

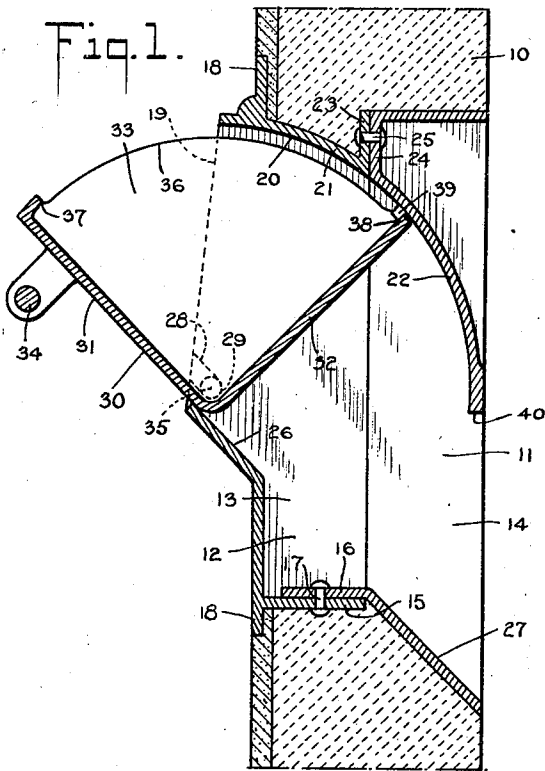
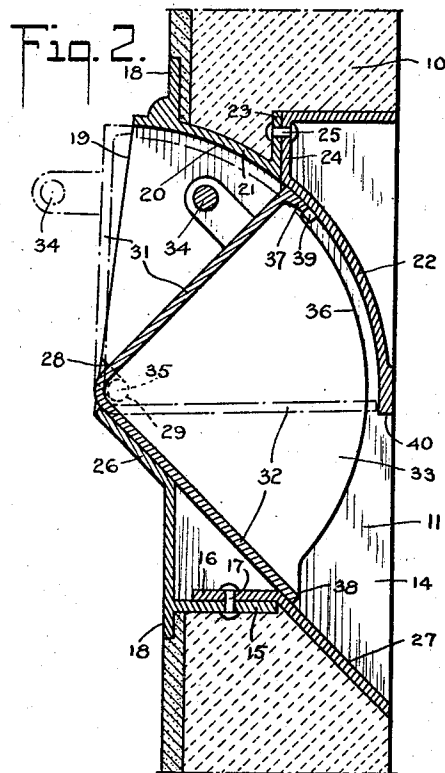
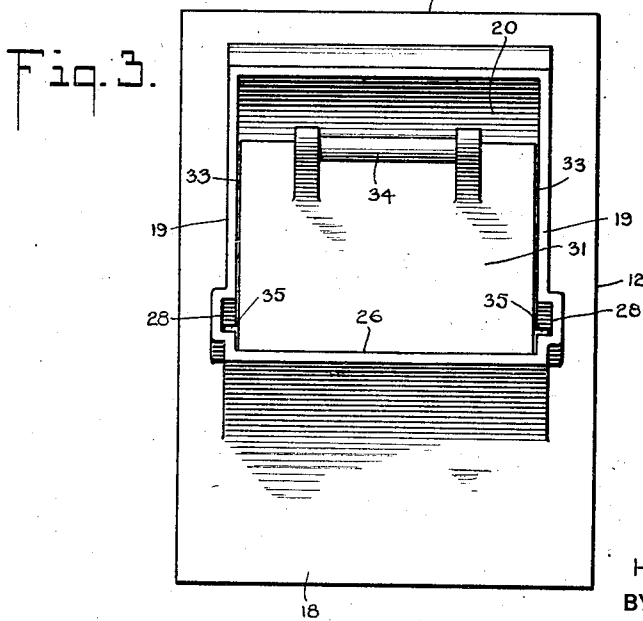
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REFUSE INCINERATOR CONSTRUCTION AND HOPPER DOOR THEREFOR

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REFUSE-INCINERATOR CONSTRUCTION AND HOPPER DOOR THEREFOR

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This invention relates to refuse disposal construction in the nature of those associated with incinerators and more particularly to hopper doors therefor.

5 Where I have attempted to provide in building construction refuse disposal chutes or flues whereby ashes, garbage or similar refuse may be deposited and gravitated to receiving receptacles or consumed in an incinerator, considerable difficulty has been encountered by reason of the draft created attendant to opening and closing of the flue openings tending to whirl particles of dust or still more objectionably drawing in odors of burning refuse. Where the flues are used in connection with heating plants, the element of loading of these flues for depositing refuse therein has been a still further objectionable source of disturbance to the bed of fire, creating drafts serving to uneconomically consume the fuel. Aside from these difficulties, where these disposal devices are used in households, a tendency to overload and jam the flue opening with refuse has been occasioned by the continuous opening permitted by doors used in connection with incinerator constructions known to me, still further adding to the difficulties encountered as above enumerated, during use, as the period of loading is thereby further increased.

My invention therefore has for an object thereof the provision of a refuse disposal construction such as incinerators and hopper or closure members for the flue thereof, permitting loading without disturbing the currents of air in the flue opening, characterized by a door or hopper which serves to seal the flue opening under all conditions of use; the provision of a refuse disposal flue having a loading door or hopper for the loading opening thereof characterized by the door or hopper serving as a seal for the loading opening in any position thereof; the provision of a refuse disposal system or incinerator, and a loading door or hopper for the loading opening thereof comprising a pivotally partitioned member coacting with the arcuate guiding walls in the opening, with the partition members serving to seal the opening in all positions; the provision of a hopper

door for the feeding opening of an incinerator flue comprising a plural partitioned, pivotally mounted member associated with an arcuate wall in the opening of said incinerator whereby one of said partitions on said member may be in contact with the arcuate wall to seal the opening under all conditions of use, thereby avoiding the induction of dust or noxious gases into the living room and avoiding any disturbance in the fuel bed by setting up drafts, normally occasioned by the loading and opening of the hopper door.

My invention still further has for an object thereof the provision of a hopper door for a refuse disposal system, such as incinerators, characterized by simplicity of construction, economy of assembly, pleasing in appearance, and at the same time including features such as leaving substantially undisturbed the air pressure in the flues of an incinerator by avoiding the creation of drafts and the induction of objectionable dust and gases into the living room when loading or otherwise using the incinerator system. Still further, my invention contemplates the provision of a hopper door for incinerators which will not become out of order, occasioned by over-stuffing of the flue opening, characterized by the provision of a hopper door which at no time permits direct feeding of refuse material to the flue.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, I make reference to the accompanying drawing forming a part hereof, in which—

Figure 1 is a side elevation in section showing my device as connected to the wall of an incinerator flue;

Figure 2 is a view similar to that shown in Figure 1 in the closed position;

Figure 3 is a front elevation.

Making reference to the drawings, it will be observed that my device may be applied to the wall 10, having an opening generally referred to 11, connecting with the flue or shaft and extending laterally into the interior of the room from which refuse matter, garbage, ashes or the like may be deposited to the flue, leading into a storage device, incin-

erator or the like. The construction permitting loading into the opening comprises a frame referred to generally at 12, preferably made of a frontal section 13 and a rear section 14, having inwardly directed flanges 15 and 16 overlapping, through which may be passed a rivet or similar fastening device 17.

The frame is further provided exteriorly thereof with a plaster bead 18 adapted to lie flush with the inner face of the wall 10. The frame 12 is provided with a main opening defined by the inwardly directed side wall flanges 19, the upper wall 20 being formed arcuately as a segment of a circle of substantially 90°. This arcuately formed portion may be included entirely by the section 13. Preferably, however, this arcuately formed wall is disposed to have a portion thereof 21 formed in the frontal portion 13 and an additional portion 22 formed in the rear portion 14 so as to be contiguous therewith. Upwardly extending flanges 23 and 24 form lap joints through which may be passed a fastening member such as a rivet 25. The bottom wall of the opening is preferably formed with downwardly inclined walls 26 formed in the frontal portion 13 and in alignment with the portion 27 formed in the rear frame 14. The side walls 19, 19 of the frame are provided adjacent the bottom wall 26 with offset bearing portions 28, 28. These bearing portions are preferably downwardly inclined slots forming bearing seats 29.

Into the opening just described, there is disposed a hopper door 30, including partition members 31 and 32, disposed substantially at right angles to each other, and side walls 33 arcuately shaped, corresponding to the arcuately shaped walls 21, 22 above described. A handle member 34 is provided on the partition wall 31 for suitably operating the hopper in a manner which will be apparent as this description proceeds. The side walls 33 are provided with bearing pins 35 which are positioned adjacent the corner formed by the intersection of the partitions 31 and 32. The curved walls 33 are preferably set off along the edge 36 between the edges 37 and 38 of the partitions numbered 31 and 32, respectively.

To position the hopper 30, this member is inserted in the opening, first inserting the edge 38, until the pins 35 rest in the bearing portions 28, upon the seat 29. The hopper will, in this position, be freely pivotal, rotation being permitted to the extreme right as far as that shown in Figure 2, wherein the partition member 32 is disposed to lie flat upon the angularly aligned bottom walls 26 and 27. In this position the partition member 31 serves to seal the opening 11 against any ingress of air or gases coming upwardly from the flue. Additionally there may be provided a lug 39 adapted to engage the offset portion 37 at the edge of the partition mem-

ber 31, further serving to seal the opening 11 and acting as a stop in cooperating with the bottom wall to prevent further rotation. This lug 39 is positioned about midway of the arcuate wall formed by the portions 21 and 22 and extends across the full length thereof. For loading material into the incinerator flue, rotation is given to the hopper door by grasping the handle 34. In its rotation inwardly about the pins 35, it will be observed that the partition member 31 serves to seal the opening throughout its movement until the position substantially shown in dotted lines in Figure 2 is reached. As the partitions 31 and 32 are positioned to subtend an angle equivalent to that of the arcuate walls 21 and 22 in the position shown in dotted lines in Figure 2, the edge 38 will be adjacent the lower edge 40 of the wall 22. In this position, it will be observed that the inner partition member 31 is just passed the opening defined by the side walls 19 and 20. Here, again, in this position it will be observed that the partition member 32 serves to seal the opening 11 of the flue. Further movement inwardly to that shown in Figure 1 maintains the edge 38 in substantial contact with the arcuate wall 22 until the edge 38 abuts the lug 39, preventing further rotation. In this position, however, the partition member 31 has passed the edges of the walls 19 and 20, giving access to the interior of the hopper. In this position, refuse material may be loaded into the hopper door to completely fill the same. It will be further observed that no material may be forced into the flue opening 11 beyond the capacity of the hopper 30. Furthermore, in its loading position, the partition member 32 serves to completely close and seal the opening 11.

To unload the contents deposited within the hopper 30, pivotal rotation to the right is effected until the partition member 32 rests upon the angularly disposed walls 26 and 27 and the edge 37 of the wall 31 abuts the lug 39. The material deposited within the hopper will thereupon gravitate down the inclined angularly positioned wall 32 into the flue, directed to any receptacle or incinerator.

It will be observed that the parts may be made of suitable fire resistant material such as sheet metal or metal casting without departing from the spirit and scope of my invention. It will be further observed that though I have described the arcuate wall and partition members as each disposed to subtend an angle of about 90°, the hopper walls corresponding to 31 and 32 may be further divergent if the sealing wall be additionally extended.

It will thus be observed that I have provided an incinerator or similar refuse disposal system which is substantially simple and inexpensive, at the same time providing

a device which is fool-proof against undue loading to render the device inoperative and one which is free from the objections of disturbing the air currents in the flue of the incinerator by reason of the provision of a seal in all positions of operation in respect to the loading opening. It will further be observed that in the preferred form as shown, the hopper door is so disposed as to automatically close upon release of the handle by the operator after depositing any material in the hopper door.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is—

1. The combination with a flue wall having an opening therein, a frame fitting into the opening comprising a frontal section formed with a plaster bead and inwardly directed flanges, a portion of which is arcuately formed, a rear section including an inwardly directed flange comprising an angular extension at the lower side and an arcuately formed wall at the top side, the flanges of said sections being capable of being fastened to form a smooth continuous, arcuate wall and cooperating to provide means for confining the masonry of the wall, a hopper pivot concentric with the arcuate wall and a hopper embodying diverging sides proportioned as radii of an arc and moving upon the pivot with one of the sides at all times in contact with the arcuately formed walls.

2. The combination with a flue wall having an opening therein, a frame fitting into the opening comprising a frontal section formed with a plaster bead and inwardly directed flanges, a portion of which is arcuately formed, a rear section including an inwardly directed flange comprising an angular extension at the lower side and an arcuately formed wall at the top side, the flanges of said sections being capable of being fastened to form a smooth, continuous, arcuate wall and cooperating to provide means for confining the masonry of the wall, a hopper pivot concentric with the arcuate wall and a hopper embodying diverging sides proportioned as radii of an arc and moving upon the pivot with one of the sides at all times in contact with the arcuately formed walls, an outwardly turned lip on said frontal section for said hopper pivot, angularly disposed in substantial alignment with said angular extension whereby a lateral and continuous extension is formed for the hopper in its dumping position.

In witness whereof, I have hereunto signed my name this 11th day of April, 1927.

HARRY H. HEYBECK.