

July 4, 1939.

E. ESSON
HOT AIR HEATER
Filed Jan. 17, 1938

2,165,038

2 Sheets-Sheet 1

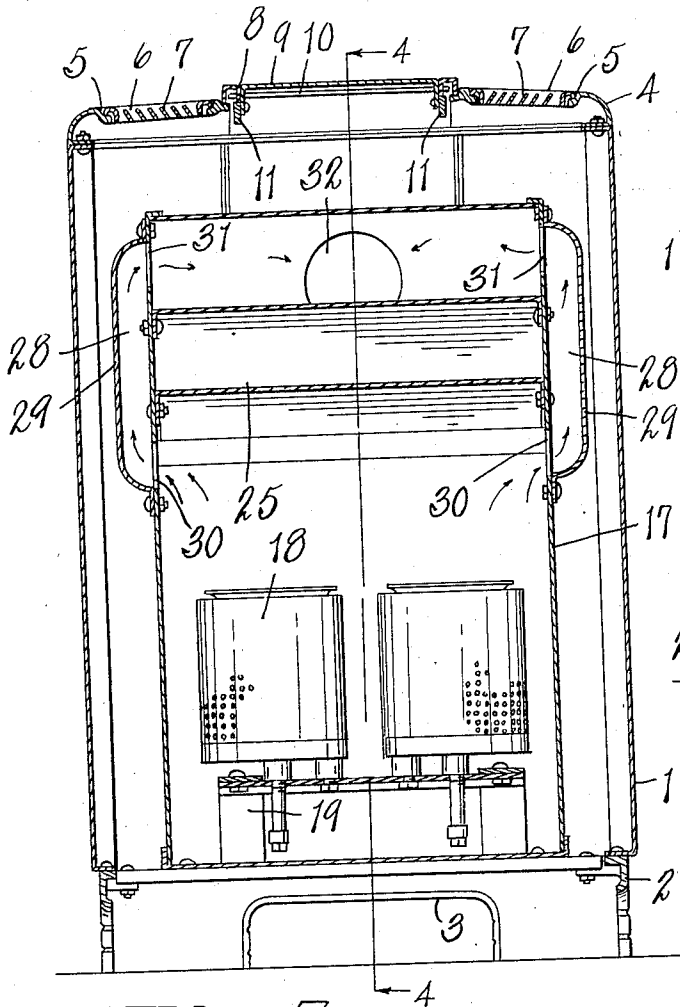


Fig. 2.

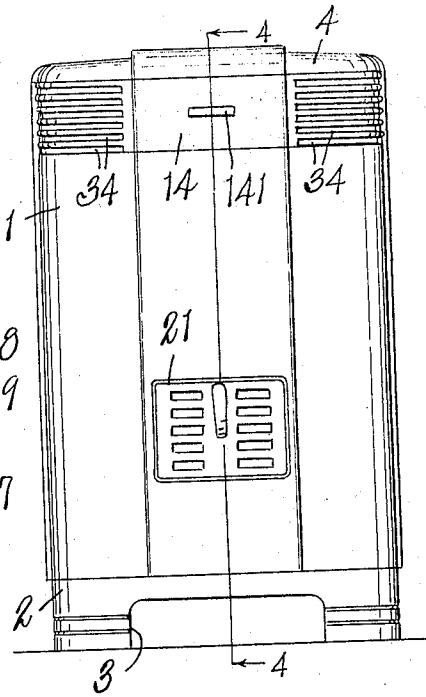


Fig. 1.

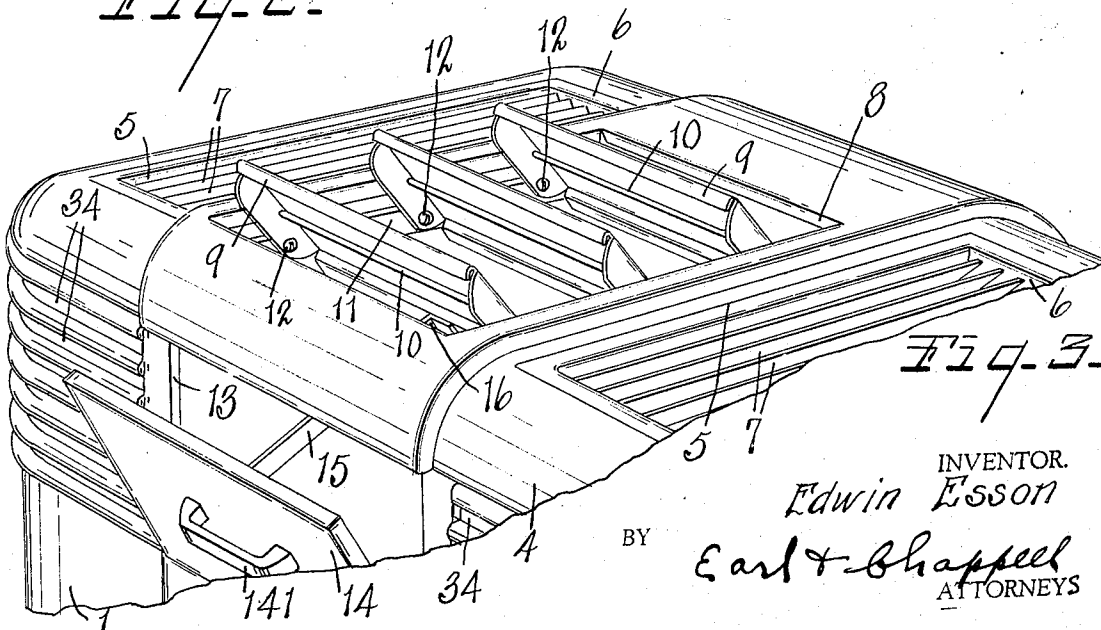


Fig. 3.

INVENTOR.
Edwin Esson
BY
Earl & Chappell
ATTORNEYS

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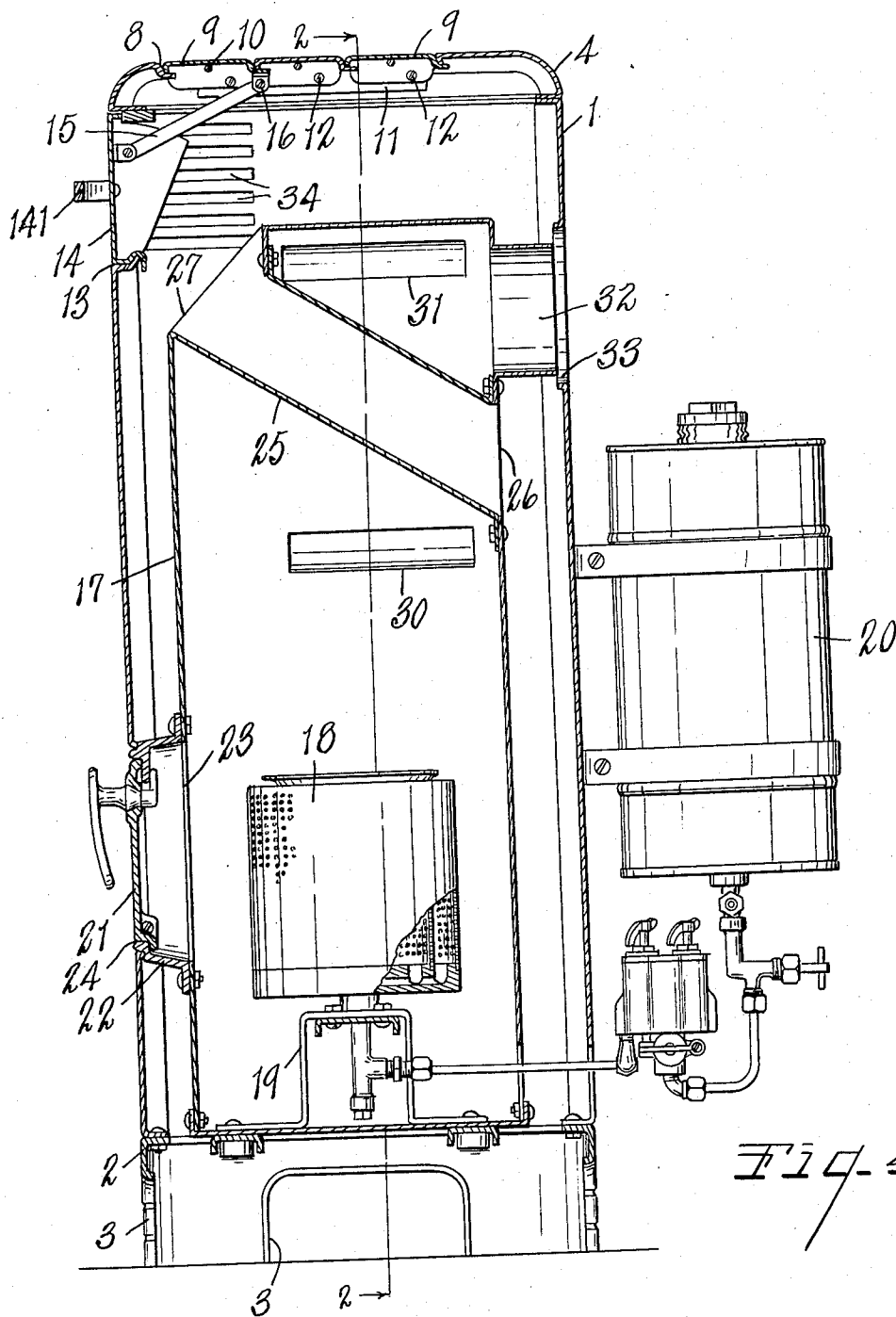


Fig. 4.

INVENTOR.
Edwin Esson
BY
Earl & Chappell
ATTORNEYS

UNITED STATES PATENT OFFICE

2,165,038

HOT AIR HEATER

Edwin Esson, Kalamazoo, Mich., assignor to Kalamazoo Stove & Furnace Company, a corporation of Michigan

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3 Claims. (Cl. 126-67)

This invention relates to improvements in hot air heaters.

The main objects of this invention are:

First, to provide a cabinet type of hot air heater which is quite compact and the same time is highly efficient.

Second, to provide a hot air heater of the type described which is efficient in that it circulates a relatively large volume of air through the hot air casing of the heater.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a front elevation of a hot air heater of the cabinet type embodying my invention.

Fig. 2 is a vertical transverse section on line 2-2 of Fig. 4, the burner elements or units being shown in full lines.

Fig. 3 is a fragmentary top perspective view with the central louvers and air circulating control door open.

Fig. 4 is a view mainly in vertical section on line 4-4 of Figs. 1 and 2 with the central louvers and air circulating door closed.

In the embodiment of the invention illustrated, 1 is the hot air casing which is preferably of approximately rectangular horizontal section. The casing is mounted on a suitable base 2 designed to provide air circulating openings 3. The top 4 is provided with side delivery openings 5 receiving grids 6 having outwardly inclined louvers 7. The top also has a central opening 8 in which is pivotally mounted a series of louvers 9, the pivots 10 being disposed centrally relative to the width of the louvers. The louvers are connected by a bar 11, the louvers being connected to the bar by the pivots 12.

The front wall of the hot air chamber is provided with a door opening 13 and with the door or closure 14 therefor, the closure being pivotally or rockingly supported at its lower end. The door is connected by the link 15 to an ear 16 on the rear edge of the front louver 9. With this connection, when the door or closure 14 is opened, the series of central louvers 9 are also opened to a forwardly inclined position as shown in Fig. 3. The closure 14 is provided with a handle or grip 141. The closure 14 serves as a counterbalance for the pivoted louvers 9 when the parts are in open position.

The burner chamber 17 is mounted centrally

within the hot air chamber with its walls in spaced relation to the walls of the hot air chamber, its top being spaced from the top of the hot air chamber.

The burners designated generally by the numeral 18 are mounted on supporting brackets 19. The burners in this case are liquid fuel burners and are supplied with suitable connections from the tank 20 mounted on the rear wall of the hot air chamber. The details of the burners and the connections are not described as they form no part of this invention.

The burners are accessible through the door 21 in the front wall of the hot air chamber. The door casing 22 is secured around an opening 23 in the front wall of the burner chamber and fits into an opening 24 in the front wall of the hot air chamber.

In the top of the burner chamber, I provide a radiator 25 which is disposed in a rearwardly inclined relation, this radiator being formed of spaced plates extending from side to side of the hot air chamber, the radiator having an inlet opening 26 in its rear end and a discharge opening 27 in its front end and directing heated air upwardly and forwardly toward opening 13 and the louvers.

By-passing flues 28 are provided at each side of this radiator 25, these flues being preferably formed by plates 29 secured to the side walls of the burner chamber to cover the holes 30 and 31 in the side walls located below and above the radiator so that the products of combustion pass around the radiator. These flues are flattened so as not to unduly obstruct the hot air space and also they present a relatively large radiating surface.

A central discharge flue 32 is provided for the products of combustion. This is designed to receive a suitable conduit, the opening 33 in the rear wall of the hot air chamber being concentric to this flue 32 so that a conduit for the products of combustion can be slipped through the hole 33 into telescoping engagement with the flue 32.

Heaters embodying my invention are highly efficient and my invention may be easily embodied in an attractive cabinet form as illustrated.

The heater is capable of circulating a large volume of air although the temperature of the air circulated may be controlled to a considerable extent by manipulation of the door 14 and consequently the adjustable louvers. It is not deemed desirable to render it possible to close all the louvers as that might result in overheating

ing. The fixed louvers 7 provide a safety factor and the adjustable louvers may be manipulated as desired.

The front wall is preferably provided with air delivery openings 34.

I have illustrated and described my improvements in a very practical embodiment thereof. I have not attempted to illustrate or describe certain embodiments or adaptations which I contemplate as it is believed that this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a cabinet heater, the combination of a hot air casing comprising a front wall having a central opening at the upper end thereof, a top having a delivery opening at each side thereof provided with outwardly inclined louvers and a central delivery opening between said side delivery openings provided with transversely disposed pivoted louvers adapted to close the central opening and when in open position to incline forwardly, a bar connecting said pivoted louvers, a closure for said front opening pivoted at its lower edge, and a link connecting said front opening closure with said pivoted louvers whereby the pivoted louvers may be opened and closed by the opening and closing of said front opening closure, said front opening closure constituting a counter-

balance member for the pivoted louvers when the closure members and louvers are in open position.

2. In a cabinet heater, the combination of a hot air casing comprising a front wall having a central opening at the upper end thereof, a top having a delivery opening at each side thereof provided with outwardly inclined louvers and a central delivery opening between said side delivery openings provided with transversely disposed pivoted operatively connected louvers adapted to close the central opening and when in open position to incline forwardly, a closure for said front opening, and connections for said front opening closure with said pivoted louvers whereby the pivoted louvers may be opened and closed by the opening and closing of said front opening closure.

3. In a cabinet heater, the combination of a casing comprising a wall having an opening adjacent the upper end thereof and a top provided with adjustable louvers, means in the casing for directing heated air in said casing toward said wall from the opposite side of the casing and upwards to and through said opening when the latter is open, a closure for the opening, and connections between said closure and louvers to permit simultaneous adjustment of said closure and louvers.

EDWIN ESSON. 30