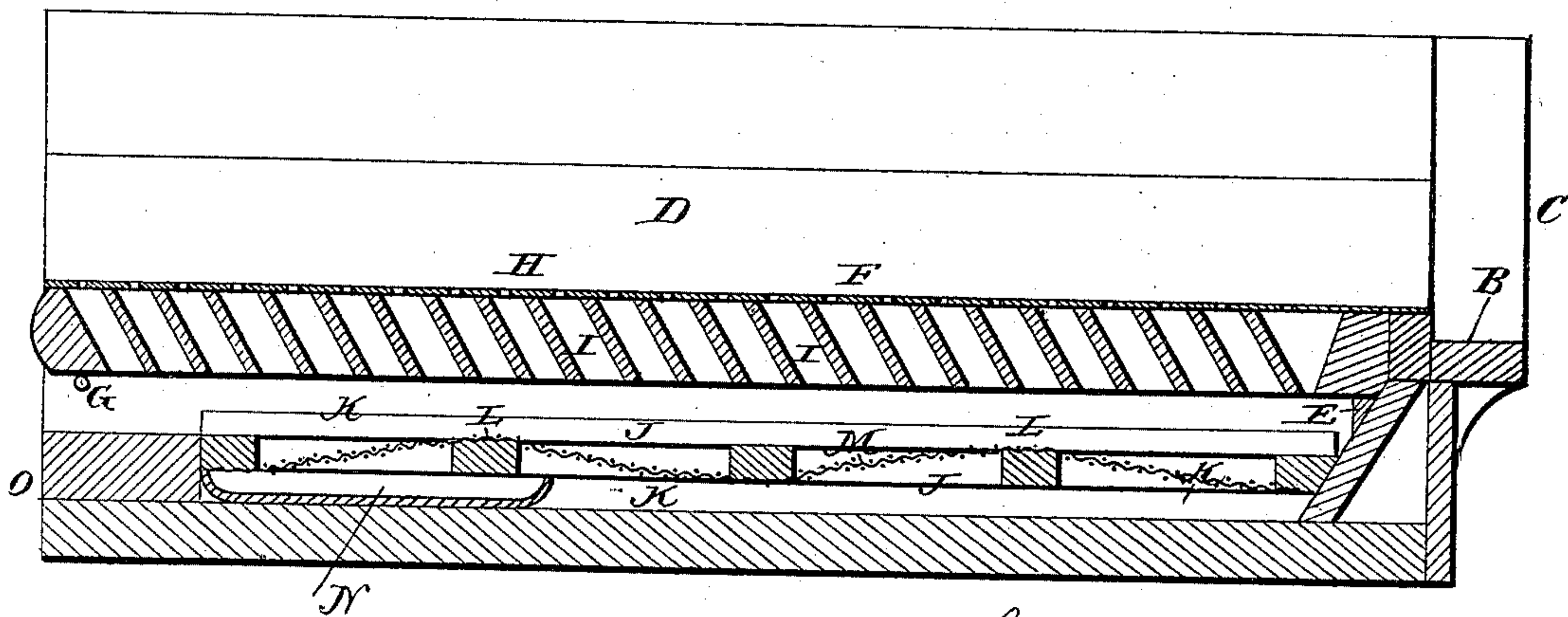
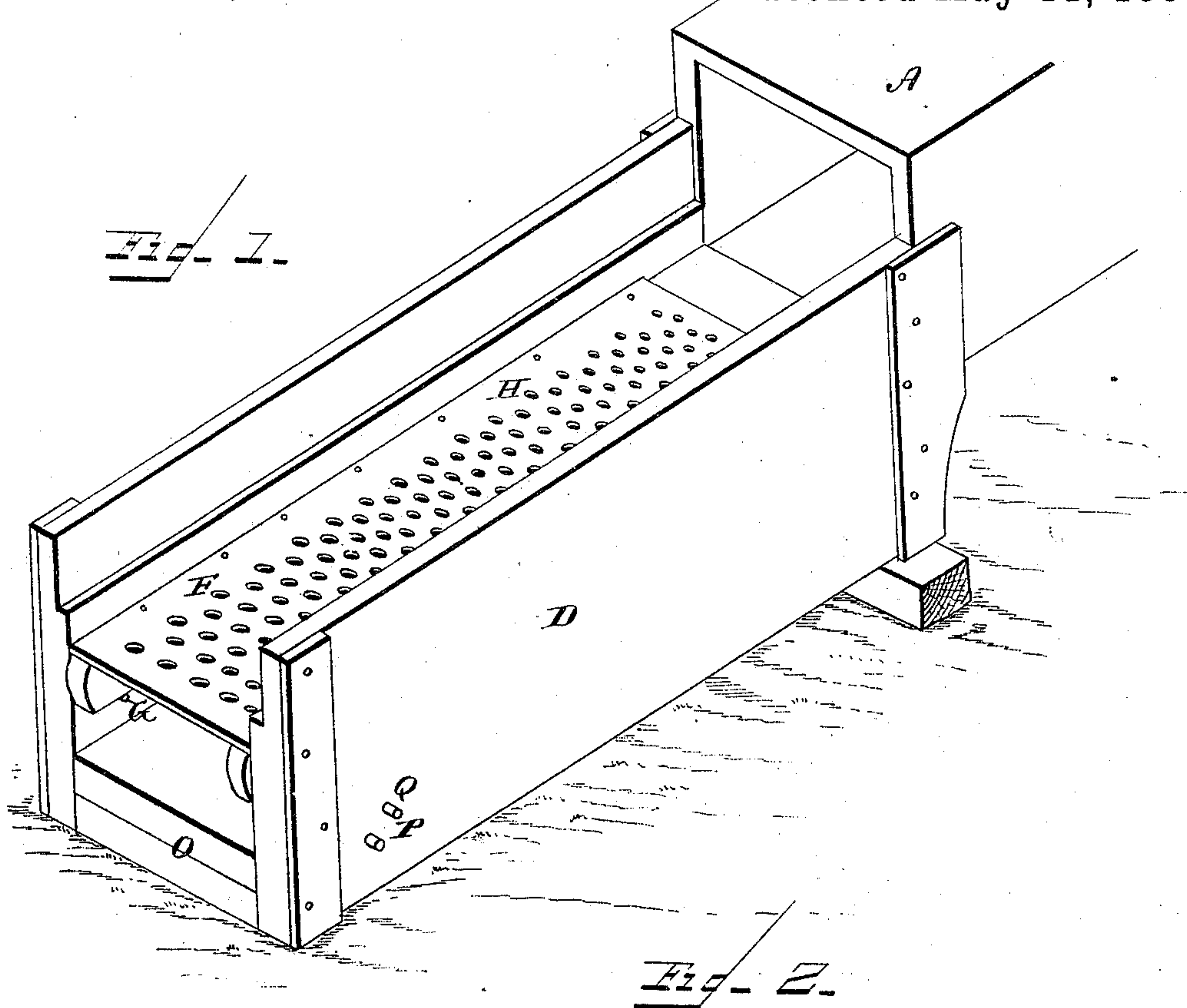


(No Model.)

S. S. & C. L. HELLER.  
GOLD WASHING APPARATUS.

No. 341,750.

Patented May 11, 1886.



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# UNITED STATES PATENT OFFICE.

SIMON S. HELLER AND CALVIN L. HELLER, OF BOULDER, COLORADO.

## GOLD-WASHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 341,750, dated May 11, 1886.

Application filed December 10, 1885. Serial No. 185,238. (No model.)

*To all whom it may concern:*

Be it known that we, SIMON S. HELLER and CALVIN L. HELLER, both residents of Boulder, in the county of Boulder and State of Colorado, have invented certain new and useful Improvements in Gold-Washing Apparatus; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which--

Figure 1 is a perspective view of a portion of a flume provided with our improved apparatus for saving gold and quicksilver in placer or hydraulic mining, showing a portion of the box broken away; and Fig. 2 is a longitudinal vertical sectional view of the same.

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

Our invention has relation to gold-washing apparatus, and more especially to apparatus for saving gold or quicksilver which may not be collected in the flumes in apparatus for placer or hydraulic mining; and it consists in the improved construction and combination of parts of such an apparatus, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the end of the flume, through which the water containing the gold-bearing dirt is carried, and the end of this flume rests upon a step, R, formed at the closed end, C, of a long box, D, which is open at its discharge end and closed for the greater part of its feed end. The feed end, or the end at which the water passes from the flume, is slightly raised above the discharge end, and the inner side of the closed end of the box is formed with a step, E, upon which one end of a screen, F, rests, which screen has its upper surface level with the upper edge of the end piece of the box, while the other end of the screen rests upon lugs G in the inner sides of the side pieces of the box, the upper portions of these side pieces projecting considerably above the surface of the screen.

The screen consists of a top plate, H, of perforated sheet metal or woven wire and of a number of transverse slats, I, having their

lower edges inclined toward the closed end of the box, so that water, sand, gold, and quicksilver which will pass through the top screen will be forced toward the closed end of the box against the upper current of water, and all material passing through the screen will fall upon a screen, J, having longitudinal side slats, K K, which rest upon the bottom of the box and raise it above the same, and having a number of cross-pieces, L, over which the gauze covering M of the screen is passed in a zigzag line, the said gauze being secured at the ends and side pieces of the screen-frame and presenting an undulating surface, with the cross-pieces projecting across the upper surface at the lowest places of the said surface. A pan, N, is placed in the lower end of the box, resting against a sill, O, at the bottom of the open end, against which sill the gauze screen also bears with its end. The sides of the box at the open end are formed with perforations P near the bottom, which perforations are provided with plugs Q, fitting removably in the same. The open end of the box opens into any suitable chute or flume, which may carry the water and washed dirt away. It will be seen that as the water carrying the gold-bearing dirt enters the upper end of the box, a portion of the water and the heavy black sand, gold, and quicksilver will pass through the upper screen, and, striking the inclined slats, will be thrown toward the closed end of the box, and the fine gold and quicksilver will pass through the gauze screen and be collected in the amalgamating-pan at the bottom of the box. The coarser particles of gold will remain upon the gauze covering of the lower screen, and the black sand and water may at times be drawn off through the perforations in the side of the box by removing the pins. The undulating surface of the gauze screen will serve to catch and hold all particles of mineral falling upon it, preventing them from being washed away, and the cross-pieces upon the upper surface of the said screen will serve to catch and retain all particles too coarse to pass through the screen.

This apparatus is especially designed for being placed at the ends of the flumes used in placer or hydraulic mining, for the purpose of collecting all gold or quicksilver which may



have been washed over the cross-strips in the sluices, thus preventing any possible waste of either gold or quicksilver, which otherwise may take place in this kind of mining, but it follows that the apparatus may also be used for washing the gold-bearing dirt without first having removed the greater part of the gold in sluices, when one box of sufficient length may be used, or a number of boxes, one placed below the discharge end of the other and washing the dirt passing from the other.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a gold-washing apparatus, the combination, with a box closed at one end and open at the other and slightly raised at its receiving end, of an upper screen having a perforated top plate and a number of transverse and rearwardly-inclined slats, a gauze screen at the bottom of the box, and a pan beneath said gauze screen, as and for the purpose shown and set forth.

2. In a gold-washing apparatus, the combination, with a box having an upper screen, of a lower screen consisting of side pieces connected by a number of cross-pieces placed at a distance from each other, and a gauze covering passed under and over the said cross-

pieces, forming an undulating surface, as and for the purpose shown and set forth.

3. In a gold-washing apparatus, the combination of a box slightly raised at its receiving end, and having the said end partly closed, and having a cross-sill at the bottom of the discharge end and perforations provided with removable plugs in the sides of the said end near the bottom, an upper screen having a perforated top plate and transverse rearwardly-inclined cross-slats under the perforated top plate, the said screen having its surface level with the upper edge of the end piece of the closed end, a screen supported above the bottom of the box and having cross-pieces, and a gauze covering passed over and under the said cross-pieces, and an amalgamating-pan resting upon the bottom of the box at the lower end of the same, as and for the purpose shown and set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

SIMON S. HELLER.  
CALVIN L. HELLER.

Witnesses:

H. E. ROWLAND,  
I. T. GUINN.