

The labor employed at the Liberty Bell at the time of which I write was two men on each shift, one of whom acted as shift-boss and had general supervision of settlers, agitators, and Moore filters, making all necessary titrations throughout these departments. At the Combination plant, one man on each shift attends to the filter-plant besides making other titrations in the leaching-plant, so that with the small unit as installed, that is, two filter-boxes of 28 and 30 leaves, respectively, one man per shift could possibly handle the full capacity of the plant or 193 tons per day.

The power consumption at the Liberty Bell is two 10-h.p. motors at the transferring cranes and one 40-h.p. motor to operate the vacuum and other auxiliary pumps connected with the filtering system, the same motor also operating a Goulds triplex pump that returns all solution used in milling the ore to the top of the mill, a lift of about 80 ft., requiring about 7 h.p. constantly, the total power consumption being 53 h.p. to charge against the filter equipment. The power consumption at the Combination plant when operating two Butters pumps, which the recent new addition makes necessary (the plant being two units), is 20 horsepower.

The Combination plant then, with its two units, one of 28 leaves and the other of 30 leaves, can handle 193 tons of dry slime per day when working at a maximum capacity, with labor of one man per shift and a consumption of 20 h.p. The Liberty Bell plant, with its four sets of leaves consisting of 67 each, will handle 450 tons per day when working at maximum capacity, with the labor of two men per shift and the consumption of 53 h.p. Therefore, as far as direct comparison of the actual operating costs of the two plants goes, there is not much difference. But two important items that effect the capacity of the Moore plant at the Liberty Bell, and that so far have not been taken into consideration, are the sticky nature of the ore handled and a difference of 3,000 ft. greater altitude.

In taking up the question of maintenance it will be noticed that the total number of leaves in the Liberty Bell plant is 268 against 58 leaves in the Combination plant, hence, allowing for an equal life in each case, the renewal cost for this item on the Moore plant will be almost five times as great as on the Butters plant at the Combination, but the rule previously mentioned still holding good, that a given pulp and vacuum condition will