

## IRRIGATION IN UTAH

Notwithstanding that irrigation was first introduced into the United States by the Mormon pioneers in Utah, said Engineer O. R. Young this week, there is still a great deal of room for improvement in the methods in use in this State. In some respects Colorado, Wyoming and California are now in advance of Utah in the perfection of irrigation methods. This is largely due to the assistance given by these States, all of which are more advanced than Utah in State engineering. Some action was taken in this matter by the State legislature two years ago, which had for its object the encouragement of the storage of irrigation water, and it is not improbable that further consideration will be given the matter by the Legislature, which convenes in January. That the subject is one of growing public interest is evidenced by the attention given the matter in the various Trans-Mississippi congresses, by which the general government has been urged to take a hand in the matter. The subject is one of vital importance in the west. Already many visitors from the East, Europe and the South Seas have been here, and are deeply impressed with the transformation brought about by the cruder irrigation systems of earlier days. The simple diversion of the mountain streams has led to the reclaiming of hundreds of thousands of acres of sage brush desert. Now, however, greater engineering skill and more capital are needed to go farther than the diversion of the streams, and conserve the great overflow at certain seasons of the year, which at present, largely runs to waste. The original systems, such as those in Salt Lake county, were built by association of community efforts, and were laid out on the easiest lines. The people lacked money, though labor was plentiful, and in this manner the various canals were constructed. The scientific construction of canals was not followed, and the result has been the loss of a great deal of water from evaporation and seepage. The modern system of canal building contemplates the direct conveyance of water to its destination in such a manner that evaporation, seepage and evaporation are reduced to a minimum. In the place of sharp angles in canals, modern engineering skill suggests gentle curves. Flumes are also built to avoid extreme meandering courses around gulches. In a few words, it may be said that the aim of the present system is to get the water to the ground as quickly as possible. This requires more capital and greater skill than was obtainable in early days. Consequently, it is not surprising that a great work like the Bear River canal was consummated a few years ago, which was not possible in the early history of Utah. This company dammed the water of Bear river and conveyed it some 40 miles at a cost of probably \$1,500,000. The methods of the company afford a striking object lesson of the difference between the methods of early days and those of more modern times.

## WATER STORAGE.

Great, however, as has been the cost of diverting the mountain streams to aid agriculture, it is when we come to water storage that great expenses are being incurred. It is here that much higher engineering skill is required, and it is these things, perhaps, which help to make it a field, especially inviting to State and Government assistance. The fact that, in many places, all the water in the streams is diverted during irrigating seasons, makes the conservation of the early spring water a necessity if a greater population is to be secured in these districts. Already the efforts of several companies are bearing good fruit. Among these is the Mt. Nebo Irrigation & Land company, which has built a big storage reservoir and head works. The water has been conveyed around Kimball Creek valley and is now the means of reclaiming about 15,000 acres of land, with the prospect that this will be increased to 30,000 acres. Another project of similar character is the Gunnison reservoir, which is so successful that its enlargement has been determined on. The Clear Lake Irrigation company has availed itself of several small natural lakes. Other companies might be mentioned, all of which are more or less successful in their operations.

## PROJECTS.

The attention that is being given to water storage is best shown by the numerous projects now being projected and consummated in different parts of the State. Too much cannot be said upon this matter as upon its advancement depends the increase in the agricultural resources of Utah. Of the projected schemes none is of greater importance than the Bonneville Water and Power Co., which proposes to carry out one of the largest storage schemes in the world near Leamington on the Sevier river. Some 300 miles of sur-

veys have already been made for the purposes of deciding upon the canals by which 250,000 acres of land is to be reclaimed. The project is now being promoted and because of its being located on a river having a large watershed it is a scheme peculiarly suited to receive State aid.

Another project of great importance is the Mammoth Reservoir company's scheme by which it is proposed to reclaim 25,000 to 35,000 acres in Sanpete county. At present there is a shortage of water, and this project is the only way by which the supply can be increased. The scheme includes a dam 125 feet high and a tunnel three miles long through the mountain range. The project will cost about a quarter of a million and when completed will reach lands in the vicinity of Nephi. The work is being undertaken by the people who will use the water. Several smaller projects are being carried out, principal among which is the Highland Canal company, near Cannonville and Mayfield. Several large projects are also contemplated, and one or two are being constructed near Green River station, or Green River. These schemes are of considerable magnitude and mean much to the southeastern part of the State. A number of other projects might be mentioned but sufficient has been said to show that much attention is being given to this important matter, which promises much greater advancement for Utah in the near future.

It is understood that the State engineer will make several recommendations in his report to the State Legislature, which will doubtless receive much attention at the hands of that body. It is probable, too, that the local side of this matter will be given the earnest consideration it demands. It may be necessary in the near future to adopt different methods of measuring and recording water rights to prevent much being expended needlessly in settling controversies in the courts. This side of the question is of great importance and will not doubt sooner or later receive the wisest consideration by the legislature.

## BIG STORAGE PROJECT.

Enterprise of the Mammoth Reservoir Company of Sanpete and Juab Counties.

A great deal of interest is being manifested on the part of the people of Sanpete and Juab counties in a scheme to reservoir the waters of Gooseberry Creek, and by means of a tunnel and canal bring the waters onto the lands in the west of Sanpete county and down Salt Creek canyon into Nephi and vicinity. The project is one of the heaviest contemplated in Utah. The promoters of the work are to be commended in their public spirit and in the manner of launching this concern.

It is purely an institution of the people, who are the shareholders, so that they are guaranteed all the privileges that will be conducive to their interests, and protected against a few minded men controlling it to the interests of the few. The estimated cost of the work is \$250,000, which is divided into 25,000 shares of the par value of \$10 each. Over 16,000 shares of the stock is already subscribed and surveys are being made in the field at work making surveys. Active operations in work will commence in the early spring, and the work pushed to a completion by October 1902, when 25,000 acres of water will flow into Sanpete and Juab counties through its canals.

The value accruing to these localities cannot be estimated. In a few years hence and Juab county between North and Levan will be one vast field, dotted with comfortable homes and orchards. It is conceded that the finest tract of land in the State lies between these two points, and all that is needed to make it the wealthiest is the water.

Juab county people are subscribing liberally for the stock and expect to bring 12,000 to 15,000 acres of the water into their valley. No doubt Sanpete people will wake up to the situation in the near future and subscribe more freely. The company expects to dispose of all its stock among the land owners by early spring and then make assessments to meet the requirements of prosecuting the work. The outlook is most favorable for an abundant supply of water. There is sure to be a considerable flow of the liquid from the mountain, the formation of the land is most favorable for canals, being of a character to hold the water without much seepage. There is a good progressive spirit and influence among the board of directors, who, no doubt, will do all in their power to work for the interests of the people and carry the scheme to a successful completion. They have engaged the services of one of the best engineers in the land—those of O. R. Young, which, in itself is an anchor to the confidence of the promoters and the shareholders. The road-

## A CALIFORNIA CROESUS

An Operator Whose Clients Have Amassed a Share of His Profits.

The Red Cloud Mine a Dividend Producer. He Offers Chances in California.

Every large city in the Union has its own strong individual financial character. New York has Russell Sage; Chicago, Lyman T. Gage; San Francisco, H. H. Huntington; and Los Angeles, Mr. E. P. Croesinger. The latter, the most versatile of them all, in the scope and variety of his interests.

The character of Mr. Croesinger's operations are of a higher order than can be said of the eastern financier whose transactions are confined to speculative avenues in stocks, bonds and trust companies; as he extends his operations to include the development of the natural resources of the country wherever he is interested in mining, oil, agriculture, horticulture and stock. His interests extend to Arizona, New Mexico, Mexico, Pennsylvania and other States, and comprise over fifty ranches in California from—acres to 3,000 acres each; in Mexico he owns a ranch of 1,387,000 acres, which is well stocked with horses, cattle and sheep; he controls 20,000 acres of choice oil land, located in the best oil fields in California, a portion of which he will develop personally, and dispose of the balance or form several companies to operate the same in the near future. The fine financial acumen Mr. Croesinger has displayed in building up a fortune in the seven figures from an investment capital of \$1,500 a few years ago, has attracted the admiration and confidence of financiers from all parts of the Pacific coast, who advise freely with him on many of their most important deals, and he is conceded to be a man of extraordinary keen and quick perception, with a thorough knowledge of local conditions, appraised values, the detailed merits of all propositions presented for his consideration. In all of his extensive transactions he has never given a mortgage and his word is accepted as good as gold.

Probably the most important enterprise upon which he is at present engaged is the development of the Red Cloud mine, located in the famous Chuchavilla mountains in Riverside county, California. These mines comprise 12 claims in all, with 16 well-developed claims, rich in gold, copper, silver and lead. The ore assays \$24.17 per ton in value, and upon the estimates given by the experts the product of the mines will pay \$50.00 per month on every block of one thousand shares. The Red Cloud Mining company is regularly organized with a capital of one million dollars, par value, of which Mr. Croesinger is president, and is under the management of practical, successful business men, and with a superintendent at the mines who is eminently fitted for the position he occupies. The largest and best equipped plant of machinery is owned and operated at the mines, with a capacity of 300 tons of ore per day. The mill and smelters will be in operation on January 15th, 1901, and dividends will be declared monthly thereafter.

There is a limited number of shares of this stock which is offered permanent investors at 50 cents per share, which will go to par within a year and pay dividends for a lifetime.

The department of mines is the largest service maintained by any operator on the coast, as Mr. Croesinger has a score of miners in the field looking up valuable properties upon which advanced information is furnished clients in New York and London, who have operated successfully through his resources at command.

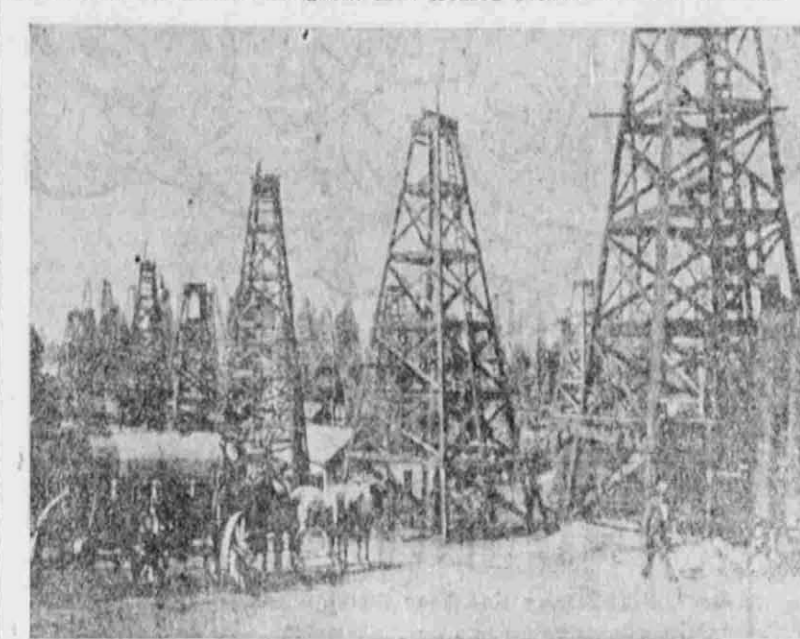
The financial department equals in number of daily transactions, the business done by many good-sized banks and at times the amounts involved are equally as large. Mr. Croesinger owns and operates several valuable and developed mining properties which are producers. He has a princely income from his productive properties, and his suites of seven offices are located at 218 South Broadway, Los Angeles, California, which are fitted up in a luxurious manner indicative of his cultivation, refined taste in the artistic appointments of his private offices, upon which the fine arts are drawn from with a lavish hand to adorn and enrich his personal surroundings.

Investors who desire a fruit farm, a stock ranch, a gold mine, or stock in the Red Cloud Mining company, or California stocks and bonds can secure the best in the market upon application. Oil lands a specialty. Mr. Croesinger is the only financier of his wealth who handles ladies' money and guarantees interest on same at one per cent per month, the principal subject to call for clients. It is said in California by financiers and others, that as a business man of affairs there is no financier on the coast who is more popular or liberal in his dealings with the public than is Mr. E. P. Croesinger of Los Angeles, California.

In all of his transactions, and in all his financial operations throughout the

country, he has yet to make his first error in judgment, which marks his success as phenomenal when the extent and variety of his transactions are taken into consideration.

Mr. Croesinger has unbounded confidence in the future of Los Angeles and Salt Lake, through the connection of the new line of railroad projected by Senator W. A. Clark, and predicts that the financial and commercial conditions of both cities will feel an improvement at once and realty values will greatly enhance in value within the next five years, and the points of attraction in the southwest for speculation in real estate, and agricultural and mining investments will be more or less increased between the two sections.



COMMON SCENE IN LOS ANGELES.

The boring for oil wells is managed by the use of derricks about fifty feet in height from the top of which the heavy weights are dropped to drive down the casings.

Throughout the oil districts these derricks are as thick as the trees of the forest. In Los Angeles City itself a tract several hundred feet wide and extending clear through the city and for miles in each direction beyond its boundaries is covered thickly with these

derricks. Over 1,400 of them have been erected. They each pay the city a license of a dollar a month for the damage they do to the landscape. Upon approaching some of the parks and finer residences, an ordinance was passed prohibiting their erection within certain distances of valuable improved property. Some residents resented themselves to a derrick in the back yard among their orange trees and roses, upon the ground that twenty-five barrels of oil a day is worth some sacrifice of aesthetic feeling.

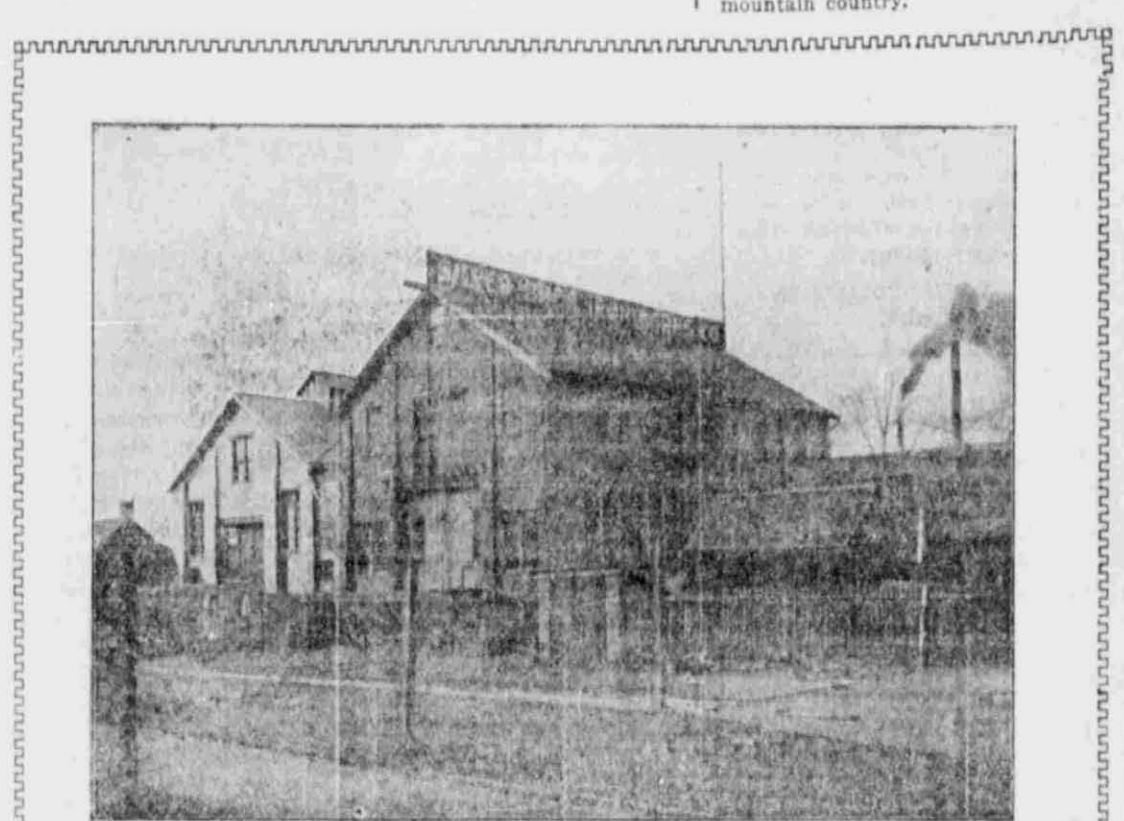
## Silver Bros. Iron Works Company.



THE SHOPS OF 1867.

The name "Silver" is synonymous with our earliest foundry and machine shop interests; indeed Mr. William J. Silver is practically the father of the business in Utah, having opened his shop as early as 1865, with none but home made machinery. Mr. Silver holds the proud distinction of being the builder of the first steam engine ever constructed in Utah. In another way he built better than he knew, for today the firm whose name heads this article comprise the three sons of the well known pioneer in the business, each one following in his father's footsteps in making master mechanics of themselves; all stand high in business and commercial circles, both in Utah and the surrounding States, the firm as well as its individual members having the highest commercial ratings.

The plant of the Silver Bros. Iron Works Company is located at 140 West North Temple street, this city. Originally the business as shown in the above engraving as "the shop of the sixties" was transacted in a small building. Keeping pace with the growth of Salt Lake City, with the constantly increasing demand from our leading mining camps for mining supplies and machinery, with the increased demand for rails for railroad construction, for structural steel and columns for use in the erection of business blocks and for



THE SHOPS OF 1900.

material to be used for a diversity of other purposes, the company has been obliged to enlarge its plant from time to time and to put in additional machinery for the manufacture of castings and machinery of almost every description. Additional ground was purchased, new buildings erected, and improvements were made until today the buildings and plant of Silver Bros., with its moulding department, its pattern rooms, its machinery shops and other necessary buildings, occupy a ground space of over an acre in extent, and are at present occupying the commodious building shown in the engraving. This, however, only imperfectly shows the extent of the works, as the offices and salesrooms being on a line with the street form an important factor not shown in the cut.

The Silver Bros. are well known in all of the mining camps of this intermountain region, and there is hardly a section of the great west where specimens of their handwork may not be found. Many of the big reduction works in our mining districts were equipped by this firm; mills and factories include in their construction machinery manufactured by the company, and many of the finer business houses and residences of Salt Lake obtained their iron columns, eye beams and structural steel from this house. Those in the Deseret News building and many others now in course of construction are being supplied by this firm.

The firm has also placed a modern corrugating apparatus for the re-rolling and corrugating of chilled rollers for flaring mills. All such work heretofore having to be sent East so that at the present time they are prepared to compete with all eastern concerns in this class of work, having the only machine of its kind in the entire intermountain country.

## REAL ESTATE.

5 Per Cent Investments in Business and Prospective Business Property Rapidly Increasing in Value. Homes for Sale in All Parts of City. A Few Good Locations for Terraces or Flats.

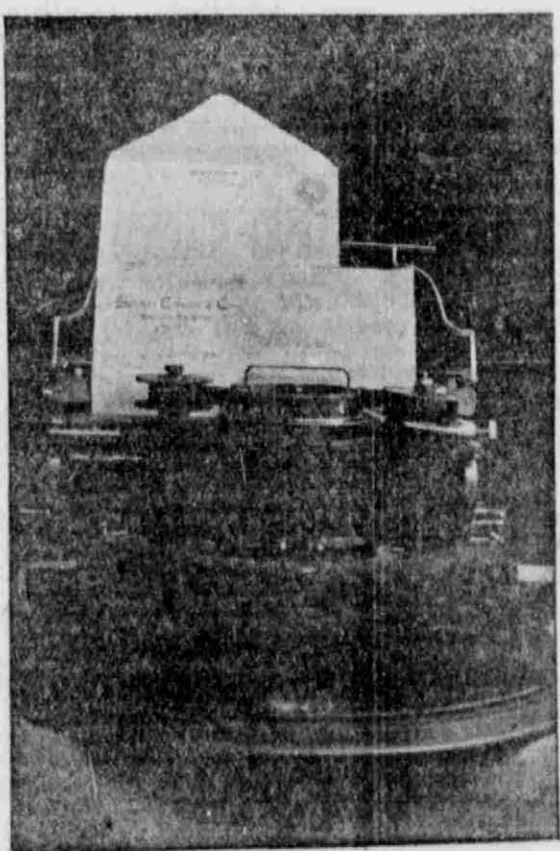
YOUNG & YOUNG,  
202-3-4 Whittingham Block, Salt Lake City.

C. U. WILSON,  
ATTORNEY-AT-LAW,  
215 North Main Street,  
Los Angeles, California.



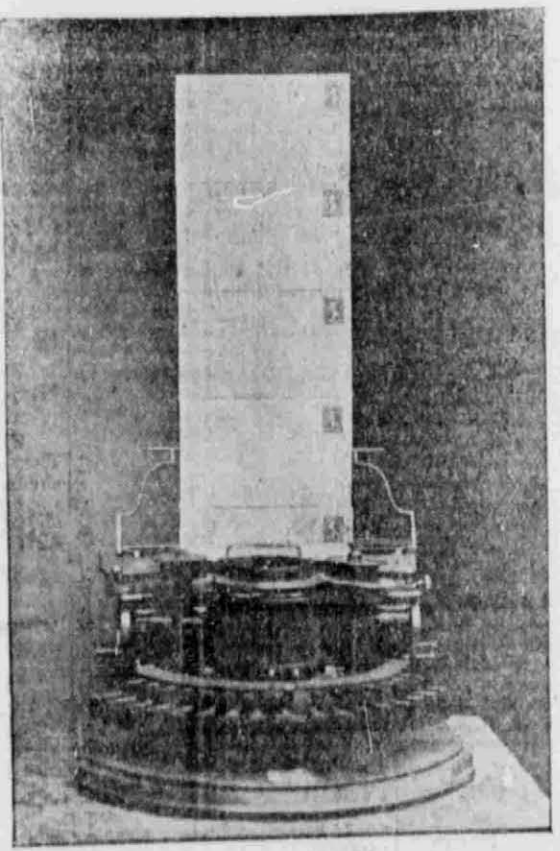
TOP FLOOR  
COMMERCIAL BLOCK  
SALT LAKE CITY.

## Spencer Clawson's Continuous Letter Sheet and Envelope Combined, Patented.



LETTER SHEET.

Spencer Clawson, Salt Lake City, Utah, the inventor, has provided a letter sheet and envelope so combined that the letter may be written and the sheet conveniently severed from the envelope so as to be placed thereon, the object being to promote convenience in the conduct of extensive business correspondence, and especially in connection with type writer work.



ENVELOPE.

This continuous envelope is a slight change from the letter sheet, being a series of envelopes in one sheet that can be easily detached as they pass through the machine, and will greatly economize time, and make the addressing of envelopes as simple as writing a letter. These devices are sure to revolutionize all classes of papers now in use by typewriters.

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