J. F. BALDWIN.

Ash-Sifters.

No. 148,650. Patented March 17, 1874.

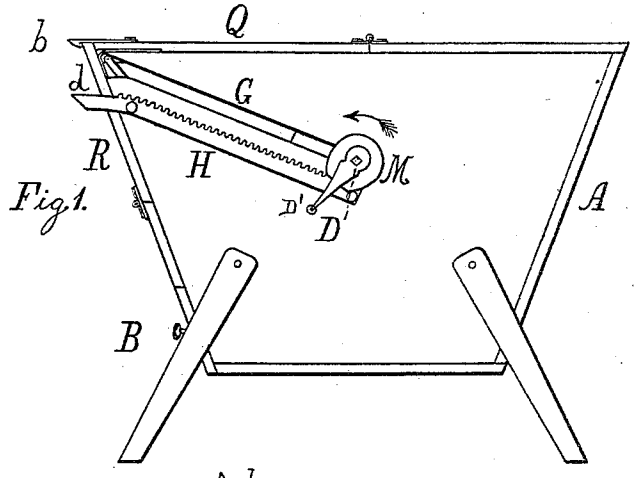

Fig. 1.

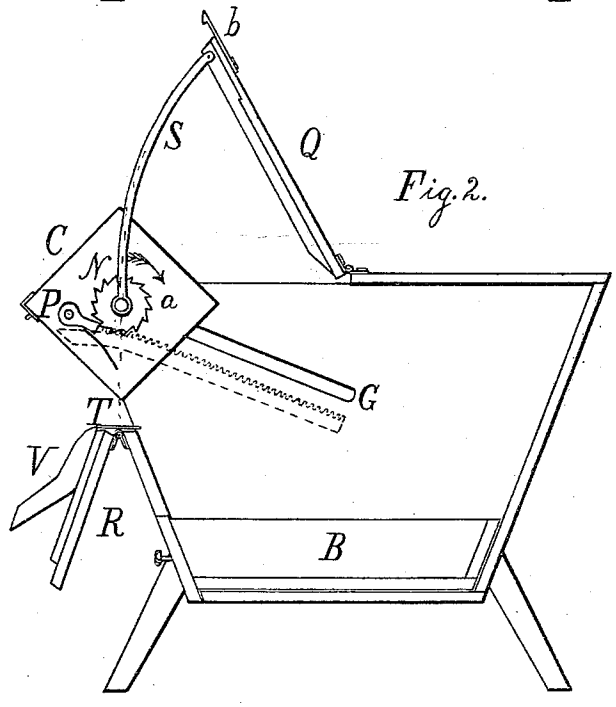

Fig. 2.

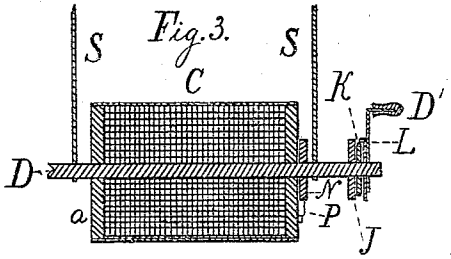

Fig. 3.

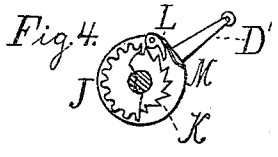

Fig. 4.

Witnesses.

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IMPROVEMENT IN ASH-SIFTERS.

Specification forming part of Letters Patent No. **118,650**, dated March 17, 1874; application filed February 9, 1874.

To all whom it may concern:

Be it known that I, JOSEPH F. BALDWIN, of the city, county, and State of New York, have invented a new and useful Improvement in Sifters for Ashes, Coal, &c.; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a side elevation of the device embodying my invention. Fig. 2 is a similar view, showing the interior thereof. Fig. 3 is a transverse section of a portion in line *x x*, Fig. 2. Fig. 4 is a view of a detached part.

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

This invention relates to a rotary sifter, which is adapted to be operated within a box or casing, and then withdrawn therefrom for removal of its contents. It consists in mechanism for causing the withdrawal of the sifter from the box or casing, and its subsequent return thereinto. It also consists in mechanism for causing the rotation of the sifter without causing the withdrawal thereof from the box, and subsequently preventing the rotation of the sifter during withdrawal. It also consists in automatically opening and closing the upper lid of the box by the withdrawal and return motion of the sifter therefrom. It also consists in an end door, which opens automatically when the top lid is raised by the withdrawal of the sifter. It also consists in means for preventing the clogging of the joint and hinges of the end door.

Referring to the drawings, A represents a box or casing, which is of suitable form and construction, and has in its lower portion a drawer, B, for the reception of the siftings from the rotary sifter C, which consists of a body of netting or sieve-work, secured to heads *a a*, through which passes freely a shaft, D, whose bearings are in diagonal slots G, formed in the sides of the box or casing A. Secured to the sides of the box A, below the diagonal slots G, are racks H, which also extend diagonally, and with which engage pinions J, secured to the shaft D, which is operated by a crank, D′. Ratchet-wheels K are arranged aside of the pinions J, and fixed to the same shaft D, and pawls L are adapted to engage with the ratchets K, said pawls being jointed to disks or arms M, which are secured to the shaft D. A ratchet, N, is secured to the shaft D, and arranged next to one of the heads *a* of the sifter C, so as to be engaged by a pawl, P, which is jointed to said head. Q represents a lid, which swings upwardly from one end of the top of the box A, and R represents a door, which swings outwardly and downwardly from one side or end of the said box, the lid and door meeting each other at an upper corner of the box, and held by a catch, *b*, suitably applied. To the upper lid Q there are jointed arms S, whose lower ends are fitted loosely on the axis or shaft D, at the sides of the sifter C. The door R falls by gravity, and the joint between the hinged end of said door and adjacent portions of the box A will be covered by a plate, T, for preventing clogging of said joint and the hinges thereof. V represents a chute, which is secured to door R, and so arranged that coal, ashes, &c., discharged from the sifter C, will be directed away from the bottom of the lid when opened. The side of the net-work of the body of the sifter that will be lowermost when the sifter is at rest should be strengthened by a lining or covering, to prevent injurious effects due to the weight of the contents of the sifter.

The operation is as follows: In order to fill the sifter with the article to be sifted, it must be removed from the box or casing A. To accomplish this, the crank is turned in the direction of the arrow, Fig. 1. By the engagement of the pinions J with the racks H, a forward motion is given to the shaft D, and consequently to the sifter C, whereby the latter is withdrawn from the box A, and assumes the position shown in Fig. 2. It will be seen that when the sifter makes its advance movement the arms S are elevated, owing to the ascent of the shaft D in the diagonal slots H. This frees the door R from the catch *b*, and permits it to fall. At the same time the lid Q is raised or opened. The lid of the sifter may now be opened, and coal, ashes, or other article to be sifted is thrown into the sifter, the lid of the sifter being then closed. The crank D′ is now

rotated in the direction of the arrow, Fig. 2, whereby the sifter returns into the box A, and the lid Q is lowered. The door R is then closed, and held by the catch *b*. By continuing the rotation of the crank D′, the sifter will be properly rotated. The siftings drop into the drawer B, from whence they can be removed in a manner readily perceptible. After the sifting is finished, the contents of the sifter may be discharged, to accomplish which I operate the crank D′ in the direction of the arrow in Fig. 1, whereby the sifter is again withdrawn or exposed, as shown in Fig. 2, and after the lid is opened, the contents are accessible.

It will be noticed that the sifting operation is performed within the box A. While the sifter is being withdrawn, the ratchet N, which is next to the head *a* of the sifter, owing to the direction of rotation of the shaft D′, does not engage with the pawl P, whereby the shaft rotates, and the sifter, fitting loosely on said shaft, is carried out of the box without rotation; but when the sifter is returned into the box, the direction of rotation of the shaft D causes an engagement of the pawl and ratchet, whereby the sifter rotates with the shaft, and the sifting is only accomplished as the sifter enters the box and occupies its position therein, and the sifting continues as long as the shaft D is rotated in the direction last stated, the same being indicated by the arrow, Fig. 2.

The bars constituting the rack H will have their outer ends formed without teeth, as at *d*; so that when the sifter is fully withdrawn, and the shaft D rests on the extreme outer ends of the slots G, the teeth of the pinions J will be disengaged from the racks H, whereby the handling of the sifter for discharge of its contents is more readily performed.

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

1. The sifter C, with shaft D, the racks and pinions H J, and the box or casing A, with slots G, combined and operating as set forth.

2. The combination with the sifter C, and the shaft D fitted loosely thereto, of the two ratchets K N and the two pawls P L, applied and operating substantially as and for the purpose set forth.

3. The lid Q, automatically opened and closed by the withdrawal and return motions of the sifter C, substantially as and for the purpose set forth.

4. The gravitating end door R, connected to the lid Q, and released therefrom by the raising of said lid, due to the withdrawal of the sifter, substantially as and for the purpose set forth.

5. The plate T, applied in relation to the joint of the end door R and the box or casing of the sifter C, substantially as and for the purpose set forth.

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