



600 feet deeper than the present lowest workings and will tap the ore bodies developed in the present workings at a distance of about 500 feet.

The Columbus Consolidated company has a low capitalization, a very important advantage to the stockholders—be-

ing 300,000 shares. The officers are: President, Tony Jacobson; vice president, Clarence K. McCormick; secretary and treasurer, Arthur E. Snow; who, with J. J. Jones and H. F. Chappelow, constitute the board of directors. Excepting the latter, who resides at Houghton, Mich., the officers are resi-

dents of Salt Lake City. The mine is under the able superintendency of A. O. Jacobson, a brother of the president of the company.

An average of fifty men have been employed by the company during the year, and the number will be considerably increased during the next.

THE CONTINENTAL ALTA PROPERTIES.

When the properties at Alta now owned by the Continental Mines & Smelting corporation were secured for this organization, the foundation was laid for another large and important producer. They had already contributed a goodly share towards the enrichment of the world—a quarter of a century ago, and when Henry M. Croxson made his examination of the mines he found the old workings filled with ore of a low grade, which were unprofitable when placed there, but which could be made to pay well now. There were large veins exposed, too, containing ore of a much higher grade, and he found conditions such that the mines could commence producing immediately. The deal for the ground was closed and now the Continental Alta mines are adding no less than \$20,000 per month to the mineral output of Utah, which amount will be increased several fold when cheaper transportation is afforded.

ORGANIZATION OF COMPANY.

While the Continental Mines & Smelting Corporation is incorporated for \$5,000,000 there is issued on the Continental Alta mines but one-fifth of its capital stock, it being the intention of the company to operate several properties in different parts of the country and, as each property is taken over by purchase, there will be a certain amount of the capital stock issued to cover its consolidation, as an asset of the parent company. No mines are purchased that are not producers or capable of producing at time of purchase, and the company does not bond and lease properties; but purchases them outright for cash.

The aggregate original capitalization of the company now included in Continental Alta mines is \$2,000,000, and the production of the Old Grizzly mine of the group has been no less than \$1,000,000 in lead and silver ore alone, as the principal product—copper—was not saleable until recently.

Consequently, the copper output has in the past been small where in the future it will perhaps be the principal metal produced.

PROPERTIES PAID FOR.

In the case of the Continental Alta purchase a condition of the option was that the greater portion of the year was given in which to pay for the properties, but the final payments were made within the first sixty days on the en-

tire holdings of the Lavinia & Grizzly Consolidated Mining company, the Darrington Mining company, and the Regulator Mining company. By the association of these properties and the installation of certain improvements the management is enabled to mine and handle the ore at a cost of from \$2 to \$5 per ton less than has been possible in operating the group heretofore, as three units. Besides, it is now possible to have the ore smelted at much lower figures than formerly, because of the increased demand for ore of this class. Only ten miners are required to break fifty tons per day, owing to the large faces of ore exposed in the stopes and to its soft nature.

SHIPPING 50 TONS DAILY.

The company is now marketing ores at the rate of 50 tons per day, and the product now being forwarded to the smelter furnaces runs in values from 21 to 30 per cent copper and from 12 to 25 ounces silver, as well as a dollar or two in gold. The least value of the ore now being moved is \$15 per ton, while the average of the second class shipments is \$18 in gold, silver, copper and lead.

HIGH GRADE COPPER ORE.

Recently there was developed high grade copper ore in three places in the mine, and a raise is now going up on lead ore carrying as much as 70 per cent in that metal and 150 ounces silver.

COULD INCREASE TONNAGE.

The output of the Continental Alta mines could easily be made 100 tons per day without further development work, but the policy of the company is to continue active exploration with a view to the greater development of the bonanza stopes of the mine, which has not been accomplished as yet in the operations of the present company, owing to caved ground.

CONTRACT WITH AMERICAN.

Although the continental Alta mines were not re-opened until last July they have yielded the heaviest tonnage of any mines in the camp. On September 22 last a contract was entered into with the American Smelting & Refining company, by which the latter agreed to purchase 75,000 tons of ore. The smelting company was very liberal and made concessions in the way of treatment charges which enabled the Continental Alta management to market ore of as low grade as \$10 to a profit owing to excess of iron, while it was previously estimated that \$12.50 was the lowest limit on ore that would pay to handle.

DEVELOPMENT WORK.

Since the commencement of work

in the mines last July, 1,562 feet of tunnels have been driven, 78 feet of shaft work completed, and 128 feet of up-raises run. The average cost of this work has been from \$2.45 to \$7.34 per foot, the shaft work being the most costly.

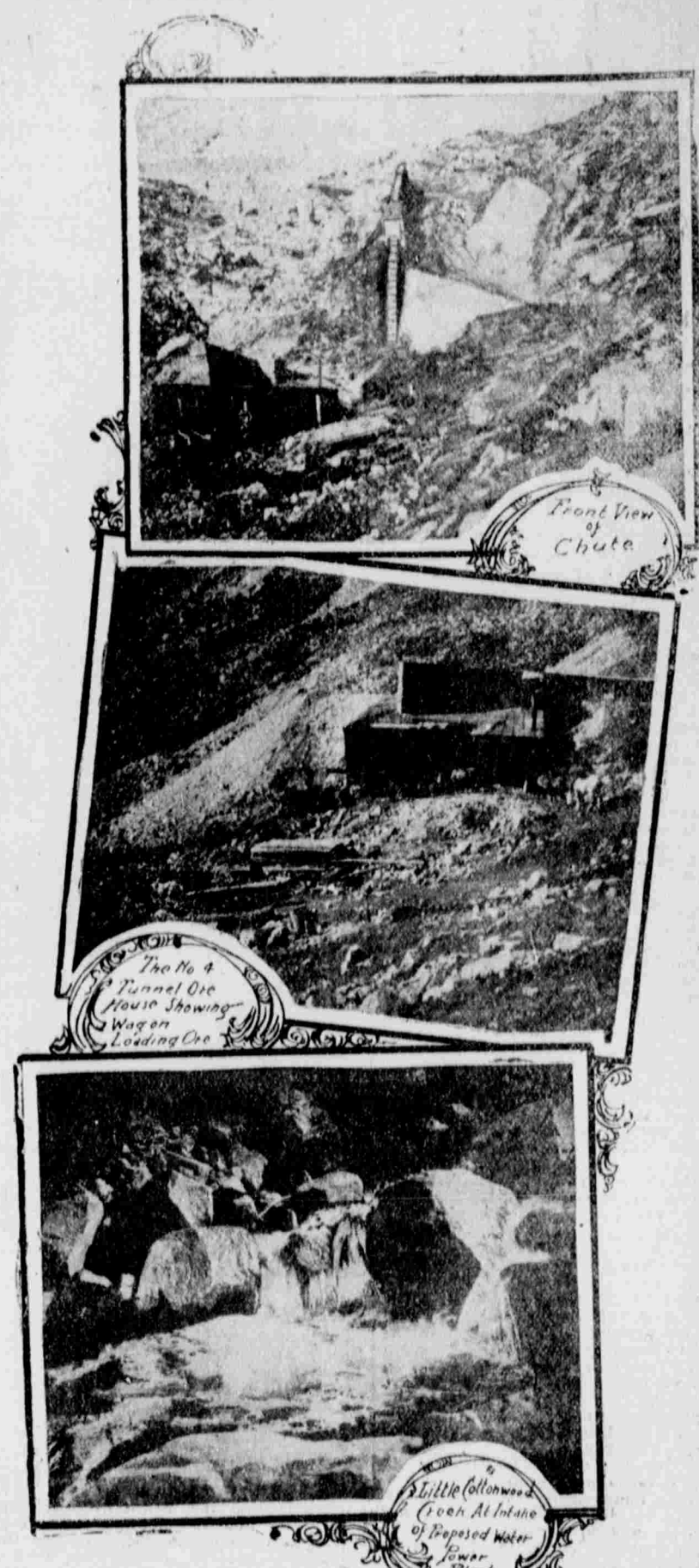
POWER AND MILLING FACILITIES.

Earlier in the year steps were taken to provide for electric power and milling facilities and an appropriation of certain waters of Little Cottonwood creek were made, for the purposes named. The surveys have been finished and the electric power plant will probably be installed early next year. This plant, when installed, will generate a minimum of 400 horse power per day, in the form of electric energy, and will be transmitted over eight miles of wire line. The fact that the present wagon and freight haul is 14 per ton for the twenty miles of transportation from mine to smelter, and that \$1.50 per ton would be amply high to figure this expense with mechanical transportation in use, leaves a possible saving of \$2.50 per ton, which, itself, is a large additional profit inasmuch as the reduction in up-freight expense will reduce the cost of mining by \$1 per ton, thus, making a saving of \$3.50 per ton, with the camp properly equipped with transportation facilities. This margin alone, will render available, for profits, many dozen thousands of dollars, as a great deal of which is blocked out in the mine awaiting cheaper transportation, and it is undoubtedly a fact that fully one-half of the ore in the Continental Alta mines, of which there is no less than 100,000 tons in sight, will average \$8 to the ton. It is this ore that will supply the proposed mill, as it is not of a sufficient grade to handle in the crude state.

AMONG LARGEST IN STATE.

The Continental Alta mines are unquestionably among the largest in the state and will enter the front ranks of most prominent producers when the present plans of complete economical equipment are carried out. The properties are situated at the head of Little Cottonwood canyon, and either adjoin or surround some of the former famous producers, such as the Flagstaff, Emma, Prince of Wales and others. The Columbus Consolidated is situated below, a short distance. The mine is equipped with a complete assay office and laboratory and engineering department, with buildings all under complete fire main system. The miner's quarters are provided with a comfortable reading room and supplied with current newspapers and magazines.

The Continental Mines & Smelting Corporation is a New York company and has been authorized to transact business in Utah. The president of the company is Henry M. Croxson, and J. E. Van Alstyne of New York is treasurer and secretary. W. G. Scott, formerly of British Columbia, is superintendent of the mine.



THE EARLY HISTORY OF MINING IN UTAH.

NOT long ago a well known western mining journal published a contribution from one of its writers, Mr. J. O. Denny, his subject being "The Early History of Mining in Utah." The author gathered much of his data from government reports and the balance was obtained through personal observation. He speaks of the early scenes in Bingham canyon, Alta, and at Stockton, which will undoubtedly be read with interest by remaining pioneers of those camps. Mr. Denny says:

There was a populous and remarkable center of industry for years before gold and silver, lead and copper were reckoned among the elements of material wealth in a vast region later found to contain minerals and one now ranking high among the mining states of the Union.

It was in 1852, before discoveries of precious base metals in the Wasatch mountains gave the mining industry its start, and its productive career practically dates from 1850.

It had been 15 years since California had electrified the world by showing evidence of its golden treasure, and several years since it had passed the record point in its productive career.

SOME SPANISH HISTORY.

There is little pre-American history to tell, for while the region that became Utah was part of the Spanish domain of 1818, the mission-founding and mine-hunting standard had never pushed so far northward and the region was

an unsolved mystery for nearly three centuries of nominal Spanish dominion. In 1540 Coronado's party reached the Colorado river and turned back and Utah's territory was not trodden by the white man until 1776, when Escalante penetrated as far as Utah Lake, at the head of the Jordan. There was another blank for a half century until enterprising American trappers pushed into the region, discovered Great Salt Lake and made the region fairly well known.

WHITE MAN ENTERS UTAH.

The white man came to Utah in the season of 1824-25, when a party of trappers from St. Louis pushed up the Missouri river and crossed over into the Great Basin. In 1825 Fort Ashley was established on Utah Lake and parties hunting beavers spread out through the country on trapping and exploring expeditions.

The "Mormons" were by the track of the main tide of overland travel that began rushing to California and mutual advantage resulted, as the passing emigrants bought and bartered freely, affording the "Mormons" a large market and the gold seekers needed supplies. While some of the "Mormons" who had gone to California turned their attention to gold mining, the faces of Brigham Young and the Apostles were firmly set against their people joining the mad rush for gold and abandoning the seemingly surer industries which they realized must be the foundation of their enduring success.

GEN. CONNOR'S MINING VENTURE.

The "Mormon" settlers early learned

the widespread existence of beds of coal and iron ore, for these were prominently distributed over the length of the territory, and the controlling powers were ready to appreciate and encourage the development of these elements of industrial progress. Early in the fifties small but unsuccessful efforts to smelt iron ores were made, and in 1854 the territorial Legislature offered a reward of \$1,000 for the commercial development of a coal seam not less than 18 inches thick within 40 miles of Salt Lake City, but nothing came of these efforts.

During the Civil war the force of about 700 men, under Gen. Connor, consisted of portions of the Third California Infantry and the Second Cavalry. The officers and men were from a mining state, many had been miners, and when they got located at Camp Douglas, late in 1862, near Salt Lake City, they very naturally exhibited a keen interest in the mineral possibilities of the mountains about them. Gen. Connor was much interested, himself, in the mining industry, and favored prospecting by the soldiers as conditions gave opportunity. So, through 1863 there was quite an active prospecting campaign carried on by the boys in blue as parties secured leaves of absence for the purpose.

FIRST BINGHAM DISCOVERY.

The initial discovery of moment was made in the summer of 1863 by Capt. A. Heitz and party, who found a vein of argentiferous galena in Bingham canyon on the east slope of the Oquirrh range, near the Jordan, about 20 miles south of Salt Lake City. In September of that year the West Jordan mine was

located in the same district by one Ogilvie, and other discoveries rapidly followed.

In December, 1863, the first mining district was organized, the West Mountain, which included all of the Oquirrh range south of Great Salt Lake. But little development work was done until 1864, when the industry began its initial boom. In that year many other claims were located, some of which displayed very rich silver-lead ores and were deemed very promising. Among these were the Empire and Galena, near the West Jordan. The Rush Valley district was early organized, including the western slope of the Oquirrh range, the eastern slope remaining the West Mountain.

In 1864 a party of California miners, on their way home from Montana, discovered placer gold in Bingham canyon and began practically the only successful placer mining in Utah, the can-

UTAH'S PRODUCTION OF COPPER AND LEAD IN 1902 BY COUNTIES.

Summary by Counties.	Copper.	Lead.
Beaver	5,022.768	5,022.768
Utah	5,271,921	20,256,507
Salt Lake	14,907,806	3,257,179
Summit	3,076,800	77,249,960
Tooele	1,486,686	3,351,325
Custom smelters		115,490
In addition to the above, not possible to distribute by counties		
Total	25,664,026	110,609,441

The value of the copper produced during the year 1902 is figured at \$3,017,415. The market value of the lead during the same period was \$4,599,668.

yon yielding over \$1,000,000 in the next few years.

WHEN STOCKTON STARTED.

Early in 1864 the town of Stockton was started in the Rush Valley district, in Tooele county, near the most important early discoveries, and a military camp was established near by, to the end of the promotion of prospecting. In the summer of 1864 the West Jordan Mining company was organized, under the laws of California, by Gen. Connor, who interested a number of California friends, and a tunnel was begun on the property. In that year activity in prospecting became widespread, carried on by soldiers and Gentile miners attracted by the discoveries, and the realization of companies was actively begun.

WHEN COUNTRY BOOMED.

By 1865 the boom was at its height and many companies were organized by army officers and others, part of the east. The boom pursued the course common to such booms. After slight development, companies proceeded to install small smelting plants. In Stockton, which has the honor of being the oldest mining camp in Utah, The first smelter was erected by Gen. Connor. Ores from various mines in this and other districts, including that of Little Cottonwood canyon, gave high assays, but the slight facilities for the reduction of the base ores were crude and inefficient, processes of smelting, transportation to reduction works in the east was impossible, and early failure came to the mining efforts of those first years. In 1865 the "Stockton mines" led it fame and hundreds of claims in different districts were held in hope and confidence.

The difficulties encountered imposed a pause, and though between 1864 and 1870 a vast amount of knowledge as to the mineral resources of the territory was gained, the productive period did not fairly begin until the opening of the next decade. The discoveries had extended to the western side of the

territory, which was found rich in minerals, and there was established a general faith in the future of the industry, a future greatly aided by the completion of the overland railway.

FIRST SHIPMENT OF COPPER.

In 1868 Bingham canyon afforded the first shipment of ore, a car of copper ore, which went to Baltimore, and at that time there occurred a considerable excitement over discoveries of gold quartz near Sevier river, in the south-western part of the territory. At that time practically the only productive mines were the Bingham canyon placers, and in 1869 R. W. Raymond, U. S. commissioner of mineral statistics, summed up the situation as follows:

"On the whole it may be said that, so far, Utah cannot be classed among the mining states and territories. The development made are all very slight and unimportant, and no shipments of any consequence of the precious metals have been made. The Union Pacific railroad, while, however, undoubtedly do much in the future toward the development of the mineral interest in the territory."

EMMA LODE DISCOVERED.

But the following year was to see a sudden and important development of the industry, and in that year mines began to be systematically operated, partly because of the building of the Utah Central railroad south to Salt Lake City. In 1869 the famous Emma mine was located and at once began its great career, being credited with producing \$2,000,000 by 1872, in which year it was sold to an English syndicate for \$5,000,000, an operation that was soon given the reputation of a huge swindle and which was followed by the closing of the mine. This mine, in Little Cottonwood canyon, was the first fully developed mine of the territory and its success gave a great and immediate stimulus to the industry.

FINDING OF TINTIC.

The Tintic district was discovered in

1869. And at this time a number of properties were undergoing development, including Flaxstaff, North Star, Magnet, Savage, and others in Little Cottonwood canyon, and developments in various districts gave a general stimulus to mining. In 1870 rich chloride of silver ores were found in Esmeralda canyon, in the Ophir district, which was another stimulating circumstance, and in that year the first effective and successful smelting furnaces were erected by Woodhull Bros., a few miles from Salt Lake City, the capacity being eight tons. The Badger Lake and other smelters soon followed. In the midst of the boom so generated, the great Ontario, which was to yield \$10,000,000 within 10 years, was opened in the Park City district. The public was widely interested in Utah mines, and there was a great influx of miners, prospectors and investors. In 1871 there were about 20 small charcoal-burning smelters in the territory and skill and capital were being devoted to the planning and erection of the larger and more efficient reduction works that soon followed.

PRODUCTION OF 1870.

The year 1870 was the first year of noteworthy ore production, nearly 10,000 tons of ore being shipped by rail east and west, of which 500 tons came from the Emma. The total value of the output, in all metals, was nearly a million dollars and in this year the Bingham placers yielded about \$300,000 additional. In the following year the mineral output was estimated at \$2,300,000, in 1872 at \$2,445,000, and in 1873 at \$4,583,700, in 1874 at \$5,200,700, and in 1875 at \$4,253,157. (Raymond.)

The falling off in 1875 was due to a depressed condition of the smelting business. At this time the mining industry had become firmly established on a large scale and a great amount of development had revealed an enormous extent of valuable mineral deposits, which gave a permanent productive career to the industry, subject to the fluctuations of prosperity that come to mining everywhere.

Latest Official Figures of Utah's Production of the Precious Metals.

ABOUT the middle of each year it is customary for the government assayer at Helena, Montana, to issue a report, showing the mineral production of the several states within his district, which includes Utah, Idaho and Montana. The statistics issued from his office are the most reliable of any that can be obtained at the present time and the figures compiled are generally believed to represent very close to the actual output. The figures for the year 1903 will not be compiled until several months later and the official report will not be made public until next June or July. The assayer now has the means at his command to get at the production of each state by counties. In his last report the official furnished some interesting data which every mining man should preserve for future reference. It will be seen that Tooele county lead in the production of gold last year, and Summit county in the production of silver.

TWO YEAR'S PRODUCTION OF GOLD AND SILVER IN UTAH, CLASSIFIED BY COUNTIES.

County.	Gold.				Silver.			
	1901.	1902.	1901.	1902.	1901.	1902.	1901.	1902.
	Fine Ounces.	Value.	Fine Ounces.	Value.	Fine Ounces.	Value.	Fine Ounces.	Value.
Beaver	1,003,718	\$ 20,748.69	1,283,000	\$ 26,521.96	427,382.00	\$ 652,574.70	221,866.78	\$ 286,557.97
Utah	98,750,489	\$ 2,042,242.49	104,653,092	\$ 2,183,371.41	2,685,734.89	\$ 4,472,485.31	2,978,394.00	\$ 4,850,852.85
Salt Lake	27,911,565	\$ 576,983.25	34,923,135	\$ 721,328.28	7,060,623.56	\$ 12,887,083.75	7,955,515.12	\$ 12,882,039.75
Summit	13,731,376	\$ 283,552.75	15,229,219	\$ 314,629.55	30,777.12	\$ 50,771.12	294,551.61	\$ 468,834.49
Tooele	80,978,768	\$ 1,673,976.70	81,570,082	\$ 1,680,402.42	2,413.38	\$ 3,827.67	1,125.45	\$ 1,807.66
Utah	120,000	\$ 2,480.00	165,122	\$ 3,320.00	31,871.05	\$ 50,771.12	108,997.30	\$ 174,925.83
Impossible to classify	2,830,796	\$ 57,538.05	1,349,934	\$ 27,887.00				
Total	184,802,933	\$ 3,820,215.66	192,156,888	\$ 3,972,235.41	152,019,751	\$ 251,860,071	14,656,778.66	\$ 23,678,086.66

ORES FROM WHICH UTAH'S PRODUCTION OF GOLD AND SILVER WAS EXTRACTED IN 1901 AND 1902.

Classification.	Gold.				Silver.			
	1901.	1902.	1901.	1902.	1901.	1902.	1901.	1902.
	Fine Ounces.	Value.	Fine Ounces.	Value.	Fine Ounces.	Value.	Fine Ounces.	Value.
In quartz and dry ores	6,688,150	\$ 138,256.32	8,848,113	\$ 182,906.41	850,266.61	\$ 1,099,334.65	784,626.02	\$ 1,049,819.50
In cyanide mill bullion	98,750,489	\$ 2,042,242.49	104,653,092	\$ 2,183,371.41	2,685,734.89	\$ 4,472,485.31	2,978,394.00	\$ 4,850,852.85
In lead ores	17,724,888	\$ 365,405.96	21,317,007	\$ 440,651.65	7,357,451.54	\$ 12,123,703.25	7,955,515.12	\$ 12,882,039.75
In copper ores	43,521,388	\$ 896,666.94	42,638,523	\$ 881,416.49	2,201,143.66	\$ 3,545,923.11	2,409,592.02	\$ 3,815,422.11
In milling ores	18,075,018	\$ 373,643.78	14,700,153	\$ 303,579.13	862,755.00	\$ 1,315,411.41	781,842.12	\$ 1,049,819.50
Total	184,802,933	\$ 3,820,215.66	192,156,888	\$ 3,972,235.41	152,019,751	\$ 251,860,071	14,656,778.66	\$ 23,678,086.66

THE STATE BANK

OF UTAH.
SALT LAKE CITY.

Joseph F. Smith, President
Wm. B. Preston, Vice President
Charles E. Burton, Cashier
Henry T. McEwen, Assistant Cashier

DIRECTORS:
Heber J. Grant, Heber M. Wells,
Joseph F. Smith, Byron Grog,
Thas. S. Burton, James D. Murdoch,
Wm. B. Preston, Isaac Barton,
A. W. Carlson.
Commercial banking in all its branches.
Accounts Solicited.

U. S. DEPOSITORY.

DESERET NATIONAL BANK.

Salt Lake City, Utah.

Capital \$200,000.00
Surplus \$100,000.00
Safety Deposit Boxes for Rent.

DIRECTORS:
J. R. Hilla, President
Moses Thatcher, Vice President
H. S. Young, Cashier
Edgar S. Hilla, Assistant Cashier

B. H. SCHETTLE

BANKER.
SALT LAKE CITY, UTAH.
Five Per Cent Interest paid on time deposits. Opposite Co-op.

WELLS FARGO & CO., BANK

Salt Lake City, Utah. (Established 1852.)
The oldest and strongest bank in Utah.
Capital, Surplus, Undivided \$15,326,512.44

Transacts a general banking business. Domestic and foreign direct connections with banks in all principal cities of the world.

DEPOSITS—Drafts, letters of credit, telegraphic transfers on all prominent cities. Deposits received—subject to check.

H. W. MILLER, Cashier.
H. D. CLARK, Asst. Cashier.

McCORMICK & CO., BANKERS.

SALT LAKE CITY, UTAH.
Established 1873.

The DESERET SAVINGS BANK

DIRECTORS:
W. R. Ritter, President; Moses Thatcher, Vice President; Elias A. Smith, Cashier; James Sharp, John R. Barnes, John C. Cutler, David Eccles, A. W. Carlson, Geo. Romney, J. B. Winder, E. R. Eldredge, Reed Smith, W. F. Fowles.

Four Per Cent Interest Paid on Savings.

COMMERCIAL NATIONAL BANK.

Capital Paid in \$200,000.
General Banking in all its Branches.

DIRECTORS:
John J. Daly, C. J. Sullivan, Mervin C. Fox, W. P. Noble, Geo. M. Downey, John Donnellan, A. F. Holden, J. B. Cosgriff, J. E. Cosgriff.

WALKER BROS., BANKERS.

Established 1859 Salt Lake City, Utah.
Incorporated 1903

Transact a General Banking Business. Safety Deposit Boxes for Rent.

NATIONAL BANK OF THE REPUBLIC.

U. S. DEPOSITORY.
FRANK H. MURRAY, President
J. A. ADAMS, Vice President
W. F. ADAMS, Cashier

Banking in all its branches transacted. Exchange drawn on the principal cities of Europe.

INTEREST PAID ON TIME DEPOSITS.

R. G. DUN & CO., The Mercantile Agency.

George Rust, General Manager, Utah, Idaho and Wyoming.

Offices in Progress Building, Salt Lake City, Utah.