J. MAIERS.

DUSTLESS ASH SIFTER.

APPLICATION FILED MAY 21, 1918.

1,417,849.

Patented May 30, 1922.

Fig. 1.

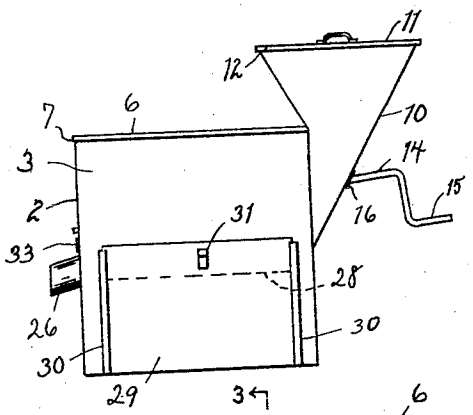


Fig. 2.

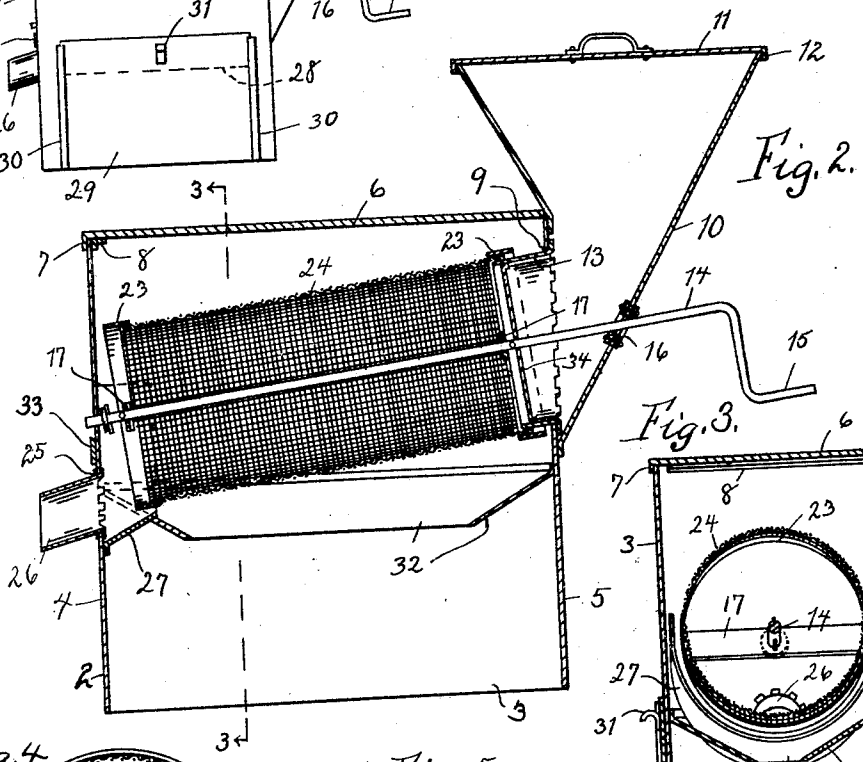


Fig. 3.

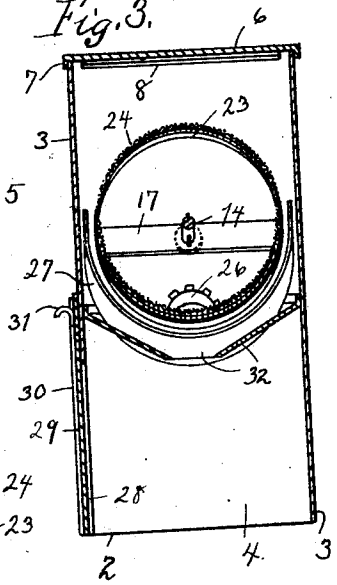


Fig. 4.

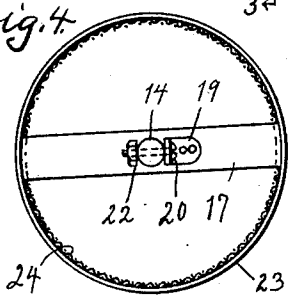
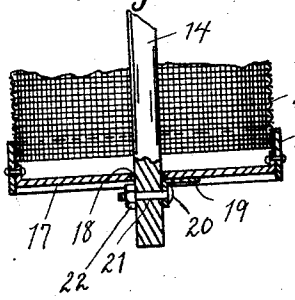


Fig. 5.



WITNESS:

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DUSTLESS ASH SIFTER.

1,417,849. Specification of Letters Patent. Patented May 30, 1922.

Application filed May 21, 1918. Serial No. 235,854.

To all whom it may concern:

Be it known that I, JOHN MAIERS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Dustless Ash Sifters, of which the following is a specification.

My invention relates to new and useful improvements in dustless ash sifters, and has for its object to provide an exceedingly simple and effective device of this character wherein a rotary sifter is employed, the same being enclosed in a suitable casing or housing having a cover to permit inspection of the sieve or other internal parts.

Another object of the invention is to provide an ash sifter the hopper of which is sufficiently large to accommodate a considerable amount of ashes, to provide a lid for said hopper so that when the latter is filled, it may be closed to prevent any dust from flying about during the sifting operation and to provide the casing or housing with a gravity slide door for closing the doorway used as an entrance for an ash refuse receptacle and which is adapted to be placed within the housing beneath the rotary sieve.

A further object of the invention is to mount a rotary sieve within a suitable housing having a hopper leading thereto, said housing carrying a thimble or tubular extension leading from the opening at the bottom of the hopper and projecting into one of the open ends of the rotary sieve.

A still further object of the invention is to provide a guide shelf within the housing partially surrounding and underlying the other open end of the sieve with its lowermost portion so shaped as to lead directly to the outlet opening or coal and cinder chute.

Another object of the invention is to provide an improved and unique construction of rotary sieve whereby the same will be exceedingly strong and durable although relatively light in weight and one which may be easily and quickly attached to or removed from its crank shaft.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail referring by numerals to the accompanying drawings forming a part of this application, in which:—

Fig. 1, is a side elevation of my improved dustless ash sifter.

Fig. 2, is an enlarged vertical longitudinal section thereof.

Fig. 3, is a section at the line 3—3 of Fig. 2 looking into the direction of the arrows.

Fig. 4, is an enlarged end view of the rotary sieve, and

Fig. 5, is a fragmentary longitudinal section thereof.

In carrying out my invention as here embodied, 2 represents a suitable housing comprising side walls 3 and end walls 4 and 5, said housing being open at the top and preferably open at the bottom, the former being normally closed by a cover 6 resting upon the upper edges of the side and end walls and having a downturned flange 7 formed around three edges thereof and adjacent one of the end edges is located an angle iron 8 secured to the inner face of the cover for positioning the same and providing longitudinal movement thereof when in place.

In one of the end walls 5 adjacent its upper end is formed an inlet opening 9 to which leads the lower end of the filling hopper 10, the upper open end thereof being normally closed by a lid 11 which has a downturned flange 12 entirely around the same so as to snugly fit the upper open end of the hopper to prevent any dust emerging during the use of the sifter.

In the opening 9 is located a tubular projection or thimble 13 which projects into the interior of the housing any desired distance for a purpose to be hereinafter described and this thimble or tubular projection is preferably mounted in place by forming a plurality of longitudinal slits therein at one end so as to produce a number of leaves or claws which are then bent outward at right angles to the body of the thimble and then so positioned that every other leaf engages the outer face of the end wall 5 while the alternate leaves engage the inner face of said end wall and these are then secured to the end wall in any approved or well known manner as by soldering.

Extending longitudinally entirely through the housing is a shaft 14, the same being arranged at an angle as plainly shown in Fig.

2. Said shaft is journalled in the end wall 4, in one of the walls of the hopper 10 and in a cross piece 34 carried by the thimble 13 while that end of the shaft adjacent the hopper is bent to form a crank handle 15. At the points of the casing and hopper where the shaft passes therethrough, the walls may be strengthened and provided with suitable bearing means such as washers 16 arranged in pairs one on each side of the wall and fastened in place in any suitable manner as by rivets.

On the shaft 14 is mounted a pair of arms 17 properly spaced apart and said arms are in the form of cross bars, each having a hole 18 for registration with the shaft and each of these arms carry an L-shaped bracket 19 located adjacent the opening 18 and through these brackets pass the bolts 20 or their equivalent which also pass through holes 21 in the shaft and have nuts 22 threaded on their ends whereby the parts are securely held in place. The ends of the arms are bent inward and have secured thereto the rings 23 which form a part of the rotatable sieve and to these rings is secured the screen 24 in tubular form which with said rings forms the complete sieve and one end of this sieve projects over or overlaps the thimble or tubular projection 13 and is concentric therewith as will be obvious from Fig. 2.

At the other end 4 of the housing is formed an outlet opening 25 which is small relative to the inlet opening 9 and in this opening is mounted the coal outlet spout or chute 26 constructed and held in place in the same manner as the thimble or tubular projection 13. Said coal outlet spout or chute projects outwardly from the end of the housing and is located adjacent the lowermost portion of the sieve but at a sufficient height to permit the placing of a receptacle beneath the same so that the coal and cinders leaving the sieve will fall into said receptacle.

On the inside of the end wall 4 is arranged a guide shelf 27 which is approximately semicircular in shape and projects under the lower end of the sieve or overlaps said end of the sieve on the outside thereof a sufficient distance to catch any coal leaving the sieve and the lower portion of said shelf is so shaped as to guide the coal falling thereon to the outlet spout or chute 26, the lower portion of said shelf also being inclined from the lower part of the chute 26 toward the sieve.

In order that a receptacle for catching the refuse ashes may be placed in the housing and beneath the rotary sieve, I provide one of the side walls of the housing with a doorway 28 normally closed by a gravity slide door 29 mounted to slide in suitable guides 30 secured to the outer face of the side wall of the housing one at each side of the doorway and in order that the door may be readily actuated, I provide the same with a handhold 31.

The refuse ashes leaving the rotary sieve will be guided toward the center of the receptacle within the housing by suitable baffle plates 32 one of which is secured to each of the side and end walls of the housing and arranged at such angles as to cause the ashes to enter a box or receptacle within the housing having smaller dimensions than the interior of said housing after the manner of a hopper chute.

If found desirable, any one or all of the walls of the housing may be further strengthened by securing thereto strips 33 of some material or metal other than that used in the formation of the housing, as for instance, said strips may be made of metal of less resiliency than that used in the manufacture of the other parts of the device.

The operation of the device is as follows:

First, the door 29 is opened and the box or other suitable receptacle inserted through the doorway 28 into the interior of the housing and as soon as the door 29 is released it will be closed by gravity and then another receptacle such as a coal hod or another box is placed beneath the coal outlet chute or spout 26. The ashes to be sifted are then placed in the hopper 10 and because of its very large capacity, a number of bucketsfull are placed in the hopper 10 and the lid 11 placed thereon. The crank handle 15 is then turned which will cause the screen 20 to revolve thereby agitating the ashes therein and cause the refuse ashes to pass therethrough and fall into the ash receiver or receptacle while the coal and cinders will gradually move toward the lower end of the screen from which they will fall on to the guide shelf 27 from which they will roll into the chute 26 and fall therefrom into the coal receptacle.

Of course I do not wish to be limited to the exact details of construction as herein shown as these may be varied within the limits of the appended claims without departing from the spirit of my invention.

Having thus fully described my invention what I claim as new and patentable is:—

1. An ash sifter comprising a housing provided with a hopper at one end, an outlet spout at the opposite end and a doorway in one of its sides normally closed by a gravity slide door, baffle plates secured to the side and end walls of the housing intermediate the top and bottom thereof, a guide shelf located entirely within the housing and secured to the end wall of the housing having the outlet spout, said guide shelf passing through one of the baffle plates and being approximately semi-circular in shape and a rotary sieve journalled within the housing above the baffle plates and having

one end overlying the guide shelf the upper ends of said guide shelf projecting above the longitudinal center of said sieve, as shown.

2. In a device of the character stated, a housing having an inlet hopper at one end and an outlet spout at the other end, a rotary sieve within the housing, a baffle plate secured to each side and end wall of the housing below the sieve, and a guide shelf approximately semi-circular in shape secured to an end wall of the housing in the region of the spout, said guide shelf passing through one of the baffle plates with its upper ends projecting above the longitudinal center of the sieve.

In testimony whereof, I have hereunto affixed my signature.

JOHN MAIERS.