The officers are residents of Boston and consist of James F. Williams, president; E. E. Abercrombie, vice-president and managing director; Geo. F. Bradstreet, treasurer. On Manager Abercrombie's last visit to the property in July he expressed himself as highly pleased with the work being done in both the mine and mill.

Bingham-New Haven Copper and Gold Mining Company

The Bingham-New Haven Copper and Gold Mining Company was organized in October, 1902, with 400,000 shares stock, par value $5.00; 228,00 shares have been issued, the balance remaining in the treasury. At that time the company took over the Zelnora, Frisco and other claims, since which time by purchase it now has increased its holdings to 150 acres of patented ground.

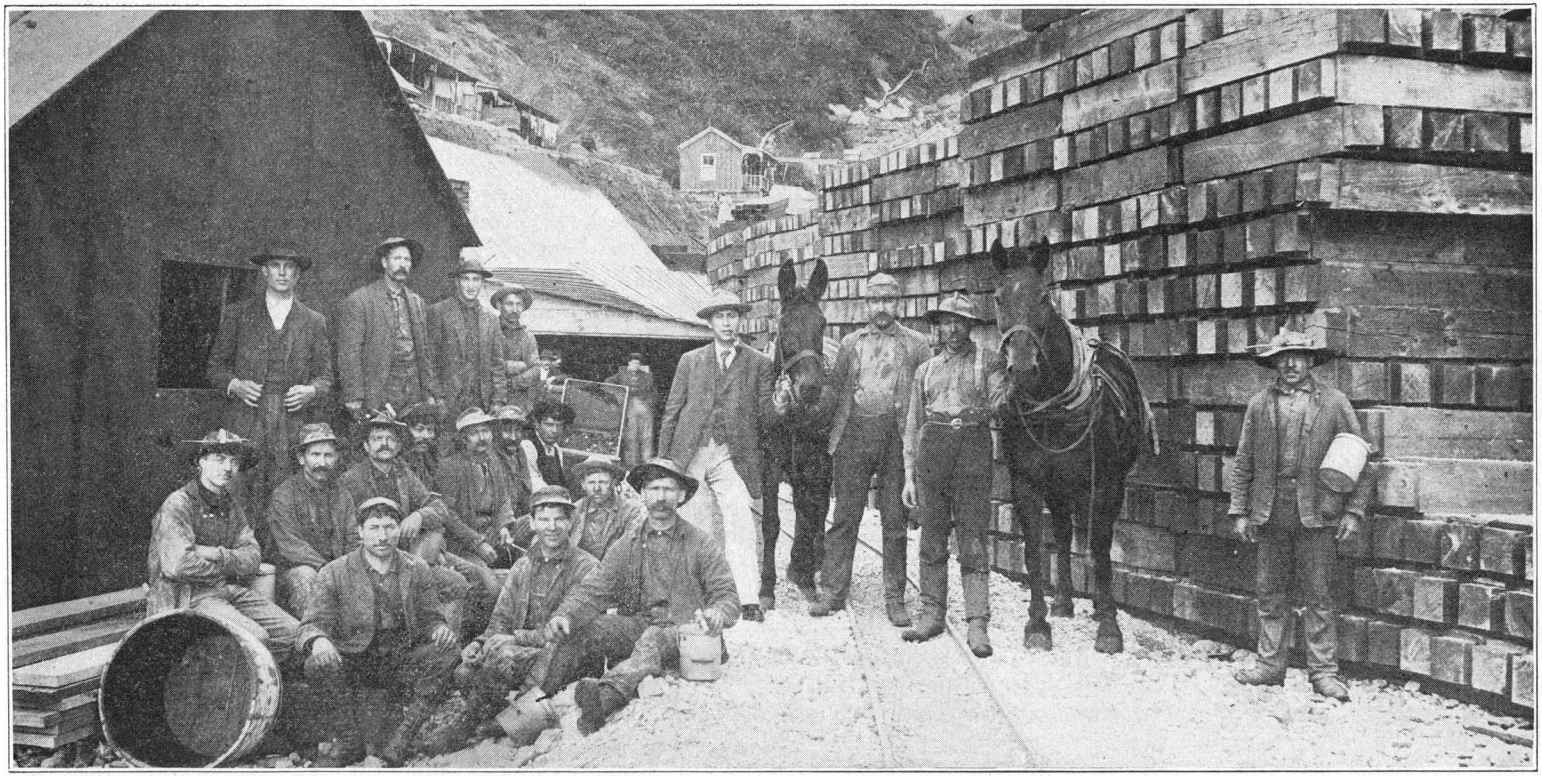
The officers of the company are: L. E. Stoddard, president; E. B. Critchlow, vice-president; T. W. Farnam, secretary and treasurer; C. H. Doolittle, general manager.

Since operations were begun about six miles of underground workings have been driven and all the modern equipment necessary to the successful operation of a mine have been installed. A concentrating mill, air compressor plant and aerial tramway from mine to railroad constitute part of their equipment. They employ about 75 men.

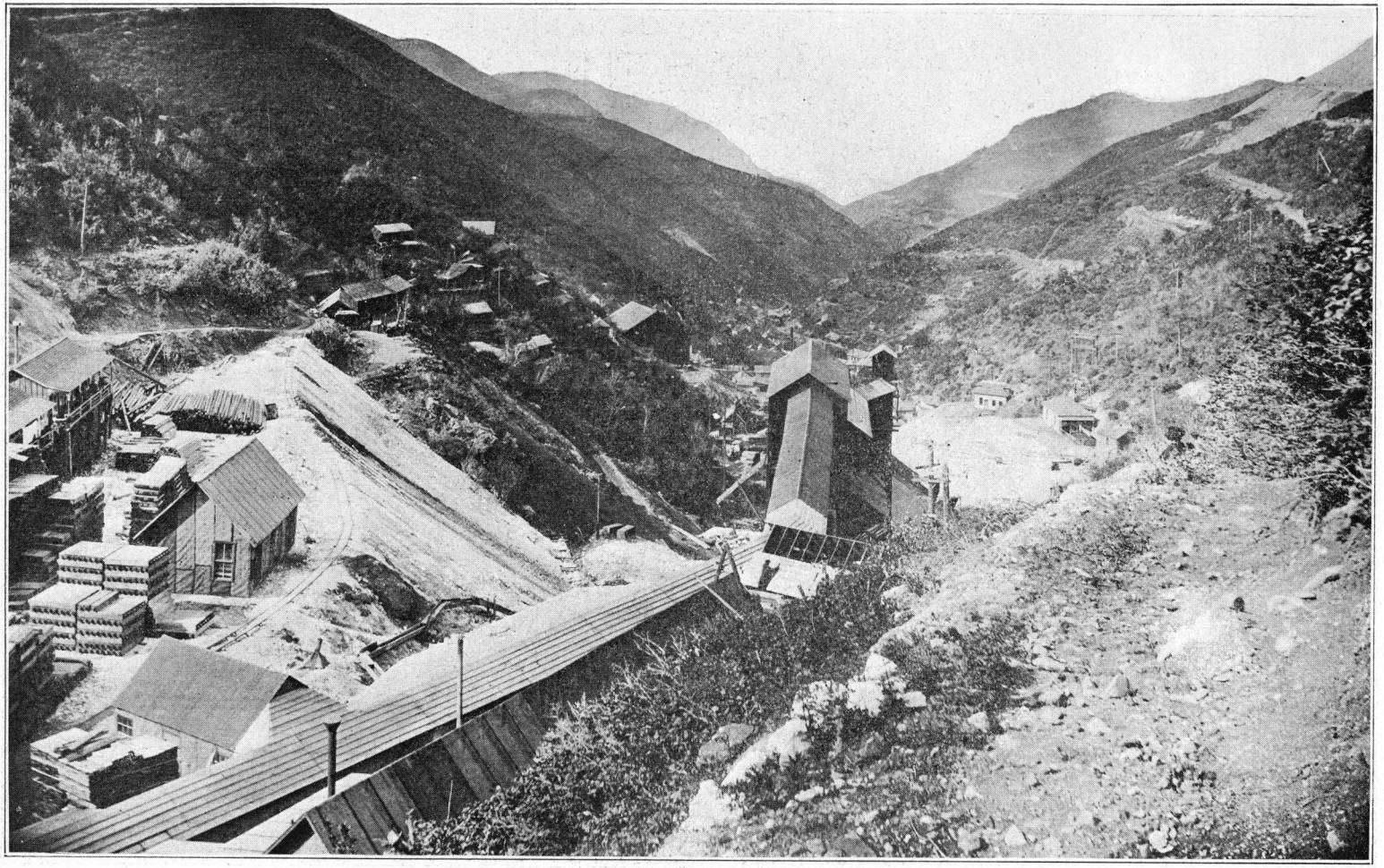
The ore bodies occur in limestones and quartzites. The mines produces lead ores and copper ores, and has shipped to date approximately 35,000 tons of the former and 25,000 tons of the latter.

The mine has paid three dividends of 10 cents each per share.

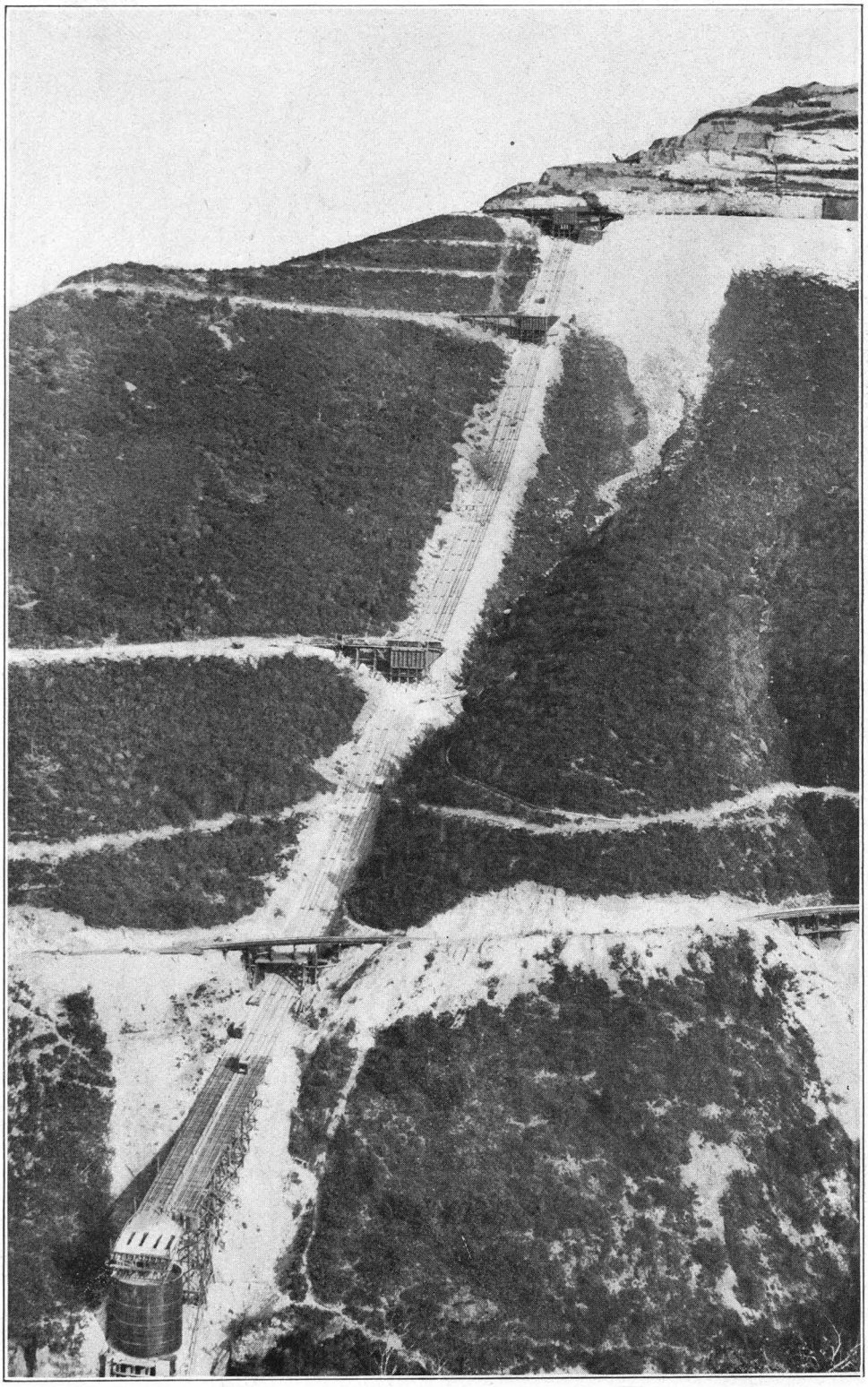
This mine is looked upon as one of the steady producers and with the large bodies blocked out has a long and prosperous life before it.



Tunnel Entrance Bingham and New Haven Mining Co.



Looking Down Carr Fork from Bingham-New Haven Mine.



—Photo by Shipler.

Boston Consolidated Gravity Tramway—Ore Bin at the Base.

Boston Consolidated Mining Company

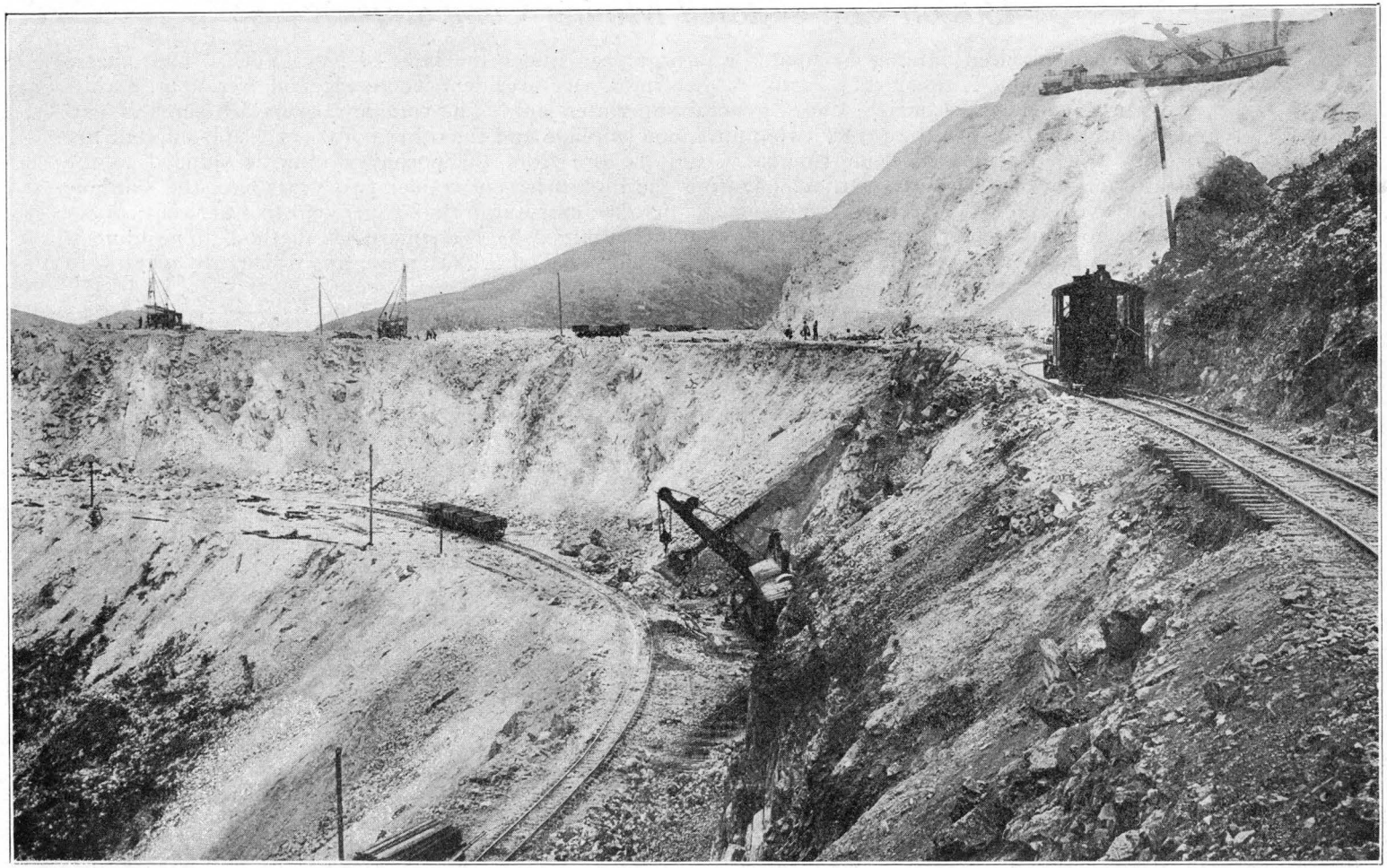
The Boston Consolidated Mining Company was organized under the laws of New York. The officers are: Colonel Samuel Newhouse, president; Frank A. Schirmer, vice-president, secretary and treasurer; Lafayette Hanchett, general manager; Louis S. Cates, general superintendent. The company owns 378 acres of patented ground in the camp. This comprises two mines, one sulphide and the other porphyry. The sulphide ore is shipped directly to the Garfield Smelting Company, and the ore from the porphyry mine is shipped to the giant concentrator of the company at Garfield. During the high prices of copper two years ago, the sulphide mine produced an average of 1000 tons of smelting ore per day, carrying from 2½ per cent to 3 per cent copper and about $4.50 in gold and silver values. The sulphide ore is mined by the square set method. The mine is equipped with three large air compressors, a blacksmith shop and machine shop, in which all repairs to machinery can be made.

The porphyry deposits of the company are worked by four steam shovels of the largest type, thirteen locomotives and 160 dump cars. About seven miles of railroad track reach from the surface workings to the stripping dumps. When operating at full capacity this equipment has handled as high as 16000 tons of stripping in twenty-four hours. The ore and stripping are broken by drilling well drill holes, six inches in diameter and seventy feet deep. These are then sprung and loaded with heavy charges of 35 per cent dynamite. The largest shot ever put off by this company contained seven tons of dynamite. This blast shattered 300,000 tons of stripping. Besides its steam shovel operations, the company is mining the porphyry deposits by an underground caving system, the application of which is entirely new and devised by the present management. The costs of this method are so low as to raise the question whether it is not as cheap as the steam shovel method.

To get the ore down the steep mountain side the company has constructed two complete surface tramways 2100 feet long and 900 feet vertically between the headhouse and ore bin. Each tram is of the balance skip type and loads twelve tons of ore to each skip load. These tramways have a capacity of 18,000 tons per day but at present about 3100 tons are being loaded daily, this being the capacity of the company's mill at Garfield. The ore bin at the base of the tramway is unique, being the only one of its kind in the country. It is a cylindrical steel tank 70 feet in diameter and 110 feet high and has a capacity of 3000 tons.

The company owns 150 acres of the mineralized porphyry. Of this, 80 acres are pay value. With this acreage there is developed about 90,000,000 tons of payable ore. At the rate the company is now mining, approximately a million tons a year, it will take ninety years to exhaust this deposit. However, this company is contemplating the doubling of its capacity to 6000 tons per day within the near future.

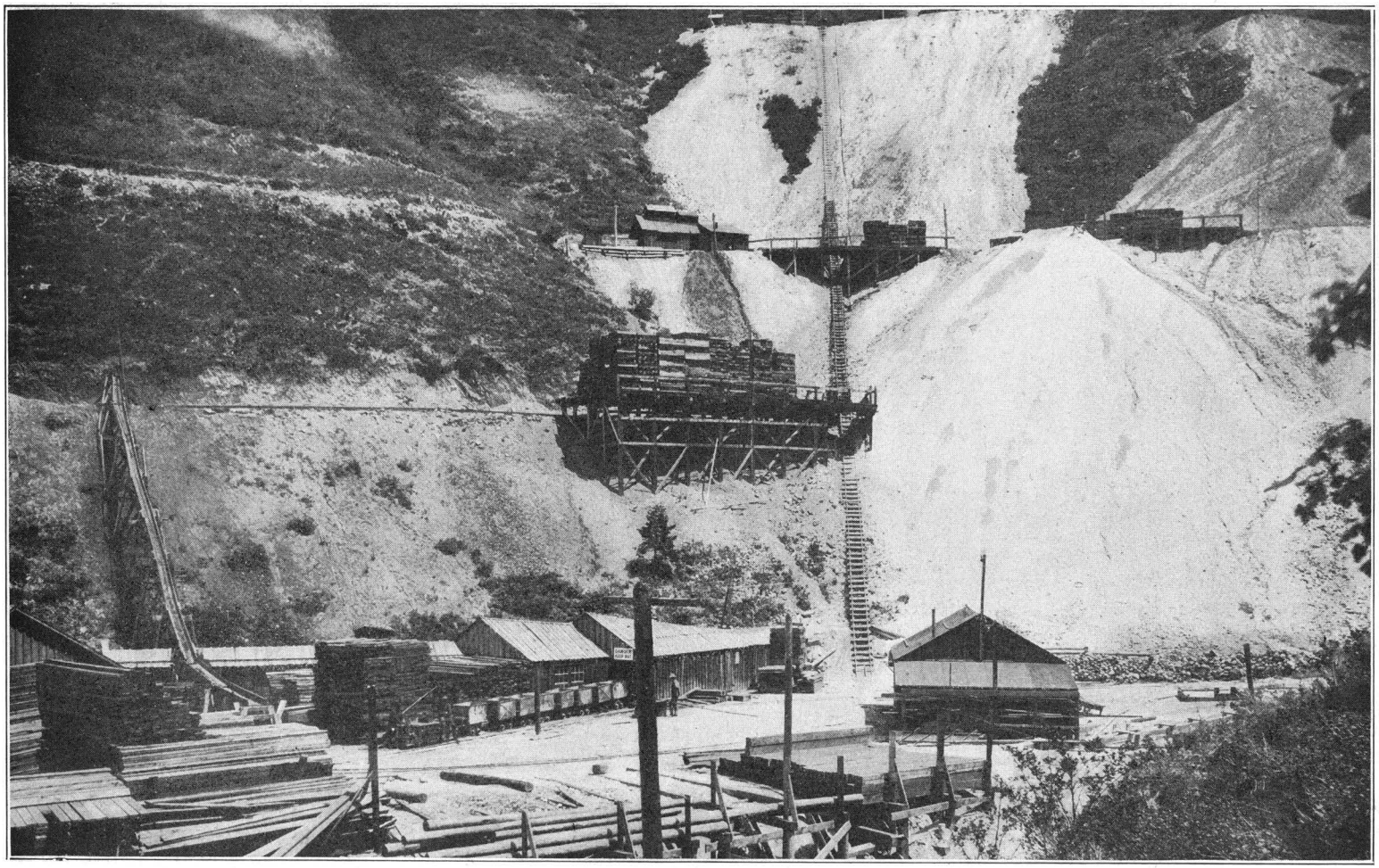
This article would not be complete without mention of the company's giant mill at Garfield. The plant has a capacity of 3000 tons, is in six units of 500 tons each, and was erected at a cost of $1,500,000. The mill is 370 by 555 feet in size, and is built of steel and concrete. Equipment includes 18,000 ton main ore bins, four Gates' crushers, 312 Nissen individual stamps, 284 Wilfley tables, 256 Johnson tables and 312 Callow settling tanks. The mill has no elevators, all material being handled by gravity. Water is supplied from springs on the mill site.



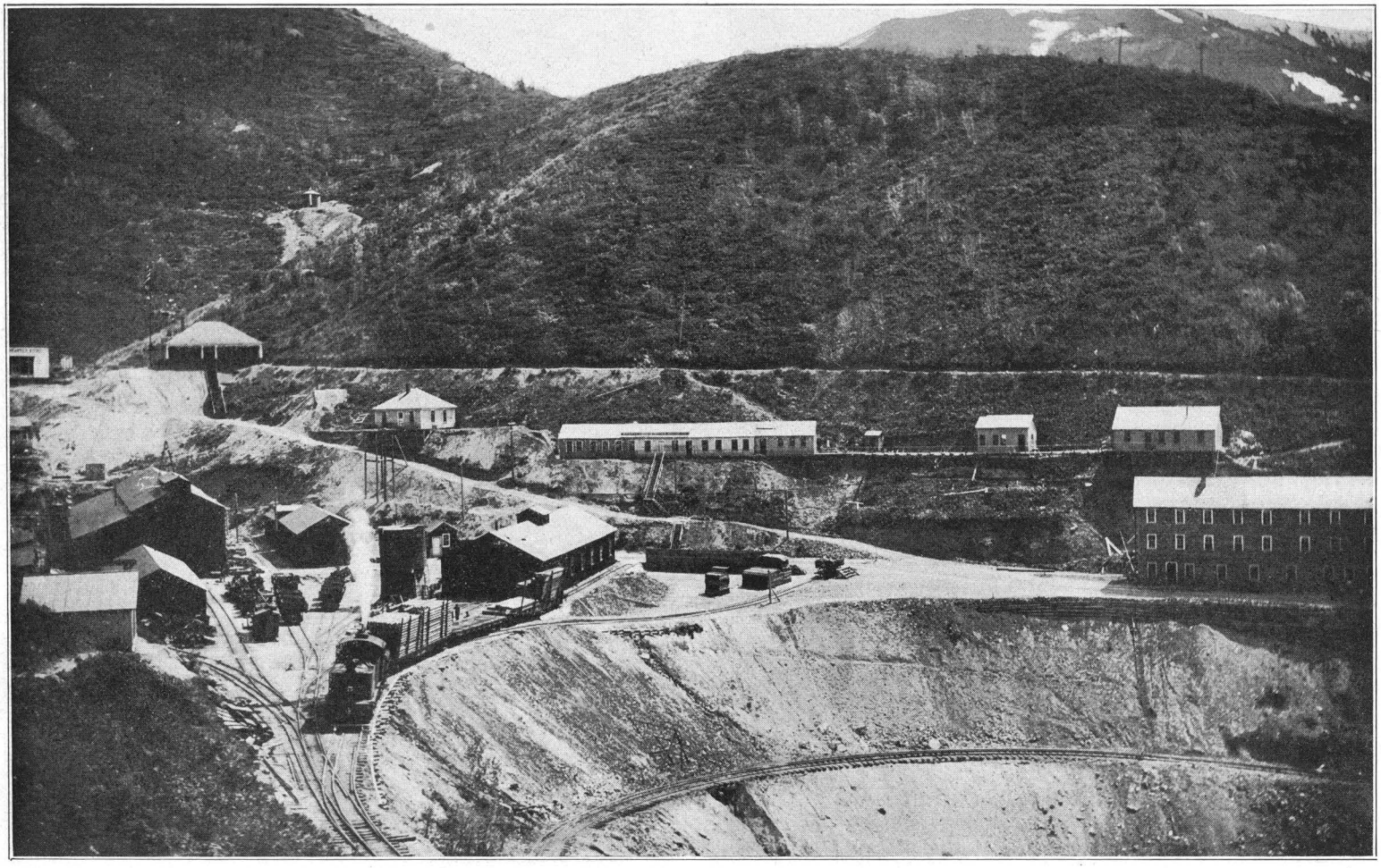
Surface Working at Boston Consolidated Mine. —Photo by Shipler.

Another Scene at Boston Consolidated Surface Workings.

—Photo by Shipler.



Tunnel Entrance at Boston Consolidated Sulphide Mine—Electric Ore Train at Tunnel Entrance.



Offices, Club House, Bunk House and Machine Shop—Boston Con. Mining Co.

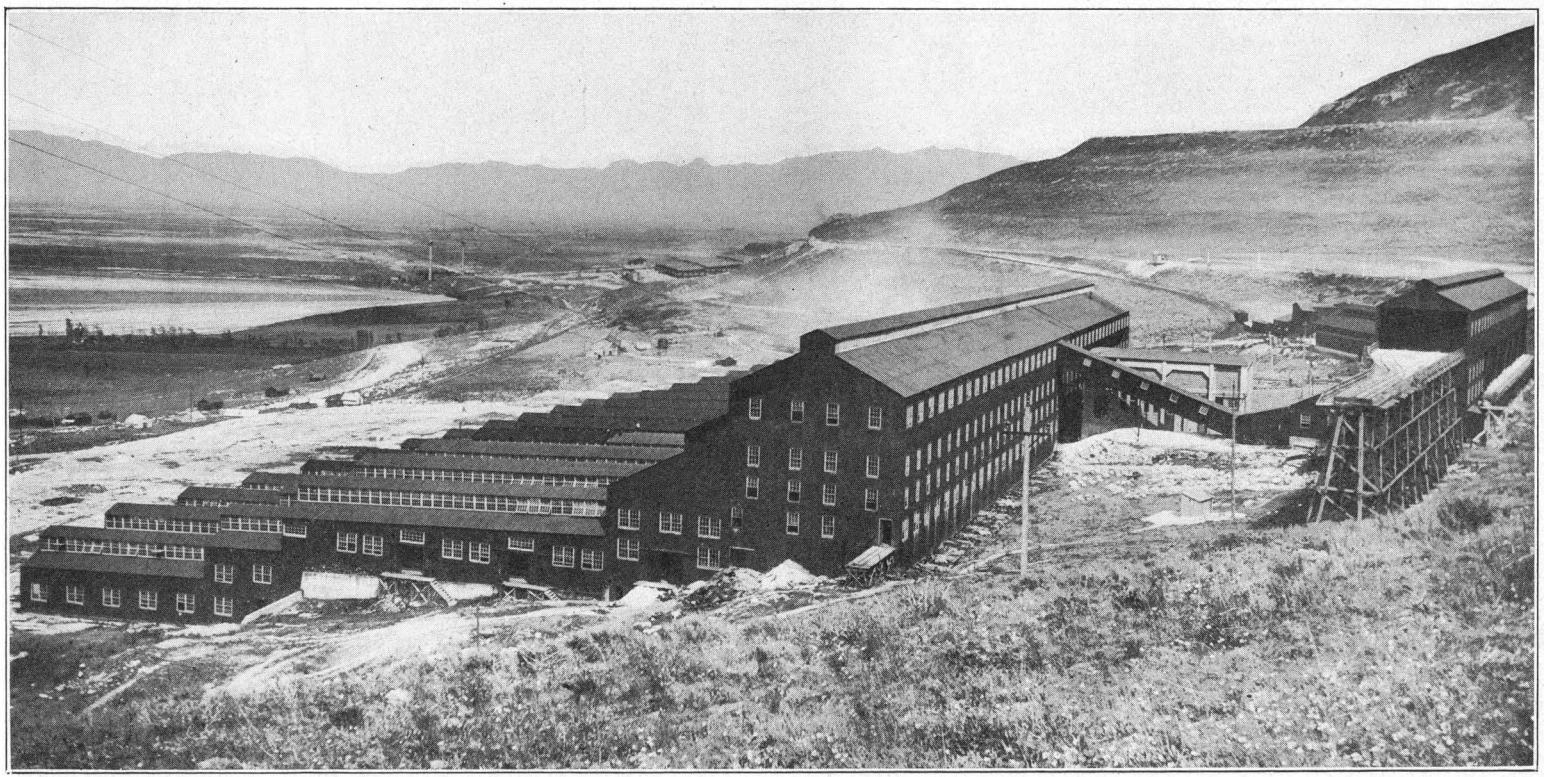
Before the Blast.

Blasting—Boston Consolidated. —Photo by Lucas.

Before the Blast.

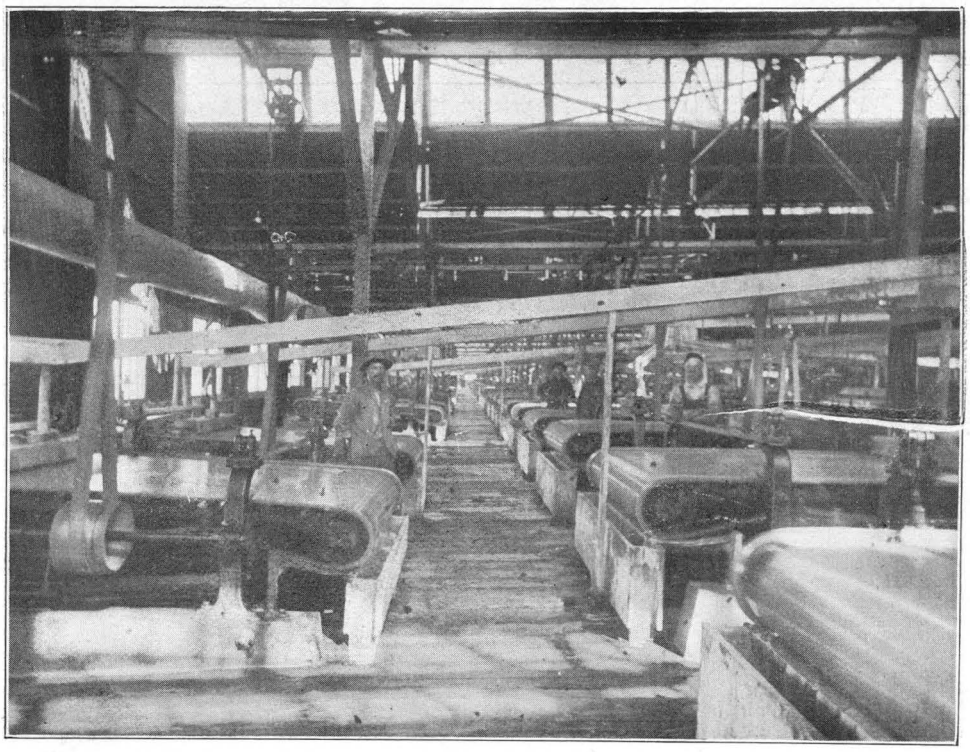
Blasting—Boston Consolidated. —Photo by Lucas.

Group of Miners at Boston Consolidated.



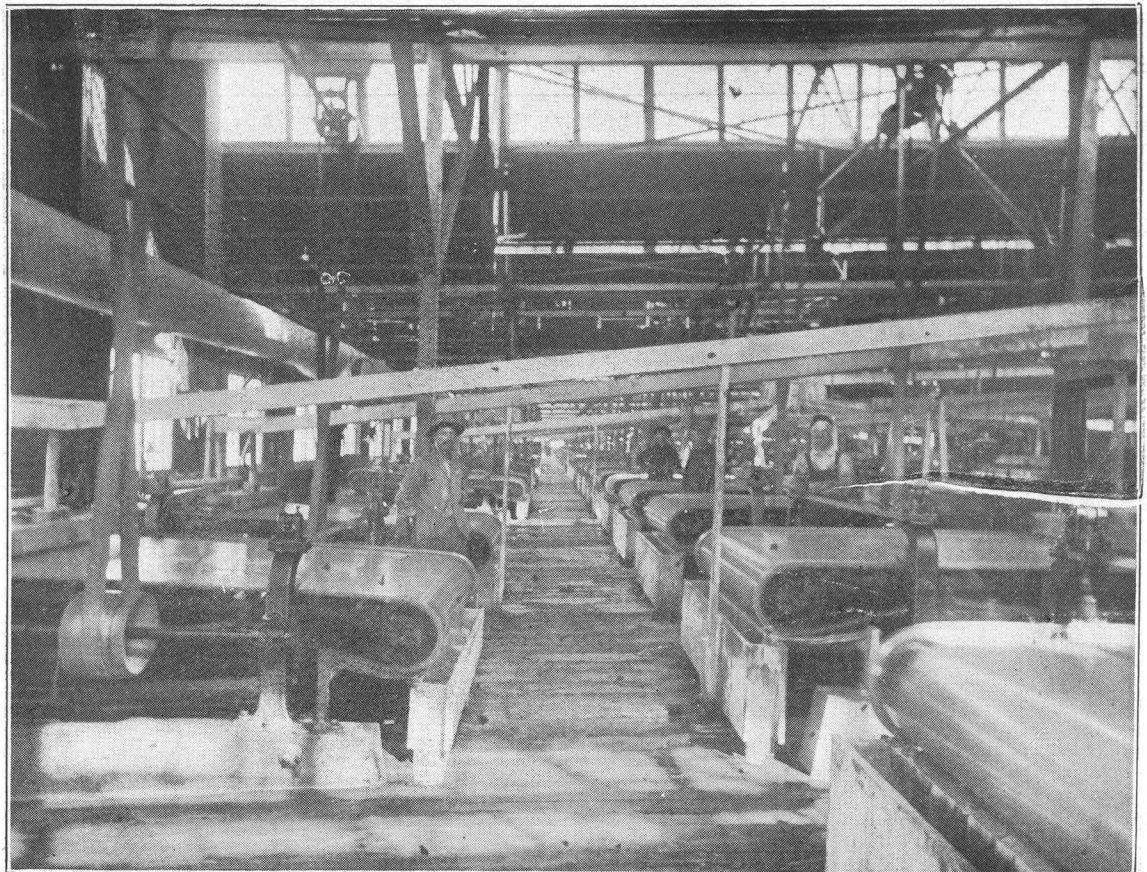
Boston Consolidated Mill—Garfield.

Vanners—Boston Consolidated Mill.

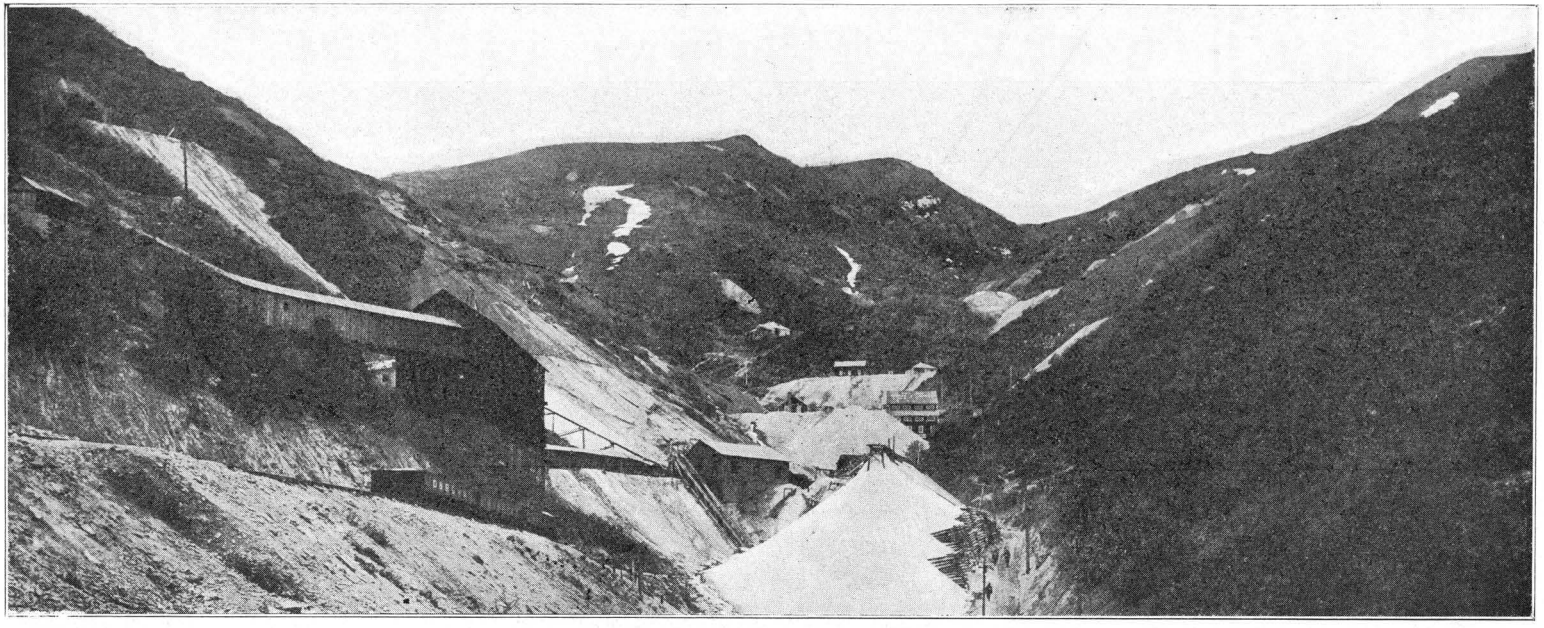


Wilfley Tables—Boston Consolidated Mill.

Vanners—Boston Consolidated Mill.



Wilfley Tables—Boston Consolidated Mill.



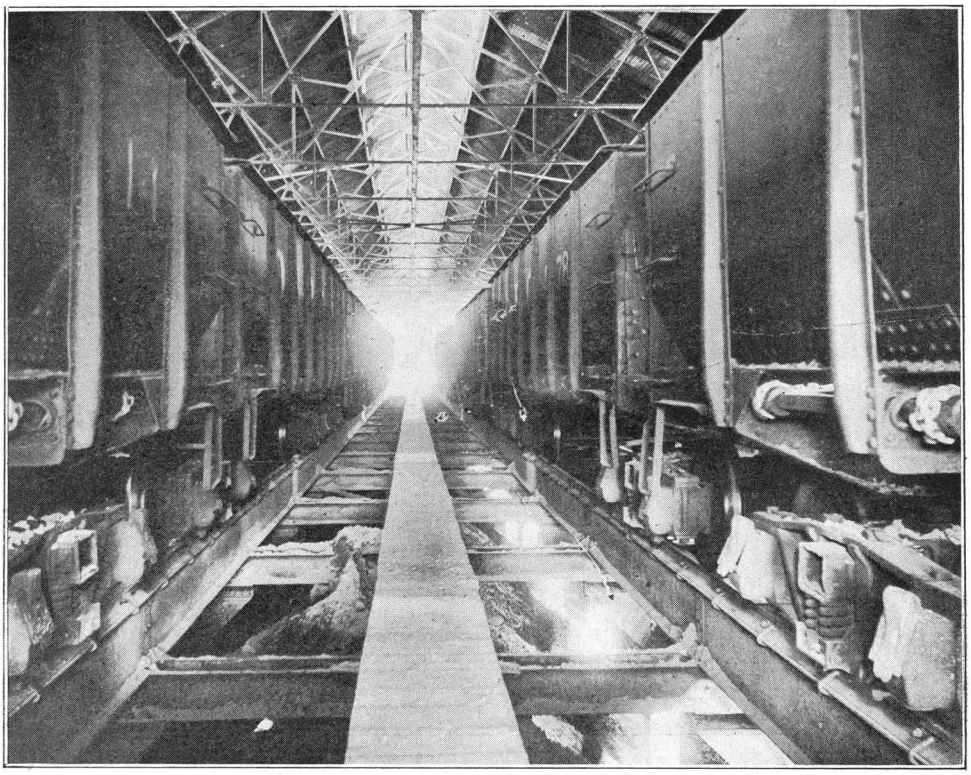
Boston Consolidated Sulphide Ore Bin—Terminal of Copper Belt R. R.

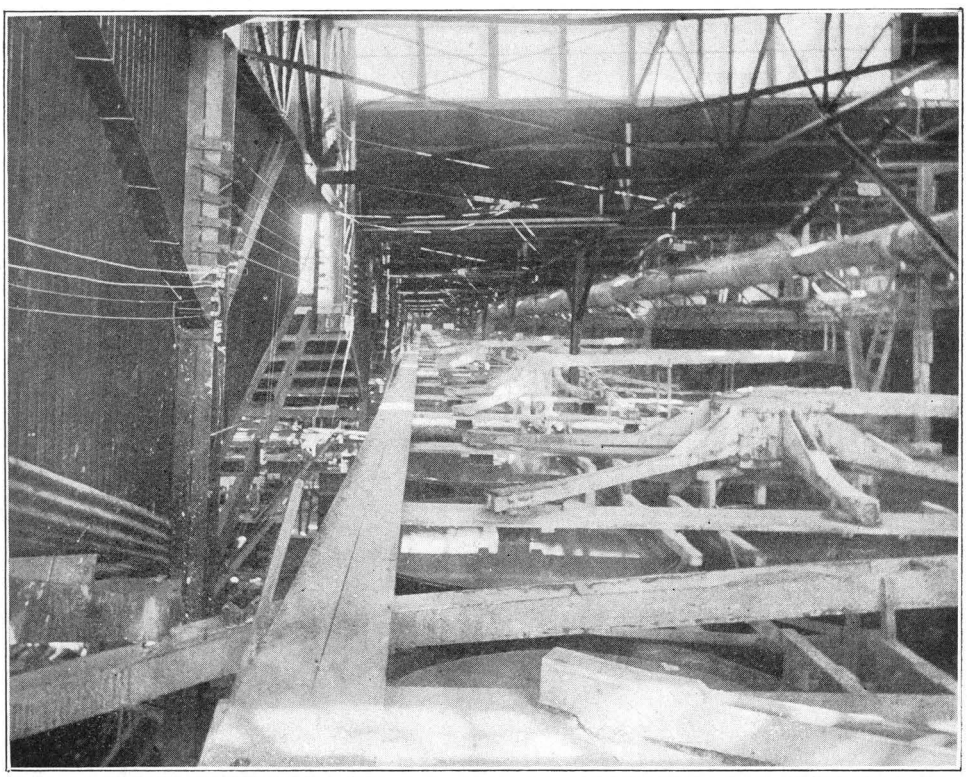
The Utah Metal Company

The Utah Metal Company, formerly the Bingham Metals Company, a Maine corporation, was organized June 8, 1909, for the purpose of acquiring three companies in the Bingham camp. The object of the combination was to get depth on the ore bodies located on the Bingham Central Standard Copper Mining Company. The Bingham Metal Mining property, situated in Middle Canyon on the Tooele side of the Bingham camp and only a short distance from the new International Smelter, was the vantage point from which this deep tunnel was to run. This property was acquired very quietly by Eastern parties until they own free and clear of all indebtedness 3000 acres of land, together with an exceptionally fine equipment.

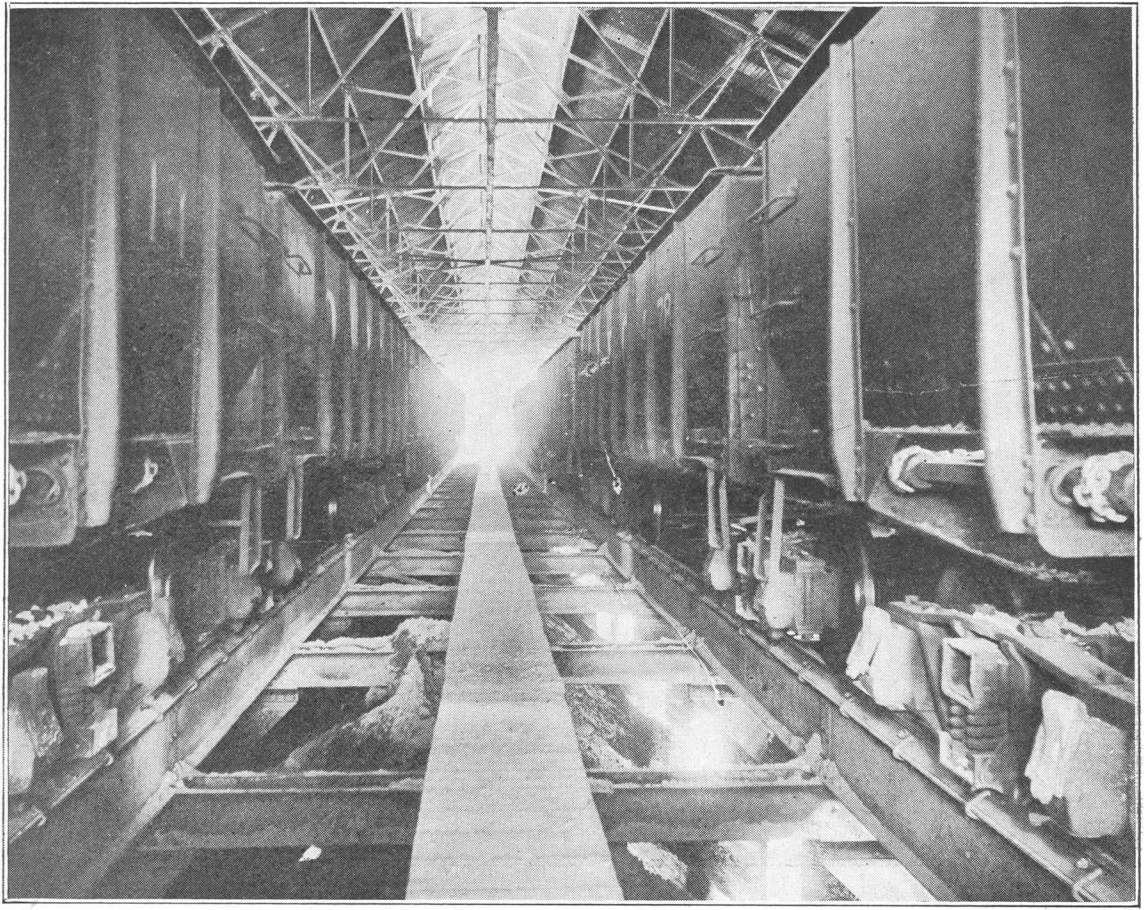
When it was definitely decided that the International Smelter Company would be erected in Tooele Valley, the plans of the Bingham Metal Company were changed and they immediately determined to run their main tunnel into upper Bingham, coming to daylight in Carr Fork. After careful surveys the project was pronounced feasible and the tunnel enlarged for a double track and electrical equipment.

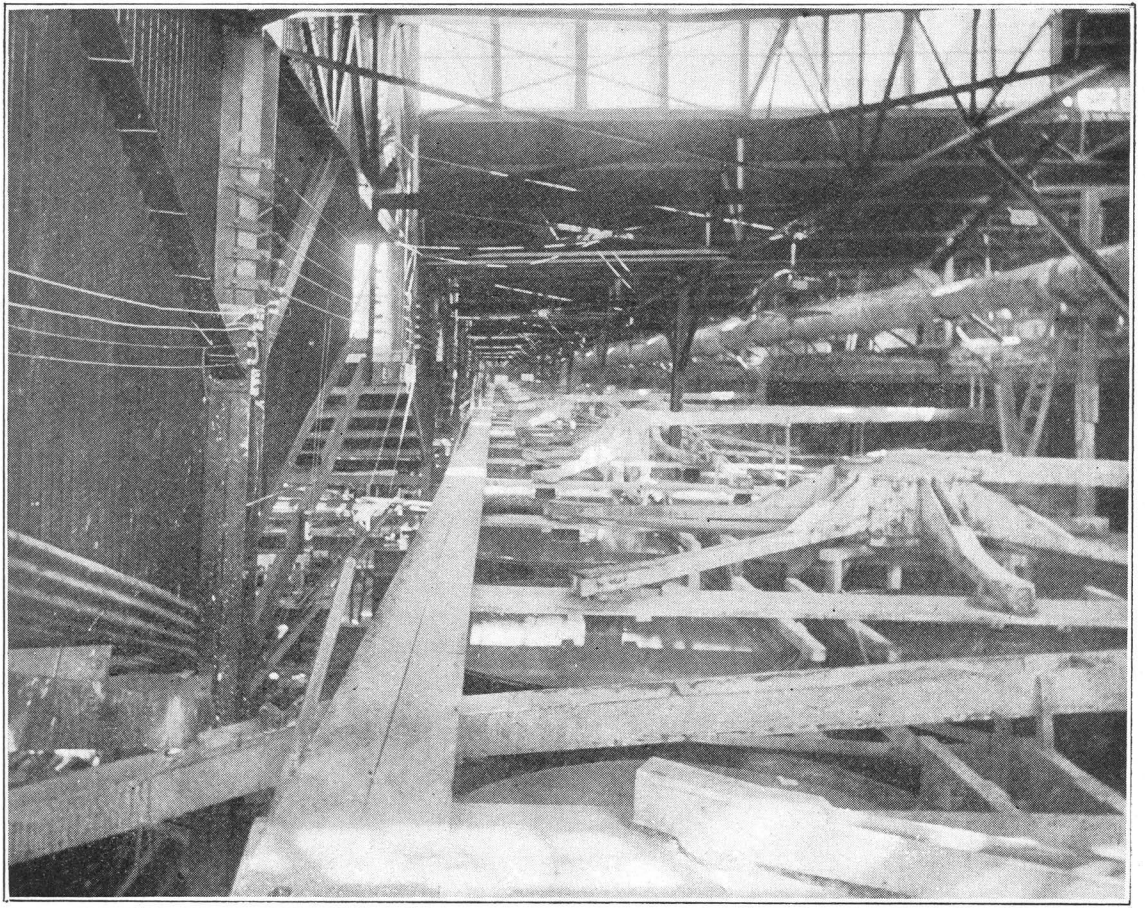
Over 3500 acres of ground, one-half of which is mineralized, and with its water power, timber, deep tunnel, which means cheap transportation, town site, mill site and developed ore bodies in the heart of Bingham camp, to say nothing of having one of the best smelting plants in the state at its front door.



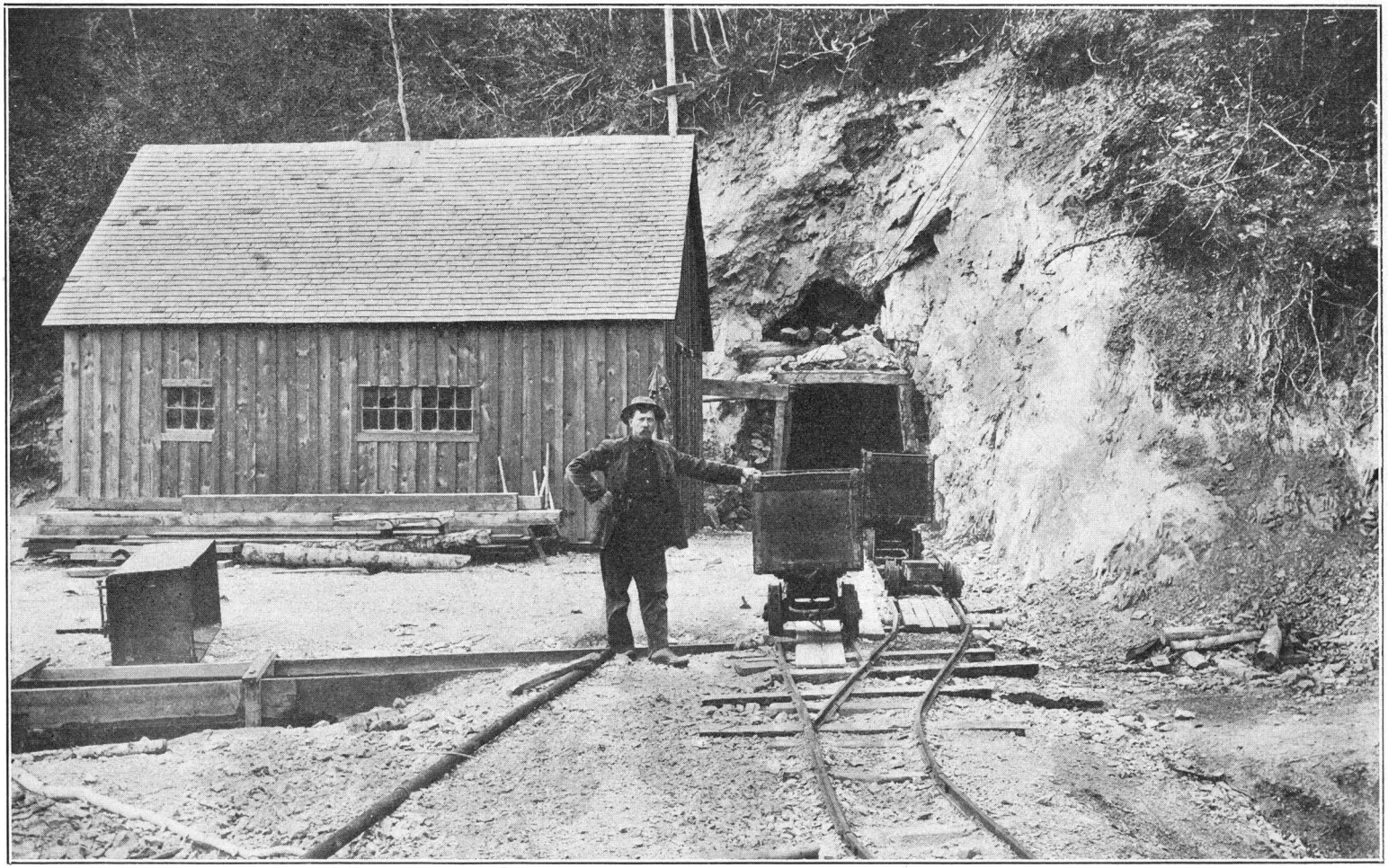


Views in Boston Consolidated Mill, Garfield.

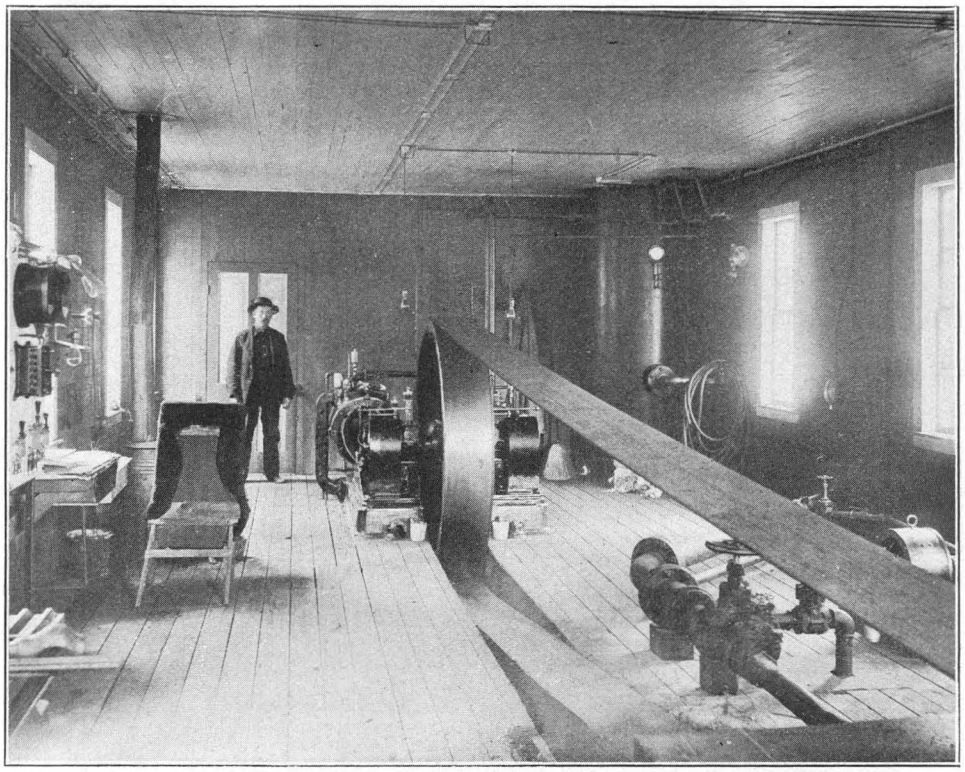


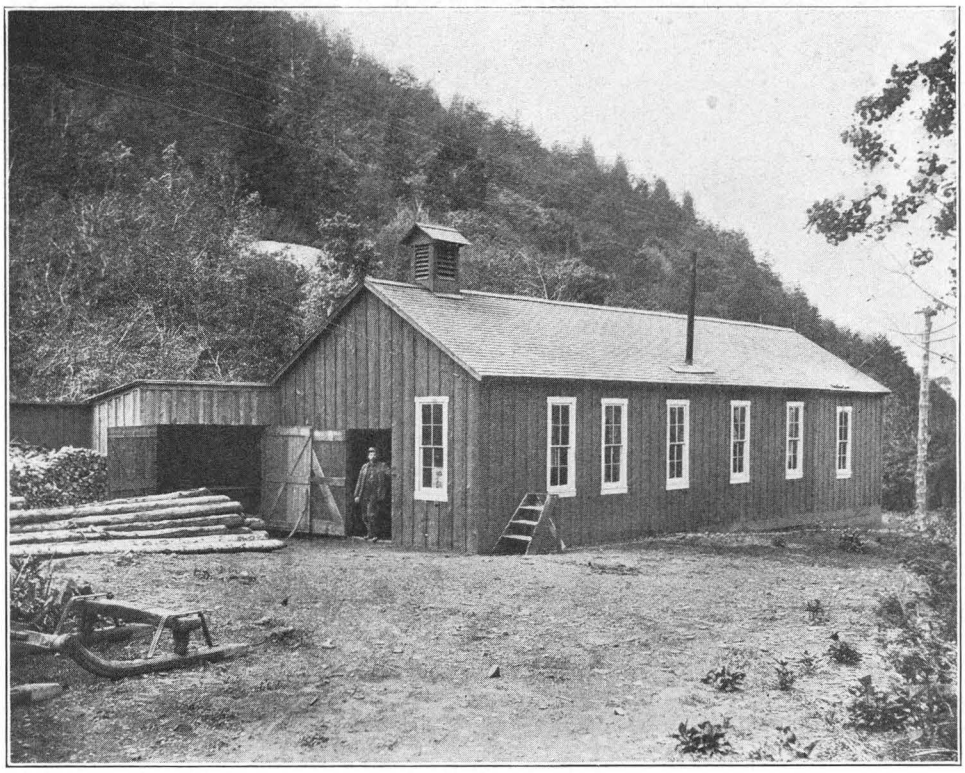


Views in Boston Consolidated Mill, Garfield.

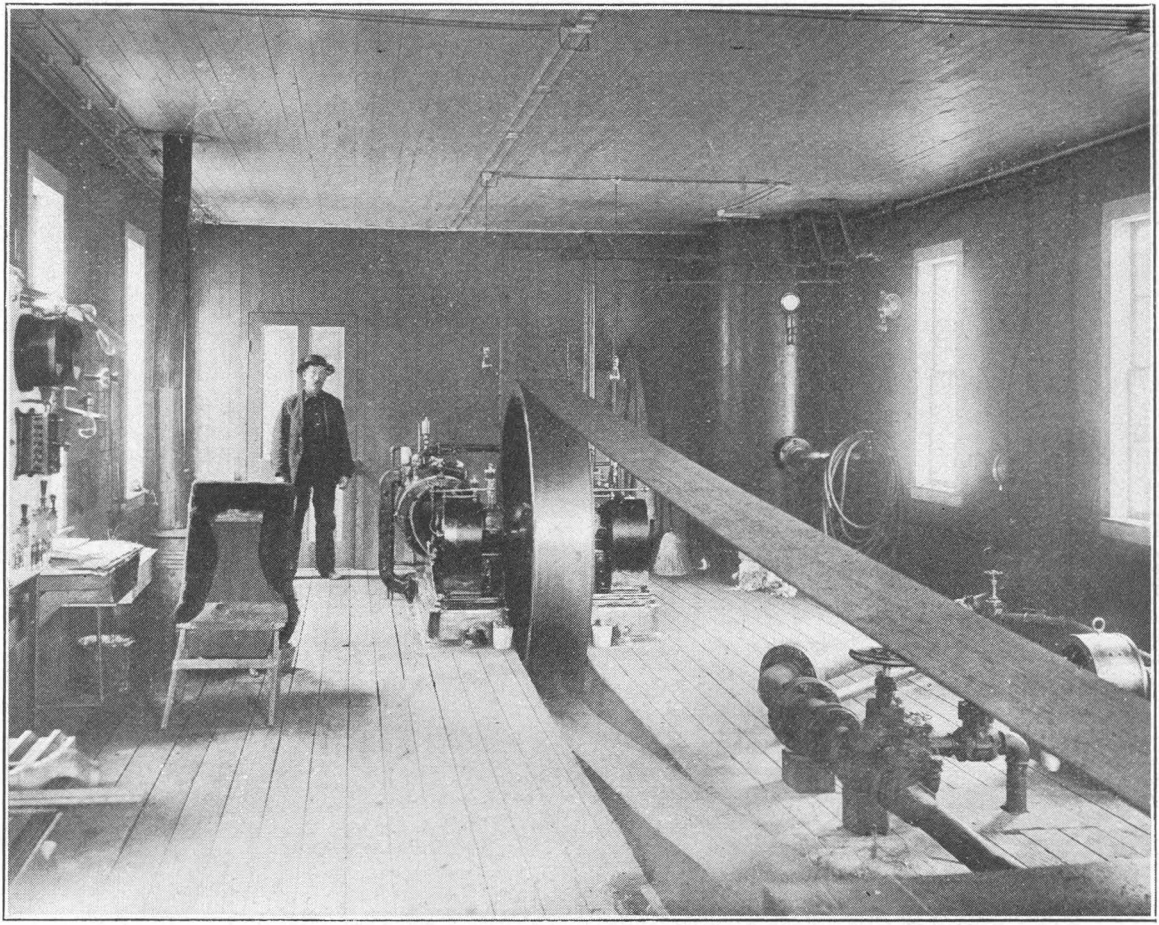


Tunnel Entrance—Utah Metal Property.

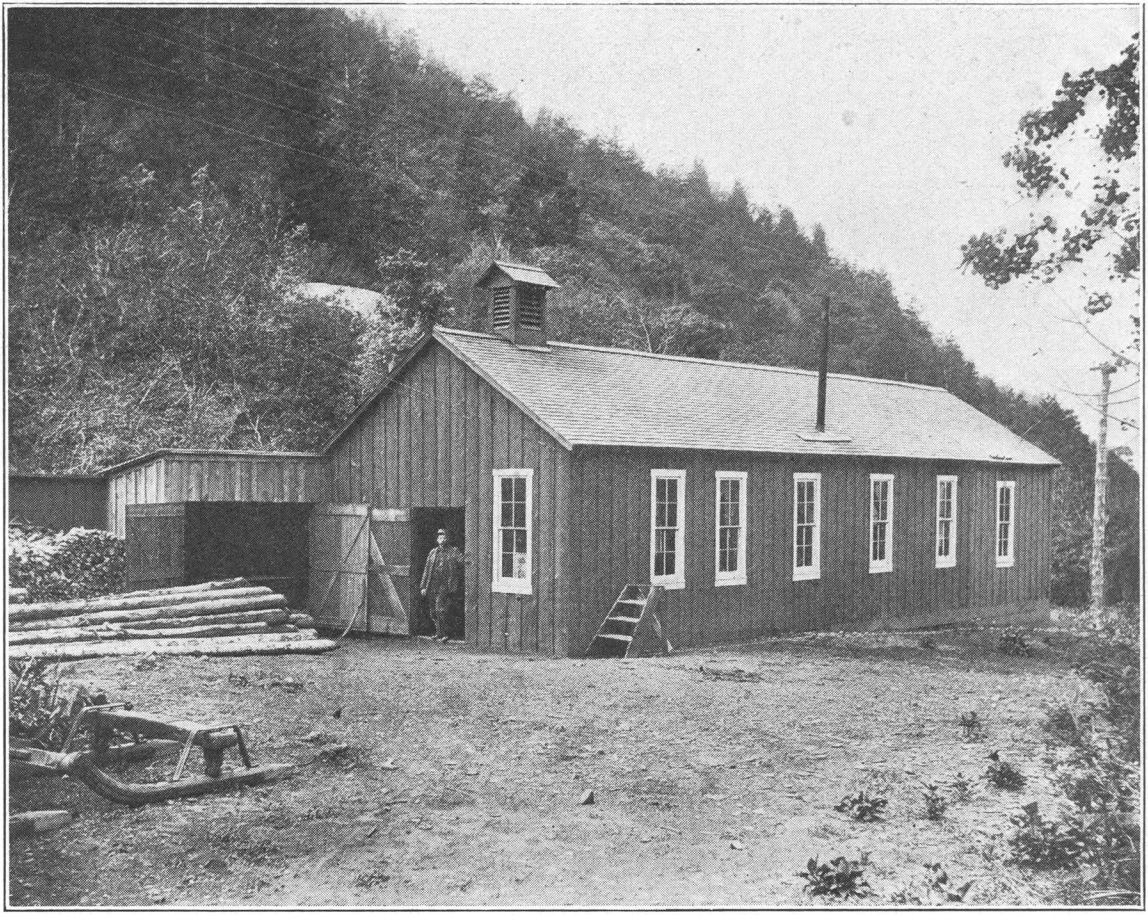




Interior and Exterior Views of Utah Metal Compressor Building.



Interior View of Utah Metal Compressor Building.



Exterior View of Utah Metal Compressor Building.

View of Utah Copper in August, 1906, When First Steam Shovel Was Started.

The Utah Copper Company

The Utah Copper Company, a corporation of the State of New Jersey, is conducting the most extensive mining operations in Bingham. The mining property owned by the company at Bingham consists of about 200 acres of mineral ground, all patented. At the Copperton plant, in Bingham Canyon, the company owns a mill-site and lands aggregating about 1000 acres, while at the new Garfield mill-site, near Garfield, Utah, the lands owned by the company comprise approximately 2400 acres.

The group of mining claims now belonging to the Utah Copper Company was formerly owned by Col. E. A. Wall, who, in 1899, sold a part interest to Capt. J. R. DeLamar. Some years later, when Capt. DeLamar decided to retire from the mining field, D. C. Jackling, who had previously made an examination of the ground for him, and had thus become familiar with its possibilities, organized a syndicate composed of C. M. MacNeill, Spencer Penrose and R. A. F. Penrose, of Colorado, and others, and these gentlemen arranged to take over the control of the property from Col. Wall. This was the beginning of the real mining operations of the Utah Copper Company, and it is due to the efforts of D. C. Jackling, aided by R. C. Gemmell and F. G. Janney, who have had direct charge of the development and equipment of the mines and mills, that the property has become the largest copper-porphyry mine in the United States, equipped with a concentrating plant operated under the most approved metallurgical methods.

The ore body consists of an altered, silicious porphyry, containing small grains of copper minerals, quite uniformily disseminated throughout the mass, and carrying an average of about two per cent copper, 0.15 of an ounce silver, and 0.015 of an ounce gold. The total area of mineralized porphyry contained within the boundaries of the property is about 160 acres, about half of which area has been prospected to such an extent that of fully developed, partially developed, and reasonably assured ore, the total in this 80 acres amounts to about 80,000,000 tons. The average thickness of the ore body under this 80 acres has not yet been fully estimated, but the extensive developments indicate an average depth of about 310 feet. At the present time the ore reserves are being increased at the rate of about 1,000,000 tons per month.

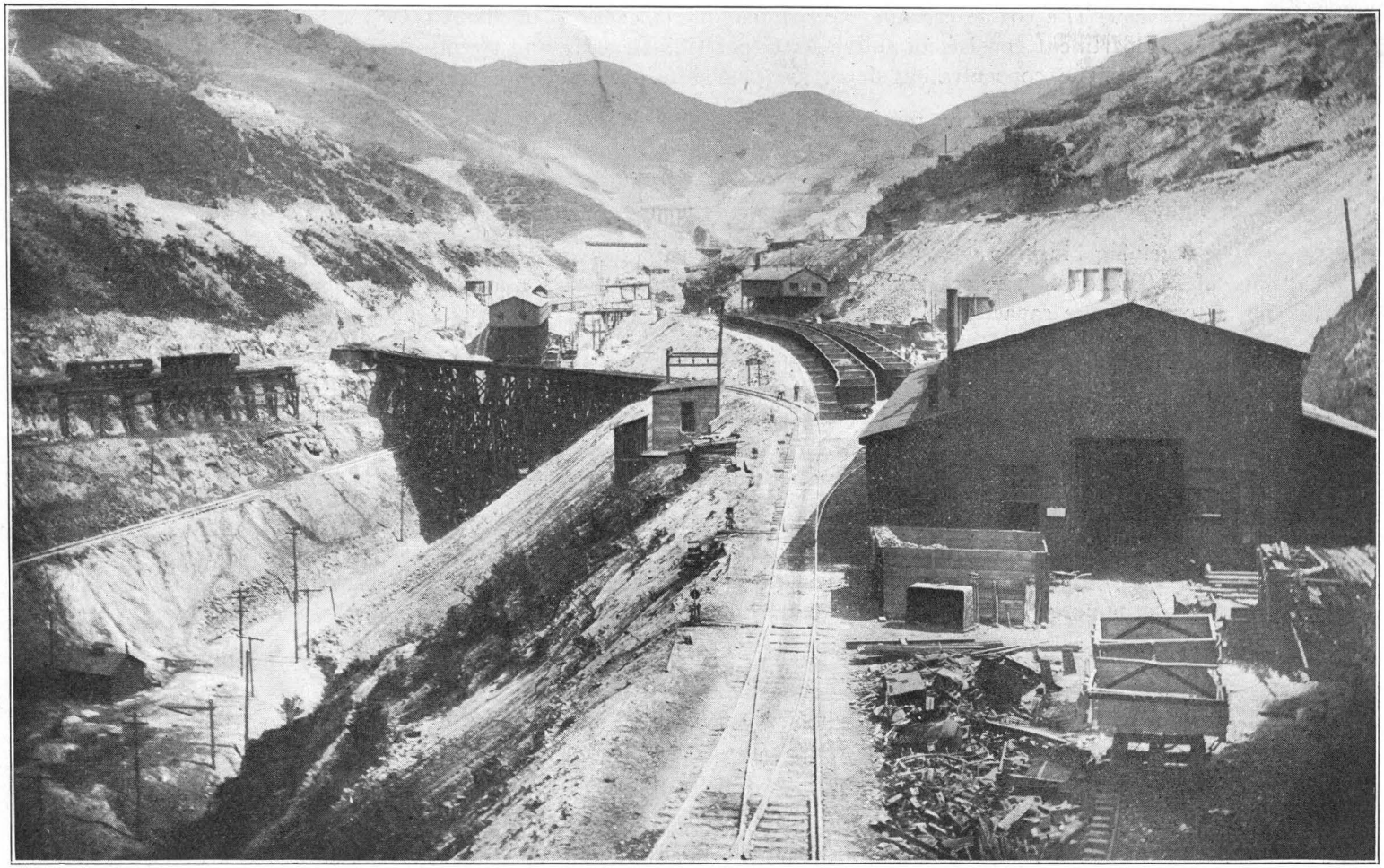
The mine was originally opened up by means of tunnels, and the ore extracted by what is known as the "top slice caving system." Several miles of underground workings were driven, proving up such a large ore body that it was decided to inaugurate a system of mining by steam shovels, by which means not only was an enormous increase made in the tonnage of the ore mined, but also the cost of mining was reduced to about one-quarter what it would have been for any system of underground mining.

The enormous tonnage of ore and capping, amounting to about 16,000 tons per day, is being handled by steam shovels and standard gauge locomotives over the Utah Copper Company's own railroad tracks to their waste dumps and to the connection with the Denver & Rio Grande Railroad. This work is under the management of J. D. Shilling, mine superintendent, whose wide experience has equipped him in every way for this tremendous undertaking. The underground portion, under the efficient supervision of John McDonald, assistant mine superintendent, is contributing at present about one-sixth of the total output of ore. As the work progresses, and more ground is uncovered by the steam shovels, the production of ore from underground will be reduced until the entire output will be mined by the steam shovel method.

The mine is equipped with a thoroughly modern machine shop, containing machinery and tools, by means of which the cars, locomotives and steam shovels may be repaired. The air compressor plant consists of a 300-horse power, electrically operated Nordberg compressor. There are commodious offices and quarters for the officials and employes, and all the minor equipment usual to a well equipped mine.

An experimental mill was constructed in Bingham Canyon at Copperton, and commenced operations in 1904 with a capacity of 300 tons per day. The results obtained at this plant were so satisfactory as to cause the company to increase it to 900 tons per day and to erect at Garfield, eighteen miles away, a most extensive and complete concentrating plant of 6000 tons daily capacity.

This latter plant is constructed of steel and concrete, in twelve sections of 500 tons each. Each section is provided with independent driving motors, so that the operation of any one section does not depend upon that of any other. The general dimensions of the main building are 508 feet by 600 feet.



Ore Bins, Machine Shops, Offices and Assembly Yards—Utah Copper Co.

Generally speaking, the plant is divided into three departments, namely—coarse crushing, fine crushing, and concentrating. The coarse crushing department has a capacity of about 6000 tons in sixteen hours. The fine crushing department consists of thirty-six 6-foot Chilian mills, and twenty-four 36-inch diameter by 16-inch face belted rolls. The concentrating department consists of 1176 concentrating machines.

The machinery is all set on reinforced concrete floors which are in turn supported on steel columns, so that all tailings and concentrate launders are carried below the floors. The total concrete floor area in the concentrating department is slightly over five and one-half acres, and the total floor area of the main building is in excess of eight acres.

The receiving bin, into which ores from the mine are delivered from bottom dump railroad cars, has a capacity of 25,000 tons. The receiving bin for the crushed ore has a capacity of approximately 15,000 tons, making a total storage capacity at the plant of 40,000 tons.

The power plant has a boiler capacity of 12,000 horse power, and the generating equipment consists of five cross-compound, condensing engines, two of 1,200 K.W. each and three of 2000 K.W. each. This equipment generates a 4000-volt, alternating current, which is transmitted to the Garfield plant and transformed down to 440 volts for distribution about the plant. The current is also transmitted to Copperton and Bingham at 40,000 volts and transformed at the Copperton mill and at the mine to 440 volts for use.

The Garfield plant is a triumph of metallurgical and mechanical skill, containing the most modern improvements, many of which were devised by the management. Its operation up to the present time has fully proven the accurracy of previous estimates, except that it has been fully demonstrated that the plant can handle continuously a considerably greater tonnage than its rated capacity of 6000 tons per day.

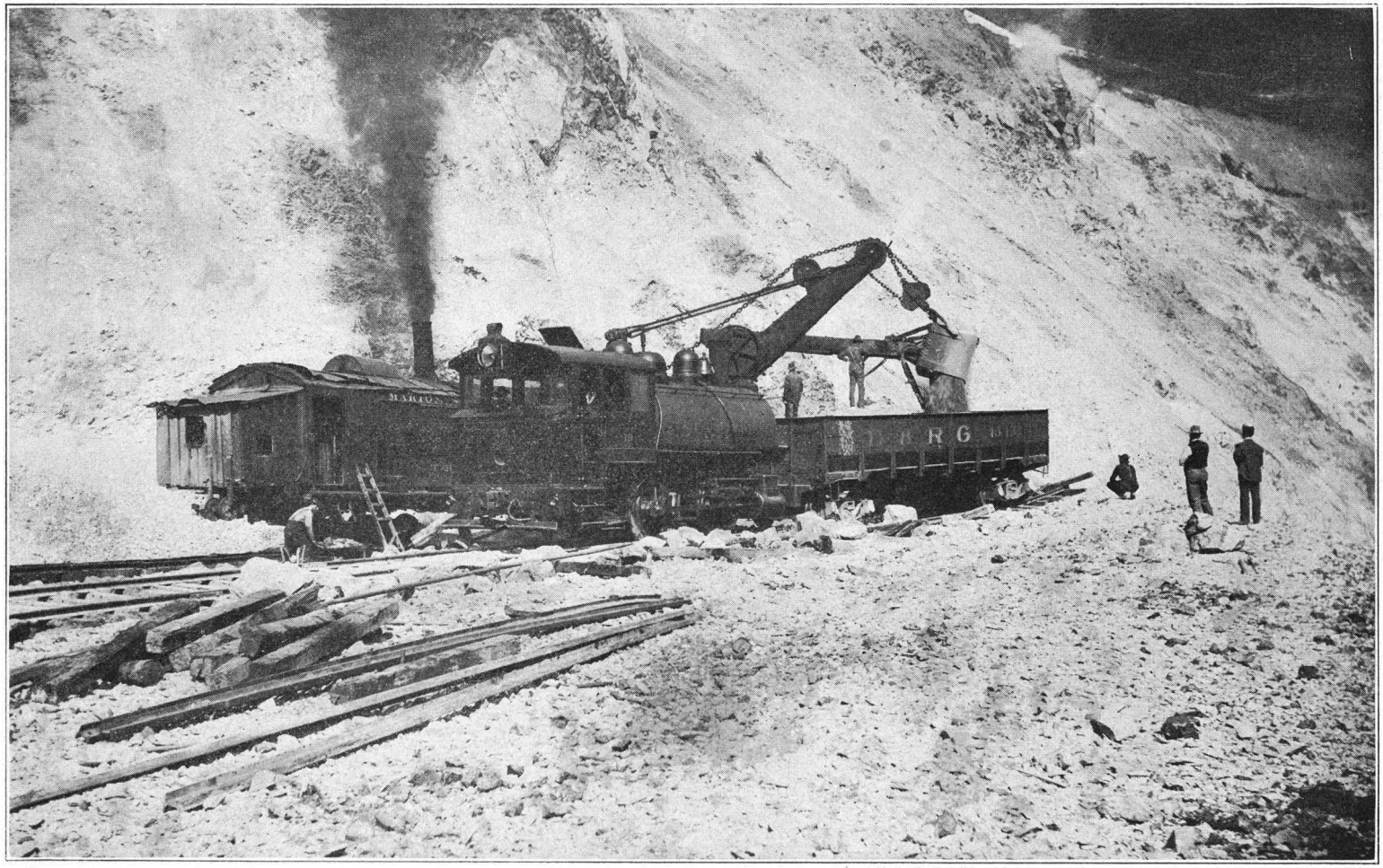
The company at the present time is making copper at the rate of about 5,000,000 pounds per month, at a cost of something less than 8½ cents per pound, which cost is based upon the net pounds of copper obtained and includes all expenses of every kind whatsoever. In view of the reduction in mining cost that will obtain when all of the ore is mined by steam shovels, and of other reductions in operating costs that will be made, it is expected that the cost of producing copper at the Garfield plant will be reduced to somewhat less than 8 cents per pound.

The Utah Copper Company is one of the most brilliant mining operations in the United States today, and its operations in all departments, financial, mining and milling, are conducted with transcendant skill.

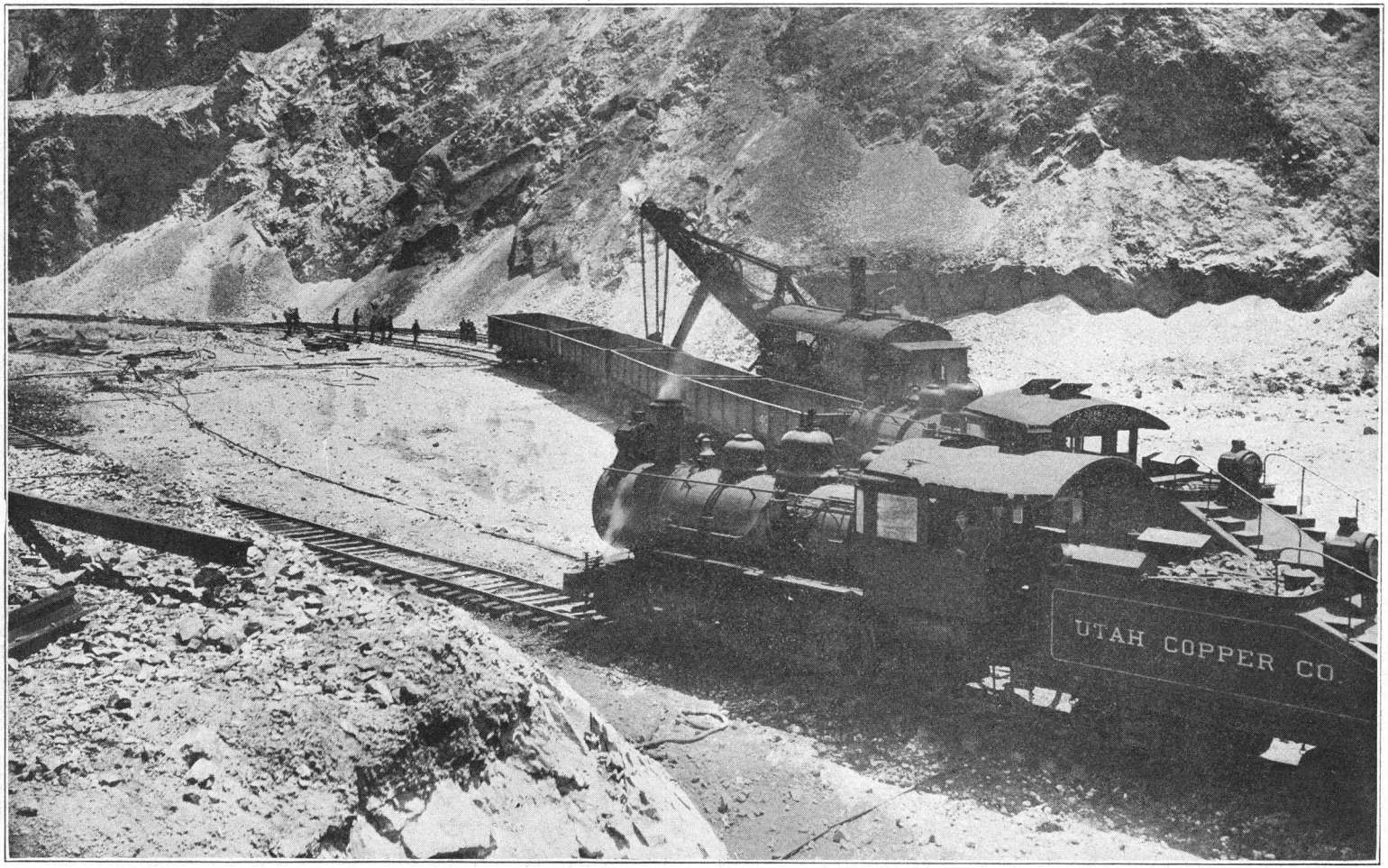
Utah Copper Property as Seen From Upper Bingham—East Line Extension Bridge.

Loading Waste at Utah Copper Mine.

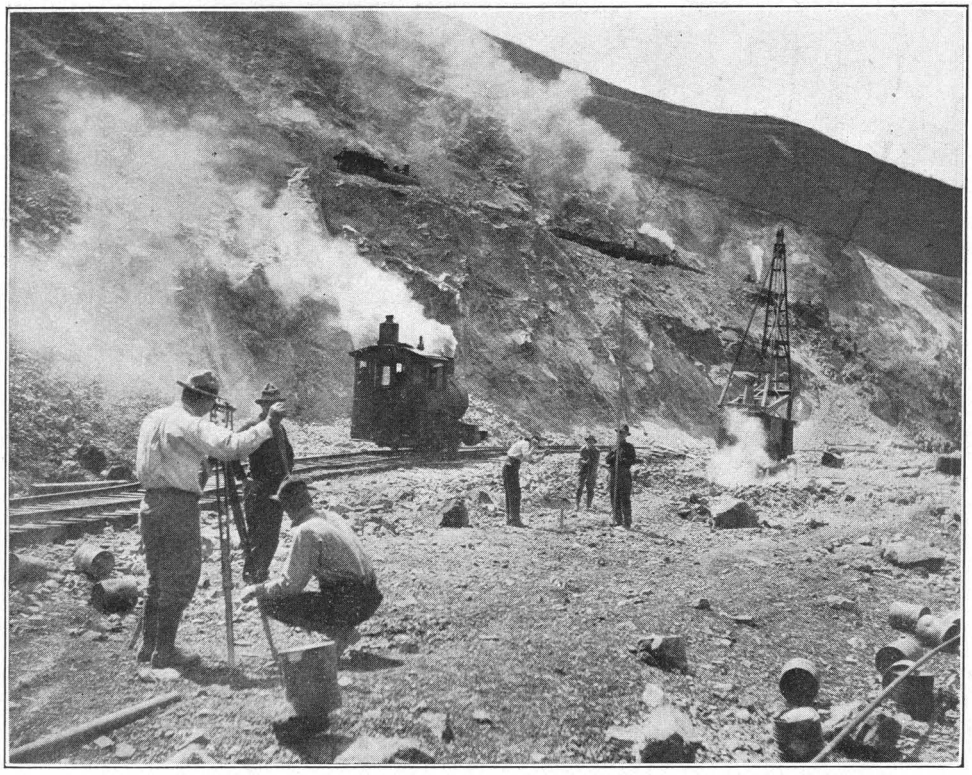
View at Utah Copper Mine.



Loading Ore—Utah Copper Company



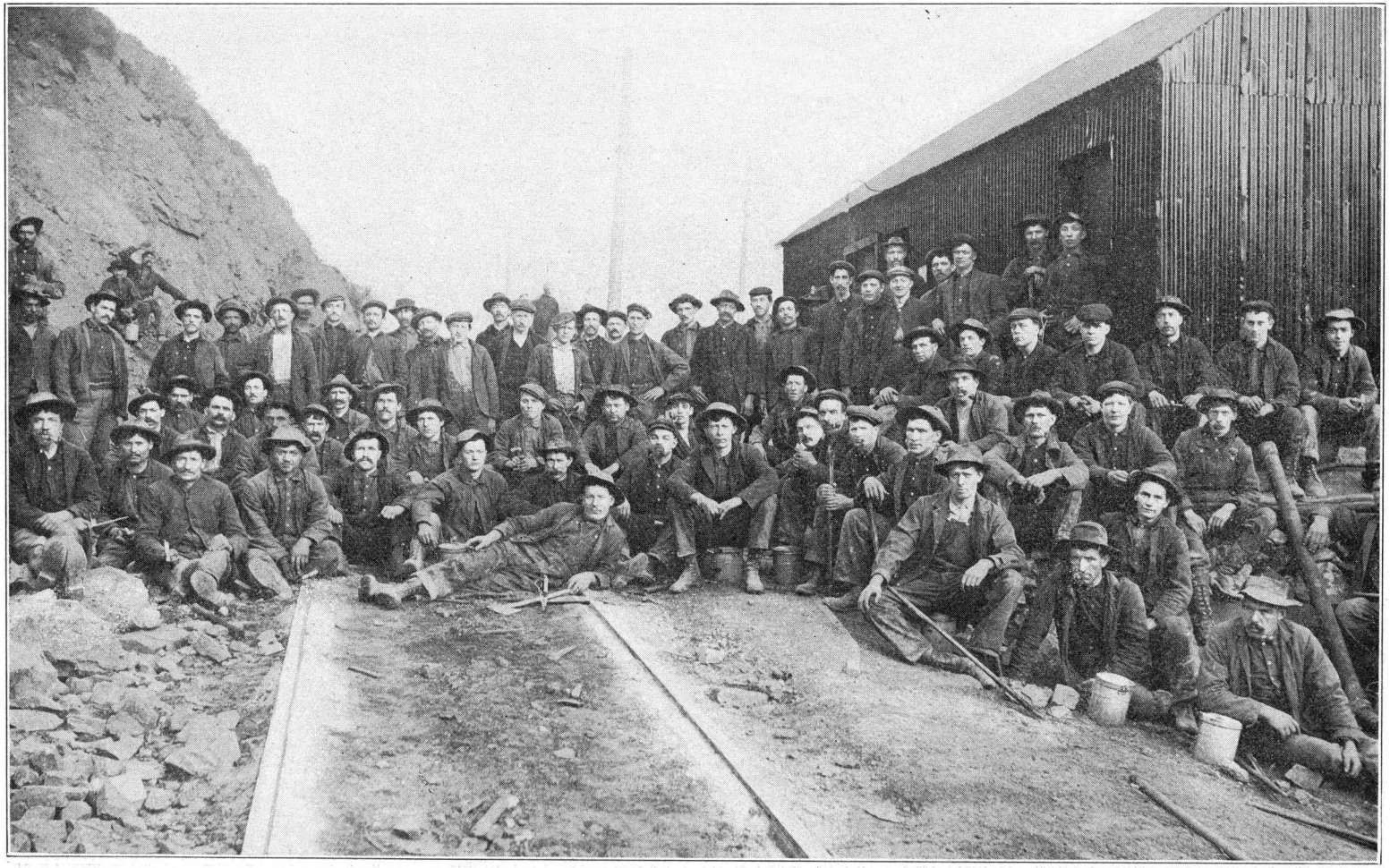
Loading Ore at Utah Copper Mine.



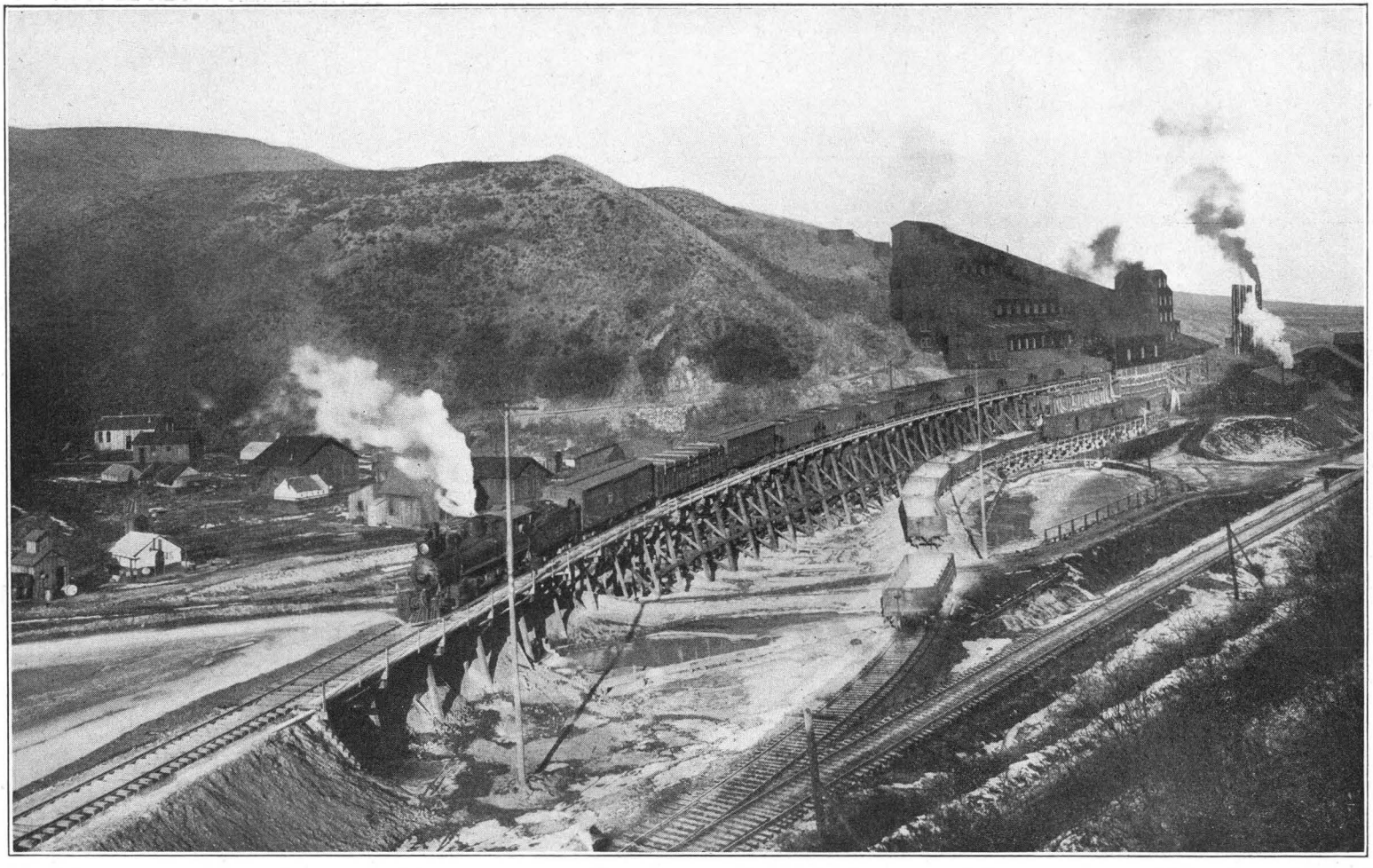
Views at the Utah Copper Mine.

Views at the Utah Copper Mine.

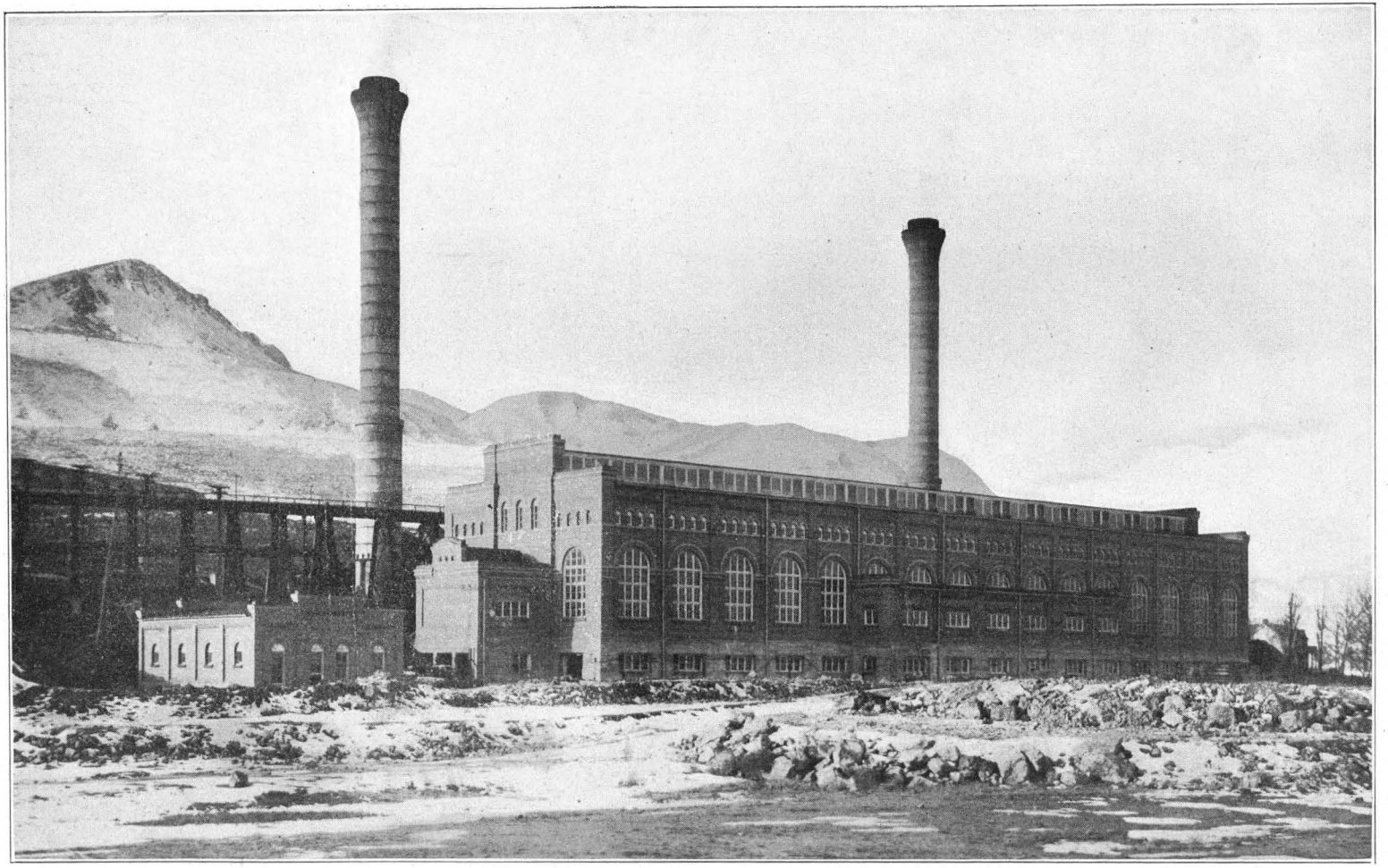
View at Utah Copper Mine.



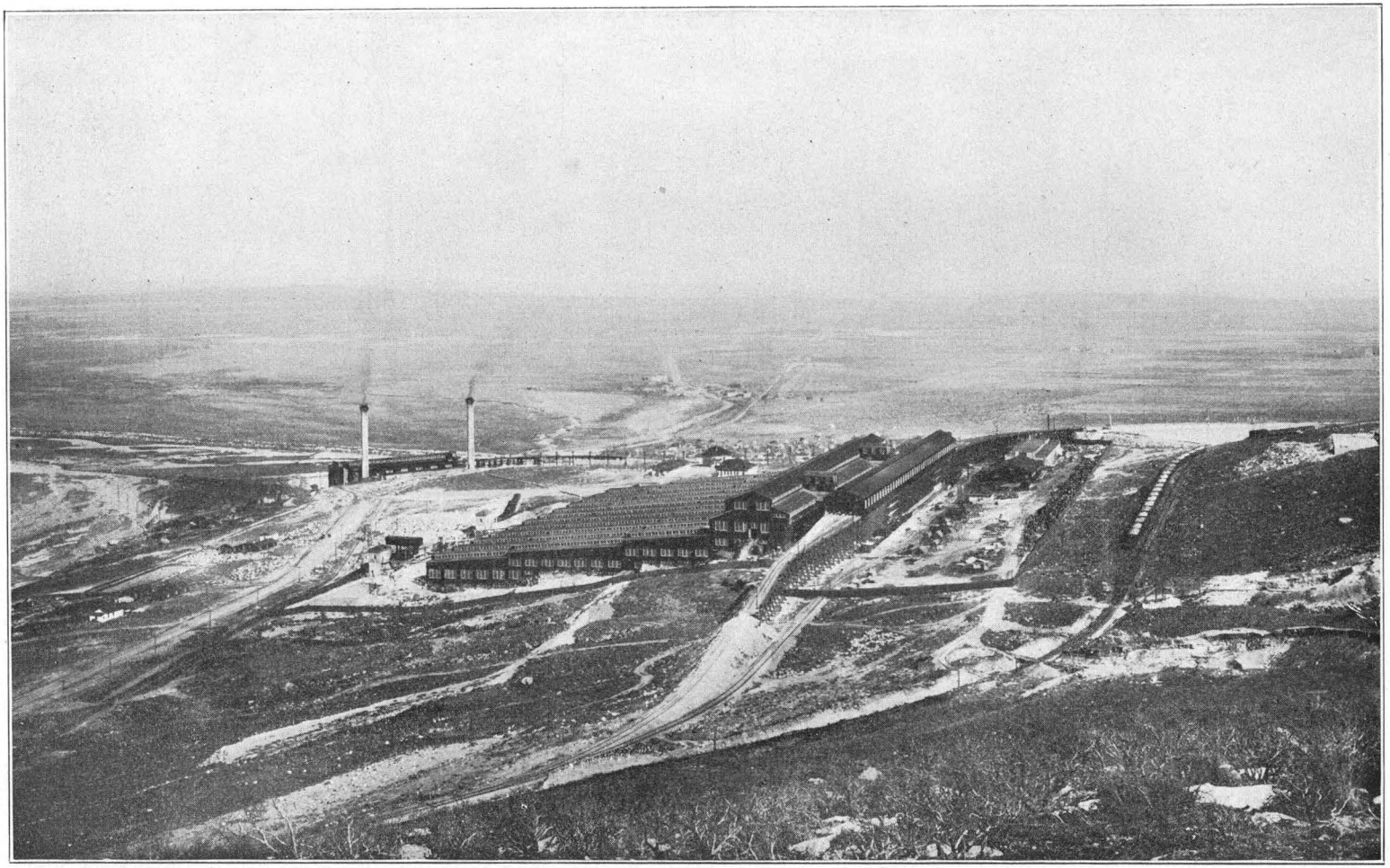
Group of Miners, Utah Copper Mine.



Copperton Mill at Bingham, Utah Copper Co.



Utah Copper Company's Power Plant at Garfield.



Garfield Mill of the Utah Copper Co. —Photo by Shipler.

Utah-Bingham Properties—Silver Hill Gulch (left), Porcupine Gulch (right).

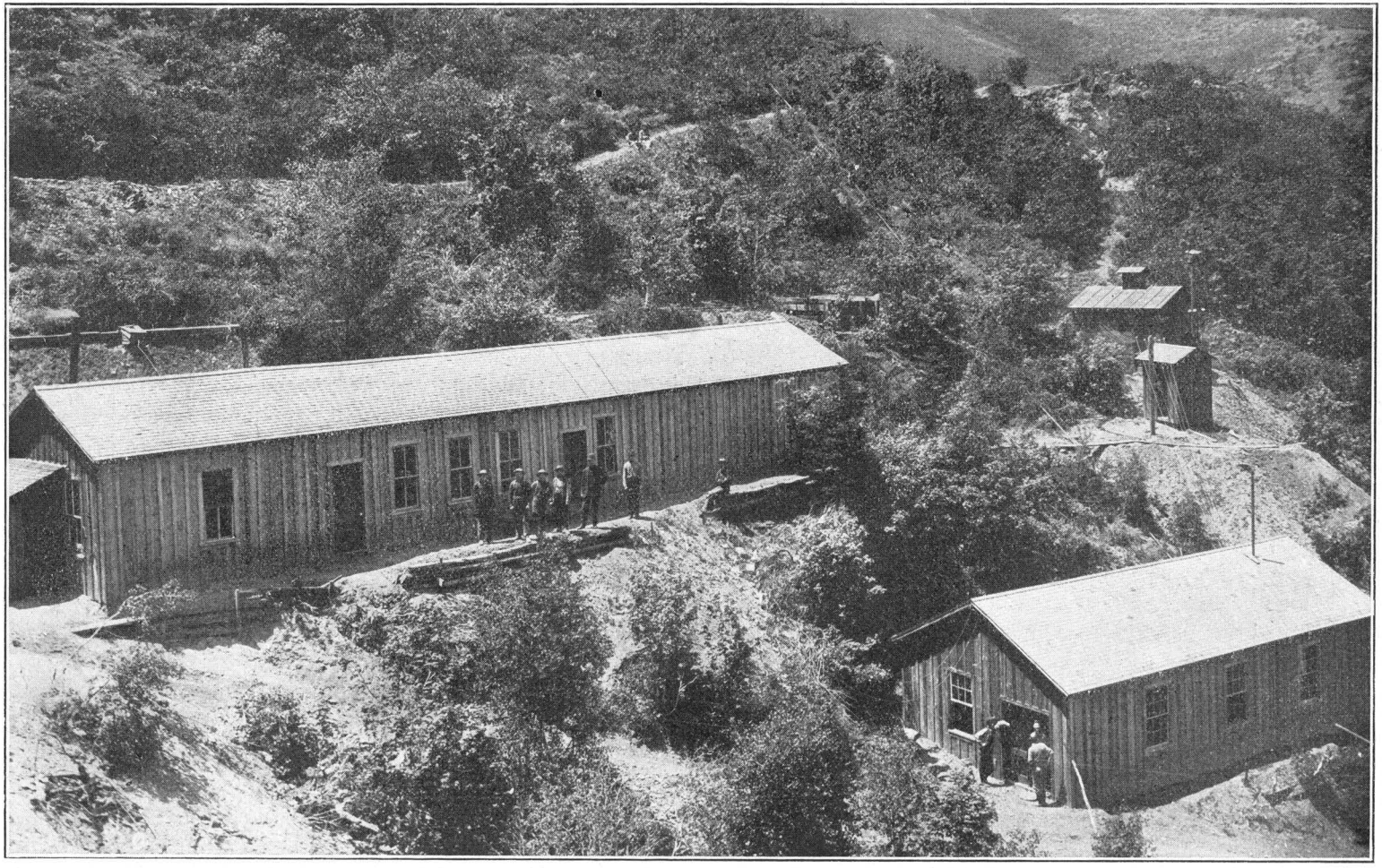
The Utah-Bingham Mining Company

The Utah-Bingham Mining Company was organized in the summer of 1906, under the laws of Maine, by Bellows Bros. of Springfield, Mass., and London, England, through whose extensive financial connections the shares have been placed and are largely held in London and on the continent. Associated with these gentlemen is Count Reginal Ward of London, whose name and finances have long been associated with the mining industry in Bingham. In 1896 he organized and financed the Utah Consolidated Company, commonly called the Highland Boy. This was the renaissance of mining in Bingham and the making of one of the largest copper camps in the West—the present output of which exceeds 13,000 tons per day. The officers of the company are Clarence S. Ward, president; Warren N. Askers, vice-president; Alfred R. Shrigley, secretary; J. E. Meadowcroft, treasurer; M. F. Rowe, asst. treasurer; W. W. Bellows, managing director, and P. M. McCree, general superintendent.

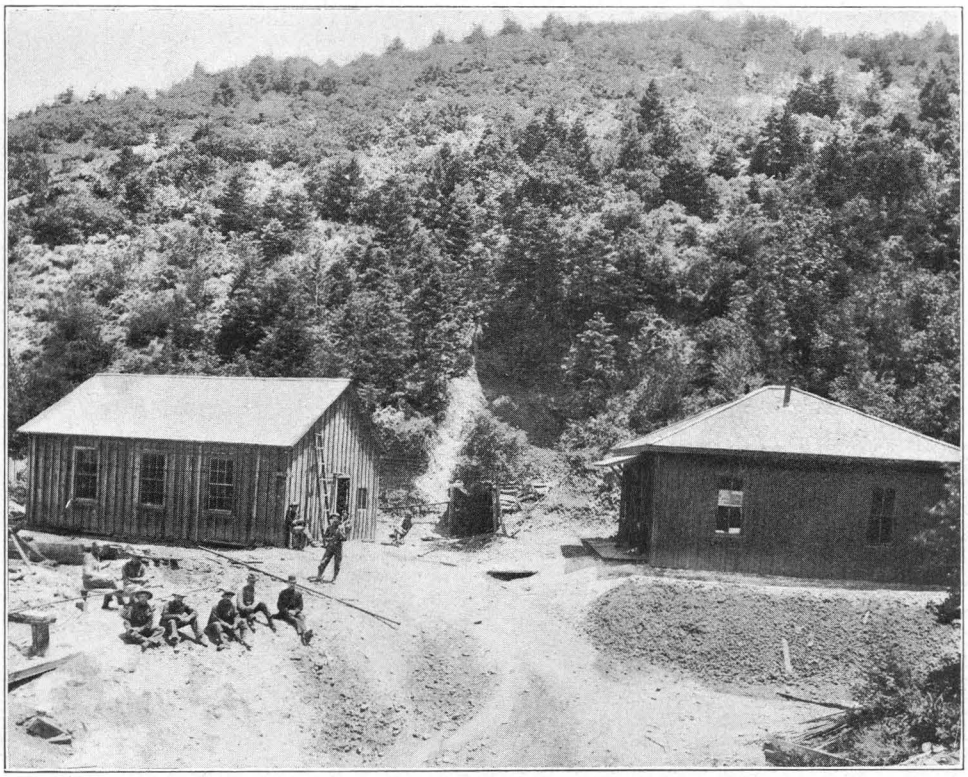
The Utah-Bingham is one of the most recent corporations operating in Bingham and owns some of the camp's oldest claims. The area of its property approximates 118 acres located along the apex of the Jordan limestone from Giant-Chief Gulch to Porcupine Gulch. The Jordan limestone is Bingham's most celebrated ore zone, the mines on this zone having a record of producing millions. From three mines alone—the Old Jordan, Old Telegraph and Spanish, which join the Utah-Bingham property on the east—$33,000,000 have been taken. The ore bodies occur as lenticular masses of lead and copper sulphide lying along the limestone and as shoots in fissures.

The workings of the Utah-Bingham embrace the Giant-Chief shaft and several cross cut tunnels including the Turngren, Irish-American and Harrison on the West and Rough and Ready Nos. 1, 2, and 3, and numerous sublevels on the east; and of the property through these, the country to be explored measures over 2000 feet on the strike, 1600 feet north and south, and over 800 feet vertically. The 150 foot level is now being driven to the west from the Giant-Chief shaft to cut the the Rough and Ready vein, which has produced some large ore bodies in the upper workings. In the Turngren tunnel several veins have been cut. From one of these the Irish-American ore is being extracted.

At the Harrison tunnel is located the Company's office, the boarding house, principal mine buildings, an electrically driven 15-drill compressor, whence compressed air is conveyed to all parts of the mine workings. Ore is being shipped from three workings on the property at the rate of two cars a week. This will be increased with better hauling facilities.



Utah-Bingham Compressor and Boarding House.



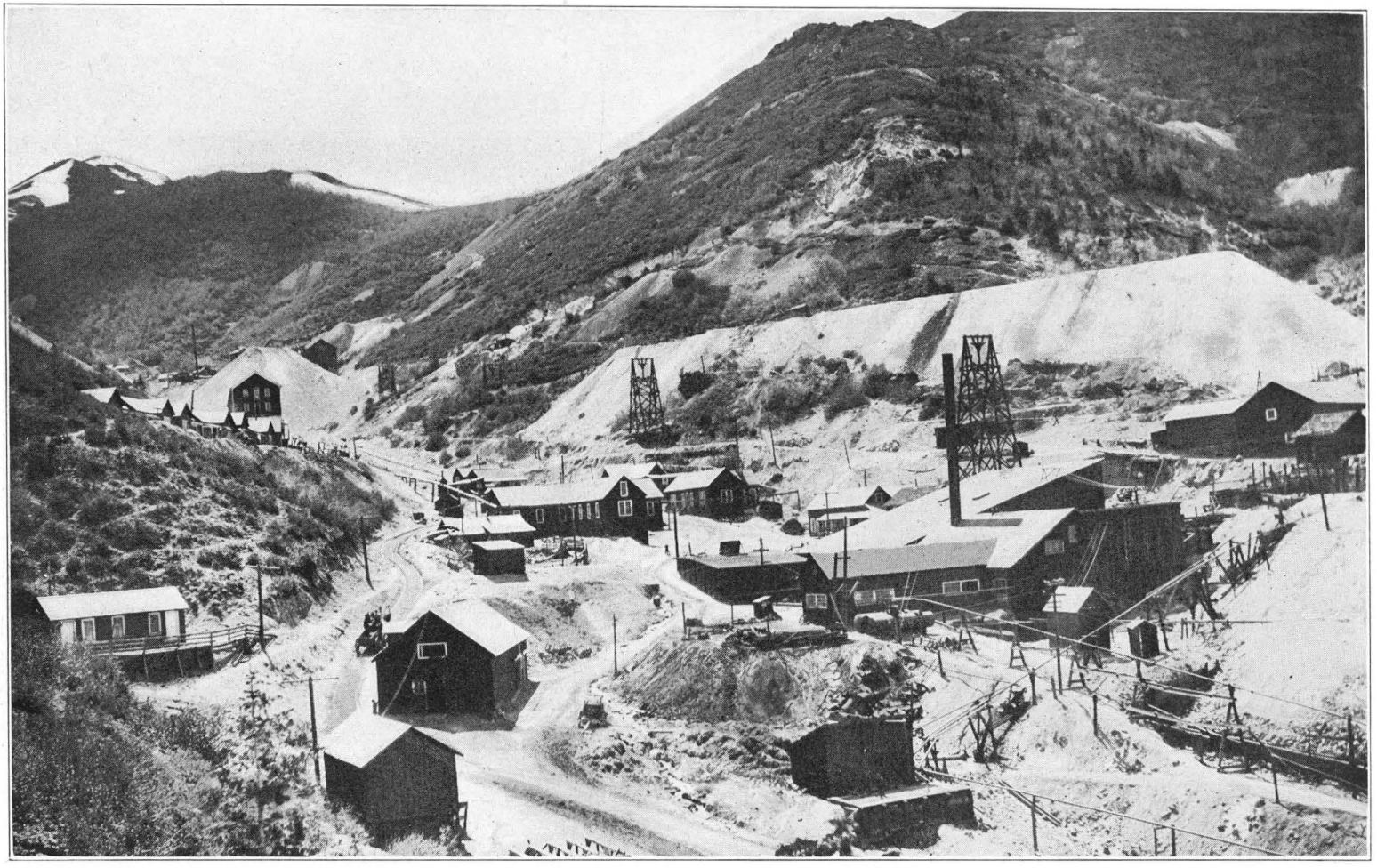
Harrison Tunnel, Office and Blacksmith Shop—Utah-Bingham Co.

Giant Chief Shaft House—Utah-Bingham Co.

Harrison Tunnel, Office and Blacksmith Shop—Utah-Bingham Co.

Giant Chief Shaft House—Utah-Bingham Co.

Site of the first recorded mining location in the Territory of Utah.



Bingham Canyon view looking west of the Old Jordan and Galena mines of the United States Smelting, Mining & Refining Co. These mines have poured out vast treasures in gold, silver and lead during the last twenty-five years and are active producers to-day. The ore is taken by aerial tram to Bingham station, where it is loaded into railroad cars for the company's smelter.

The United States Mining Company

The United States Mining Company, organized in 1899, under the laws of Maine, secured by purchase the famous old properties, The Galena, The Old Jordan, The Old Telegraph and the Spanish mines. These properties lie along the famous ore zone of the Bingham District, viz: the Jordan line so named from the mine of that name being located on it. Although these mines were first opened up in 1864 and have a recorded production of $33,000,000, they are still among the best properties in the camp.

The ore is argentiferous, galena and auriferous copper, occurring in the limestone, both in the fissures which traverse the formation and as lenticular masses along the bedding plains of the rock. The ores are mined by both shafts and tunnels and is conveyed from the mines to the bins at the railroad by means of an aerial tramway three miles long, and thence by rail to the smelting plant of the company located at Bingham Junction. The ore reserves in the different mines are enormous, one body in the Kempton containing 1,000,000 tons of Galena ore.

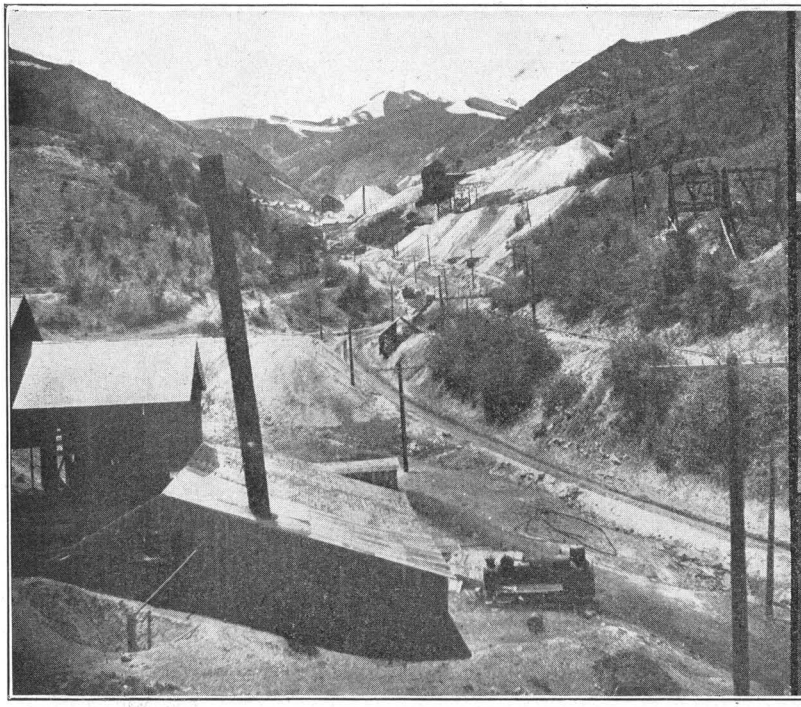
The smelter of the United States Company is located in the valley at Bingham Junction. This plant has a daily capacity of 2500 tons and has seperate departments for treating lead and copper ores. The smelter was compelled to close down in the fall of 1907 due to an unfavorable court decision which restrained all the smelters (with one notable exception) in the valley from operating. Lead smelting was resumed several months later with the aid of bag houses which completely eliminate the noxious fumes. The bag houses are the most successful appliances yet devised for arresting the destructive fumes, and it is hoped that the plant will soon be able to resume the smelting of copper under like conditions.

Owing to the various complications in the smelter litigation, the ore shipments from the company's mines have been considerably curtailed. However, the management has steadily pursued development work and there is at present an enormous tonnage of copper sulphide ready for shipment as soon as the smelter resumes operations.

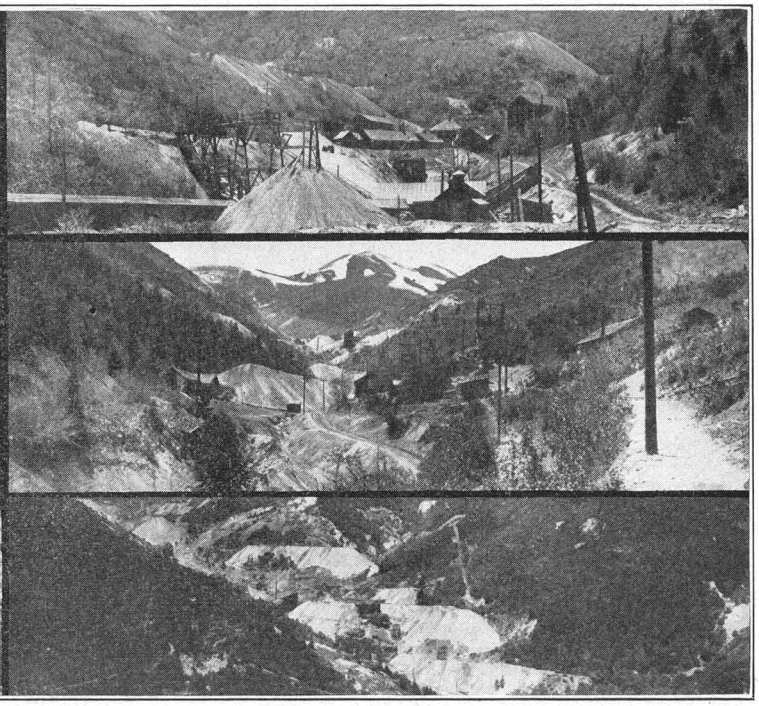
The success of the United States Company's operations, both in mining and smelting, must be attributed to Mr. A. F. Holden, managing director of the company, and his staff of assistants:—Hon. C. E. Allen, General Manager; C. F. Bernard, Mine Superintendent; George W. Heintz, Smelter Superintendent.

They have been untiring in their efforts to place the company upon a profitable plane and success has crowned their work.

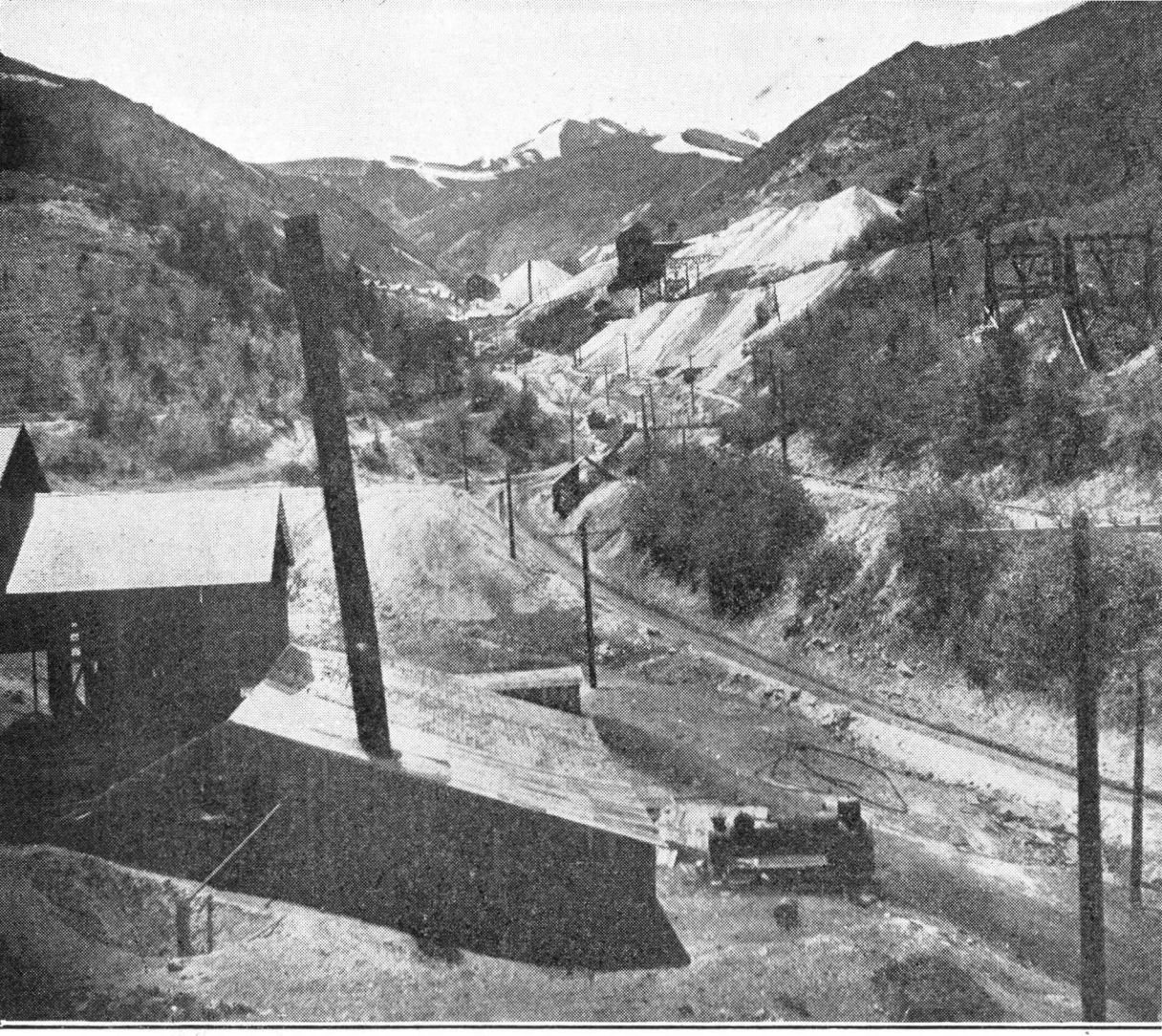
NOTE—On August 2, 1909, Judge John A. Marshall, of the Federal Court, decreed that the U. S. smelter might resume the smelting of copper ore. This decree is permanent. The plant will immediately be put in shape for operation.



View from Old Spanish Mill looking toward Old Jordan and Galena mines of the United States Company.



Scenes on the United States Co.'s Properties.



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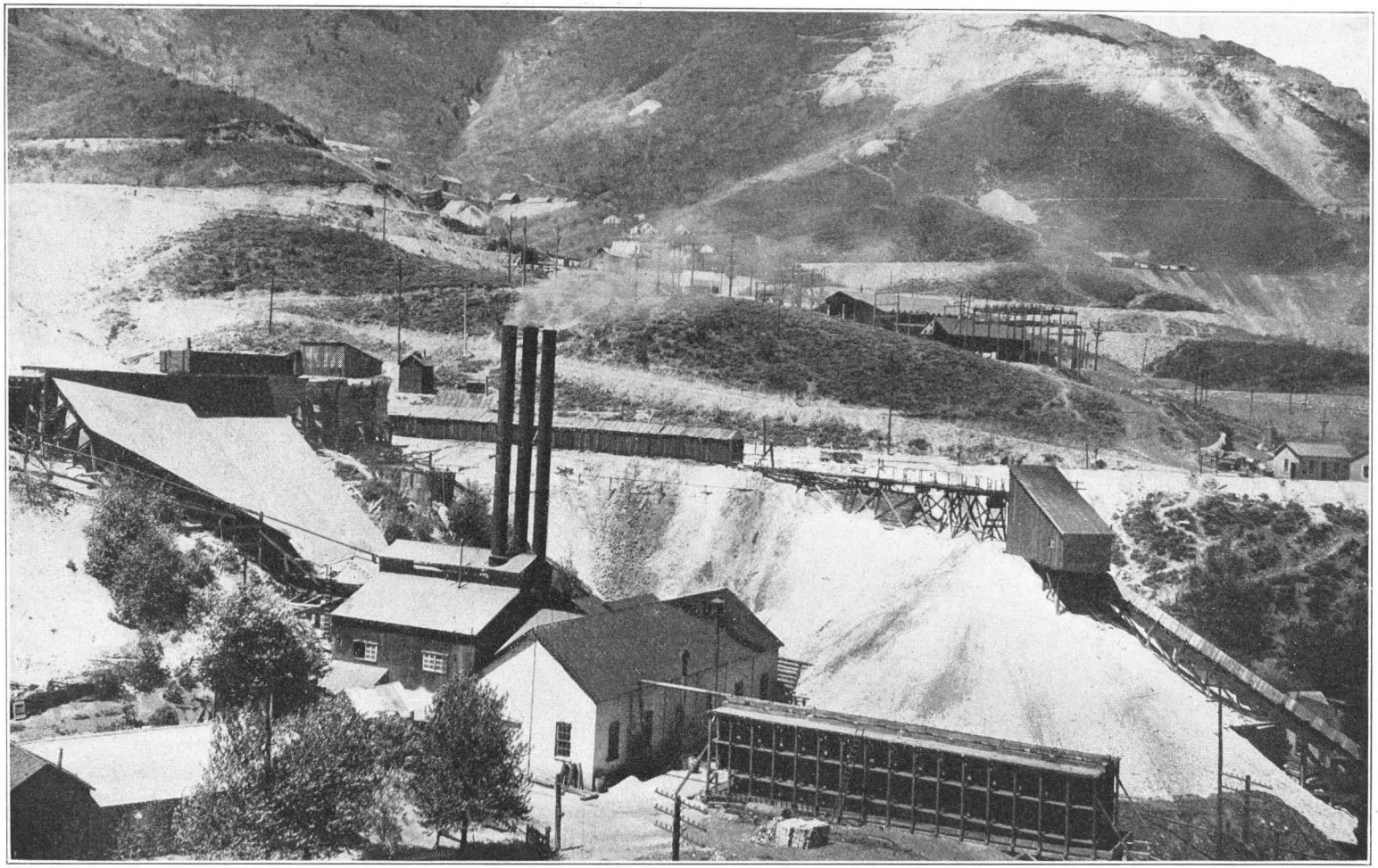
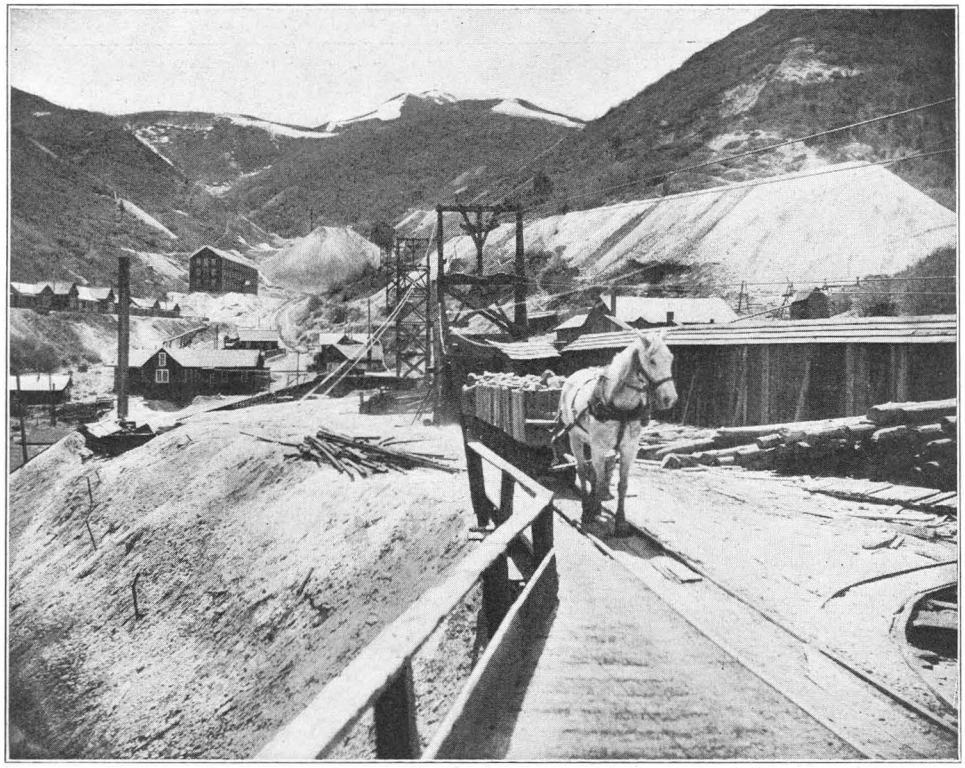
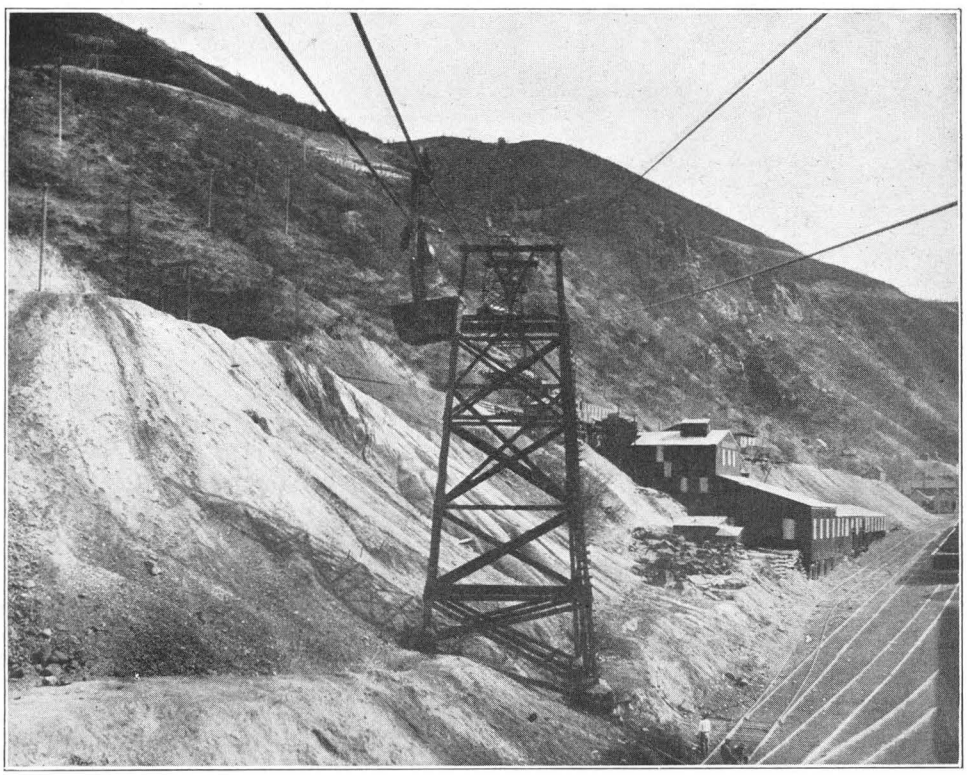


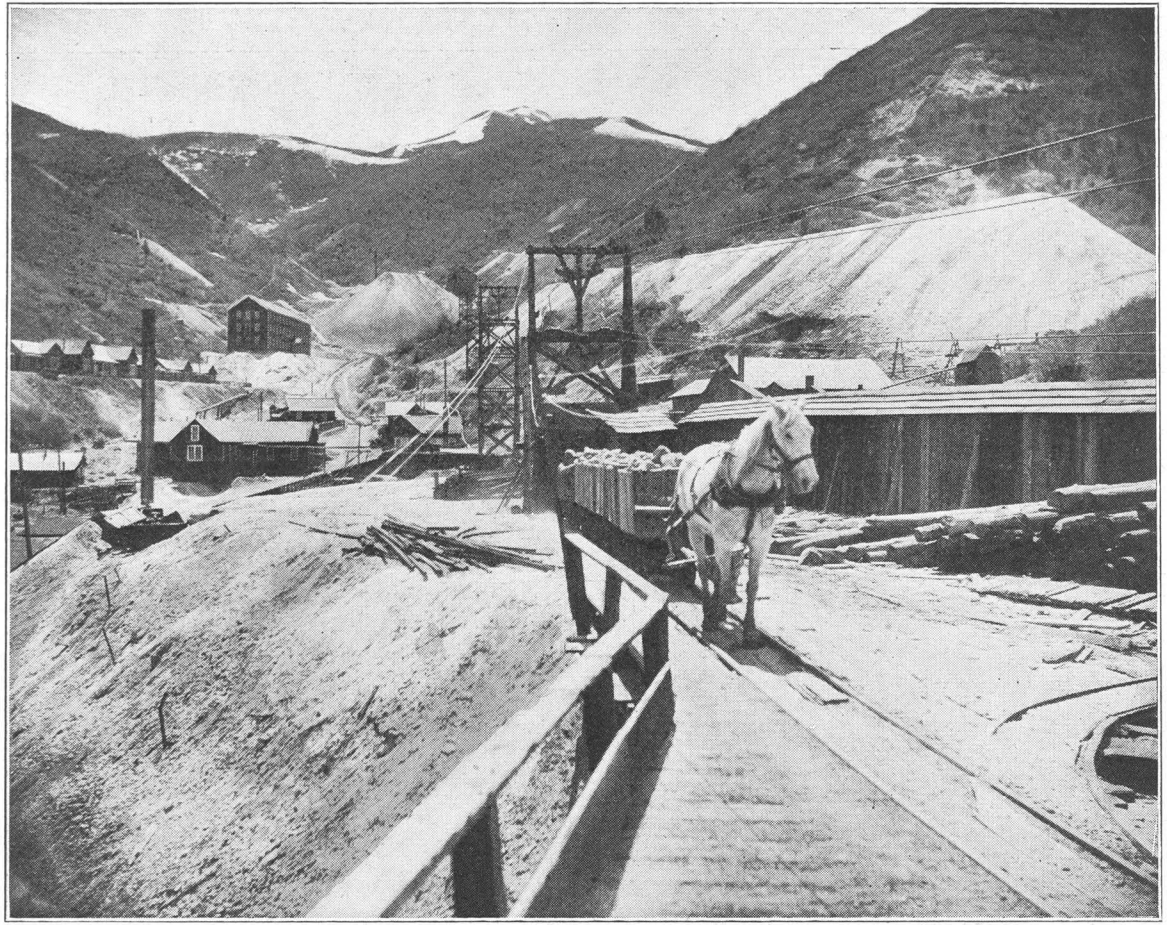
Composite View showing the U. S. Mining Co.'s power plant and dump at mouth of Niagara Tunnel, the transformer house of Telluride Power Co., with Utah Copper and Boston Consolidated workings in back ground.



View of tram-cars on the dump at No. 2 tunnel, Old Jordan mine, of the United States Mining Company.



Section view of United States Co.'s aerial tramway on which the ore is conveyed in buckets to the railway station at Bingham, where it is loaded into cars for the company's smelter in the valley. Hundreds of tons of ore are daily forwarded over this line.



View of tram-cars on the dump at No. 2 tunnel, Old Jordan mine, of the United States Mining Company.

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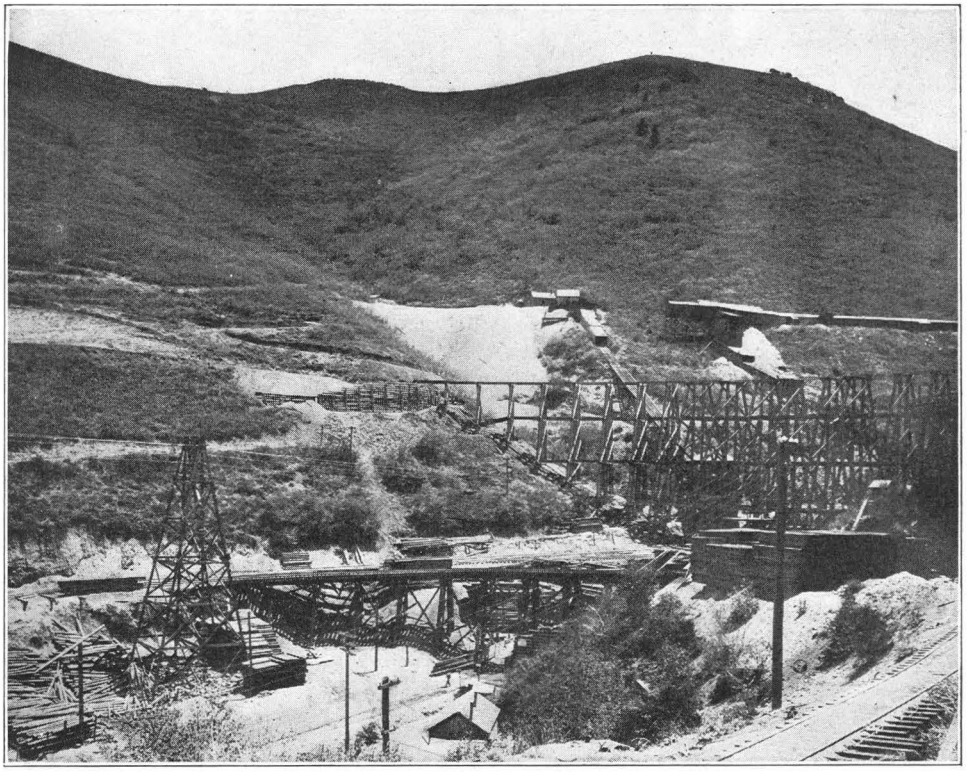
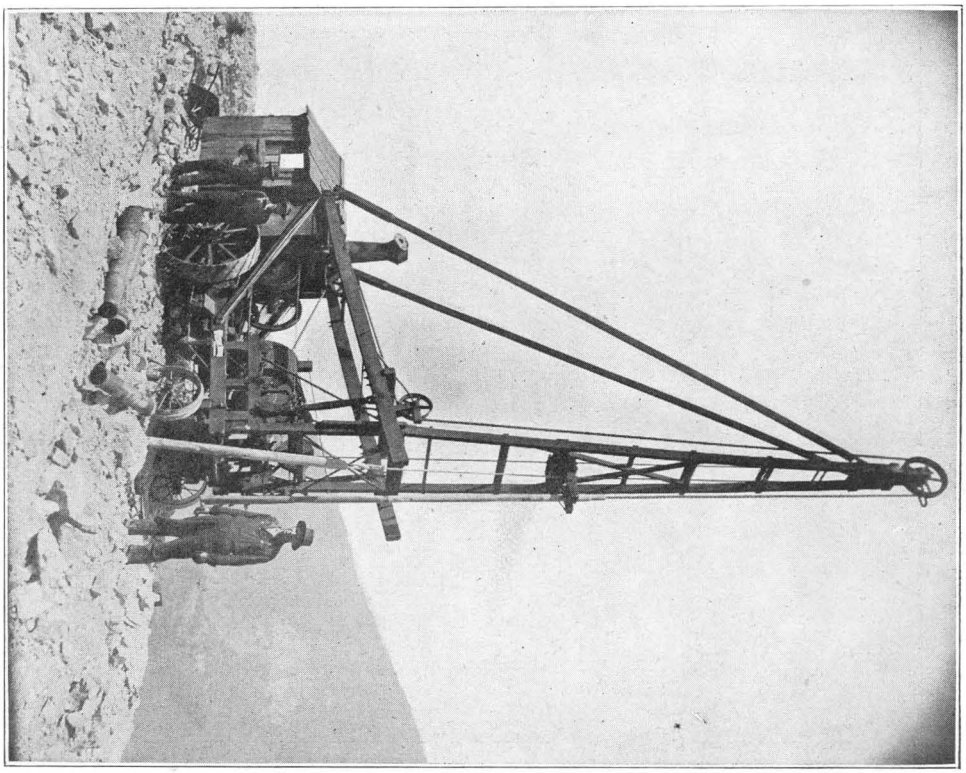
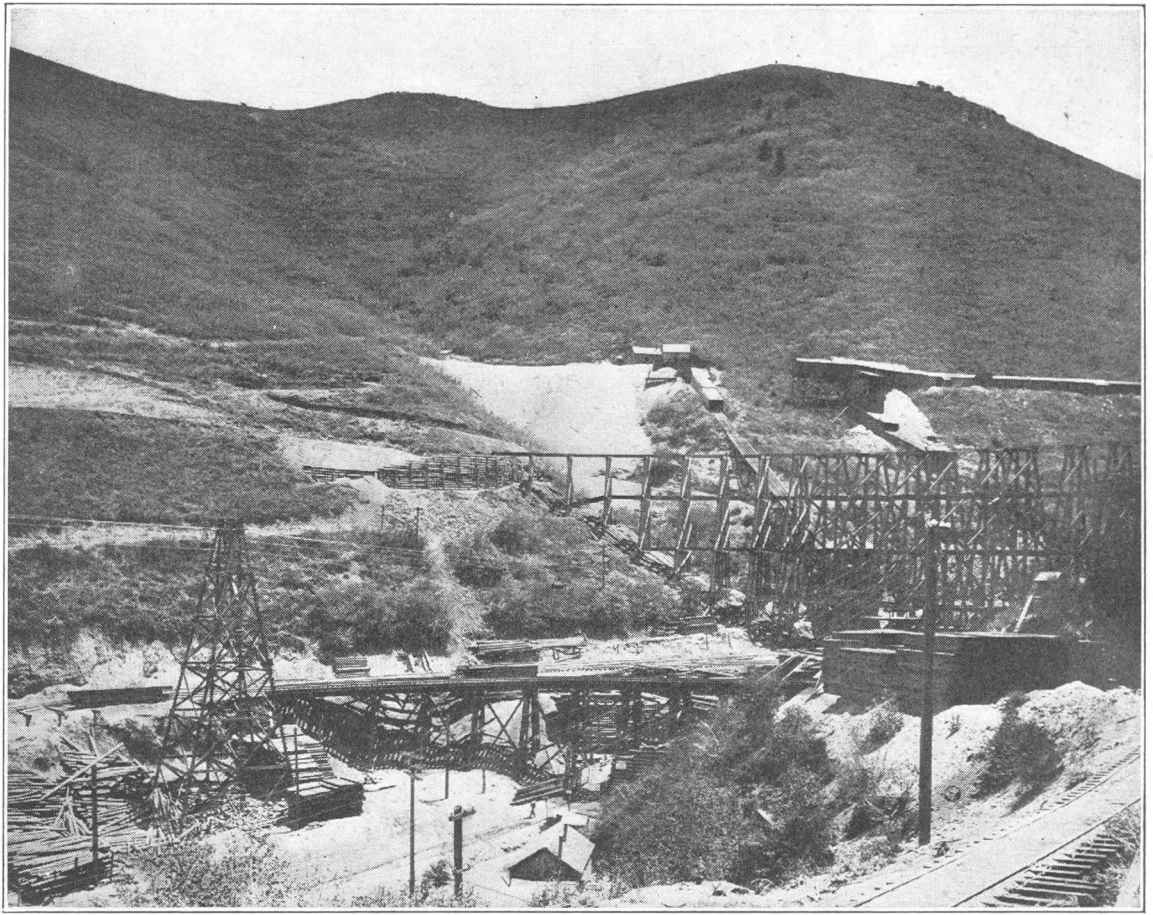


View of Upper Crossing of Utah Copper Co.'s Waste Track over Property of U. S. Mining Co. Material too low in value to treat is taken over these these waste lines to dump ground.



Keystone Drill—Utah Copper Company.



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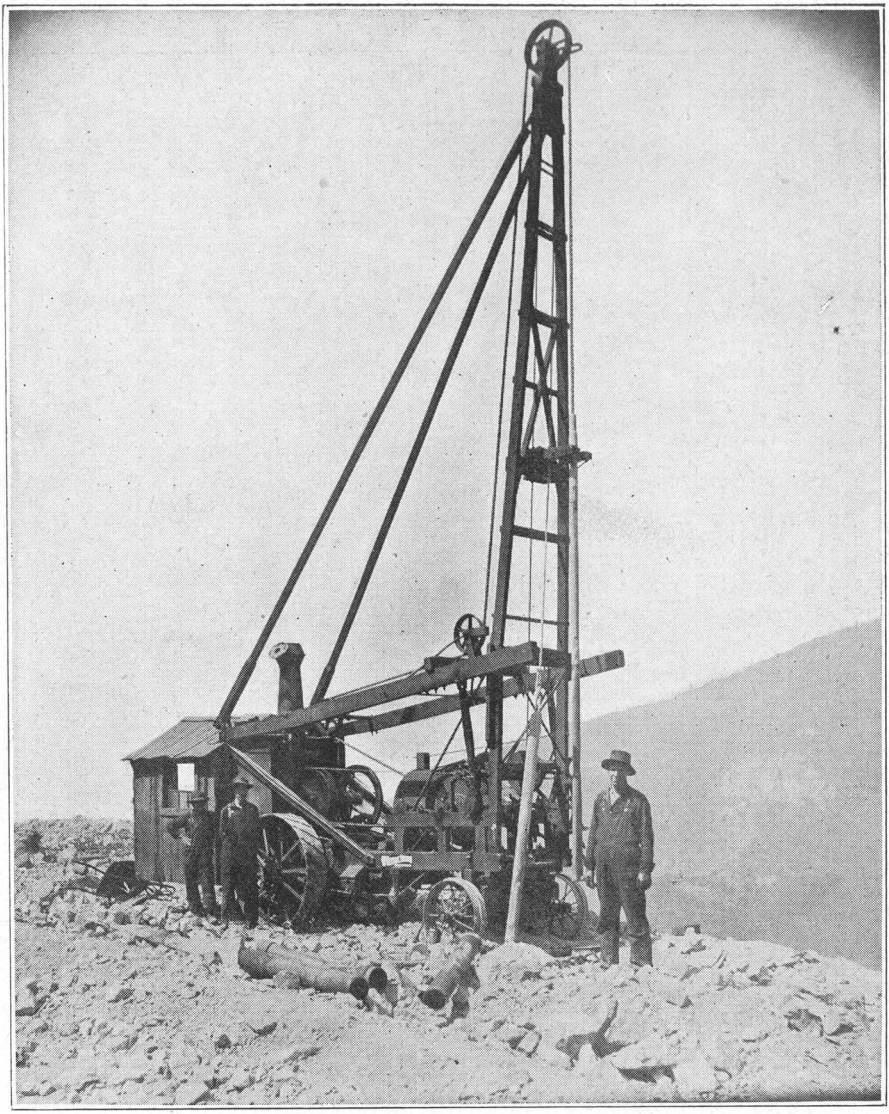
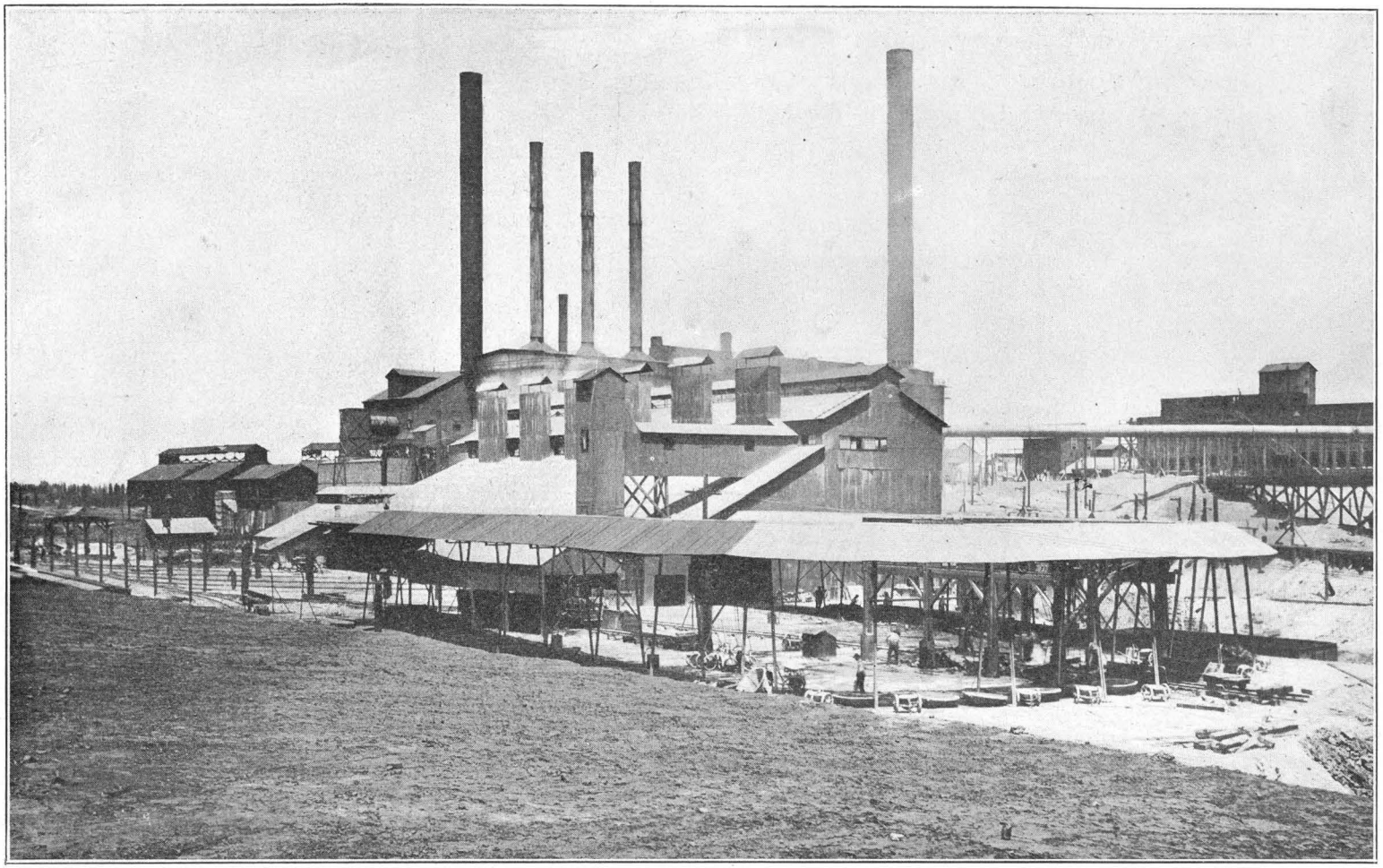
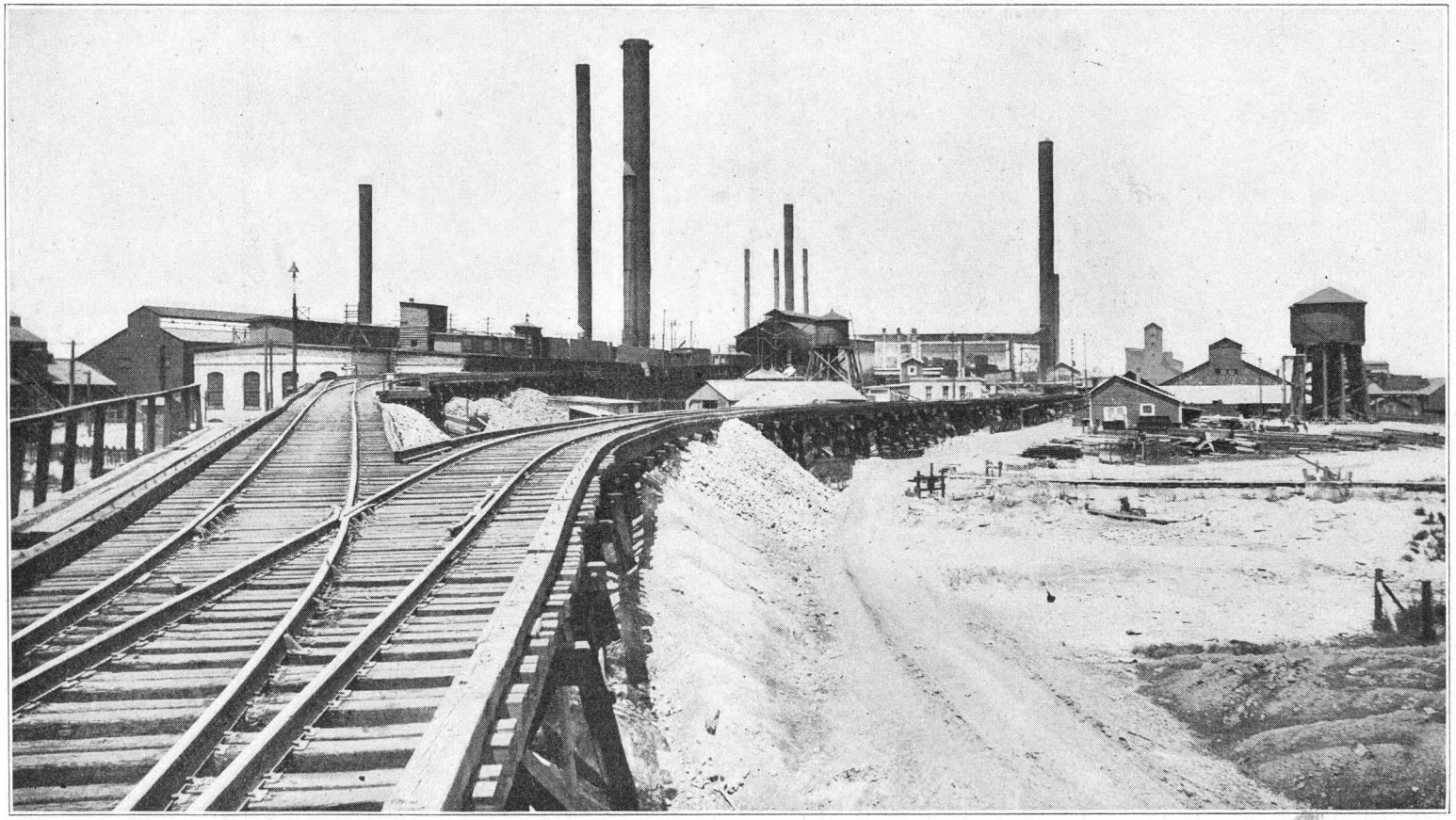


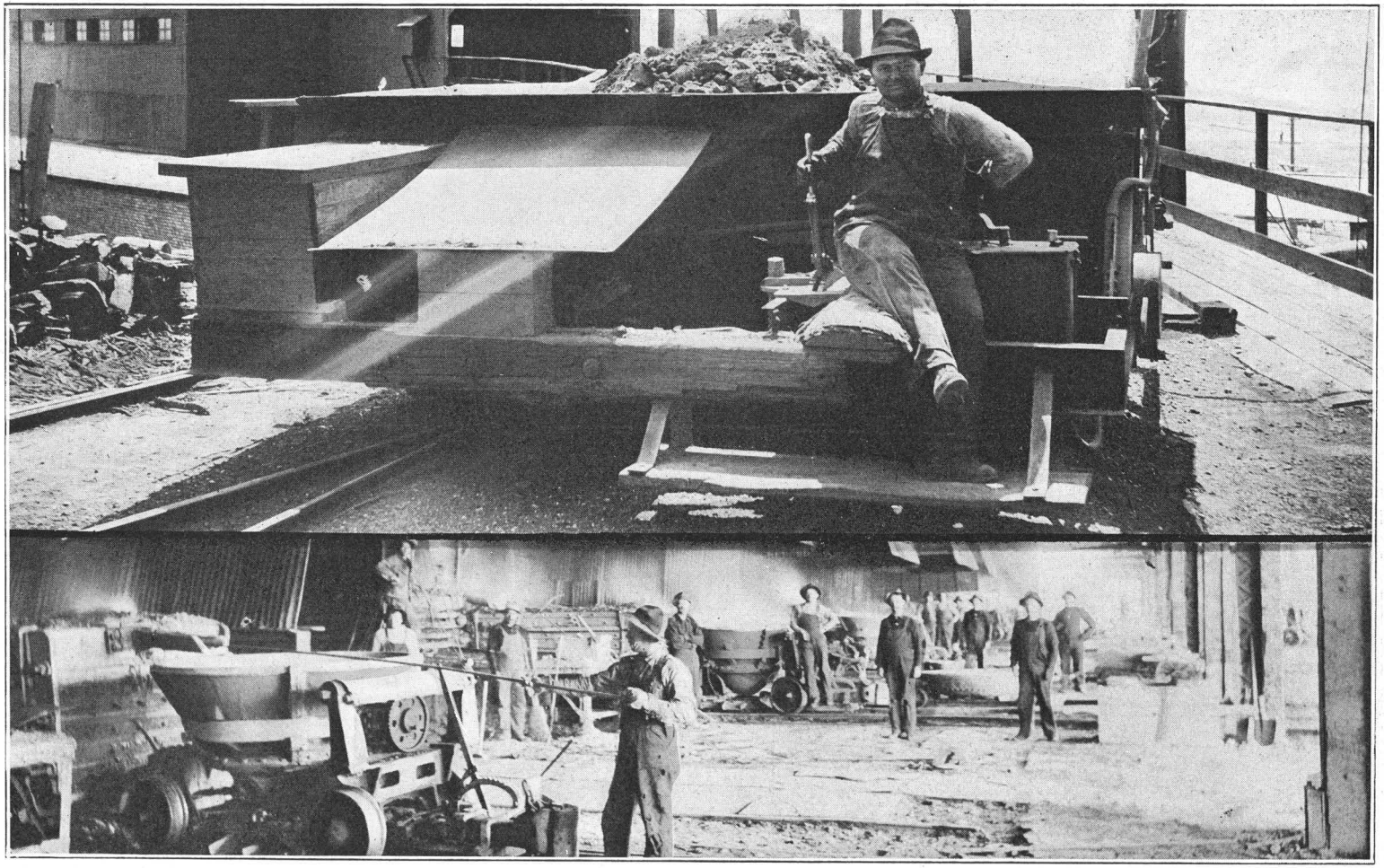
Keystone Drill—Utah Copper Company.



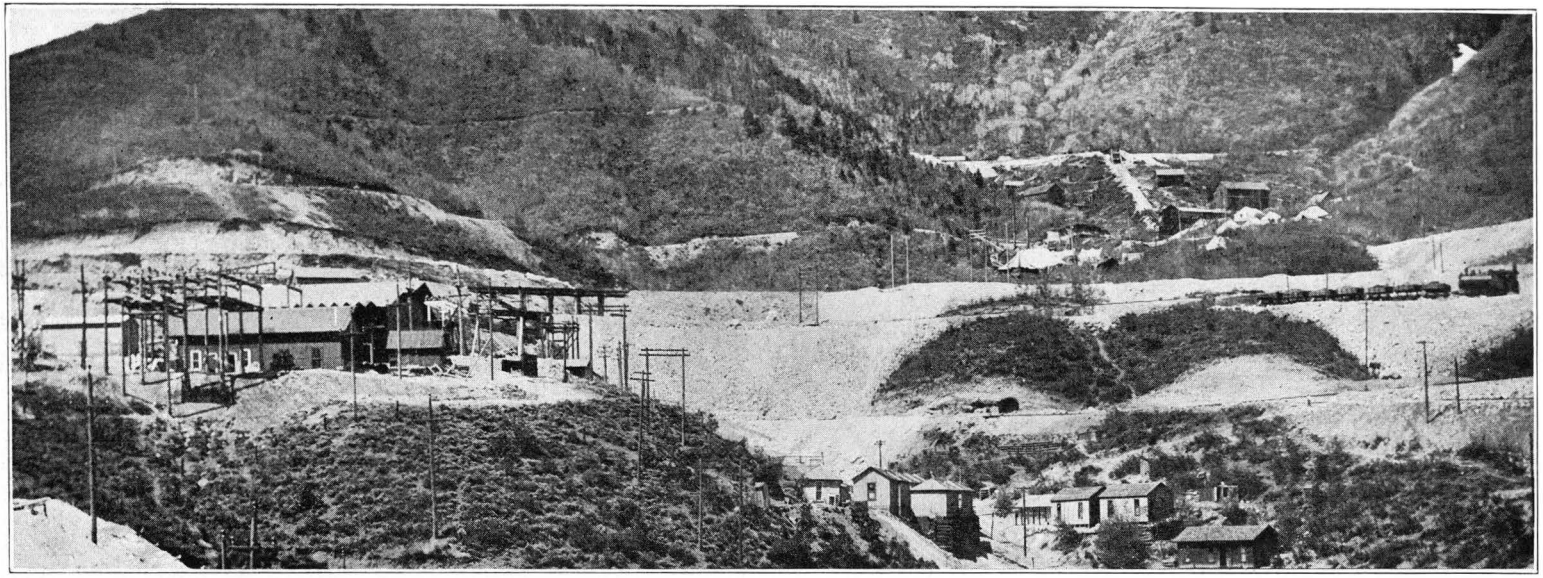
View of blast furnace building of the United States Smelting Company where 1,000 tons of lead ore is daily converted into bullion containing the precious metal contents of the ore. From this point the bullion is taken to the refinery where the gold and silver is separated from the lead. Immediately in the background is the mammoth bag house which filters all the smoke and gas made by the furnaces.



View on the trestles of the United States Smelter from which the R. R. cars dump their loads of ore containing gold. silver. lead and copper into large receiving bins. Note the high stacks from which no smoke escapes. By its process of bagging all the fumes, the United States Smelter has solved the problem of smelting in the Valley of Salt Lake without doing damage to vegetation. At the time this photograph was taken five blast furnaces, one white metal furnace, and twenty roasting furnaces were in operation and passing out no smoke into the atmosphere.



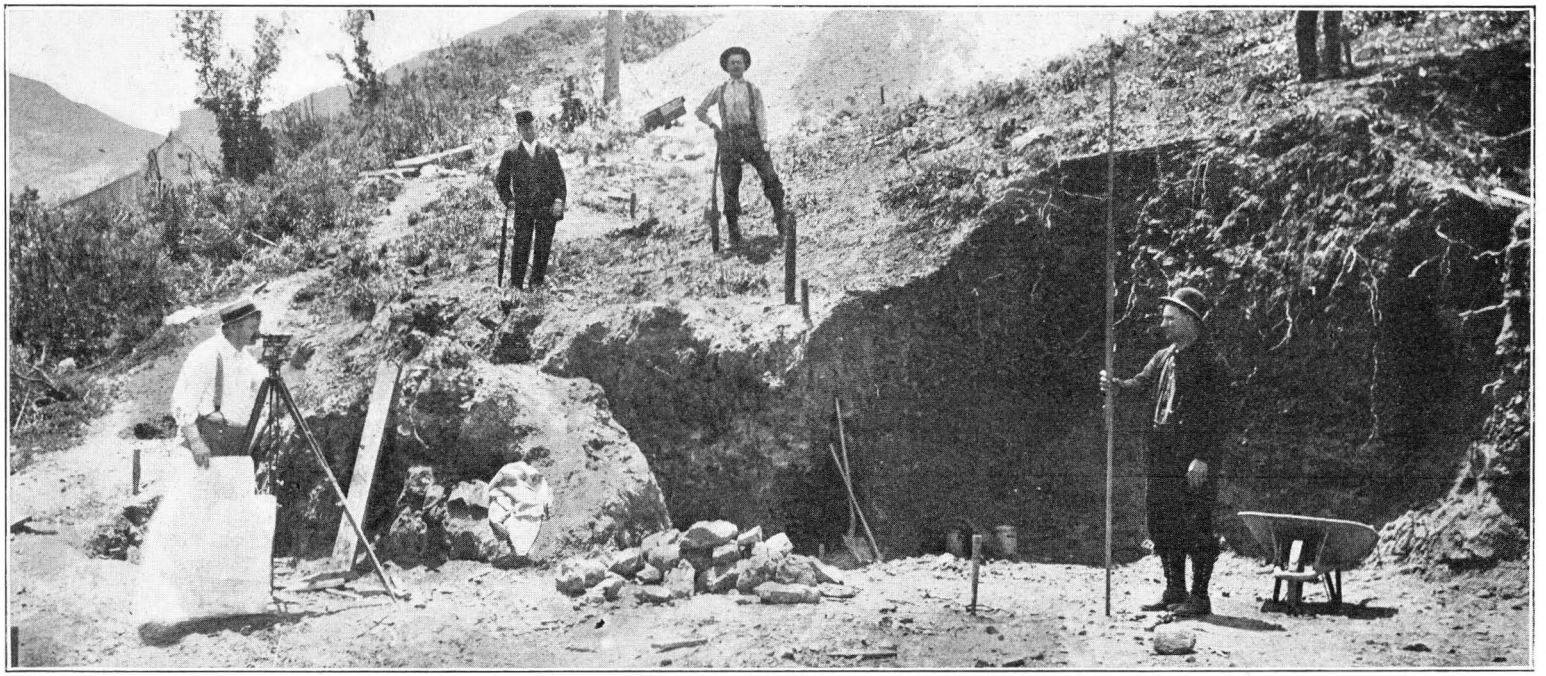
View of a charge car at the U. S. Smelter, with its load of miscellaneous ores, on its way to the feed floor where it is discharged into the blast furnaces. Tapping the lead furnaces in the blast furnace building of the U. S. Company's mammoth smelter. The slag is being tapped into cars and hauled to the slag dumps. The metal is tapped from the sides of the furnaces and settlers and is cast into buillion in an adjoining building.



Substation—Telluride Power Company. Commercial Mine.

The Telluride Power Company

In March, 1901, the Telluride Power Company constructed a 44,000 volt line from Cedar Valley to Bingham, being a branch of the main line from the Provo generating station to the Golden Gate mill at Mercur. At 3 o'clock on the afternoon of April 9, 1901, power was first turned on at the Commercial mine to operate an air compressor, saws, etc. Rapidly the Bingham district became electrified until at the present time it is receiving from the Telluride Company more than 10,000 horsepower from five large generating stations, one of which is located at Grace, Idaho, 160 miles north, and all of these stations are connected with the Bingham system by four 44,000 volt lines. Except for a few minor mishaps the service has been continuous. The operations of the Telluride Company have meant a great deal to Bingham, and especially to those operating concentrator machinery as, on account of the fly wheel action of the great Telluride system, the speed regulation may be said to be perfect.



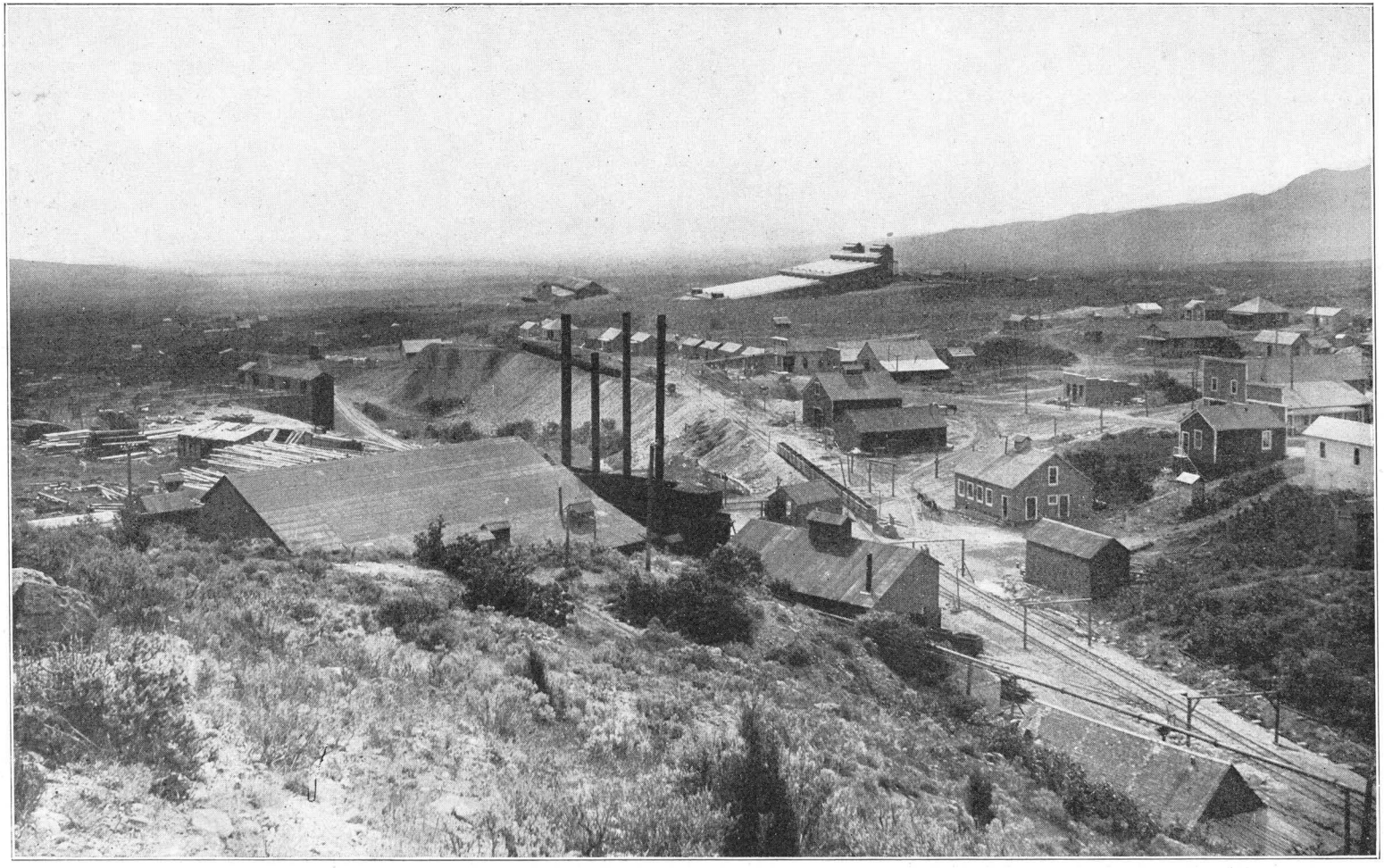
Site of Silver Shield Mill now under constructon.

The Silver Shield Mining Company

The Silver Shield Mining Company is a famous old producer lying up the Commercial Gulch. Its property comprises an area of over 80 acres. The mine is under the management of Harry S. Joseph of Salt Lake City, and is operated through the Franklin tunnel which cuts the Silver Shield vein at a depth of 700 feet. At the mouth of the tunnel is a five drill compressor and all the necessary equipment to operate the mine. The ore is brought to the surface by electric traction.

The ore bodies occur as shoots in the veins, breaking into the quartzite and limestone. Large bodies of low grade ore are already blocked out and awaiting shipment. The management proposes to erect a 100-ton concentrator close to the mouth of the tunnel. The foundation for the plant has already been laid and the mill should be completed before the end of the year. With the mine and mill both in operation, the company will resume paying dividends.

Tunnel Entrance—Silver Shield Mining Company.



View—Lark, Utah. Showing Ohio Copper Mill—Mouth of Mascott Tunnel. Bingham Mines Co. office and Compressor Plant.

The Ohio Copper Company

The Ohio Copper Company is incorporated under the laws of Maine with a capitalization of 1,500,000 shares, par value $10.00. The officers are James McFarlane, president; Carlos Warfield, vice president; R. Hopkins, second vice president; G. Baglin, secretary and treasurer; Colin McIntosh, general manager; Felix McDonald, mine superintendent, Frank Jones, mill superintendent.

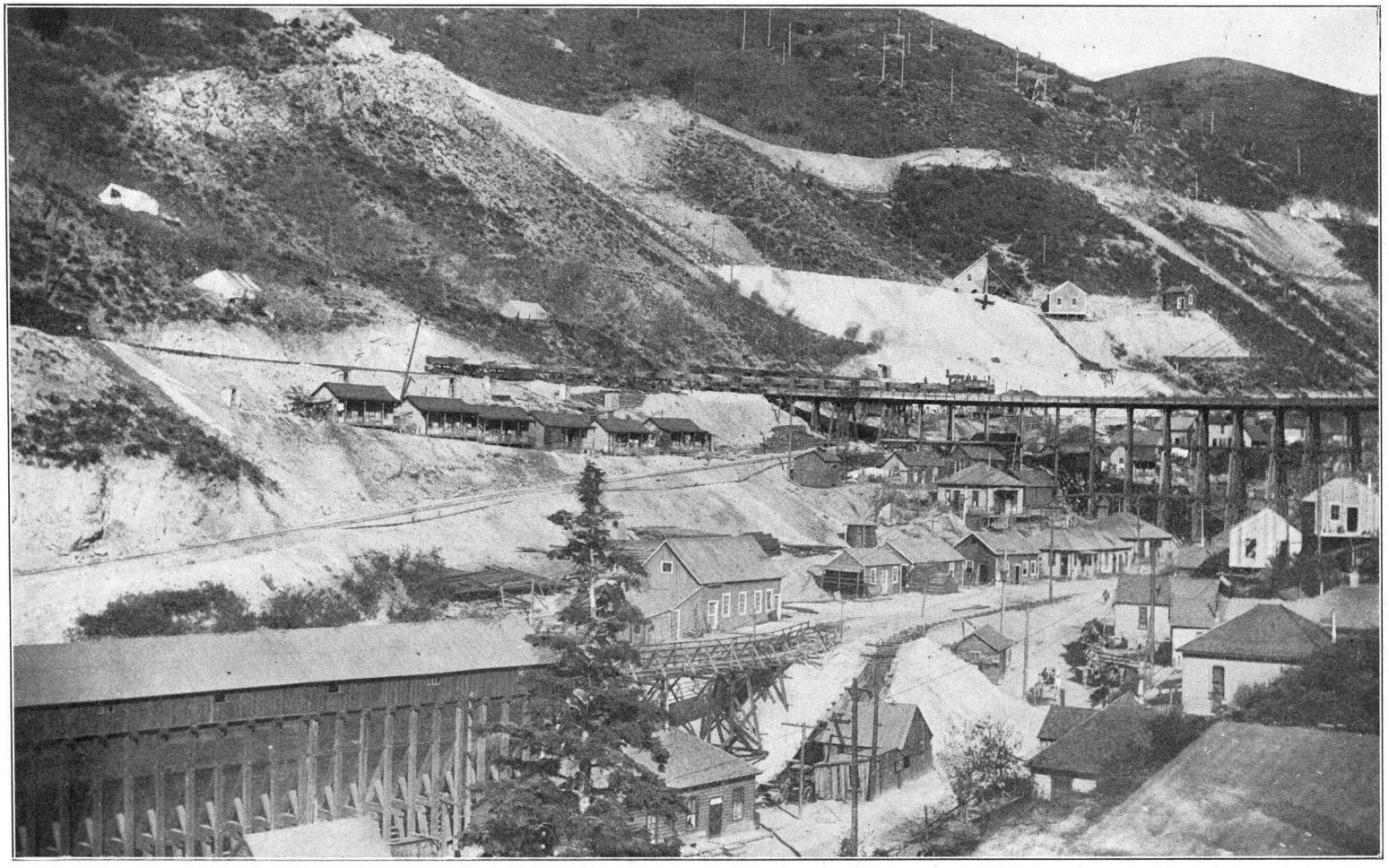
The mining property of the company comprises a group of patented claims aggregating 120 acres together with a mill site of 1480 acres. The mining property is joined immediately on the west by the Utah Copper Company and the same mineral conditions are common to both, although the medium is somewhat different.

The development work consists of two tunnels and a shaft sunk on the dip of the vein to a depth of 1400 feet where it connects with the main transportation tunnel. This tunnel is equipped with electric haulage and will conduct the ore to the concentrating mill at Lark. The development work is considerably in excess of 6000 feet. Over 13,500,000 tons of ore have already been blocked out above the main tunnel level and is ready for immediate extraction.

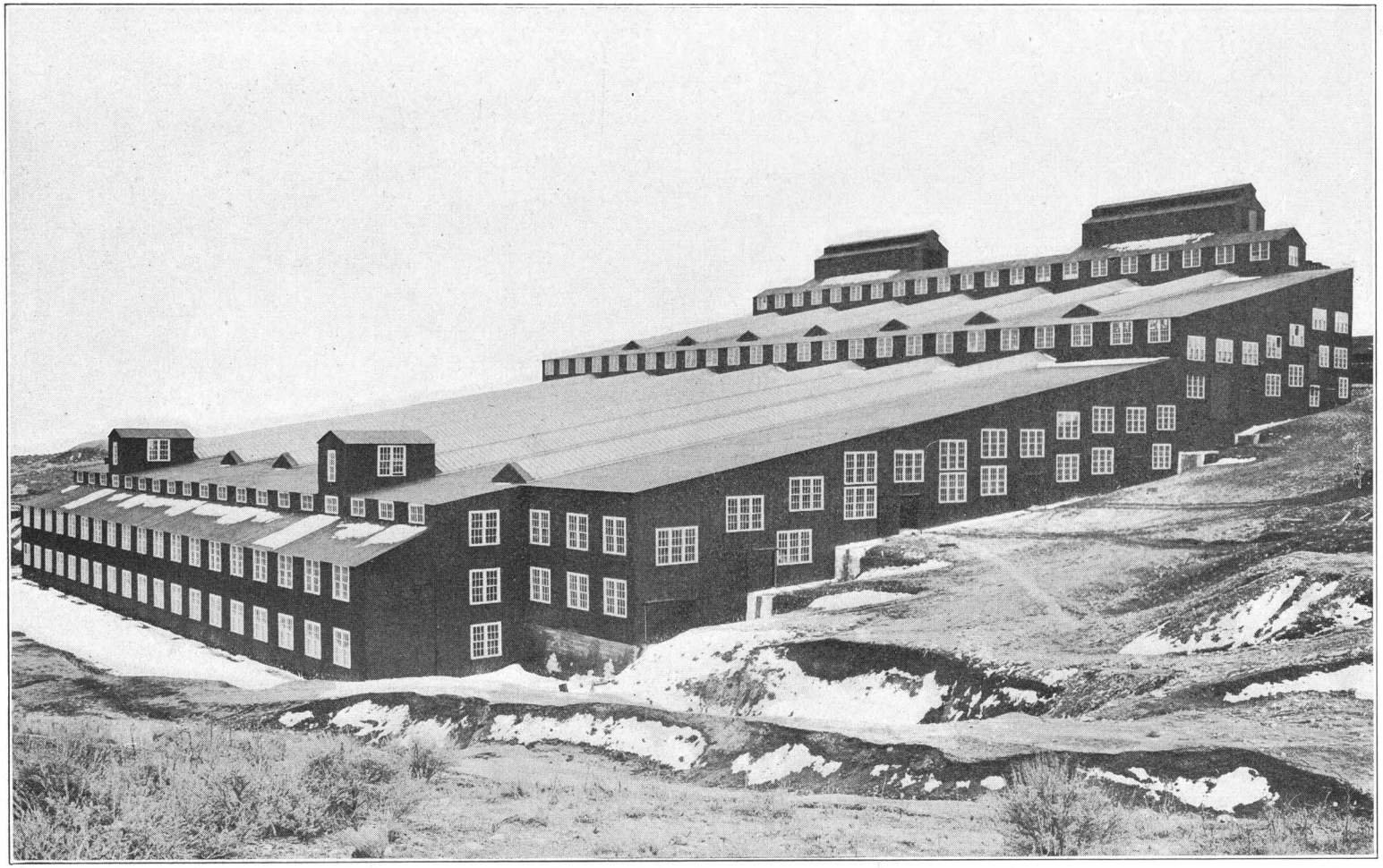
The rock formation of the property is of a much shattered quartzite merging into the adjoining porphyry. Through the mass are tongues of the latter rock. The whole is mineralized in the same manner as the adjoining Utah Copper ground. The property is traversed by three strong fisures, two of which have been prospected and show an ore body 400 feet wide, carrying an average of 1.64 per cent copper. The ore from the fissures themselves, as shipped in the past, carried from 15 to 35 per cent copper. The ore of the Ohio Copper will prove a better concentrating material than the so-called porphyry ores. The rock being quartzite, there will be less sliming, the process will be little masked by talcose matter and will result in a lower cost of concentrating.

The new mill of the company will soon be completed and ready for work. It is located at Lark on the east slope of the mountain about three quarters of a mile from the mouth of the Mascotte tunnel. It is constructed of structural steel and concrete floors, and will have a daily capacity of 4,500 tons. The plant connects with the main line of the Rio Grande Western railroad by a spur line running to Revere. The mill has been designed by, and erected under the direction of Colin McIntosh, general manager of the company.

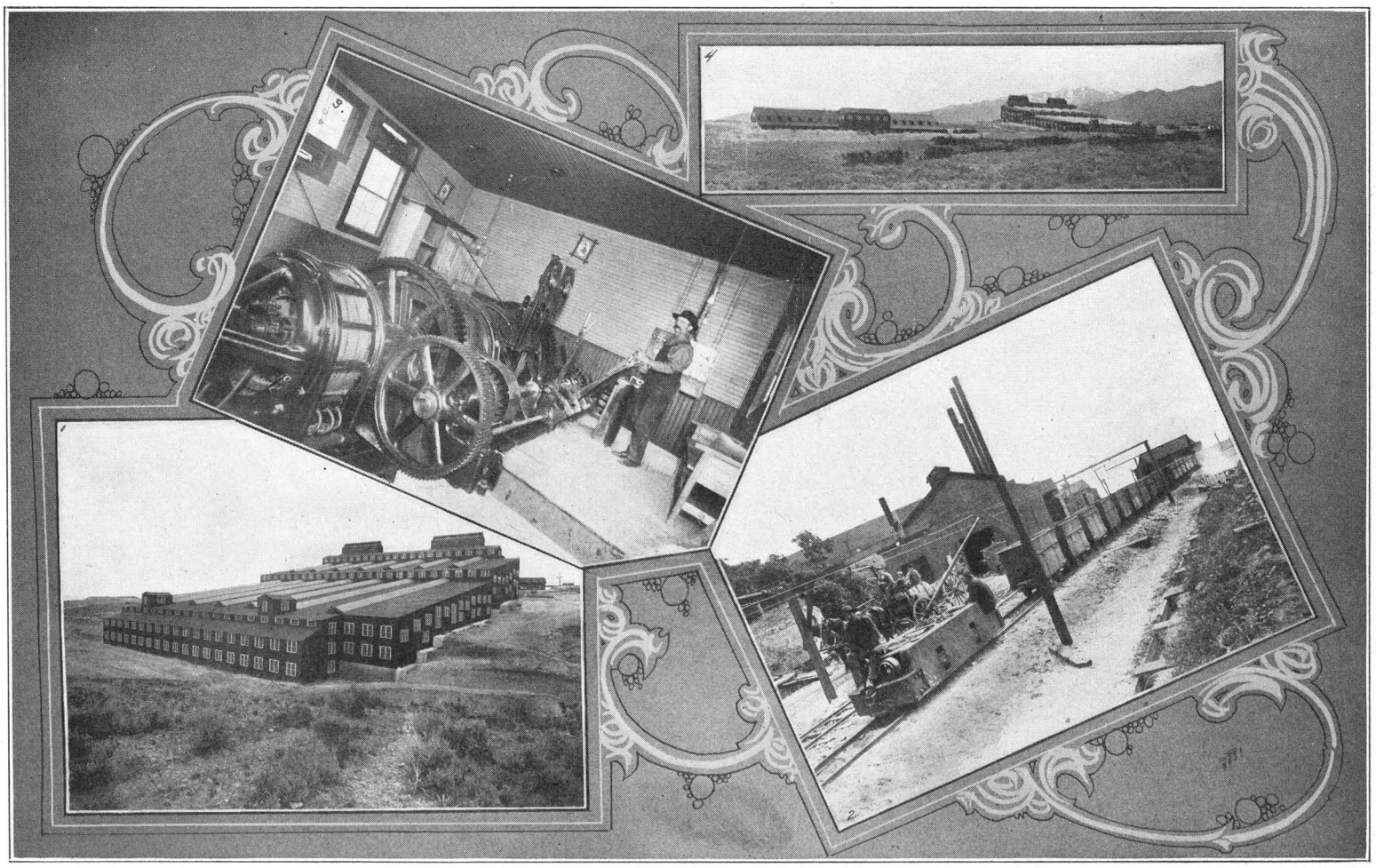
With its splendid transportation facilities and reduction equipments, the Ohio Copper Company can, with only 20 acres of its area developed, produce copper for 9 cents per pound, delivered to eastern markets. There is sufficient ore blocked out to keep the big company working at full capacity for twenty years. According to the figures of Mr. McIntosh—which are most conservative—the company when once under way, can earn a monthly net profit of $127,575 with copper selling at 13 cents. This will rate the Ohio Copper as one of the big producers of the country.



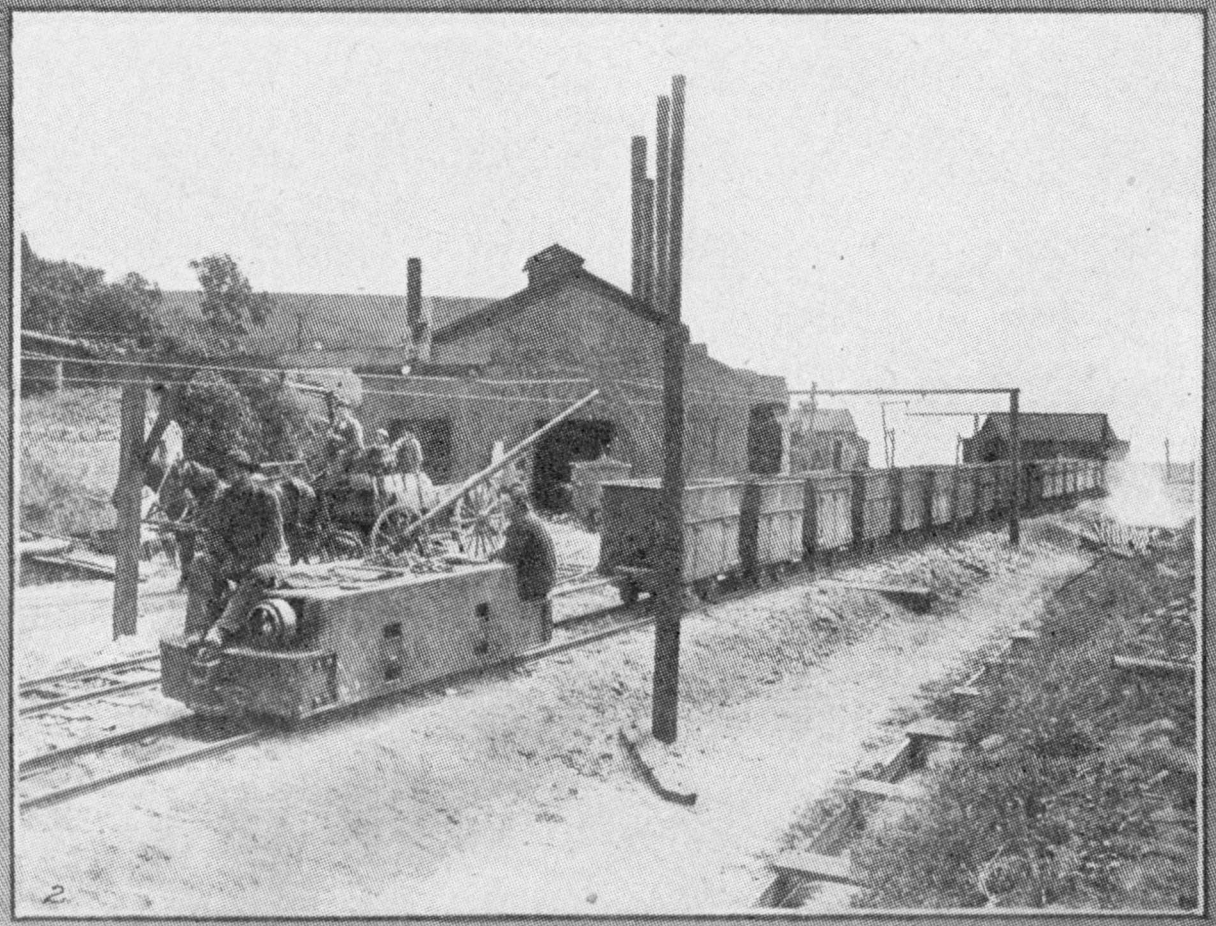
Ohio Copper (x) Shaft. Offices. Compressor Plant and Ore Bins.



Ohio Copper Concentrating Mill. Capacity, 3,000 tons daily. Photo by Shipler.



1. Ohio Copper Mill. 2. Ore Train mouth Mascotte Tunnel.
3. Electric Hoist Ohio Copper Shaft. 4. Ohio Copper Mill and Slime Plant.



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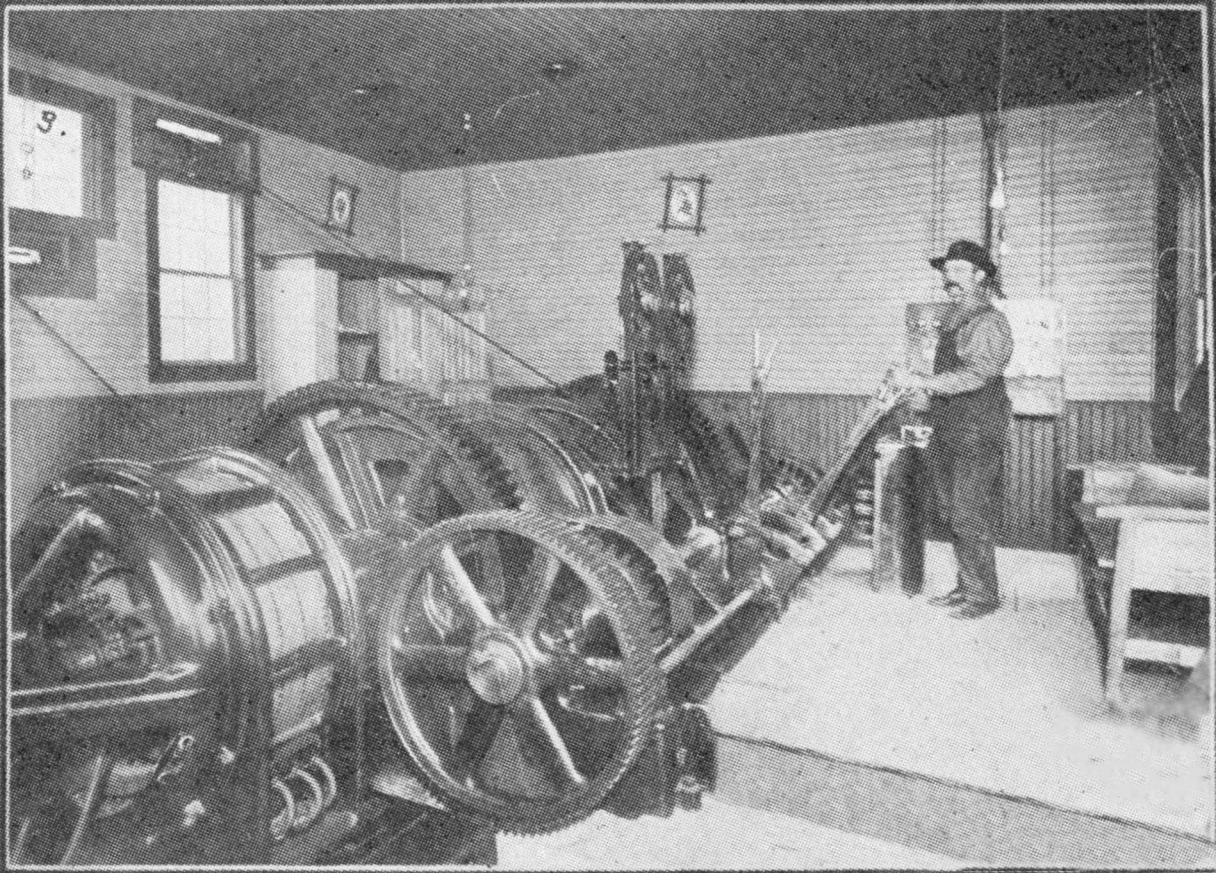
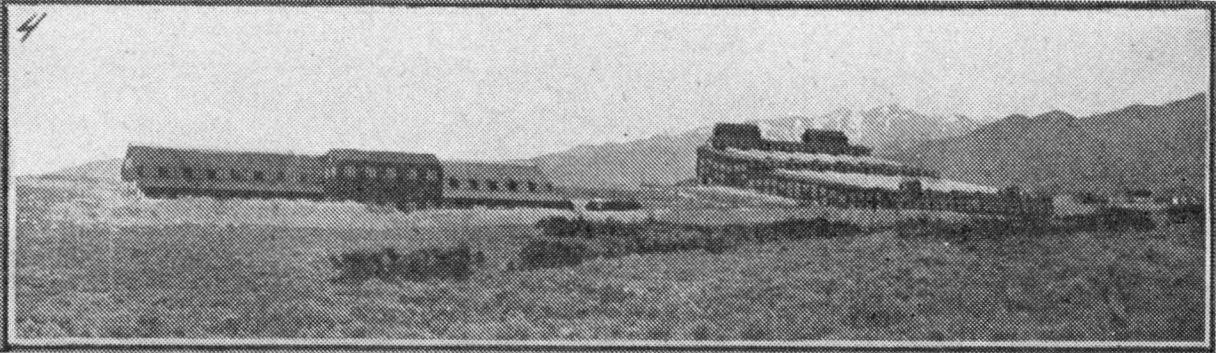
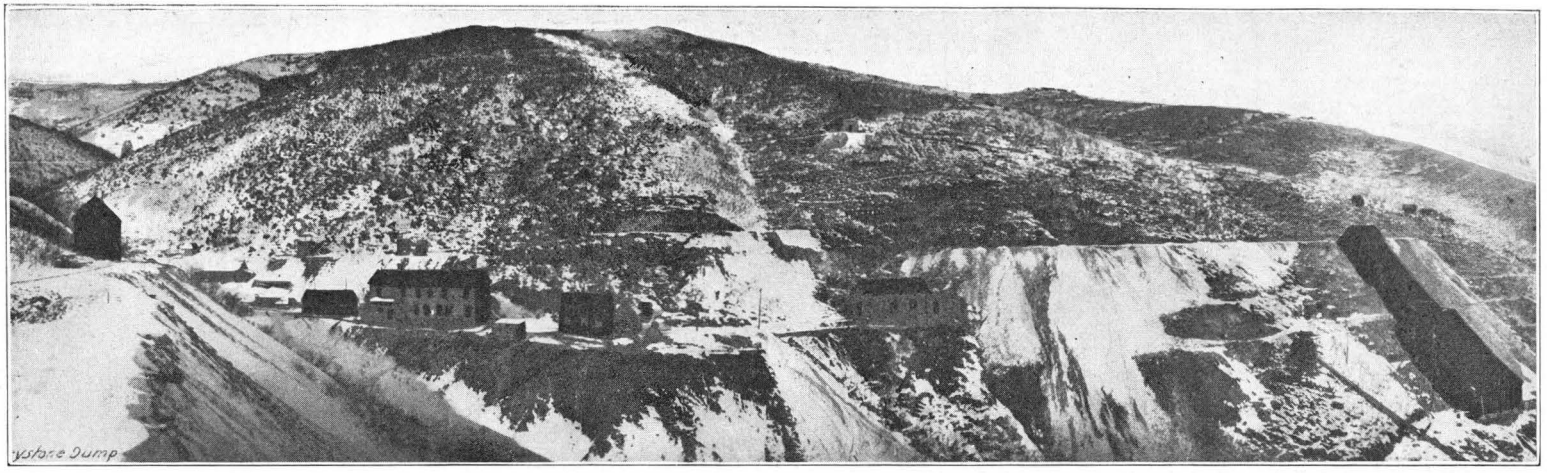






Mine Buildings and Mill—Fortuna Mining Company.

The Fortuna Mining Company

The Fortuna Mining Company owns a group of claims, adjoining the Utah Copper and Ohio Copper properties, comprising an area of about 195 acres. The officers of the company are Simon Bamberger, president; Sidney Bamberger, manager; J. B. Bean, secretary, and James Start, mine superintendent.

The ore in the mine is a sulphide, a considerable body of which is already blocked. This ore is of the same character as that which has made the Ohio and Utah Copper big propositions. The company has about four miles of underground workings, including two shafts which at present are being sunk below the 800 foot level. The equipment includes a 100-ton mill, an electric hoist and compressor and a gasoline hoist in use in the Mayflower shaft on the 800-foot level. Considerable ore has already been shipped from this property.

Bingham Amalgamated Copper Company

The Bingham Amalgamated property adjoins the Ohio Copper and Fortuna and includes the Illinois and Copper Glance groups. Jos. Edmunds is general manager and resident director of the mine.

Thus far the energy of the company has been mainly directed towards developing the property although considerable ore has been already shipped. The mine has an 1800 foot tunnel in McGuire's Gulch, also an ore shoot 60 feet wide, running high in copper and $1.20 in gold to the ton. The equipment at the mine also includes a complete electrical plant.

Bingham Mines Company

The Bingham Mines Company was organized in 1908, under the laws of Maine, with a capitalization of $1,500,000, as a reconstruction of the Bingham Consolidated Mining Company. J. P. Graves is president of the company; Jas. Creighton, General Superintendent; Homer Pett, Business Manager.

This property consists of over 500 acres of ground which includes the Dalton and Lark, the Commercial, the Brooklyn, and a number of smaller properties. These mines possess a variety of ores, principally sulphides, carrying gold and silver values with copper in the lower levels.

The Dalton and Lark mine has two shafts and four tunnels and is thoroughly equipped with electric apparatus for operating purposes. About 1,000,000 tons of ore are already in sight in this mine. The Commercial mine is considered the best property owned by the Bingham Mines Company. It has two ore bodies already in sight, with ore reserves of over 500,000 tons. The Dalton and Lark is making daily shipments to the American Smelting and Refining Company at Garfield.

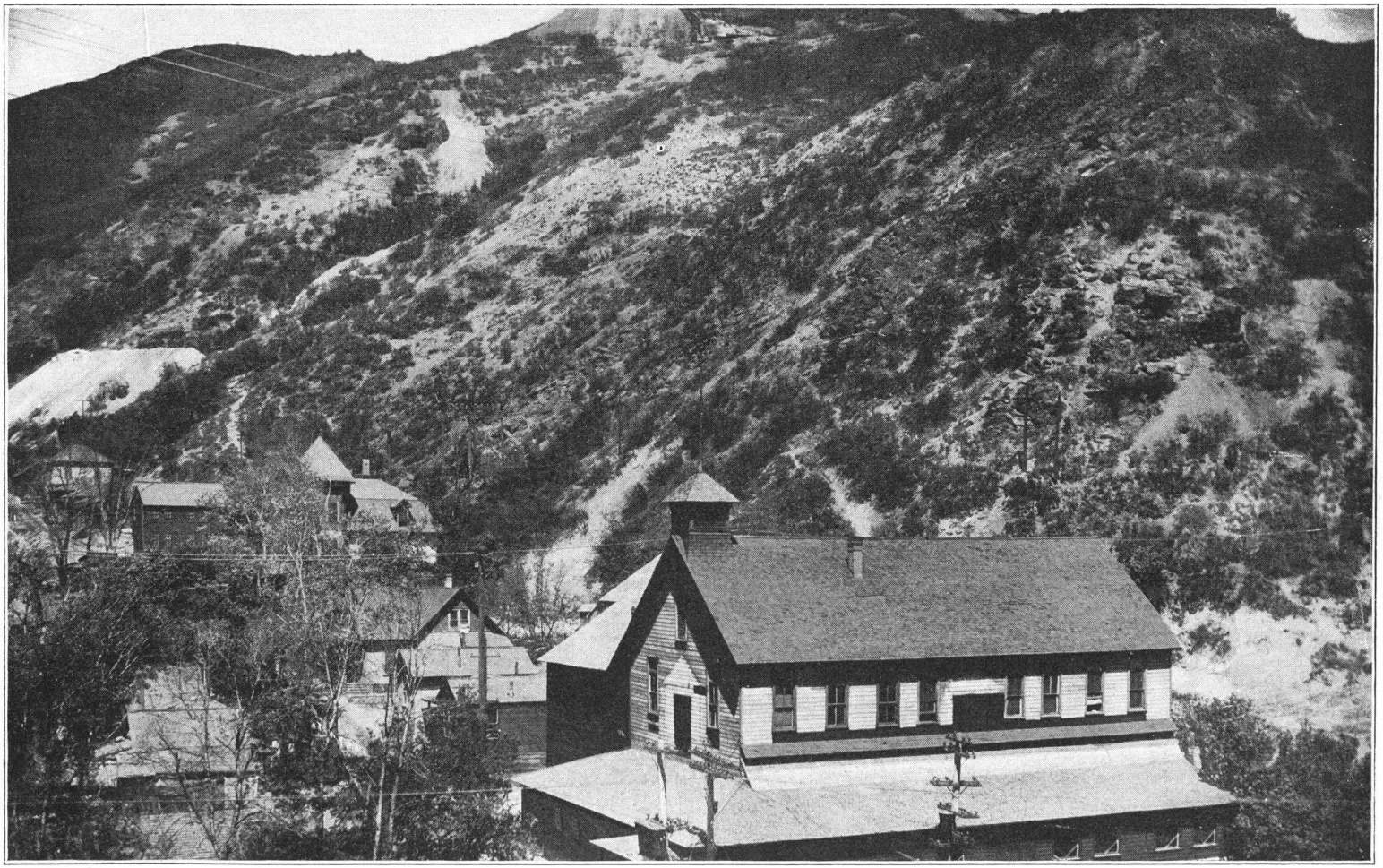
The North Utah Mining Company

This property, which is controlled by British interests, consists of a consolidation of the Old Butler Liberal, Butler No. 3, Butler Mining and Milling, New Red Wing and the Hooghly and Vespasian groups together with the Markham Mill—a 20-ton concentrator. The officers of the company are: W. D. Bohm, general manager and financial agent; Wm. Robbins, mine superintendent; John Brooks, mill superintendent; Pearse, Kingston & Browne of London, consulting engineers.

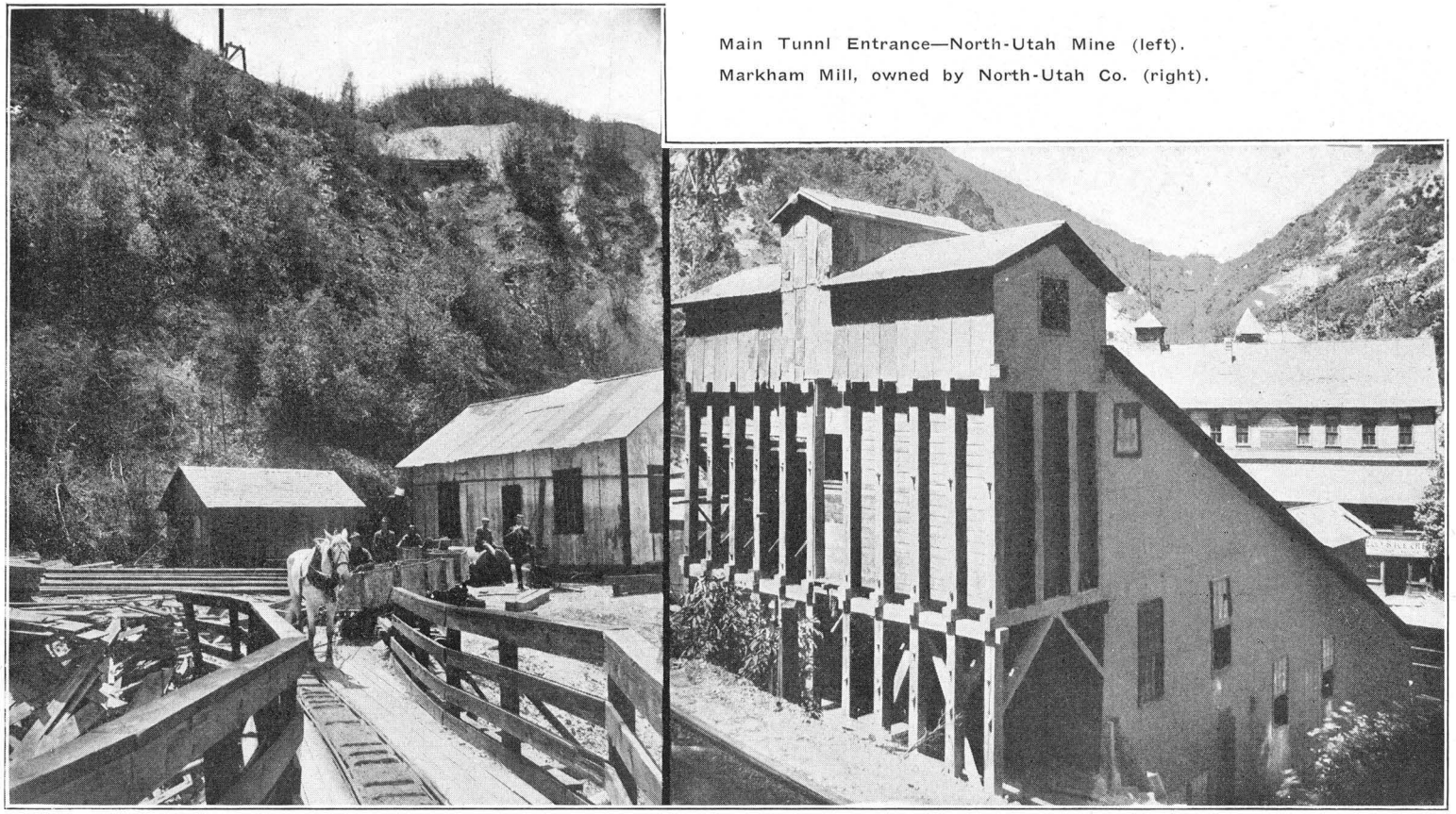
The ore bodies occur as contact deposits, and in fissures in the quartzite. The mineralization is extensive and ranks among the highest grade ore in the camp. Considerable of this has been shipped. At present the property is shipping 100 tons of 40 per cent lead ore per week.

The property is opened by a shaft and several tunnels. A 15-drill compressor has been installed, and one of the largest hoists in the camp has been placed in the Butler tunnel, the intention of the management being to sink the shaft to a depth sufficient to open the ore body on an extensive scale. Under this efficient management the North Bingham property will soon take its place among the many dividend payers in the camp.

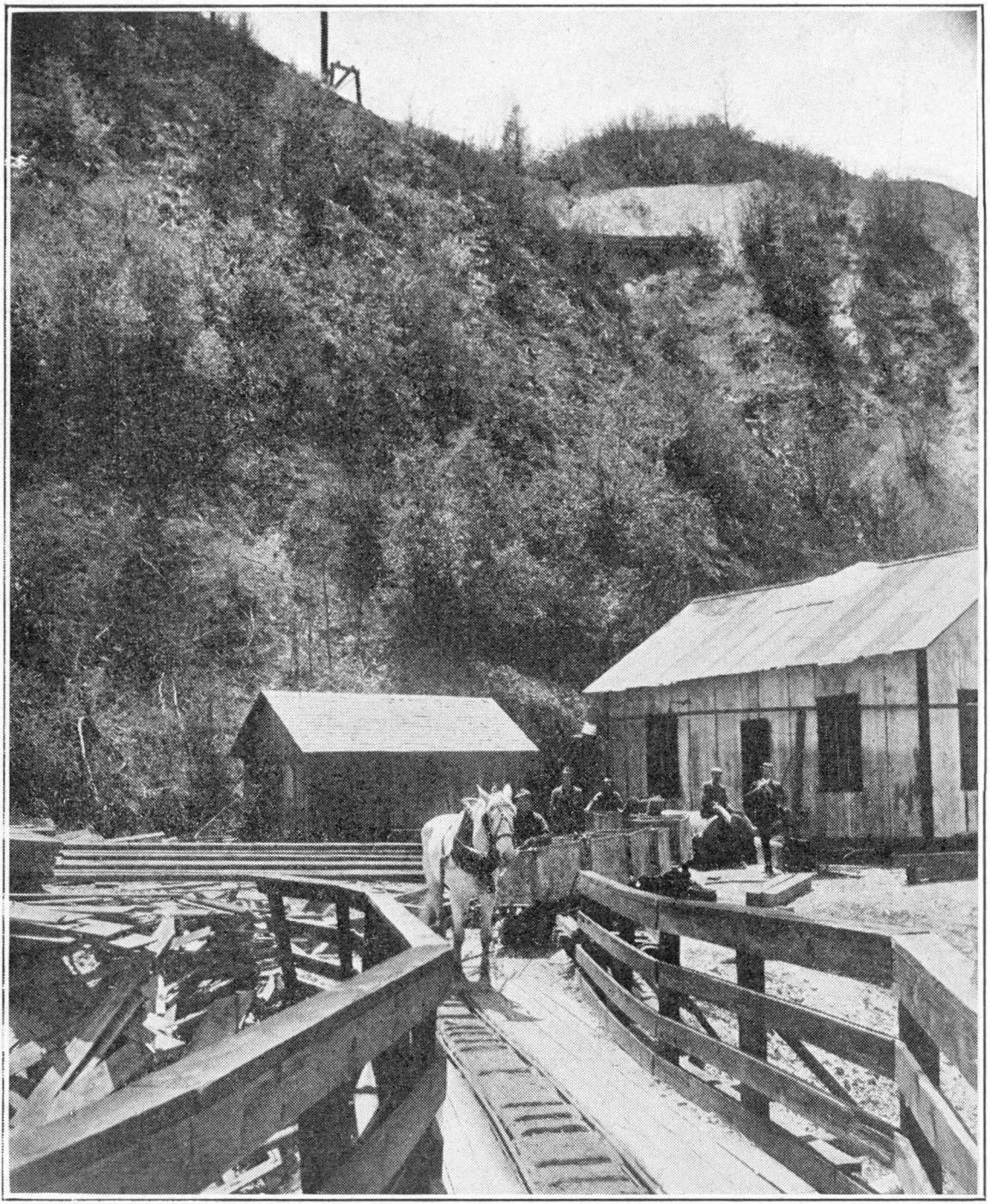
North-Utah Property—Markham Gulch.



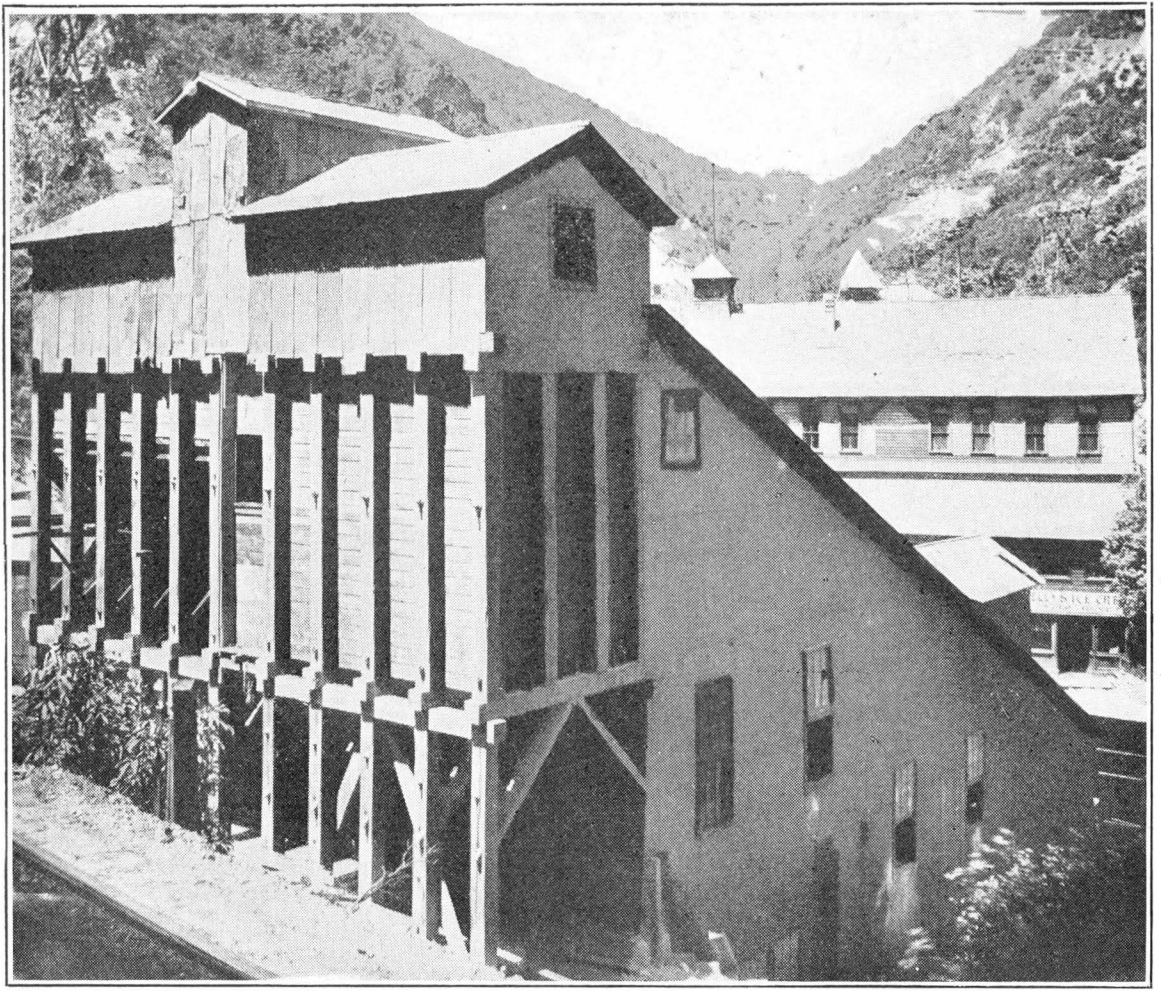
Julia Dean Mine—Markham Gulch.



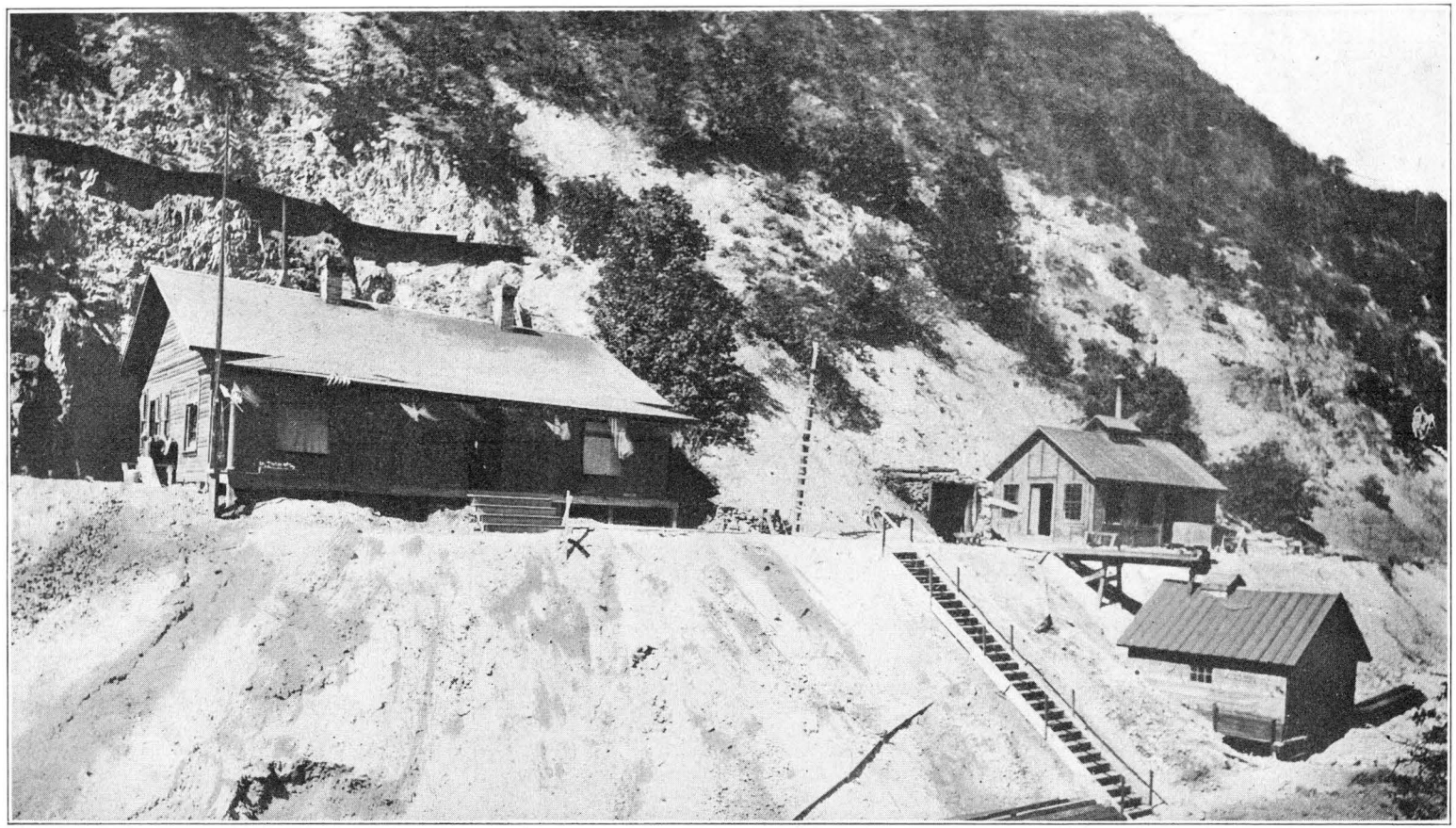
Main Tunnl Entrance—North-Utah Mine (left).
Markham Mill, owned by North-Utah Co. (right).



Main Tunnl Entrance—North-Utah Mine.



Markham Mill, owned by North-Utah Co.



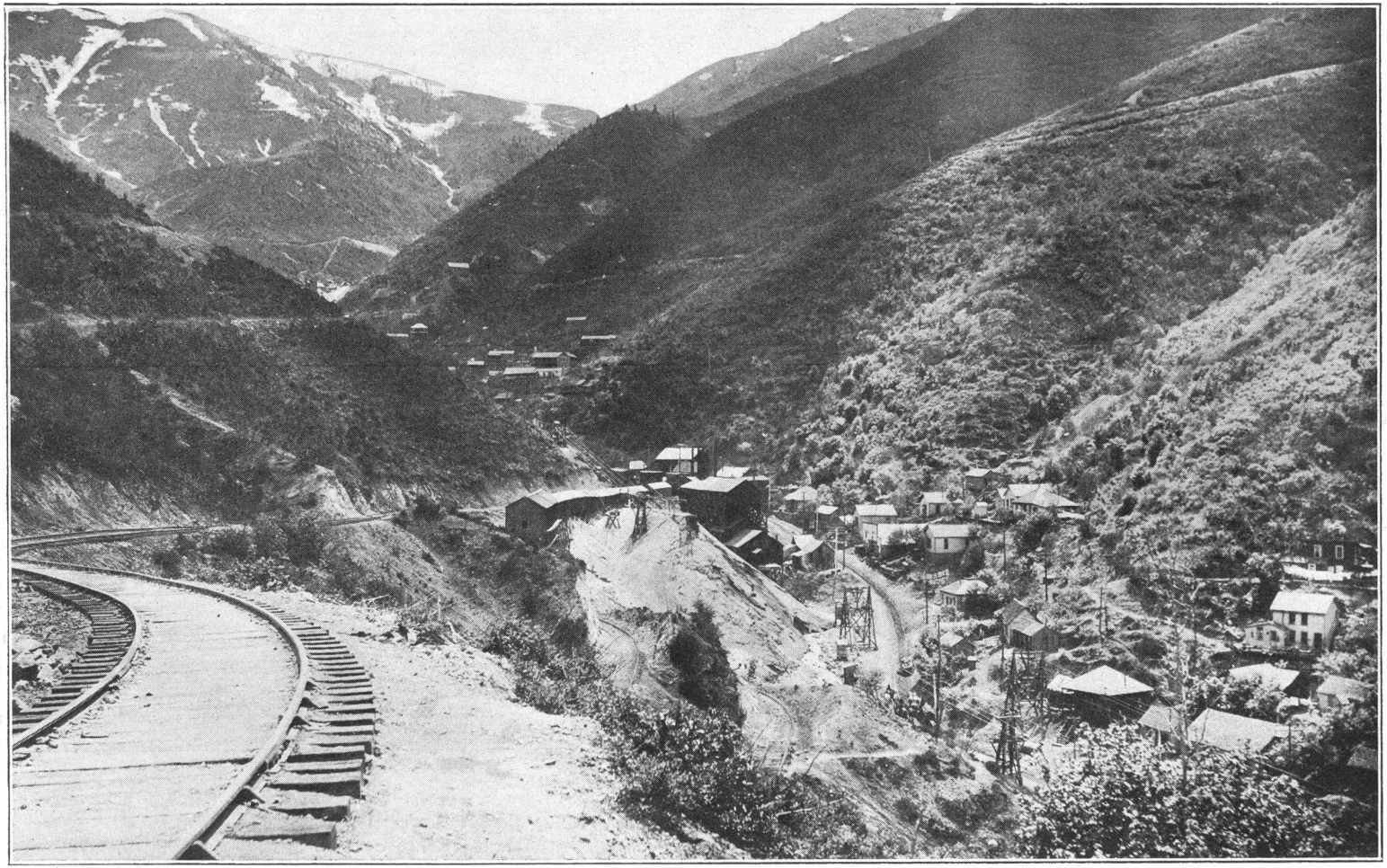
Main Tunnel Entrance and Buildings—Mystic Shrine.

At a point, 275 feet from the mouth of the main tunnel, the management is preparing to sink a shaft to a depth of 100 feet and thence drift into the surrounding territory. Substantial buildings have been erected on the property and a power house has just been erected in which will be installed a 150-horse power electric motor and a twelve-drill compressor.

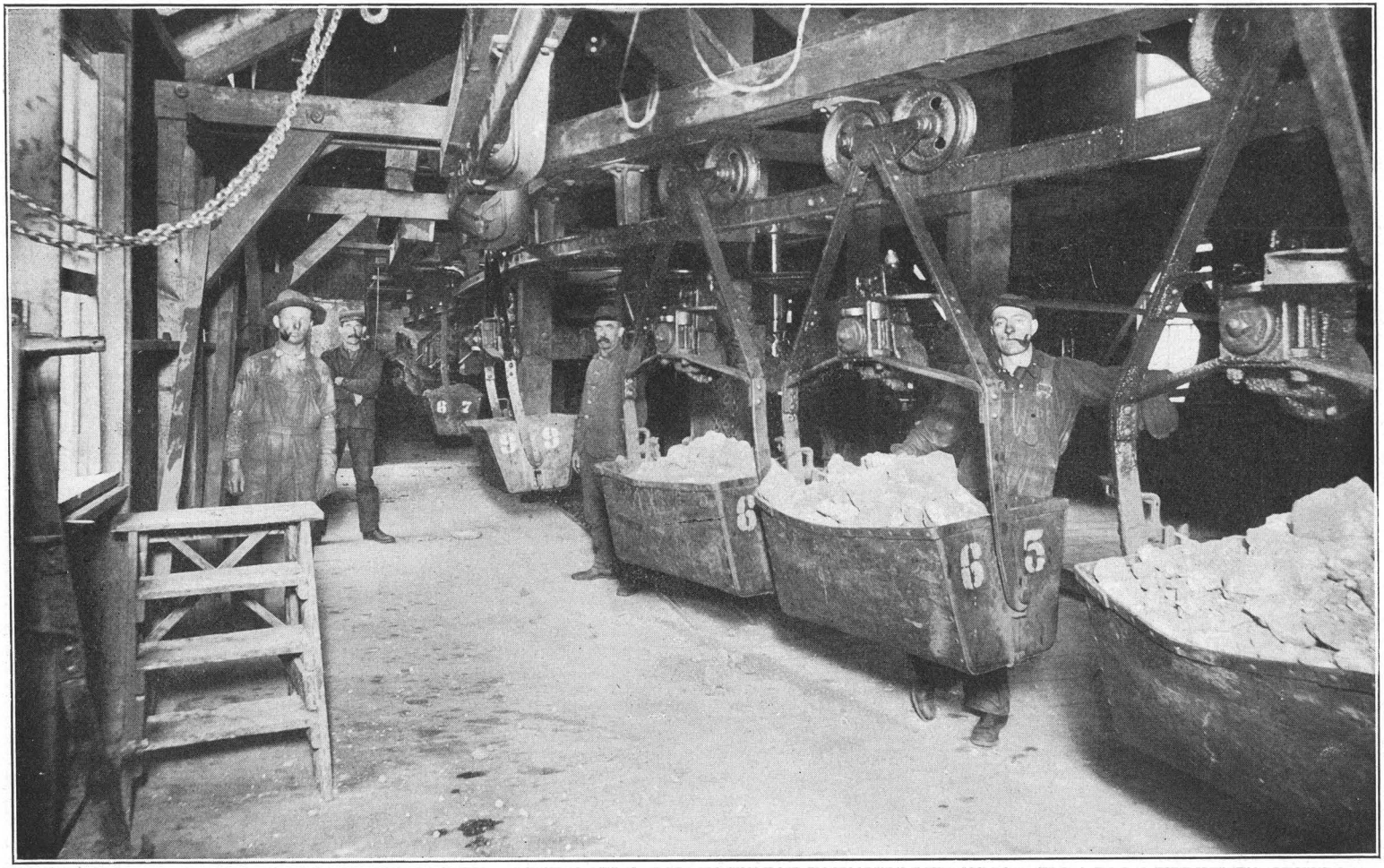
Mystic Shrine Property.

THE MYSTIC SHRINE.

The Mystic Shrine property is owned by the Intermountain Mining and Industrial Association and comprises an area of over 17 acres lying in Markham Gulch. The property is under the management of R. E. Goodell who has personally directed the greater part of the work thus far accomplished. The workings in the property approximate some 3000 feet, and during the past two years considerable shipments of iron sulphides and silver lead ores have been made, netting $6.86 per ton.

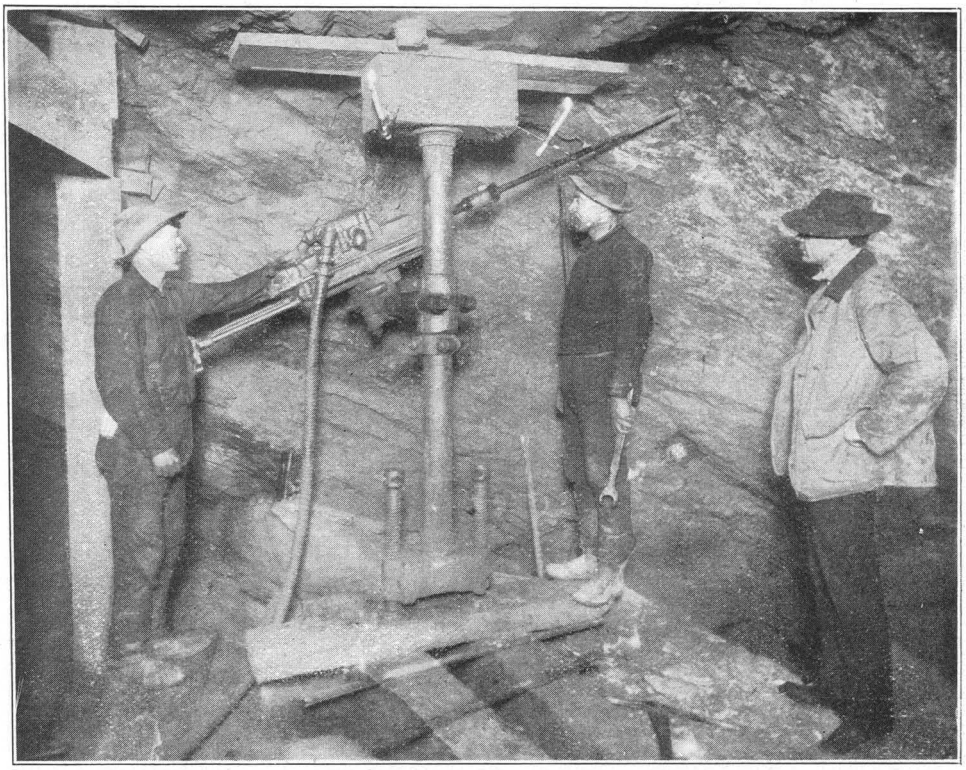


Main Tunnel Entrance, Tram House, Compressor Plant of Yampa Mine.
Yampa ground second ridge right half of view. Highland Boy Central
Ridge. Portion of Col. E. A. Wall's Maxwell Group lower left.

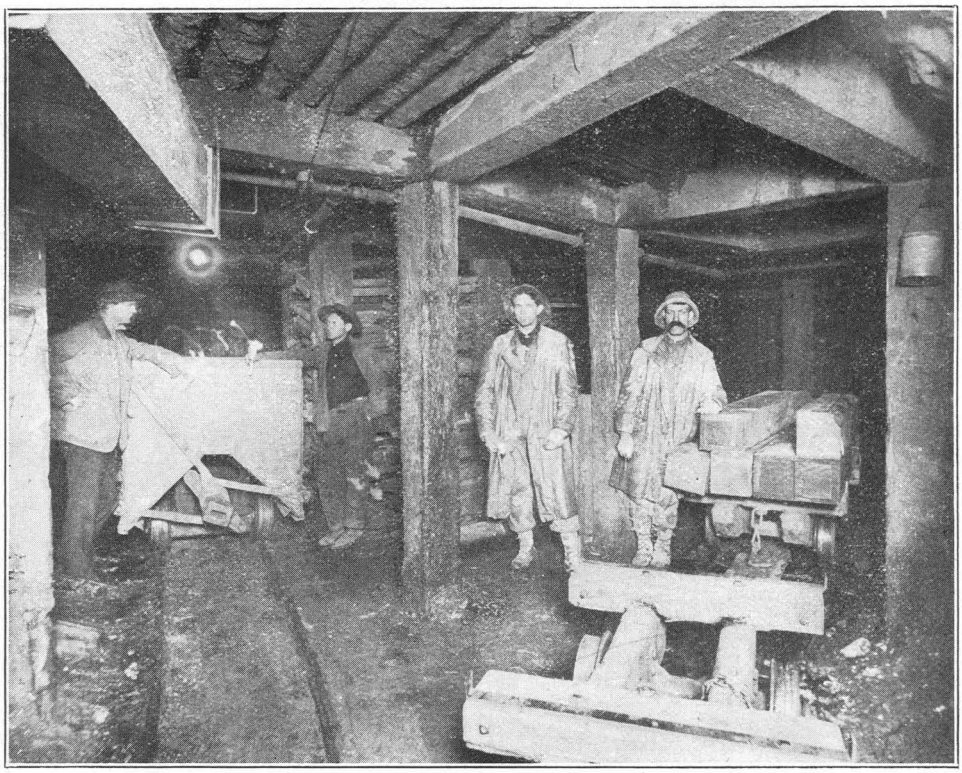


Loading Station Yampa Tramway.

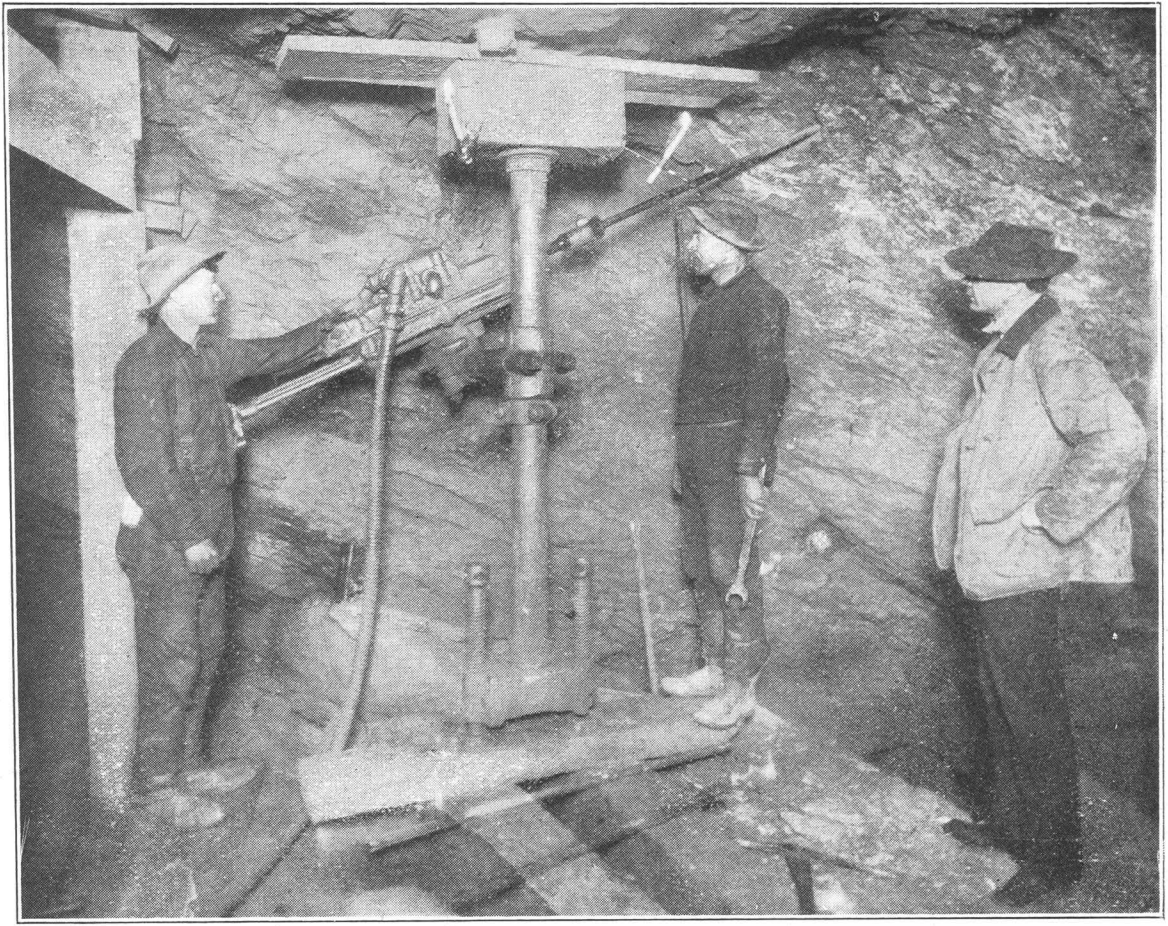
Electric locomotive with six three-ton cars, loading from No. 2 chute, 2,700 feet from surface. From this chute 600 tons of sulphide is loaded daily—Yampa mine.



The 1,400 level, No. 1 Stope, Yampa Mine.
Everything ore but the machine and men.



View in Yampa Mine.



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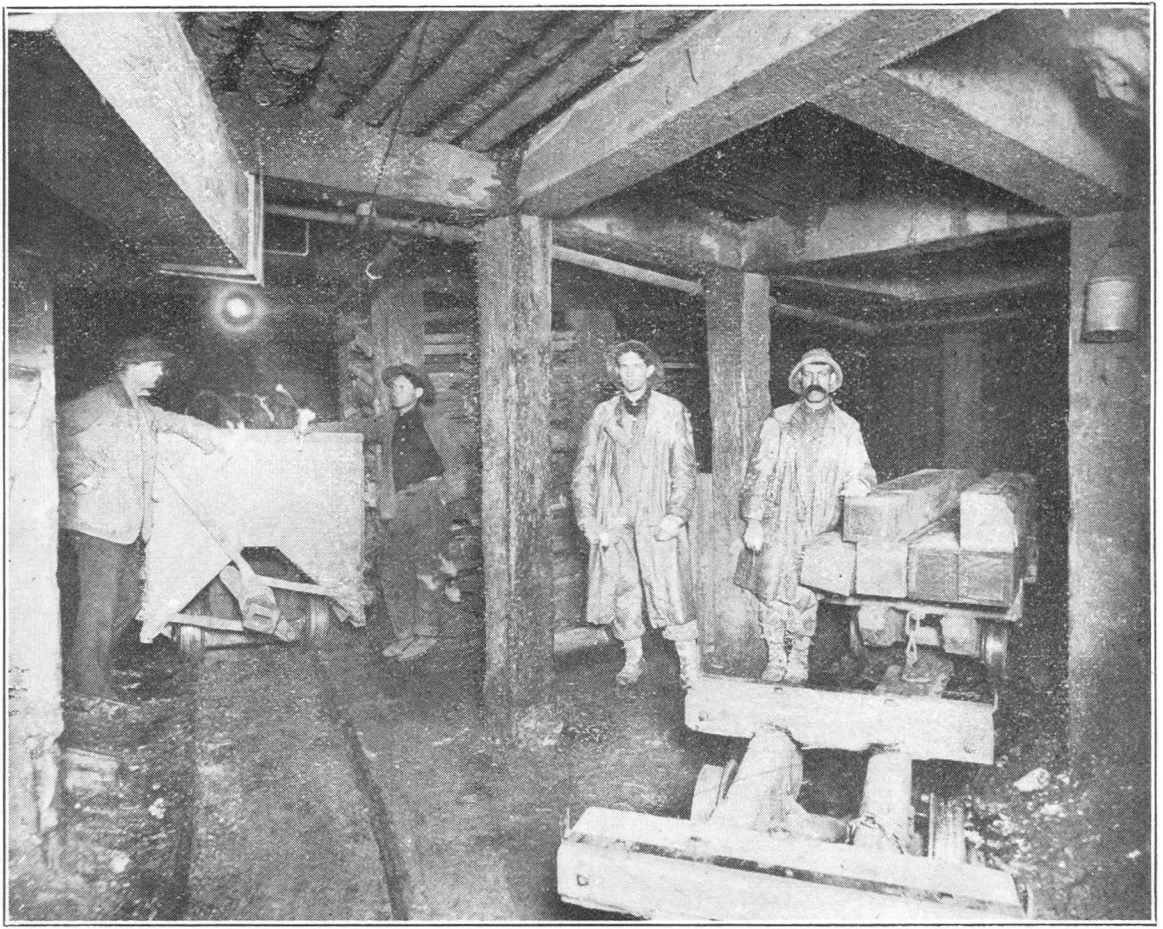


View in Yampa Mine.

Yampa Smelting Company

The plant of the Yampa Smelting Company is located just below the R. G. W. depot and was erected in 1904. The company is controlled by the Tintic Mining and Development Company. The officers of the Yampa Smelting Company are Grant B. Schley, president; C. A. Pringle, general manager; Michael Gavin, secretary, and F. J. Murphy, superintendent, to whose efficient management a greater portion of the success of the smelter is to be attributed.

The smelter treats the ore from the Yampa mine which is conveyed from the mine to the smelter over an aerial tram 12,300 feet long. The plant is completely equipped with modern machinery and appliances for treating copper sulphide ores, including calcining furnaces, reverbatory and blast furnaces, blowers, etc. Steam is generated in the 300-horse power boiler by the waste heat from the blast furnaces. The steam plant furnishes power for the electric plant which supplies current for the various motors which drive the complicated machinery of the big plant. The plant also uses about 300-horse power from the Telluride Power Company.

The smelter has a capacity of 1000 tons daily. About 800 tons is treated daily from the Yampa mine. The plant also handles on an average of 200 tons of custom ore daily from the various leases and small mines in the camp. The product is turned out as copper bullion 99 per cent. fine.

Yampa Mining Company

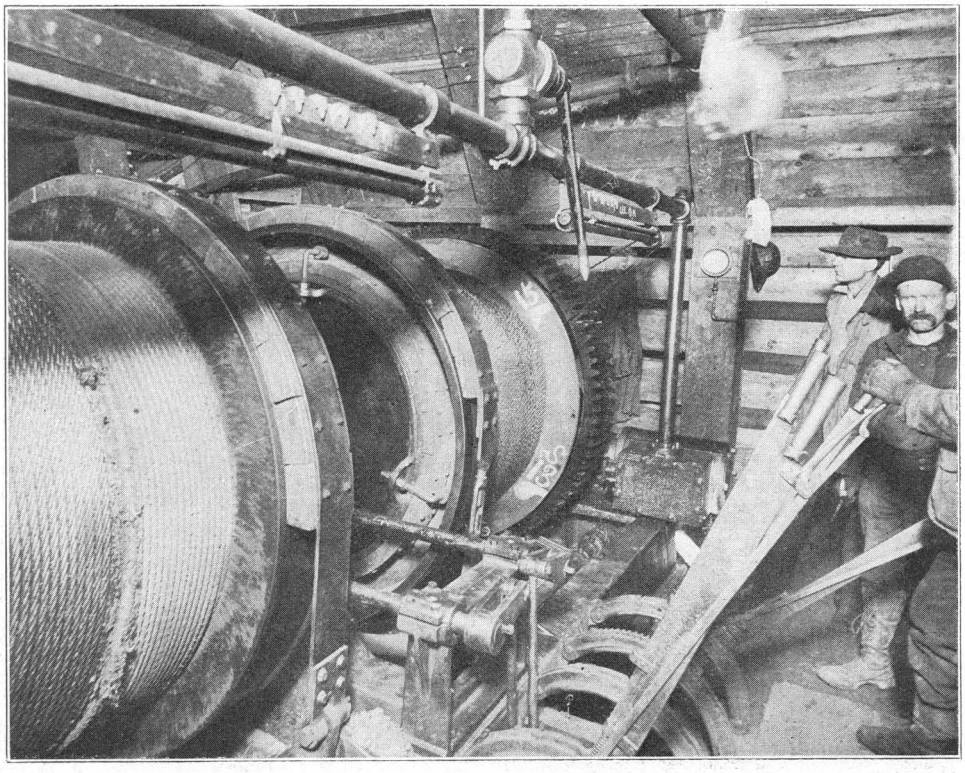
The Yampa Mine is owned and controlled by the Tintic Mining & Development Company. It lies 1½ miles up Carr Fork on the north side of the canyon. Its surface area includes six patented claims and approximates 100 acres of ground. This area adjoins the Highland Boy property on the south and the Utah-Apex property on the north. T. M. Penrose is superintendent of the mine.

The ore occurs as a replacement on a lime quartzite contact and consists chiefly of a heavy iron sulphide with a variable admixture of bornite, chalcopyrite and other copper minerals. The mine is opened by two main inclines, sunk from the surface along the bedding plane of the quartzite to a depth of nearly 2000 feet. Lateral drifts are run at right angles to these inclines at 120 feet intervals to the boundary of the property.

From the lowest point of the property a tunnel 2000 feet long has been driven. This tunnel intersects the ore body on the 12th level. This is the main working tunnel. The ore from the upper workings of the mine is let down by gravity to the tunnel and is conveyed by electric locomotion to the surface, and thence to the smelter by means of the aerial tramway. The ore from the lower workings is also brought to this level by means of an electric hoist placed on the 12th level.

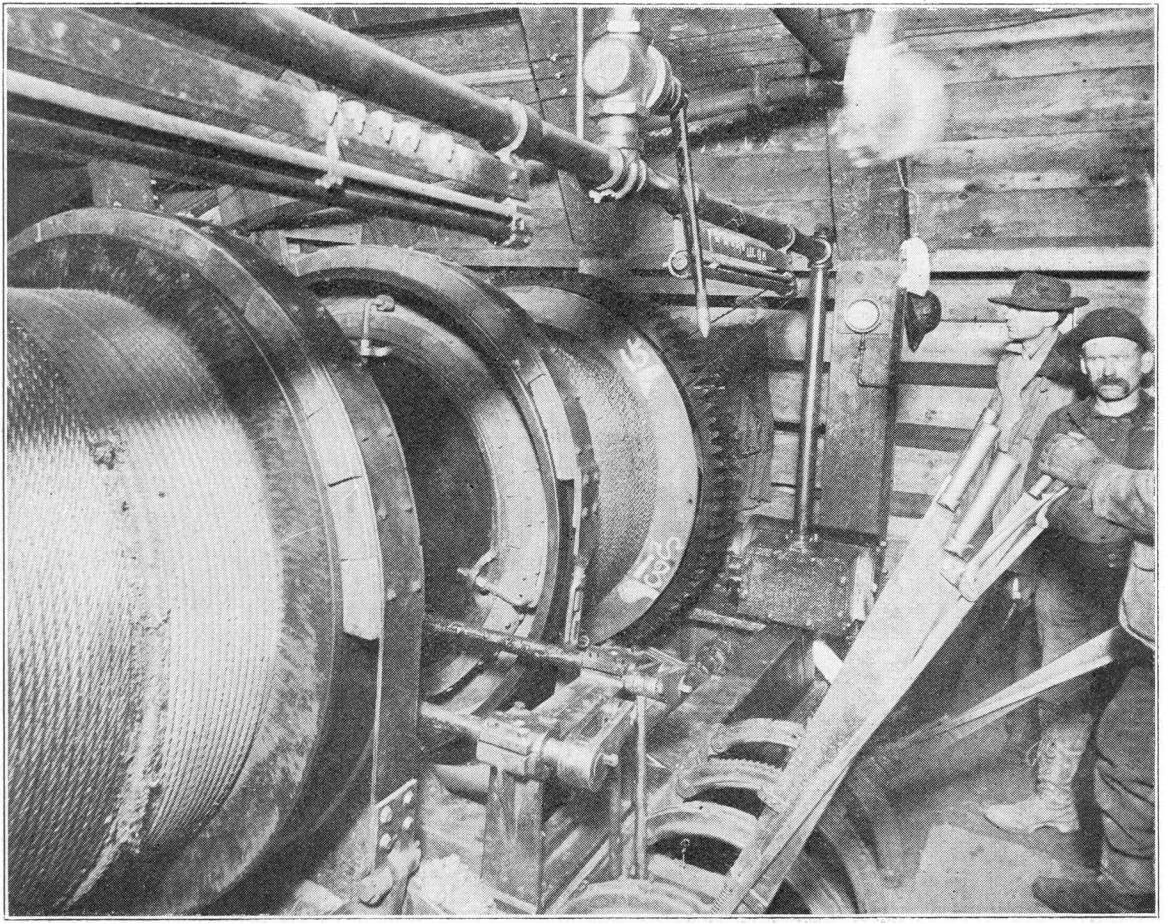
Owing to the nature of the ore occurance the square set system of timbering has been resorted to. So successful is this system from the standpoint of safety to the miners, that during the past eighteen months not one serious accident has occurred. During the past year the Yampa mine has produced 250,000 tons of smelting ore, all of which was treated at Yampa smelter. The mine is now employing 230 men and is producing an average of 800 tons daily. The ore reserves are sufficiently large to insure this rate of production for years.

Station at Twelfth Level. Yampa Mine.



Underground Hoist on 1,200 level, Yampa Mine. This hoist delivers ore from the three lower levels to the 1,200 or tunnel level.

Station at Twelfth Level. Yampa Mine.



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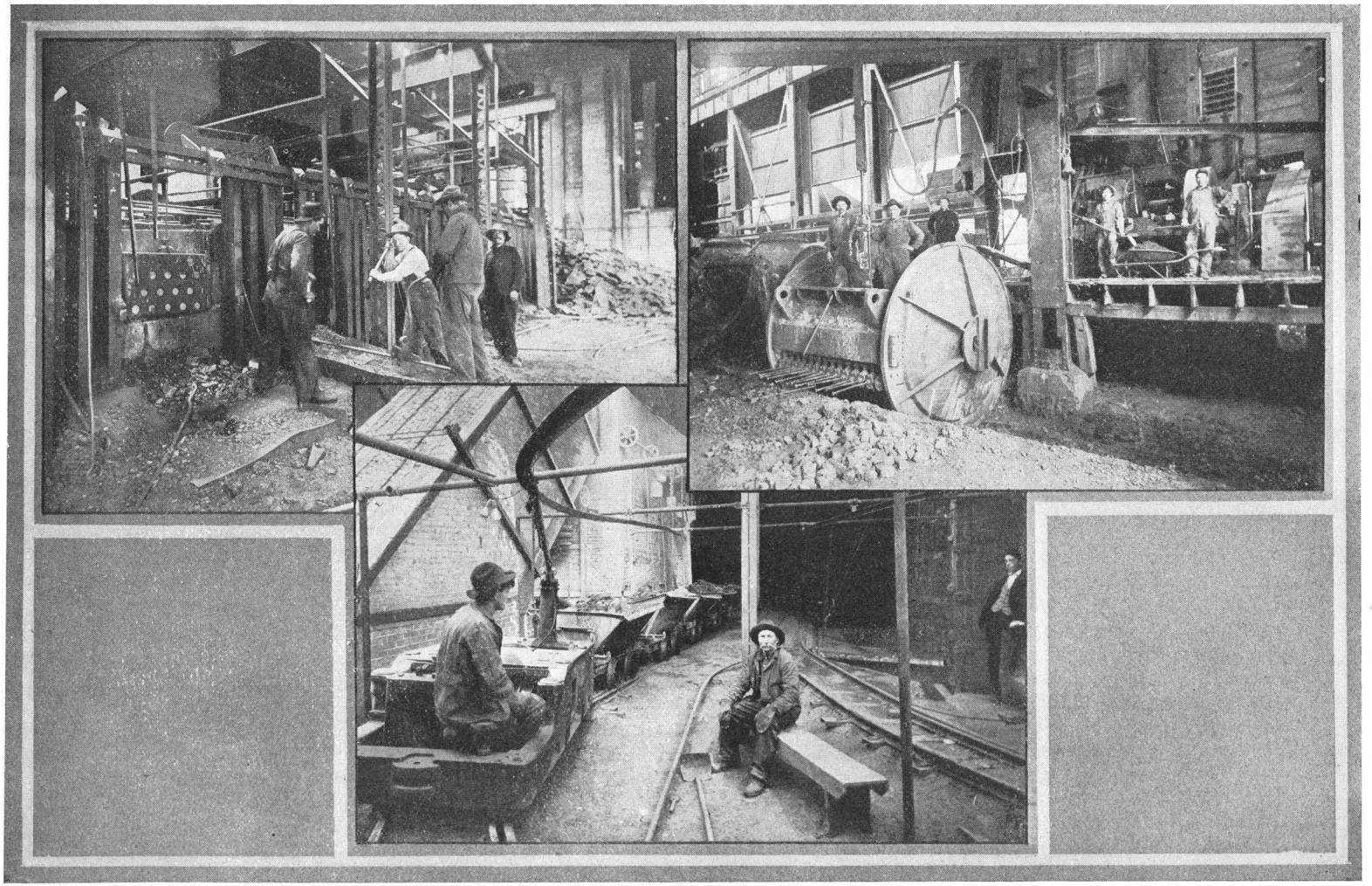
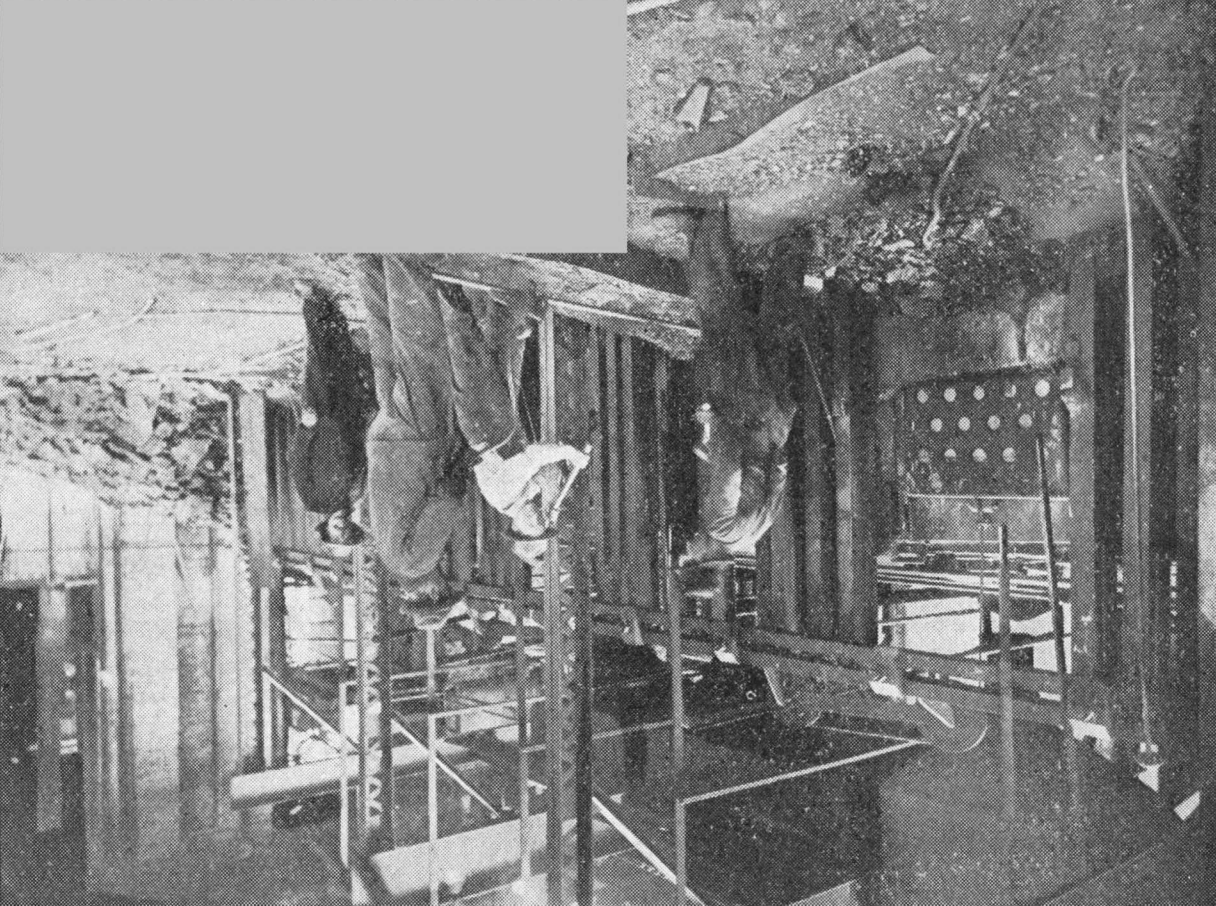
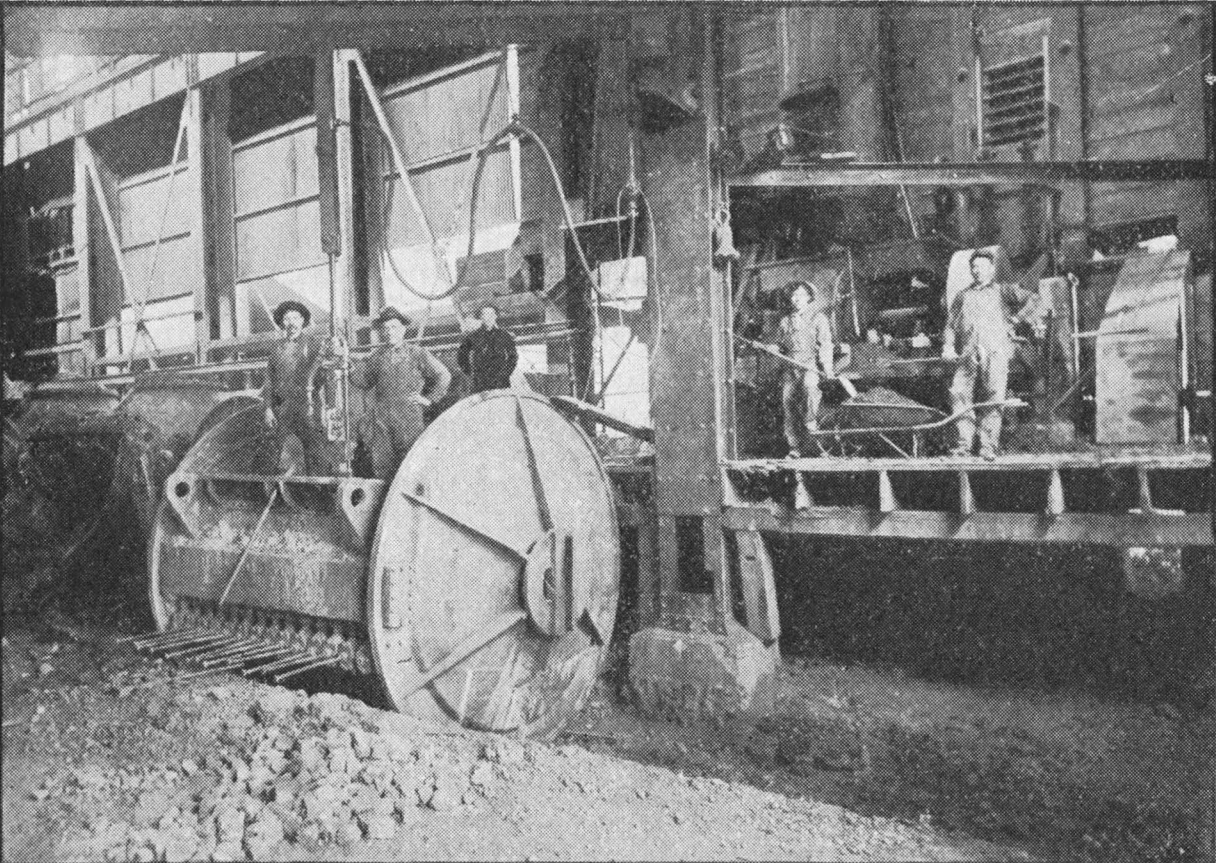
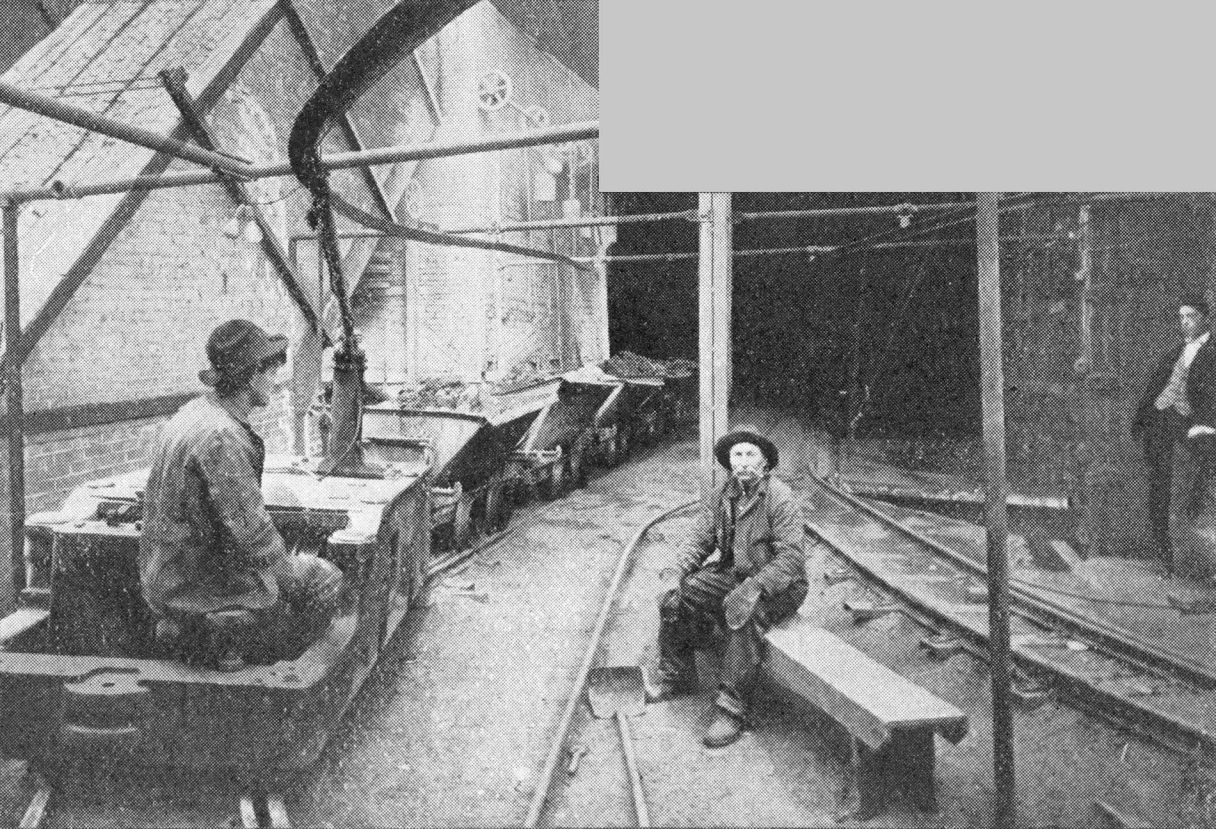
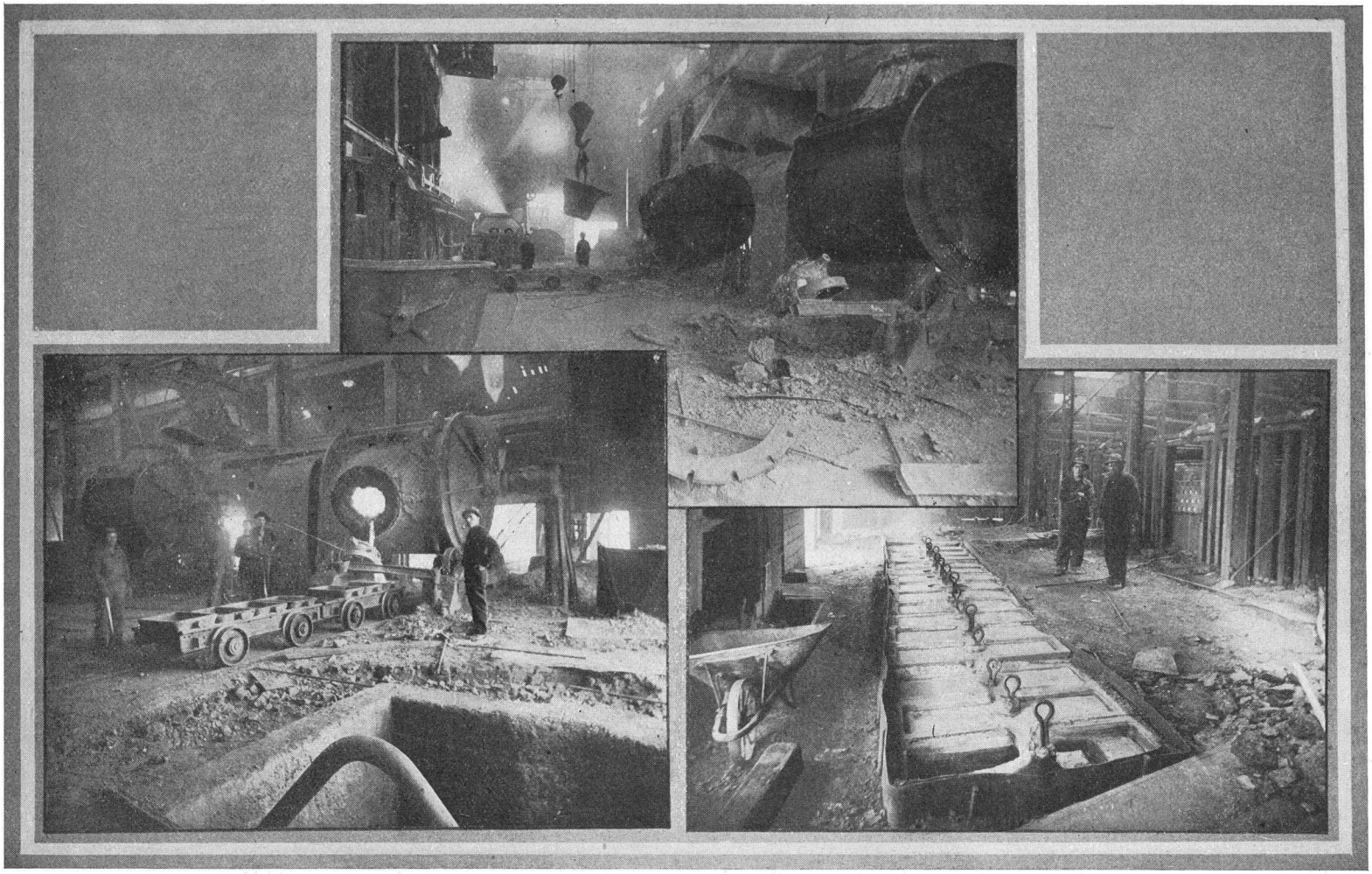


Interior Views—Yampa Smelter.

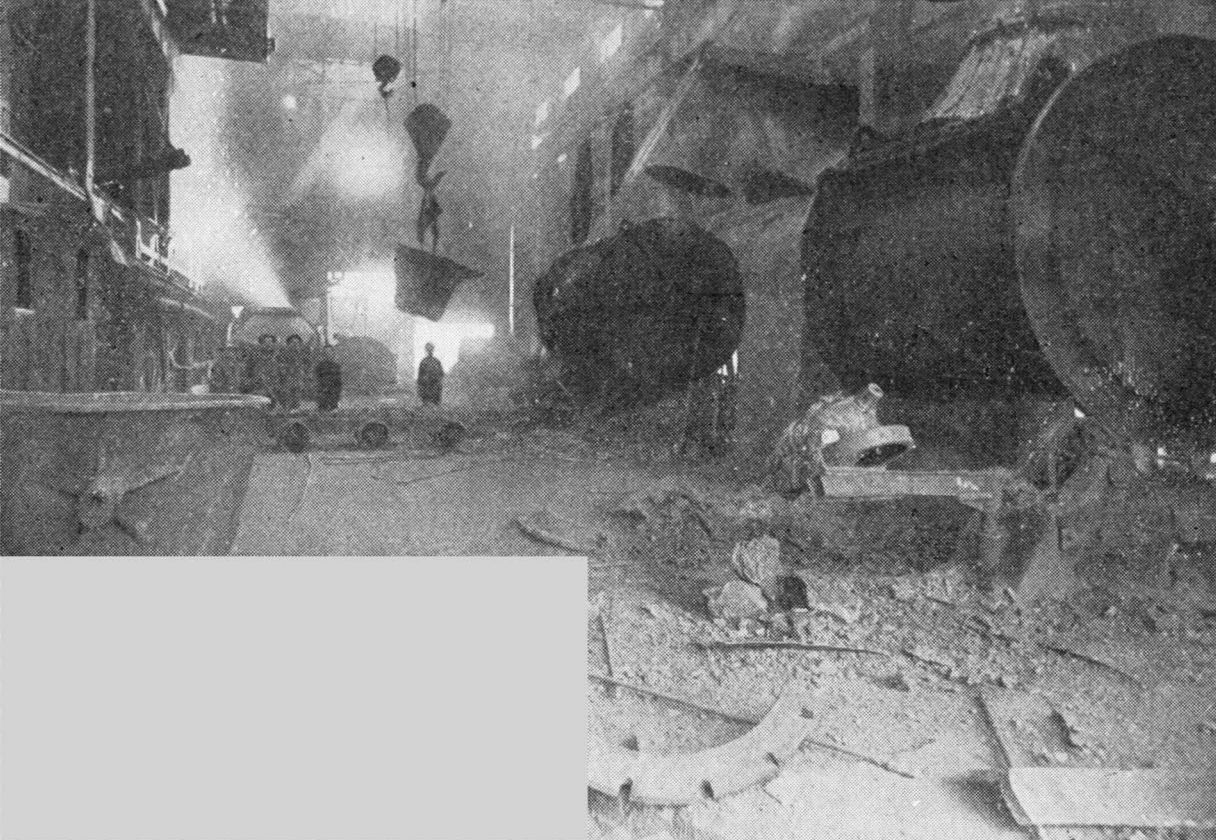


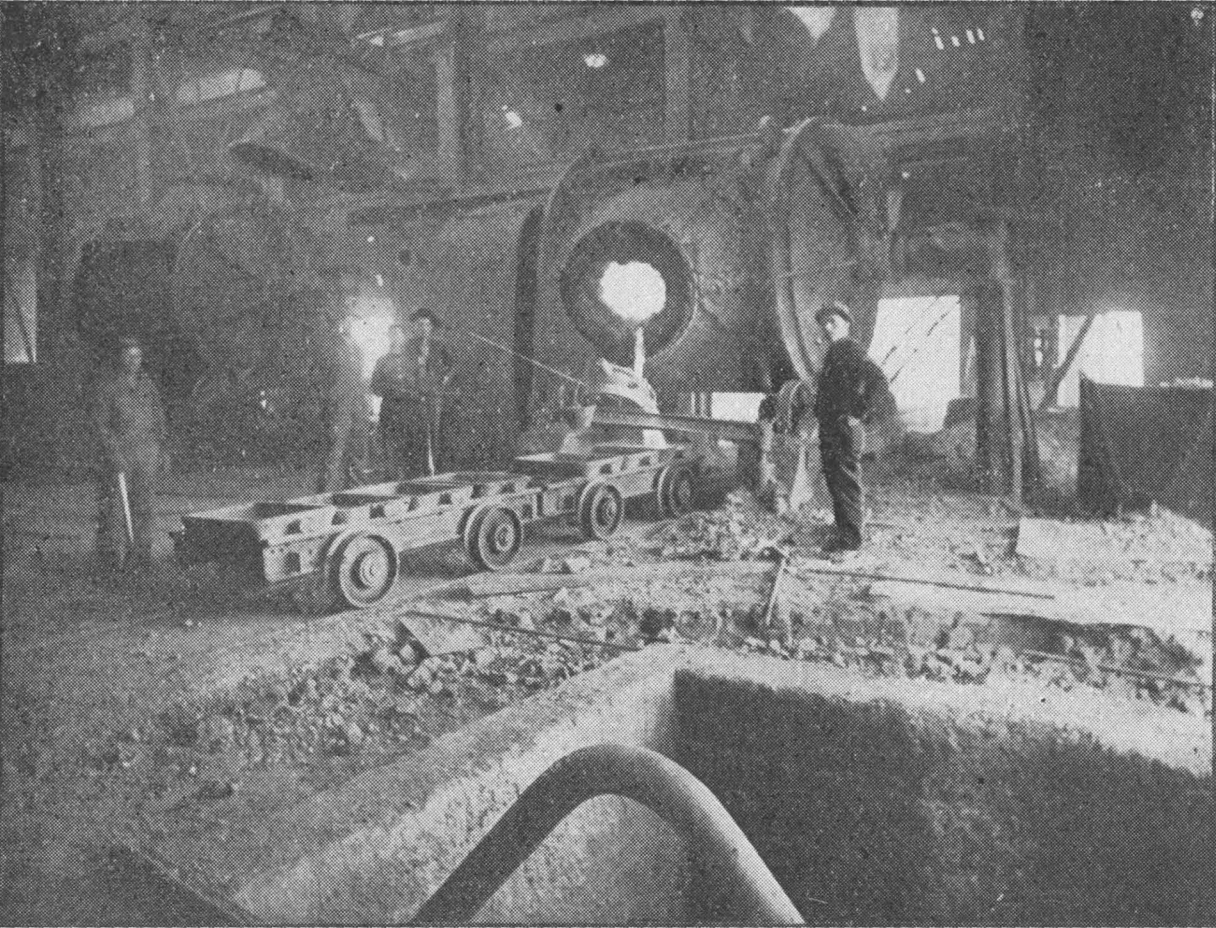


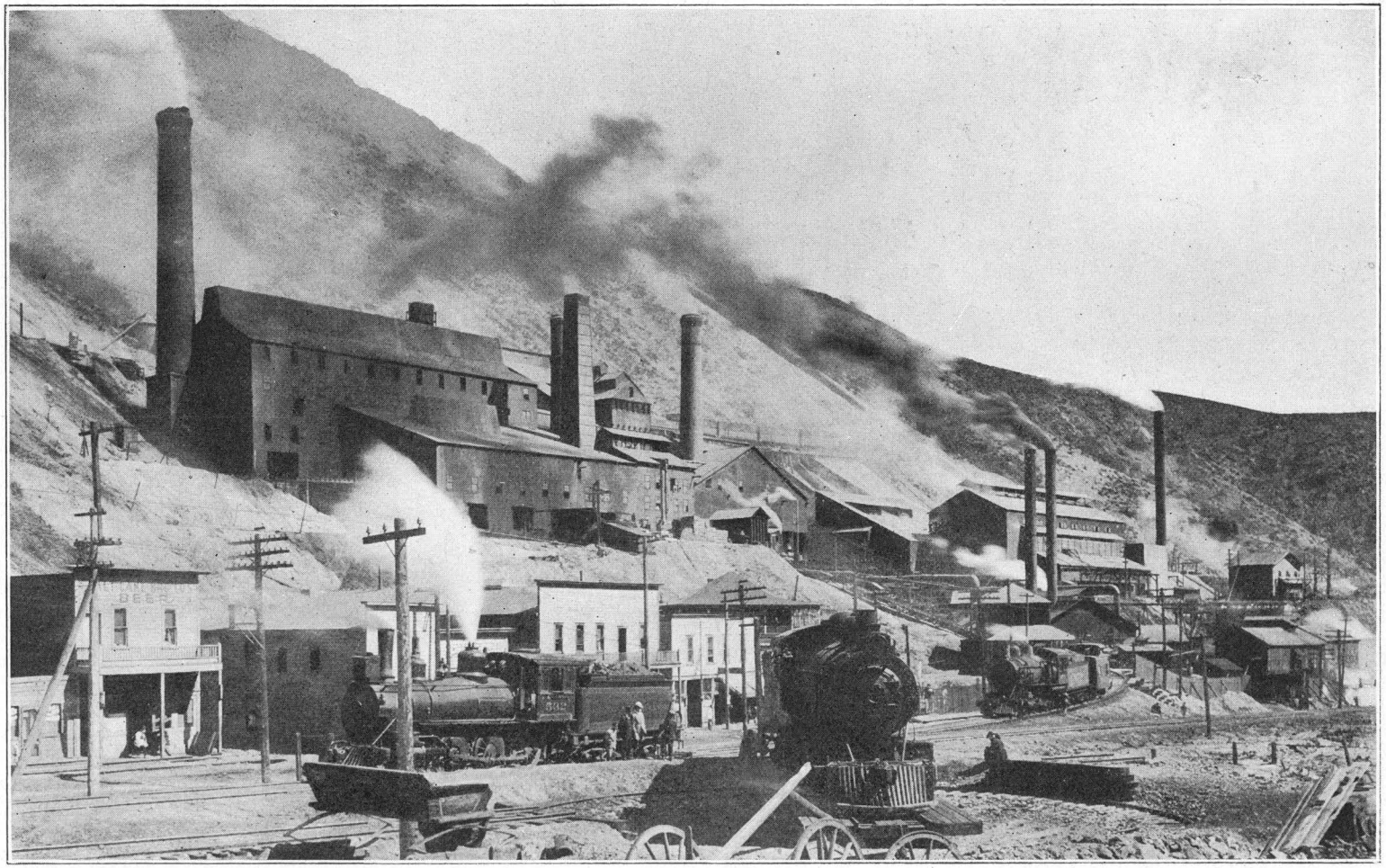




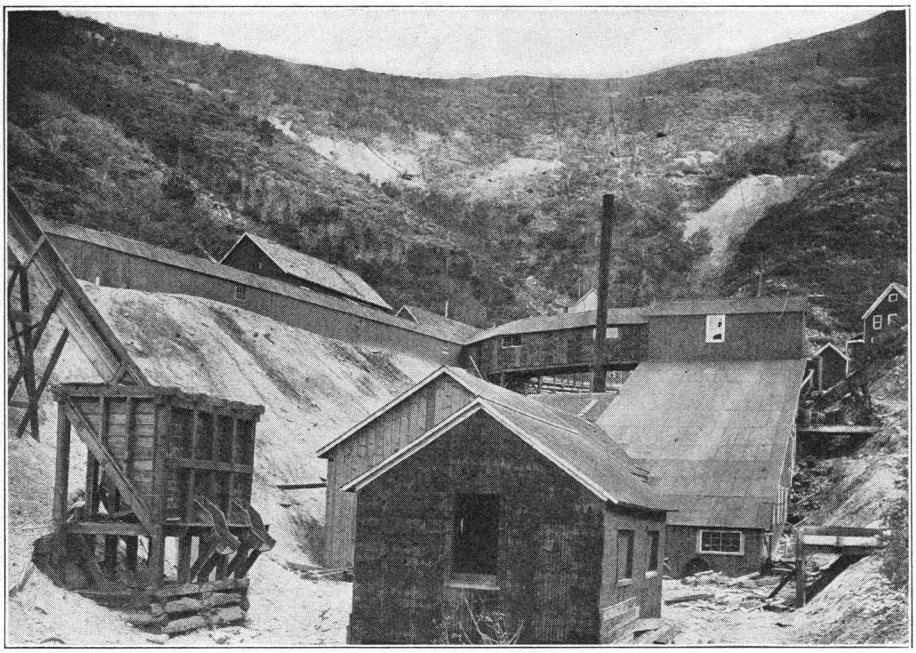
Interior Views—Yampa Smelter.







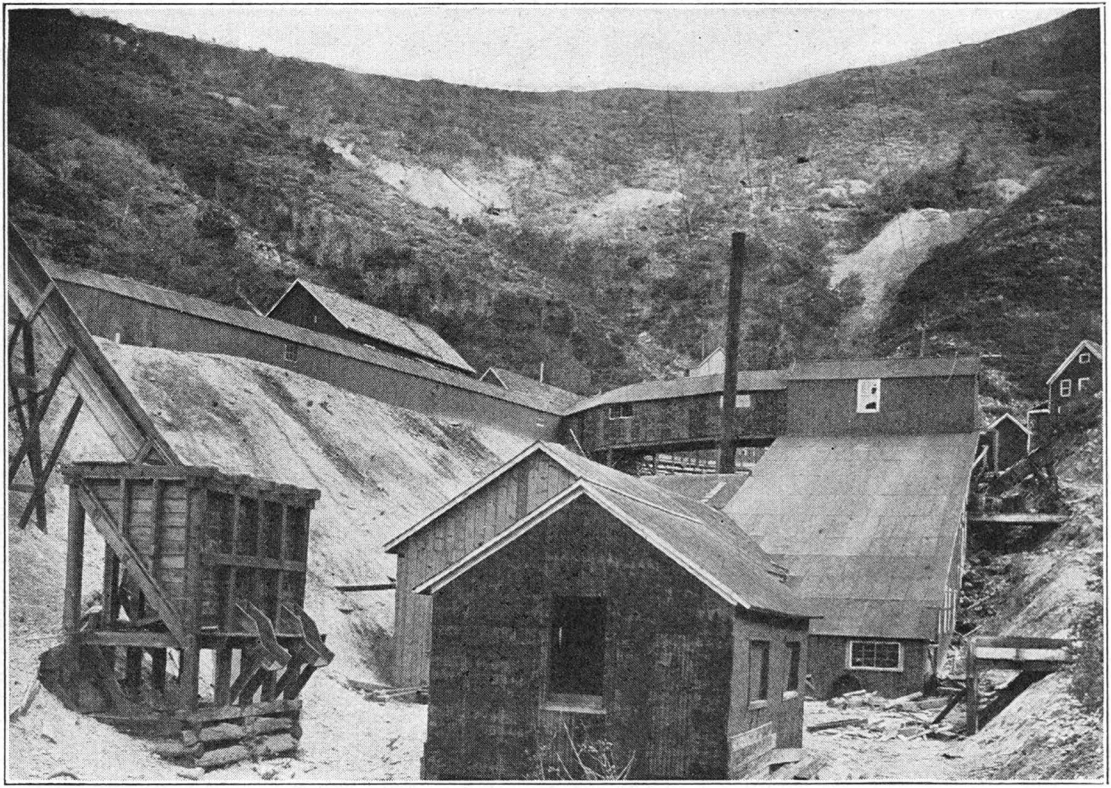
Yampa Smelter.



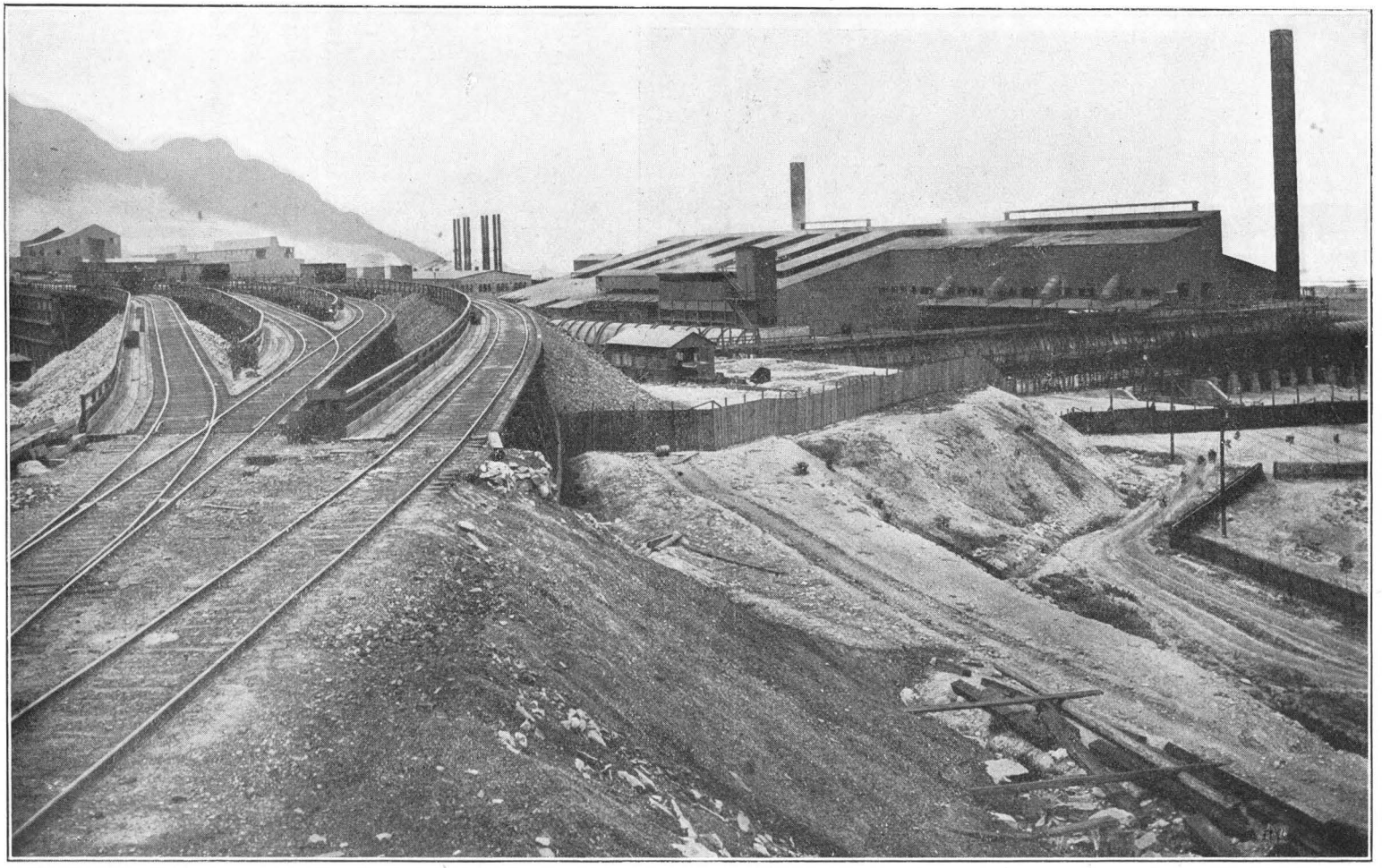
Last Chance Mine and Mill.

The Last Chance

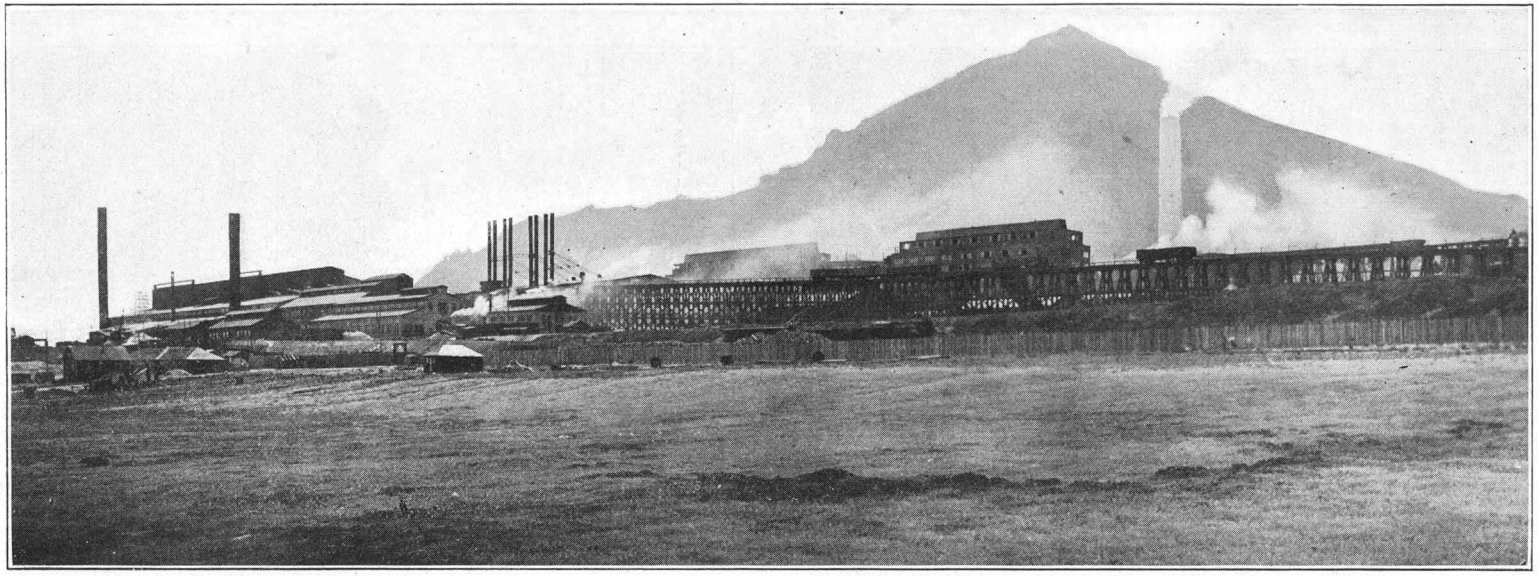
The Last Chance property consists of thirteen claims, and adjoins the United States property on the West. It is owned by the Nevada-Utah Mines and Smelter corporation which also owns considerable property elsewhere, and is capitalized for $15,000,000. It is developed by two miles of workings and is equipped with a mill of 125 tons daily capacity. This property has produced $1,250,000 ore values.



Last Chance Mine and Mill.



American Smelting and Refining Company's Plant—Garfield.

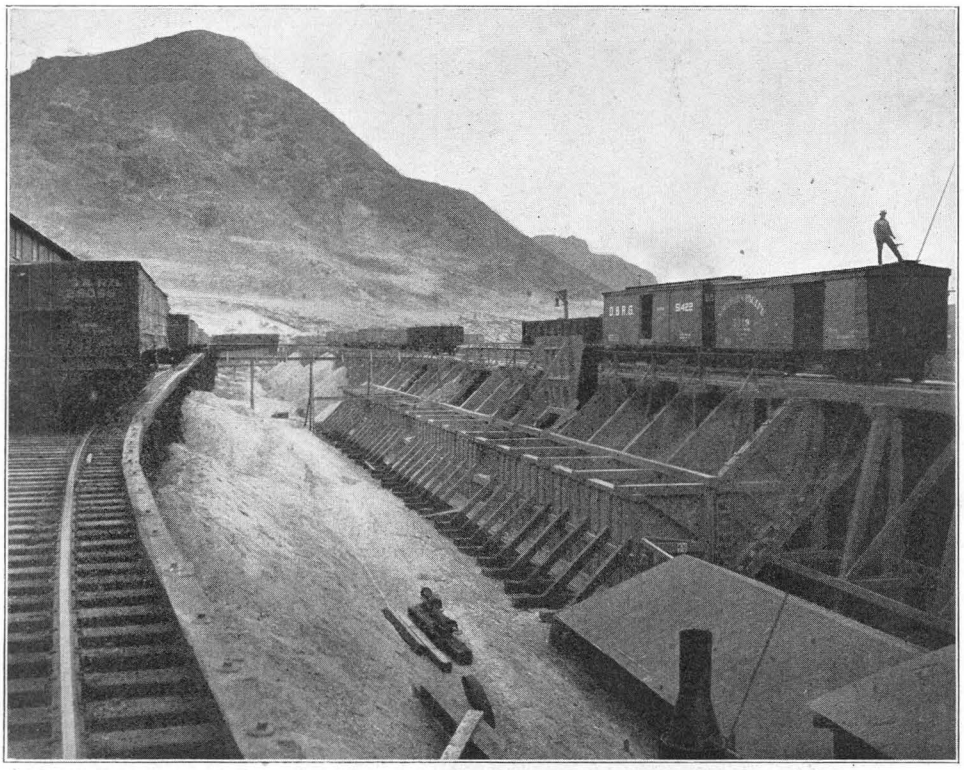


Another View of Garfield Smelter.

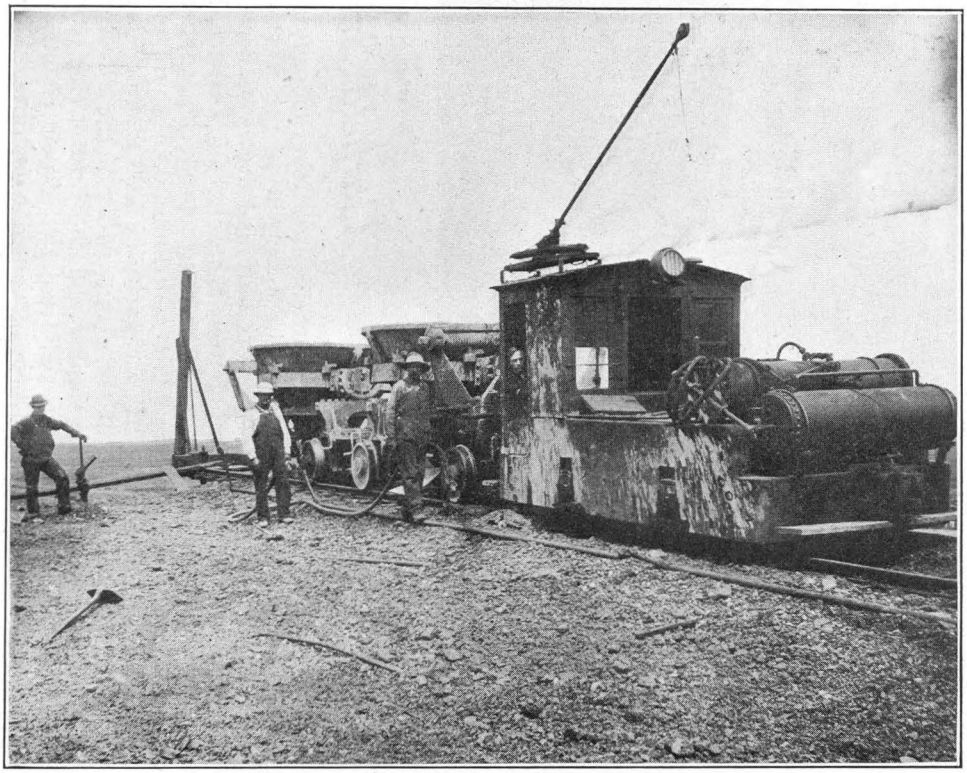
Garfield Smelting Company

The plant of the Garfield Smelting Company is located at Garfield on the shores of the Great Salt Lake. This place is reached by the main line of the S. P., L. A. & S. L. and a branch line of the D. & R. G. railroads. The plant treats custom ore only and draws its consignments from all parts of the inter-mountain region, its greatest supply coming from the Bingham District, being consigned principally from the Utah Copper and Boston Con. mines. All the camps producing copper and silicious ore from California, Nevada, Montana, Idaho and southern Utah, contribute their share to this giant smelter.

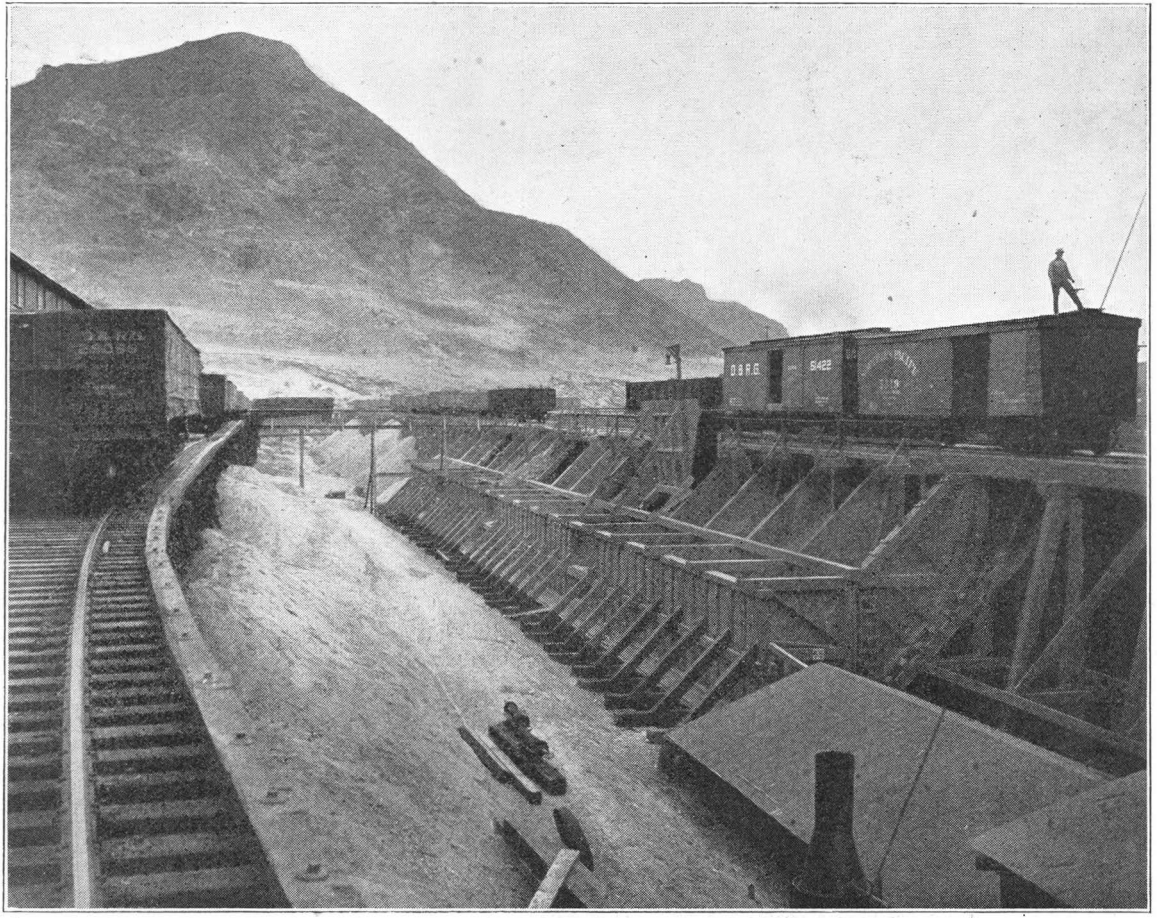
The smelter has a capacity of 3000 tons per day and is kept running full shift. One thousand two hundred men are employed at the plant. Most of these reside on the Garfield Townsite, jointly owned by the Garfield Smelting, The Utah Copper and the Boston Con. companies. The water is supplied by the Garfield Water Company and is conveyed from the Tooele country by large conduit pipes. This company is likewise owned and controlled by the above named companies. The coal and coke necessary for the smelter are shipped direct from the mines of the Utah Fuel Company.



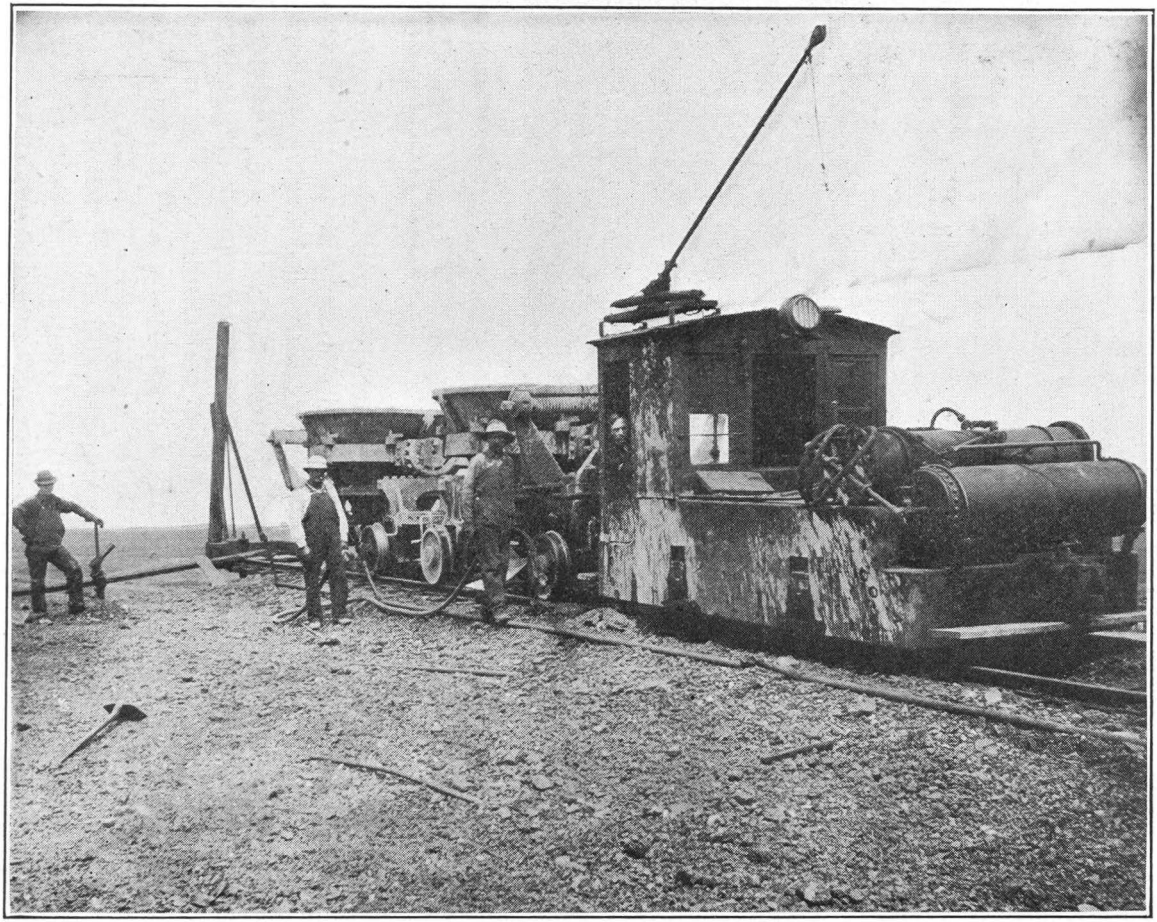
Ore Bins—Garfield Smelter.



Slag Train—Garfield Smelter.

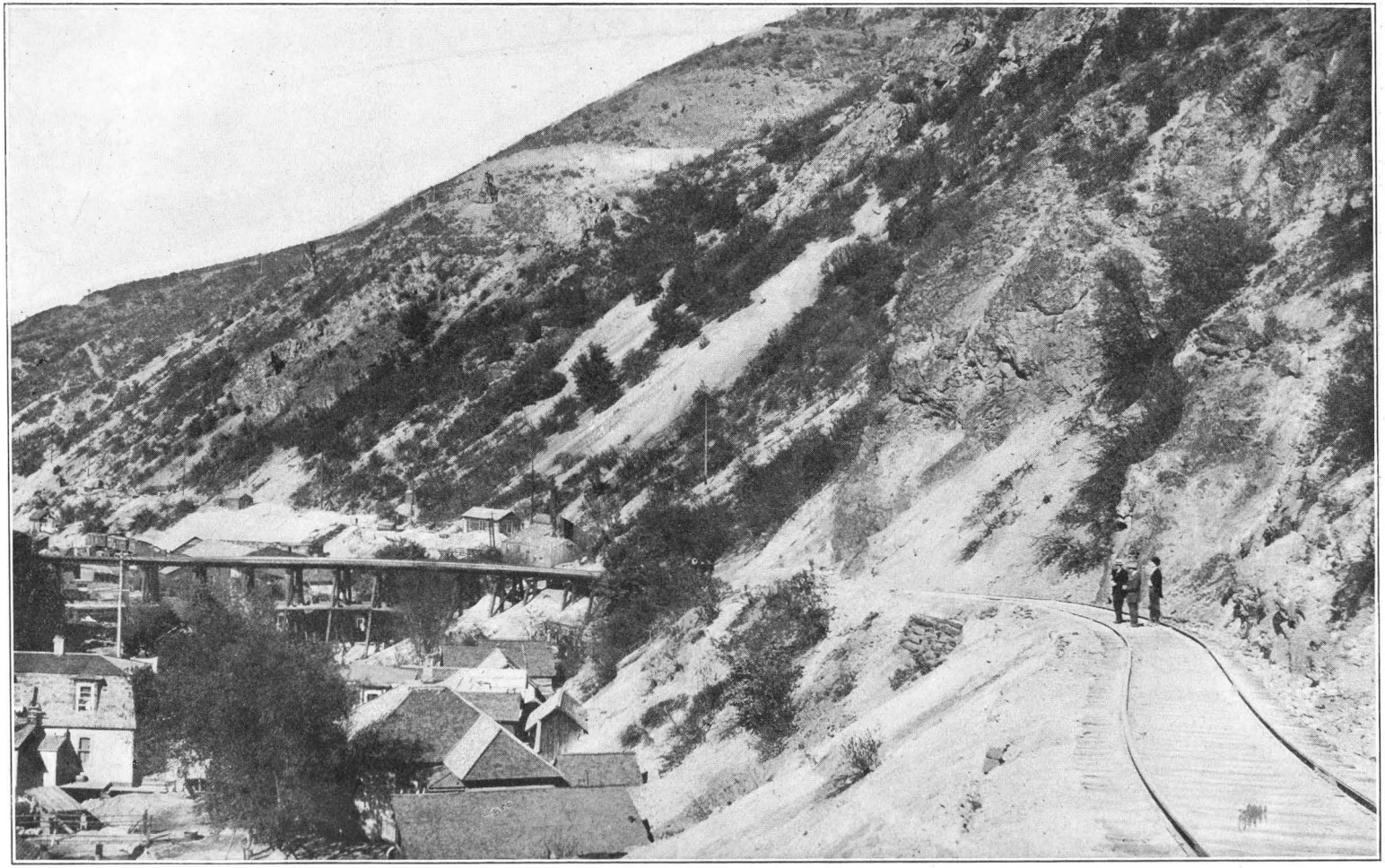


Ore Bins—Garfield Smelter.

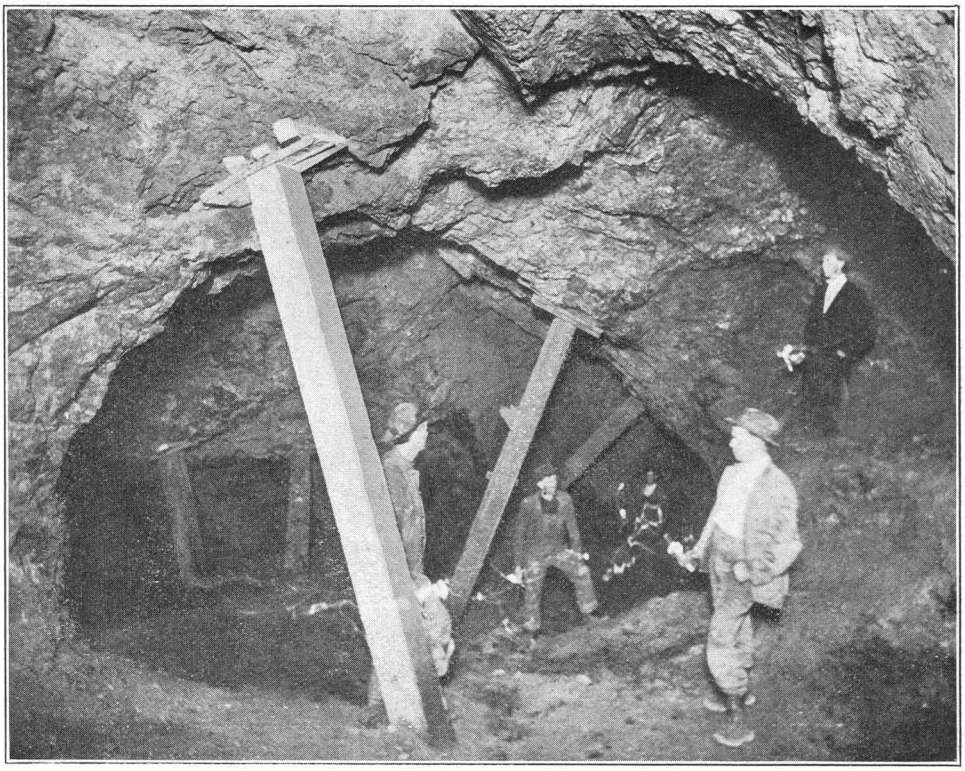


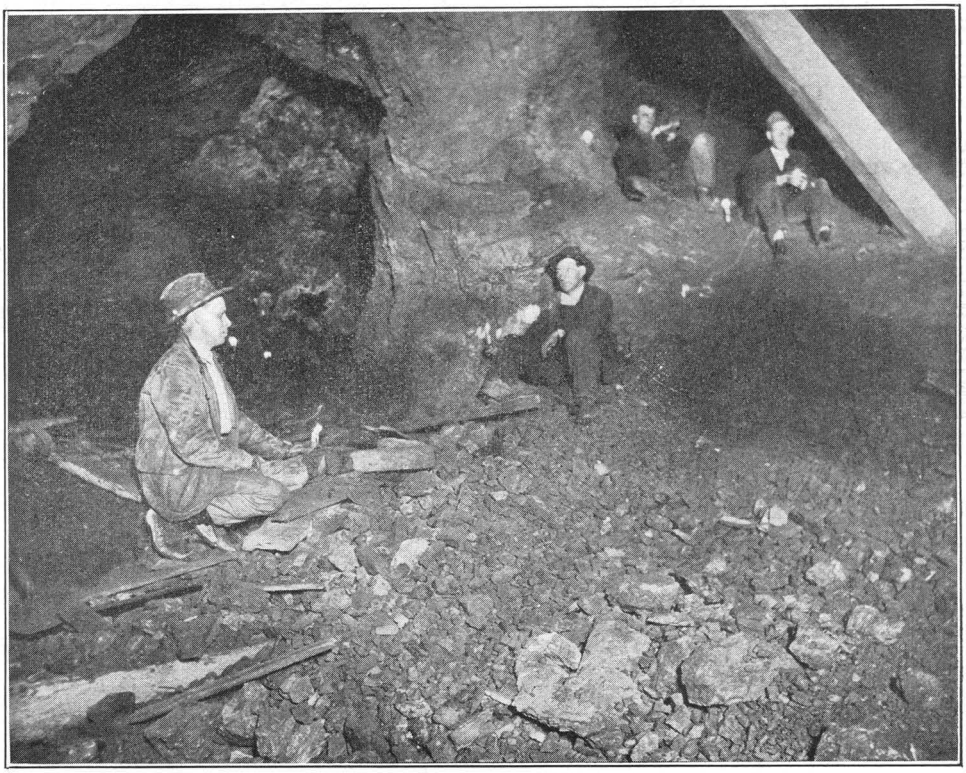
Slag Train—Garfield Smelter.

View of Bingham-Butte Property—Lower Bingham (looking up the canyon).

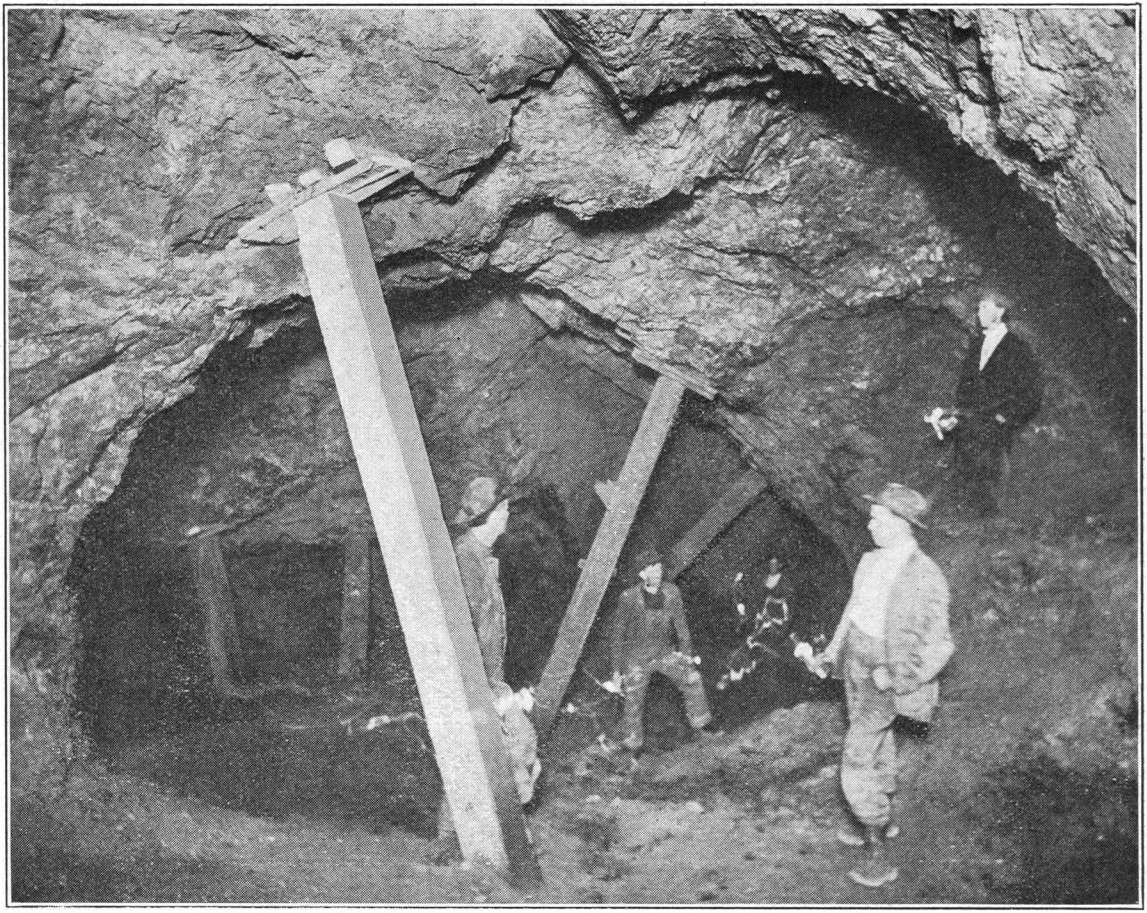


Bingham Butte Property looking down the canyon. Copper Belt spur leading to Yampa Smelter.

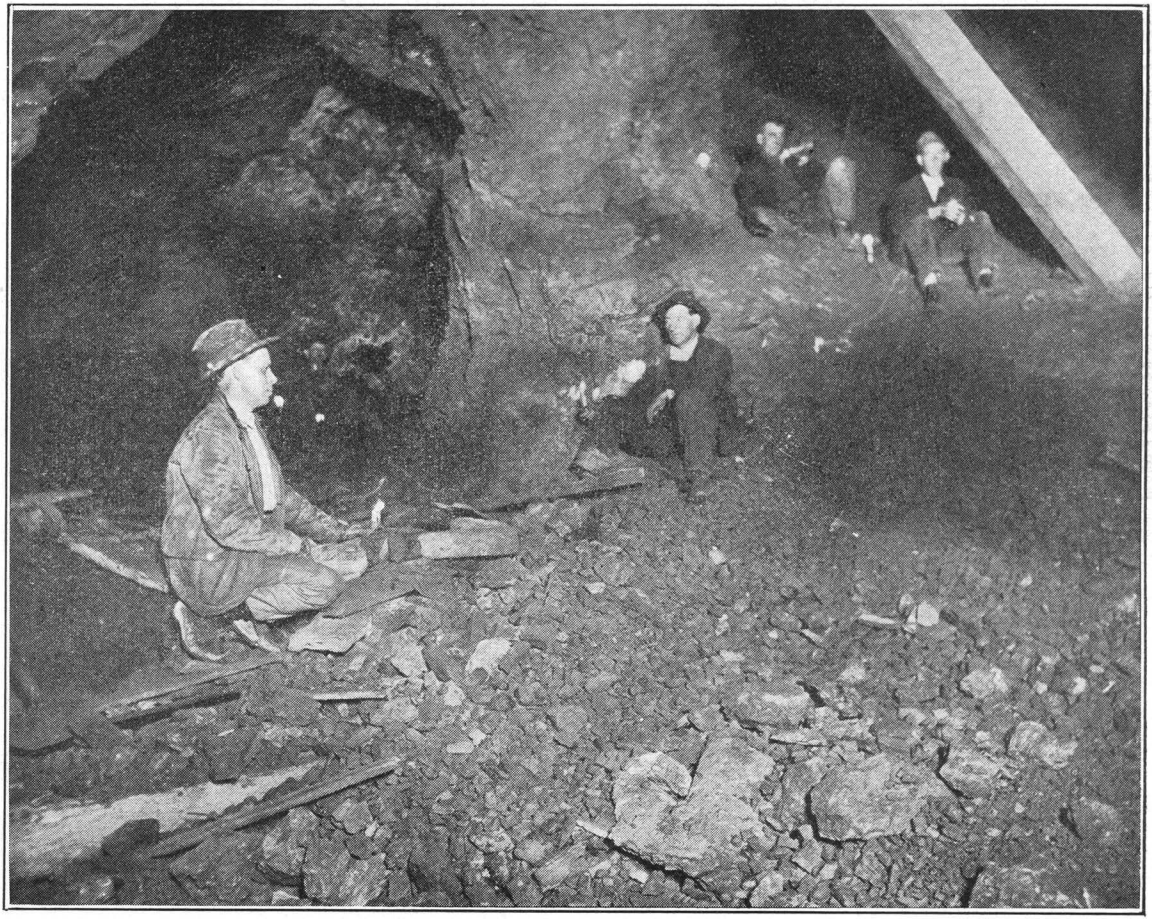




Underground Workings—Bingham-Butte Property.



Underground Workings—Bingham-Butte Property.



Underground Workings—Bingham-Butte Property.

Bingham-Butte Consolidated Mining Company

The Bingham-Butte property consists of the old Tiawaukee group of eleven patented claims and the Eddy group of four patented claims. These claims comprise an area of 120 acres located on the east side of the canyon near the Rio Grande depot. These were among the first claims operated in the camp, production dating back to the year 1869. The officers of the company are: W. E. Hubbard, president; L. C. Roeber, secretary; E. O. Howard, treasurer, and Sam. H. Treloar, manager.

Development was commenced near the top of the mountain in tunnel No. 1. Tunnels Nos. 2, 3 and 4 were driven at different intervals down the mountain side, all of them encountering the ore vein at different depths and angles. Development by the present management consists of sinking a two-compartment shaft from the main operating tunnel level to a depth of 500 feet, and blocking out the ore encountered in the different levels. The tunnels are also being extended to intersect the contact veins. The present workings show a sixty foot body of good, commercial ore. The company is well equipped with compressor, hoist, etc., and being near the railroad has splendid shipping facilities.

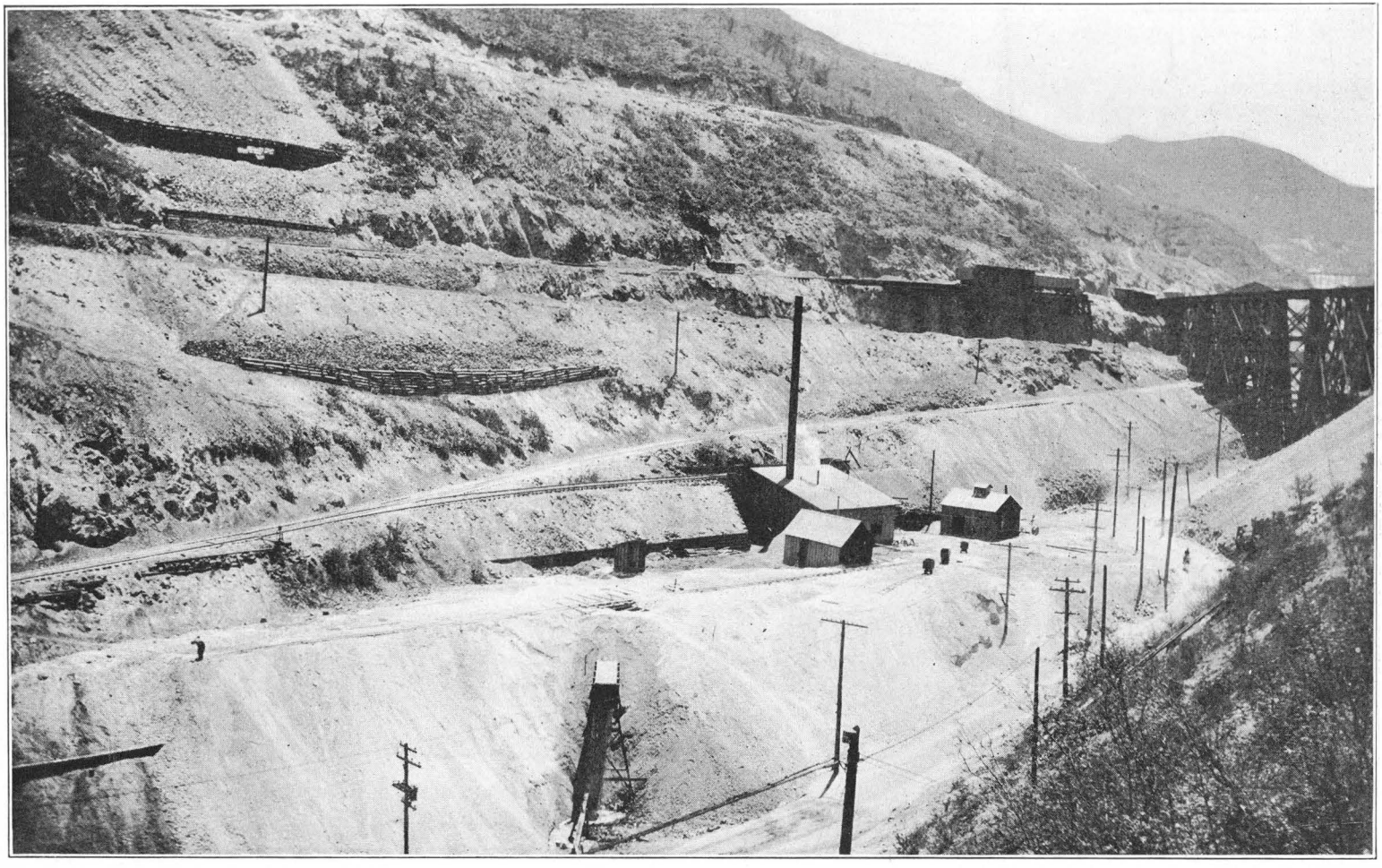
The Starless Mine

The Starless group of patented claims, comprising an area of about 160 acres, adjoin the Utah Copper properties on the northeast, and are owned by Col. E. A. Wall, whose name belongs in the galaxy of characters who have been making history in the camp for more than a decade.

The ore is similar in character and grade to that of the Utah Copper. Development has been pushed steadily for the past few years, the work aggregating 10,000 feet. The quantities of the ore bodies are, as yet, indeterminable, although developments indicate considerable areas of commercial ore. Development work is being done by means of tunnels, cross-cuts and up-raises. A new hoisting engine was recently installed under ground in the main tunnel, and the work of sinking an incline in the ore body is being rapidly pushed at present.

The Dewey Mill, owned by Col. Wall, and run in connection with the Starless, is being enlarged and remodeled according to original plans designed by Col. Wall himself, and will soon be put into commission. The mine will then resume shipping and both mine and mill will be run at full capacity.

Col. Wall also owns individually the Maxwell, Jay Gould and Almo groups, comprising upwards of 100 acres of land located in Carr Fork, adjoining the Boston Consolidated, Yampa and Utah-Apex properties



The Starless Group—Air Compressor and Tunnel Entrance. R. G. W. Trestle at Utah Copper Mine.

View in Cottonwood Gulch showing portions of the Phoenix (left), Bingham & Eastern (right), and Bingham Copper (center) Properties.

Cottonwood Gulch, Compressor and Office Building of Bingham Copper Company and Dumps of the Caromondel and the Petro Tunnels (now Utah Apex).

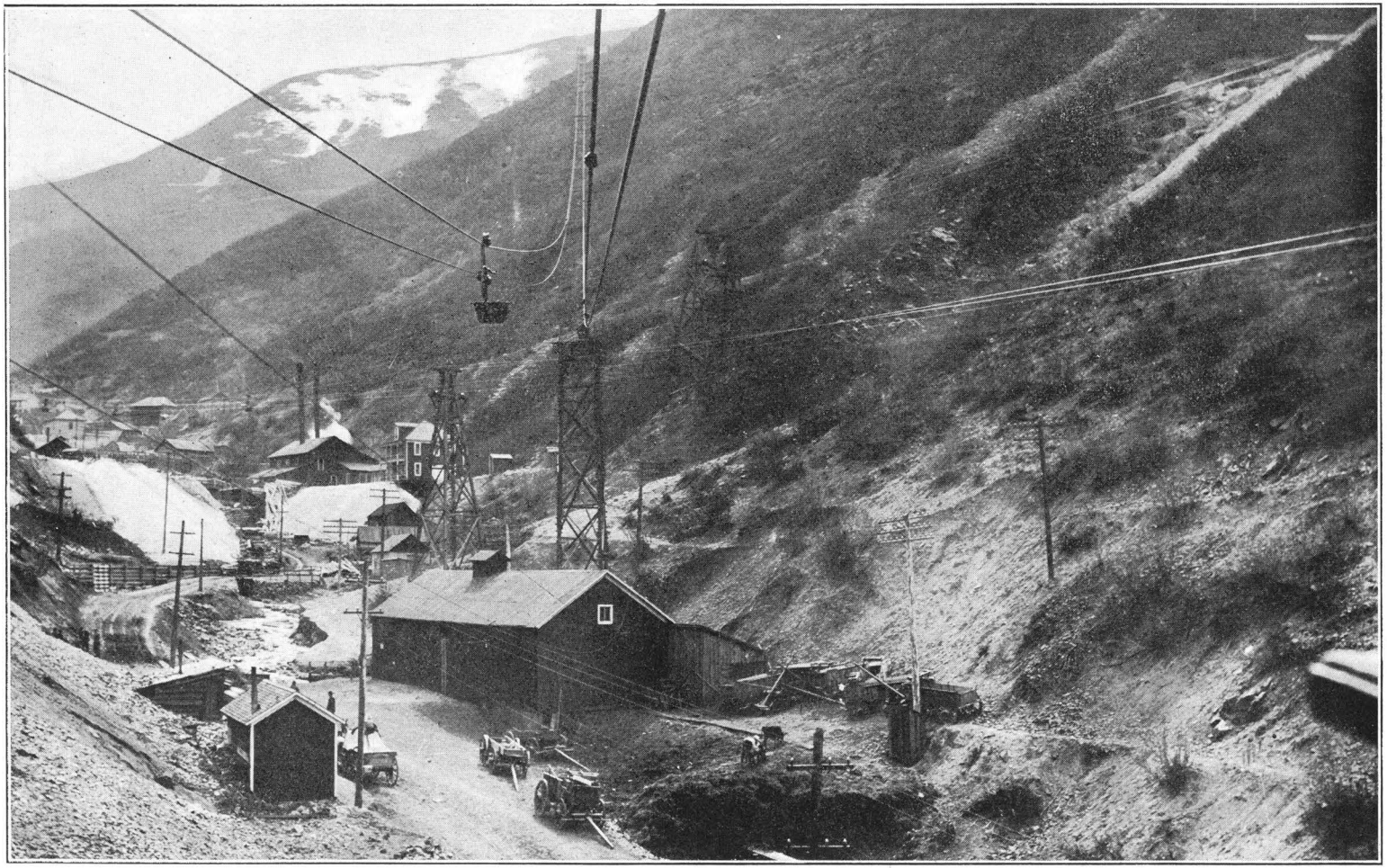
Bingham Copper Company

The Bingham Copper Company is organized under the laws of Wyoming with a capitalization of 800,000 shares, par value at one dollar. The company offices are located at 60 Congress Street, Boston.

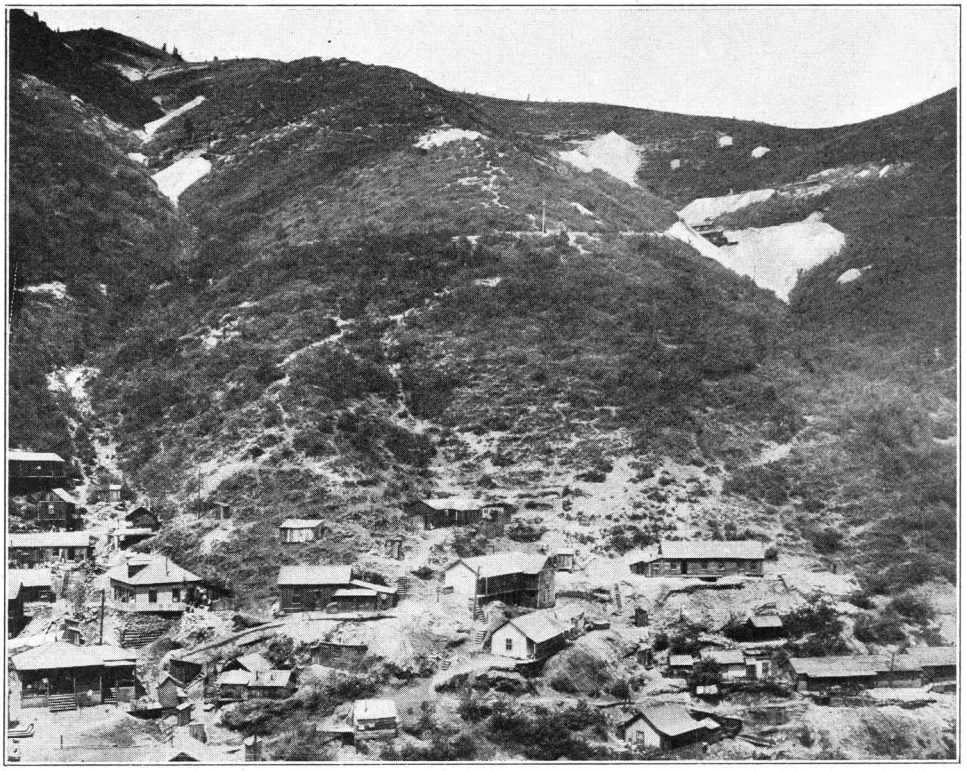
The company consists of 12 patented claims covering 120 acres extending from the north side of Cottonwood Gulch south 6000 feet to Sap Gulch adjoining the Utah Con. and Utah-Apex properties the entire distance. Owing to exceptional surface showings some of these claims were among the first locations made in the district. The former owners of these claims were unable to develop the ground on an extensive scale and thus were obliged to confine their operations to mining the carbonate ore lying near the surface, and considerable ore was shipped.

Recent developments in the big properties adjoining tend to show that rich ore deposits must lie in Bingham Copper territory and the present management is planning an aggressive campaign of development. The close proximity of the site of the International Smelter, now being erected in Pine Canyon, will afford a near and ready market for the ore.

Cottonwood Gulch, Compressor and Office Building of Bingham Copper Company and Dumps of the Caromondel and the Petro Tunnels (now Utah Apex).



General View of the Utah-Apex Properties. Utah-Apex Tramway crossing Utah-Con. and Yampa Tramways.



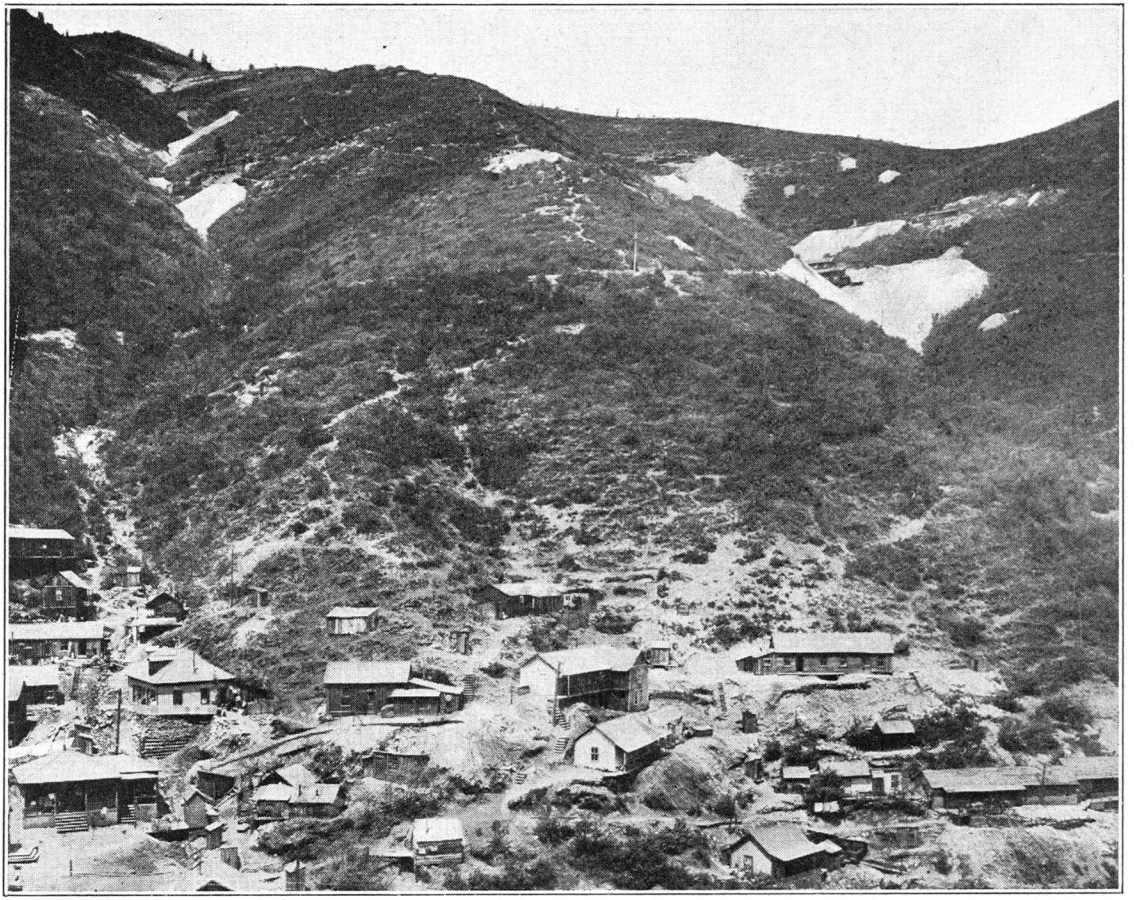
Mine Workings at the Utah-Apex.

Utah-Apex Mining Company

The Utah-Apex Mining Company was organized in 1902, under the laws of Maine, with a capitalization of $2,500,000, increased in 1906 to $3,000,000. The officers are E. R. Hastings, president; John W. Horne, treasurer; R. S. Oliver, general manager; H. L. Parker, superintendent.

The claims of this company comprise 162 acres on York hill in Carr Fork adjoining the Utah Consolidated property on the south and west. Development is done by means of three shafts and six tunnels comprising over five miles of workings. Prior to a year ago over 300,000 tons of copper sulphides and lead carbonates were shipped from the mine. Considerable shipments were made during the past year of ore carrying good values in gold, silver, copper and lead. Further development work shows immense bodies of the same grade ore.

This company has recently acquired the Phoenix property adjoining it, consisting of four large claims and a 200-ton concentrator operated with electric power. At present this mill is treating Apex ore. An aerial tram 3000 feet in length transports the ore from the main tunnel to a point near the Copper Belt railroad where connection is made by a surface tramway.

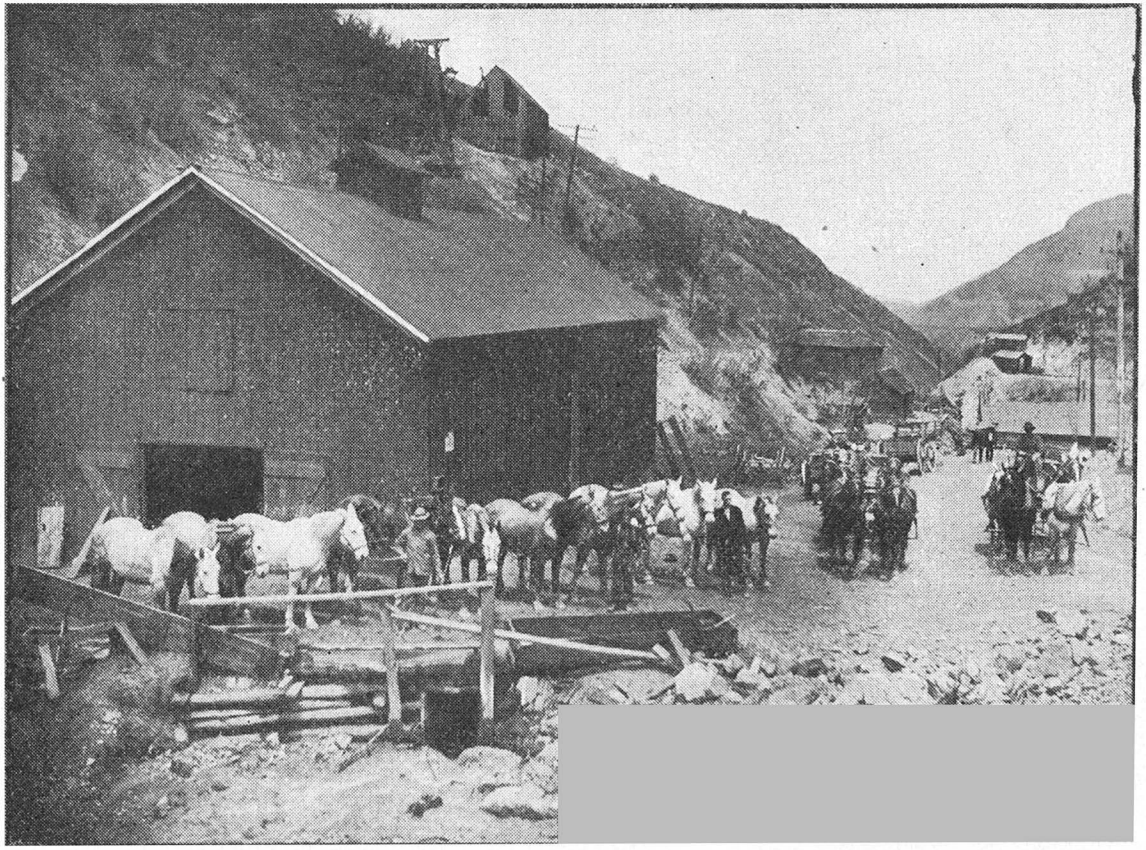


Mine Workings at the Utah-Apex.

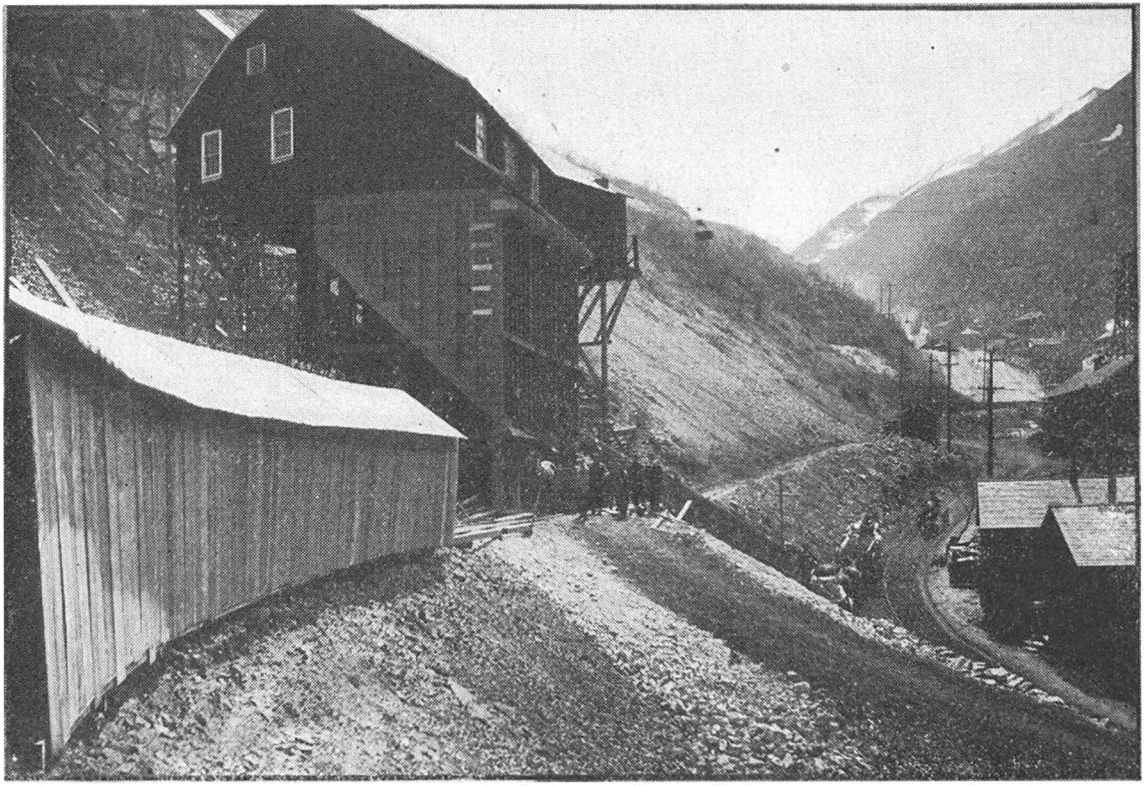
Stables.

Tunnel Entrance Utah-Apex Co.

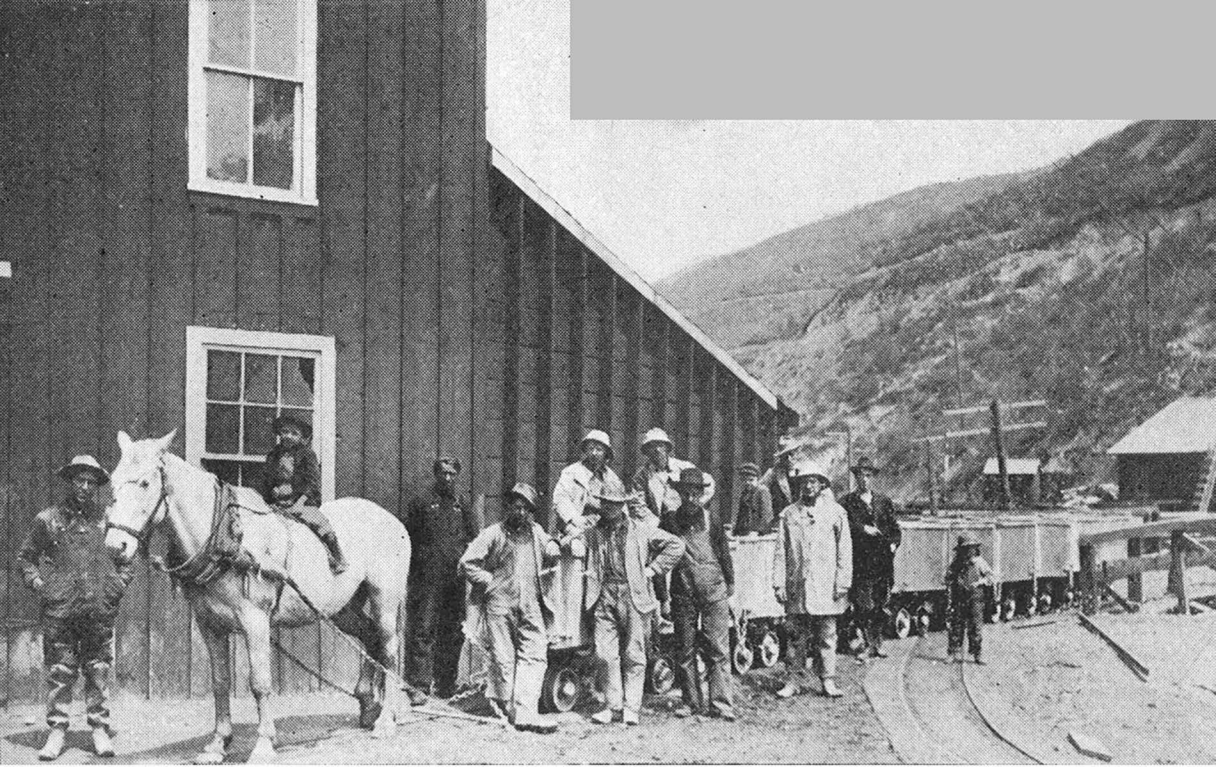
Tramway Terminal



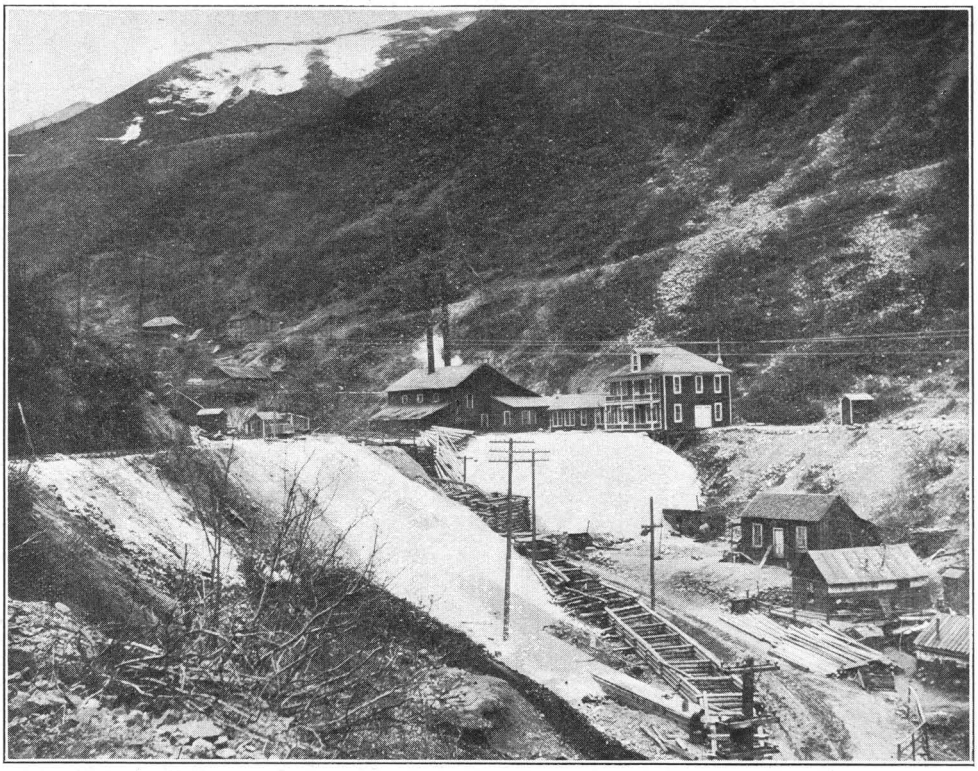
Utah-Apex Co. Stables.



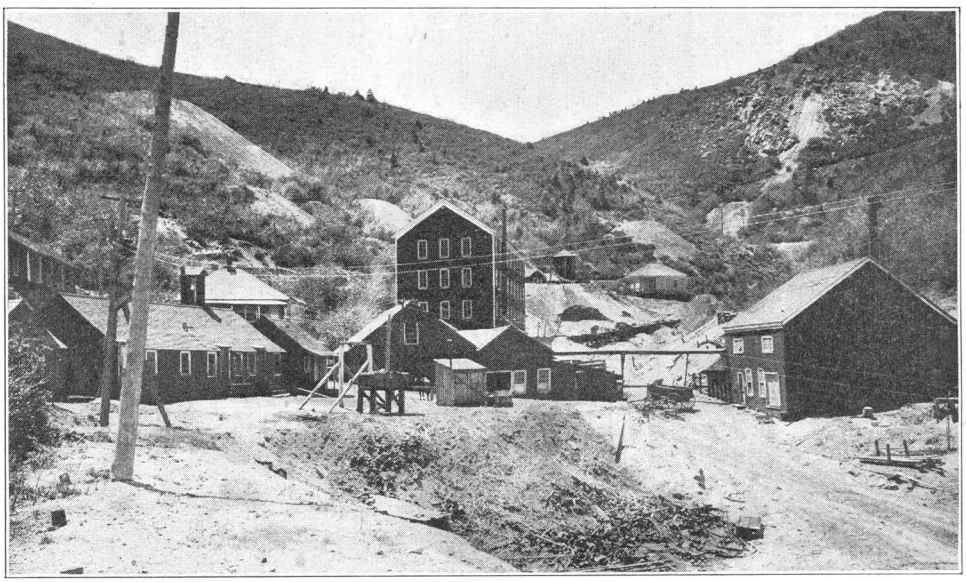
Utah-Apex Co. Tramway Terminal



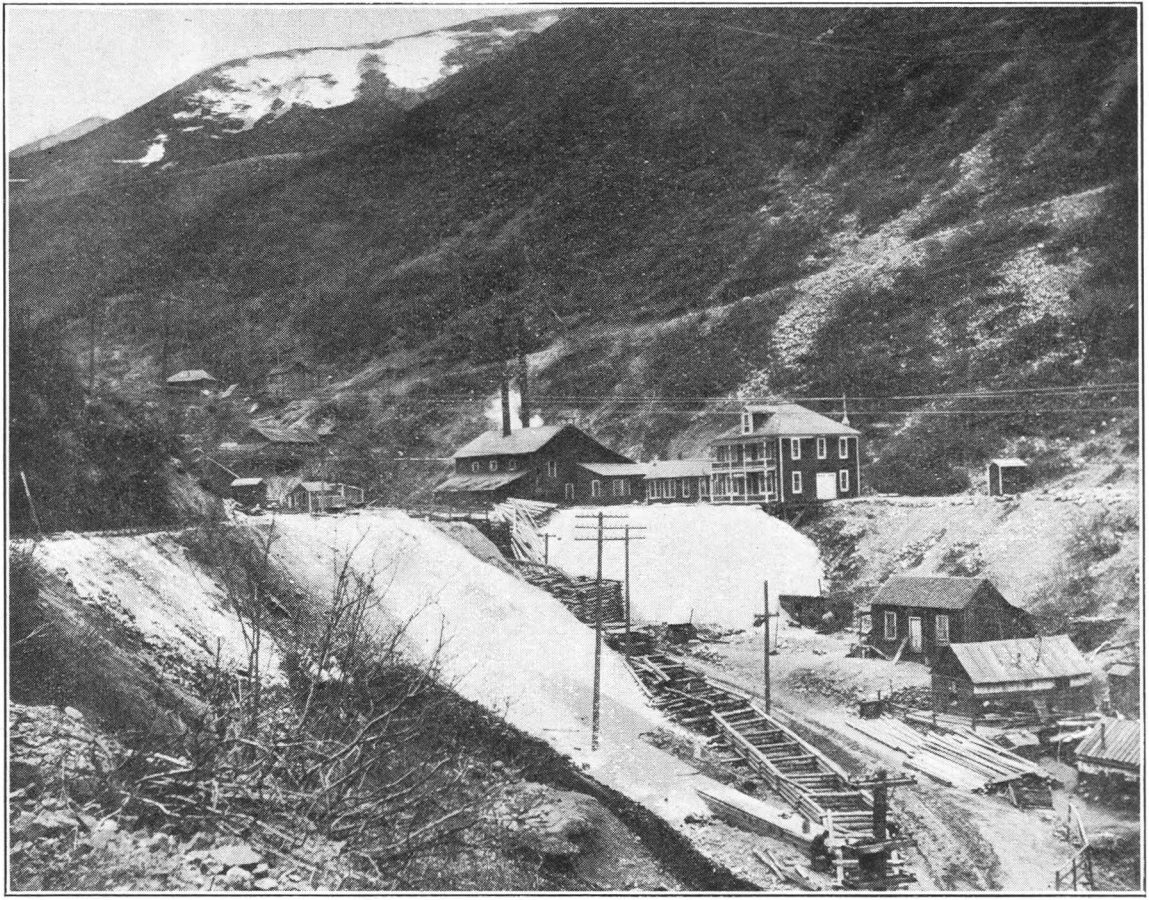
Tunnel Entrance Utah-Apex Co.



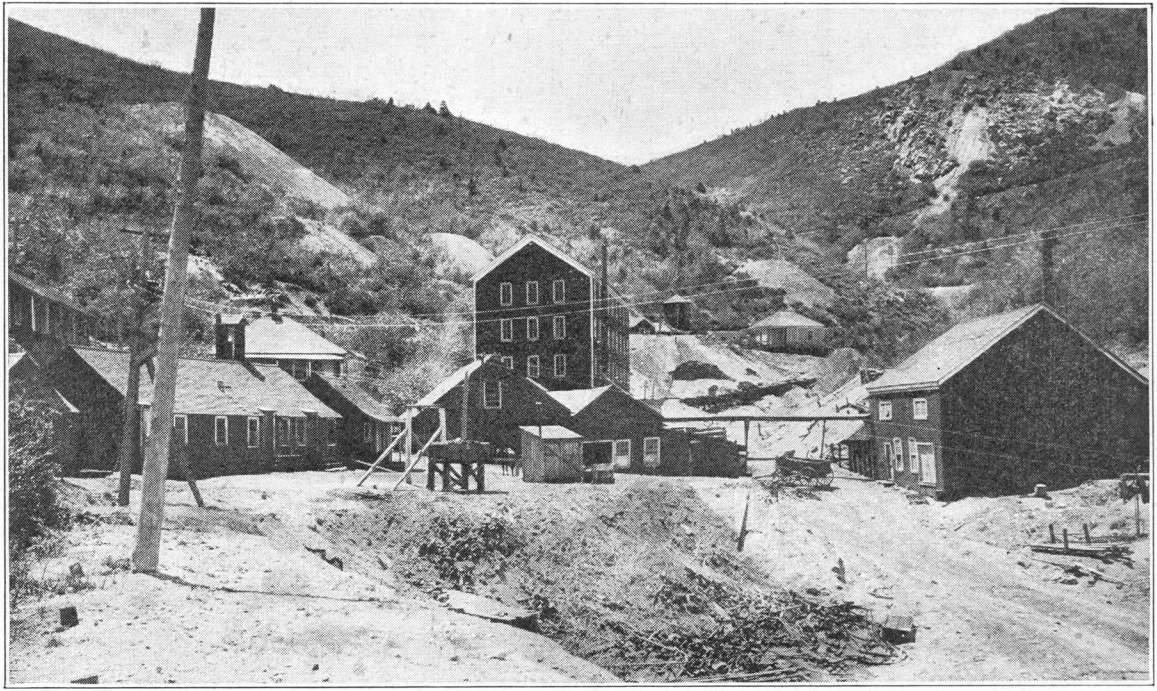
Utah-Apex Mine Offices and Compressor Plant.



Old Telegraph Mine Building and Bunk House—U. S. Mining Co.



Utah-Apex Mine Offices and Compressor Plant.

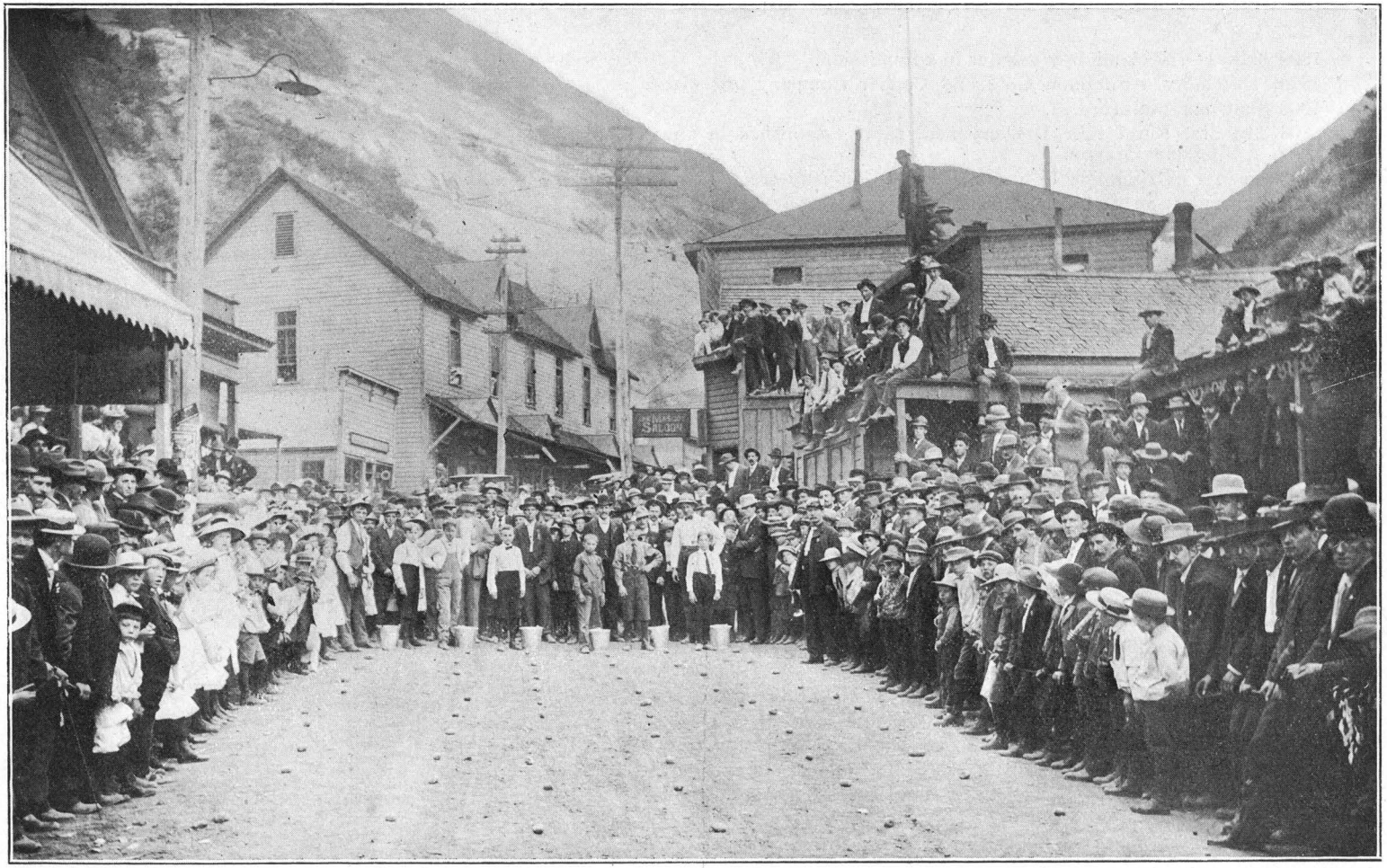


Old Telegraph Mine Building and Bunk House—U. S. Mining Co.

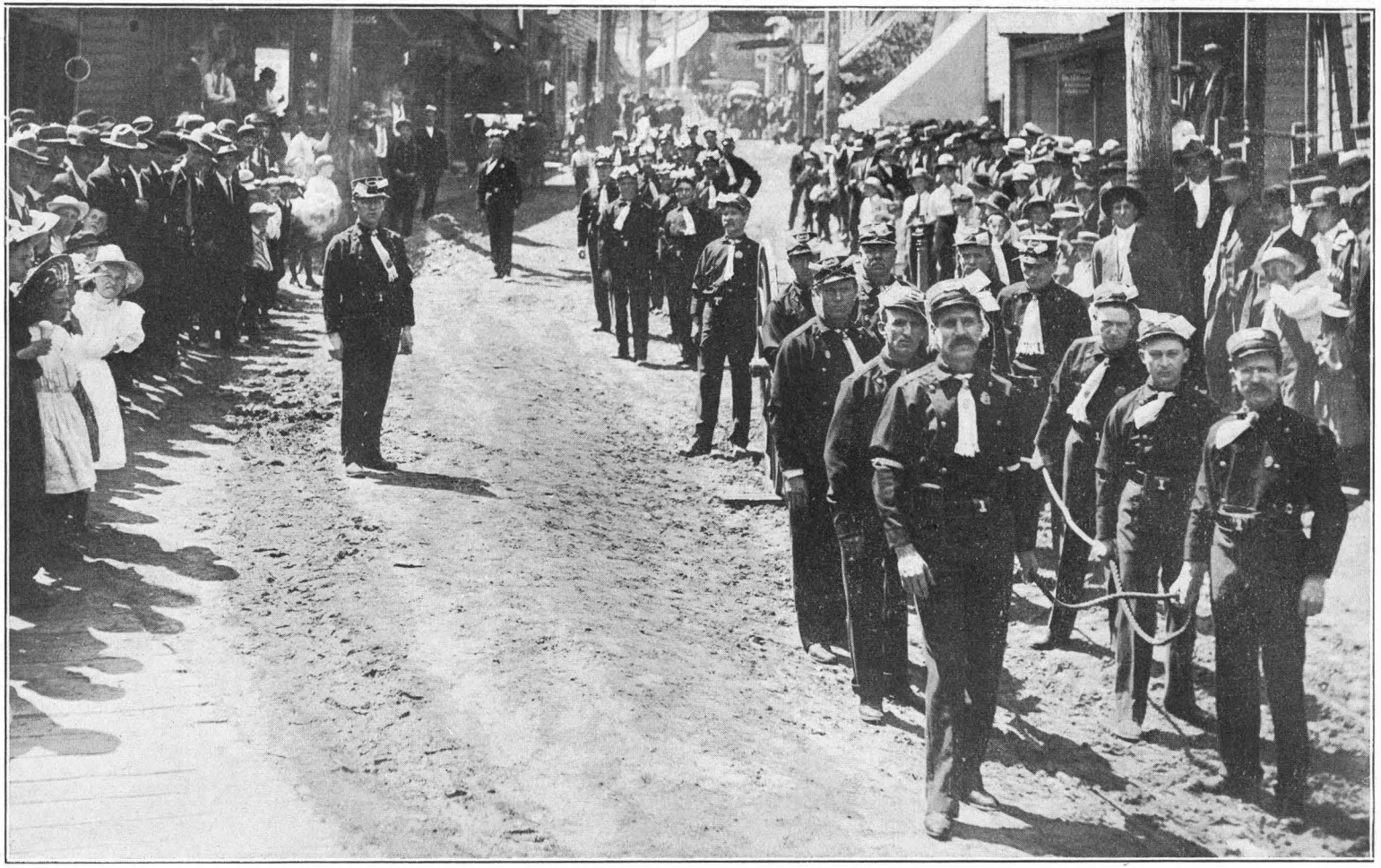
Important Events in the History of the Bingham Mining District

1863 (September 17)—Jordan Silver Mining Company (known as Old Jordan claim), located by G. B. Oglivie; first recorded mining location in Utah.
1863 (December)—West Mountain mining district organized; first mining district in Utah.
1864 Placer gold discovered.
1864 (January)—Galena claim located.
1864 (May)—Vidette claim located; first property to show copper.
1864 (Summer)—West Jordan Mining Company incorporated under the laws of California.
1864 (July)—Columbia claim located.
1865 Spanish claim located.
1866 (January 3)—Yosemite located.
1866 (March 31)—Winnamuck located by Mormon farmers.
1868 (June)—First shipment of ore from Utah (copper ore from Kingston claim.)
1870 (October 1)—Last Chance claim located.
1871 Utah smelter built. Winnamuck smelter built.
1871 (March 3)—No-You-Don't claim located by T. H. B. Jones.
1873 (June 6)—Montreal claim located by four prospectors. (Original locations on Telegraph lode were No-You-Don't. Montreal, Nez Perce's Chief.)
1873 (June 29)—Nez Perce's Chief claim located by R. Godfrey.
1873 Highland Boy claim located by James W. Campbell.
1873 (December)—Bingham Canyon (narrow gauge) Railroad completed.
1874 Carbonates penetrated and sulphides entered in principal mines.
1874 Concentration works erected; first in Utah.
1877 Leaching works erected.
1881-1889 Butterfield Canyon mines prominent as producers of lead ore.
1896 (December)—Discovery of paying copper ore in Highland Boy mine. Initiation of activity in copper mining.
1896 Utah Consolidated Mining Company (Highland Boy) organized.
1897 Boston Consolidated Mining Company organized.
1899 (March)—Consolidation of Old Jordan and Galena, Spanish, and Telegraph mines, and organization of United States Mining Company.

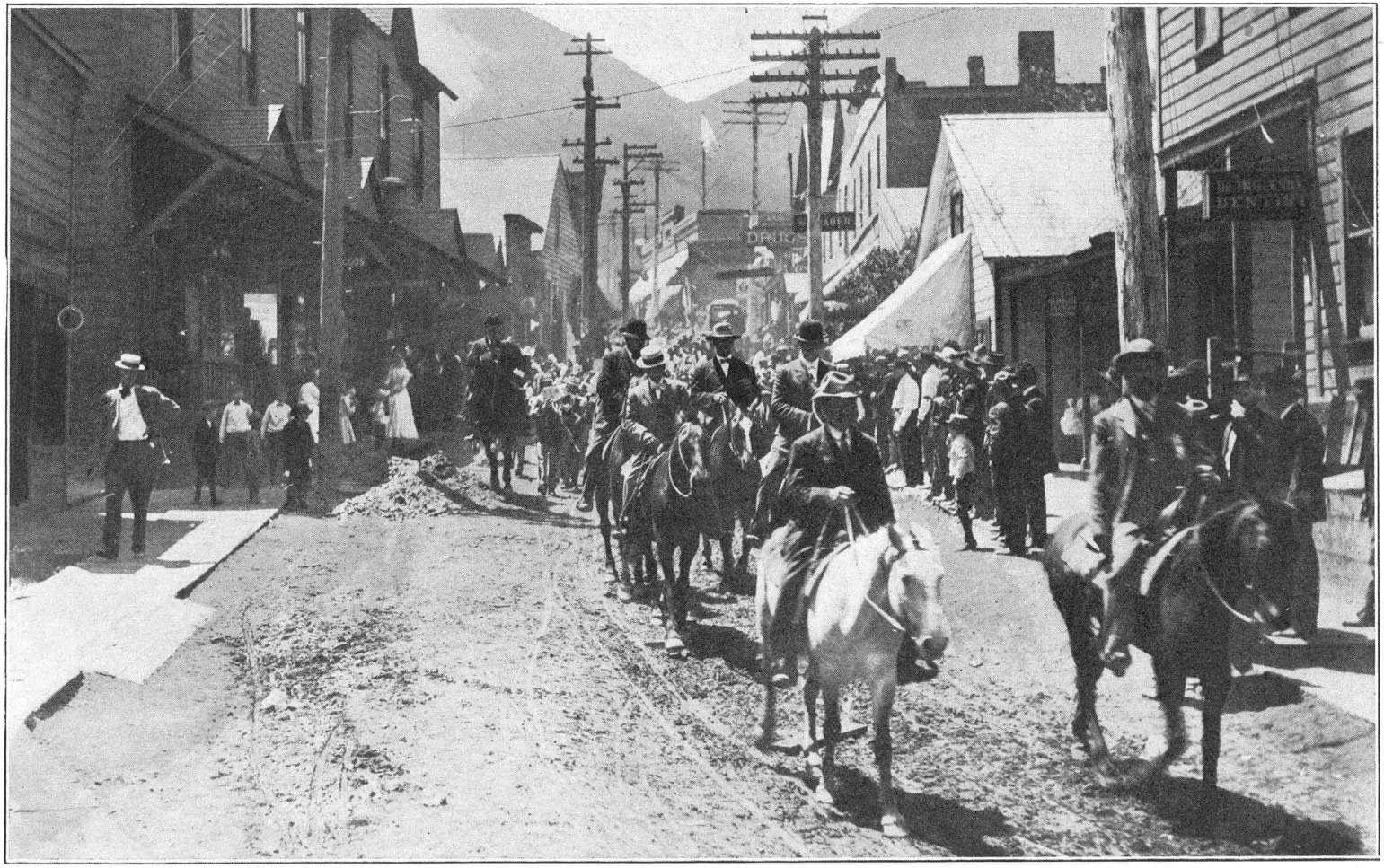
1899 (May)—Highland Boy smelter in commission.
1899 (December)—Bingham Gold and Copper Company organized.
1900 Shawmut mill erected.
1900 The first Rural Free Delivery mail route established in the United States, outside of a farming district, established in Bingham Canyon.
1900 Smelter of Bingham Gold and Copper Company erected at Bingham Junction.
1901 Concentration and enlargement of Highland Boy plant at the mine.
1901 Steam railway extended to Upper Bingham. (Copper Belt Ry.)
1901 (May)—Purchase of Dalton and Lark-Brooklyn-Yosemite group and consolidation with Bingham Gold and Copper Mining Company as "Bingham Consolidated Mining Company."
1901 Telluride Power Company's line erected to Bingham Canyon.
1901 (April)—Tintic Mining & Development Company purchase Yampa mine.
1902 Bingham-New Haven Copper and Gold Mining Company organized.
1902 (August)—United States Aerial Tramway completed.
1903 (June)—McNeill-Penrose syndicate take option on DeLamar-Wall property—now Utah Copper.
1903 (September)—Utah Copper working tunnel begun.
1903 Copper Belt Railroad extended to Yampa and Boston Consolidated mines.
1904 Utah Copper mill at Copperton erected.
1904 Yampa smelter erected.
1904 (March)—Town of Bingham Canyon incorporated.
1905 Col. Wall purchases Starless group.
1905 (August)—Guggenheims purchase control of Utah Copper.
1906 Ground broke for the Utah Copper 7000-ton mill at Garfield.
1906 Garfield smelter completed.
1906 (April)—Grading commenced on line of R. G. W. High Line.
1906 (July)—Utah Apex Tramway completed.
1906 (August)—First steam shovel started on the Utah Copper surface workings.
1906 (November)—F. Augustus Heinze assumes control of Ohio Copper.
1907 (January)—First ore train run over the R. G. W. High Line.
1907 (June)—Utah Copper Mill at Garfield commenced treating ore.
1908 (January)—Boston Consolidated mill at Garfield commissioned.



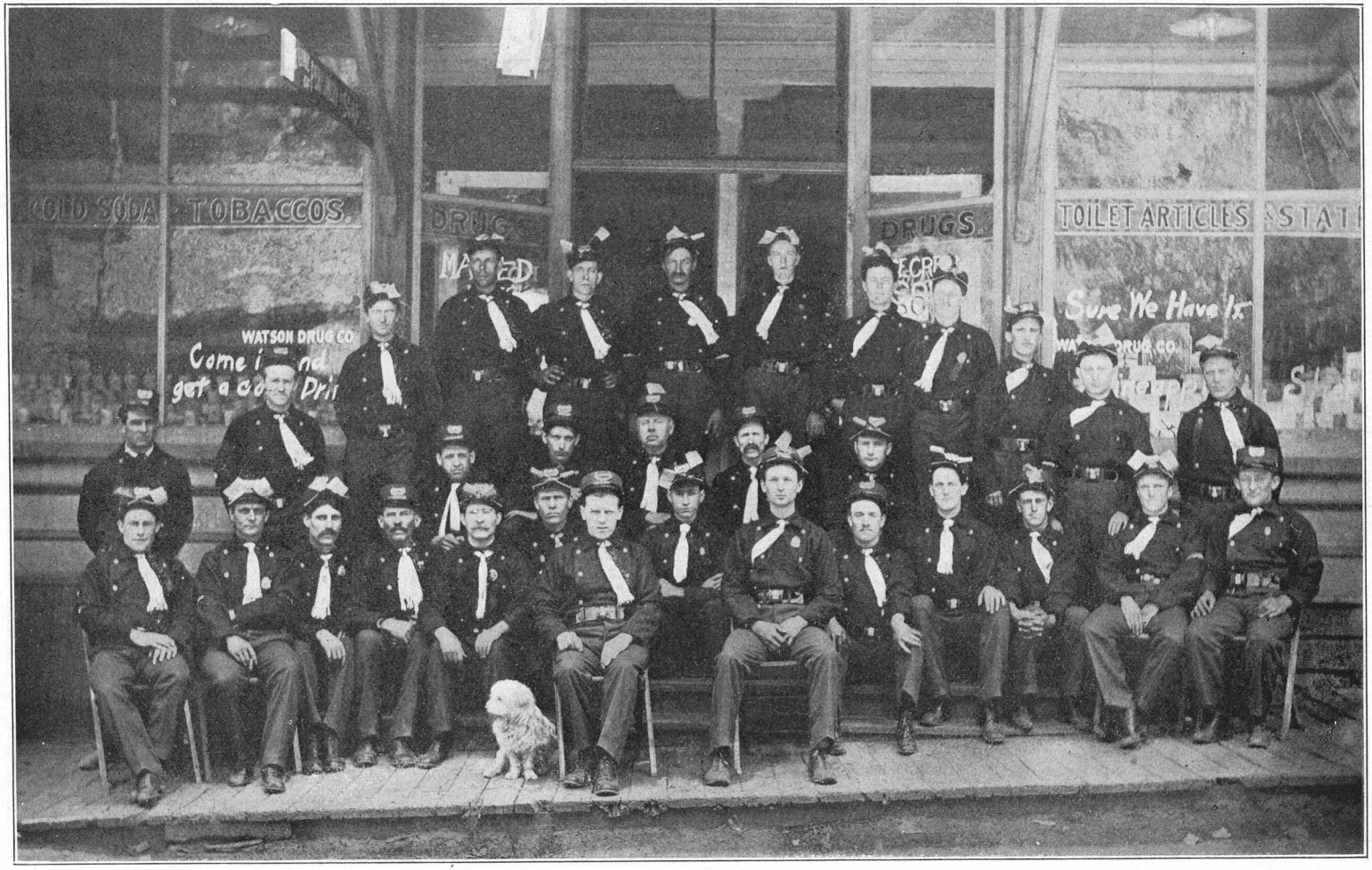
A Holiday in Bingham—Childrens's Sports.



Volunteer Firemen on Parade.

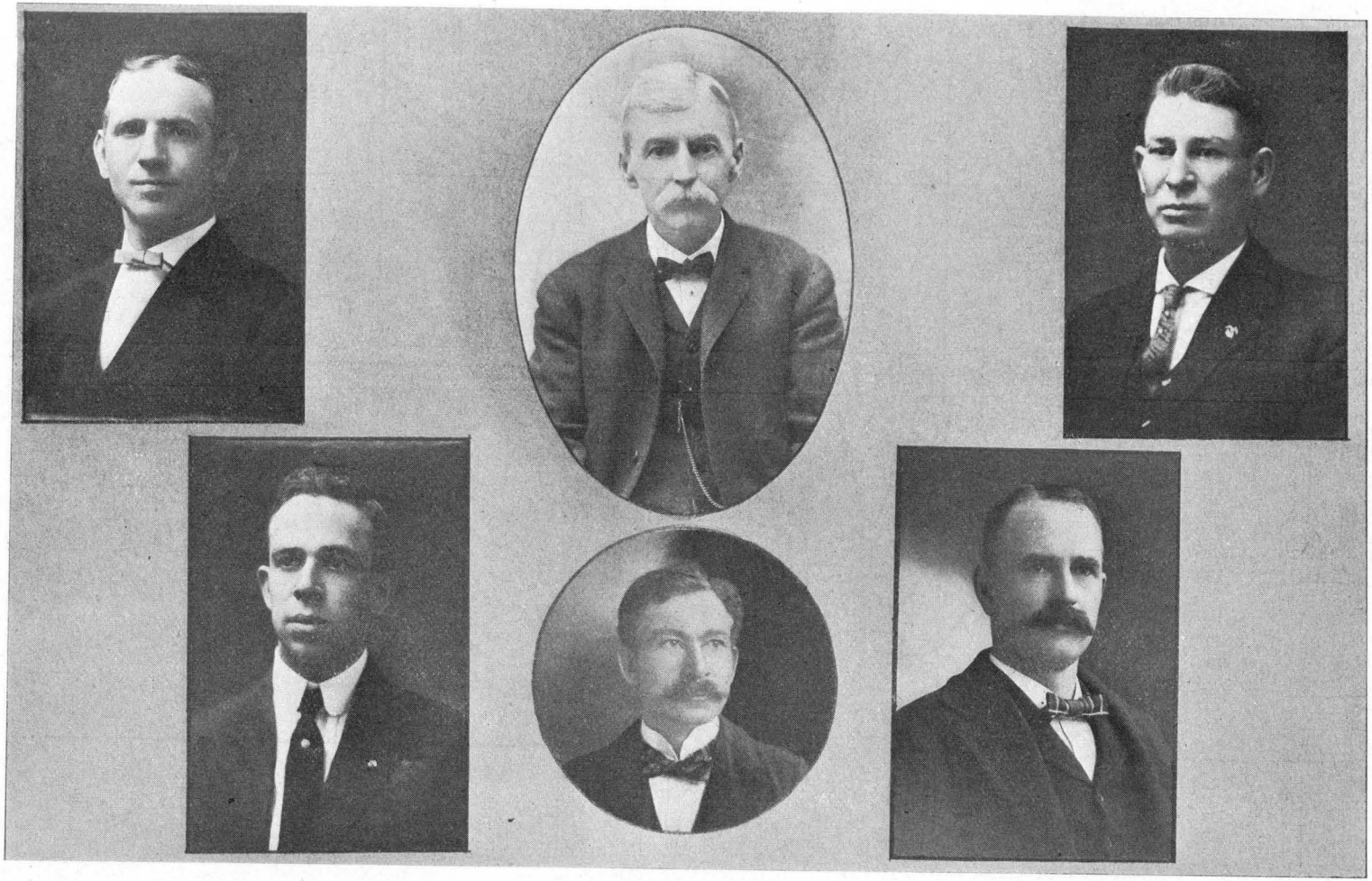


Town Officials Leading Procession—Miners' Union Day.



Bingham Volunteer Fire Department.

Justice of the Peace and Police Officers.



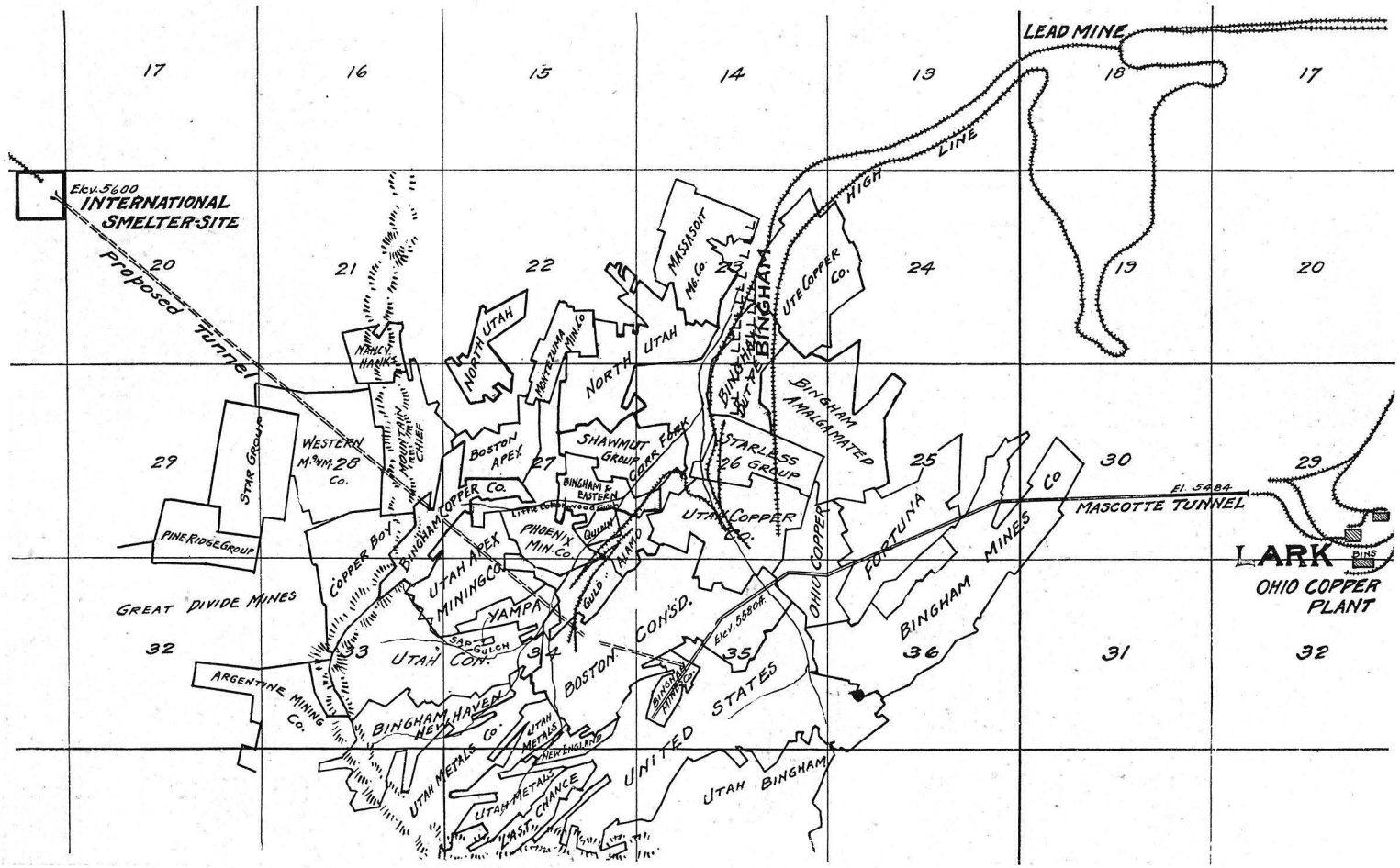
Town Council.

F. W. Quinn, Clerk.
J. Bourgard, Jr., Treasurer.

T. H. Quillan, President.
A. G. Gabrielson, Trustee.

V. B. Jones, Trustee.

A. Osborn, Trustee.



Map Showing Principal Mines in the District.