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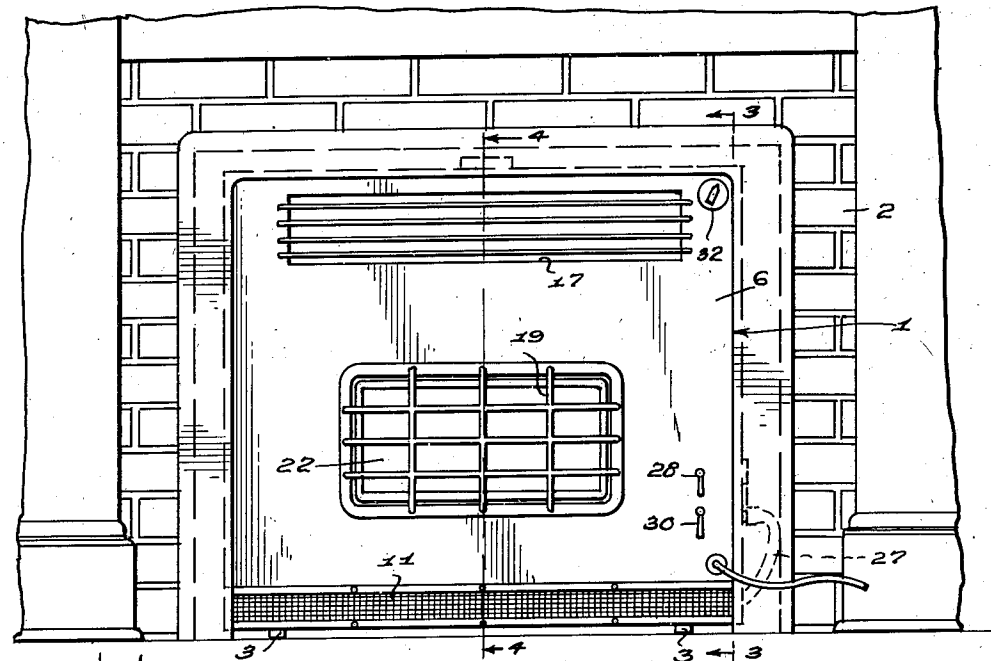
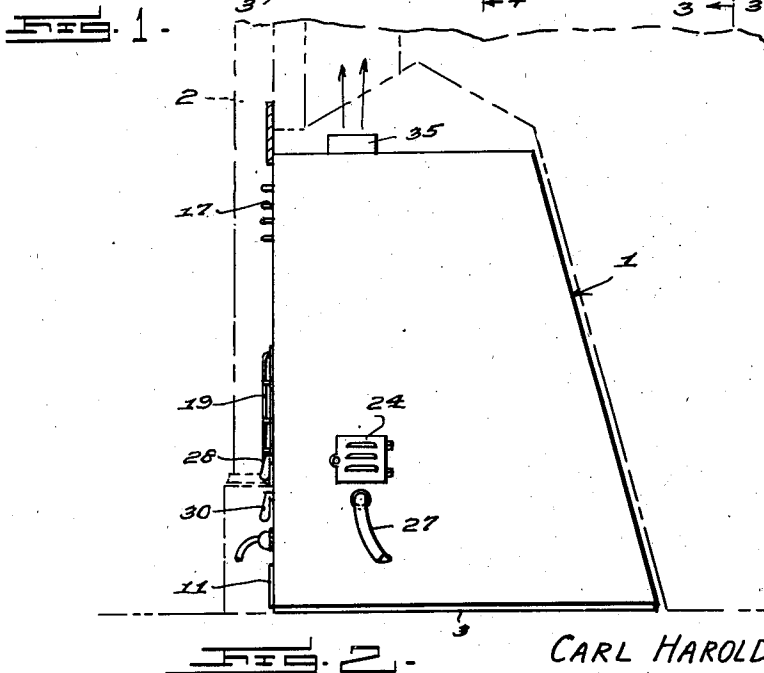
C. H. WEAVER

2,269,387

FURNACE

Filed March 25, 1940

2 Sheets-Sheet 1



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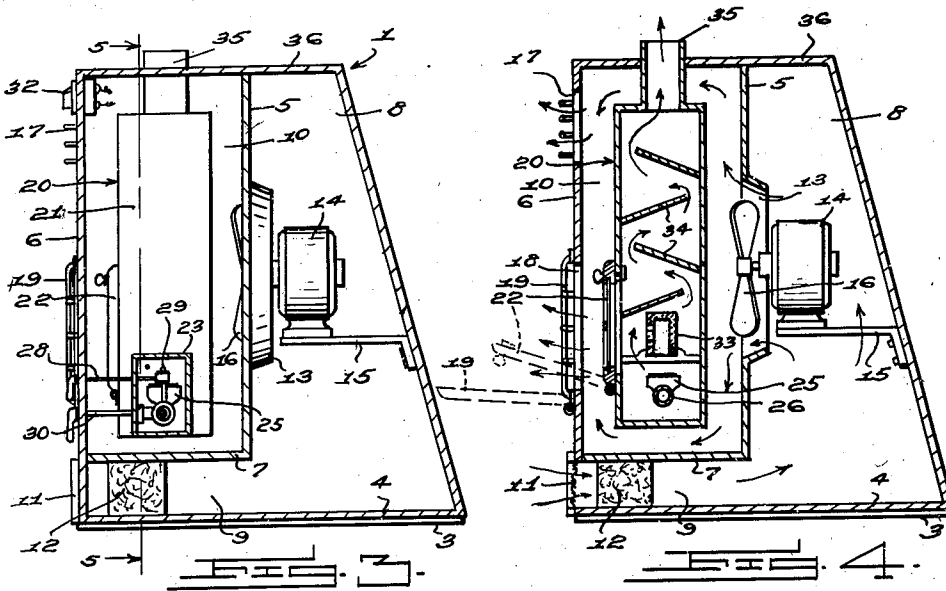
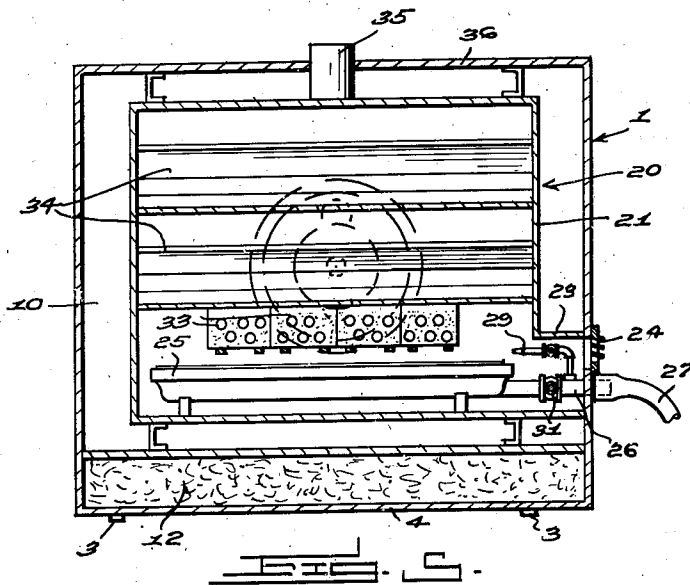
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UNITED STATES PATENT OFFICE

2,269,387

FURNACE

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1 Claim. (Cl. 126—110)

The present invention relates to new and useful improvements in furnaces and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character in the nature of a self contained unit which is adapted to be expeditiously installed for operation, either permanently or temporarily, in a fire place.

Another very important object of the invention is to provide a furnace of the aforementioned character comprising a novel construction and arrangement whereby a continuous circulation of filtered and forced heated air may be had.

Other objects of the invention are to provide a furnace of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in operation, compact, attractive in appearance, safe and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in front elevation of a furnace constructed in accordance with the present invention, showing said furnace installed and ready for operation.

Figure 2 is a view in side elevation.

Figure 3 is a vertical sectional view, taken substantially on the line 3—3 of Figure 1.

Figure 4 is a vertical sectional view, taken substantially on the line 4—4 of Figure 1.

Figure 5 is a cross sectional view, taken substantially on the line 5—5 of Figure 3.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a cabinet which is designated generally by the reference numeral 1, said cabinet being of any suitable material. As illustrated to advantage in Figs. 1 and 2 of the drawings, the cabinet 1 is a shape and dimensions to fit into a fire place 2. Metallic runners or skids 3 are provided beneath the bottom 4 of the cabinet 1 to facilitate placing the furnace in the fireplace 2 or removing said furnace therefrom.

Mounted at an intermediate point in the cabinet 1 is a vertical partition 5 the lower end of which is spaced above the bottom 4 of said cabinet. Extending from the lower end of the partition 5 to the front 6 of the cabinet 1 is a horizontal partition 7. The partitions 5 and 7 provide in the cabinet 1 what may be referred to as a

cold air chamber 8 and an air intake passage or tunnel 9 communicating with said chamber 8. The partitions 5 and 7 further define an air heating chamber or compartment 10 in the front portion of the cabinet 1.

Air enters the intake 9 through a screened opening 11 in the lower portion of the front 6. Mounted in the intake 9 is a filter 12 through which the ingoing air must pass. The chamber 10 communicates with the chamber 8 for receiving air therefrom through a circular, flanged opening 13 in the partition 5.

An electric motor 14 is mounted on a suitable support 15 in the chamber 8. The electric motor 14 drives a fan or blower 16 of suitable type which is operable in the opening 13, said blower forcing the air from the chamber 8 into the chamber 10. The upper portion of the front 6 of the cabinet 1 is provided with a grilled or barred hot air discharge opening 17. Another discharge opening 18 is provided in a lower portion of the front 6, said opening 18 being provided with a hinged grill 19.

Mounted in the chamber 10 and spaced from the walls thereof is a combustion chamber which is designated generally by the reference numeral 20. The combustion chamber 20 includes a housing 21 to the interior of which access is had through a hinged, windowed door 22, said door 22 being leak-proof when closed and aligned with the opening 18.

The housing 21 is provided with a lateral extension 23 (see Figs. 3 and 5) which projects to the adjacent side wall of the cabinet 1 and which communicates with an air intake opening 24 in said cabinet. Mounted in the lower portion of the housing 21 is a gas burner 25. The pipe 26 of the burner 25 projects through a side wall of the cabinet 1 and has connected thereto a suitable conduit 27 from a suitable source of gas. A control 28 is provided for the pilot light 29 of the burner 25 and a control 30 is provided for the regulating valve 31 of said burner. It will be observed that the controls 28 and 30 are manually operable from the front of the cabinet 1. Incidentally, the reference numeral 32 designates a suitable control which is located on an upper corner portion of the cabinet from 6 for the electric motor 14.

Mounted in the housing 21 above the burner 25 is a plurality of radiants 33. Above the radiants 33 a plurality of oppositely inclined, staggered baffles 34 is provided in the combustion housing 21. A flue 35 rises from the housing 21 and passes through the top 36 of the cabinet 1,

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. With the electric motor 14 in operation, the blower 16 draws air into the chamber 8 through the intake 9. In passing through the filter 12 this air is thoroughly cleaned. From the chamber 8 the blower 16 forces the air through the opening 13 into the chamber 10 where it circulates around the combustion unit 20 and, of course, is heated thereby. This heated air then passes out through the openings 17 and 18 and circulates through the building. The electric motor 14 is automatically controlled or regulated through the medium of the thermal control 32 which may be manually adjusted as desired. Also, if desired, the burner and pilot controls may be automatically actuated. As suggested in dotted lines in Fig. 4 of the drawings, access to the interior of the housing 21 may be conveniently had by simply swinging the grill 19 and the door 22 downwardly to open position. If desired, the apparatus, with the burner 25 out of operation, may be used in warm weather, for example, for removing dust, pollen, etc., from the air and circulating the filtered air through the house or building.

It is believed that the many advantages of a furnace constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the device is as illustrated and described, it is to be under-

stood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

A furnace comprising a cabinet including a front wall having air intake and discharge openings therein and a side wall having a draft opening therein, a vertical partition in the cabinet separating the same into a front heating chamber and a rear air chamber, said heating chamber having a bottom spaced above the bottom of the cabinet to provide an air intake passage communicating with said air intake opening in the front wall, a casing mounted in the heating chamber in spaced relation to the walls thereof and forming a combustion chamber, said combustion chamber comprising a lateral extension to said side wall of the cabinet and communicating with the draft opening therein, a burner, including a pilot light and control valve mounted in the combustion chamber, the extension accommodating said pilot and control valve, said partition having an opening therein behind the central portion of the casing, and a fan positioned in said last-named opening for blowing air from the rear air chamber into the heating chamber and around all of the sides of said last-named chamber.

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