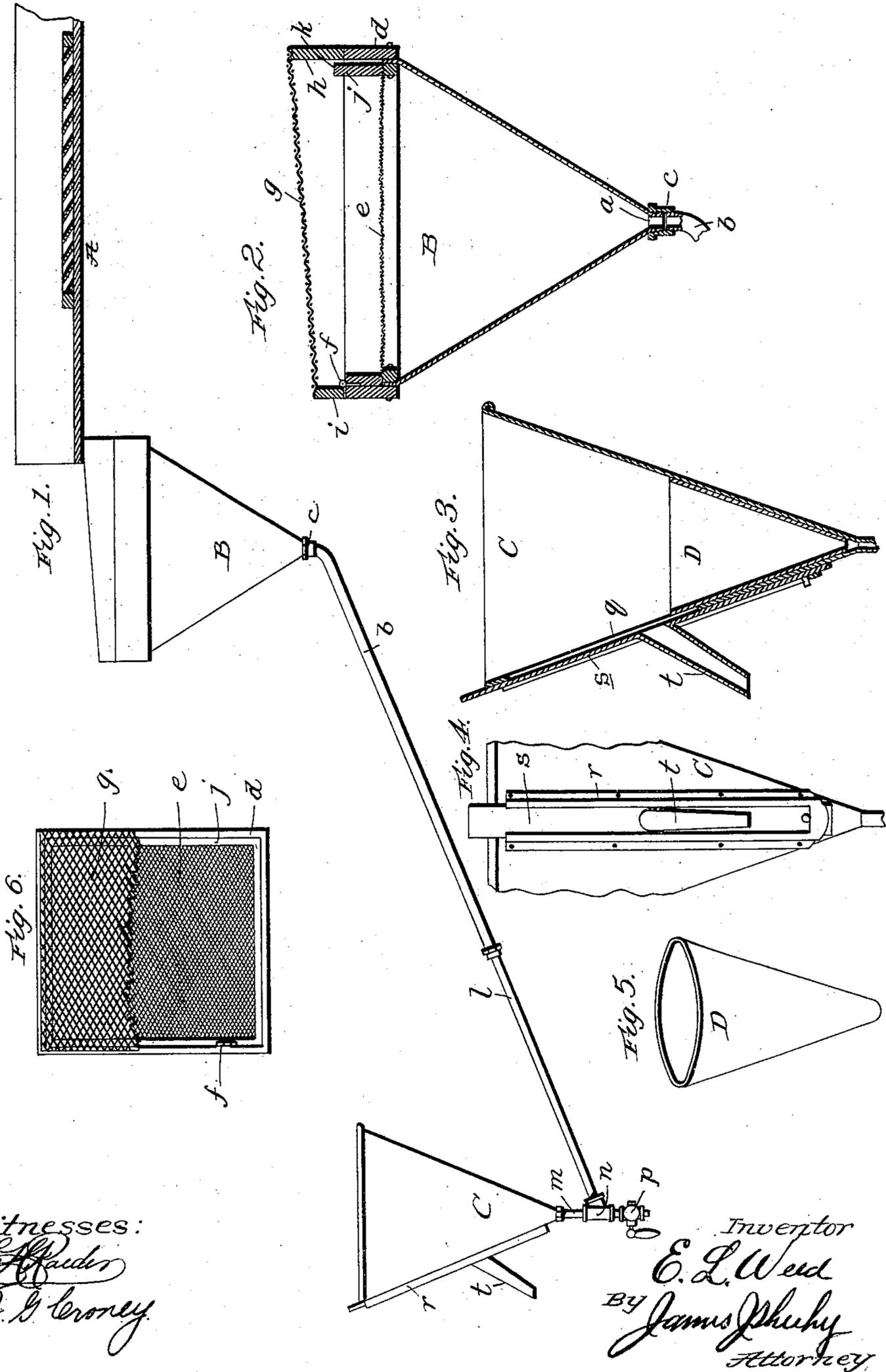


(No Model.)

E. L. WEED.
APPARATUS FOR RECOVERING FINE GOLD.

No. 599,819.

Patented Mar. 1, 1898.



Witnesses:
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UNITED STATES PATENT OFFICE.

ELISHA L. WEED, OF ELLENSBURG, WASHINGTON, ASSIGNOR TO EDWARD G. FLEMING, OF SAME PLACE.

APPARATUS FOR RECOVERING FINE GOLD.

SPECIFICATION forming part of Letters Patent No. 599,819, dated March 1, 1898.

Application filed September 23, 1897. Serial No. 652,765. (No model.)

To all whom it may concern:

Be it known that I, ELISHA L. WEED, a citizen of the United States, residing at Ellensburg, in the county of Kittitas and State of Washington, have invented certain new and useful Improvements in Apparatuses for Recovering Fine Gold; 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.

This invention relates to improvements in apparatuses for recovering fine gold, and the novelty and many advantages will appear from the following description and claims when taken in connection with the annexed drawings, in which—

Figure 1 is a side elevation of my improved apparatus, showing a part of a sluice-box in longitudinal section. Fig. 2 is a vertical sectional view of the hopper with its screens in position. Fig. 3 is a vertical sectional view of the funnel with the galvanized-iron funnel thereon for holding quicksilver. Fig. 4 is an elevation of the same with parts broken away, illustrating the adjustable spout for drawing off sand and water from the funnel. Fig. 5 is a perspective view of the copper funnel removed from the galvanized-iron funnel; and Fig. 6 is a plan view of the screens, the upper one being broken away to show the lower one.

Referring by letter to the said drawings, A indicates a sluice-box which may be of any ordinary or approved construction, the one here shown being simply for the purpose of illustrating my improvements in connection with a sluice-box.

B indicates a hopper which is preferably formed of galvanized iron and is provided at the lowest point of its bottom with an outlet-aperture *a*, to which is attached a discharge-pipe *b* by means of a coupling *c* or other suitable fastening device. On this hopper is mounted a framework *d*, which may be rectangular or other suitable shape in outline. To this frame *d* is hinged a screen *e*, which is designed to rest horizontally upon the hopper when in an operative position and to turn upon the hinged joint *f* when it is desired to throw from the screen such gravel and the like as may accumulate thereon. *g* is another screen of much coarser mesh than the screen *e*. This

upper screen has one of the vertical walls *h* of its frame of a greater height than the opposite wall *i*, so that the screen drawn over the same will assume a slanting or inclined position. The upper screen is designed to rest upon the frame *d*, and by projecting the wall *j* of the lower screen-frame, as shown at *k*, it will be seen that the upper screen will be prevented from casual displacement. The upper screen being inclined, as illustrated, it will allow coarse gravel, stones, and the like to roll off, and by being detachable it can be readily removed and replaced after being cleaned. The lower screen being hinged, as described, when the upper screen has been removed, to clean the lower screen it is simply necessary to raise it on its hinged joint and swing it outwardly, when such dirt, smaller gravel, and the like as may have passed through the coarse screen will be discharged.

C indicates a funnel which may be composed of galvanized iron or other suitable material. This funnel is arranged at a lower altitude than that of the hopper, and the pipe *b*, which leads from the base of the hopper, is designed to connect with the base of the funnel, a pipe *l* of less diameter being interposed between the pipe *b* and the funnel C, so as to retard the discharge of the water and gold-bearing sand as it enters the funnel.

It is obvious that instead of employing the small pipe *l* a reducer of suitable character might be used, although such pipe is preferable. The pipe *l* may be connected with the pipe *m* by means of a T-joint *n* or other suitable coupling, and said pipe *m* is provided with a cock *p* for drawing off the amalgam.

The funnel C is provided with an adjustable discharge-spout. In the illustration I have shown the funnel as slotted vertically in one of its side walls, as at *q*, and provide a guide-strip *r* on each side of said slot to receive a slide *s*, carrying a spout *t*. It will be seen that the height at which sand and water are to be drawn from the funnel C may be regulated by the manipulation of the slide carrying the spout.

D indicates a smaller funnel, which is designed to hold quicksilver. This smaller funnel, which may be formed from copper, is designed to rest within the larger funnel C and fits snugly in the lower portion thereof, so as

to receive the gold-laden sand as it passes from the hopper down the pipe connection.

In operation the gold-bearing sand, gravel, and the like as they leave the sluice-box pass
5 onto the inclined screen *g*, where the coarse gravel and stones are cast off by rolling down the inclined surface, while the finer gravel, sand, and water pass to the second screen *e*,
10 where such gravel will be checked and the sand, with its gold, allowed to pass into the hopper. It thence passes by gravity into the base of the funnel C through the pipe connection, and, rising through the quicksilver in the funnel D within the funnel C, the gold
15 will of course be held in the amalgam and the water and sand drawn off through the spout *t*, the point of drawing off being regulated by the manipulation of the slide carrying the spout. In practice the level of the
20 mercury or quicksilver is slightly below the upper end of the funnel D.

An apparatus of this character may be very cheaply constructed and requires but little attention during operation. The screens are
25 so constructed and arranged that they may be readily cleaned and readily replaced after cleaning.

The hopper B is preferably funnel-shaped, as shown, and its lower end being connected
30 with the lower end of the funnel by a contracted conduit, as shown, it will be seen that the water and "pay dirt" will be forced upwardly in the funnel C under considerable head, which will materially facilitate the
35 amalgamation of the gold particles with the

mercury. It will also be seen that by reason of the commingled water and pay dirt entering the funnel C under a strong head it will be discharged upwardly into the funnel in a comminuted state, and being permitted
40 by the shape of the funnel to spread the particles of gold will quickly amalgamate with the mercury.

Having thus described my invention, what I claim is—

In an apparatus for recovering fine gold, the combination of the funnel adapted to contain mercury, the hopper disposed in a plane above that of the funnel and having its lower end connected by a pipe with the lower end
45 of the funnel, the fixed frame *d*, connected to and extending above the upper end of the hopper, the movable frame arranged in the fixed frame and carrying a fine screen and having one of its walls connected to the con-
50 tiguous wall of the fixed frame in a hinged manner and its opposite wall *j*, extending above the adjacent wall of the fixed frame, and the upper screen of coarser mesh having
55 the frame resting on the fixed frame and surrounding the hinged frame and held against casual displacement by the wall *j*, of the hinged frame, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

ELISHA L. WEED.

Witnesses:

CLYDE WARNER,
C. H. STEWART.