

P. P. PARKHURST.

Gold Washer.

No. 26,236.

Patented Nov. 22, 1859.

Fig. 1.

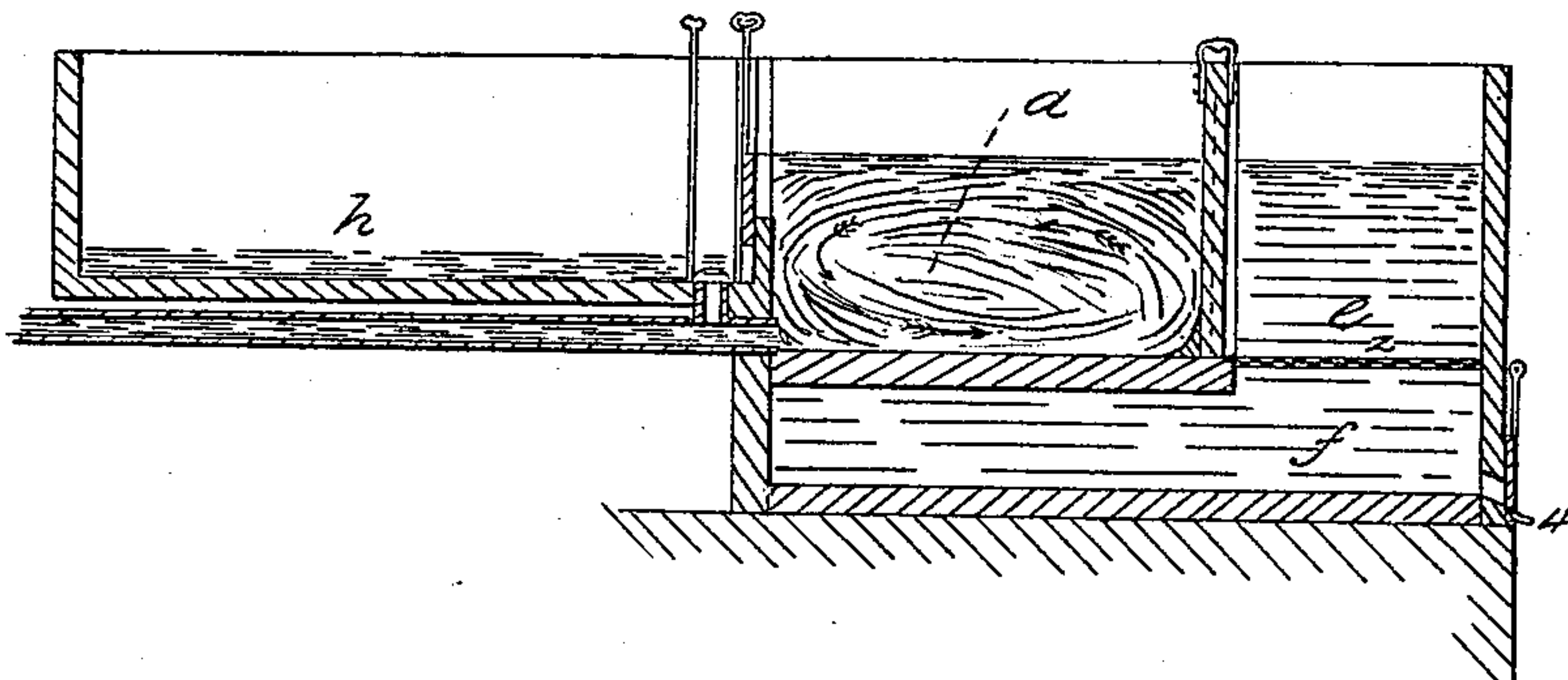
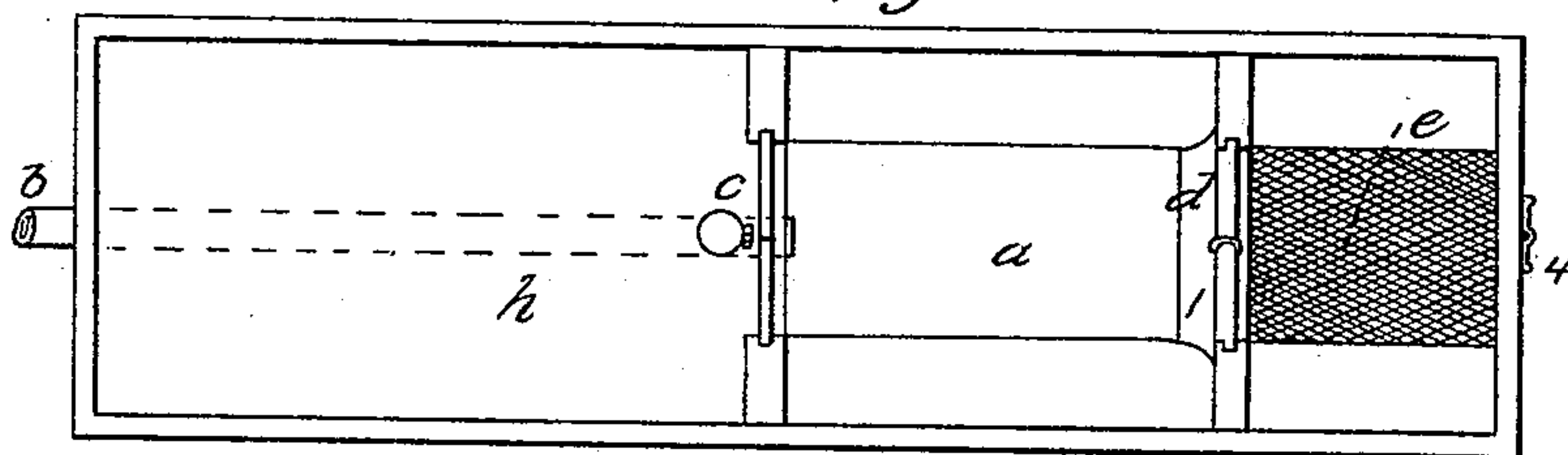


Fig. 2.



Witnesses:

Samuel M. Tenell
Thos. Geo. Harold

Inventor:

Per meum P. Parkhurst.

UNITED STATES PATENT OFFICE.

PARMENUS P. PARKHURST, OF PRINCETON, MASSACHUSETTS.

ORE-SEPARATOR.

Specification of Letters Patent No. 26,236, dated November 22, 1859.

To all whom it may concern:

Be it known that I, PARMENUS P. PARKHURST, of Princeton, in the county of Worcester, and State of Massachusetts, have
5 invented, made, and applied to use a certain new and useful Improvement in Apparatus for Separating Metallic Ores; and I do hereby declare that the following is a full,
10 clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1, is a vertical longitudinal section of my said apparatus, and Fig. 2, is a
15 plan of the same.

Similar letters denote corresponding parts.

My said invention consists in a chamber or washing box into which a current of water is introduced horizontally in such a manner
20 that a whirl or circulation is produced in such box, and in the sands and mineral matters placed therein, causing the earthy substances to pass over a gate or overflow while the metallic substances remain in the box,
25 and are received into a chamber after each washing is completed.

In the drawing *a*, is a box which I term the washing box or chamber that is to be of an oblong shape. I prefer that the sides
30 be flaring so that the surface of the water in said box is larger than the bottom of the box. To this box a supply of water is introduced as at *b*, by a pipe from any suitable head; said pipe *b*, enters the wash box
35 near the bottom at one end.

c, is an overflow gate at the same end as the pipe *b*, which is to be movable to regulate the height of the overflow.

d is a gate set watertight or nearly so in
40 slides at the end of the wash box or chamber *a*, opposite to the pipe *b*; said gate may have a curved bottom piece at 1, to deflect the current of water upward at this end of the washing box.

45 *e*, is a box continuing out from the box *a*, or otherwise connected thereto in the bottom of which box is a screen 2, over a chamber *f*.

The manner of operating my invention is to place in the washing box, or draw there-
50 into with the water, a proper amount of ore or "diggings", and allow the water to dash in at the bottom by the pipe *b*, which thoroughly mixes the earthy matters and the water and causes a very strong ebullition or commotion. As the box fills up nearer to the
55 level of the head of water the ebullition de-

creases and the metallic particles subside. I then lower the gate *c*, and draw off the water and earthy matter, and then repeat the washing. In all cases the force of water
60 and the height of the gate *c*, have to be so regulated that sand and heavy particles will be thrown over, while only the metal remains; and it will be seen that the current of
65 water passing in at the bottom and being deflected upward by the gate (at 1,) causes a circulation or whirl in the direction indicated by the arrows, producing a downward current or suction at the gate *c*, but the ebullition or circulation being below the surface,
70 and that is comparatively still.

When the washing is completed and the water runs clear I raise said gate *d*, and all the metallic particles are washed into the
75 box *e*, and the screen 2 separates large stones or pieces while the fine particles of ore are deposited in the chamber *f*. The operation is then to be repeated by placing the ore into the box *a*, shutting the gate *d*, and proceeding
80 as before.

The chamber *f* can be cleared of the metal therein by opening the orifice 4, and allowing water to pass in at the other end.

The water that passes over the gate *c*, conveying away the earthy materials runs into
85 the chamber or reservoir *h*, and this chamber or reservoir may be situated nearly at the level of the washing box *a*, or below the same, however when placed on nearly the same level the earthy matters may be run
90 back and washed over in the box *a*. It will be apparent that the size of my apparatus must depend upon the amount of water that can be availed of, and also the amount of
95 head or pressure. In all instances the ebullition or circulation in the wash box is derived from the water entering near the bottom of the box and whirling around as set forth, to cause a separation of the metallic
100 particles and the delivery of the earthy matters: The operation may be observed through a glass inserted in the side of the box *a*.

In cases where a supply of water is scarce air or other fluid may be forced in at the
105 pipe *b*, to aid in producing the whirl or circulation of the water.

Having thus described my said invention, what I claim and desire to secure by Letters Patent is—

1. The washing box or chamber *a*, constructed with the pipe *b*, entering near the
110 bottom to cause a whirl and circulation as

specified, and with the gate or overflow *c*,
for the purposes and as described and shown.

2. And in combination with such washing
box (*a*) I claim the receptacle or box *e*, and
5 chamber *f* to receive the metallic particles
when the gate *d*, is raised as set forth.

In witness whereof I have hereunto set

my signature this twelfth day of August
1859.

PARMENUS P. PARKHURST.

Witnesses:

LEMUEL W. SERRELL,
THOS. GEO. HAROLD.