June 24, 1930. C. L. JOHNSON 1,765,871

DUST COLLECTOR

Filed July 12, 1929 2 Sheets-Sheet 1

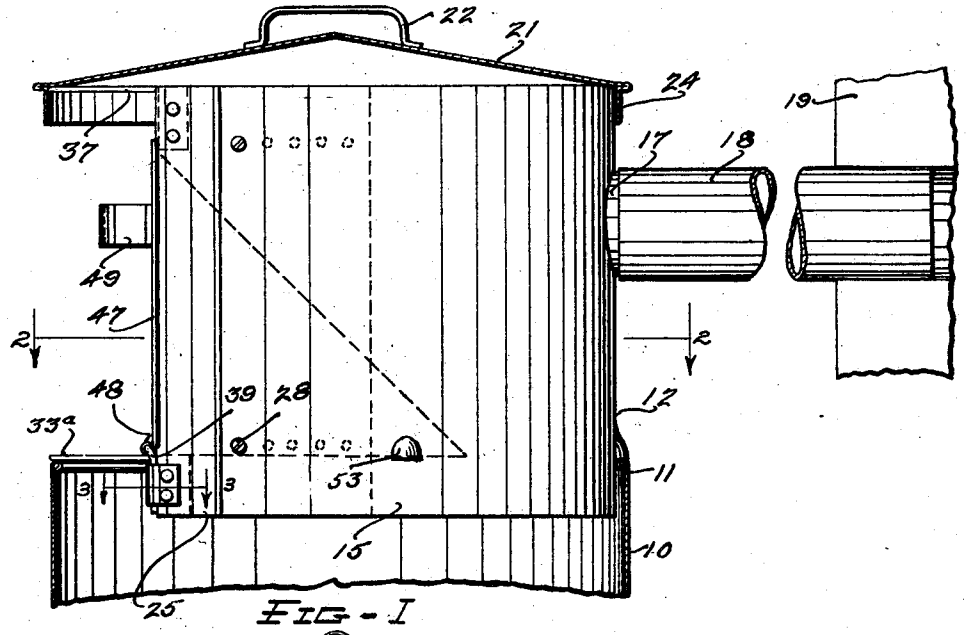


FIG - I

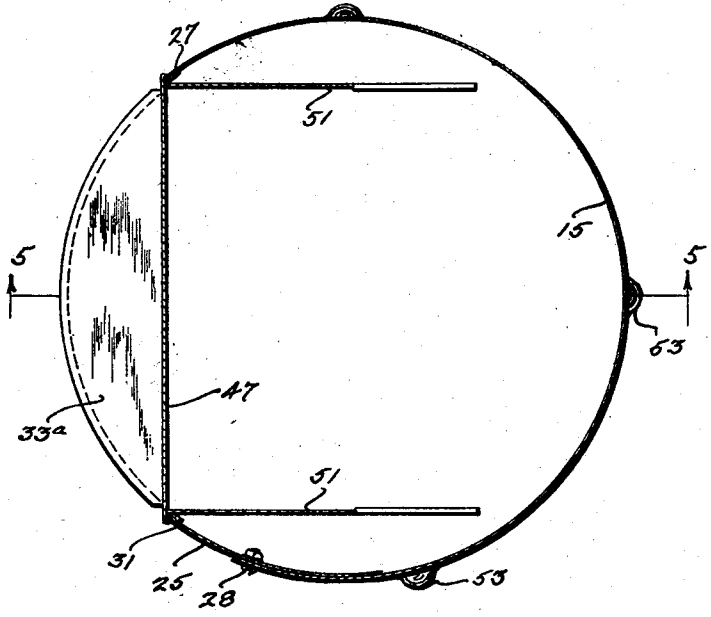


FIG - 2

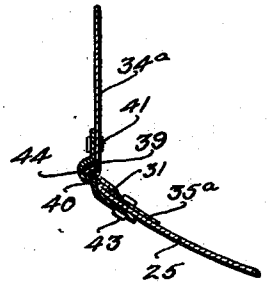


FIG - 5

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June 24, 1930. C. L. JOHNSON 1,765,871

DUST COLLECTOR

Filed July 12, 1929 2 Sheets-Sheet 2

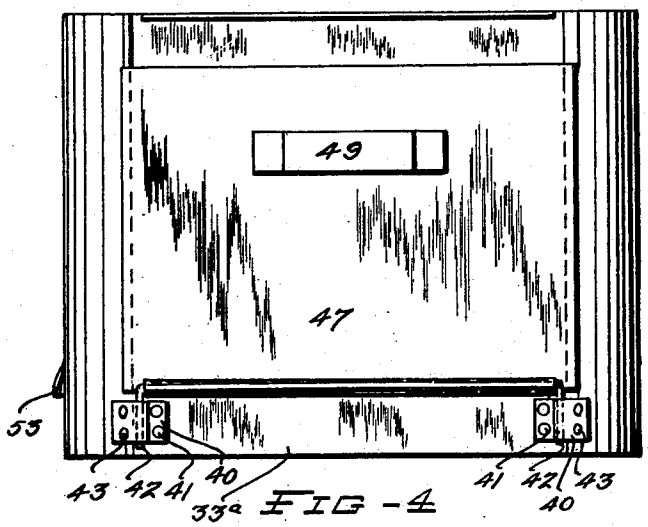


FIG -4

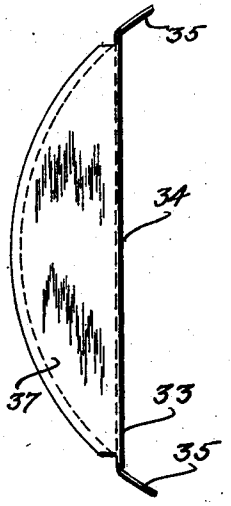


FIG-6

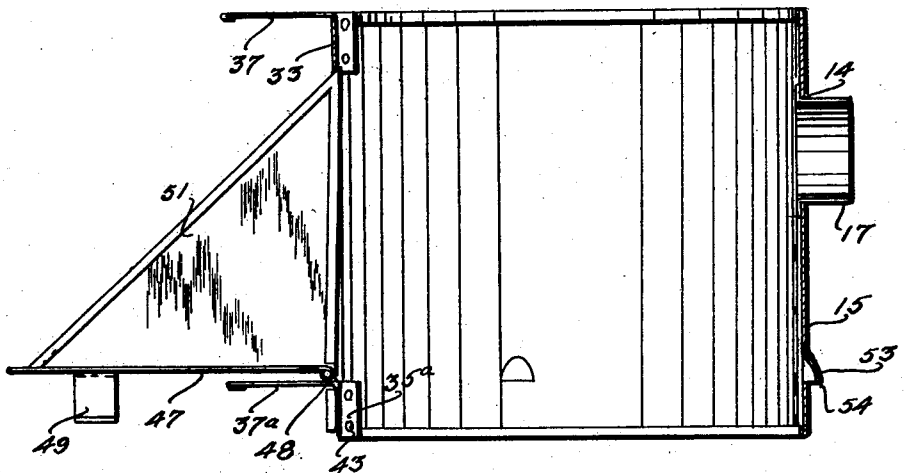


FIG -5

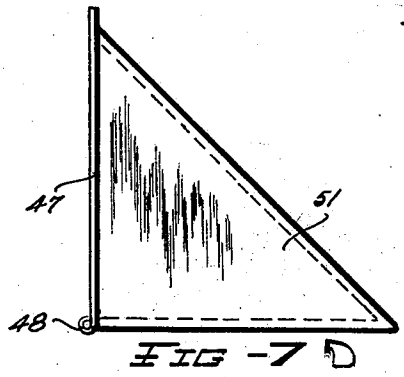


FIG -7

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UNITED STATES PATENT OFFICE

CARL LESLIE JOHNSON, OF JAMESTOWN, NEW YORK

DUST COLLECTOR

Application filed July 12, 1929. Serial No. 377,741.

This invention relates to an improvement in dust collectors for use with coal burning furnaces, etc., and comprises a device of this class adapted to be fitted upon and cover the top of an ash receptacle.

The device is adapted to be used in connection with any receptacle or device to receive ashes when removed from a furnace and to permit the handling of said ashes without the usual accompaniment of dust in the furnace room.

It is well known that other devices of this general character have been produced but it is believed that they are more or less inefficient. For example, certain of these devices are no more than a cover to an ash receptacle and are directly connected with the chimney or flue. While the ash dust, which rises when the ashes are emptied into the covered receptacle, is properly carried off, the structure is such that considerable dust arises in conveying the ashes from the furnace to and placing within the ash receptacle. Other devices of this character are adapted to be placed upon an ash receptacle and constitute a chamber through which the ashes are passed to the receptacle and in which the dust is collected. These devices, in most instances, are not provided with doors or a chute of any kind by which the ashes may be easily placed within the ash receptacle. In applicant's experience it has been found that in order to properly handle ashes, a device must be provided which has an accessible opening or chute and which may be closed to prevent any of the ash dust from passing out of the receptacle into the furnace room.

This invention has therefore for its principal object the provision of a device of this character connected with the smoke pipe or chimney of a heating furnace and which is adapted to be applied to the top of an ash receptacle for removing the dust therefrom by the draft which obtains in the smoke pipe.

Another object of this invention is to provide a device of this character which is fitted with a chute by which ashes may be easily placed within the receptacle and closure means by which to confine the dust.

A further object of this invention lies in the provision of a device of this character which, being adjustable, may be fitted upon ash receptacles varying in size.

Another and further object of this invention is the provision of a device of this class having an adjustable wall which is adapted to receive an ash receptacle cover of whatever size receptacle said device is adjusted for use upon.

Other and further objects of this invention will appear from a consideration of the following specification when taken in conjunction with the accompanying drawings which form a part thereof, and in which

Fig. 1 is a side elevation of one modification of this invention shown mounted upon an ash receptacle;

Fig. 2 is a horizontal sectional view of the structure shown in Figure 1, taken substantially on line 2—2 of that figure;

Fig. 3 is a fragmentary sectional view showing the door securing means, being taken on the line 3—3 of Figure 1;

Fig. 4 is a front elevation of the device;

Fig. 5 is a vertical sectional view of the device showing the door in open position, being taken substantially on line 5—5 of Figure 2;

Fig. 6 is a plan view of one of the hood elements mounted on the front of the device; and

Fig. 7 is a side elevation of the door.

Referring to the drawing and particularly to Figure 1 thereof, this invention is shown for use upon an ash receptacle generally indicated by the reference numeral 10. The receptacle 10 is shown formed with a rolled edge or bead 11. The dust collector 12 is formed with an opening 14 in the vertical wall 15 thereof. Secured in the opening 14 is a collar 17 upon which is mounted a pipe 18. This pipe communicates with a suitable flue or chimney generally indicated at 19. The receptacle 10 is provided with a cover 21 having a handle 22. The cover 21 terminates along its circumferential edge in a vertical flange 24. When the dust collector 12 is placed upon the receptacle 10, the cover 21 is placed upon the collector and forms the top

wall of the combined receptacle and dust collector.

The dust collector 12 is formed from two walls 15 and 25. The wall 15, constituting approximately two-thirds of the device, terminates in a rolled or flanged edge 27 adjacent one side of the door opening. The other vertical edge of the wall 15 is joined to the wall 25 by means of bolts 28 which are passed through suitable openings in said walls. A number of openings are provided in horizontal alignment in the wall 25 in order that the diameter of the device may be enlarged or reduced according to the size ash receptacle upon which the dust collector is to be fitted. When in use with a small receptacle, the device 12 will be of a reduced size substantially as shown in Figure 2 of the drawing, whereas, when used upon a large ash receptacle, the adjacent ends of the walls 15 and 25 will overlap each other only a sufficient distance to permit centering of the openings and the insertion of bolts 28. The end of the wall 25, remote from the wall 15, terminates in an inwardly turned flange 31.

The flanges 27 and 31, of the walls 15 and 25 respectively, are supported in spaced relation to each other by identical plates 33 and 33ª (see Fig. 6). The plate 33 is formed with a vertical wall 34 which terminates in end flanges 35. Formed integral with the wall 34 and extending horizontally from the upper edge thereof is a hood 37. The hood 37, as well as the flanges 35, are shaped to conform to the general circumferential curve of the walls 15 and 25. The plate 33, along the flanges 35, is secured at one end to the wall 25 and at the other end to the wall 15, in any suitable manner as by welding or riveting. The lower plate 33ª is supported by means of flanges 35ª upon the ends of walls 15 and 25. In this instance it is essential to provide securing means for the rod 39 and therefore straps 40 are secured to the vertical wall 34ª of the plate 33ª by means of rivets 41. The other ends of the straps are joined to walls 15 and 25 by means of rivets 43. The straps 40 are formed to provide pockets 44 into which the ends 42 of the rod are inserted. A door 47, having a curled edge 48, is fitted upon the horizontal portion of the rod 39. The door is formed with a straight face to which is secured a suitable handle 49. Projecting at right angles to the face of the door 47 are wings 51 which, when the door is opened (see Fig. 5), guide ashes into the dust collector and ash receptacle.

It will be noted that a series of projections 53 are formed in the wall 15 in any suitable manner, preferably, however, as shown in the drawing. The lower edge 54 of each projection lies substantially in horizontal alignment with the hood 37ª of the plate 33ª. When the dust collector 12 is placed upon the receptacle 10, the projections 53 and plate 33ª act to support said collector in the position substantially as shown in Figure 1 of the drawing. Since the face of the dust collector is flat and does not conform to the generally cylindrical contour of the device, there would be a space through which ash dust could rise from the receptacle were it not for the provision of the plate 33ª. Furthermore, this is true of the upper portion of the dust collector, for example, the cover 21 of the receptacle 10 would not completely close the top of the dust collector without the hood 37, which extends horizontally to complete the cylindrical shape of the device.

It is to be understood that by removing the bolts 28, the size of the dust collector may be increased or decreased as is necessary to fit it upon a given ash receptacle. Altering the size of the device permits the manufacture of but one type of dust collector which will fit all ash receptacles without regard for size.

Attention is directed to the fact that the door 47, when opened, constitutes a chute by means of which ashes are placed within the dust collector, the wings 51 providing suitable walls to prevent spilling the ashes. When the door 47 is closed, however, the wings 51 constitute a weight by means of which said door is retained in its closed position. In other words no latch or fastening of any kind is necessary to prevent undesired opening of the door, since the weight of the wings 51 is sufficient to accomplish this purpose.

While only one modification of this invention has been shown and described, applicant does not intend to be limited thereto since it is obvious that other modifications or adaptations may be made without departing from the spirit and scope of this invention as set forth in the hereunto annexed claims.

Having thus set forth my invention what I claim as new and for which I desire protection by Letters Patent is:

1. A removable ash-receptacle attachment comprising a generally cylindrical element formed from two relatively adjustable walls, spaced plates joining remote ends of said walls, a door mounted between said plates and a U-shaped rod hingedly supporting said door upon the lower of said plates.

2. A removable ash-receptacle attachment comprising a generally cylindrical element formed from two relatively adjustable walls, projections projecting outwardly from the lower edge of said walls to support said attachment upon said receptacle, spaced plates joining remote ends of said walls, a door mounted between said plates and a U-shaped rod hingedly supporting said door upon the lower of said plates.

3. A removable ash-receptacle attachment comprising a cylindrical element formed from two relatively adjustable walls, projec-

tions formed in said walls and providing support for said attachment, hooded plates spacedly secured to remote ends of said walls, hingedly supported means closing the opening between said plates, said means constituting a chute by which ashes are fed into said attachment and thence into said receptacle.

4. A removable ash-receptacle attachment comprising a cylindrical element formed from two relatively adjustable walls, supporting means formed along the lower edge of said walls and engageable with the walls of said receptacle, hooded plates spacedly secured to remote ends of said walls, a door closing the space between said plates and means pivotally joining said door to the lower of said plates.

5. A removable ash-receptacle attachment comprising a cylindrical element formed from two relatively adjustable walls, a collar defining an opening in one of said walls, supporting means formed along the lower edge of said walls and engageable with the walls of said receptacle, hooded plates spacedly secured to remote ends of said walls, a door closing the space between said plates and a U-shaped rod hingedly supporting said door upon the lower of said plates.

6. A removable ash-receptacle attachment comprising a cylindrical element formed from two walls, adjustable means securing said walls, a collar defining an opening in one of said walls, projections formed integral with and projecting outwardly from said walls, said projections being adapted to support said attachment upon said receptacle, vertically spaced plates joining remote ends of said walls, a door mounted between said plates and a U-shaped rod hingedly supporting said door upon the lower of said plates.

7. A removable ash-receptacle attachment comprising a generally cylindrical element formed from two walls, means adjustably securing said walls together, projections formed integral with and projecting outwardly from said walls, vertically spaced plates secured to remote ends of said walls, horizontal flanges projecting outwardly from said plates and shaped to conform to the cylindrical contour of said walls, a door closing the space between said plates and a U-shaped rod hingedly supporting said door upon the lower of said plates.

8. A removable ash-receptacle attachment comprising a generally cylindrical element formed from two relatively adjustable walls, projections formed integral with and projecting outwardly from said walls and adapted to support said attachment upon said receptacle, a collar defining an opening in one of said walls, vertically spaced plates securing remote ends of said walls, horizontal flanges extending outwardly from said plates, said flanges conforming to the cylindrical contour of said walls, a door closing the space between said plates, inwardly projecting wings defining the edges of said door and a U-shaped rod hingedly supporting said door upon the lower of said plates.

In testimony whereof I have affixed my signature.

C. LESLIE JOHNSON.