

gold, so that little need be said about them. In the Blake machine the crushing is done by that part of the jaw most remote from the supporting axle; in the Dodge this arrangement is reversed. Evidently the variation in breadth of the jaw opening of the Blake will be much greater than in the other case, and the product will be more variable in size. It must not be forgotten, as an offset, that the Dodge has not as large a capacity, and hence the matter becomes to some extent a question of preference. General practice seems to favor the Blake.

For handling large quantities in separate crusher houses, the Gates or Comet appear to be the best machines. They run very steadily, and have little jar; the capacity is larger, but on the other hand they are more complicated and very heavy.

Whatever form of crusher be used, the jaw opening should be as small as possible, because it has been found that the cost of reduction by these machines is only one-fifth of what it is by stamps. Wherever possible, the rock breaker is placed in a separate building; this is done for two reasons. In the first place, if situated high up in a mill, the reciprocating motion of the heavy jaw causes much vibration, which is most noticeable when the stamps are hung up; but it is also felt when they are in motion, as there is considerable jarring while large pieces of ore are being fed. Secondly, much fine dust is produced, and this readily finds its way into the bearings of the machines located on a lower story, with prejudicial results. In many cases, however, circumstances will not permit of this arrangement, and the crusher is placed above the ore bin.

If possible, power should be supplied from a separate motor, since the action is irregular, and tends to disturb the running of the stamps and concentrators when connected with them. The suggestion that this motor be applied at night to driving a dynamo seems to be a good one.

In many mills, a grizzly is used; this is simply an inclined grating made of long iron bars, or light rails, laid side by side, and spaced the same distance apart as the jaw-opening of the rock-breaker. The ore is dumped over it; what passes through falls into the ore bin, while the rest is fed to the crusher.

ORE BINS.—These should be as large as convenient, holding at least twenty-four hours' supply. If an accident happens to the hoist, or the mine is flooded, the mill would have to be stopped if no supply were kept; and it has been found that intermittent working is the