G. LAUDER.

ORE WASHERS AND SEPARATOR.

No. 182,764. Patented Oct. 3, 1876.

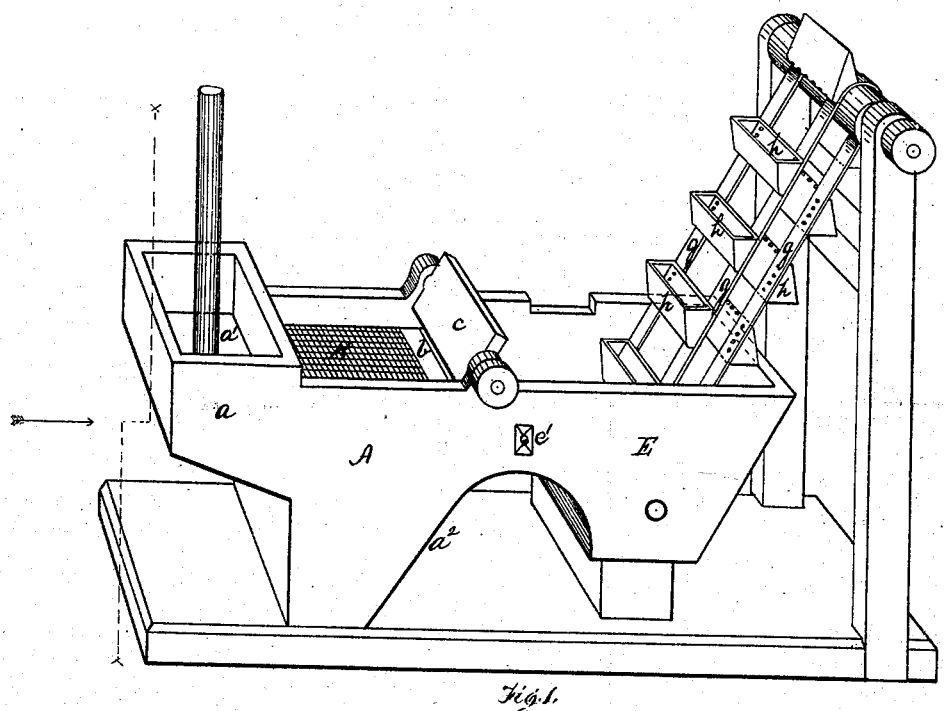

Fig. 1.

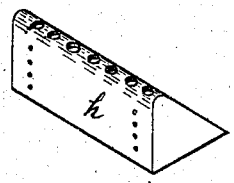

Fig. 3.

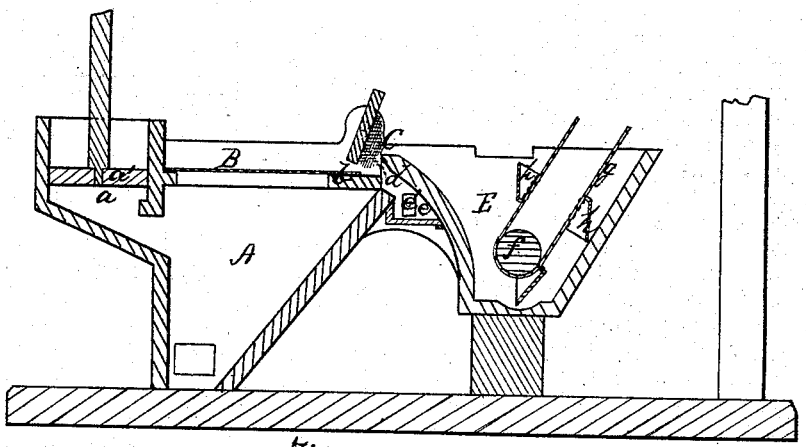

Fig. 2.

Witnesses.

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GEORGE LAUDER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN ORE WASHERS AND SEPARATORS.

Specification forming part of Letters Patent No. **182,764**, dated October 3, 1876; application filed July 20, 1876.

To all whom it may concern:

Be it known that I, GEORGE LAUDER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Devices for Washing Slack, Ores, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a perspective view of apparatus embodying my invention, and Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a detached view of a perforated bucket.

Like letters refer to like parts wherever they occur.

My invention relates to that class of apparatus employed for washing coal or slack, separating ore, and like purposes.

Though adapted for the washing of ores, coal, and like substances, my apparatus has been devised with especial reference to the washing of coal-slack, for the removal of slate, pyrites, and like impurities.

I will now proceed to describe my invention, so that others skilled in the art to which it appertains may apply the same.

In the drawing, A is a tank or reservoir, provided with a piston-chamber, *a*, and piston a^1. This tank is preferably formed with an inclined side, as at a^2, to facilitate the settling of any heavy matters held in the tank-water, and may be provided with a man-hole for cleaning the tank, when necessary. Across the upper part of tank A is arranged a screen or perforated plate, B, which extends to within a short distance of the overflow C, where it connects with a "baffle" or dead-plate, *b*. This baffle or dead-plate *b* may be a separate plate, as shown, or may be formed by leaving unperforated a portion of plate or screen B. C indicates the overflow of tank A. Above and slightly back of overflow C is journaled a revolving paddle or sweep, *c*, the shaft of which may be provided with a pulley. Just below the overflow C, or on line with the baffle-plate, is a slot or opening, *d*, leading into a pocket, *e*, provided with a gate, *e'*. E is a tank, placed in line with tank A, to receive the overflow therefrom, but so arranged as not to be affected by the agitation of the water in tank A. This I term the settling-tank. In the bottom of the settling-tank is arranged a pulley, *f*, around which passes an endless belt, *g*, to which are secured a series of perforated buckets, *h*, for removing the contents of tank E. The power for operating the piston or plunger, the sweep, and the elevator may be obtained and applied in any of the well-known ways.

The operation of my devices is as follows: The plunger a^1 is reciprocated, thereby imparting an impulse to the water in tank A, causing it to alternately rise and fall through screen B. The slack or like material to be washed and separated is then fed upon screen B, and, as it is agitated by the water, the slack and like heavier substances will arrange themselves next the screen, while the coal-slack and lighter impurities will be carried forward and accumulate near the overflow C. But, in order to get rid of the pyrites and fine slate, which are too light to fall in the strong current over the screen, and yet are heavier than the fine coal, the baffle or dead-plate is arranged near the overflow. This arrests the wave or force of the water, and allows the lighter impurities to settle and be carried into pocket *e*, whence they can be removed, from time to time, through gate *e'*. The fine coal or washed slack which accumulates at the overflow is swept into settling-tank E, which contains still-water, by means of the sweep *c*. In tank E the whole of the coal-slack, including the finer and lighter particles, is caught and saved, and may be removed by the perforated elevator-buckets or in other suitable manner.

The advantages of my apparatus are the rapidity with which coal-slack may be washed, the effective manner in which even the lightest impurities are eliminated, and the increased yield from saving the finer particles of slack which have heretofore been lost in the overflow.

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

1. In an ore or coal washer and separator of the class specified, the combination of the baffle-plate and the sweep, arranged relatively to the overflow, substantially as and for the purpose specified.

2. In an ore or coal washer and separator of the class specified, the jigger-tank, provided with the baffle-plate and sweep, arranged at the overflow, and in combination with the settling-tank, substantially as and for the purpose specified.

In testimony whereof I, the said GEORGE LAUDER, have hereunto set my hand.

GEORGE LAUDER.

Witnesses:
JAMES I. KAY,
F. W. RITTER, Jr.