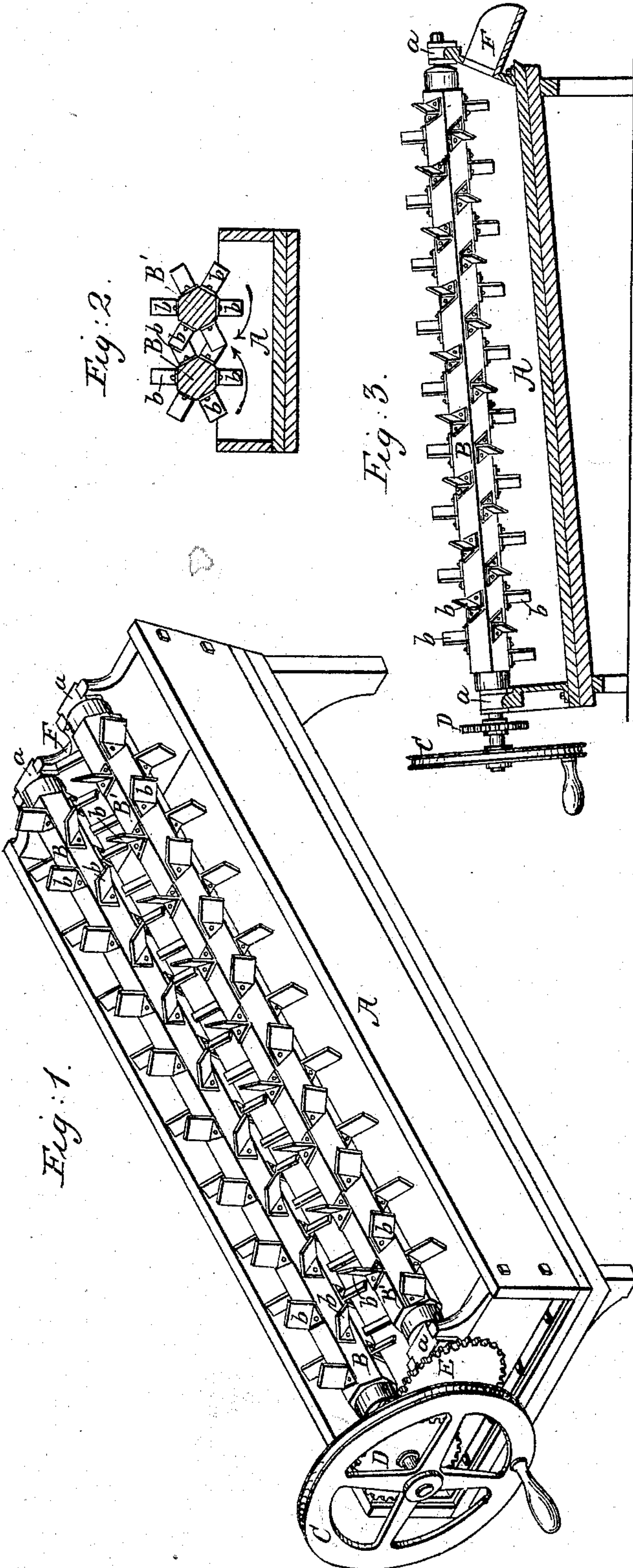


## Ore Washer.

No. 15,827.

**Patented Sept. 30, 1856.**





# UNITED STATES PATENT OFFICE.

SAML. THOMAS, OF ALLENTOWN, PENNSYLVANIA.

## ORE-WASHER.

Specification of Letters Patent No. 15,827, dated September 30, 1856.

*To all whom it may concern:*

Be it known that I, SAMUEL THOMAS, of Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain  
5 new and useful Improvements in Machines for Washing Iron Ores; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings,  
10 making a part thereof, in which—

Figure 1 represents a perspective view of the entire machine. Fig. 2 represents a vertical cross section through the machine, and Fig. 3 represents a longitudinal section  
15 through the same.

Similar letters of reference where they occur in the several figures denote like parts of the machine in all.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A, represents a long box or trough standing at an inclination, as shown in Fig. 3. In sliding boxes *a, a* in the end pieces of this trough A are supported the journals of two shafts B, B', so that said shafts may rise with the bearings when necessary, their own weight tending to hold them down.  
30 A pulley or drive wheel C, is placed on the end of one of the shafts (B), through which motion may be communicated to said shaft from any first mover. A gear wheel D, is also placed on the shaft B, which meshes  
35 with a similar gear E, on the shaft B', so that the two shafts shall have a rotation as shown by the red arrows, Fig. 3. Both of the shafts B, B', are provided with obliquely arranged projections or sectional spiral  
40 flanges *b*, which stand and move across each other's path, so as not only to carry the ores from the lower to the more elevated end of the trough, but also to lift up in a vertical line the ores, with their clay, sand, or other  
45 impurities, and loosen up the mass, so that the water with which the trough is sup-

plied may better penetrate, wash, and separate the ore from the other impurities. At the more elevated end of the trough is a spout or conductor F, into which the washed  
50 ore is carried, and from whence it drops into any suitable place, the clay, sand, and other material remaining with or passing off with the water out of the trough. The material to be washed is thrown into the trough at  
55 its lowest end, said trough being filled with water. The material is lifted up and carried forward at the same time by the flanges *b*, entirely separating the ore from the other material with which it is mixed, said flanges  
60 being so arranged that after one set carries up the material and drops it onto the next succeeding set it will be carried horizontally toward the delivery end of the trough, and the whole mass becomes thoroughly loosened  
65 up as it is carried forward and perfectly washed from all clayey matter, which remains behind in the water. Any number of these pairs of carrying shafts can be used, and they can be driven by belt, gear, or in  
70 any other way so that they turn toward each other at their lower portions and from each other above their axes.

Having thus fully described the nature of my invention, I would state that I am aware  
75 that an inclined revolving vessel has been used in washing ores and that a single shaft provided with shovels and spiral flanges has also been used. I do not claim either of these things, separate or combined, but  
80

What I do claim as new and desire to secure by Letters Patent is—

In combination with a stationary inclined box, the double shafts with spiral flanges thereon, and turning in opposite directions,  
85 for lifting up, and carrying forward the ores to the delivery, in the manner set forth.

SAMUEL THOMAS.

Witnesses:

A. B. STOUGHTON,  
E. COHEN.