Oct. 4, 1949. C. P. PRICE 2,483,666

IGNITER FOR GAS HEATERS

Filed March 25, 1948 2 Sheets-Sheet 1

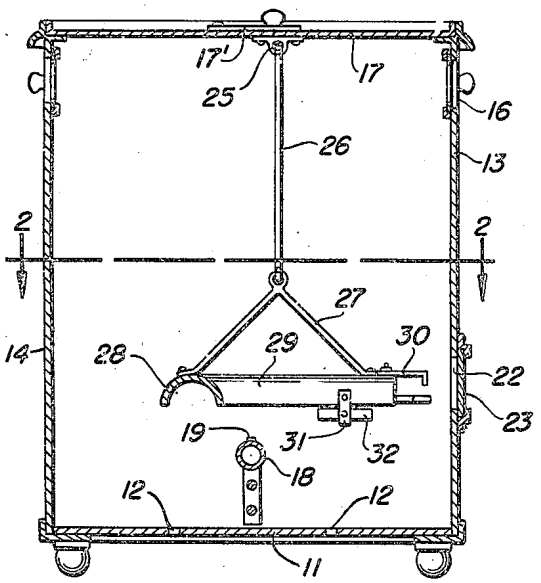

Fig 1

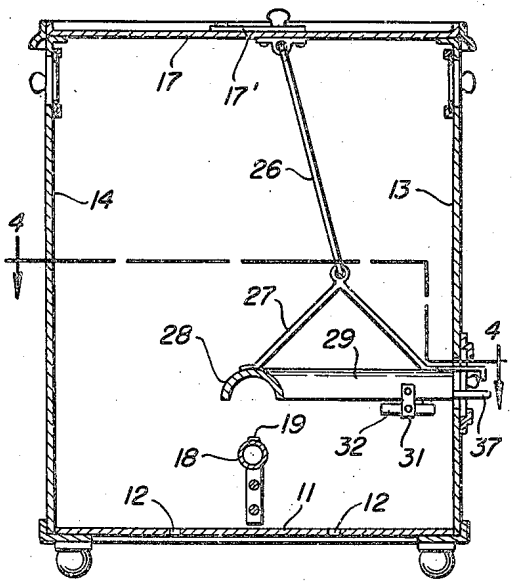

Fig 3

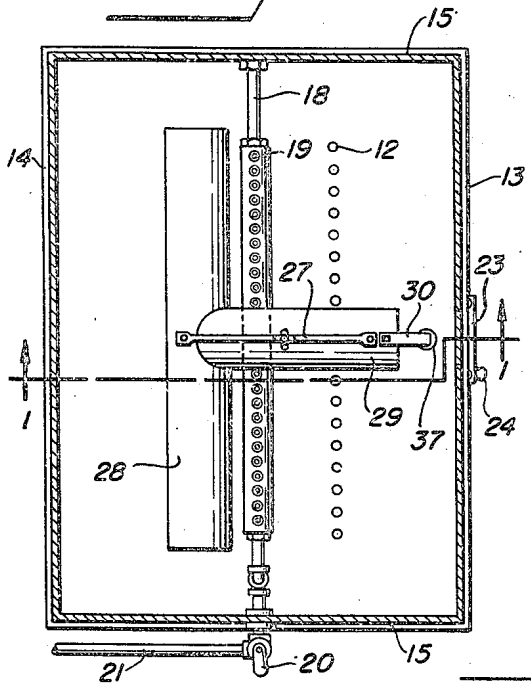

Fig 2

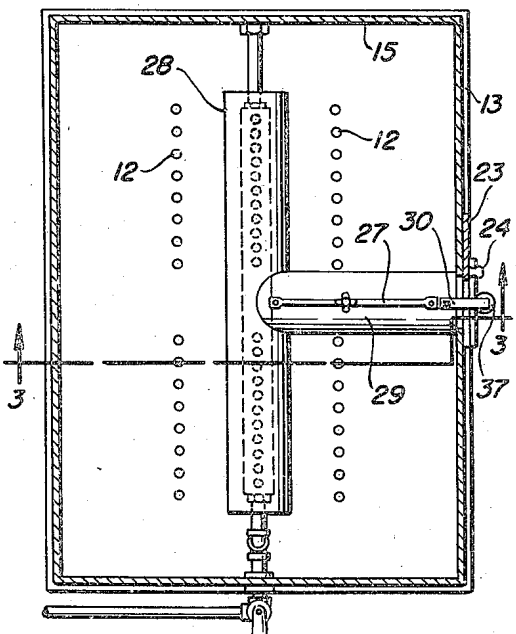

Fig 4

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IGNITER FOR GAS HEATERS

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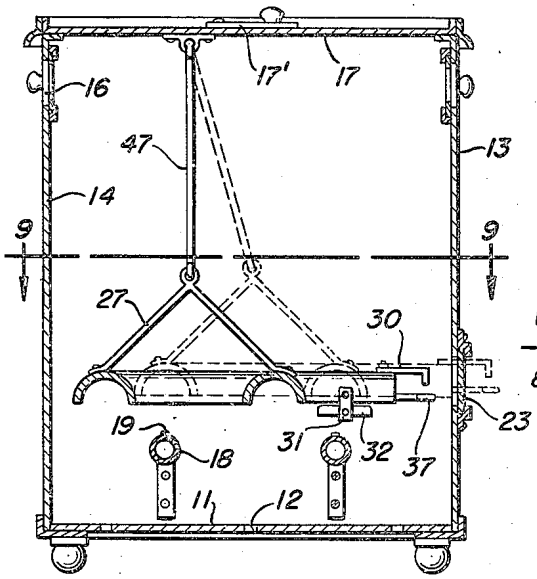

Fig 8

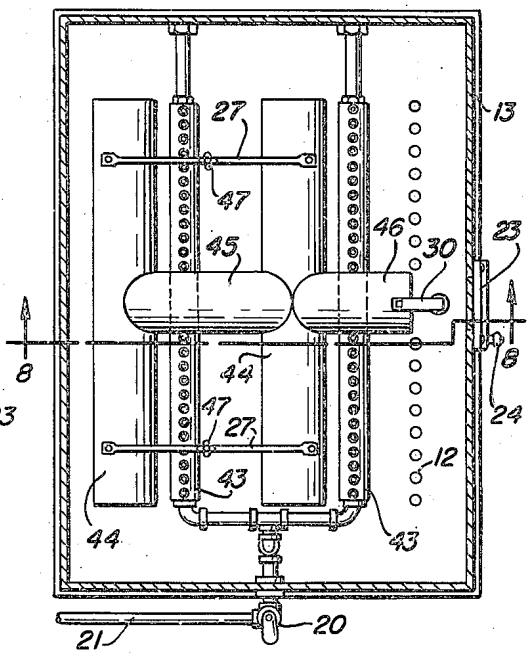

Fig 9

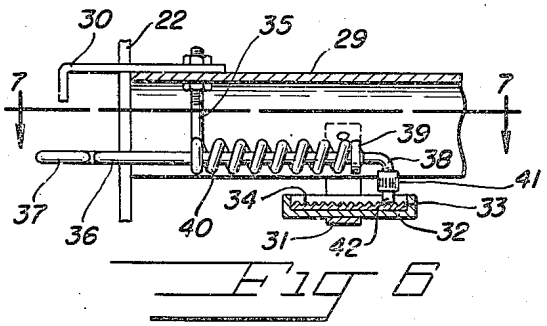

Fig 6

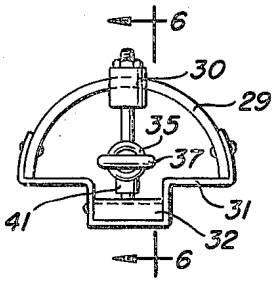

Fig 5

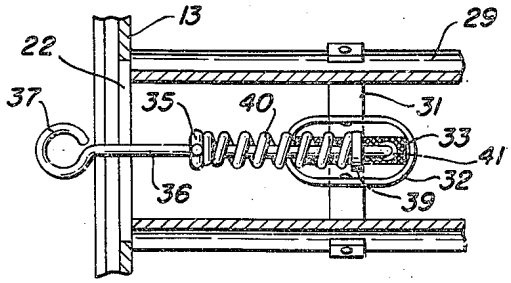

Fig 7

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UNITED STATES PATENT OFFICE

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IGNITER FOR GAS HEATERS

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5 Claims. (Cl. 126—85)

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The following specification relates to my invention of an improved igniter for gas heaters. In my prior patent on a gas lighting device granted September 1, 1925, 1,551,619, I disclosed the combination of a room heater operated with illuminating gas and means for igniting the gas burner in a safe and convenient manner.

The present invention provides improved means for carrying out the same general purposes but with certain decided advantages.

One of the objects of my invention is to provide safe and convenient means for igniting the fuel gas when the burners are spaced inwardly from the front of the burner housing.

A further object of my invention is to insure the ignition of all burner jets regardless of the space arrangement in which they are arranged.

A still further object of my invention is to facilitate the igniting operation by making it part of a single continuous movement of the hand.

Incidental to my invention is the provision of means for limiting and thus regulating the volume of air fed to the burner so that there will be no likelihood that some or all of the jets are extinguished by draughts.

As illustrating the preferred form of my invention I have shown it on the accompanying drawings in which:

Fig. 1 is a vertical sectional view on line 1—1 of Fig. 2, showing my improved igniting means in normal inoperative position;

Fig. 2 is a horizontal sectional view of the same on the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 4 showing the igniting means in its operating position;

Fig. 4 is a horizontal sectional view of the same taken on line 4—4 of Fig. 3;

Fig. 5 is a view in front elevation of the igniting means;

Fig. 6 is a vertical, longitudinal section of the same on the line 6—6 of Fig. 5;

Fig. 7 is a horizontal, sectional view of the same taken on the line 7—7 of Fig. 6;

Fig. 8 is a vertical sectional view of a modified form of the igniting means in normal inoperative position taken on the line 8—8 of Fig. 9, the operative position being shown in dotted lines, and

Fig. 9 is a horizontal section taken on the line 9—9 of Fig. 8.

Broadly speaking, my invention consists in providing an oscillating or rocking flame trough momentarily connecting the gas burner with an

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ignition opening in the housing, combined with igniting means actuated incidental to moving the igniting trough into operative position.

Thus in Fig. 1 I have shown the combination as applied to a room heater which may be portable. The heater has a base 11 of cast or sheet metal. Suitably arranged in this base are series of air inlets 12, 12. These air inlets are so gauged or proportioned as to admit a moderate excess only of air to support combustion of the burners. However, the volume of air brought in is restricted to the extent that the flame of the burner is not liable to be extinguished by draughts or the like.

The casing includes a front 13 and a rear wall 14 together with end walls 15, 15. These walls are also made of cast or sheet metal. Each of these walls has a series of "shuttered" vents 16 along the upper edge by which the heated gaseous products of combustion are discharged to supply heat to the room being warmed.

A sheet metal top 17 rests upon flanges of the walls and may be permanently attached thereto. It has a vent with a slidable closure 17'.

A heating element consists of a gas burner manifold 18. This is fixedly mounted centrally of the base 11 and between the end walls 15, 15. The manifold has a plurality of the usual nozzles or jets 19 by which the fuel gas is discharged from the burner. A suitable valve 20 connects the manifold 18 outside one end 15 to a conduit, flexible tube or the like 21 by which fuel may be delivered to the burner.

It will be noted that the burner is arranged parallel to and between the sereis of air inlets 12, 12. This insures adequate supply of fresh air to the burner throughout the length of the manifold.

The front wall of the heater has an opening 22 midway of the length of the front and slightly above the manifold 18. A sliding door 23 serves to close this opening and is operated in turn by a knob 24 or the like. The purpose of the opening is merely to provide a hand hole for use in operating the igniter.

Centrally of the under surface of the top 17 there is a rocking or pivot bearing 25. A link 26 is dependent from the bearing 25 and free to rock from front to rear of the heater. The lower end of the link 26 has a pivoted yoke 27 in the form of an inverted V. This yoke provides means for the suspension of a T-shaped arched hood 28 which constitutes a long inverted trough. From the central portion of this trough 28 there is a central branch 29 which runs at right angles and

directly opposite and near the opening 22 in the front of the casing. It will be noted from Figs. 2 and 4 that the branch 29 is wider than the opening 22 and abuts the edge of the front opening when the main portion of the hood or trough is rocked forwardly into the vertical plane of the manifold 16.

A finger grip or handle 30 is bolted to the top of the end of the central branch 29 and is sufficiently long to reach outside the opening 22 when the branch 29 is in contact with the front.

The central branch 29 has a transverse strap 31 midway between the long trough part 28 and the end of the central branch 29. This strap forms a stirrup in which is carried a pan 32. This pan has a steel bottom 33 with an upper rasping surface 34.

The bolt 35 by which the handle 30 is attached to the branch 29 is extended downwardly through the branch 29 and ends in an eye. The eye forms a loose slide bearing for a pull bar 36. The front end of this bar has an eye 37 forming a finger grip immediately below the downwardly bent end of the handle 30. The rear end of the bar 36 has a downwardly bent extension 38. An abutment 39 surrounds the bar in front of the bent extension 38. A spiral compression spring 40 extends around the bar 36 between the abutment 39 and the eye-bolt 35.

Normally the spring 40 maintains the downwardly bent end 38 above the rear end of the pan 32. The bent extension 38 has a screw threaded sleeve 41 by which a pyrophoric disk or flint 42 of cerium alloy or the like is held downwardly in contact with the rasping surface 34 of the steel 33.

In Figs. 1 to 4, inclusive, the invention has been illustrated as applied to a single series of burner nozzles.

In Figs. 8 and 9, however, the burner consists of two parallel branches 43, 43. These likewise are longitudinally extended in spaced arrangement over the bottom of the heater and jointly served by the valve 20 and gas tubing 21.

The igniting device in this instance consists of two parallel inverted troughs 44, 44 connected at their mid-portions by a transverse trough 45. The trough 45 is extended beyond the front trough 44 to provide a short trough 46.

This trough 46 is similar to the previously described trough 29 and supplied with the same igniting facility.

The two troughs 44, 44 are suspended from yokes 27, 27 which, in turn, are held by spaced links 47, 47. The troughs thus are maintained in a horizontal plane during the shift from inoperative to operative position as shown by dotted lines in Fig. 8. This maintains the desired operating space with respect to the branches of the burner.

It will be evident from the above description that I have provided means for safely and conveniently igniting an oil burner from outside of the heater housing. Also by a single continuous movement I am able to shift the igniting device into operative position and at the same time set off sparks which will serve to ignite the gas which has risen and flowed along the branch troughs 29 and 46. The flame is, therefore, instantly propagated throughout the length of the burner branches and all jets ignited. Release of the igniter grip permits the igniting device to fall back by gravity into inoperative position outside of the stream of combustion gases from the burner.

In detail, the ignition is carried out by first

sliding the door 23 open. The igniting device may be drawn out with one hand by means of the handle 30. However, by gripping the eye 37 of the the bar 36, the igniting device is first drawn until the trough 29 strikes the front wall of the heater as shown in Fig. 6 and thereafter continued pull on the eye rubs the pyrophoric disk 42 over the rasp setting off a stream of sparks which ignite the fuel gas rising through the troughs to the front opening.

As the flame is propagated back to the gas above the burners, the latter are ignited. Release of the handle 30 or the eye 37 drops the igniting device back outside of the heating zone of the journals into the position shown in Figs. 1 and 8. The front door 23 may then be closed and burning proceeds with the regulated supply of fresh air through the inlets 12, 12, the products of combustion being discharged through the vents 16.

The purposes of the invention may be carried out within the scope of the following claims even though numerous changes are made in materials and proportions from the illustrative examples above set out.

What I claim is:

1. In combination a gas heater housing, a manifold therein spaced from the front of the housing and parallel thereto, and having upwardly directed burner nozzles, a door opening in the front of the housing, a hood pivotally suspended above and behind the manifold, a branch hood connected with the first named hood and extending to a point near the door and a handle on the branch hood for swinging the latter against the front adjacent the door opening and accessible therethrough and to bring the hood proper over the manifold and its nozzles.

2. In combination a gas heater housing, a manifold therein spaced from the front of the housing and parallel thereto, and having upwardly directed burner nozzles, a door opening in the front of the housing, a hood pivotally suspended above and behind the manifold, a branch hood connected with the first named hood and extending to a point near the door, a handle on the branch hood for swinging the latter against the front adjacent the door opening and accessible therethrough and to bring the hood proper over the manifold nozzles, and a pyrophoric igniter carried by the branch hood and operable through the door opening to ignite the burner gas as the hoods are swung forward.

3. In combination a gas heater housing, a manifold therein spaced from the front of the housing and parallel thereto and having upwardly directed burner nozzles, a door opening in the front of the housing, a hood pivotally suspended above and behind the manifold, a branch hood connected with the first named hood and extending to a point near the door and a pyrophoric igniter carried on the branch hood for swinging the latter against the front adjacent the door opening and accessible therethrough and to bring the hood proper over the manifold nozzles and for simultaneously igniting the burner gas.

4. In combination a gas heater housing, a manifold therein spaced from the front of the housing and parallel thereto and having upwardly directed nozzles, a door opening in the front of the housing, a hood pivotally suspended above and behind the manifold, a branch hood connected with the first named hood and extending to a point near the door, a handle on the branch hood for swinging the latter against the front

adjacent the door opening and accessible therethrough and to bring the hood proper over the manifold nozzles, a rasp attached to the branch hood, a slidable rod carried by the branch hood and having a finger grip extending forwardly, and a pyrophoric member on the rear of the rod and in contact with the rasp.

5. In combination a gas heater housing, a manifold therein spaced from the front of the housing and parallel thereto and having upwardly directed nozzles, a door opening in the front of the housing, a hood pivotally suspended above and behind the manifold, a branch hood connected with the first named hood and extending to a point near the door, a handle on the branch hood for swinging the latter against the front adjacent the door opening and accessible therethrough and to bring the hood proper over the manifold nozzles, a rasp attached to the branch hood, a slidable rod carried by the branch hood, a spiral spring holding the rod in its rearward limit of movement, a finger grip on the rod and a pyrophoric member on the rear of the rod and in contact with the rasp.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,551,619	Price	Sept. 1, 1925