

(No Model.)

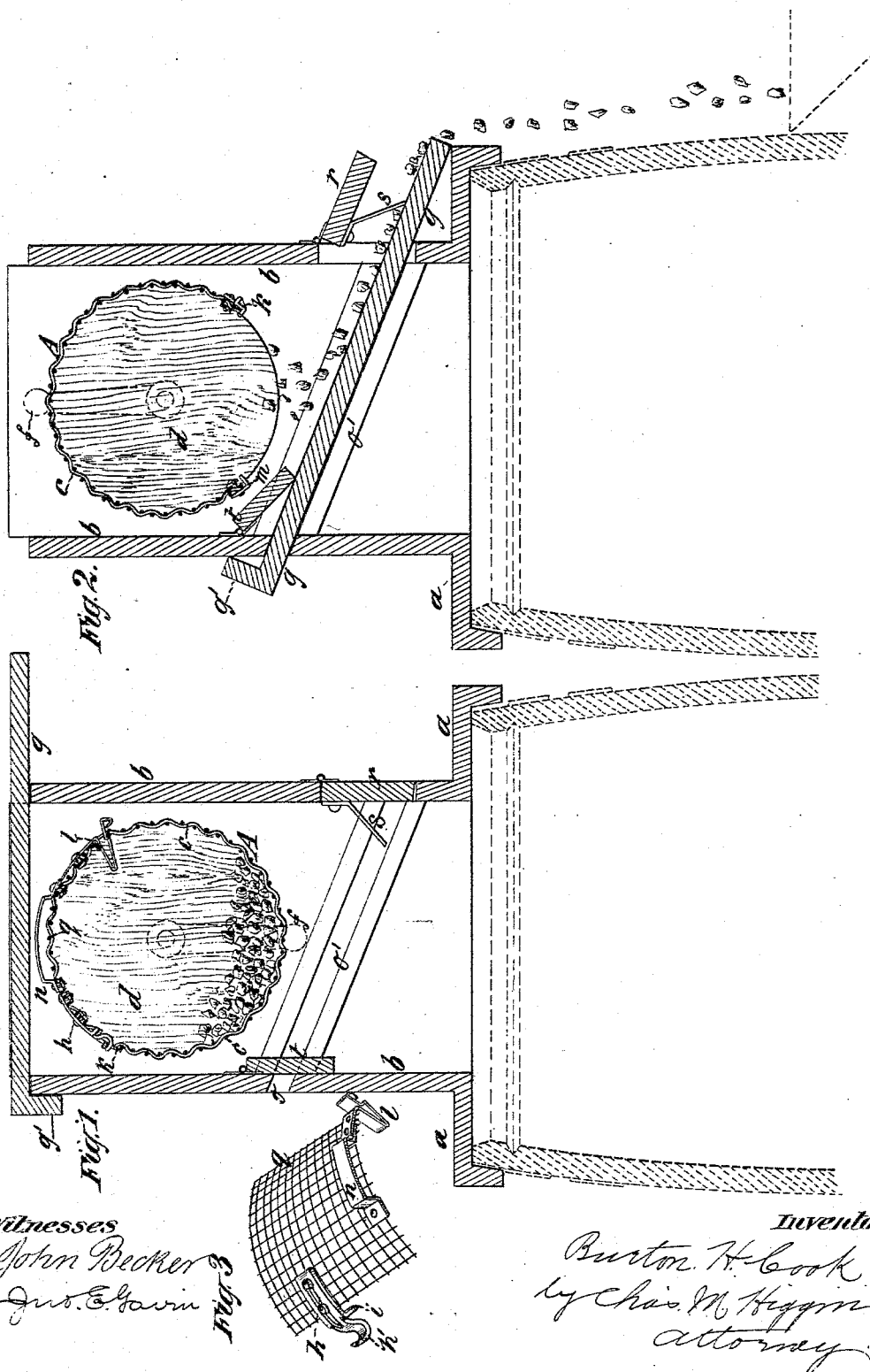
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B. H. COOK.

ASH SIFTER.

No. 301,684.

Patented July 8, 1884.



Witnesses
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Fig. A.

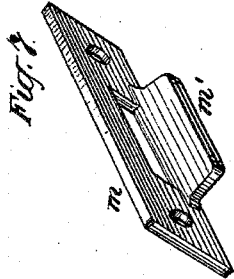
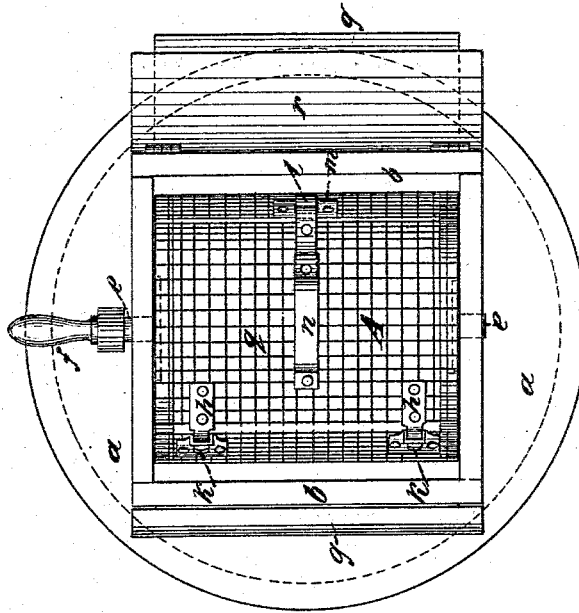


Fig. 8.

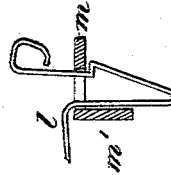


Fig. 5.

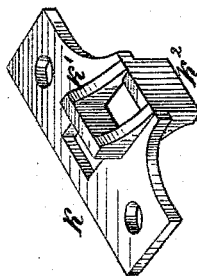
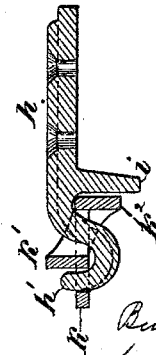


Fig. 6.



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UNITED STATES PATENT OFFICE.

BURTON H. COOK, OF BROOKLYN, NEW YORK.

ASH-SIFTER.

SPECIFICATION forming part of Letters Patent No. 301,684, dated July 8, 1884.

Application filed April 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, BURTON H. COOK, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Ash-Sifters, of which the following is a specification.

My invention belongs to that class of ash-sifters having a rotary cylindrical sieve, one section of which is removable to permit the insertion and removal of the cinders, and which cylinder is mounted in an inclosing-box provided with a movable slide or partition adapted to be slid across the box beneath the cylinder, when the sifting is finished, to form an inclined chute, on which the cinders may be dumped and by which they are discharged from the side of the box.

One feature of my invention lies in the special construction and arrangement of the chute-slide relatively to the box and cylinder, whereby it serves also as the lid to the box; and another feature consists in a discharge-door on the side of the box operating in relation with the slide.

The remaining features of my invention lie in the special construction of the hinges and catch of the removable lid-section of the cylinder, and also in certain minor details, as hereinafter fully set forth and claimed, whereby a strong, simple, cheap, and effective ash-sifter is provided.

In the annexed drawings, Figure 1 is a sectional elevation of my improved sifter, represented in the act of or prepared for sifting. Fig. 2 is a similar view, represented in the act of dumping the sifted cinders. Fig. 3 is a fragmentary perspective view of the lid-section of the cylinder removed, showing the form of hinge and catch thereof. Fig. 4 is a plan view of the complete sifter. Fig. 5 is a perspective view of the casting forming the socket-leaf of the hinge, and Fig. 6 is a section through both the socket and hooked leaves of the hinge shown engaged. Fig. 7 is a perspective view of the socket-plate of the catch; and Fig. 8 is a cross-section of the socket-plate, showing the barb of the catch sprung therein.

Referring to Figs. 1, 2, and 4, *a* indicates the base of the sifter, which is of the usual round and flanged form, adapted to fit on and over the head of the ash-barrel, as indicated

in Figs. 1 and 2, and *b* indicates the casing of the sifter, which is preferably a square upright box, rising centrally from the base *a*. In the upper part of the box is inclosed the cylindrical sieve *A*, which consists of a cylinder, *c*, of wire-cloth, fixed to two round wooden heads, *d d*, which heads are fitted with little metal trunnions *e e*, which are journaled in holes bored in each side of the box, thus forming an axis on which the cylinder is free to revolve within the box in the usual manner of rotary sifters, as will be readily understood from Figs. 1, 2, and 4. One of the trunnions is a little longer than the other, and is squared to receive a crank, *f*, whereby the cylinder may be rapidly revolved to sift the cinders in the usual manner. One section, *g*, of the wire-cloth *c* of the cylinder is removable to permit the insertion and removal of the material to be sifted, and this lid-section *g* is hooked or hinged at one edge to the cylinder, and is provided with a catch to engage the opposite edge, whereby the lid may be easily removed or replaced when required, yet is firmly held in place during the action of the sifter. The hinges and catch are of peculiar form, well shown in Figs. 1, 3, 4, 5, and 6, to which reference may be now had. The leaves *h* or parts of the hinge connected with the lid *g* are formed, as shown, with upturned hooked ends *h'* and downwardly-turned stops *i i*, the stops being adapted to abut against the edge of the lid-opening in the wire-cloth cylinder, while the hooks are adapted to hook into one of the meshes of the cloth, or preferably into a special socket-plate or leaf, *k*, (see Figs. 5, 6, and 4,) made of cast-iron, and riveted to the wire-cloth cylinder, as shown in Fig. 4. The socket-leaf, as shown best in Figs. 5 and 6, is formed with two openings, to admit the hook of the opposite leaf, the openings being separated by a cross-piece or bridge with which the hook engages, as shown in Fig. 6. The cross-piece is strengthened by an upwardly-projecting flange, *k'*, and the edge of the socket is strengthened by a downwardly-projecting flange, *k''*, against which the stop *i* of the hooked leaf abuts, as shown in Fig. 6. The socket-leaf *k*, and also the hooked leaf *h*, is cast with two rivet-holes, as shown in Figs. 5 and 6, to receive the rivets, whereby they are fastened to

the wire-cloth cylinder, as shown in Fig. 4, thus rendering the attachment secure. At the middle of the lid-section *g* is riveted a loop of hoop-metal, forming a handle, *n*, whereby the lid may be easily moved into or out of position, and at one end of the handle a strip of spring-metal, *l*, preferably sheet-steel, is fastened, and is bent down over the edge of the lid in the form of a spring-barbed catch or latch, and is adapted to spring into engagement with a mesh or socket in the opposite edge of the wire-cloth cylinder, as well shown in Fig. 1, also in Figs. 3 and 4. I prefer to have the barb of the catch-spring *l* engage with a cast-iron socket-plate, *m*, (see Figs. 4, 7, and 8,) riveted onto the wire-cloth cylinder, as shown in Fig. 4, this socket-plate being cast with two holes to receive the rivets, and with an opening to receive the barb of the catch, and also a downwardly-projecting lip or flange, *m'*, for strength, as well shown in Figs. 7 and 8. It will now be seen that the hinging and fastening devices of the lid are very strong, simple, and cheap, and easily operated. Thus by pressing back the barbed loop of the catch *l* the lid may be raised and swung upon the hooked hinges, which can be readily unhooked from their socket-plates and the lid then placed aside, while the ashes and cinders are poured through the opening into the cylinder, after which the lid can be again easily hooked in its sockets and closed down, and the catch sprung into its socket, which will hold the lid securely in place during the sifting operation, which is effected, as usual, by rapidly revolving the cylinder by rotating the crank, which will cause the ashes to fly out through the meshes and fall into the barrel below, while the cinders of useful size remain in the cylinder, as will be readily understood. It will be readily noted that the form and position of the catch is such that it has no tendency to loosen during the revolution of the cylinder by centrifugal force or otherwise; but its tendency is rather to tighten itself in its socket, thus rendering the position of the lid secure. When the cylinder is being revolved to sift the cinders, as above described, the box *b* is of course covered by the lid *g*, as shown in Fig. 1, to prevent the escape of ashes, and when the ashes have been sifted out the lid is removed, and the cylinder is turned around to dump the cinders onto an inclined chute or slide inserted across the box below the cylinder, by which the cinders may be discharged out through a side door and into the scuttle placed beneath the same, as seen in Fig. 2. Now, according to my improvement it will be seen that the lid of the box, as seen in Fig. 1, is also made to serve as the slide-chute, as seen in Fig. 2. The lid *g*, as shown, is made considerably longer than necessary to cover the top of the box, but of just the right width to fit between the end walls of the box, which, as seen in Figs. 1 and 2, project up above the side walls a distance equal to the thickness of

the cover, so that these walls embrace each side of the cover, while the cover rests on the tops of the side walls, as shown. One end of the cover is formed with a short rim-piece, *g'*, projecting at right angles thereto, which abuts against one side of the box when the cover is placed over the same, as shown in Fig. 1. On one side of the box below the cylinder is formed a slit, *o*, extending the full width of the box, and within the box, on each side thereof, inclined ways *o'* are formed, coincident with said slot, and inclining downwardly therefrom. At the foot of the inclined ways, at the opposite side of the box, an opening is formed to provide a discharge-orifice for the sifted cinders, which opening runs the full width of the box, similar to the slot *o*, and is provided with an outwardly-opening hinged door, *r*, having a downwardly-inclined inwardly-projecting finger, *s*, thereon, as shown in Figs. 1 and 2, which door normally gravitates shut, as shown in Fig. 1, so as to prevent the escape of dust or ashes during the sifting operation. The slot *o* is also provided with an inwardly-opening valve or door, *t*, which normally gravitates against the side of the box, and thus closes the slot to prevent the escape of ashes. It will now be readily understood that when the sifting operation is finished the lid or cover *g* of the box is removed and inverted, and then slid into the slot *o* on the side of the box and down the inclined ways *o'*, until the rim *g'* strikes the side of the box, which will cause the opposite end of the cover to protrude through the discharge-orifice, and thereby open the door *r*, the finger *s* of which will rest on the slide, and thus hold the door open, as shown. When therefore the cinders are now dumped from the cylinder, they will fall on this slide or cover, which thus forms a chute to discharge them through the door over the edge of the base-rim *a* into the scuttle or other vessel placed beneath the same to receive them, as indicated in Fig. 2; hence by this means one part serves both as the lid and the chute, thus rendering the construction cheap and simple and quite convenient in operation, as the mere removal and insertion of the lid prepares the apparatus for dumping, and automatically opens the valve *t* and door *r*, as shown in Fig. 2, which movement of the lid is very simple and is quickly effected. After the cinders are dumped, the slide is removed and placed on the top of the box, as before, and the doors *t* *r* will of course close of their own gravity, thus preparing the box for the next operation of sifting. It will therefore be now readily appreciated that the several features described combine to produce a very efficient sifter of the rotary class, which at the same time is composed of few and simple parts, and these of inexpensive durable construction and of easy operation.

Instead of forming the box with a flanged base-rim, *a*, to fit over a barrel, the box might

be made with a large receptacle beneath to receive the ashes, if desired; but it is not thought desirable.

What I claim is—

5 1. In a sifter, the combination of the sieve and its inclosing-box open at the top, and having apertures on the sides below the sieve, with the movable slide *g*, adapted to fit above the sieve over the top of the box, and form a
10 cover therefor, and also adapted to fit below the sieve across the box and form a chute to discharge the cinders, substantially as herein set forth.

2. The combination, with the sieve and its
15 inclosing-box having a discharge-door on the side below the sieve and a slot at the opposite side, of the slide *g*, adapted to enter the slot, extend across the box, and project through and open the said door, substantially as and
20 for the purpose set forth.

3. The combination, with the sieve and its inclosing-box having the slot *o* and the door *r*, with its inward projection *s*, of the slide *g*, adapted to enter the slot of the box, project
25 across the same, and come in contact with the projection *s*, and thus open the said door and keep it open, and thereby form a chute by which the cinders are discharged.

4. The combination, with the sieve, of the
30 inclosing-box formed with the slot *o* on one side, the door *r* on the opposite side, and inclined ways *o'* extending across the box, with

the movable chute-slide *g*, adapted to enter said slot, slide over the ways, and project through said doorway, substantially as and 35 for the purpose set forth.

5. The combination, with the sieve and sieve-box having two opposite sides higher than the sides at right angles thereto, of the lid *g*, formed with the ledge or rim *g'*, adapted 40 to fit over the box between the higher sides, in combination with a way across the box below the sieve, and a discharge-door at the foot of the same adapted to receive said lid, so as to form a discharge-chute when the cinders are 45 dumped, substantially as herein shown and described.

6. The combination, with the sieve-box, of the rotary sieve *A*, with its movable section *q*, having hooked hinge-leaves on one side and 50 a suitable catch at the opposite side, with the corresponding sockets, *k* and *m*, substantially as herein set forth.

7. The combination, with the sieve and sieve-box having the slot *o* and valve *t*, of 55 a movable chute-slide adapted to enter said slot, and a discharge-door on the side opposite said slot, substantially as and for the purpose set forth.

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