

which is supplied at the mill site on the beach, the air being carried up in 4-inch pipe 6,500 feet long. The compressor was supplied, through the Hamilton Manufacturing Co., by the Rand Drill Co., and is capable of running four drills. The ledge is composed of sugar quartz, well mineralised in the pay streak, and generally carrying fine iron pyrites throughout the whole body. Analysis of the ore from the pay streak showed it to consist mainly of silica, sulphide of iron and zinc, a little arsenic, gold, silver, and traces of copper. The gold is disseminated in a very fine state throughout the rock, which makes it readily yield to cyanide treatment; but no free gold can be obtained by panning.

The ore from the mine will be conveyed over an aerial tramway (Bleichert system) supplied by the Trenton Iron Works, New Jersey. The length of the

pared with the 85 to 95 of the ordinary cam mill, and will work with a 1,500-pound stamp head as smoothly as with one of 100 pounds. But a full description may not be uninteresting. On the top of the ring posts is a crank shaft with cranks at equal angles, each of which is provided with a connecting rod jointed to a cylinder, so that as the crank revolves the cylinder moves up and down. Within the cylinder is a deep, solid plug or piston, the rod passing through the cylinder bottom and constituting the stem to which the stamp head is attached, a jacket surrounds the cylinder, and at a few inches from the bottom is a port or opening communicating with the jacket space. The cylinder below the piston is filled with liquid, for which the jacket forms a reservoir, and above both the piston and the water level in the jacket are air spaces with free communi-



Terminal of Tramway, Dorothea Morton Mine.

tramway is one mile and a quarter, and has a capacity of 100 tons per day of ten hours. From the terminal of the tramway, which can be seen in the photo, the rock will be dumped into a chute, which will carry the ore on to a grizzly, the fine particles dropping direct into the ore bin and coarser material into a Blake Marsden Stern crusher, which discharges into the ore bin. From the bin the ore passes into Challenge feeders, which feed the mill.

The mill differs somewhat from the ordinary stamp battery generally in use, and is known as the Morison High Speed Mill. This mill is a new departure, and its success only remains to be demonstrated in a practical way to ensure its being used in place of the old method all over the world.

The great feature upon which the designers of the Morison mill lay particular stress is the fact that it will give from 130 to 150 drops per minute, as com-

cation between them. The head strikes the rock on the die before the cylinder has completed its downward stroke, so that, at the end of the stroke of the cylinder, the bottom of the piston is above the port in the side of the cylinder, and the liquid is thus enabled to flow in. As the cylinder returns on its upward stroke the liquid is squeezed through the port from the cylinder into the jacket space, which has the effect of gradually and smoothly overcoming the resistance of the weight until, when the bottom of the piston closes the port, no more liquid can escape, and any further upward movement of the cylinder will raise the stamp head on an incompressible liquid buffer. The blow causes a rebound of the head, and, while still rising therefrom, the liquid "pick up" catches the weight, and the energy required to move a body from rest is thus saved, causing a very considerable economy in power to work the battery. So gradual