C. O. BAGLEY.
Mining Riffle.

No. 207,153. Patented Aug. 20, 1878.

Fig. 1.

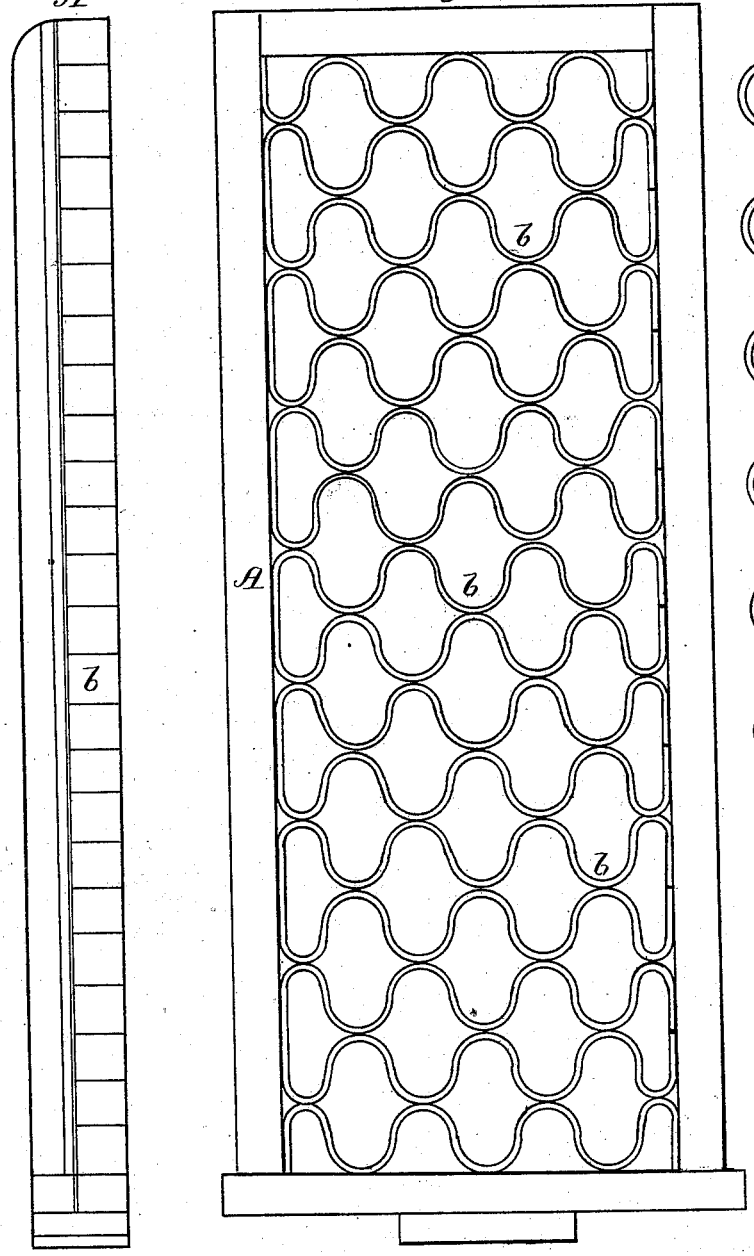
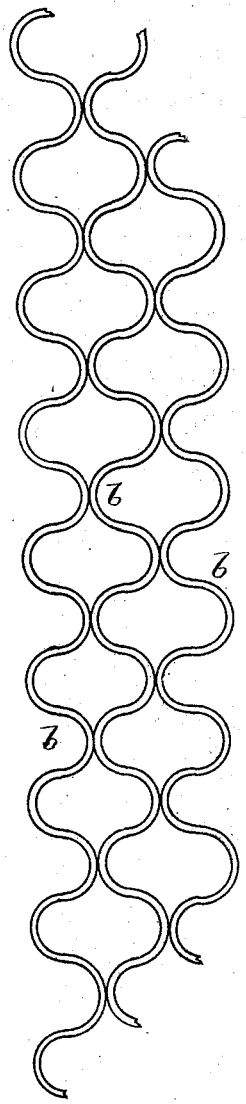


Fig. 2.



WITNESSES.
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UNITED STATES PATENT OFFICE.

CHARLES O. BAGLEY, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN MINING-RIFFLES.

Specification forming part of Letters Patent No. **207,153**, dated August 20, 1878; application filed March 21, 1878.

To all whom it may concern:

Be it known that I, CHARLES O. BAGLEY, of the city and county of San Francisco, in the State of California, have invented an Improvement in Mining-Riffles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to certain drawings accompanying this specification, and forming a part of the same.

My invention has reference to that class of mining apparatus in which riffle-bars or obstructions are used for arresting the particles of precious metal which attempt to pass over or through the apparatus. These riffle bars or plates are most usually placed on the bottom of a sluiceway or flume through which the auriferous material, mixed with water, is carried; but they are also used in some forms of concentrators and amalgamators. My riffle-bars are adapted for all of these uses.

The object of the present invention is to greatly simplify and cheapen the construction of these riffle-bars, and at the same time render them durable and effective for the purpose in arresting the particles of precious metals. The invention therefore consists in a series of independent bars or plates serpentine or zigzag in form, and placed parallel to each other, so that a net-work of cavities will be formed, as will be hereinafter described.

Referring to the accompanying drawings, Figure 1 is a plan of the sluice-section. Fig. 2 is a plan of the riffles placed longitudinally in the sluice. Fig. 3 is a side section of the sluice.

Let A represent a section of a sluice or trough through which auriferous material intermixed with water is to be carried.

b b b are the riffle plates or bars which are placed upon the bottoms of this class of mining apparatus for the purpose of arresting the heavy metallic particles, which, by their superior specific gravity, seek the bottom of the sluice or trough.

I prefer to make these riffle-bars of thin strips of metal; but when they are intended to serve simply as obstructing-riffles they can be made of other material. Usually I shall make them of copper, and amalgamate their surfaces with quicksilver, so as to convert them into amalgamated plates.

Each plate or bar I bend into a zigzag or serpentine form, as represented. I then place them upon the bottom of the sluice or trough, either transversely across it, in the usual way, or lengthwise in it, according to the character of the particles to be arrested.

The bends in the plates can either be made angular or on curved lines. In either case, if the plates be made to correspond with each other, a net-work of cavities will be formed when the riffle-plates are brought close together, as represented at Fig. 1. The riffles could, however, be placed at a short distance apart, so as to form a series of low zigzag dams or obstructions, each bend in which forms a backwater or eddy, in which the heavy particles will settle. In some instances I will place these serpentine plates longitudinally in the bottom of the sluice, as shown at Fig. 2, in which case they will cause the water to move in zigzag or serpentine lines from one end of the sluice to the other. In either case the arrangement provides a larger surface than if the plates were straight, which is a great advantage, especially when the surface is amalgamated.

The bends in the plates also serve to greatly strengthen them, and the simple manner of constructing the riffles by the series of plates bent in the form hereinbefore described, and arranged relatively to each other, greatly cheapens the construction of riffles for sluice-sections.

The sluice-section A, in the present instance, is provided with a copper bottom, which I shall also amalgamate, and the section is adapted to be either suspended, mounted on legs, or as a slide, and to have a longitudinal back-and-forth motion imparted to it by means of a cam or equivalent device, and a concussion at the end of its backward stroke or motion; but these devices have all been used before, and are not claimed in this application.

The net-work of cavities or pools formed by this construction and arrangement of the riffles insures the lodgment of all the metallic particles which are heavy enough to settle to the

bottom, and by regulating the inclination of the sluice and the quantity of water and material passing over it I can save even the fine particles that have heretofore been carried away by the water as float-gold.

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

The sluice-section consisting of the plates *b*, bent in a zigzag or serpentine form, as shown, and placed in relation to each other upon the bottom of the section, whereby a net-work of cavities is formed, substantially as and for the purpose specified.

In witness whereof I have hereunto set my hand and seal.

CHARLES O. BAGLEY. [L. S.]

Witnesses:

WILL B. SCHWARTZ,

J. V. DE VRY.