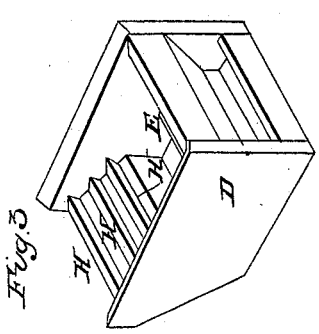
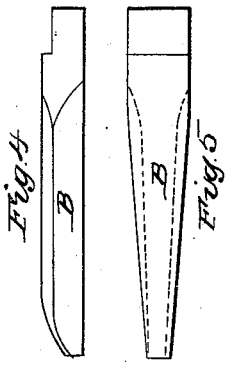
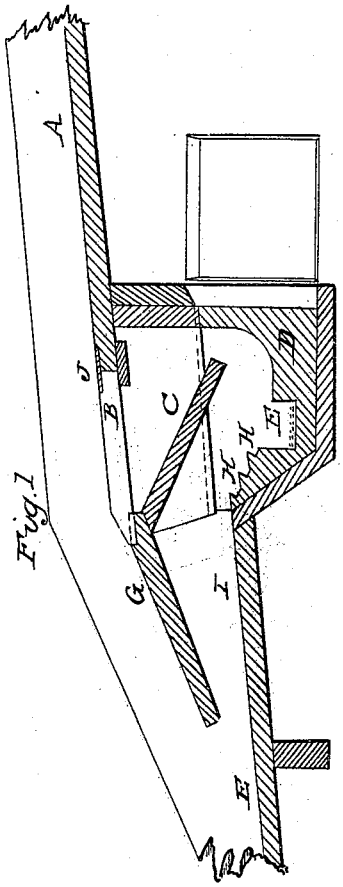
R. E. WASHBURN.

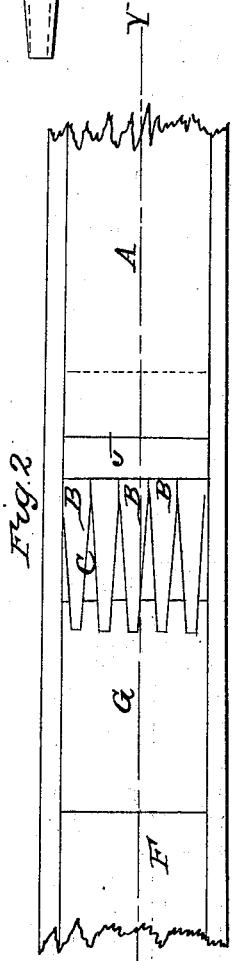
Sluice Box.

No. 52,775. Patented Feb. 20, 1866.









WITNESSES
Wm. Smith
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UNITED STATES PATENT OFFICE.

R. E. WASHBURN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN SLUICE-BOXES.

Specification forming part of Letters Patent No. **52,775**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, RICHARD EMERSON WASHBURN, of the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Sluice-Boxes for Separating and Amalgamating Gold or other Metals, called "Washburn's Sluice-Box;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which like letters indicate like parts in each of the figures.

Figure 1 is a sectional elevation, Fig. 2 a plan, and Fig. 3 an isometrical view, of amalgamating-box; Figs. 4 and 5, detail views of tooth B.

The nature of my invention relates to an easy and effectual method for saving the precious metals found in sluice or hydraulic mining, so called; and it consists of one or more boxes to be placed along a flume, each box having an incline floor, upon which are placed tapering bars or teeth, by means of an aperture, arranged in a row at a suitable distance. Underneath the upper end of the box is placed a hollow cast-iron box with riffle-bars placed across it. In this box quicksilver is placed for the purpose of amalgamating the metals, the whole being inclosed by means of a door. By this arrangement no quicksilver can escape and be lost; neither can the amalgam be stolen, as is often the case, by robbers, for the amalgam-boxes can be taken from the sluice-boxes every night and be transported to a place of safety, and be replaced again in the morning.

To enable others skilled in the art to make and use my sluice-box, I will proceed to describe its construction and operation.

Referring to the drawings, A is the flume above the box; F, the flume or water and débris passage below the same.

B B B is a grating formed of sections B B, beveled and sunk into the chute G at their lower ends, held by a plate, J, at their upper ends. Over this grating of cast-iron all of the material washed through the flume passes, the finer portions, containing the gold, passing through the grating, the coarser being carried over it along the chute G into the lower or succeeding flume, F.

From beneath the grating the finer material is carried by the water over the chute C into the amalgam-box D, the portion E of which contains quicksilver, for the purpose of retaining the gold which might otherwise escape from the vat E, the finer particles of material passing over the riffles H H H, which pick up the gold and amalgam which may have passed the vat E. From thence the fine material is carried by the water over the chute I into the lower flume, F, where it joins the coarser material carried over the chute G.

The grating or teeth B B B are made of hard cast-iron, of form tapering from the upper part, where they are set in the sluice-box, to the lower grate-bar, being narrower on the upper than the lower edges, so that no clogging can occur. (Shown in Figs. 4 and 5.)

The amalgam-box is constructed of cast-iron and should be quicksilver-tight. The plate J, under which is inserted the bars, as also the chute G, is of cast-iron.

Having thus described my sluice-box so as to enable those skilled in the art to make and use the same without further invention or experiment, I will now proceed to state what I claim, and desire to secure by Letters Patent, as follows, to wit:

1. The adjustable amalgam-box D, quicksilver-vat E, and riffles H H H, or their equivalents, substantially as described, and for the purpose set forth.

2. The peculiar-shaped tapering grating or bars B B, arranged as described, for the purpose of allowing the coarser material to pass off without choking, substantially as set forth.

3. The manner of introducing the water so that it may pass through the amalgam-box D, dividing it by means of the chutes C and G, the coarser passing down the chute G, while the fine material and water pass down G, uniting again at F, so that the box can be used in any part of the flume, substantially as described, and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal this 18th day of September, A. D. 1865.

R. E. WASHBURN. [L. S.]

Witnesses:

C. W. M. SMITH,

S. H. BOWMAN.