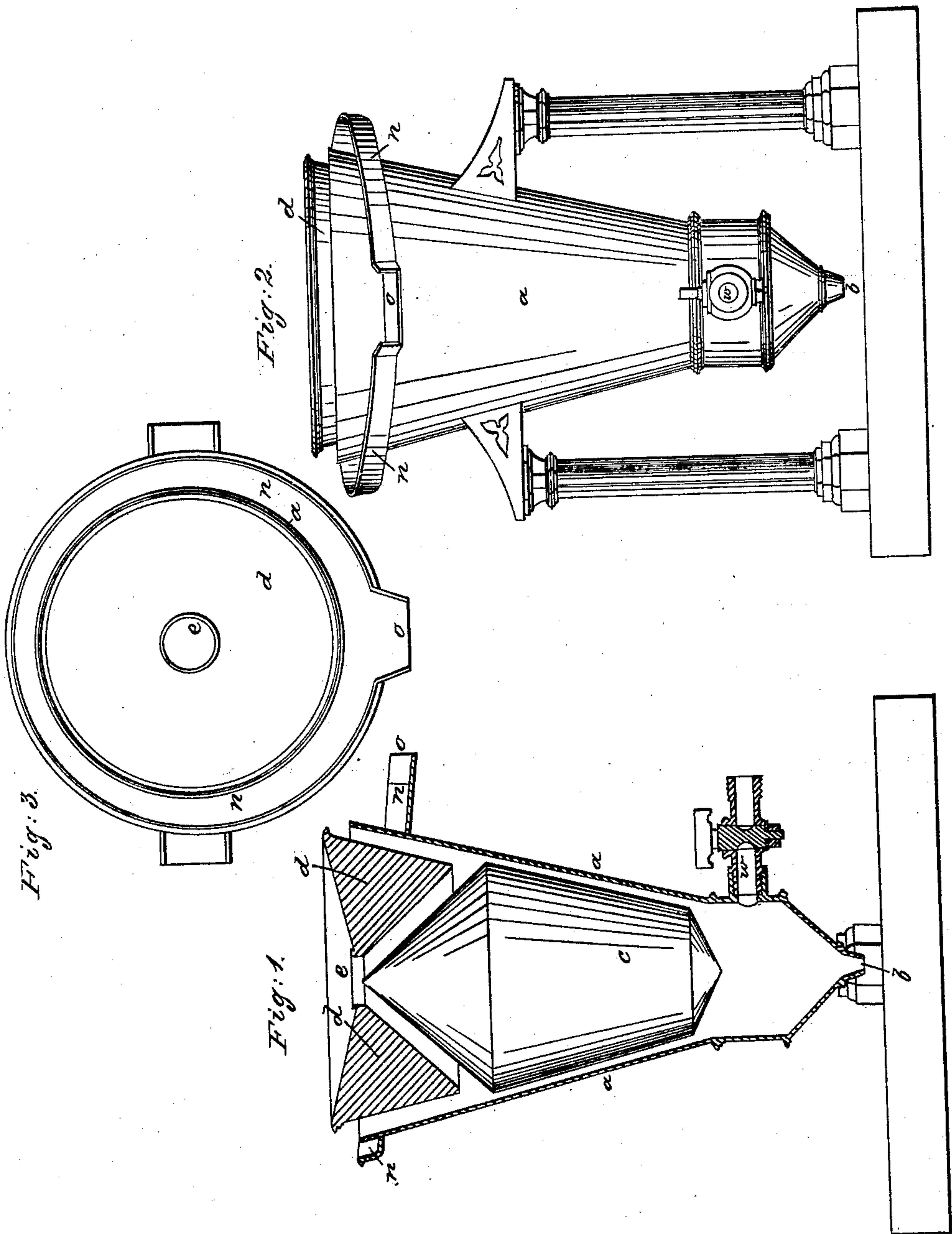


L. STADTMULLER.

Ore Separator.

No. 22,138.

Patented Nov. 23, 1858.



UNITED STATES PATENT OFFICE.

L. STADTMULLER, OF BRISTOL, CONNECTICUT.

ORE-SEPARATOR.

Specification of Letters Patent No. 22,138, dated November 23, 1858.

To all whom it may concern:

Be it known that I, L. STADTMULLER, of Bristol, Connecticut, have invented certain new and useful Apparatus for Sizing Ores from the Mine, which I denominate a "Hydraulic Ore-Sizing Apparatus;" and I do herein describe and ascertain my said invention, referring to the accompanying drawing, in which—

Figure 1 is a vertical section showing the interior of the machine. Fig. 2 is an exterior elevation. Fig. 3 is a top plan.

My invention so operates as to separate the lighter from the heavier portions of crushed ore by projecting said ore into an upward current sufficiently strong to bear upward the lighter portions of the ore while the heavier are allowed to subside downward through the ascending current and pass off below, the operation being continuous and easily controlled and regulated.

The construction of my apparatus is as follows:

I form a truncated conical case with the cone inverted the bottom part of which is for a little space cylindrical as seen in the drawing and this is terminated by an obtuse conical bottom in the center of which is an aperture.

a is the case; b , the opening in the bottom. Within this case a there is an inverted truncated cone c which leaves an annular space all around so proportioned as to have the area equal from bottom to top. The space at bottom being smaller in circumference is greater in radial dimension than at the top. This central cone terminates at both ends in an obtuse cone, as clearly illustrated, and above it there is an annular deflector d the upper and under side of which are concaved in conical form with a hole at e through the center. There is a space between this annulus d and the sides of the case a somewhat larger than the space below and proportioned to it and to the space be-

tween the annulus d and the cone below so that the currents will be equalized in their motion.

Near the bottom of the case a in the cylindrical part there is an opening to which a water pipe w , is affixed. This pipe has a larger area than the aperture in the bottom so as to produce the strongest current upward that I ever require when a full stream the size of the pipe is let on. This is regulated at will by a stop-cock p in the pipe w . The top of the annulus d projects up above the top of the case so that all the material driven upward will flow over the edge of the case a . This is surrounded by a trough in an inclined position at n, n , a little below the top so as to catch the overflow and convey it off through its spout on the lower side at o .

The operation of this apparatus is as follows: The ore with a quantity of water is let in upon the annulus d and descends through the center aperture e , whence it spreads all around over the conical base of c , descending through the space f , to the sides of the case, where it meets a current of water flowing upward, which separates the ore, carrying up the lighter portions of the ore and allowing the heavier ores to descend against the current—by which the sizing is perfectly effected. When the head of water is equal I can dispense with the regulating cock and regulate the current by shifting the cones.

Having thus set forth my apparatus what I claim therein as new and for which I desire to secure Letters Patent is—

The apparatus herein described for sizing ores constructed and arranged substantially as herein specified.

L. STADTMULLER.

Witnesses:

EDMOND GOODMAN,
SAMUEL P. NEWELL.