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A Tour Of The Royal Mine 1903

One day in mid-1903, Herbert C. Hoover, a prominent young mining engineer, came to Calaveras County to visit his good friend, David McClure, at the Gwin Mine. McClure and his associate, F. F. Thomas, had made a remarkable showing in the reopening of that historic gold mine. During his visit, Hoover made a point of going over to see the other mining excitement in

the county at Hodson, just northwest of Copperopolis. Here he found a hubbub of activity, as Jack Kemp Van Ee spurred his construction workers on to finishing the big 120-stamp gold mill on top of the hill above Hodson.

The fascinating story of the Royal Mine has been told before in these pages, in our July, 1968 issue. Recently our attention was brought to a fine collection of photographs that were taken at the peak of the Hodson boom by a member of the well-known Dennis family of Jenny Lind. William Samuel Dennis had, like many before him, left the county to seek his fortune elsewhere. First to San Francisco, with his bride, for a few years, and then to Alaska at the time of the celebrated gold rush. But like so many native Calaveras boys, he yearned for the pleasant surroundings of his youth, so just before the turn of the century, he moved with his wife and children back to Calaveras, taking up his abode at Altaville where he worked for one of the Angels mines. This soon led to his employment at Hodson, first at the Pine Log mill, then in the construction of Kemp Van Ee's big new mill, of which he became the superintendent.

Will Dennis, fortunately for us, was a shutter bug, and recorded the peak of the excitement at Hodson on glass plates. We produce some of his excellent photographs in this issue. Our readers may find it useful to refer to the earlier issue of "Las Calaveras" to refresh their memories of the Royal story. Of how the little Pine Log mill was used to process the rich gold ores from the newly-developed high-grade Royal vein in the last two decades of the



THE ROYAL MILL UNDER CONSTRUCTION

This big gold mill was unique in its construction, being two 60-stamp mills built "back-to-back." It was also unique in its hilltop site and in the huge trestle tramway to the mill from the crushing plant at the shaft. In this view, only the bottom

part of the trestle was in place. Process water was pumped from Salt Spring Valley reservoir. A half century later the mill was dismantled and many of the Oregon pine timbers "recycled" in a Fresno shopping center.

Nineteenth Century. How promoter John C. Kemp Van Ee bought the mine with English money, advanced by J. T. Hodson of London, under a rather unusual contract and attempted to make a large, low-grade mine of it. How this proved to be a failure when the grade of the ore didn't hold up to his expectations, and how, beset by lawsuits, Van Ee was forced to abandon his dream. And then how, after a number of unsuccessful tries by later operators, Frank Tower acquired the property and cannily turned it back into a small but profitable high-grade mine.

There is a suggestion that Hoover's presence was more than just a casual visit, for at that time he was operating out of his London office and may have been asked by Mr. Hodson to check up on activities at the Royal.

The town of Hodson was short lived, but was a busy place in the early years of the century. We were unable to locate any Hodson snaps in the Dennis collection available to us, but have been able to include a few views taken by Arthur B. Morgan, a professional photographer, working as a miner for the Royal and living there at the time. All pictures in this issue were taken by Dennis unless otherwise noted. We are grateful to Jane Meyer Huberty for her help, and to Earnest Long of Mokelumne Hill and John Landgraf

of the Discovery Antique Shop in Ione, for making their holdings in the Dennis collection available to us.

But let's not keep Mr. Hoover waiting any longer. Manager Kemp Van Ee will take us all underground where we will see his busy miners at work in the immense ore stopes. Then we will emerge again into the sunlight, tour the shaft buildings and take an electric tram ride over the trestle to the big mill. After inspecting this mammoth structure with Superintendent Dennis as our guide, we will adjourn to Hodson for a late lunch in the staff dining room at the Hotel Royal and then catch the afternoon stage out.

THE DENNIS FAMILY

This pioneer Calaveras family owes its existence to William Dennis who emigrated to Jenny Lind from Barnstable, England, in the early 1850's. He married Delphina Jane Eaton, a native of New England, and raised a family at Jenny Lind.

William Dennis was involved in mining during the silver boom in the sixties, at Silver City, in what is now Alpine County. His partner returned to England to raise money for the mine property at Silver City, but disappeared on the return voyage. It was
(Continued on Page 50)



THE FOURTH AT HODSON - 1900

It was always a tradition to make a big thing of the 4th of July in western mining camps, and Hodson was no exception. Arthur Morgan was busy that day in 1900 up and down Main

Street, taking pictures like this one of the William S. Dennis family on the steps of their company house.



BUILDINGS AT THE ROYAL SHAFT

Upper view - looking southwesterly. The main shaft is collared in the cut behind the little building in foreground. Gopher Ridge may be seen in the background. Taken about 1900 before the new construction was begun. Lower view - Looking southeasterly. The tall building houses the head-frame and ore bins. The compressor, hoist machinery and steam plant are in the building to the right, and the shop buildings are to the left. The horse tram has just arrived, empty, from the 40-stamp Pine Log mill down at Hodson. This view was snapped before the new crushing plant was built.





A SINGLE-JACK STOPE

A stope is miners' parlance for the workplace and opening created in the mining of the ore. The miners would take the oil lamps off their hats and hook them on timbers or jutting edges of rock, while they worked. The two miners are drilling a single-jack round in a face of gold ore. The mucker in the middle is cleaning up the toe or bottom of the face so that the miners can drill toe holes there. A single-jack was a light sledge hammer, and was held in one hand by the miner, while the steel was held in the other. After each blow, the miner would rotate the steel slightly, so as to cut a round hole. A brawny and skillful single-jacker could drill "a lot of hole" in a shift.



TRIMMING THE RIB

Often after blasting, some of the "ground" would not break out. This ground must then be drilled and blasted again, so that the drift or stope can be continued. Here a single-jack miner is putting in a few "plugs" to knock out a bit of "high bottom" along the "rib" or edge of the opening, so that a clean face will be ready for the next round.

A NEW MACHINE DRILL

About the time these pictures were taken, the new machine rock drills, driven by compressed air, were taking over the work formerly done by single and double-jack miners. There were problems with the early rock drills. They were too heavy. The dust they created gave many miners fatal doses of silicosis. The drill in the picture is an improved "piston" model, lighter and faster, but is still a dry machine. Within another decade or so, rock drills replaced the old hand drilling methods, and water was used, introduced through the machine and drill steel right to the bit, to combat the dust. In this view, the driller is standing at the controls. His helper, the chuck-tender, stands by, ready to change steel or help move or realign the drill for the next hole. The shift boss stops by to check on their progress.



HAND MUCKING IN A STOPE

These two "muckers" were snapped as they were loading out a mine car. One of them would then tram the car to the shaft station, dump the three-quarters of a ton of ore into the shaft "pocket". Meanwhile, the other mucker would tram an empty car, waiting at the switch, back to the stope, and start mucking into it. It was not until a quarter of a century later that mechanical mucking machinery was introduced, and more than a few of us have put in time at this now obsolete back-breaking pas-time.

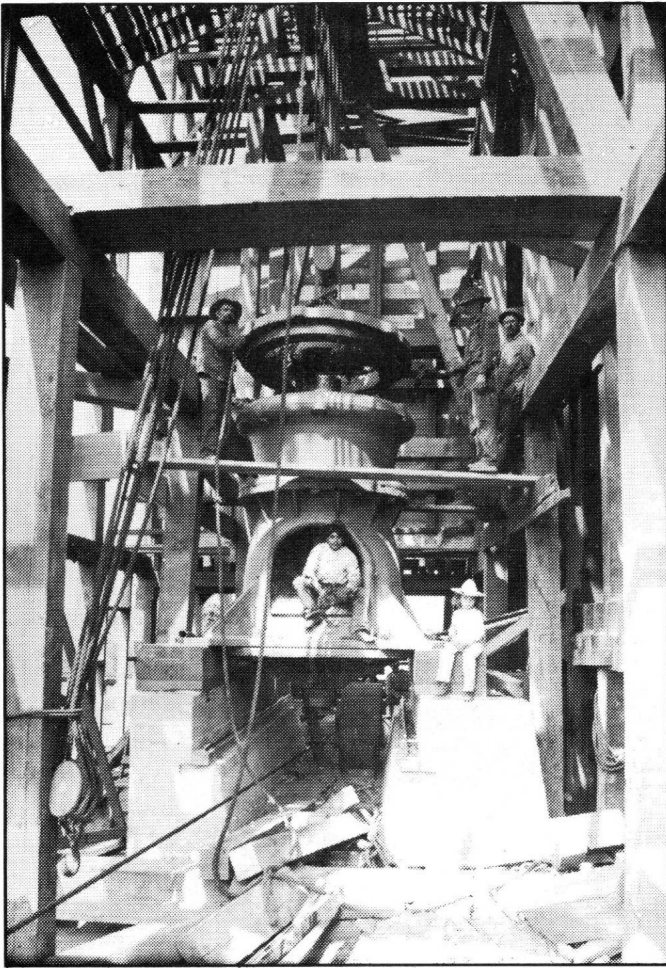
THE NEW CRUSHING PLANT

This towering structure was built in large part of Oregon "pine", as were the mill and the trestle, brought in by rail to Milton and hauled up to Hodson by team. The Royal bought over one million feet of this material at \$22 per thousand feet, delivered at Hodson. The new electric tram motor may be seen at the floor level. The tops of the Gates secondary crushers are visible in the opening part way up, and the revolving screen is already mounted near the top of the structure.



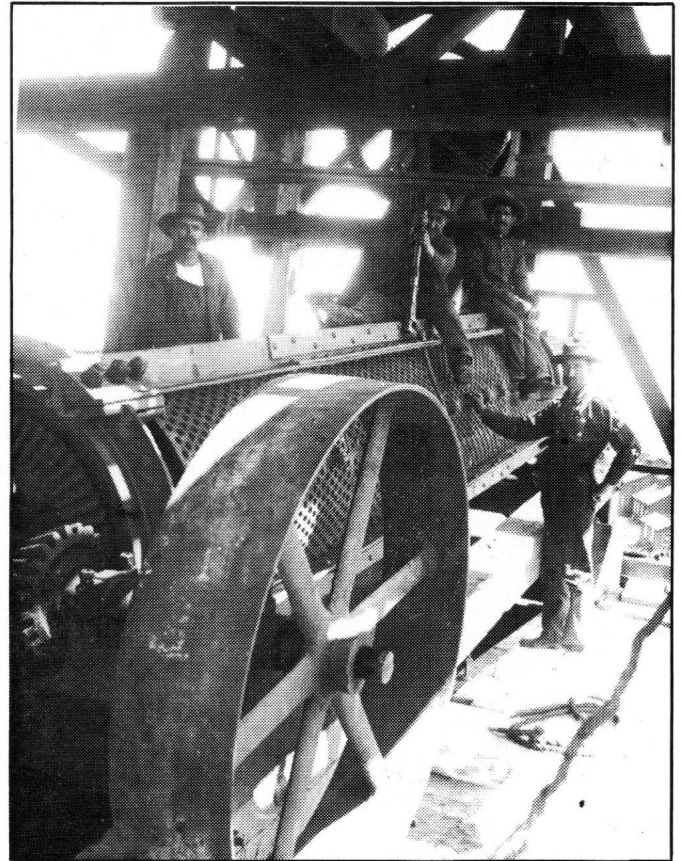
STOPE SCENE

The two men in the foreground are breaking up boulders from the last blast. One of the two miners in the distance is engaged in single-jacking, and the other is getting ready to pick out a place for more single-jack holes. The watcher in the upper left is undoubtedly the shift boss, seeing that these activities are being pursued vigorously. The Royal mine stopes were large and generally very little timber was used.



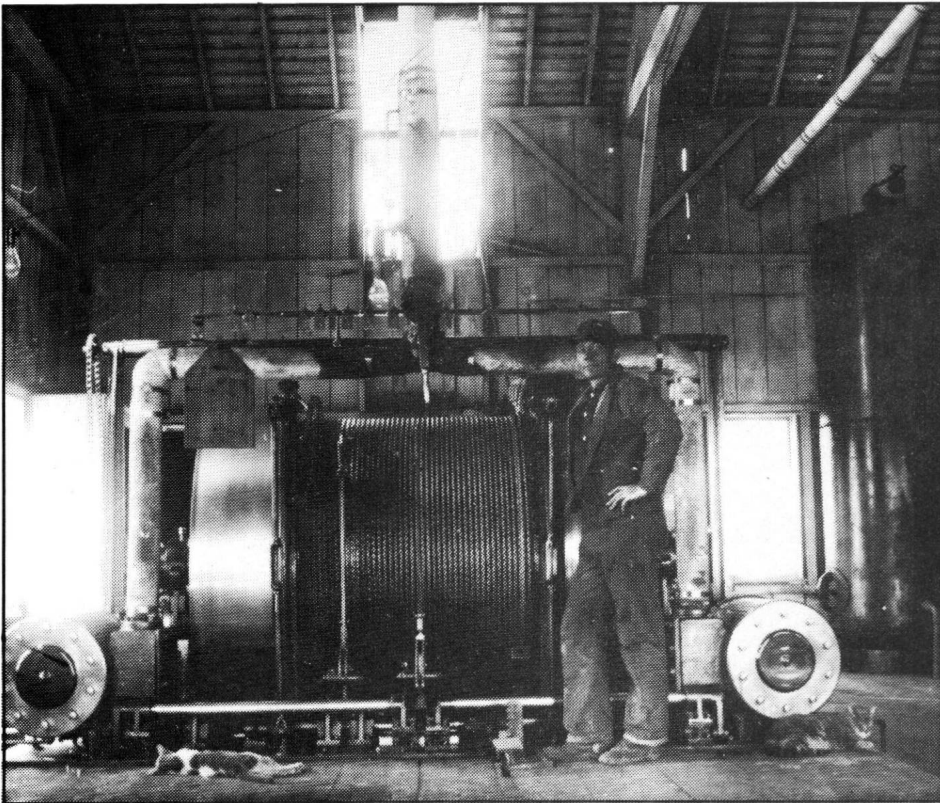
SETTING THE PRIMARY CRUSHER

The ore from the mine was hoisted up the shaft and dumped into the primary crusher. That piece of equipment reduced the ore to less than about $2\frac{1}{2}$ inches in size. The crushed ore was then hoisted in a bucket elevator to the revolving screen. Here we see the primary crusher, a Gates Gyratory, being set on its foundations. There should be a worried mother nearby. Photo by Morgan.



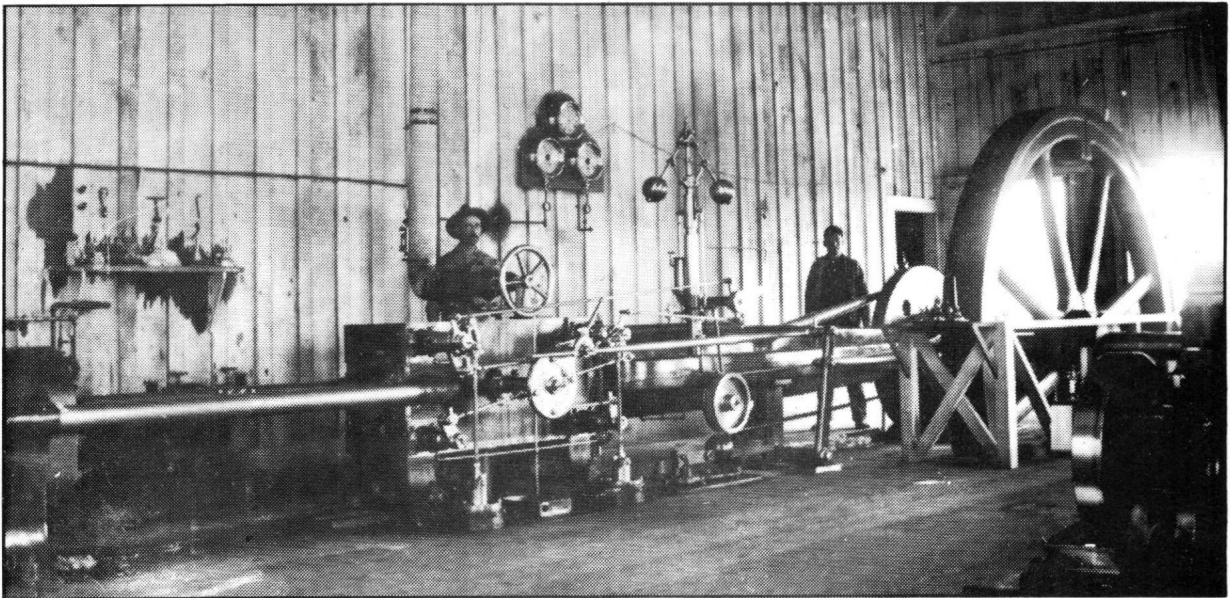
INSTALLING THE REVOLVING SCREEN

The $2\frac{1}{2}$ inch crushed ore from the primary crusher was run through this revolving screen. Any material fine enough to pass through the one-inch openings went into an ore bin, and was ready to be hauled to the mill for further processing. The coarse material left the screen and was dropped through the secondary crushers which reduced the fragments to less than an inch in size. This material was then discharged into the ore bins ready for the mill.



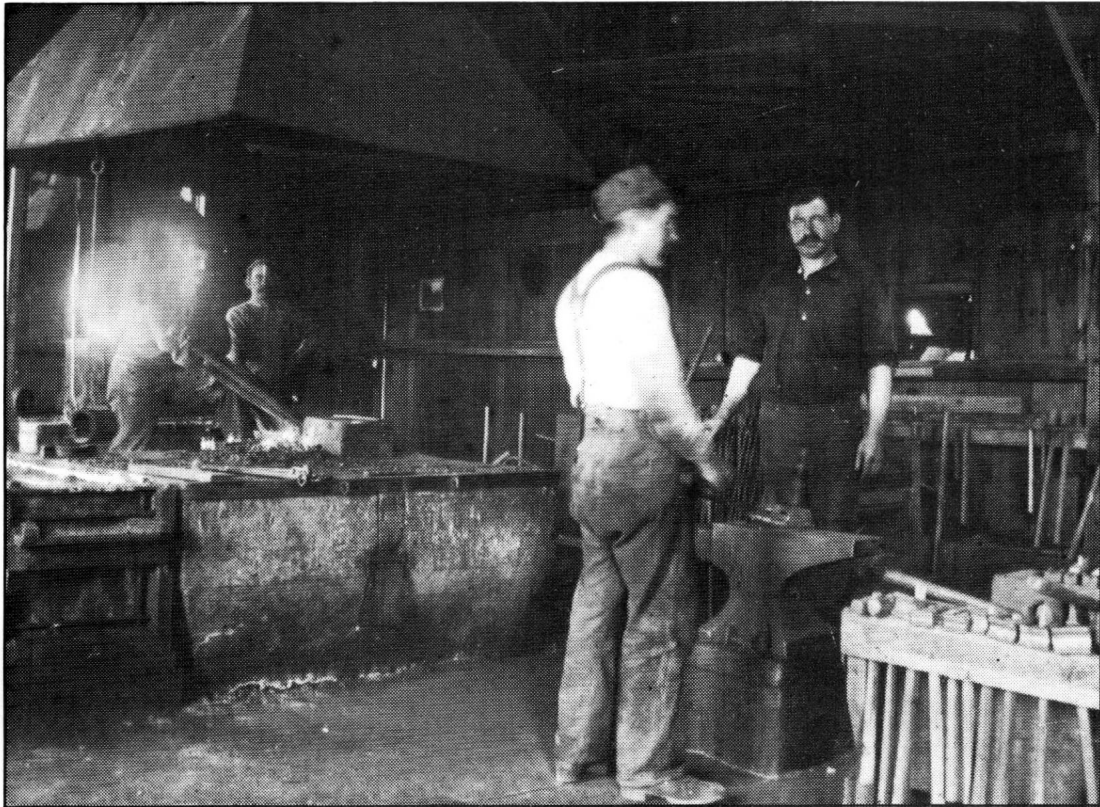
MAIN HOIST

A powerful, fast, two-cylinder steam hoist served the Royal shaft. The hoist engineer proudly stands in front of this modern piece of equipment, which he keeps immaculately clean with all moving parts carefully oiled and greased.



AIR COMPRESSOR

The air compressor was one of the most important items of equipment at a mine. Here the air was compressed to about 100 pounds per square inch, and then delivered to the mine through steel piping to run the rock drills, pumps, fans, underground hoists, and to supply air when needed at the faces. Note the compressor's huge flywheel. Most of the accessories were brass and were kept well polished.



THE BLACKSMITH SHOP

THE SHOPS

Also at the shaft were the shops. The metal work turned out by the blacksmiths of that generation was not only excellent in quality but remarkably varied as to shape and function. Although the machine shop looks crude by today's standards, the Royal was able to fabricate a great many of the small parts required in the installation and operation of the complex equipment at this operation.



THE MACHINE SHOP



THE HIGH TRESTLE

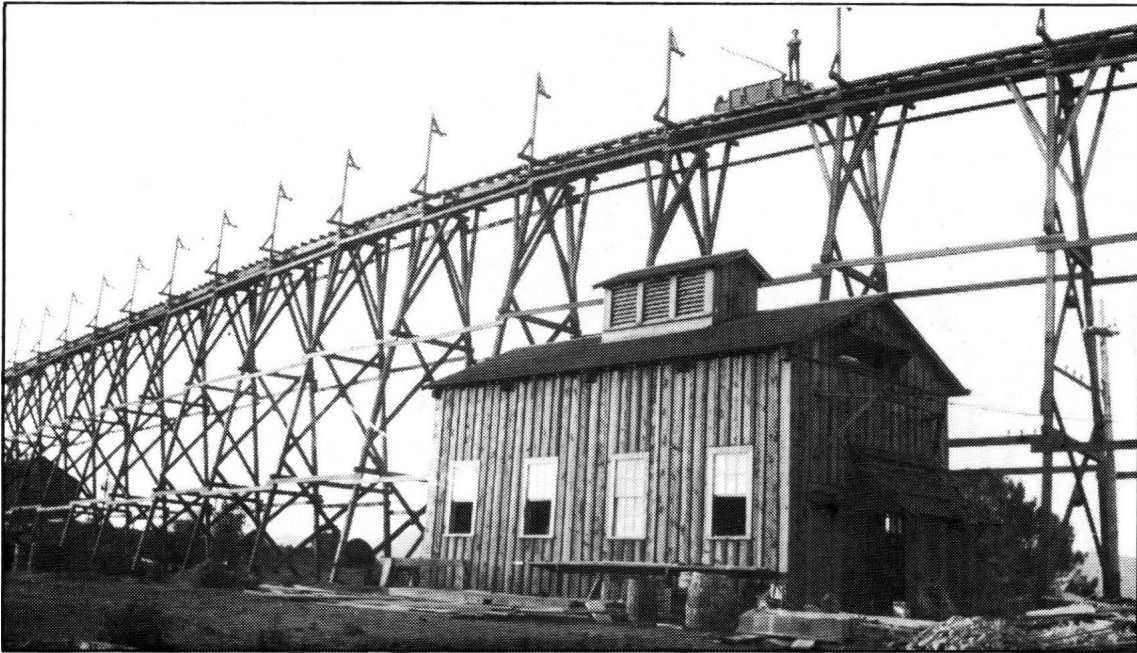
This was designed to allow the electric tram to deliver the crushed ore to the top of the big mill, so that gravity could be used in the stamping, amalgamating and concentrating

processes. In this excellent view taken by Arthur Morgan, note the "skip" at the left, about to descend into the shaft for another load of ore.



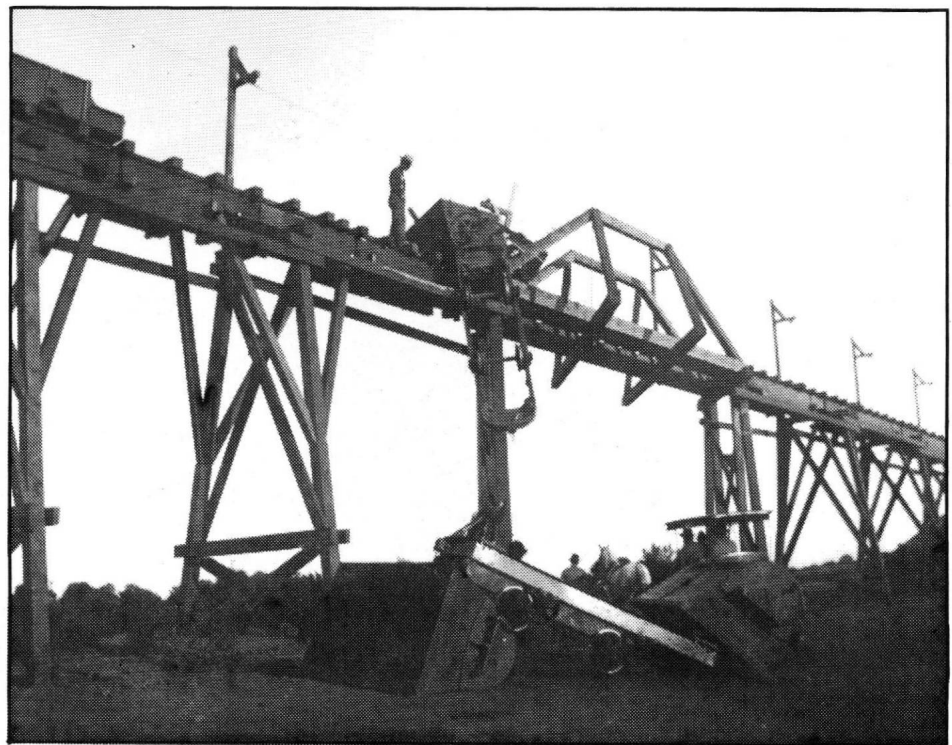
VISITOR'S DAY

A group of visitors, probably staff families and friends, take a ride on the new tram. Although they look quite nonchalant here, things were undoubtedly different when they crossed the high span just before reaching the mill.



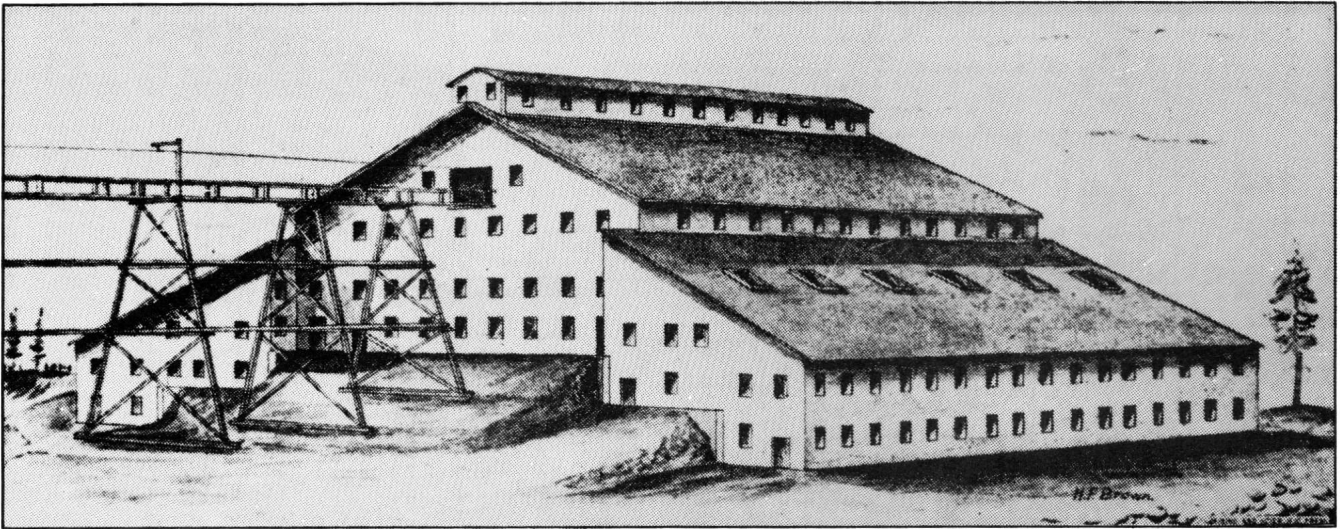
TRESTLE DETAIL

This was indeed a remarkable structure. But by Frank Tower's time, it had been dismantled and replaced by a surface tram and a skipway up to the mill bins. The several buildings along the trestle were warehouses, shops, and at one time, the office.



WRECK ON THE TRESTLE

This type of accident can happen in the best managed of mining operations. With a little shop work, the cars were soon as good as new.

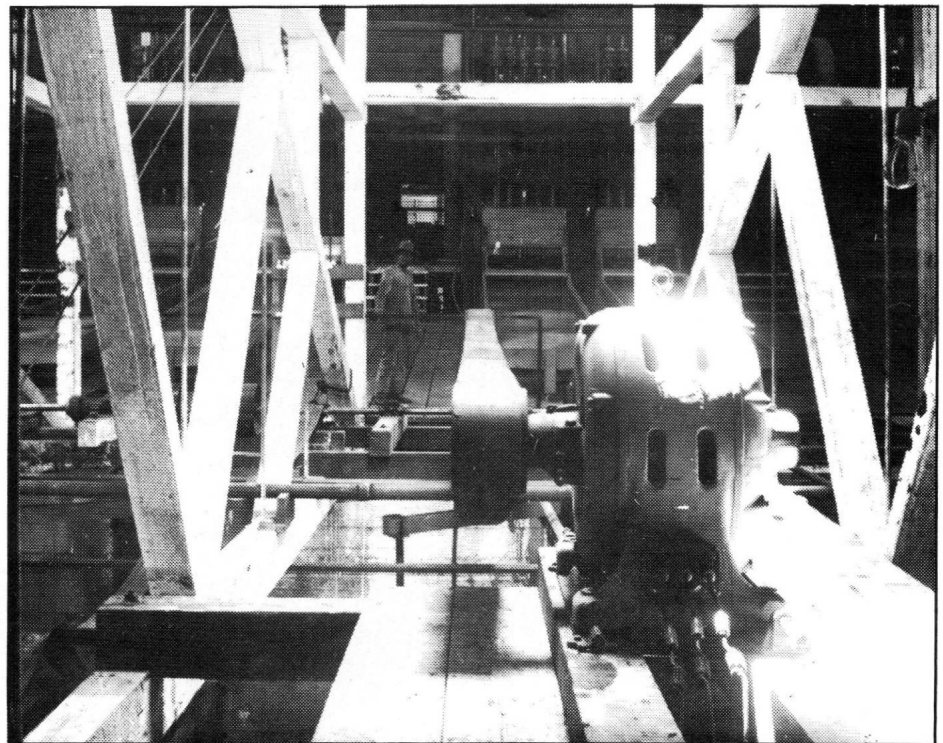


ARTIST'S VIEW OF THE MILL BUILDING

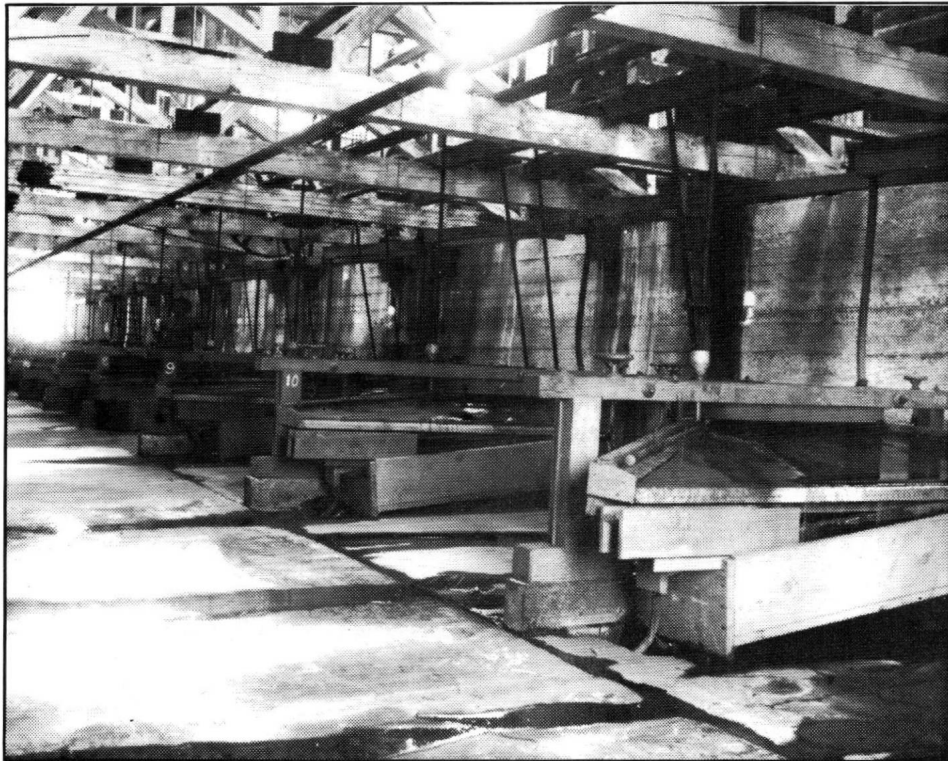
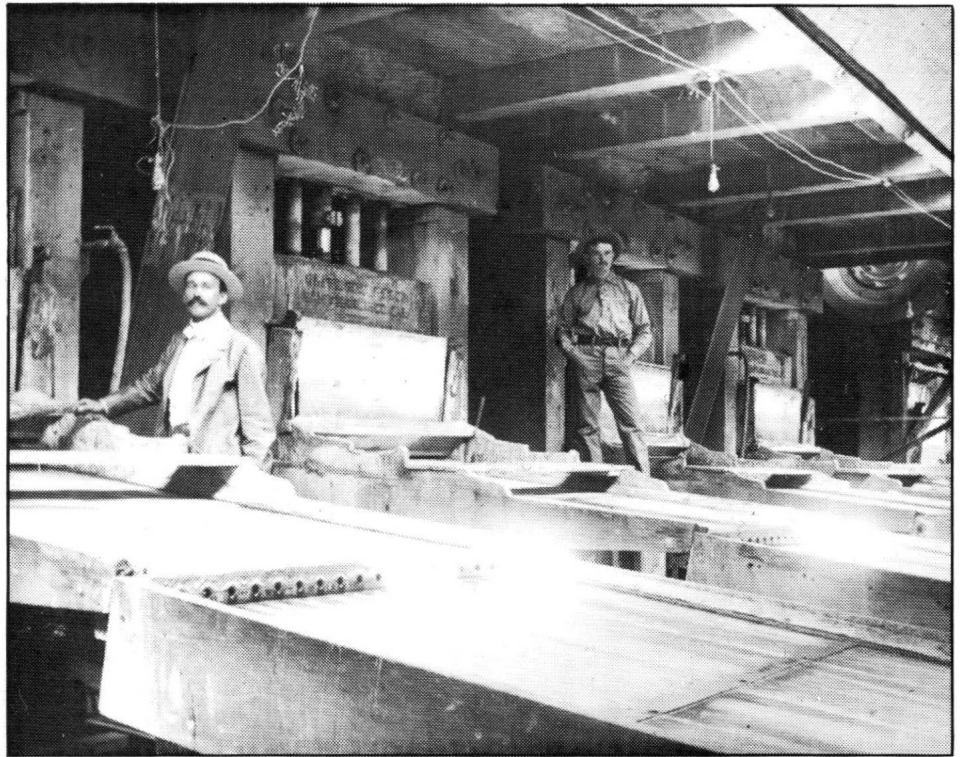
This is a somewhat inaccurate but very graphic sketch of the mill, published at the time of construction in *Mining & Scientific Press*. Reproduced by permission.

THE DRIVE FOR BATTERIES 7 AND 8

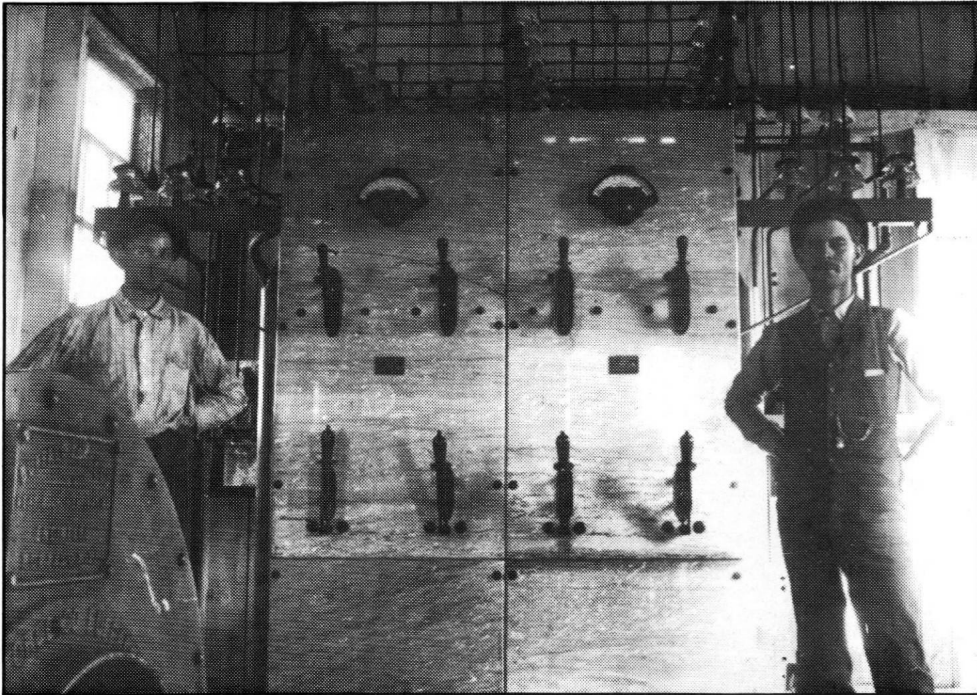
Each two 5-stamp batteries had a separate electric motor drive. The crushed ore delivered by the tram to the mill ore bins was fed with water into the battery and was finely crushed by the falling stamps. The roar of these 120 stamps dropping into the mortar boxes was tremendous and could be heard for several miles on a quiet night.



THE AMALGAMATING PLATES
Quicksilver was put into the mortar boxes to amalgamate the coarse gold. The finer ore overflowed through a screened discharge and over plates coated with quicksilver. These caught the smaller particles of free gold, and any amalgam that splashed out of the mortars. This view shows the double 5-stamp batteries 1 and 2, and 3 and 4, with a set of plates for each five stamps.

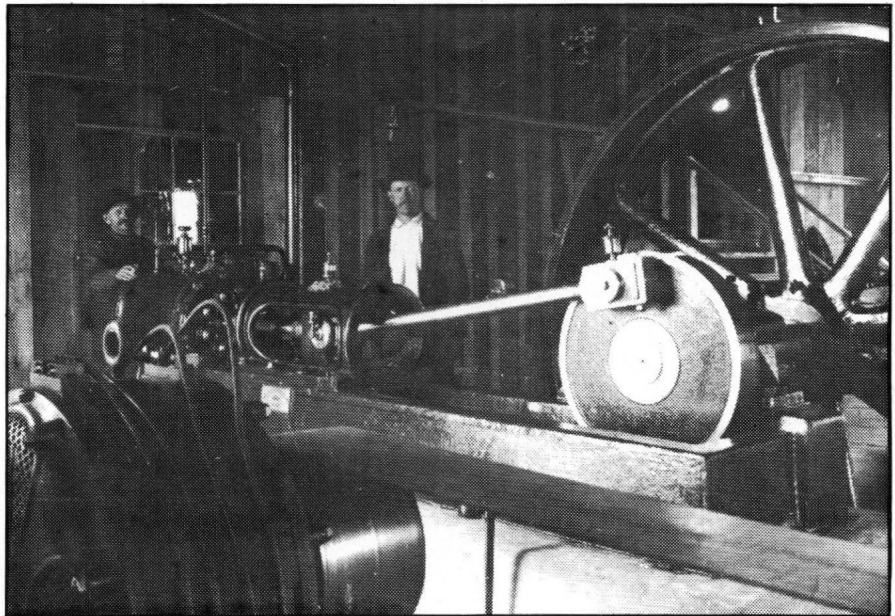


THE CONCENTRATING TABLES
After passing over the amalgamating plates, the finely-ground ore washed down onto the vibrating tables, shown here, on the next lower "deck". Here, much of the gold-bearing sulfurets or sulphides was separated. This material then went down to a lower deck where Frue vanners gave it a final cleaning before the gold in the sulphides was recovered in the chlorinating plant.



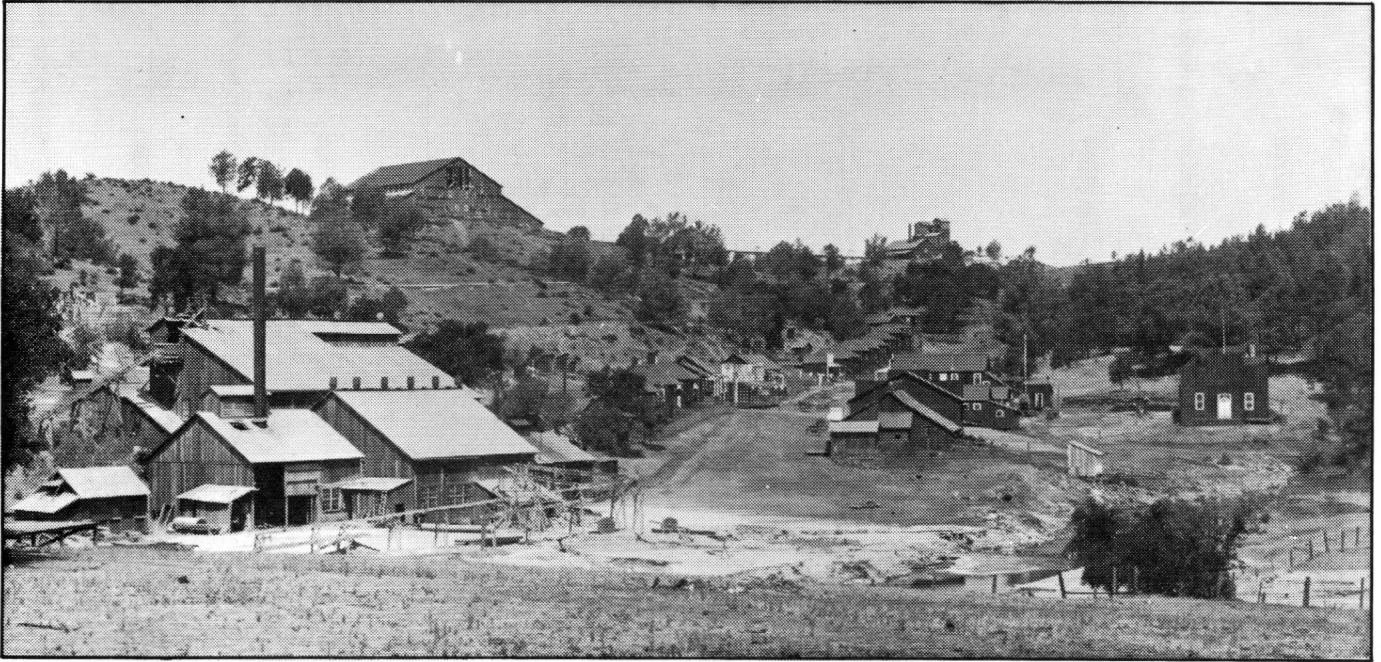
ELECTRIC SWITCHBOARD

The Chief Electrician, on the right, was justifiably proud of his installation, although an electrician of our day might be a bit amused by the simplicity of the board and by the open circuitry. It should be remembered that this soapstone panel was engineered and installed during the first decade of wide usage of electricity in the mines, and represented a great step forward from the water or steam power previously used in the area. Two separate lines, one from the Stanislaus Milling and Power Co., and one from the Union Electric Co., were necessary to provide sufficient power for the Royal when all equipment was running.



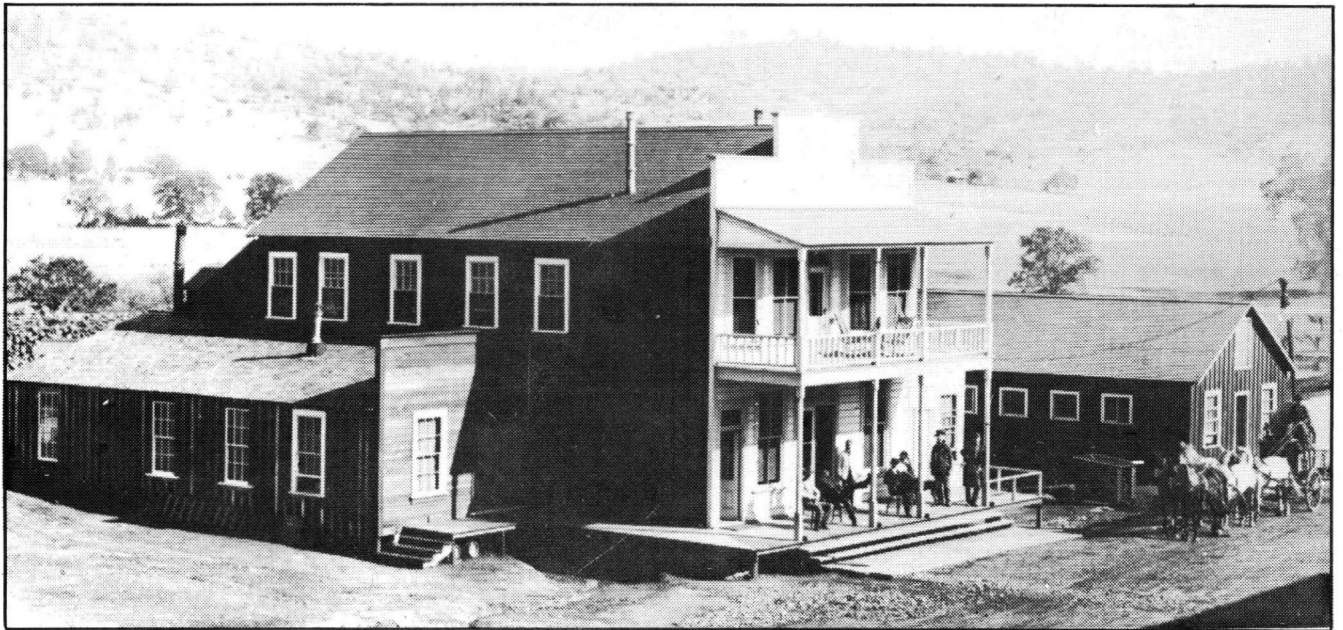
STANDBY COMPRESSOR

Although the big steam-driven compressor was normally used for compressed air supply, this newer, electric powered unit was ready for use whenever the larger one was down for maintenance or repairs, or during peak operating demand, when more air was needed.



HODSON AND THE PINE LOG MILL

When "Baron" Kemp Van Ee first took over the Royal, he built the company town at Hodson, named for his English backer. Next he expanded the old Pine Log mill from 20 to 40 stamps. Then the big mill was built. This view was taken by Arthur Morgan in 1903.



HOTEL ROYAL AT HODSON

The staff dining room is located in the small annex on the left. This picture was probably taken by Arthur Morgan.

