

settling pot from which it is tapped at intervals. This is known as matte. When cool it is broken up and put into sacks ready for shipment to Brooklyn. The slag—the lighter and worthless portion, is run off into slag pots and then dumped into the bay. A portion is occasionally used as flux. Analysis shows that very little copper is retained in the slag, decimal three (.3) per cent. being the average. Slag consists of silica, lime, iron and alumina, named in order of abundance. The matte contains copper, gold, silver, some iron and carbon. It runs about \$175 in copper, \$40 in gold and \$9 in silver to the ton.

As a rule two shipments of matte occur in a week. The forty-eighth since January was made on August 4th. It consisted of 15 tons. With the exception of what comes from Mount Sicker, nearly all the ore smelted is from the company's mines.

Never before have these mines looked so well. Finer ore could not be desired than what is now being taken out of the 80-foot level of the Cornell from near the winze. Under the present management development work is being kept well ahead and there seems every reason to believe that there will be no difficulty in keeping the smelter running to its utmost capacity.

Occasionally there are interruptions, as from August 1st to 5th, when the fires were allowed to die out from failure in the water supply. Water is obtained from a creek issuing from Priest Lake and too much seepage was taking place. The dam was repaired and sufficient water again secured.

Advantage was taken of this lull in smelting to clean out the dust chamber. Though 9x25 feet and cleaned out in May, it was choke-full. This dust is too good to waste and is put again through the furnace.

Incidentally it was learned that the fire bricks made in Victoria from Union fire-clay cannot stand the fierce heat of the furnace. Running too high in silica they give out in three days. Carterraig, a Scottish brick, is used and found to be much superior.

At first sight smelting looks smooth work. Slag and matte seem to come out with ease and regularity. But when we consider the difficulty some people have in understanding the humors of an ordinary stove we conclude that it is not so easy as it looks. Indeed we recognize that it is only after years of study and practice that the skilful foreman has become able to say: "The moment I look at her, I know what's wrong."

## THE NEW HENDY HOIST.

The Joshua Hendy Machine Works of San Francisco, Cal., is at present making a number of sales of its new and superior design 8½x10 double cylinder single drum hoists. Through the courtesy of the company, we are enabled to present herewith an illustration of this hoist. The hoist has certain features of construction to which the builders are able to trace the reputation these engines have secured in the short time they have been on the market. The hoist is mounted on a single solid base, with standboard for the operator. The engines are reversible link motion, and the drum is fitted with post breaks, which are sure, quick and safe in operation. Their compactness in design and the substantial and strong construction are particularly commendable. For severe and continued service experience has shown them to be unequalled.

The columnar indicator is also a feature of the

hoist, although the manufacturers will furnish dial indicators if preferred. Clutch pinions are furnished as the purchaser may desire. The pinions are helical steel, thereby obviating vibration, and at the same time lessening the likelihood of breakage. A better idea of the engine can be obtained from noting the following dimensions, which are for the 8½x10 hoist, 45-horsepower: Diameter of drum, thirty-two inches, diameter of flanges, 44 inches; length of drum between flanges, 24 inches; diameter of drum shaft, 4½ inches; diameter of crank, 4 inches; weight of hoister, single rope, usual speed 8,000 lbs; approximate shipping weight, 8,750 lbs.; floor space required, 88 x 92 inches.

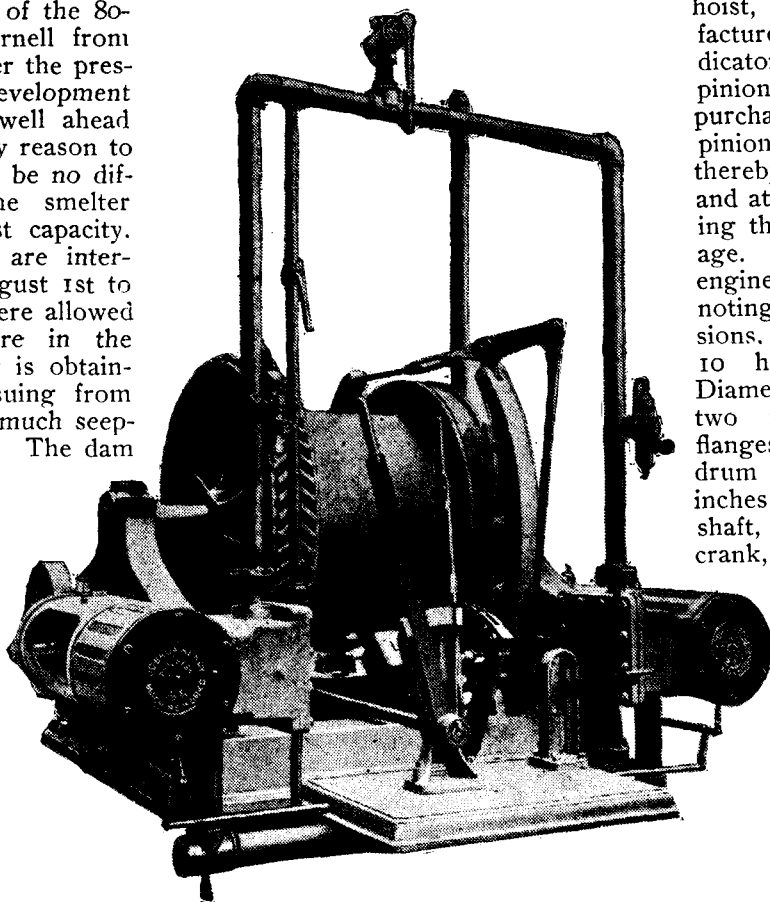
Smaller engines of from five to seven inch cylinders, having cut gears and pinions, can also be seen at the warerooms of the Joshua Hendy

Machine Works in San Francisco. The company also shows a large variety of double drum hoists.

## A NEW CENTRIFUGAL DREDGING PUMP.

WE call attention of our readers, and especially of those interested in mining operations, to the progress made in development of pumping machinery under the exacting demands due to development of our mines on the Pacific Coast.

It is noticeable that demand for an article to fill any particular requirement, always has the effect of calling out efforts for its production, and reciprocally, the production of an article, the highest and



Centrifugal Dredging Pump.