Adjustable Draft Mounting for Re-Veritable Draft Heater Fire Pots

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Application September 23, 1947, Serial No. 775,488

3 Claims. (Cl. 126—75)

My invention relates to heaters, more particularly having reference to a furnace or like space heater.

In the art to which the invention relates many variations in furnace and like heating units have been proposed, designed to provide more economical, operation. The present invention contemplates improvements in heating devices of this character by which a more complete use of the heat generated is obtained.

One of the objects of the invention is accordingly to provide an improved heating unit in which the fire box is suspended in a combustion chamber spaced from the walls thereof and including a novel and improved draft arrangement for the fire box.

A further object of the invention is to provide for adjustment of the draft means for the fire box to accommodate the heater to the draft obtaining in the chimney or draft outlet to which it is connected.

A still further object of the invention is to provide improved draft means for the heater.

Other features and advantages of the invention will become apparent by reference to the accompanying description taken in conjunction with the drawings in which:

Fig. 1 is a side view of the heating unit assembled, shown partly sectioned and partly broken away to disclose the essential parts.

Fig. 2 is a side view of the wind box and fragment of the upper draft pipe in section, and including the fire pot.

Fig. 3 is a top view of the fire pot taken by itself.

Having reference to the drawing of the furnace includes an outer casing 1, having a dome shaped upper end 2. At the lower end of the casing is an ash pit 3 with door 4 providing a draft inlet.

On the ash pit 3 is a vertically arranged draft pipe which includes a pipe section 5 having communication with the ash pit and with which a further pipe section 6 is telescopically mounted to be vertically adjustable thereon to vary the combined lengths of the draft pipes, the pipes 5 and 6 being secured together at the desired position of adjustment by a pin 7 carried by the pipe 6 and engageable in one or other of a series of openings 8 in the pipe 5 with which the pin may be aligned.

The upper end of the pipe 6 terminates in an integral enlarged portion 9 that is open at the upper end and forms a wind box in which is suspended a fire pot 10, said pot having a marginal flange 11 that rests on the upper edge of the wind box. The fire pot includes a grate 12 with shaker bar 13 pivoted on an arm 14 projecting from the fire pot and further includes a series of draft openings 15, the marginal flange 11 of the fire pot including a slot 17 for the shaker bar.

Fuel for the fire pot may be fed through a fuel inlet 16 having a fuel door 17, with the ashes discharging through outlets 18.

The draft pipes and fire box are centrally disposed within the casing 1, leaving an air space therebetween in which the gaseous products of combustion circulate to discharge through a flue pipe 19 attached on a flue outlet 19 at the lower end of the casing 1.

There is further provided an auxiliary flue outlet 20 in the upper portion of the casing that has communication with the pipe 18 by a pipe 21 with damper 22.

There is further provided for the heater a clean-out inlet 23 with door 24, and skirt brackets 25.

In the use of the heater, when installing it the draft pipes 5 and 6 are relatively adjusted and secured by the pin 7, to give the required combined length to the draft pipes in accordance with the draft required, this varying with the different chimneys.

The gaseous products of combustion from the fire pot would circulate in the directions indicated by the arrows, that is upward to the dome and downward to discharge through the flue outlet 19.

The draft control is obtained by adjustment of the draft pipes 5 and 6 in accordance with the draft in the chimney, the fire pot being so set low for a low draft chimney and raised relatively for a chimney of higher draft. The hot gases from the combustion in the fire pot tend to move upward, and since these gases have to move downward to reach the chimney outlet, the hotter the gases get the greater resistance they offer to moving downward, with a corresponding reduction in draft for the fire. In its initial stages the fire when started in a cold heater has plenty of draft, which accordingly decreases as the fire becomes stronger.

The auxiliary flue outlet 20 may be used to assist the draft in the early stages of combustion or as required.

In use the heater has been found to be extremely economical in the use of fuel and obtains greatly improved results over the ordinary heater employed for space heating.

While I have herein disclosed a preferred embodiment of my invention, it is obvious that changes in the construction and arrangement of parts would be readily conceivable and insofar
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as such changes come within the spirit and scope of the invention as defined in the appended claims they would be considered a part hereof.

What I claim and wish to secure by Letters Patent is:

1. In a heater, a casing having an ash pit in the lower portion and including a partition dividing the ash pit from the body of the casing, said ash pit having a draft inlet, a wind box, means mounting the wind box in the casing above the ash pit, said means including a pipe providing draft communication between the ash pit and wind box, and said means being capable of adjustment to raise or lower the wind box, said casing providing a space about said pipe and wind box, a fire pot suspended in the wind box, the casing providing a flue outlet located in the lower portion thereof and above the partition dividing the ash pit from the body of the casing, and a fuel inlet in the casing providing access to the fire pot.

2. In a heater, a casing having an ash pit in the lower portion and including a partition dividing the ash pit from the body of the casing, said ash pit including a draft opening, a lower draft pipe section upstanding on the ash pit communicating therewith, an upper draft pipe section telescopically mounted on the lower pipe section, means securing the draft pipe sections together at selected positions of adjustment, a wind box on the upper draft pipe section, said casing providing a space about the wind box and said pipe sections, a fire pot suspended in the wind box, the casing providing a flue outlet located in the lower portion thereof and above the partition dividing the ash pit from the body of the casing, and a fuel inlet in the casing providing access to the fire pot.

3. In a heater, a casing having an ash pit in the lower portion and including a partition dividing the ash pit from the body of the casing and a dome shaped upper portion, said ash pit including a draft opening, a lower draft pipe section upstanding on the ash pit communicating therewith, an upper draft pipe section telescopically mounted on the lower pipe section, means securing the draft pipe sections together at selected positions of adjustment, a wind box on the upper draft pipe section, said casing providing a space about the wind box and said pipe sections, a fire pot suspended in the wind box, the casing providing a flue outlet located in the lower portion thereof and above the partition dividing the ash pit from the body of the casing, and a fuel inlet in the casing providing access to the fire pot, the fire pot being spaced from the top of the casing to allow circulation of gases within the dome shaped upper portion.

NEIL McMURCHIE SCHRANK.

REFERENCES CITED

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

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