

R. H. BURKE.  
ASH SIFTER.  
APPLICATION FILED MAR. 13, 1909.

971,825.

Patented Oct. 4, 1910.

2 SHEETS-SHEET 1.

Fig. 1

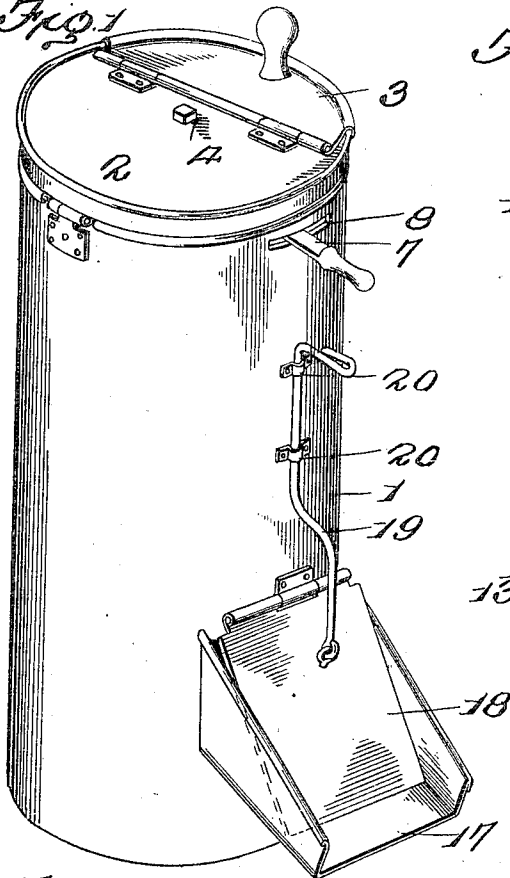


Fig. 2

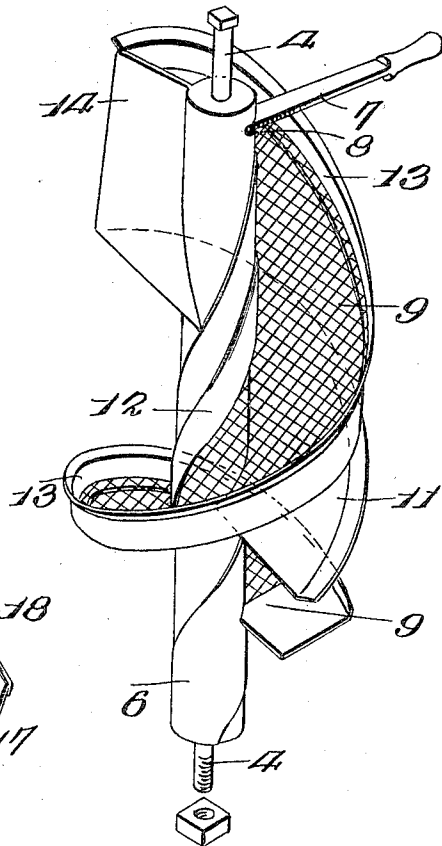
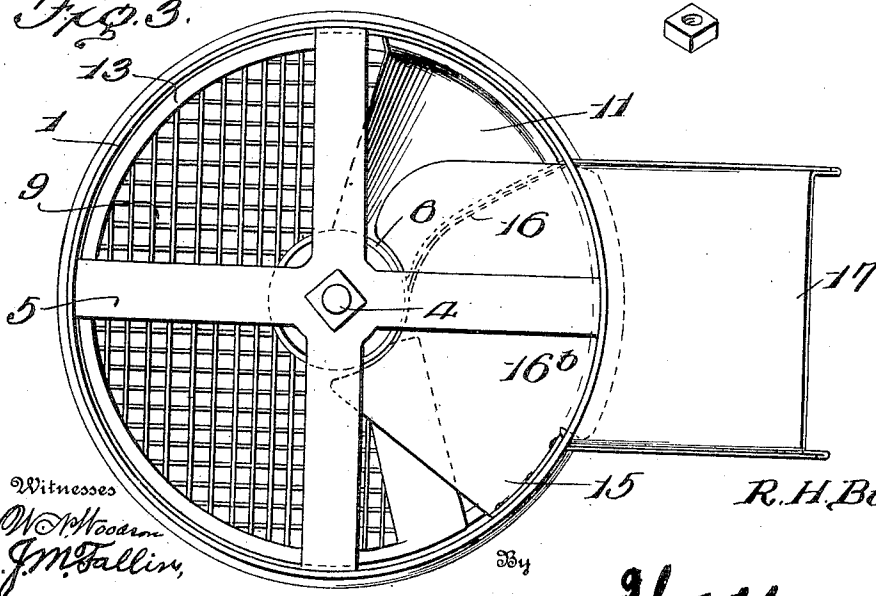


Fig. 3



Witnesses  
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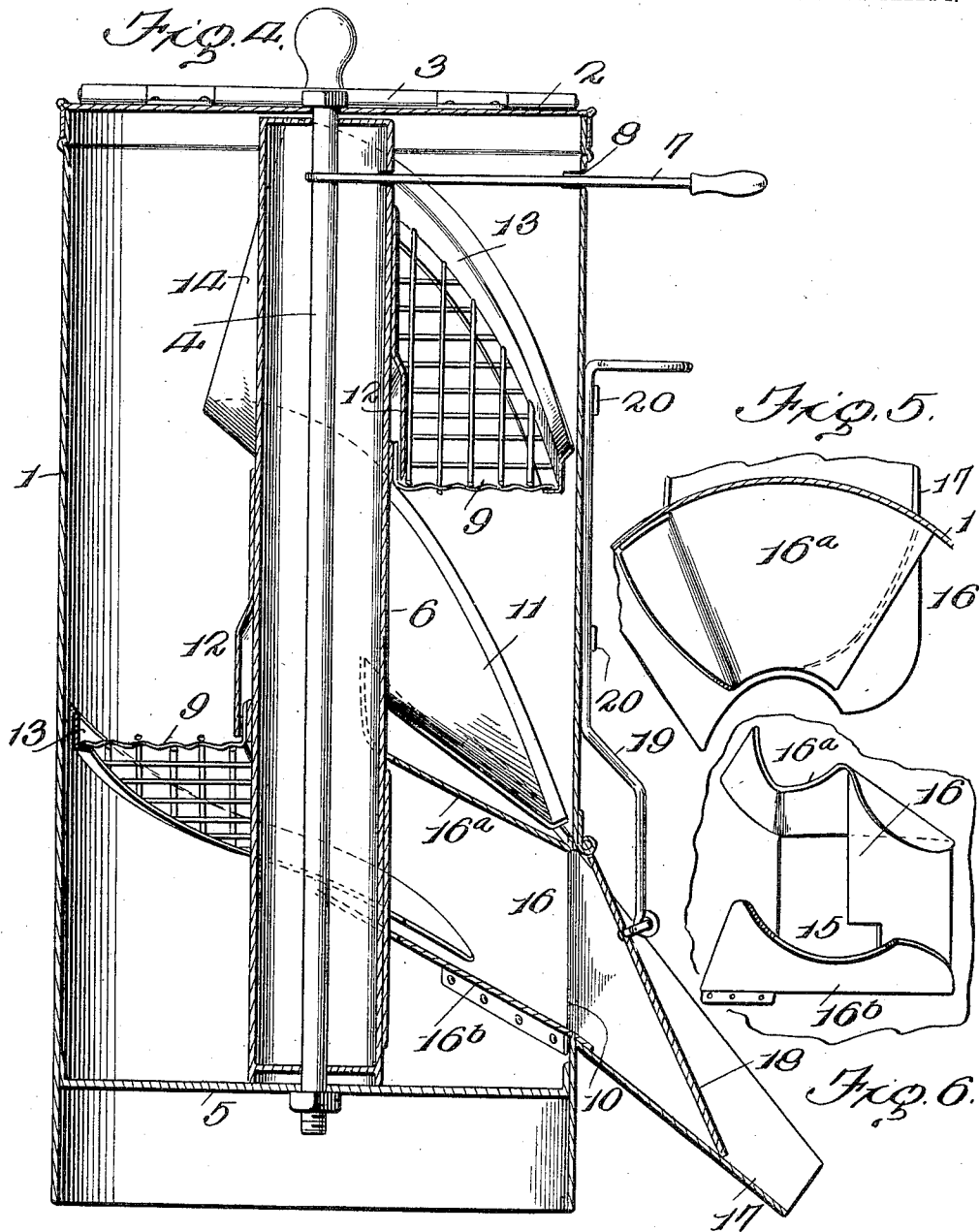
W. H. Macey, Attorneys

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2 SHEETS—SHEET 2.



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By *J. H. Mearns*, Attorneys

# UNITED STATES PATENT OFFICE.

RICHARD H. BURKE, OF LEXINGTON, MASSACHUSETTS.

ASH-SIFTER.

971,825.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed March 13, 1909. Serial No. 483,205.

*To all whom it may concern:*

Be it known that I, RICHARD H. BURKE, citizen of the United States, residing at Lexington, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Ash-Sifters, of which the following is a specification.

This invention comprehends certain new and useful improvements in sifting devices of that type designed particularly for domestic use in treating ashes to recover the cinders from the noncombustible residue, and the invention has for its object an improved device of this character which consists essentially of a peculiar sieve adapted to be conveniently operated so as to agitate the ashes placed thereon and cause the noncombustible particles to fall therethrough, the cinders being automatically delivered by the sieve to a discharge spout, after separation, and the parts being entirely inclosed so as to prevent any dust accompanying the operation from being disseminated in the air, to the annoyance of the operator.

With this and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that I shall hereinafter fully describe, and then point out the novel features thereof in the appended claims.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a perspective view of a sifting device constructed in accordance with my invention; Fig. 2 is a similar view, showing the operating parts removed from the casing; Fig. 3 is a bottom plan view; Fig. 4 is vertical sectional view, and, Figs. 5 and 6 are detail views of the mouth or hood.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to the drawing, the numeral 1 designates a vertically disposed hollow cylindrical casing which is preferably constructed of sheet metal or the like, and which is open at its lower end and is closed at its opposite end with a hinged top or lid 2, the top being provided at its free end with a

segmental hinged section 3 that is designed to be lifted independently of the main portion of the top to afford an inlet into the casing. A vertically disposed spindle 4 extends centrally of the casing with its upper end mounted in the top 2 and its lower end supported in a spider 5 secured within the casing. Rotatably mounted on the spindle is a hollow cylindrical shaft 6 which is designed to be rocked about the spindle as its axis by any suitable means, as for instance, by an actuating arm 7 fulcrumed on the spindle and projecting radially outwardly through the shaft with its outer end having a limited movement in a segmental slot 8 formed near the upper end of the casing 1. A spiral sieve 9 encircles the cylindrical shaft 6 so as to divide the annular space between the same and the inner wall of the casing into a spiral runway through which the ashes are designed to travel, and which leads from the inlet to an outlet 10 extending through the casing near the lower end thereof. A slide or chute 11 is preferably disposed spirally on the periphery of the shaft 6 and is constructed of sheet metal or the like, and extends just below each upper convolution of the sieve 9, so as to prevent fine particles from falling through an upper convolution of the sieve and dropping into the convolution thereof just below, the chute discharging the particles into the lower portion of the casing.

In the present instance, the sieve is constructed of a strip of meshed fabric, the inner edge of which is upturned, as shown, and is embraced by and secured to a flange 12 extending spirally around the shaft 6, the sieve being provided at its outer edge with an upwardly disposed rim 13 of sheet metal or the like that is suitably supported from the shaft. At the upper end of the sieve, the rim 13 is radially inwardly disposed, as indicated at 14, and secured to the shaft so as to brace the structure as a whole, such inwardly disposed portion also serving as a deflector to insure of all the material introduced through the inlet being deposited upon and traveling along the sieve. The lower end of the sieve is movable in a chute 15 that extends inwardly around the outlet 10, and consists of a side 16, a top 16<sup>a</sup> and a bottom 16<sup>b</sup>, the bottom being arranged to have cinders deposited thereon so as to conduct the same through the outlet 10 into a discharge

spout 17 projecting upwardly from the casing. For convenience, the discharge spout is controlled by a swinging door 18 hinged to the casing, above the outlet opening 10, and arranged to be manipulated through the instrumentality of a vertically disposed rod 19 connected to the door intermediate of the ends thereof and slidingly mounted in bearings 20 with its upper extremity outwardly disposed to constitute a handle arranged just below the projecting end of the actuating arm 7.

In the practical use of my improved sifting device, the ashes or other substance to be treated, are introduced through the inlet in the top of the casing, and the section 3 is then closed. The projecting extremity of the actuating arm 7 is grasped, and the latter is moved back and forth in the slot 8 to effect the rocking of the hollow shaft 6 and the sieve 9 carried thereby. By virtue of this construction, the ashes placed upon the sieve are thoroughly agitated so that the noncombustible particles drop through the sieve, while the cinders gravitate along the same and pass through the spiral runway, until deposited on the bottom 16<sup>b</sup> of the chute 15. The cinders slide outwardly along the bottom through the outlet 10, and are discharged from the spout 17 into a suitable receptacle placed below the spout, for this purpose. It is to be observed that the noncombustible particles falling through the upper convolutions of the sieve, are caught by the chute 11 and conducted thereby into the lower portion of the casing, the particles thus caught, and the particles dropping through the lowermost convolution of the sieve, passing through the lower open end of the casing and being collected in a suitable receptacle.

From the foregoing description, in connection with the accompanying drawing, it will be apparent that I have provided an improved sifting device which may be advantageously employed in sifting ashes, although it is to be understood that it is not limited to any such use, but may be employed for sifting purposes generally; and which is so arranged that the sieve may be conveniently agitated to effect the separation of the cinders and discharge the same automatically after such separation has been effected. Furthermore, the device embodies to a marked degree the characteristics of simplicity, durability and strength; is susceptible of being easily and cheaply manufactured, and possesses certain other advantages that will render it more attractive than the ordinary devices of this character in general use.

Attention is particularly directed to the fact that in the present instance the upper extremity of the chute 11 is upturned and secured to or formed integral with the radial

portion 14, so as to inclose the space between the corresponding ends of the chute 11 and the sieve.

The spindle 4 is provided at its upper end with a head which is arranged to abut against the upper face of the main portion of the lid 2, the lower end of the spindle being detachably engaged with the supporting spider in order to maintain the spindle against upward displacement and thus cause the head at the upper end thereof to effectually hold the lid against displacement from the upper end of the casing. By disengaging the spindle from the spider the former may be readily withdrawn upwardly through the hollow shaft 6 and the lid 2, so as to release the lid and permit its removal, whereby to admit of the shaft 6 and the spiral sieve 9 carried thereby being withdrawn upwardly from the casing.

Having thus described the invention, what I claim is:

1. A sifter including a vertically disposed casing provided at its upper end with a removable lid, a support secured within the casing below the upper end thereof, a vertical spindle inserted through the lid and formed at its upper end with a head arranged to bear upon the lid to maintain the same against removal, the lower end of the spindle being mounted in the support and being detachably retained therein to hold the head against the lid, a hollow member mounted on the spindle between the lid and the support, and a spiral sieve secured to and coiled vertically about the hollow member, the spindle being adapted to be disengaged from the support and withdrawn upwardly from the hollow member and through the lid, whereby to release the lid and permit the hollow member and the sieve to be withdrawn upwardly from the casing.

2. A sifter including a vertically disposed casing, a vertically disposed spiral sieve mounted within the casing for an oscillatory movement about a vertical axis, the casing being formed with an outlet opening through its vertical wall in proximity to the lower end of the sieve, and a relatively stationary chute mounted within the casing for conducting material to the outlet opening, the lower end of the sieve being movable over the chute and being arranged to disclose material thereon.

3. A sifter including a vertically disposed spiral sieve mounted for oscillatory movement about a vertical axis, and a relatively stationary chute positioned below the lower end of the sieve, said lower end of the sieve being movable over the chute upon the oscillation of the sieve and being arranged to discharge sifted material thereon.

4. A sifter comprising a casing provided with an outlet, a shaft rotatably mounted in the casing, a spiral sieve encircling the shaft

and movable therewith, means for rocking the shaft, and a chute extending inwardly from the outlet and having one end of the sieve movable thereover by and upon the  
5 rocking of the shaft.

5. A sifter comprising a vertically disposed casing formed in its side wall in proximity to its upper end with a slot and also formed in its side wall at its lower end with  
10 an outlet opening, a vertically disposed spiral sieve mounted to oscillate within the casing, an actuating arm connected to the sieve and projecting outwardly through the slot and movable therein to effect the oscilla-

tion of the sieve, a member movably connected to the casing for controlling the discharge through the outlet, and an operating rod movably mounted at the side wall of the casing and connected at its lower end to the member and terminating at its upper end in  
20 proximity to the actuating arm.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD H. BURKE. [L. s.]

Witnesses:

JOHN H. BROWN,

JOHN G. FITZGERALD.