T. G. PALMER.

~~GAS~~ HEATER.

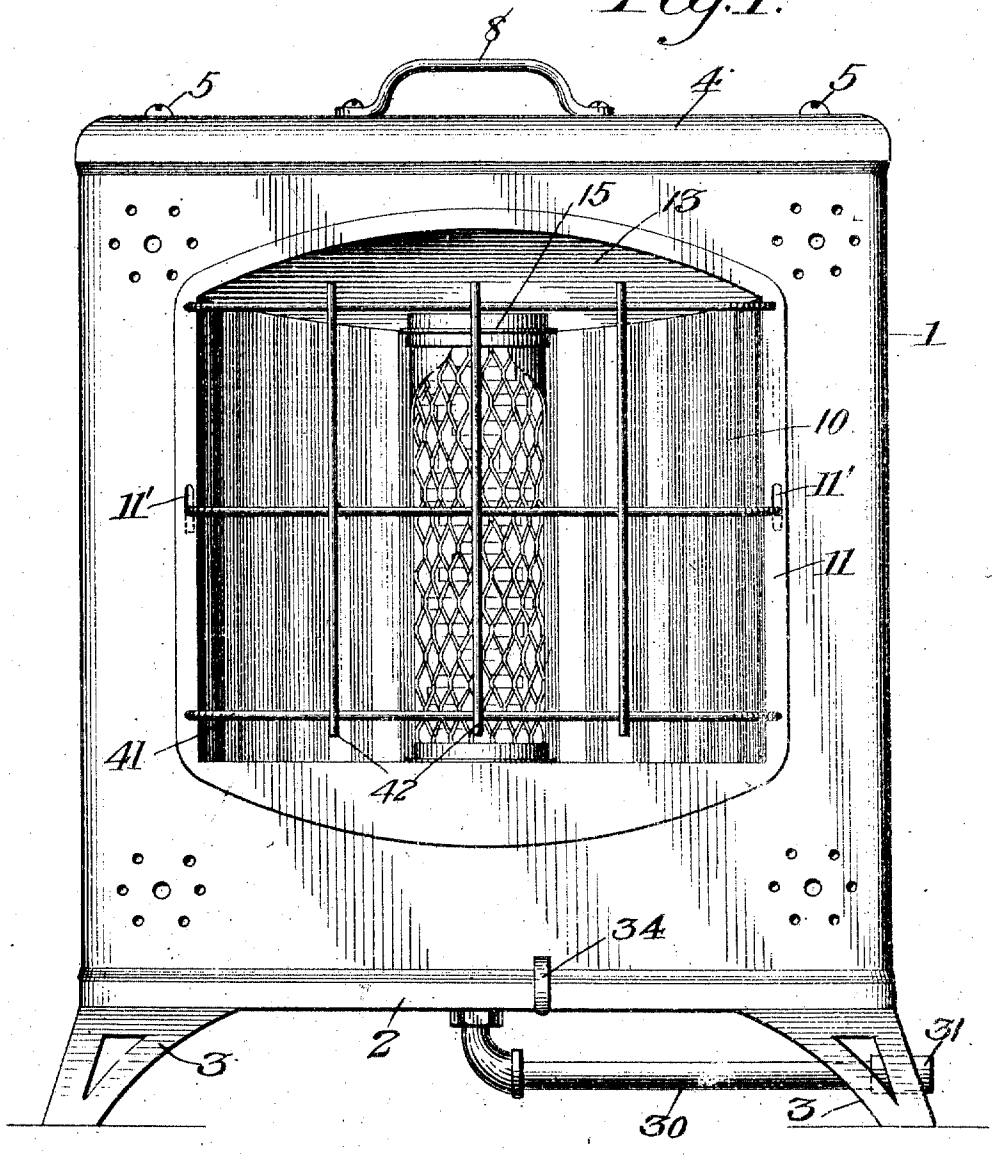
APPLICATION FILED DEC. 18, 1916.

1,253,090.

Patented Jan. 8, 1918.

2 SHEETS—SHEET 1.

Fig. 1.



Inventor.

Truman G. Palmer

by Pennie Goldstrong & O'Neill

Attys

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2 SHEETS—SHEET 2.

Fig. 2.

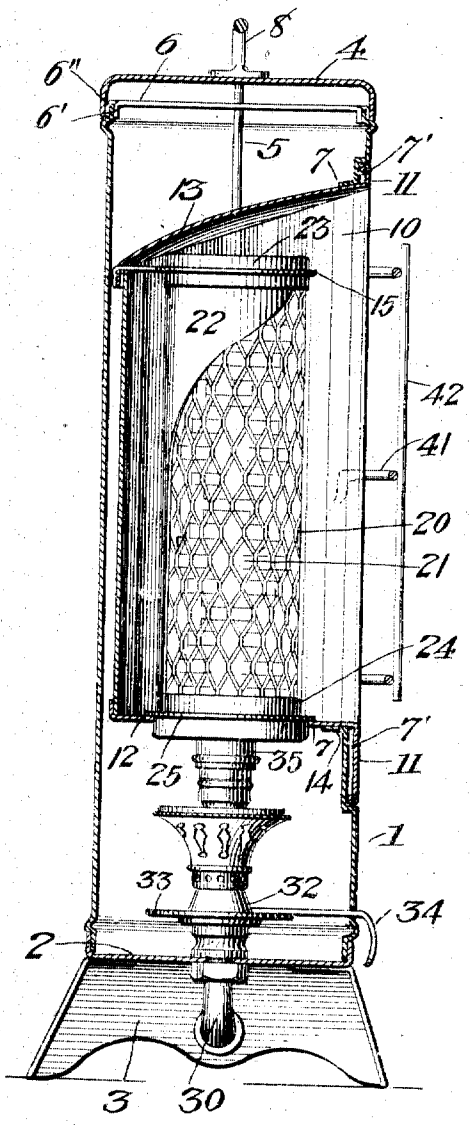


Fig. 3.

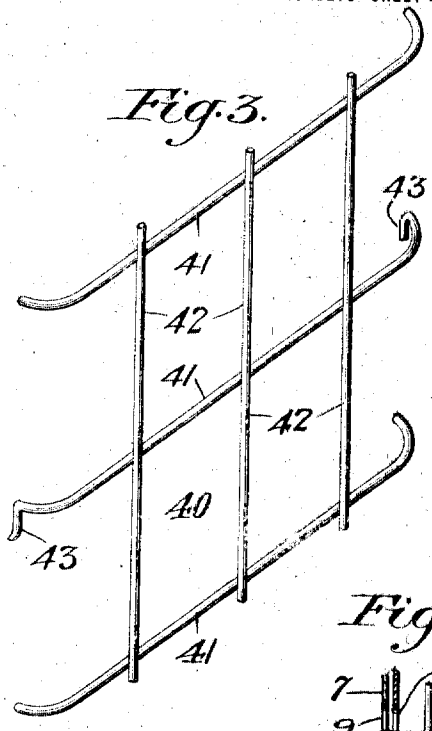


Fig. 4.

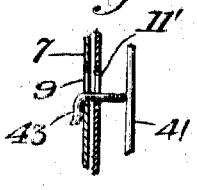


Fig. 5.

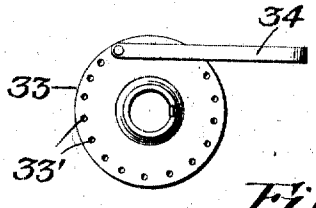
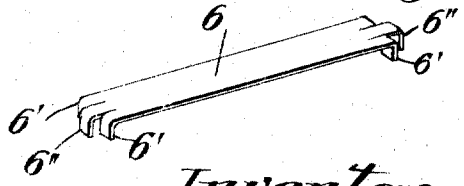


Fig. 6.



Inventor.

Truman G. Palmer

By Kenniff Goldsborough & O'Neill

Attys

UNITED STATES PATENT OFFICE.

TRUMAN G. PALMER, OF CHICAGO, ILLINOIS.

GAS-HEATER.

1,253,090. Specification of Letters Patent. Patented Jan. 8, 1918.

Application filed December 18, 1916. Serial No. 137,586.

To all whom it may concern:

Be it known that I, TRUMAN G. PALMER, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Gas-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to gas heaters of the general type shown in my prior patents, of which Nos. 1,125,387, dated January 19, 1915, 1,195,260, dated August 22, 1916, and 1,196,019, dated August 29, 1916, may be taken as examples, and has for its object to provide a heater of this general type, involving a Bunsen burner, a foraminated shell inclosing a baffle, and a reflector, in which the heating unit is mounted, with a portable casing designed to protect and support the various elements of the heater, so as to render the latter readily accessible for adjustment, repair and replacement, the casing and the reflector being associated with a guard grid extending over the front of the reflector, said grid being provided with means for removably locking the reflector to the casing, the whole constituting a neat, compact and efficient device which may be readily removed from place to place and quickly connected to a source of gas supply, or, if desired, permanently located in a fire-place, wall recess, or other desired position where the generated heat may be most economically disposed.

In the accompanying drawings:—

Figure 1 is a front elevation of the improved heater;

Fig. 2 is a vertical sectional elevation;

Fig. 3 is a perspective view of the guard grid;

Fig. 4 is a fragmentary detail illustrating the means associated with the guard grid for locking the reflector to the casing;

Fig. 5 is a plan view of the air regulating valve for the Bunsen burner; and

Fig. 6 is a perspective view of a reinforcing bridge piece applied to the casing.

Referring to the drawings, 1 indicates the body of a generally rectangular casing, preferably made of sheet-metal, which is folded to appropriate form with its meeting edges united by spot welds or other suitable joints, said casing being provided with a bottom 2 provided with feet or legs 3, by means of which the casing is elevated to the desired degree from its support, and a top 4, which bottom and top telescope with the adjacent edges of the body portion 1. The body portion 1, bottom 2 and top 4 are preferably secured together by ordinary stove bolts 5, which are passed vertically through the casing and engage the top and bottom, as shown. In order to stiffen the upper portion of the casing and prevent the same buckling inward, a reinforcing bridge piece 6 is provided, which latter has formed on its ends, tongues 6′ and 6″, which straddle the upper marginal edges of the casing 1, as shown in Fig. 2, and prevent the distortion of the front and back of the casing. The front of the casing is provided with an enlarged opening provided with an inturned flange 7 surrounding the same and with an inset or recessed marginal edge portion 7′.

Fitted within the opening in the front wall of the casing 1, and supported by the flanges 7, is a reflector of the general type illustrated in my patents aforesaid, which reflector consists of a body portion 10, having a beaded marginal flange 11 surrounding the same, which latter occupies the recessed marginal portion 7′ of the casing 1 surrounding the opening therein, so that the flange 11 is substantially flush with the front wall of the casing 1. Said reflector is also provided with a bottom 12 and a top 13, the said bottom portion having a central opening 14 in which the heating shell is preferably supported.

The heating unit is preferably like that shown in my patents aforesaid, and comprises a foraminated cylindrical shell 20 provided with a longitudinal baffle 21 having spirally disposed radially-extending vanes or fins, said baffle being disposed between upper and lower caps 23 and 24, which are telescopically engaged with the shell 20, the lower cap 24 engaging a flanged collar 25 which occupies the opening 14 in the bottom of the reflector.

Rigidly connected to the bottom of the casing 1 is a gas inlet pipe 30 having a threaded coupling 31 adapted to receive the correspondingly threaded nipple of the flexible or other suitable gas supply pipe. The elbow member of the inlet pipe 30 is secured to the bottom 2 of the casing and is adapted to receive, on its upper end, the nozzle of an ordinary Bunsen burner, such as is commonly employed in connection with Wels-

bach and other incandescent gas burners, said nozzle having the usual gauze covered outlet 35, above which the admixed gas and air burn, and also being provided with the usual gas regulating valve 32.

Said air regulating valve is provided with a disk-like flange 33 provided with a series of peripheral perforations 33′, which are adapted to be connected by means of a suitable pin with an adjustable hand-piece 34 which projects through the front wall of the casing 1 and by means of which the opening of the air inlet to the burner may be accurately regulated. The purpose of the foraminated disk 33 is to enable the hand-piece to be properly attached to the air valve, after the burner has been assembled, as will be understood. The relation of the burner to the reflector and the foraminated heating shell is clearly illustrated in Fig. 2, the outlet head of the burner 35 being disposed centrally within the collar 25 and the lower cap 24 of the shell 20, so that the products of combustion are directed upwardly through the shell in contact with the baffle 21.

In order to protect the shell from contact with extraneous objects and also to provide means for locking the reflector to the casing, there is provided a guard grid, preferably made of cross wires, and having the general form or configuration illustrated in Figs. 1, 2, 3 and 4, in which 41 represents the horizontal wires of the grid, to which are spot welded vertical wires 42. The outer ends of the horizontal wires are curved or bent, so as to space the face of the grid some little distance away from the front of the casing and the reflector. The extreme ends of the middle horizontal wire 41 are bent to provide hook-like elements having curved ends 43, which are adapted to be slipped through elongated registering openings or slots 9 and 11′, which are provided in the recessed portion 7′ of the front wall of the casing 1 and the marginal flange 11 of the reflector, so that the hooked ends 43 will lock behind the front wall of the casing, as more particularly shown in Fig. 4. When assembled, the guard grid is firmly locked to the reflector and rigidly locks the reflector to the front wall of the casing 1, in the manner indicated.

To assemble the heater shell and reflector with the casing and grid and to lock the parts securely together, the heater shell 20, with its accessories, is adjustably positioned with its bottom engaging the flange ring 25 and its top held by a clamping ring or bracket 15 secured to the reflector and embracing the upper cap 23, the reflector is then placed within the opening in the front wall of the casing 1 and supported on the flanges 7, the curved ends 43 of the middle wire 41 of the grid are then passed through the registering slots or openings 9 and 11′ in the reflector and the front wall of the casing, respectively, and the grid moved downwardly a slight distance until the hoked ends lock behind the inner face of the wall of the casing, so that the curved ends of the horizontal wires of the grid engage the face of the flange 11 surrounding the reflector. To remove the reflector, it is only necessary to lift the grid slightly to disengage the hooked ends of the horizontal rod 41 from the registering openings in the casing and reflector, so that the grid may be removed bodily, after which the reflector and the heating shell carried thereby may be lifted out bodily, or the heating shell alone removed.

If desired, the casing may be made of a single sheet of metal properly cut and folded to box-like form, with the legs formed integrally therewith, the meeting edges of the cut sheet being suitably united by spot welds or other appropriate means. For convenience of transport, the casing is provided with a handle 8 attached to the top thereof.

What I claim is:—

1. A heater comprising a casing, a burner, a foraminous shell above the burner, a reflector inclosing the shell, and a guard disposed in front of the reflector, said guard having means for locking the reflector to the casing.

2. A heater comprising a casing, a reflector mounted in the casing, a heating unit inclosed by the reflector, and a grid in front of the unit and reflector, said grid having means for locking the reflector to the casing.

3. A heater comprising an open-fronted casing, a reflector mounted in the opening and extending into the casing, and a guard grid extending over the front of the reflector, said grid having means for locking the reflector to the casing.

4. A heater comprising an open-fronted casing, a reflector mounted in the opening and extending into the casing, said reflector and casing having registering openings in the forward sections thereof, and a guard grid extending over the front of the reflector and having hooked ends engaging the registering openings to lock the reflector to the casing.

In testimony whereof I affix my signature.

TRUMAN G. PALMER.