



Beaver Portland Cement Company Near Gold Hill. (Photograph Courtesy of Oregon Journal.)

County's Biggest Manufacturing Plant Is Gold Hill Cement Works

Several years ago a man equipped with a definite purpose and some government geological reports walked from Roseburg to Gold Hill. The man was J. C. Burch. He was in search of something and found it without the use of a railroad train or an automobile. Mr. Burch had spent about twenty years of the good years of his life in the cement and plaster manufacturing business and had a notion that there was room for another cement mill in Oregon.

Right on the edge of the city limits of Gold Hill he found a mountain with a big pile of limestone exactly suitable for the making of Portland cement. About a mile and a half below the town he found another smaller deposit, and perhaps the same distance across the railroad tracks still another in two hills with a low saddle between. As a result of his subsequent investigations and operations there is now in the edge of the town a cement mill, modern and complete in every detail, with a capacity of 1,000 barrels of Portland cement every twenty-four hours. This mill will be ready for operation, with three-fourths of its full quota of eighty employes, before the 10th of October.

Mr. Burch originally came west for recreation and the benefit of his health. He had received letters from a number of western towns representing that they had at hand good deposits of limestone and requesting that a cement manufacturing business be established. Mr. Burch gathered these letters together and decided to combine recreation with investigation. He visited California and concluded that the state had enough cement mills already. He went through Washington with the same result. He came to Oregon with the definite purpose of putting up a mill if suitable raw material could be found. The result of the aforesaid pedestrian tour of 120 miles, more or less, being favorable, Jackson county now has the second cement mill in the state. The other mill is at Portland. Aside from these two, the nearest mill on the north is 100 miles north of Seattle and the nearest on the south is at San Francisco. Thus it would seem that the new enterprise has abundant chances for success. Last year Oregon used 600,000 barrels of cement, nearly twice as much as the capacity of the new mill in this county. The use of cement for all kinds of construction is rapidly increasing and, considering the practically universal success of cement mills all over the country in the past, great hopes are reasonably entertained for the building of a stupendous industry in the making of Portland cement in southern Oregon.

Through the courtesy of B. F. Burch, a son of the prime mover in this enterprise, a reporter from Ashland was taken all over the new plant and given a splendid idea of the present outlook and future prospects of the Beaver Portland Cement Company, the owner and operator of the properties in question. From

Mr. Burch the above information was obtained and in addition he supplied the details which follow.

The company has spent, to date, over \$550,000. It now owns about 900 acres of land in the three pieces above mentioned. Over \$400,000 have been spent in the erection of the plant and building of side-tracks from the main line of railroad close at hand. The annual capacity of the plant is estimated at 350,000 barrels, allowing for two months shut-down every winter, which is customary. About eighty men, mostly skilled workmen, will be required to operate the quarries and the mill to capacity during the entire twenty-four hours. The plant is being built under contract by the Hunt Engineering Company of Kansas City, Mo., and is the twenty-first cement plant built by this company.

Most of the heavy machinery is from eastern manufacturers and was ordered over two years ago before the war began. At the time the war broke out the company had been doing development and other preliminary work for over a year. About September, two years ago, the company stopped operations on account of uncertain conditions following the beginning of the trouble in Europe. A year later they started in again to complete the plant, which is now practically finished. Many delays have been encountered, and, as it takes about two years to build a cement plant anyway, the company has lost practically no time except the one year of inactivity as a matter of commendable precaution.

The raw material used consists of about 35 per cent shale and 65 per cent lime rock, with 1 per cent gypsum added during the process of manufacture. The addition of the gypsum is to retard the setting of the cement when in use. The lower deposit of stone will first be drawn upon for a part of the rock used to go in proper proportions with the shale which it is necessary to remove in development of the larger deposit at the mill. This lower quarry is opened up and the rock is taken down a double-track tramway about 2,200 feet long to a crusher and through this to the bins at the side-tracks. From here the stone goes on cars to the mill and is hauled up a tramway to the first crusher at the mill.

A general view of the entire plant makes one think of a quartz mill plant in its arrangement. The difference in elevation from the first crusher down to the final storage bins for the finished product is about sixty feet in a distance of perhaps, 600 or 700 feet. This gradual descent from start to finish is one of the most noticeable features of the entire construction and makes possible the elimination of about 75 per cent of the ordinary elevating and conveying machinery, thus making gravity do a large proportion of the work and practically eliminating all hand work. Starting at the upper end of the works the shale and limestone go through the first immense

crusher into bins with a storage capacity of enough material for twenty days' run in case anything happens at the quarries. From here it is taken in cars holding the correct proportions, roughly, of each material, dumped into a hopper, and goes into the big prelliminator, weighing sixty tons, where the rock is ground to the fineness of a pinhead. Thence the course is to the tube mill, a steel tube probably six feet in diameter and twenty-five or thirty feet long. This has thousands of pounds of small steel slugs, boiler punchings, and during the rotation of the tube these constantly fall upon the powder and grind it still finer. This tube mill will handle 1,500 barrels per day. Thus far the mill is the same as a dry process mill, but this one is of the wet process variety. Most of the old country plants are of the wet type, which makes a more uniform product but requires a little more expense to operate. Of the 100 cement plants in the United States only nine use the wet process. From the tube mill the powder goes into the big, deep slurry tanks made of wood. Here it is mixed with water and held in suspension by constant agitation accomplished by the introduction of compressed air. Here comes the first and only chemical process of the manufacturing. It consists of the making of chemical tests and the introduction of one or the other of the materials, as may be required, to secure the exact proportions necessary for a perfect product. From the slurry tanks the mix-

ture goes to final correction tanks. This testing being finished to the satisfaction of the chemist, the moist material enters the upper end of the kiln—the notion of the writer the most unusual and interesting of all the features of the plant. It is worth \$100,000 and the freight costs for each brick. This kiln is monster steel tube ten feet in diameter and 200 feet long, lined with fire brick at a cost of \$3,000—about 50 cents for each brick. This kiln is set nearly horizontal at a slight incline. It rests on three wheel bearings of four wheels each, is geared up to a motor in the middle and with a system of cog-wheels is made to rotate slowly while filled with flame, making the moist powder into klinkers from the size of a pea to a half dollar before they emerge into the cooler at the lower end. The fire enters the kiln at the lower end and a smokestack at the upper end carries off the smoke and waste gasses. Loaded and in operation this monster kiln weighs about one million pounds at white heat—3,000 degrees Fahrenheit—inside the tube, rotating, turning over and over with its load of fire and rock.

At one side of the kiln is the air compressor for the slurry tanks and the motor for turning the kiln. From the lower end of the kiln the klinker goes white hot into a cooler. This is another steel tube somewhat smaller than the kiln and about eighty feet long. It rotates also and delivers the material into the klinker

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except the president, who spends the winter in Medford, are J. C. Burch, president; William Schrupp, vice-president, and L. H. Adams, secretary-treasurer. Mr. B. F. Burch, through whose courtesy all of the above information was obtained, is sales manager for the company. He states that it will be the policy of the company to place several men on the road as soon as the output will warrant it and also to employ two or more men to go over the territory demonstrating and promoting the use of cement in all lines of construction for which it is suitable. This will be the method employed for much the larger part of the company's advertising.

Visitors are very welcome at the plant and will be shown over the entire works. It is suggested that those who want to get an adequate idea of the enterprise should go soon before the mill starts operations, for then the noise will make it very difficult to explain the various methods and processes as the visitor goes through.

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308 X YES IS A VOTE FOR YOUR CHILDREN

ONE NORMAL NOT ENOUGH

Oregon has but one Normal School. This school is located at Monmouth. Excellent as is the work of this school it is utterly unable to supply but a small part of the need for trained teachers for the State.

Of more than 6,000 school teachers in the public schools of Oregon, but 13 per cent have been trained for their profession of teaching in Normal Schools. 277 students in the Normal School graduates for the eight leading counties of Eastern Oregon.

During the past five years the attendance of students from nine Willamette Valley counties was 277 students in the Normal School against 30 Normal School graduates for the eight leading counties of Eastern Oregon.

Owing to the crowded condition of our one Normal at Monmouth and also the distance and expense of attending, students from Eastern Oregon are compelled to go to neighboring states to secure their training as teachers.

ONLY COSTS 4 CENTS PER \$1,000

The annual maintenance cost of the proposed State Normal School in Eastern Oregon amounts to but one 25th of a mill or 4 cents on a thousand dollars of taxable property. Isn't it worth this to have your children trained to become useful and productive citizens?

STRONG ENDORSEMENTS

Among those who strongly endorse the establishment of the proposed Eastern Oregon Normal School are Governor Withcombe, J. H. Ackerman, President of the Monmouth State Normal; W. J. Kerr, President of the Oregon Agricultural College; P. L. Campbell, President of the State University; Robert C. French, former President of the Weston Normal, and practically all of the leading educators of the State. J. A. Churchill, Superintendent of Public Instruction, voices the sentiments of those who are most familiar with the need of more adequate Normal facilities when he says:

"Oregon's greatest need for its rural schools is the teacher who has had full preparation to do her work. Such preparation can best come through Normal School training.

"I trust that the voters of the state will assist in raising the standard of our schools by establishing a State Normal School at Pendleton. The location is central, the interest of the people of Pendleton in education most excellent, and the large number of pupils in the public schools will give ample opportunity to students to get the amount of teaching practice required in a standard normal school."

All the above educators insist that a Standard Normal School must be located in a town of 5000 or more population and having enough grade pupils for teaching practice.

VOTE RIGHT

By voting YES for No. 308 you will help to give to the school children of Oregon the same advantages enjoyed by the school children of our neighboring states.

Vote YES for No. 308.

Eastern Oregon State Normal School Committee

By J. H. Gwinn, Secy., Pendleton, Ore.

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