Dawn of the Cement Age--A New Utah Industry.

Local Capitalists Are Making the Wheels of Progress Hum in Another Great Industrial Field--$2,500,000 Invested in a Plant that is Located in Weber Canyon Where Huge Steam Shovels Dig From the Mountain Side the Limestone That is Transformed into Cement.

STEAM SHOVEL AT WORK.

Huge Machine That is Attacking the Mountain of Lime Rock.

THE COMPANY'S NATURAL ASSET.

This Great Mountain of Lime Rock it is Proposed to Wipe out of Existence to Furnish Material for the Cement Plant in the Valley Below.

MILL SITE FROM THE EAST.

All of the Buildings are of Fireproof Construction and Erected to Remain Permanently a Part of the Plant.

Special Correspondence.

IN the parade of Utah industrials the people have long been familiar with the smelting plants that reduced Utah ores to copper, gold and lead, but it was not home-made money that built them and the worry of finding out whether they were failures or successes has rested largely on Boston and not on Utah shoulders.

Up Weber canyon, however, the wheels of progress are just beginning to hum in another great industrial field, and this time it is Utah money that is being expended to the extent of two and a half millions of dollars and Utah investors who are doing the worrying as to whether success or failure shall follow their efforts.

The Weber canyon project is in the cement field and cement within the past few years has so forged its way to the front that it has passed building stone in industrial importance, and rivals steel itself as a building material. Before the San Francisco earthquake the cost of a big building was figured in steel and stone. Now it is estimated in reinforced concrete, which means steel, cement and pebbles. The lesson of the quake was that reinforced concrete stood firm while building stone fell in promiscuous wreckage, and the result was a terrible expansion of the demand for cement, and a sudden increase in the value of cementing materials.

And this sudden rise in such values is what gives the Weber canyon cement plant its commercial importance, and its excuse for existence. Eighteen months ago the site of the plant contained only the asset of three great hills of limestone, plus a little group of men who had faith in a Utah cement plant, built on a large scale. Today the Union Portland Cement company is making its first shipments of "Red Devil Cement," with a large red devil printed on each bag as a trade mark, and the home address of the company given as "Devil's Slide, Utah."

Old timers will recall that in former days people knew Weber canyon through the symbols of the 1,000 mile tree, familiar to all Union Pacific travelers, the repeating engine whistles at Echo, and the peculiar pair of rocky ledges midway between them that took the name of "Devil's Slide."

It is the hill opposite the slide that has been selected to be powdered down through rock crushers, ground up in a cement mill, baked in great ovens, and turned out in bags at the rate of 12,000 bags per day.

WONDERFUL PROGRESS.

And in the past year wonderful progress has been made towards making the grinding up of this hill possible. Thirteen great buildings stand in the mouth of Lost Creek canyon. In the bottom of the canyon there is a hum of dynamos and the "chug" of steam engines, and on the top of the western ladges there is the hiss of compressed air and the rapid click of the steel drill as it buries its length into the rock that is next to be blasted out. Streams of water flow through concrete conduits from the basements of great buildings constructed always of galvanized iron, and when you come to pay a visit an enthusiastic manager takes you into a concrete office building and introduces you to porcelain wash bowls and nickeled drinking taps while he explains that the water mains are being laid to Cementville, the city of little houses that you noticed farther down the canyon, with a hotel, a store and the etceteras to start off the main street. Everything is built to suggest durability and permanency. There are few temporary expedients about either the eating arrangements, the office fixtures or the machinery that goes into the great complication of roasting ovens, grinding mills, steam turbines and electric dynamos.

BUILT TO STAY.

The plant is built to stay. There is cement material enough on the hill they are just beginning to scratch, to keep it going at 10,000 barrels a day for 25 years. Then there is enough more in a hill to the south, just above the "Devil's Slide," to run it another 50 years, and after that the chemist explains that our grandchildren can tear down a third hill west of the one on which the company is now working, if they still find cement a desirable material.

You catch sight of the plant as you approach it on the Union Pacific just after the conductor calls out "Devil's Slide." The view then is the series of cement cottages where the laborers will live, and a tall smoke stack up a gulch which hides the rest of the buildings. At this point the Weber rounds suddenly to the south and the eroding tons of the red cliffs beyond the lime stone first come into view. Wreaths of smoke issuing from the cottage chimneys and children and women in the yards give the first impression of the permanent home life that is being built up, and cause one to recall the smelter townsites that are growing up in the mountains west of Salt Lake where the new smelters are being built, and the embryo packing town that is planned for North Salt Lake to add one more to our little centers of population.

HOME PRODUCTS.

That the Merchants and Manufacturers' efforts for home concerns have borne fruit is very evident from the minute you get inside the plant. Silver Bros. brand is on the steel cars in which the rock is hauled down the mountain face to the crushers, and the names of local contractors and carpenters appear on the pay rolls of the construction foremen.

A Deserent News representative came to the plant on foot from the railway station on the Weber, strolling up the spur track towards the tall galvanized iron buildings that were clouded in dust, and suggested a smelter plant more than any other collection of buildings he had ever seen. The first impression of permanency came in the appearance of the railroad spur. Its special bridge over the Weber was a permanent, well built affair, and the steel was heavy in the rails, instead of being that worn-out brand which often gets into sidings and spurs. Nearing the office which fronts the series of buildings, he was encountered by a set of scales built to weigh every car that goes out with cement or comes in with coal, a great deal of which is used as it was afterwards explained, in the roasting bins and in the steam plant that furnishes the power. A new "wrinkle" in coal consumption was soon to be explained, too, for the reporter was taken into a room, black with dust, in contrast with all the others, which were white. Here he heard the bumping of crushers and grinding of rollers, and saw a chain of buckets dipping up coal from a chute under the tracks where the cars were emptying automatically, while it was explained that the coal is powdered in this room to the same fineness as the cement. Across the tracks he was taken into another room, where the ends of long steel cylinders protruded, and into thees cylinders a thin flame was shooting from a three-inch iron pipe, the flame reaching out possibly 20 feet over the top of white hot cement clinkers. Here it was explained that the powdered coal was being forced through the iron pipe by compressed air and was igniting by spontaneous combustion on account of the great heat at the end of the pipe where it is freed.

THE PROCESS FOLLOWED.

Since the making of cement is now to become one of the greater Utah industries, it perhaps is worth while to follow the process through its different phases from the rock ledges to the bag houses, where it is packed for shipment. There are ten different buildings through which each particle passes, and in each is complicated machinery. As a mechanical study the wonderful thing about it is that in all the 5,200 feet the rock travels, it is not touched once by hand from the time it is shoveled into the dump cars on the hillside, until the bags of finished cement are ready to be tied. Of the machinery itself the important feature is that the old-fashioned strips of belting which used to characterize the interiors of mills, are done away with, and instead, each piece of machinery is controlled by its own electric dynamo and direct-coupled, by means of gear cases to those with which it must work in unison. The belt couplings are so rare that they almost seem good when one is encountered, proving as it does that the good old days are not entirely buried in the rush of new inventions. Perhaps a dozen of them exist in the entire plant, although the power is all furnished from one central station, where three turbine engines manufacture electric current, which in turn is distributed over the plant through a series of auxiliary dynamos.

JUST BEFORE THE OVERTURE.

The work on the hill is uniquely done. When the chief chemist, W. S. Trueblood took the writer up to the grade lines on the hill, he explained that the cement plant is in that stage which an orchestra finds itself just before the overture begins. There is a humming from each violin as the player prepared for its use, but this is very different from the concert pitch that comes a little later when the overture is fairly begun.

GRAVITY LINE.

"That's the way it is up here," he said. You see this one little line of narrow track running along the face of the hill. Then there are these 70 odd men loading cars from the blasted rock, but look down yonder in the canyon. See those two electric locomotives there? In a few days they will be up on this ledge, pulling these cars, and there will be a double track along here. Then all the work that is done by these 70 men will be done by 18, and that big steam shovel you see climbing the hill yonder will be loading cars on this limestone ledge at the rate of three a minute. You notice there are two tracks. They run in each direction from the crusher house, and measure half a mile each way. These tracks are on a 1 per cent grade, so that gravity will carry loads, and it will take only a little power to pull the empties back. With doube tracks in each direction we can run cars of rock into that crushing plant at a rate sufficient to mill 10,000 barrels of cement a day. But the plant in no way depends on the rock crusher. You see those four large bins below the crushers. It is in them that the broken rock is stored, and so long as they are kept full, or any two of them are kept full, the plant will run independent of any other source of supply."

HUGE STEAM SHOVEL.

The "News" representative walked along the half mile of track built into the fact of the cliff, while Mr. Trueblood explained that the plan was to destroy the hill to the track level, inserting great blasts from the top and running them down to the proper depth to loosen the rock for the steam shovel working always on the present level. At the far end was found the steam shovel. It was engaged in a unique task of digging its own way up the hill to the ledge where it is to go to work. Finding no way to get the shovel up, it was put to work on its own power, and sent up an 8 per cent grade, digging a roadway so perfect that teams may follow along behind it with loaded wagons. It had made 160 feet per day with Engineer Bruce at the throttle and we found it just finishing its task, and almost ready to begin loading cars with limestone.

Going down into the plant from the hillside, one saw the cars run into a big hopper, which seized them, turned them completely over, dumped them, and returned them to position to be run out, while their loads of rock went tumbling down through the coarse crusher, into two finer crusners, out through these between rollers, and then on down into a long moving trough which conveyed the pebbled particles into the big storage bins.

WORK FOR AN EXPERT.

In the bins an interesting chemical feature is noticed, for the cement rock goes into the crusher in all proportions of purity from 60 to 80 per cent carbonate of lime. The cement company's mixture is 74 5-10 per cent pure, and constant alertness on the part of the chemist is necessary. His system of control is such that every bit of rock is known to him, and goes into a bin specially set apart to receive rock of that purity. Then when it comes to producing a "mix" for the stone driers, chutes are opened in the bottom of each bin, two in one, perhaps, and four in another, to so mix the lime rock in the rotary buckets that it will be exactly of the strength desired.

CEMENT IN THE MAKING.

So far, the process is just breaking rock. Now that of making cement begins, and the pebbled rock goes on its way to the stone drying rooms, which are heated to a temperature of 300 degrees. This is the important step of the work, for its objective is the driving out of every particle of moisture, and of carbon-dioxide gas. Leaving the stone driers well heated, the product goes to the "raw grind" mill and leaves it in the fineness of sand, rather than pebbles. Next it goes to the tube mills and comes out in the fineness of flour, so fine that much of it will float, and with 96 per cent able to pass through a sieve with 10,000 meshes to the square inch. Then there is more heat waiting for it, for the powdered rock is sent into the kilns, which are the vital part of the plant. Here the powdered coal is forced in over the product, and it fuses into cement clinkers at a white heat. It is now ready for the market, except that it is not in a form for building purposes, and another grinding must be administered to reduce it again to a fine powder. It gets this in the "finish" mill, and pours afterwards down the feed spouts into the sacks that are to receive it, each one bearing the symbol of his Satanic majesty done in red, and the address "Devil's Slide, Utah."

SHIPMENTS IN ORDER.

When the "News" representative arrived on Wednesday morning last there were three cars of cement on the siding, ready to be shipped. When he left on the first train out, which came Thursday morning in token of the fact that the plant has not yet impressed the Union Pacific passenger department that "Devil's Slide" must be given a new rating and allowed more accommodations, there were 11 cars ready to leave, and General Supt. Dutcher was placing an order for a dozen more to be on hand next day. The cement was billed to Ogden, Logan, Tintic, King City, Cal., Bingham canyon, Winnemucca and Caliente, which is pretty fairly representative of the western field. Carl Leonardt, it was explained by Mr. Dutcher, lives in California, and he is so anxious for cement that he is willing to contract for the entire output for two years.

CAPACITY OF PLANT.

The capacity of a plant depends on the capacity of the kilns. At this plant there are three, each with a capacity of 1,000 barrels a day. The rest of the plant could operate for 10,000 barrels, and it is on the number of kilns that a plant is rated by the unit system. In the photographs accompanying, smoke is seen issuing from the chimneys of two of the kilns, which means that the plant was running then at a 2,000 barrel rate, and waiting for the "concert pitch" which will see all three of them running for perhaps two shifts a day, and the plant going ahead at full capacity to demonstrate what it can do as a commercial factor of the new west.

SALT LAKERS INTERESTED.

The Union Portland Cement company, which built the big plant, is composed largely of Salt Lake and Ogden people. C. W. Nibley is president; Joseph Scowcroft, Reed Smoot, M. S. Browning and James Pingree, vice presidents, and C. W. Nibley, Joseph Scowcroft, Adam Patterson, M. S. Browning, Reed Smoot, James Pingree, C. E. Murphy, Carl Leonardt, J. W. Abbott, Aman Moore, B. G. Blackman, James Mack. Angus T. Wright, D. A. Smyth and Charles Ziemer are the members of the board of directors. The company was formed in June, 1906, and its capitalization is $2,500,000; stock was sold only at par for the preferred, with the common stock issued gratis to holdiers of preferrad, on which dividends of 7 per cent are guaranteed, with the remainder of the profits going to the common stock. What it will do in the market is still to be determined, as the first dividend seems a considerable distance in the future. However, the plant is built, the cement is being turned out, and a new community is being added to the villages which center about the great commercial plants of Utah.

The "Warpath" at the Jamestown Exposition.

NOTHING so pleases the public at expositions as the collection of new, strange and interesting features, which at Chicago and Buffalo was called the Midway, at St. Louis the Pike, at Portland the Trail, and at the Jamestown exposition is known as the "Warpath."

One of the most expensive amusement enterprises on the Warpath is the reproduction of the famous battle between the first ironclads, the Merrimac and Monitor. The building housing this attraction and the scene painting required an expenditure of $150,000. Large ships, real guns and real men are used in this production, and it is realistic to the finest detail, even to the rolling of the waves and the sound of the splashing upon the shore. The electrical effects producing lightning, sunrise and sunset, are said to be the finest ever perfected. Participants in this famous engagement and other eye witnesses declare this to be a true and realistic representation of the battle.

There are two other reproductions of battles of importance in the history of the Civil War, Gettysburg and Manassas. Both of these productions are housed in fine buildings, and they represent the very best work of the scene painter. The realism of the panoramic reproductions of these battles is added to by a plastic foreground built up to meet the majestic paintnig in such a way as to be puzzling, and to cause the observer to really imagine himself a looker-on at these bloody struggles.

Col. Ferari's wild and trained animal show offers to the lover of this sort of amusement absolute satisfaction. There is a large arena where men and women take their lives in their hands, walk into a steel cage and mingle with the blue bloods of the animal kingdom giants of the forest, tigers, lions, leopards, jaguars, wolves and bears, and cause them to go through various maneuvers for the delectation of the audience. The most remarkable exhibition here shown of trained wild animals performing is that of a company of seals and sea lions, animals generally supposed to be of a low order of intelligence, but which here prove themselves on a par with many of those animals long considered the most intelligent. Exposition visitors agree that in every respect, Colonel Ferari's troupe is without a rival among exhibitions of its kind. LaBelle Selica's lions, for instance, seem endowed with almost human perception and Mlle. Helene's leopards are scarcely less remarkable in their work. Princess Pauline, the animal queen, too, bends these habitants of the jungle to her veriest wish. Captain Goldie's mixed group in feats astonishing and amusing, attract much attention. Capt. Kuneo's hybrids vie for a first place in favor and Capt. Dick Bass, with his performing bear, "Josephine," keeps interest on the qui vive every minute. Add to these the dog and monkey circus, a show which eclipses the best that has gone before.

One of the most instructive and novel concessions on the Warpath is the baby incubator. This practically recent invention means more to the scientific and medical world than any discovery of the present century, and one should not fail to see the machines containing their tiny specimens of humanity, which have been placed there to be nursed into strong life.

In "Old Jamestown" may be seen a replica of the old church tower, and other landmarks of the first English settlement in this country, without traveling 40 miles up the James river. Through the streets of this novel village walk men and women representing the first settlers, and Indians walk and talk and trade with them just as they did 300 years ago. An excellent idea has been carried out here in having the true descendants of that tribe of Indians with which John Smith and his followers had to deal, the Paumunkies, here in this reproduction of the old settlement. These Indians, 20 in number, also enact a drama which they themselves have written from the story handed down to them of the incident of John Smith's rescue by Pocahontas, and an Indian maid, a descendant of Powhatan, the father of the original Pocahontas—whose name is Pocahontas—enacts the part of that noble young Indian.

Hell's Gate is without doubt the most exciting of all amusement devices. It takes one at first by easy gliding boat and then gradually increases to a rush and a whirl through dark tunnels and mysterious caverns where huge reptiles crawl about and spout forth flame, and where his Satanic majesty, and his imps, disport.

Hale's Tours of the World give an opportunity to visit far distant countries and return within an hour, and a dime will pay all traveling expenses. The cars very much resemble those of any other railroad, and there are the sounds of bells and whistles to add additional touch of realism.

The Congress of Nations, or the beauty show, contains representative young women from the several civilized countries. In fact an effort was made to secure the most beautiful specimens of young womanhood to be found in America and the European countries.

The famous painting, The Shadow of the Cross, which has puzzled and mystified, not only the world at large, but the artistic world, for a number of years, is on exhibition on the Warpath. It is a painting which has the most peculiar effect upon he who looks upon it, and stamps upon the mind an impression which remains for life.

The Esquimaux Village contains a number of these strange litle men and women from the frozen arctic, and their daily lives are pictured faithfully. The building itself represents icebergs and mountains of snow, with here and there the snow houses of the inhabitants.

Princess Trixie, the horse with a human brain, crossed the ocean from the Palace theater, London, to amuse the visitors at the Jamestown exposition. This beautiful pure white Arabian mare does everything but speak, and this she does by signs, almost as intelligently as any dumb human. She knows the alphabet, is an excellent mathematician and can distinguish the various colors as well as any woman who frequents the bargain counter.

The Philippine Reservation, where 141 little brown men and women from their far-away island home live and labor just as they do there is always interesting. Represented here are both the civilized and uncivilized tribes, including a nobleman, Prince San Saluna, the ruler over the provinces of Cattabato valley and its 150,000 inhabitants. An exhibit hall is maintained where the various agricultural products and articles of industry are shown. Their weaving and bead work is being done daily by the women skilled in these lines, and the scantily clothed uncivilized tribes amuse themselves by beating the tomtoms from morning until night.

Paul Revere, the revolutionary hero, makes his famous midnight ride every hour in the day. This is not simply a panoramic production, but real men and a real horse are used, and a splendid idea may be had of this ride of such far-reaching importance.

"Pharaoh's Daughter" is an illusion show which perplexes its thousands. Beautiful scenery and beautiful young women are used in this production founded upon sacred history, and the show is of such a character as to please the most discriminating.

The Streets of Seville and La Gida theater are typical of the Spanish countries. In the theater beautiful Spanish dancing girls, brought from the Royal Opera House of Spain, go through those bewilderingly graceful movements so peculiar to their race. Genuine Spanish bull fights and cock fights are also a part of the program.

Colonial Virginia offers an opportunity to gain a true idea of the life of the Old Dominion of long ago. The marriage of Pocahontas and John Rolfe and the first ball at the capital are among the historical incidents pictured.

The Florida Ostrich farm has been moved for the time being from Jacksonville to the exposition, and daily on the Warpath may be witnessed both harness and riding races between these giant birds.

Aside from these attractions, there is another like number of shows all well worth the time required to see them.

JENNEY, A GREAT ARCHITECT.

Fifty monuments, many of them higher than Bunker hill monument; thousands of beautiful memorials scattered through the world; one entire town, a great national park which he first helped make horrible and then, 40 years later, made beautiful—these are some of the memorials to William Le Baron Jenney, who died in Los Angeles last week.

Jenney invented the skeleton structure and revolutionized city building, erected some of the greatest skyscrapers in the world; startled the architects and builders of every land by his daring innovations, laid out and built the town of Riverside, saved half of Grant's army at Shiloh, made Sherman's march to the sea practicable by his bridge work, caused Vicksburg to fall by his wonderful engineering, planned and located the historic spots in the great Vicksburg National park, was dean of the architects and acknowledged master builder of the world. He trained and taught many of the great architects and builders of America, was professor of architecture of the University of Michigan—and died a comparatively poor man.

Jenney was a dreamer who did things; a man who built castles in the air as an architect, and, turning practical builder, did them in steel and stone. He did things other architects considered visionary. He set them gaping by constructing great buildings from the top down, or from the middle up; he calmly stuck steel smokestacks into office buildings, ignoring the cries of alarm; he acknowledged no precedent, but established half the existing precedents in modern building.

Of these things he was proud; but the great boast of his life was this: That he was the man who introduced American pumpkin pie into Paris.

Jenney was one of the early school of Chicagoans who did things. He really made Chicago possible as a great city—he and the men he taught have erected practically all the great towering skyscrapers of the world. He didn't discover steel, but he discovered its greatest use.

Yet, except among architects and builders, he was little known in Chicago. Possibly he was as well known in Berlin, London, Vienna, Paris—in any great city—as he was in his own. Architects and builders from all over the world came to him to learn—and were taught. He might have made hundreds of millions by patenting his inventions, but he preferred to let the world progress. He gave every idea he had freely to his fellows, and to him money was but a minor consideration.

Kindly, gracious, considerate, even of the least of the draftsman, jolly, and an authority on good eating, a lover of a good story, and a teller of hundreds of them, friend of great men, and of the waiters who served him, he was beloved by all he met.

The story of how Jenney saved a section of Grant's army at Shiloh not only illustrates his resourcefulness as an engineer, but throws an interesting sidelight on the great general.

Part of Grant's troops, almost overwhelmed, were holding the river bank. It was imperative that they be brought across. Grant ordered Jenney to bring them. Jenne rode down, discovered some rusty, battered steamers which had not had fire in them for weeks. There was no wood, coal, or other fuel. He rode to Grant and reported.

"What did I send you down there to do?" asked Grant, quietly.

"Why," stammered Jenney, "to bring those troops across."

"Well," rejoined Grant, "go bring them."

Jenney went. He had the order. First he tore away the upper works, wheelhouses, and decks, and fed them into the furnaces. Nothing more was in sight. An inspiration seized him. He levied on the commissary stores and he got up steam and brought those troops across by burning thousands of dollars' worth of hams and crackers in the furnaces.

The hams and crackers were charged to Grant's personal account, and he, as a joke, switched and charged it against Jenney's salary—and it was canceled after the war.—Chicago Tribune.