

W. H. STANLEY.

RIFFLE-BOXES FOR CONCENTRATING ORES.

No. 187,193.

Patented Feb. 6, 1877.

Fig. 1.

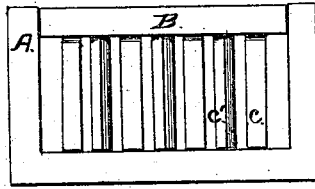


Fig. 2.

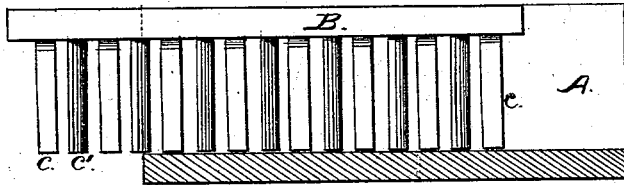
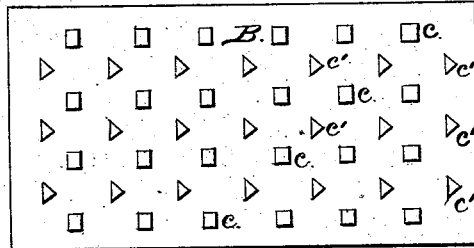


Fig. 3.



Witnesses:

Edward L. Adams

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Inventor:

William H. Stanley

Wm. Smith

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UNITED STATES PATENT OFFICE.

WILLIAM H. STANLEY, OF VIRGINIA CITY, NEVADA.

IMPROVEMENT IN RIFFLE-BOXES FOR CONCENTRATING ORES.

Specification forming part of Letters Patent No. **187,193**, dated February 6, 1877; application filed September 18, 1876.

To all whom it may concern :

Be it known that I, WILLIAM H. STANLEY, of Virginia City, in the county of Storey and State of Nevada, have invented a certain new and useful Improvement in Riffle-Boxes for Concentrating Ores containing the precious metals; and I do hereby declare that the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which my invention most nearly appertains to make and use the same.

This invention has for its object the separation of sands, débris, and worthless particles from comminuted wet ore, such as auriferous sands, sulphurets, &c.

It consists mainly of an oblong trough or flume, having a close cover or top, made flush with the top edges or sides of the trough. In this cover are placed pegs or pins, which extend downward to the bottom of the flume, which disrupt and break the flow of water which carries the ore and débris, and causes the heavier and richer particles to be deposited in the trough around the pins, and the lighter sands and worthless portion to pass off at the lower end of the flume, all of which will hereafter more fully appear.

Referring to the annexed drawings, and to the letters marked thereon, Figure 1 is an end view; Fig. 2, a longitudinal section; Fig. 3, a plain view of cover with pins in position.

A represents the flume or trough, provided with a smooth regular bottom and sides, within which is placed the movable cover B, flush with the top edges of the box. This cover is provided with a series of vertical pins or riffles, *c c'*, the upper ends of which extend up through the cover, while their lower ends rest upon the bottom of the box or flume. The riffles *c* are rectangular in cross-section, and placed crosswise of the cover at suitable intervals from end to end. The riffles *c'* are triangular in cross-section, and are placed between each of the rows of pins *c* with their

sharp angles up the stream or against the current, and so as to break joints or divide the space between the rectangular pins *c*, the first and last series being of the triangular form.

The operation will be as follows: The ore, with sufficient water being fed to the upper end of the box or flume, will impinge or strike against the triangular riffle *c'*, and be deflected or carried against the flat surface of the rectangular pins or riffles *c*, along the whole series, which will cause the heavier and valuable particles (the current being disrupted and retarded) to fall by gravity upon the bottom of the box or flume around the riffles, while the worthless and lighter particles will be carried down by the flow or current of water, and out at the lower end of the flume, leaving the valuable portions of the ore free from worthless matter.

In order to clean up, as it is called, the cover and riffles can be easily removed from the box or each series of boxes, as the flume can be extended to any desired length.

By this simple means much valuable ore can be concentrated and saved, which is now allowed to run to waste in the tailings from quartz-mills, &c.

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

A riffle-box for ore concentration, consisting of a flume or trough, having a flush-fitting cover, from which project rows of arresting pins or riffles, the pins of said rows being alternately triangular and rectangular in cross-section, and the several rows interspaced, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 4th day of September, 1876.

WILLIAM H. STANLEY. [L. S.]

Witnesses:

R. W. CHASE,
B. F. SMITH.