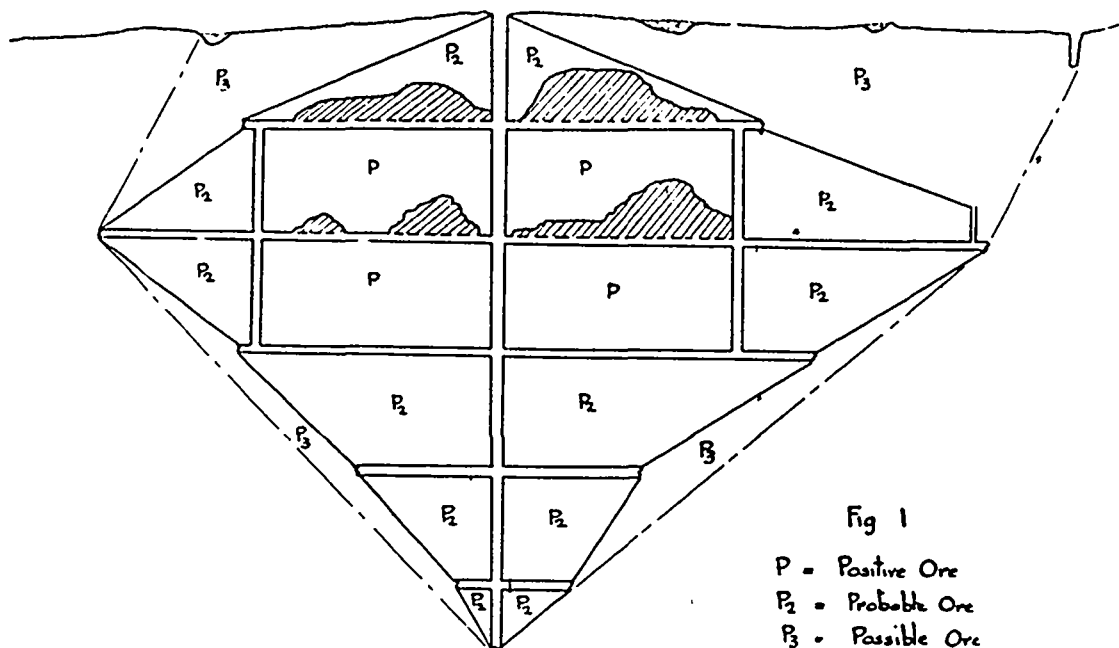


too remote, is to blast out mill run tests, taking (necessarily) only a few samples, but each sample being of a large quantity or tonnage. Before taking such samples, the engineer should determine the approximate boundaries of the pay shoots, if there be any such, and their area should be roughly computed, and the ratio of their area to the whole

this class of ore, but it is not practicable in remote districts.

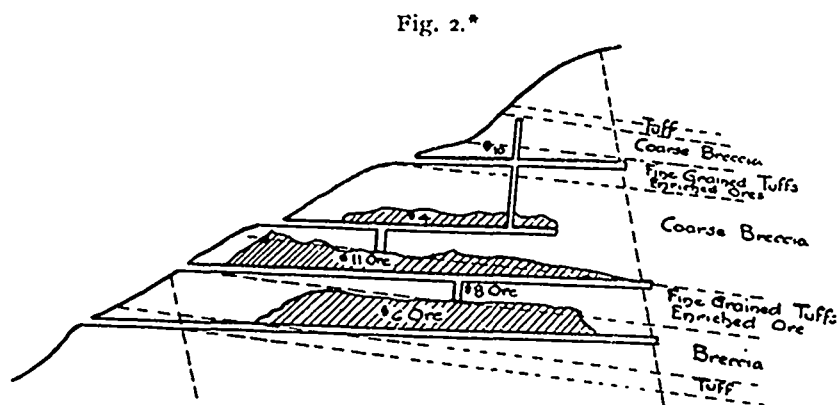
A tool which saves much time and labor in sampling under the first system, at mines which are equipped with an air-drill plant, is the Haessler-Ingersoll hammer, which weighs about twelve pounds, is fourteen inches long, has a stroke of



(See page 133, June number, 1905.)

area blocked out, determined. A few mill run samples should be taken outside of the vein which is known to be pay grade. The samples taken under this system will each be of at least five tons in amount, or perhaps much larger; they may be worked by the engineer himself or shipped to some mill or sampling works of whose honesty and independence the engineer is thoroughly convinced.

about three inches, and delivers up to about 300 strokes per minute. With an air pressure of sixty pounds, a channel one inch in depth and three inches wide can be cut in one-fourth to one-sixth of the time required by hand, and with little or no labor. The cuttings are finer than those obtained with hammer and moil, and there is less tendency for the rock chips to fly away to long distances; it is also



(See page 134, June number, 1905.)

The last system is not in frequent use owing to the difficulty in most cases of finding a reliable mill within a reasonable shipping distance of the mine. When time and cost are both permitted, it is, in some cases, much the more satisfactory method for

easier to trim the channel to exact dimensions. Wherever the rock is hard, the number of samples to be cut is large, and the property is equipped with a compressed air plant, the use of the air hammer will greatly expedite the work of sampling, and diminish the hard labor item.

\* From T. A. Rickard, Mineral Industry, 1902.