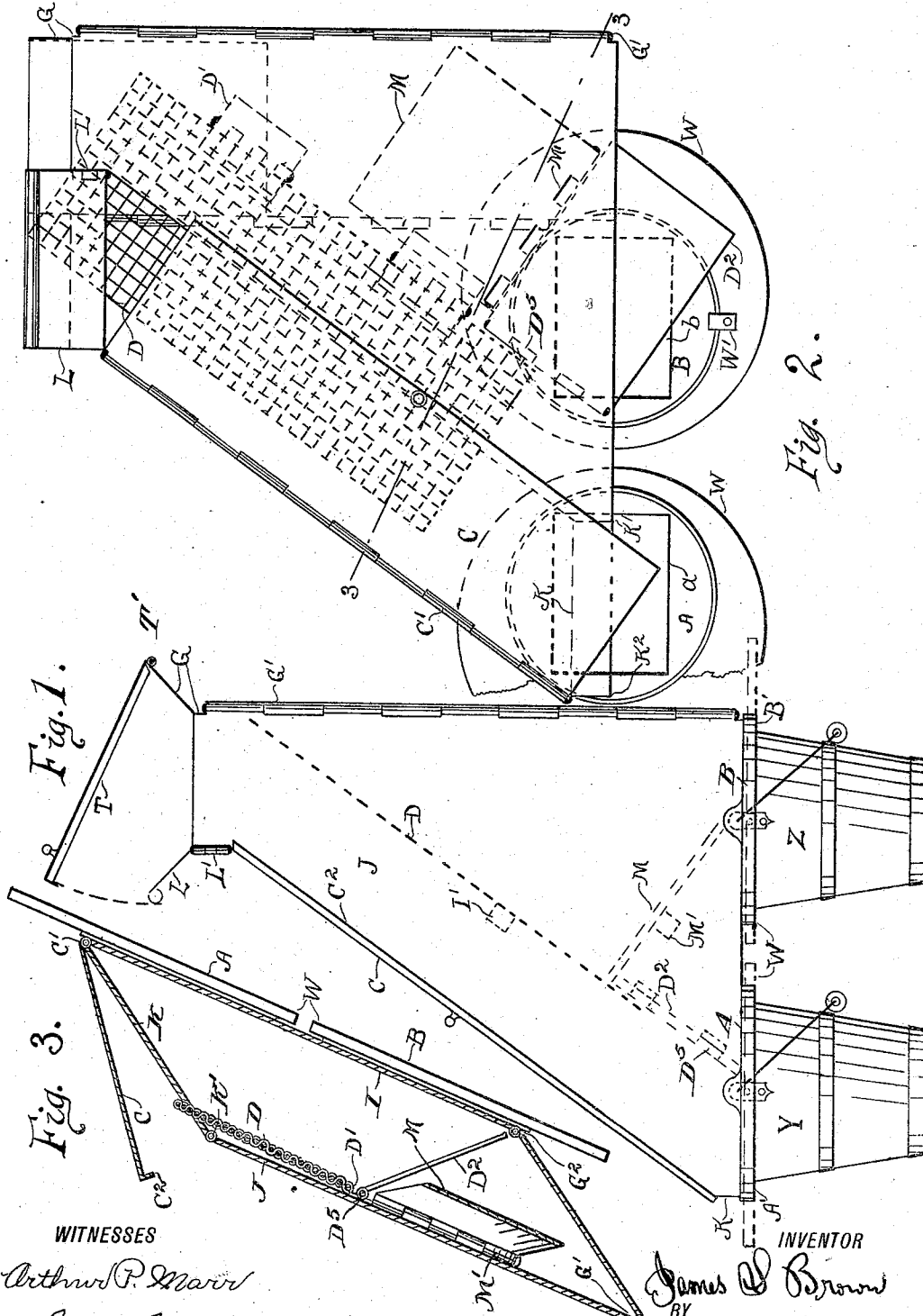


J. S. BROWN.
ASH SIFTER.

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941,613.

Patented Nov. 30, 1909.



WITNESSES

Arthur P. Mavor

S. H. Stodder

INVENTOR

James S. Brown

BY

James D. Brown
ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES S. BROWN, OF NEW YORK, N. Y.

ASH-SIFTER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES S. BROWN, of the borough of Manhattan, in the city and State of New York, have invented a certain new and useful Improvement in Ash-Sifters, of which the following is a specification.

My improved construction is intended more especially for domestic use but can be made larger and used with barrels instead of buckets.

I have devised an ash-sifter of sheet metal which can be folded into a small compass for transportation or storage. In some cases where liberal space is afforded it may be kept in an extended condition all the time, and thus the small labor of liberating and folding the structure will be avoided, but it is always ready to be folded when required.

My sifter is of the long approved class in which the ashes with any ordinary or extraordinary mixture of cinders are poured slowly upon a stationary inclined screen and allowed to traverse down and through it. I provide for resting my structure on two buckets,—they should be metal, for safety against fire,—one to receive the fine material which will descend through the screen, the other to receive and store the larger material, the raw and partially-burned coal and also the usually small proportion of slag or incombustible solid matter, clinker. My sifter can be used with care in rooms which require extreme cleanliness. There is little liability to annoyance from escaping dirt, even in the form of fine ashes which will float awhile in the air.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a side view of the sifter extended for use and mounted on two pails,—common buckets, wood or metal. Fig. 2 is as nearly as practicable a similar view with all the parts in the folded or partially folded position, the buckets do not appear in this view, and Fig. 3 is a section in a nearly horizontal plane showing the structure about half collapsed or folded. The plane of section is indicated approximately by the broken line 3—3 in Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A and B indicate two disks of sheet metal

horizontal when in use, each having a large aperture *a* and *b* respectively and also each having a rim A' and B' which extend down. These rims are of such size as to match loosely over the tops of ordinary buckets Y and Z. The bucket Y receives the coarse material, much of which is still fuel of some value,—usually the whole of the contents of bucket Y can be poured upon a well established fire and serve usefully. The other bucket Z receives the fine ashes to be thrown away.

C is a door inclined when in use constituting a large portion of the front. It is attached by hinges C' to the front edge of one side I and by means of the bent portions C², adapted to press with an elastic grasp on the front edge of the opposite side J. It performs the important functions of, first, covering the work and defending against much escape of fine ashes while sifting is being performed; second, strengthening and completing the structure, and third, affording a ready means of access to the interior when required for any purpose, as the removal of encumbrances which may accumulate on the outer face of the screen D.

D is a screen of sufficiently stout and open-work wire-cloth held at an angle. The angle may be varied in constructing as shall be found expedient. I have in my experiments succeeded well with an angle of about 50 degrees. The ashes are shoveled or poured in small instalments or in a more or less constant stream into the hopper L and thence upon the upper portion of the screen D, and they slide and roll down its incline with the effect of allowing the ashes to descend through the interstices in the screen, while the larger material forms a thin and more or less irregular stratum on the upper face of the screen and moves down past the lower edge of the latter and falls into the bucket Y.

M is a single piece of imperforate sheet metal inclined in a direction opposite that of the screen, through the central portion of the bottom. It is joined to the interior of one side by hinges M' and is supported at the other side by a bracket M². These parts will be referred to again.

Some of the ashes which sink through the screen will fall directly into the bucket Z. Another portion sinking through at lower points in the screen will fall on the

incline M, and be led by the latter into the same bucket.

G is an upright back-sheet of galvanized iron prolonged upward by an extension of the same or an appended sheet. This is the rear side of the hopper at the top of the structure, through which the unsifted ashes and cinders are introduced. The front side of this hopper is formed by an oppositely inclined plate L. This plate in addition to its function of aiding to receive a supply of ashes serves as a strengthener to the structure when in use, being permanently hinged to the side I at L' and engaged with the side J when in use. I and J are larger, approximately triangular, sheets of such material which constitute the sides. Describing the structure as shown in Fig. 1 adjusted for use, these plane sheets of sufficiently stout galvanized iron, I and J, stand at right angles to the back sheet G. They are flexibly connected thereto by hinges G' and G². One edge of the screen D is flexibly but permanently attached to the inner face of the side J by hinges D'. This screen is supported across the upper end by resting against the back sheet G, and across its lower end by resting on the sheet M.

Between the lower edge of the screen D and the bottom of the structure extends a sheet D², a rectangular plate of sheet metal flexibly secured to the inner face of the plate J by hinges D⁵. Its opposite edge is detachably secured to the inner face of the plate I by convenient fastenings. Its upper edge lies in contact with the upper edge of the plate M which has been since turned on its hinges M² so as to correspondingly extend across, and in this, the useful condition, the plate D rests on and is supported by the plate M. Another sheet of metal M standing when in use inclined in the opposite direction from that of the screen D, not only leads much falling ashes to the proper aperture in the disk B but also contributes much to the strength and stiffness of the structure. It is flexibly connected to the inner face of the side J by hinges M'. The opposite edge of this inclined piece is supported when extended by resting against a slight bracket on the inner face of the side I.

K is a narrow piece of sheet metal connecting the sides I and J below the door C, hinged to each at K' K² respectively.

The door C may be opened at any time allowing access to the screen D and the other interior parts. In many situations where there is space at command the sifter may be left on the buckets Y and Z or simply lifted off and set aside after each use, maintaining the same extended condition as that in which it is used,—that shown in Fig. 1. When for any reason it is desired to fold it we proceed as follows: Open the door,

the screen D on its hinges D' upward past the stop I' springing the sides out enough to allow this, and fold it upward against the side J. Next, reach in, liberate and similarly flatten the inclined plates D² and M turning the inclined piece D² downward by partially revolving it on its hinges D⁵ riveted on the inner face of the side plate I, and turn the deflector M upward on its hinges M², riveted on the side J at an opposite incline. The interior is now clear. Next, and very important, attend to the bases, the apertured disks A and B turn each on edge as shown in Fig. 2, and the whole casing is unbraced ready to collapse into the desired flattened form, and now by a more or less moderate movement so change the structure from its heretofore rigid rectangular cross section, first to oblique, as shown in Fig. 3 in effecting which change the angles at the corners C and G' become acute and the angles at K' and G² become obtuse. Soon the entire structure assumes a flat or nearly flat condition. Fig. 3 shows the parts when the flattening movement is about half completed. If the collapsed structure is to be transported or otherwise much handled lay something rigid as a piece of board across on one face and tie with a coarse string. The operation of again conditioning for work is the obvious reverse. The work is better done with the aid of an assistant but only a little strength or skill is required to do it alone. The rings A and B should be turned into their proper working positions as early as practicable, they form a broad base on which the other parts will stand. When all is complete the buckets are set at about the right distance apart if such has not been done before and the sheet metal and coarse woven wire structure properly braced by the adjusting of the parts D² and the screen D in place and closing the door C is lifted and placed thereon as at first.

In a large number, perhaps a majority, of the cases where my sifter will be used, only the small vessels Y and Z will be required. The disks A and B fit easily on such vessels. Each of these disks is permanently pivoted to the lower edge of the side J. When in use they lie level as shown in Fig. 1 and when folded they lie in a vertical plane as shown in Figs. 2 and 3. In what I esteem the most complete form of the invention the sifter is adapted to be used also on larger vessels as the ash cans used in cities. I provide for this by the addition of a detachable larger disk under each of the small disks A and B attaching it by buttons when required. Such larger disks W are shown in strong lines in Figs. 2 and 3 and in dotted lines in Fig. 1, the single button in view being marked, W'.

T is a cover hinged to the structure at the

back edge T' and is adapted to close the top when desired. Fig. 1 shows this cover in a partially open position. Its use is optional. So also is the flared condition of the adjacent parts. The device will serve well without either.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. The plates M and D² may be differently inclined, more nearly upright, with the effect to equally brace the structure generally and to lead the ashes and cinders more perpendicularly into the respective receptacles, but the folding is not effected as perfectly in such case. I prefer the arrangement about as shown.

I claim as my invention:

1. In a construction of the character described, the back, front, sides and door formed of flexible material joined by hinges allowing it to be folded in an approximately flat condition for stowage, having a screen hinged to one of the sides along an inclined line with the parts assisting to support each other when unfolded for use, and having a joint between the free edge of the door and the adjacent side partially folded so that the door is held in the locked condition by elasticity without requiring other fastening.

2. In a folding ash-sifter, the upright sides and back hinged together, a screen hinged to one of the sides along an inclined line and a door hinged to the front, in combination with an internal plate hinged to one of the sides, adapted when positioned

for use to perform the triple functions of receiving and guiding the falling ashes, stiffening the structure against racking strains and supporting the screen.

3. In a folding ash-sifter, the several upright parts permanently hinged, one side and the back hinged on both edges, and the other side hinged on one edge, with the other edge prepared to engage and liberate at will, a screen hinged to one of the sides along an inclined line, an inclined door hinged to one side and formed to engage by the other edge with the other side so as to make a convenient fastening therewith, and swing as a door, in combination with each other and with two partially revoluble disks with their apertures all arranged to serve as herein specified.

4. In an ash-sifter having a back, front, two sides, and a door, the two disks in the base apertured as shown adapted to match tightly on ordinary buckets for use, and to be partially rotated on hinges on the one side for stowage, a screen hinged to one of the sides along an inclined line, in combination with two larger disks, eccentrically apertured, one surrounding each of the smaller disks, adapted to serve with larger vessels as herein specified.

Signed at New York, New York, this 31st day of July 1908.

JAMES S. BROWN.

Witnesses:

THOMAS DREW STETSON,
ARTHUR P. MARR.