

Sept. 8, 1959

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2,903,115

INCINERATOR PUSH DOOR

Filed Oct. 28, 1957

FIG. 1

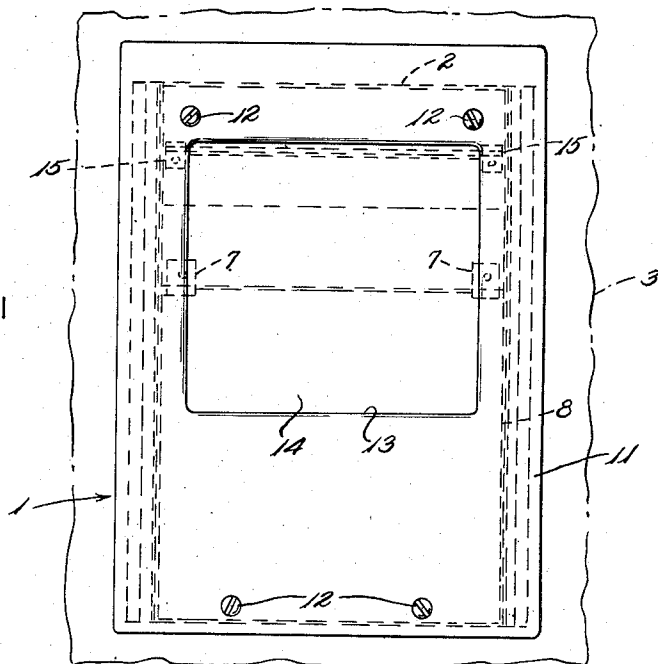
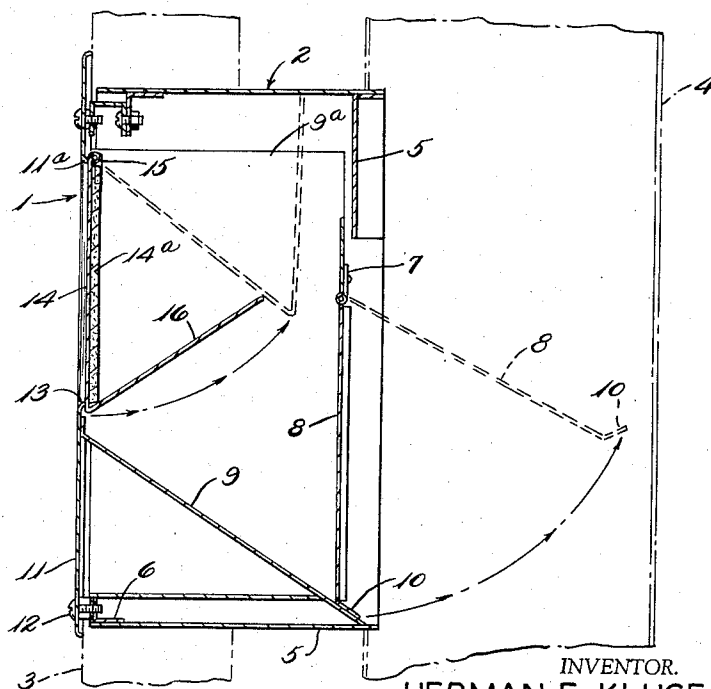


FIG. 2



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## INCINERATOR PUSH DOOR

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Application October 28, 1957, Serial No. 692,942

2 Claims. (Cl. 193—34)

This invention relates to receiving or feed doors for flue fed incinerators, and especially to an incinerator push door unit having a closure adapted to retain itself in a closed position.

Heretofore there have been many different types of receiving doors provided for use in laundry chutes, and another big field of use for receiving doors is for rubbish or garbage burners or incinerators. In such doors, it is very necessary that the doors maintain a tight fit with their associated framing means when the doors are closed, and with the doors being readily openable to receive bundles of garbage or other material to be placed into and through the hopper door for combustion in the associated burner means. Normally, these constructions have inner sealant doors as well as outer closures and these inner doors usually are opened by the material to be burned being forced thereagainst by gravity to cause the door to swing open and let the material fall into the combustion chamber of the associated burner unit.

The general object of the present invention is to provide a new and improved hopper door characterized by the provision of an offset end flange or counterweight thereon to maintain the door in a sealed or closed position.

A further object of the invention is to provide an attractive appearing door which has a minimum of parts therein and which has a center of gravity therein to urge the door inwardly and/or against the associated frame means to a closed position.

Other objects of the invention are to provide an uncomplicated type of a unit through which refuse can be passed to a flue or stack connecting to an incinerator chamber; to provide a door construction for a flue or stack which will be very sanitary in construction in that no recessed chambers are accessible for collection of garbage or other refuse therein; to provide a door that is self closing without the use of springs; to provide a door and supporting frame unit constructed so that no protruding handles or the like need be required whereby the unit is of attractive appearance and a long service life; to provide a door positioning member and frame which can be provided in any desired color or modern finish, to provide a door hopper construction wherein the door is flush with the supporting means and is inwardly moving and connects to a downwardly inclined discharge chute; and to provide a door and positioning frame that can be used to replace prior styles of feed or receiving doors and their frame means.

Another object of the invention is to provide a door construction utilizing novel inner and outer closures and adapted for any of a wide variety of uses and which door is made at minimum cost for effective functioning thereof.

The foregoing and other objects and advantages of the invention will be made more apparent as the specification proceeds.

In the accompanying drawings:

Fig. 1 is an elevation of a door embodying the prin-

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ciples of the invention, showing such door in its operative position in association with wall and flue means; and

Fig. 2 is a vertical section through the door of Fig. 1.

When referring to corresponding parts shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison therebetween.

The present invention, in general, relates to a receiving door or the like wherein frame and closure means are provided as a unit for being secured to a wall or the like at an opening therein for filling such opening and permitting passage of rubbish, or other material through the hopper door. The door unit and frame and closure means includes front and rear openings therein with a downwardly inclined shelf member ordinarily secured to the frame and closure means and extending from the front to rear thereof immediately below the front and rear openings, a rear door pivotally secured to an upper rear portion of the frame and closure means for closing the opening in the back thereof, and a front door pivotally secured within the frame and closure means at an upper front portion thereof for closing the front opening, the front door having an upwardly and rearwardly extending integral flange at its lower end to provide a center of gravity in the door such as will urge it forwardly against the means outlining the front opening and will maintain the door in a tightly closed position under normal operating conditions.

Reference now should be had to the details of the structure shown in the accompanying drawings, and a door unit, or frame and closure means is indicated as a whole by the numeral 1. This door unit, or frame and closure means 1 is positioned in a sleeve, indicated as a whole by the numeral 2 and secured in a wall 3 so that the door unit connects to a rubbish chute 4 or the like. Material may be inserted into and pass through the door 1 and sleeve unit 2 into the rubbish chute 4 for passage to an incinerator, storage hopper, or other collection means connected to the chute 4 at the lower end thereof. The sleeve unit 2 is made from suitable metal sheets 5 and angles 6 and has a front opening therein and a rear or back opening which connects directly to the rubbish or equivalent chute 4.

The metal sheets 5 and angles 6 are secured together to form a generally substantially rectangular shaped sleeve 2 permanently positioned in the opening of the wall 3. A portion of this frame and closure means 1 at a back section thereof carries a hinge plate 7 which pivotally suspends a back or rear closure, or door 8 over the back opening in the frame and closure means 1. Fig. 2 of the drawings best shows that a downwardly inclined shelf member 9 is suitably secured to sides 9a of the frame and closure means 1 and extends from front to rear of such means immediately below the front and rear openings therein for connecting such openings and facilitating passage of rubbish, garbage or the like through the door unit 1 and associated means. It should be noted that the rear closure or door 8 has a downwardly and outwardly inclined flange 10 thereon, which flange is formed complementary to and rests directly on the associated surface of the shelf member 9 so that an effective, tight sealing action can be secured by such door 8. Gravity normally retains the rear closure 8 in its closed or sealed position. Obviously, the door 8 is of sufficient width to fill the back opening in the frame and closure means 1 snugly or tightly when the door is in its closed position.

Preferably an outer cover is provided for use in association with the frame and closure means 1. Thus, a metal sheet or cover 11 is provided and it is suitably secured to the remainder of the frame and closure means 1 to make a unit therewith. The door unit or frame and

closure means 1 is secured to the wall sleeve unit by a plurality of cap screws 12 or the like. The cover has an opening 13 therein for receipt of laundry, rubbish, garbage, etc.

As an important feature of the present invention, a front closure or door 14 is hingedly secured to the rear surface of the cover 11 for normally closing the front opening 13 in the cover. Any suitable pivot or hinge means, such as a pintle 15, is provided for positioning the front door 14. The pintle 15 is suitably anchored to a part of the frame and closure means 1 such as the cover 11. It will be seen that the door is positioned in such a manner that the pintle 15 is not visible from the front of the door unit 1. The cover 11 has a rearwardly directed flange 11a outlining the opening 13 and the door 14 seals against the edges of such flange 11a in its normal closed position. The front door 14 abuts on the inner surface of the cover 11 to make effective sealing engagement with an inwardly curved flange 11a at the opening 13. The door 14, as an important feature of the invention, is made from fairly heavy gauge metal in relation to the remainder of the unit, and it has an integral, rearwardly and upwardly directed flange 16 formed at its lower end. The flange 16 provides a center of gravity for the door 14 to urge it forwardly of a suspended vertical position and automatically keep such door closed by an appreciable force exerted thereon. This flange 16 is of sufficient length that it normally will abut against a top portion of the frame and closure means 1 when the front door 14 is swung up to a position substantially parallel with the shelf member 9. Hence, any desired bundles of rubbish, garbage, or the like, can be inserted in through the front opening 13 by swinging the door 14 rearwardly in the hopper door unit. The bundle of garbage, rubbish or the like would then slide down over the shelf member 9 and normally would open the back door, or rear closure 8, by gravity action, although the material being passed through the receiving door can be manually forced against the back door 8 to open it and swing it to a discharge position whereby the material being passed through the door can fall into the rubbish chute 4 for suitable disposal action.

The cover 11 and door 14 can be made from any suitable material and may have an attractive chrome or equivalent finish thereon, as desired. The door 14 suitably carries an asbestos sheet 14a on its rear surface for insulating and sound deadening purposes. Also, the frame and closure means 1 can be secured to prior styles of wall sleeves, like the sleeve 2, to provide a novel and effective new closure therefor.

The door unit 1 of the invention is adapted to be positioned in building units in a conventional manner, but yet will have an effective service action. It is important that the door 14 does not open farther than to a position substantially parallel to the shelf member 9 as the door 14 then aids in preventing forcing of bundles too large for the door 14 into it. The door 14 will automatically be retained closed without the use of springs or other means requiring maintenance or service. Hence, the objects of the invention have been achieved.

While one complete embodiment of the invention has been disclosed herein, it will be appreciated that modifica-

tion of this particular embodiment of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. A hopper door comprising frame and closure means for being secured to a wall or the like at an opening therein to fill such opening, said frame and closure means including front and rear openings therein with a downwardly inclined shelf member secured to such means and extending from front to rear of such means immediately below said front and rear openings, a cover forming a part of said frame and closure means and having said front opening therein, a rear door pivotally secured to an upper rear part of said frame and closure means to close the opening in the back thereof, said rear door having a downwardly and rearwardly inclined flange to bear on said shelf member and seal thereon, and a front door positioned within said frame and closure means at an upper front portion thereof to close said front opening normally, said cover having a rearwardly directed flange outlining said front opening, said front door having an integral upwardly and rearwardly extending flange on its lower end to maintain such door normally in a tightly closed position against said rearwardly extending flange by gravity, and journal means positioned on the back of said cover and pivotally securing said front door to said cover for rearward opening movement, the upper end of said front door flange contacting a part of said frame and closure means to limit opening movement of said front door to a position substantially parallel to said shelf member.

2. A hopper door comprising frame and closure means for being secured to a wall or the like at an opening therein to fill such opening, said frame and closure means including front and rear openings therein with a downwardly inclined shelf member secured to such means and extending from front to rear of such means immediately below said front and rear openings, a cover forming a part of said frame and closure means and having said front opening therein, a rear door pivotally secured to an upper rear part of said frame and closure means to close the opening in the back thereof, and a front door positioned within said frame and closure means at an upper front portion thereof to close said front opening normally, said front door having an integral upwardly and rearwardly extending flange on its lower end to maintain such door normally in a tightly closed position against said cover by gravitational forces on said front door, and journal means positioned on the back of said cover pivotally securing said front door to said cover for rearward opening movement, the upper end of said front door flange contacting a part of said frame and closure means to limit opening movement of said front door to a position substantially parallel to said shelf member.

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