Dec. 7, 1954 J. W. HEBERT 2,696,178

REFUSE INCINERATOR WITH CHARGING DOOR STOP MECHANISM

Filed Oct. 26, 1951 2 Sheets-Sheet 1

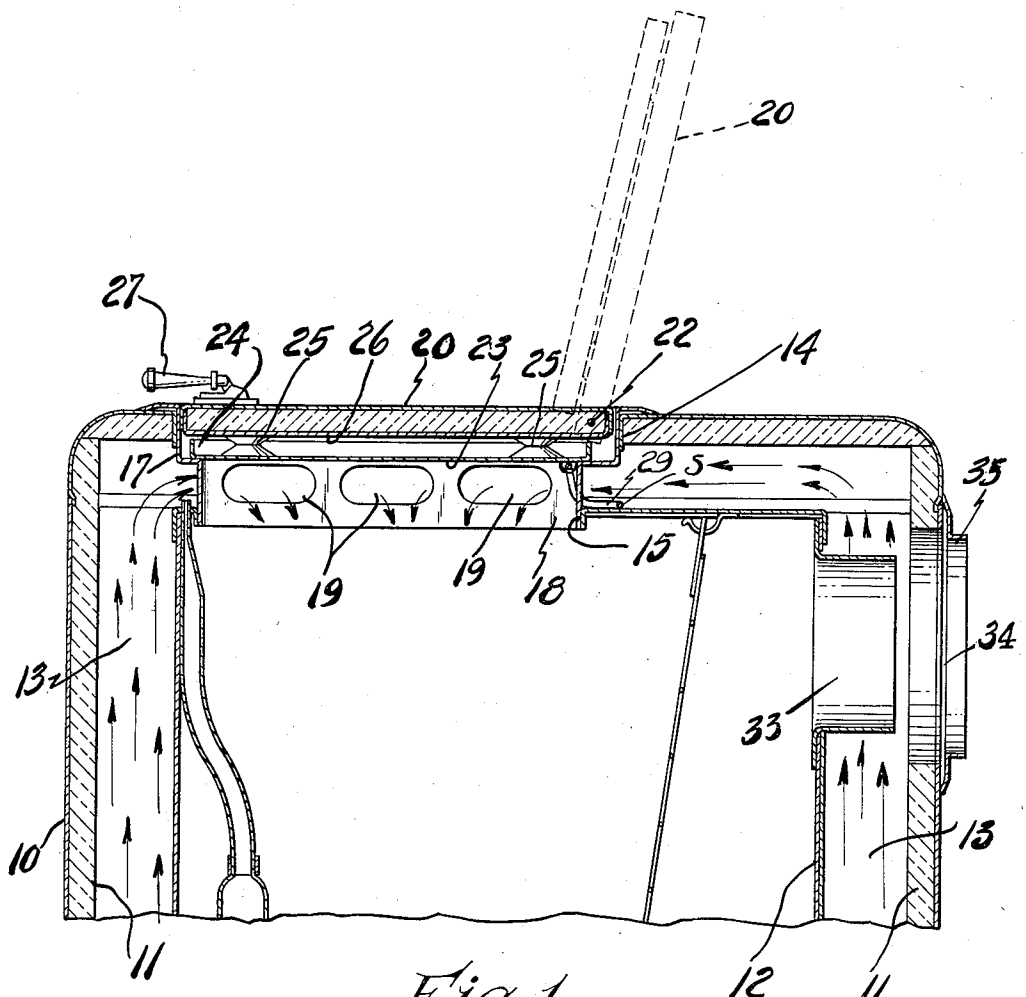


Fig. 1

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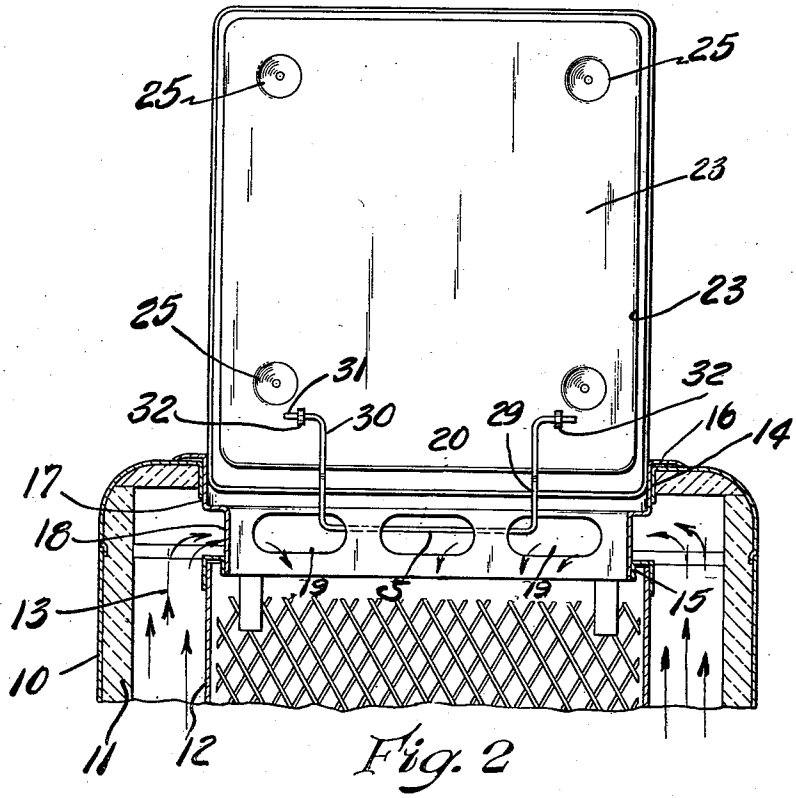


Fig. 2

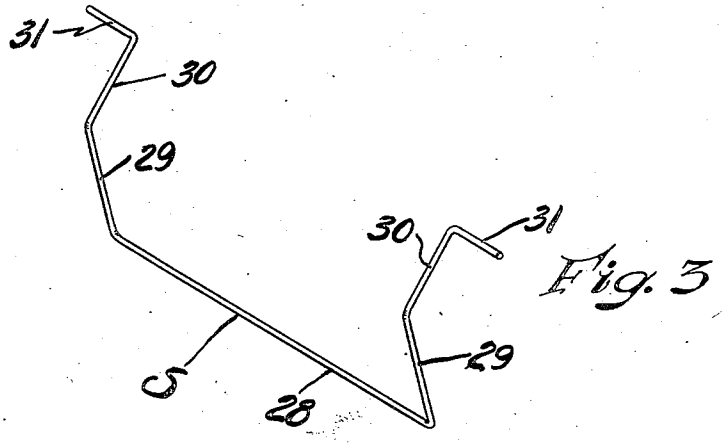


Fig. 3

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REFUSE INCINERATOR WITH CHARGING DOOR STOP MECHANISM

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Application October 26, 1951, Serial No. 253,420

9 Claims. (Cl. 110—18)

This invention relates to incinerators designed for the burning of garbage and other refuse, and is primarily directed to means for limiting the swing of the feed door of said incinerators.

One of the prime objects of the invention is to design a simple, practical, and inexpensive door stop which can be readily manufactured, and easily applied and/or removed.

Another object is to design a simple stop by means of which the door may be held in predetermined position to insure maximum opening to the combustion chamber and minimum interference with the feeding of refuse to said chamber.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, and proportion of the various elements, and in the minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is a fragmentary, vertical, sectional elevational view of my improved incinerator with the door stop in position thereon, the broken lines showing the door swung to raised position.

Fig. 2 is a fragmentary, vertical, sectional, front elevational view showing the door in its raised position.

Fig. 3 is a perspective view of the stop.

Referring now more particularly to the drawings in which I have shown a preferred embodiment of my invention, the numeral **10** indicates the outer housing of an incinerator which is insulated as at **11**. An inner casing **12** is provided in the housing **10** with an air space **13** provided between the walls of said housing and casing to permit upward flow of air to the combustion chamber and to further assist in cooling the incinerator.

Vertically aligned openings **14** and **15** are provided in said housing and inner shell respectively, and a fabricated door frame **16** is mounted therein, the lower section of said frame being shouldered and reduced as at **17** to form a throat **18** which closely fits the opening **15** formed in the inner casing. A plurality of slotted air passages **19** are provided in said throat section **18** to permit free circulation of air through openings **19** into the combustion chamber C.

A fabricated door **20** is hingedly connected to the frame **16** by means of hinge pins **22**, and when the door is in its closed position as shown in Fig. 1 of the drawings, it will lie substantially flush with the top of the incinerator housing, said door being formed with a bottom plate **23** which is upwardly flanged as at **24**. Bosses **25—25** are provided on the plate **23** and the plate **26** respectively for providing air space therebetween and tight engagement with the shouldered section **17** of the throat **18**, and a suitable handle **27** is provided to facilitate manipulation of said door.

The structure described is identical with that shown, described and claimed in my co-pending application Serial No. 253,419, filed October 26, 1951, for "Incinerators."

The stop S is formed as clearly shown in Fig. 3 of the drawings, and is preferably formed of suitable gauge wire stock, the stop being substantially U-shaped in form and including a laterally extending section **28** having outwardly projecting legs **29** formed integral therewith.

The outer end sections **30** of said legs are bent at an angle to the sections **29** to accommodate the shouldered section of the door; thence the ends **31** are bent laterally or horizontally as shown and are accommodated in eyes or bearings **32** which are formed in the plate **23** which forms a part of the door.

In practice, the stop is first mounted in the throat section **18** of the door frame, the legs **29** being inserted through slotted openings **19** and the free end sections **31** in the eyes **32** on the plate **23** so that when the door is swung to raised position as shown in Fig. 1 of the drawings, the stop will resiliently limit the swinging movement of said door and hold it in predetermined position. It is important to note that the lower edge of the door extends but a minimum distance into the door opening, leaving the maximum unobstructed space or area for feeding refuse and other material to the combustion chamber.

A smoke flue **33** is provided in the back wall of the inner casing **12** and a smoke pipe (not shown) is connected thereto and leads through an opening **34** in the back wall of the housing, a collar **35** surrounding the openings **34** as usual.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and inexpensive stop for limiting the swinging movement of the incinerator door.

In all instances the above descriptive matter and the drawings are to be interpreted only as illustrative of the invention rather than limiting the scope thereof and reference should be had to the appended claims for a determination of the scope of the invention.

What I claim is:

1. In combination with a garbage incinerator comprising an upright housing having front, rear, and side walls, and a top wall, and an inner casing including front, rear and side walls supported within said housing, the top of said casing and walls thereof being spaced from said housing to define an insulating and air conducting chamber therebetween, the top wall of said housing having a charging opening and the casing having a charging opening in alignment therewith, a door frame supported by the housing and extending through the charging opening in the top wall of the housing to the charging opening in the inner casing to provide a charging passage from the top wall of the outer housing to the top of the inner casing, said door frame being formed with laterally spaced openings interjacent its ends connecting said air chamber and the charging passage to transmit air between said chamber and inner casing, a charging door normally closing the opening in said housing hingedly connected adjacent its rear edge to said frame for outward swinging movement away therefrom, and a substantially U-shaped stop member with its free ends hingedly carried by said door, the legs of the stop extending beyond the hinged edge of the door and through said laterally aligned openings in said frame from the interior side thereof to the exterior side thereof, the legs of the stop extending a sufficient distance beyond the hinged edge of the door so that the intermediate portion of said U-shaped stop member is disposed exteriorly of and in spaced relation from the frame when the door is in closed position and can be brought toward the frame into bearing engagement therewith when the door has been swung outwardly a predetermined distance to thus limit the further outward swing thereof.

2. The combination defined in claim 1 in which laterally turned sections are provided on the free ends of the legs of the U-shaped stop member, and spaced-apart bearings are provided on the inner face of said door for releasably accommodating said laterally turned sections of said legs.

3. The combination set forth in claim 1 in which the free end portions of the legs of the U-shaped stop member are bent at an angle with relation to the rest of the legs and the free ends thereof are turned laterally.

4. In a garbage incinerator, an outer casing, an inner casing spaced from the walls thereof, said outer and inner casings having aligned charging openings formed therein, a door frame supported in the charging opening in the outer casing and extending from the charging opening

in the outer casing toward the charging opening in the inner casing to form a charging passage from the outer casing to the inner casing, the door frame being formed with laterally spaced openings interjacent its ends connecting the space between the walls of the casings with the charging passage, a charging door closing the opening in said outer casing hingedly connected adjacent one edge thereof to said frame for outward swinging movement away therefrom, and stop means carried by said door extending beyond the hinged edge thereof, the extending portion of said stop means including legs extending from the inner face of said frame through the laterally spaced-apart openings in the frame, the legs being turned laterally after passing through said frame and being of sufficient length so that the lateral portions are disposed beyond the outer face of said frame when the door is in closed position and are brought inwardly into engagement with the outer face of said frame when the door is swung outwardly a predetermined distance to limit further outward swing thereof.

5. In a garbage incinerator, an outer casing having a charging opening in a wall thereof, an inner casing spaced from the walls thereof having a charging opening in alignment therewith, a door frame extending from the charging opening in the outer casing toward the charging opening in the inner casing in substantially perpendicular relation to the wall of said outer casing in which is said charging opening and forming a charging passage from the outer casing to the inner casing, a door hingedly connected adjacent one edge thereof to said frame for outward swinging movement away therefrom, and stop means carried by said door and moving outwardly therewith when the door is swung outwardly, said stop means extending from the hinged edge thereof a sufficient distance so as to lie adjacent a wall of the frame when the door has been swung to an outward position in which it is substantially perpendicular to the wall of the outer casing in which the charging opening is provided, the extending portion of the stop means lying adjacent the frame in said position including a portion turned laterally to the extended length thereof to bear inwardly against the frame when the door has been swung outwardly past said substantially perpendicular position to positively block the further outward swing thereof.

6. In a garbage incinerator, an upright outer casing including a top wall, an inner casing spaced from the walls thereof, said inner casing having a top wall, said outer and inner casings having aligned charging openings formed in the spaced-apart top walls thereof, a door frame extending from the charging opening in the outer casing toward the charging opening in the inner casing to form a charging passage from the outer casing to the inner casing, said frame having laterally spaced openings interjacent its ends connecting the space between the walls of the casing with the charging passage, a door hingedly connected adjacent one edge thereof to said frame for outward swinging movement away therefrom, and stop means extending from the hinged edge of said door hingedly carried by said door to swing in a vertical plane, said stop means including legs extending from said door through the laterally spaced-apart openings in said frame from the inner side thereof to the outer side thereof, the legs being turned laterally after passing through said frame and being of sufficient length so that the lateral portions are disposed beyond the outer face of said frame on the top wall of said inner casing when the door is in closed position and ride forwardly until the door is swung outwardly a sufficient distance from the outer casing so that said portions are brought into bearing engagement with the frame and limit the further outward swing of the door.

7. In a garbage incinerator, an outer casing having a charging opening in a wall thereof, a door frame supported in the charging opening and extending inwardly therefrom substantially perpendicular relative to said wall thereof, a charging door closing the opening in said outer casing hingedly connected adjacent one edge thereof to said frame for outward swinging movement away therefrom, laterally spaced openings in the door frame interjacent its ends, and a substantially U-shaped stop member with its free ends carried by said door, the legs of the stop extending beyond the hinged edge of the door through laterally aligned openings in said frame from the interior side thereof to the exterior side thereof, the legs of the stop extending a sufficient distance beyond the hinged edge of the door so that the laterally turned portion of said stop is disposed exteriorly of the frame when the door is in closed position and is brought toward the frame into bearing engagement therewith when the door has been swung outwardly a predetermined distance to thus positively limit the further outward swing thereof.

8. In a garbage incinerator, an outer casing having a charging opening in a wall thereof, a door frame supported in the charging opening and extending inwardly therefrom substantially perpendicular relative to said wall thereof, a charging door closing the opening in said outer casing hingedly connected adjacent one edge thereof to said frame for outward swinging movement away therefrom, an opening in said door frame interjacent its ends, and a stop member including an end hingedly carried by said door to permit said stop means to swing in a vertical plane, the opposite end of the stop extending beyond the hinged edge of the door through the opening in said frame from the interior side thereof to the exterior side thereof, said opposite end of the stop including a portion turned angularly to the extended length thereof at a predetermined distance from the first-mentioned end of said stop, said portion being disposed exteriorly of the frame when the door is in closed position and being brought toward the frame into bearing engagement therewith when the door has been swung outwardly a predetermined distance to positively limit the further outward swing thereof.

9. The combination defined in claim 7 in which laterally spaced-apart eye bearings are provided on the inner face of said door and the free ends of the legs of the U-shaped stop member are turned laterally and extend through said eye bearings.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,769,003	Strube	July 1, 1930
2,010,460	McKinley	Aug. 6, 1935
2,383,188	Griswold	Aug. 21, 1945
2,443,524	Weyenberg	June 15, 1948
2,515,869	Gregg	July 18, 1950
2,528,333	Biddle	Oct. 31, 1950