

A. HEATHERINGTON.

Ore-Washers.

No. 152,227.

Patented June 23, 1874.

Fig. 1.

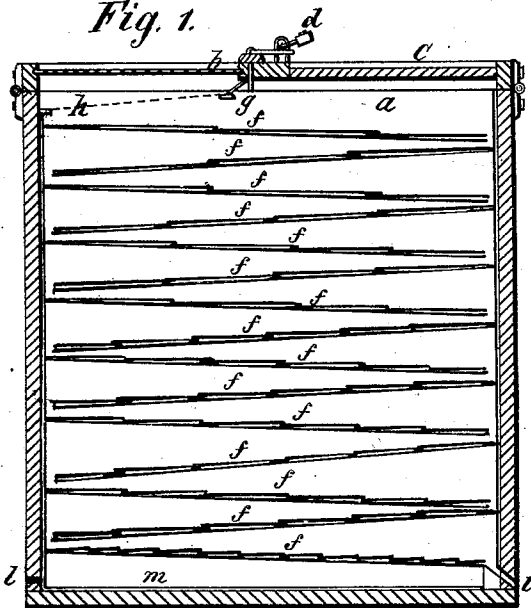


Fig. 2.

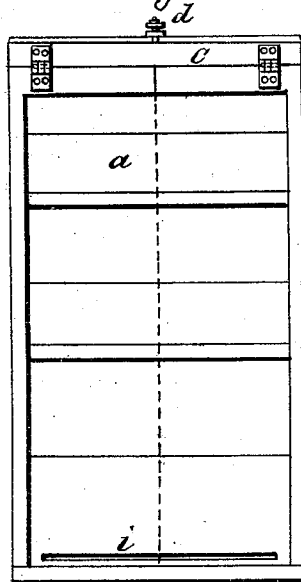


Fig. 4.

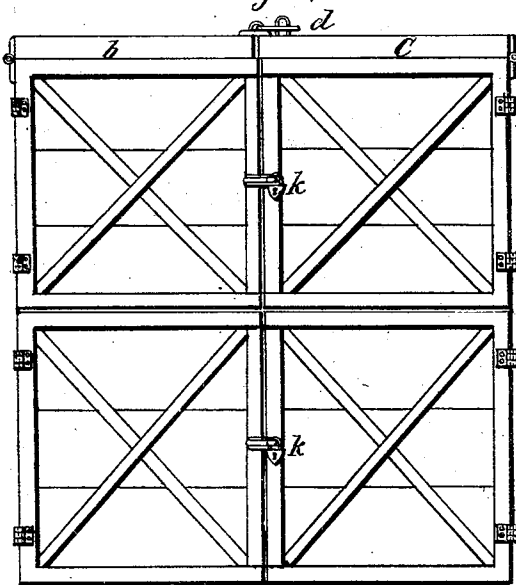
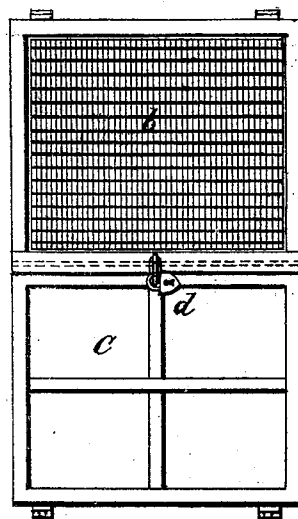


Fig. 3.



Witnesses

J. N. Campbell
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Fig. 5.



Inventor

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by
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UNITED STATES PATENT OFFICE.

ALEXANDER HEATHERINGTON, OF LONDON, ENGLAND.

IMPROVEMENT IN ORE-WASHERS.

Specification forming part of Letters Patent No. 152,227, dated June 23, 1874; application filed December 31, 1873.

To all whom it may concern:

Be it known that I, ALEXANDER HEATHERINGTON, of Fleet street, in the city of London, England, have invented Improved Apparatus for Washing Metals, Ores, or Precious Stones, of which the following is a specification, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a longitudinal section of the apparatus. Fig. 2 is an end elevation, Fig. 3 a plan, and Fig. 4 a side elevation, of the same. Fig. 5 is a plan of one of the supports for the plate.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to novel arrangements of apparatus for separating, by washing, substances of different specific gravities, and is especially applicable to washing metallic gold, silver, or platinum, or metallic ores, or precious stones, from the earthy matrix with which they are mixed.

The object of my invention is to construct the apparatus so that it may occupy but little space, that the parts may be readily accessible for examination, and removable, and that it may be readily locked and secured to prevent its contents from being stolen.

In the annexed drawing, *a* is a chest of wood, or wood and metal, into the upper part of which the substances to be washed are admitted with a sufficient stream of water through the grating *b*, which prevents any pieces of too great size from entering. They then pass down the inclined board *g*, through sieve *h*. The grating *b* only covers a part of the top of the chest, the remainder of which is closed by the hinged cover *c*, which is secured by the lock *d*. The grating *b* is fitted in a frame, which is also hinged and secured by the lock *d*. Within the chest *a* are arranged, one above the other, a series of movable inclined planes, *ffff*, resting upon supports of open metal-work, one of which is shown in plan at Fig. 5; or they may rest upon ledges, angle-pieces, or other suitable supports fixed within the chest. The inclined planes are arranged so as to slope alternately in opposite directions, and the angle of their inclination depending upon the available

quantity of water; and a space is left between the lower end of each and the end of the chest *a*, so that the water carrying the substances to be washed passes from the fine sieve *h* to the upper end of the highest inclined plane, down which it flows, and then drops upon the upper end of the next inclined plane, and so on until it has passed over all the inclined planes *ffff*, and it then escapes with the lighter or waste part of the substance through the opening *i*. The sides of the chest *a* are made hinged, as shown in Fig. 4, so that they can be readily opened for the purpose of cleaning or changing the inclined planes; and they are secured, when closed, by the locks *k k*, in the same way as the grating *b* and the cover *c*, so that the apparatus may be safely left without fear of the gold or other valuable substances deposited upon the inclined planes being stolen. The ends of the chest *a* may also be hinged and provided with locks, if desired.

The inclined planes *ffff* are shown arranged in a series of steps of varying size, overlapping each other in the direction of the stream; but they may be arranged so as to overlap in an opposite direction to that shown against the stream, so as more readily to arrest the metallic or other heavy particles which settle upon them.

The plates forming the inclined plane may consist of boards or trays of wood and metal, and some or all of them may be covered with blankets or hides, or may be of copper amalgamated with mercury where the apparatus is to be used as an amalgamator, in which case steam may be admitted through the opening *l* in cold weather. The chest *a* may be divided into two or more parts vertically, as shown by the dotted line in Fig. 2, in which case the inclined planes *ffff* are made in separate sets arranged on each side of such division, and where the apparatus is used as an amalgator the sides, ends, and bottom of the chest *a* are lined with amalgamated copper plates *m m m*.

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

1. The chest *a*, having the hinged grating *b*,

the hinged cover *c*, and the fastenings *d k k*, in combination with the inclined planes *f f f f*, substantially as and for the purpose described.

2. The inclined planes *f f f f*, arranged one above the other, and consisting of movable plates or boards arranged in steps, substantially as and for the purpose described.

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

ALEXANDER HEATHERINGTON.

Witnesses:

EDMUND EDWARDS,

CHARLES JAMES WINTERSILL.