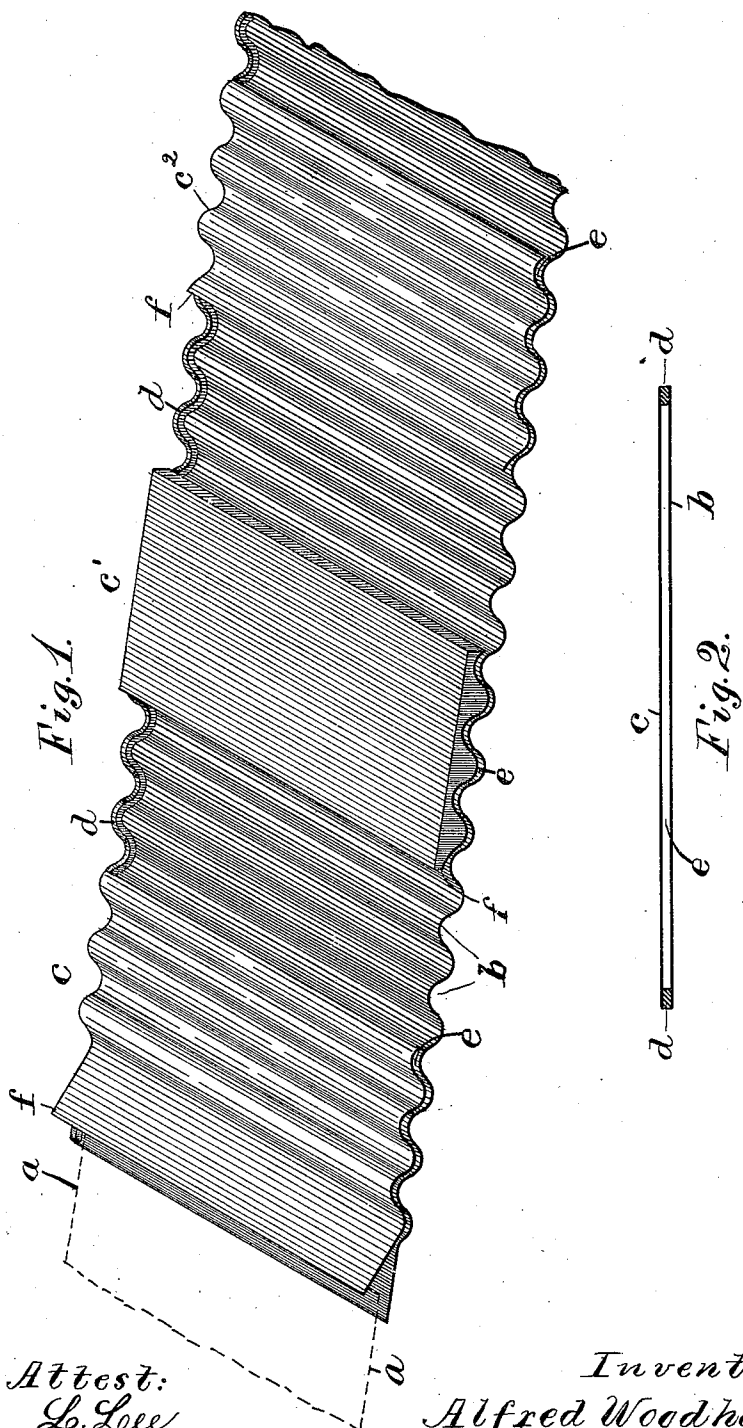


(No Model.)

A. WOODHOUSE.
AMALGAMATOR FOR FREE MILLING GOLD ORE.

No. 471,367.

Patented Mar. 22, 1892.



Attest:
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per Crane & Miller, Attys.

UNITED STATES PATENT OFFICE.

ALFRED WOODHOUSE, OF BREMGARTEN, WOKING, ENGLAND, ASSIGNOR OF
ONE-HALF TO WILLIAM LINN ALLEN, OF NEWARK, NEW JERSEY.

AMALGAMATOR FOR FREE-MILLING GOLD ORE.

SPECIFICATION forming part of Letters Patent No. 471,367, dated March 22, 1892.

Application filed November 25, 1891. Serial No. 413,072. (No model.)

To all whom it may concern:

Be it known that I, ALFRED WOODHOUSE, a subject of the Queen of Great Britain, residing at Bremgarten, Woking, Surrey county, England, have invented certain new and useful Improvements in Amalgamators for Free-Milling Gold Ore, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to provide a simple and effective means of obviating the loss of gold from gold washing or amalgamating apparatus and to provide, also, an apparatus which may be readily cleaned from the gold and amalgam; and it consists, essentially, in the combination, with a transversely-corrugated bed, of a removable cover similarly corrugated upon its under side and supported a little above the same to form a narrow bent channel with amalgamated walls, through which the refuse fluid from the washer or tailings from the battery are conducted and against the walls of which it repeatedly impinges in its passage through the same.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a perspective view with the strip *d* removed from one edge of the bed, and Fig. 2 is a transverse section of the bed through both strips.

a represents the lower end of the chute, by which the refuse fluid from the gold-washer or tailings from the battery are discharged upon upon the upper end of the bed or plate *b*. The plate or bed is shown formed of sheet metal, as copper electroplated, corrugated uniformly transverse to the plate, and several covers *c c' c²* are shown supported a little above the surface of the plate by lateral strips *d*. The covers are made of sheet-copper *c*, corrugated the same as the plate *b*, with their ridges inserted in the grooves in the plate *b*, thus forming narrow bent channels *e* transversely to the plate. Instead of sheet-copper the cover may be formed of a solid block of metal, as shown at *c'* in Fig. 1, with its under surface corrugated to fit the grooves. The strips *d* are preferably formed of india-rub-

ber, which is adapted to bend transversely into the ends of the grooves over which the covers are applied, and serves also as a packing to prevent leakage at the edges of the plates. The entire surface of the plate *b* and the under sides of the covers are amalgamated, and the fine particles of gold suspended or floating in the fluid are caught and retained by such surfaces as the fluid presses alternately against the upper and lower sides of the channels *e* in its movement through the same. The upper edge *f* of each cover is bent or curved outwardly from the plate to form a tapering mouth to the channel *e*, and the plate *b* is inclined sufficiently—as one foot in six—to drive the water freely through such channels, carrying the sand or other refuse with it.

The construction shown herein enables me to form both the bed and the cover of commercial sheets of copper having uniform corrugations from two to three inches apart, and the covers are set from one-quarter to one-third of an inch from the contiguous surface of the plate *b*, the proportions being varied to suit the character of the refuse fluid received from the chute *a*. The covers are in practice held in place merely by their own weight, and may be readily grasped by the upturned edge *f* and lifted from the plate or bed *b* whenever it is desired to clean the gold or amalgam from the surfaces.

The number of covers applied to the riffle-plate may be varied in accordance with the character of the refuse fluid or tailings, and it has been found that in most cases it is necessary to preserve the channel *m* of uniform width or cross-section throughout, as shown in the covers *c c'*, to maintain a uniform velocity in the current, and thus prevent the sand or sediment from settling in the grooves and clogging up the channel. I find that if the corrugated plates are given exactly twice the drop or pitch that is given to the ordinary flat plates they will clear themselves of sand.

Having thus set forth the nature of the invention, what is claimed herein is—

1. In a riffle-plate, the combination, with the uniformly and transversely corrugated bed *b*, of a similarly-corrugated removable

cover supported over the bed and a little above the same, as and for the purpose set forth.

2. In a riffle - plate, the combination, with
5 the transversely-corrugated bed *b*, of the flexible strips *d*, applied to its edges, and a series of sheet-copper covers corrugated similarly to the bed and supported upon such strips, as and for the purpose set forth.

In testimony whereof I have hereunto set to my hand in the presence of two subscribing witnesses.

ALF. WOODHOUSE.

Witnesses:

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