per hour. The cost of feeding and attending the mill, and removing the product, together with expenses of engine and fuel, would probably amount to $6.50 per day, or 8¼ cents per ton. The cost of Whelpley and Storer's machine is somewhat more than that of Blake's, and while nine horse-power only is required for the latter, fifteen is said to be necessary for the former. With these data it may therefore be safe to estimate that the preliminary crushing of the ore would cost 10 cts. per ton. The crushing by means of ordinary rollers is here left out of consideration, as the ore must be very much reduced in size (to two inches in diameter and less) before it is possible to treat it by means of rollers.

In reducing the ore to a finer powder than is possible by means of any crusher, the choice lies between millstones, stamps, and Whelpley and Storer's pulveriser. The operation of pulverising by means of the first named is too expensive; and wet stamps, although they do it cheaper, have this disadvantage that the drying of the fine powder and the subsequent crushing of such parts of it as might cake together would increase the cost materially. By far the best pulveriser is undoubtedly that of Whelpley and Storer, which with twelve horse-power reduces to a state of fine dust from 1500 to 2000 lbs. of ordinary quartz or other stone per hour. Assuming that this machine were driven by the same engine which works the crusher, the cost of pulverising could not exceed 20 cents per ton.

The pulverised ore, after having been mixed with the salt and iron oxide, is next calcined; and it would seem quite practicable to effect this calcination in a semi-reverberatory furnace, the hearth of which would consist of cast-iron plates heated by the flame from a furnace passing through flues beneath. The smoke, etc., from the fire would be kept altogether, distinct from the gases evolved by the ore and other ingredients during the calcination. Since diligent stirring is rather injurious than otherwise, it follows that no great amount of labor is necessary; and since the temperature is to be kept as low as possible, it is also evident that the expenditure of fuel will be inconsiderable. It is therefore probably a reasonable estimate that $1 per ton would cover the expense of calcination.

The gases evolved during this operation are sulphurous acid and chlorine in very nearly the proportions of their equivalents. Partly to create a draft though the furnace and partly in order to utilise these gases, it would be well to put into connection with