

June 19, 1928.

1,674,531

L. STEINLE

FURNACE

Filed June 23, 1926

2 Sheets-Sheet 1

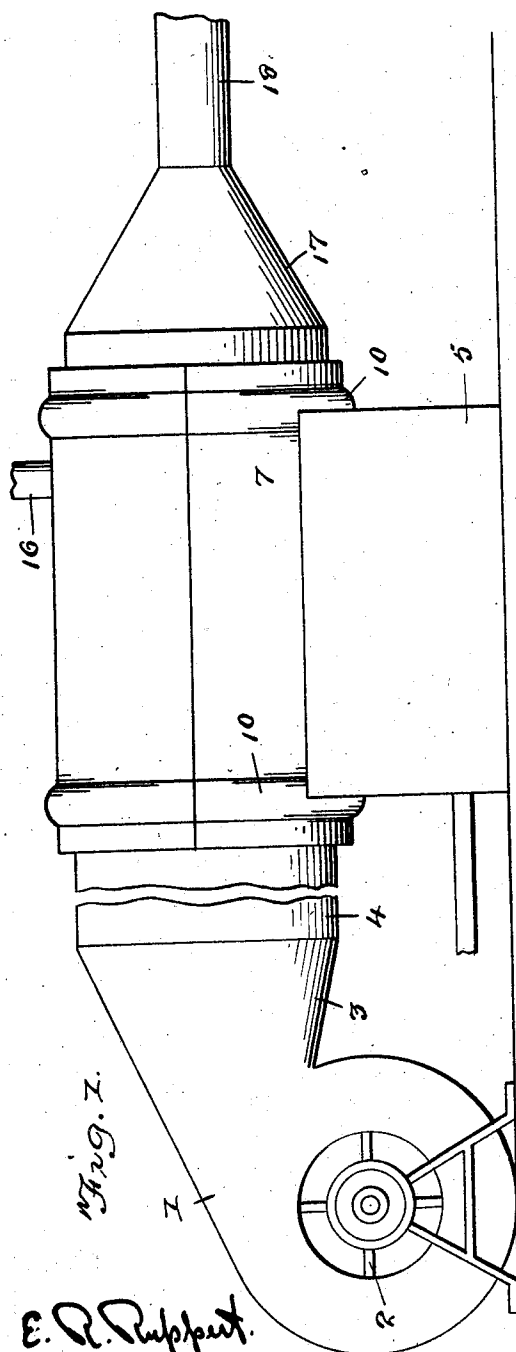


Fig. 1.

E. R. Ruppert.

WITNESS:

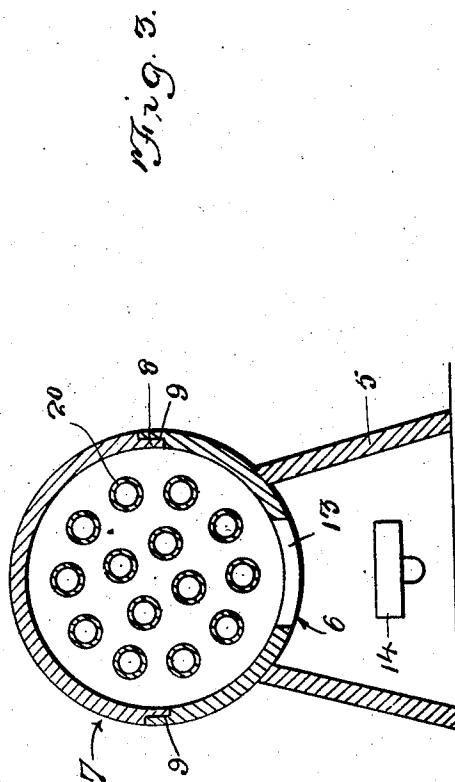


Fig. 2.

Leon Steinle

INVENTOR

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2 Sheets-Sheet 2

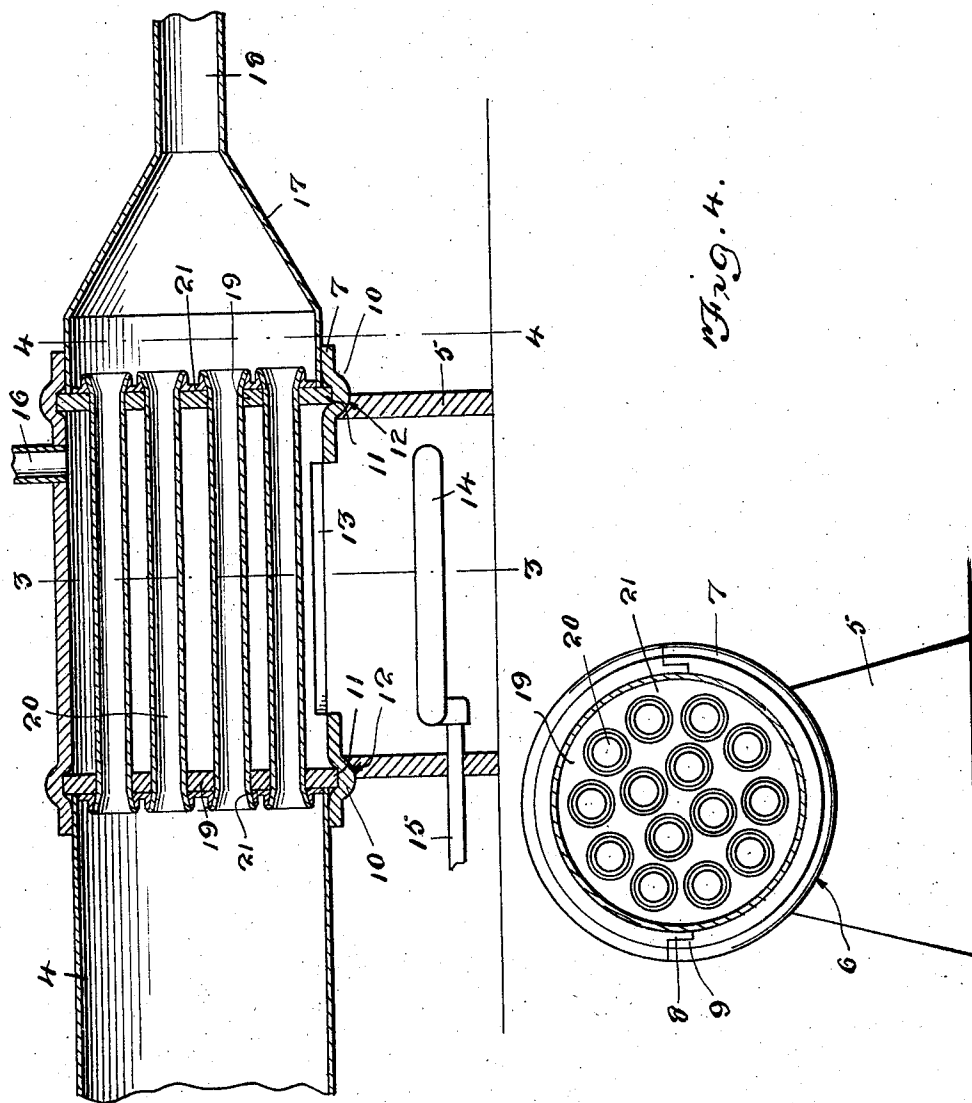


Fig. 2.
E. R. Ruppert.

Fig. 4.
Leon Steinle
INVENTOR
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WITNESS:

UNITED STATES PATENT OFFICE.

LEON STEINLE, OF SAN ANTONIO, TEXAS.

FURNACE.

Application filed June 23, 1926. Serial No. 118,088.

My present invention has reference to a hot air furnace designed for supplying heat to a building, or to an orchard to prevent frost inflicting injury to trees therein, or for

any other desired purposes, and my primary object is to conduct cold air through a suitable pipe or duct through tubes that are subjected to heat so that the air, in its passage therethrough, will become warm, and thereafter after conducting the warm air to a distributor pipe of comparatively small area, the said distributor pipe leading to the place where the heated air is required.

A further object is the provision of a furnace for heating air, that shall be of a comparatively simple construction in which the parts are so constructed and associated that access thereto or replacement thereof may be made should occasion require.

To the attainment of the above broadly stated objects and many others which will present themselves as the nature of the invention is better understood, the improvement resides in certain details of construction, combination and operative association of parts, a satisfactory embodiment of which is illustrated by the accompanying drawings.

In the drawings:

Figure 1 is a side elevation of a furnace in accordance with this invention.

Figure 2 is a detail vertical longitudinal sectional view therethrough.

Figure 3 is a sectional view on the line 3—3 of Figure 2.

Figure 4 is a sectional view on the line 4—4 of Figure 2.

My improved furnace, while strong and durable, is designed to be lightly constructed so that the same can be moved from place to place should occasion require. This is especially desirable when hot air from the furnace is to be conducted into orchards, and other outdoor places. The improvement, of course, may be also of a stationary nature, as when the device is employed for heating dwellings or other buildings.

In carrying out my invention I arrange in a suitable housing 1 a blower fan 2. The housing has its sides provided with air inlet openings and the blower fan 2 is designed to be rotated by a small motor. The casing 1 has on its outlet end or mouth 3 a tube 4. The tube 4 may be of any desired length and

is of a comparatively large cross sectional diameter. The tube provides the cold air conducting pipe for the furnace.

The furnace includes a hollow base 5 whose sides are preferably inclined inwardly to the open top thereof, and the ends of the said base, at its said top, are concaved, as at 6. These concaved ends are designed to receive therein the lower portion of the cylindrical body 7 of the improvement forming a heating drum. The body 7 is preferably of thicker, but not heavier material than the tube 4 which is removably associated with the fan housing 1. The body 7 may, if desired, be formed of reinforced asbestos or other heat retaining substance and the said body comprises two semi-cylindrical sections, the upper section having its sides provided on its inner edge with reduced tongues 8 that are received in notches or grooves 9 in the lower section. The body 7, adjacent to the ends thereof, has outwardly directed beads 10, providing inner annular grooves 11. The inwardly arched edges on their top at the ends of the base 5 are concaved or rounded inwardly and upwardly, as at 12, so that the beads 10 of the cylindrical body 7 will snugly rest therein and contacting therewith the said body will be held from longitudinal movement. The lower section of the body, in a line with the open top of the base 5, has a substantially rectangular opening 13 therethrough, and in the base directly below this opening there is a burner 14. A fuel conductor pipe 15 leads through one end of the base and communicates with the burner. The top of the body 7, adjacent to what I will term the outer end thereof, has an opening therethrough for the reception of a vent pipe 16.

Received in and frictionally contacting with the wall at the outer end of the cylindrical body 7 there is a funnel-shaped reducing tube 17. This tube, at its reduced end, has removably connected therewith a pipe or tube 18 that is in the nature of a heat distributor and leads to the place or places where heated air is desired. Designed to be snugly received in and to contact with the walls formed by the grooves 11 there are cylindrical heads 19 of the heating drum 7. The heads 19 have connected therewith the flue pipes 20 of the drum. As disclosed by the drawings, the flue pipes 20

are arranged in inner and outer circumferential series and have their ends flared outwardly at their connection with the openings in the heads 19.

- 5 The interengaging tongues and grooves of the sections of the cylindrical body 7 prevents any outside air entering the said body. The disc heads 19 are snugly received in the grooves 11 provided by the beads 10. Of
10 course, the base 5 is provided with a suitable door, not shown, whereby the burner 14 may be ignited and regulated. The heat from the burner will pass through the opening 13 in the body 7 and will circulate between the staggeredly related series of tubes
15 20 so that the air passing through all of these tubes will be effectively heated before entering the distributor tube or pipe 18. The volume of heated air passing outwardly
20 through the tubes will contact with the flared or funnel-shaped wall of the reducing tube 17, so that the heated air will be concentrated and forced through the comparatively small diameter of the distributor
25 tube 18. It is to be noted that a heater constructed as above described, is formed in sections so that the device may be easily moved from place to place in an orchard or the like and quickly set up. It is also to be
30 noted that the construction is simple and

the parts constituting the same may be cheaply manufactured.

The heads 19 have riveted on the outer faces thereof flanged discs 21 that receive therein the outwardly flared ends of the flue
35 pipes 20. This insures a more perfect connection between the heads and the said flue pipes.

Having described the invention, I claim:

A portable furnace comprising a cylindrical
40 body formed of two semi-cylindrical sections having interfitting edges, the said body so formed having a circumferential bead formed at each end, a hollow base supporting the said cylinder, the ends of the
45 base being curved at the top to receive the cylinder at the formation of the bead, the sides of the base contacting and supporting the said cylinder throughout its length, a heating element carried in the hollow base,
50 heating tubes carried in the two semi-cylindrical sections, the said tubes being supported by heads which are carried on the inside of the bead, inlet and outlet pipes connected to the said cylinder body, and a
55 blower for forcing air into the inlet pipe, through the tubes and out the outlet pipe.

In testimony whereof I affix my signature.

LEON STEINLE.