No. 667,969. Patented Feb. 12, 1901.

A. CAMPBELL.

ASSAYING DEVICE.

(Application filed June 25, 1900.)

(No. Model.)

Fig. 2.

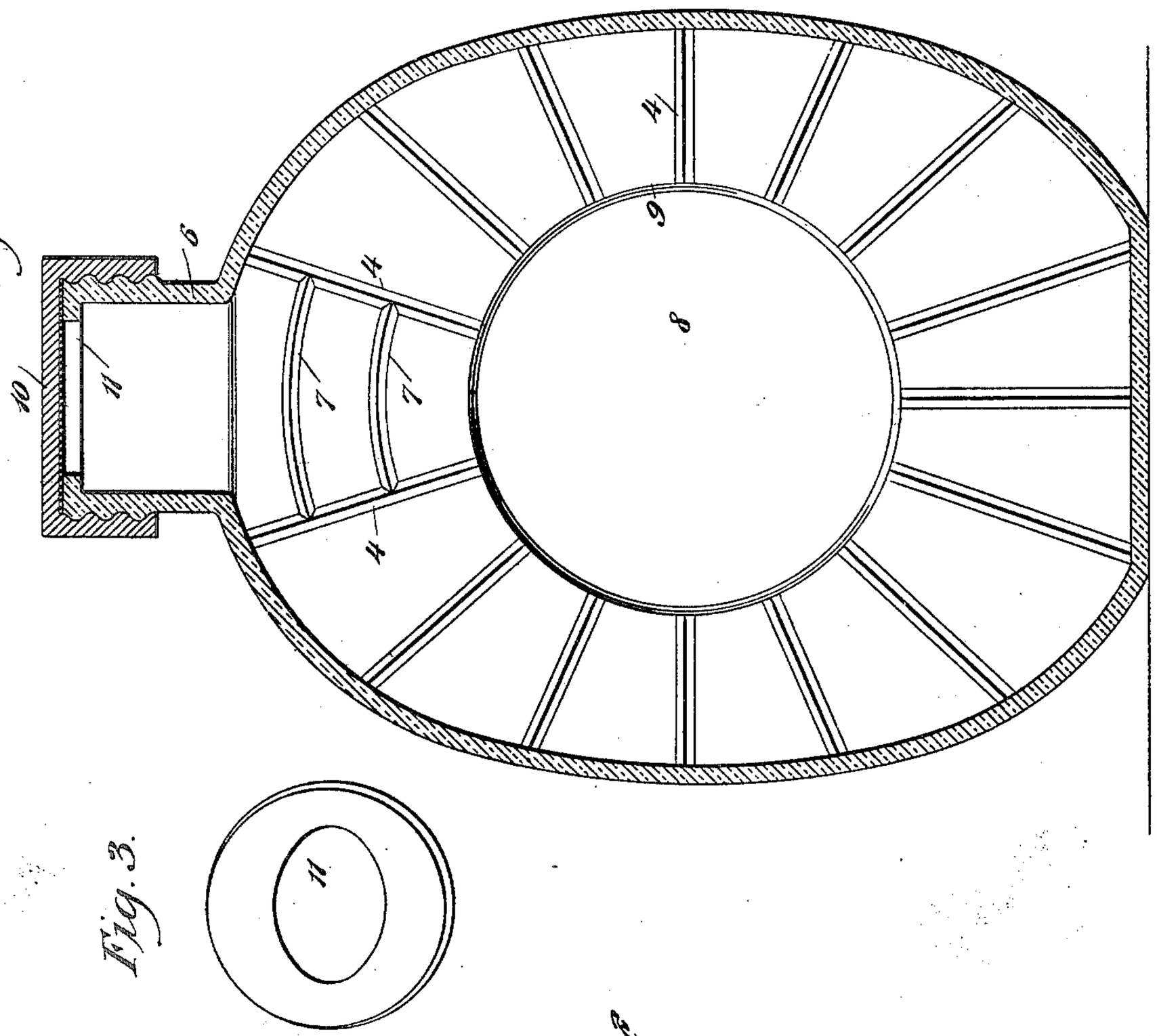
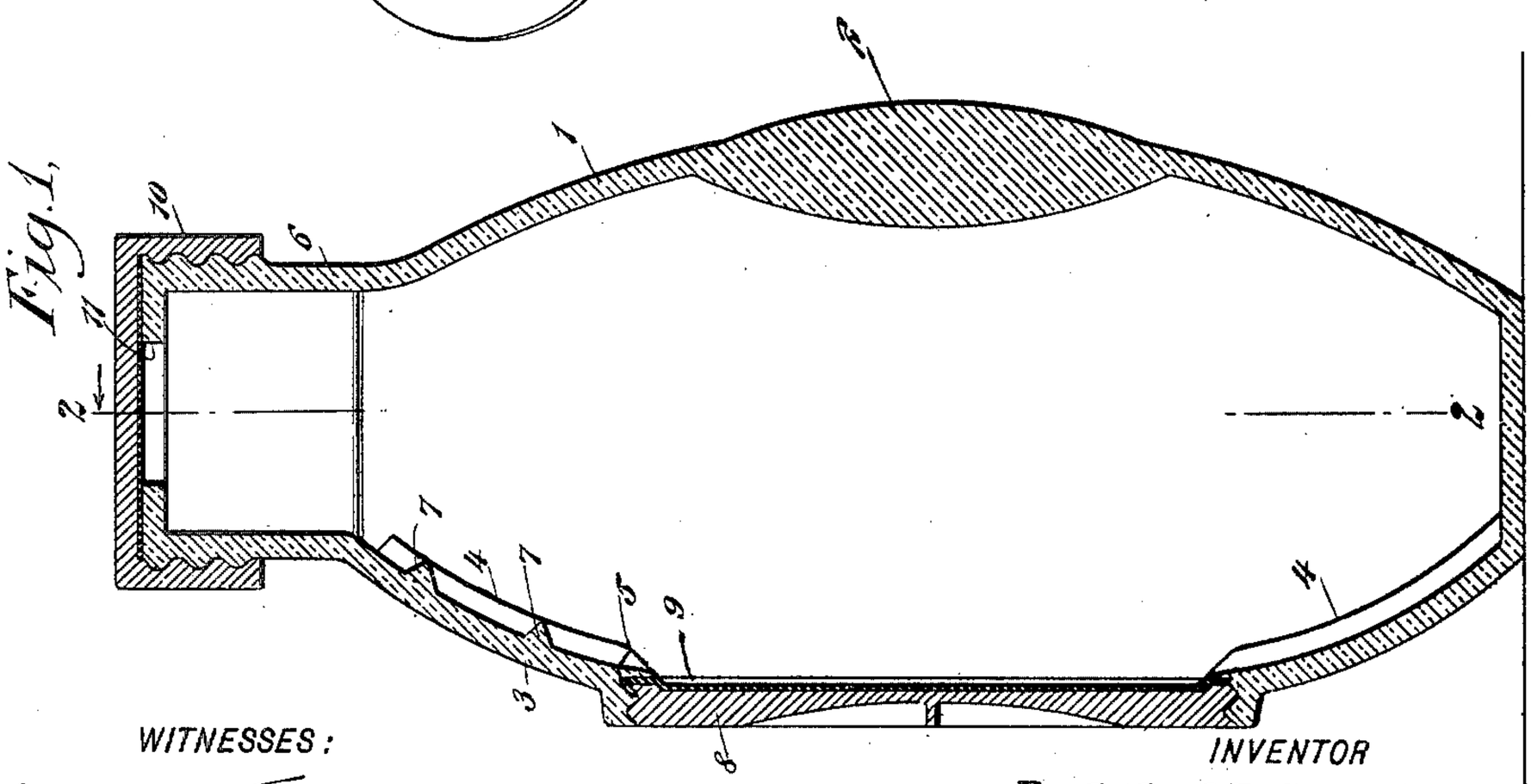


Fig. 3.

Fig. 1.



WITNESSES:

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ARCHIBALD CAMPBELL, OF SURF, CALIFORNIA.

ASSAYING DEVICE.

SPECIFICATION forming part of Letters Patent No. 667,969, dated February 12, 1901.

Application filed June 25, 1900. Serial No. 21,454. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD CAMPBELL, a citizen of the United States, and a resident of Surf, in the county of Santa Barbara and State of California, have invented a new and Improved Assaying Device, of which the following is full, clear, and exact description.

This invention relates to improvements in devices for use in assaying metal-bearing ores or sand; and the object is to provide a device of this character that can be conveniently carried in a person's pocket and by means of which the assay may be quickly made with the use of but little water.

I will describe an assaying device embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of an assaying device embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1, and Fig. 3 is a plan view of the outlet for water and sand.

The assaying device is substantially bottle-shaped, and it may be made wholly of glass or partly of glass, as desired—that is, a portion of the device may be made of metal, while a sufficient portion of glass is placed therein to permit of viewing the sand and metal within the device. One wall 1 of the device is concaved on its inner side, and for convenience I may provide it with a thickened portion 2, which serves as a magnifying-glass through which the material may be observed. The opposite side 3 is also concaved on its inner side and is provided with ribs or riffles 4. These riffles 4 are shown as extended radially from a central opening 5. The radial riffles 4 at the mouth or outlet end 6 are connected by cross-riffles 7. The opening 5 is designed to receive a closure 8, consisting of copper or other metal or glass. If metal is employed, its inner surface may be coated with quicksilver for amalgamation with the gold. The body of the closure 8 may be of glass, on the inner surface of which a copper or other metal plate 9 may be placed. This closure 8 is provided with a peripheral screw-thread for engaging with the screw-threaded wall of the opening 5, as shown in Fig. 1.

A screw-cap 10 is provided for the outlet end 6, and the mouth or outlet 11 of this outlet end is made oval, as indicated in Fig. 3, so that higher walls are provided on the side of the device containing the magnifying-glass and riffles than at the other side or edge, thus forming a carrier to retard the outflow of water containing sand. While I have shown the outlet end of the device as round to receive the screw-cap, it is obvious that it may be otherwise shaped and the cap otherwise secured thereto.

In operation a small quantity of crushed ore or sand containing gold or the like is to be placed in the device with a small quantity of water. Then upon holding the side 3 downward the device is to be rocked back and forth, so that the heavy particles containing the gold or values will sink to the bottom and the water and sand will flow out at the open end. The crushed ore or sand remaining in the device in a moist condition will then be allowed to run down and evenly distribute over the smooth concave side, where the particles of precious metal may be easily distinguished by looking through the magnifying or the plain glass. With the amount of sand known and the number of gold particles obtained a fairly accurate idea may be formed of the value of the ore in free gold, and this may be repeated over different parts of the ground, making the assay of great value. When quicksilver is used, the amalgam may be treated in a retort or in any other manner to separate the gold.

It is obvious that this device may be easily carried in one's pocket, or it may be packed in a case containing other small implements employed by miners in prospecting. When not in use for assaying purposes, it may be used as a receiver for any desired liquids.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An assaying device, comprising a bottle-shaped receiver, riffles on the inner side of one of its walls, the wall upon which the riffles

are located being provided with an opening, and a removable cover for said opening, substantially as specified.

2. An assaying device, comprising a bottle-shaped receiver having riffles on the inner side of one of its walls, and a magnifying-glass in its opposite wall, substantially as specified.

3. An assaying device, comprising a bottle-shaped receiver, having riffles on the inner side of one of its walls, the said wall having an opening, a removable closure for said opening, and a removable cover for the outlet end of the device, substantially as specified.

4. An assaying device, comprising a bottle-shaped receiver, riffles on the inner side of one of the walls of the receiver, the said wall having an opening, a closure for said opening having a metal plate at its inner side, and a magnifying-glass in the opposite wall, substantially as specified.

5. An assaying device, comprising a bottle-shaped receiver having an oval outlet-opening, a removable closure for said outlet-opening, riffles on the inner side of one of the walls of the device, a magnifying-glass in the opposite side wall of the device, and a closure for an opening in the wall having the riffles, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARCHIBALD CAMPBELL.

Witnesses:

S. H. SUDDEN,

J. B. DEAN.