No. 868,270. PATENTED OCT. 15, 1907.

J. E. HUNSINGER.

ORE TESTING TABLET.

APPLICATION FILED MAR. 5, 1906.

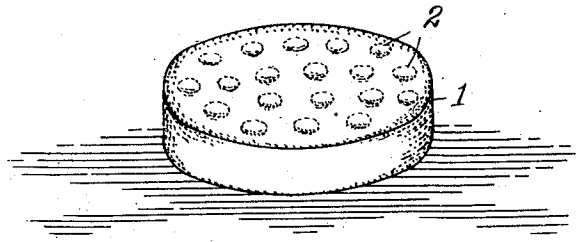



Fig. 1.

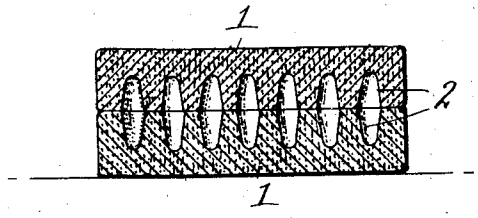



Fig. 2.

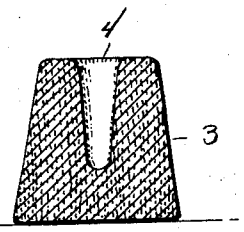



Fig. 4.

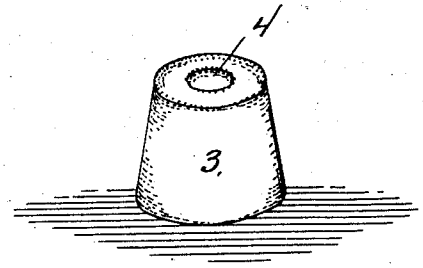



Fig. 3.

—Witnesses.—
C. B. Baenziger.
I. G. Howlett.

—Inventor.—
John E. Hunsinger.
By E. W. Wheeler & Co. attys

THE NORRIS PETERS CO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JOHN E. HUNSINGER, OF SAGINAW, MICHIGAN, ASSIGNOR TO EARL A. CHENEY AND FRANK CHENEY, OF SAGINAW, EAST SIDE, MICHIGAN.

## ORE-TESTING TABLET.

No. 868,270. Specification of Letters Patent. Patented Oct. 15, 1907.

Application filed March 5, 1906. Serial No. 304,204.

*To all whom it may concern:*

Be it known that I, JOHN E. HUNSINGER, a citizen of the United States, residing at Saginaw, East Side, in the county of Saginaw, State of Michigan, have invented certain new and useful Improvements in Ore-Testing Tablets; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to ore-testing tablets or crucibles, and consists in the composition of elements hereinafter more fully set forth and pointed out particularly in the claims.

The object of the invention is to provide means whereby a mineral prospector may, in a simple and effective manner, ascertain the character and quality of such ores as he desires to test on the spot, obviating the necessity of carrying heavy ore samples a great distance to have them assayed. The above object is attained by means of my composite ore-testing tablet or crucible, shown in the accompanying drawing, in which:—

Figure 1 is a perspective view of the tablet. Fig. 2 is a sectional view through two of the tablets placed together, as may be found necessary in the reduction of refractory ores. Fig. 3 is a perspective view of my reducing composition in the form of a crucible. Fig. 4 is a sectional view through said crucible.

In the application of my invention, I provide a tablet or crucible of such composition as to produce a reducing heat when ignited, and having such fluxes and reagents as the quality of the ore being treated may demand. The composition of which the tablets and crucibles are formed consists of powdered, hard-wood charcoal, chlorate of potash and sodium carbonate in about the following proportions; powdered, hard-wood charcoal, fifteen (15) parts; chlorate of potash, eight (8) parts; sodium carbonate, six (6) parts. This composition is made plastic by a paste made of flour and water, and the mass so formed is shaped into round tablets 1 with a plurality of small cells 2 therein, and into crucibles 3 with a larger central cell or receptacle 4. The cells in the tablets and crucibles are made slightly tapering and are of such capacity as to contain a sufficient amount of ore to enable the making of a thorough test.

The manner of using my improved tablets and crucibles is as follows:—Crush a small amount of ore and grind very fine; then sift through a fine mesh cloth or sieve; place the pulp on top of a tablet or crucible and carefully fill all of the cells and strike off from the top all the remaining pulp; then light the tablet with a match and when burned and thoroughly cooled, place the slag in a suitable mortar and triturate until all of the slag has been washed off. The slag is dissolved at once when water is poured thereon and any remaining lumps can easily be reduced with the pestle so that every particle of metal may be saved if the operator is careful in panning.

For refractory ores where a greater heat is required, two tablets should be used, the bottom one to be filled as before explained and the other placed directly on top, as shown in Fig. 2.

The crucible form shown in Figs. 3 and 4 is designed more expressly for retorting small amounts of amalgam. When treating amalgam it is placed in the central cell 4 and a small quantity of salt spread over the top as a cover and the crucible ignited; when cool, the slag can be easily panned down to the bottom, enabling the loose particles of metal to be readily detected because of their flattened condition due to the rubbing of the pestle in the mortar during the process of panning.

In treating various qualities of ores, it may be found necessary to use fluxes differing from the one mentioned in the composition, such for instance, as cyanid of potassium, borax, argol and zinc, as conditions may require.

It will be noted that the presence of the chlorate of potash assists materially in the combustion of the charcoal, and produces a greater degree of heat than could be produced by the charcoal alone. The mixture of charcoal and chlorate of potash used in the proportions employed by me in my composition would cause a too rapid combustion of the tablet; I therefore add the carbonate of sodium which reduces the rapidity of combustion, while the potassium chlorate gives off such an amount of oxygen as to maintain the desired degree of heat even in the presence of retarded combustion.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent is:—

1. An ore testing tablet, comprising powdered, hard-wood charcoal fifteen (15) parts, chlorate of potash eight (8) parts, sodium carbonate six (6) parts, said ingredients being bound together by a suitable adhesive.

2. An ore testing tablet, comprising a fuel, an agent rich in oxygen to enhance combustion and a combustion retarding agent and flux.

In testimony whereof, I sign this specification in the presence of two witnesses.

JOHN E. HUNSINGER.

Witnesses:
J. FRANK BAILLI,
A. E. VOSBURG.