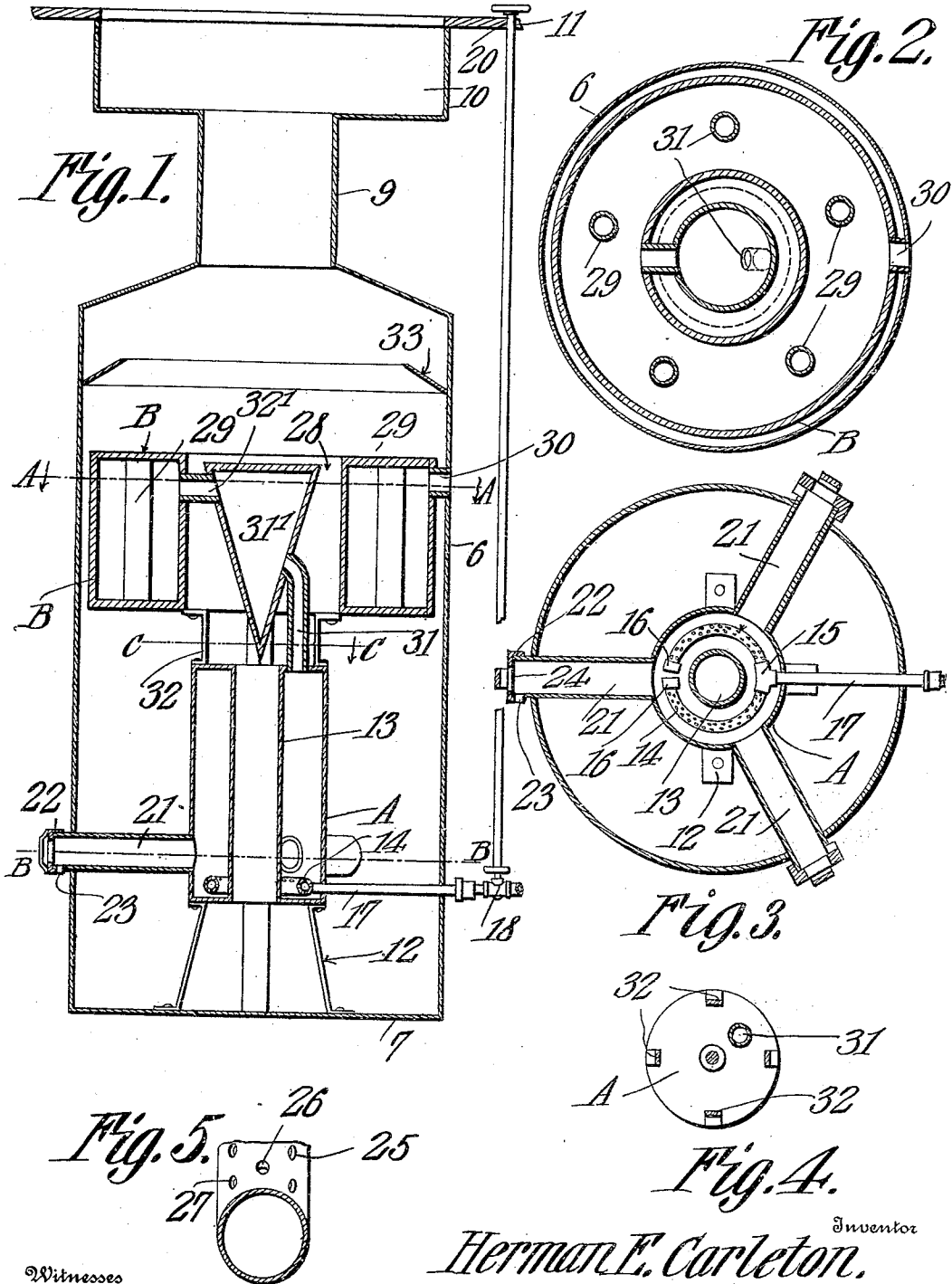


H. E. CARLETON.
HEATER.

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931,730.

Patented Aug. 24, 1909.



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HERMAN E. CARLETON, OF MARIETTA, OHIO.

HEATER.

931,730.

Specification of Letters Patent. Patented Aug. 24, 1909.

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To all whom it may concern:

Be it known that I, HERMAN E. CARLETON, a citizen of the United States, residing at Marietta, in the county of Washington and State of Ohio, have invented a new and useful Heater, of which the following is a specification.

This invention relates to heaters, and more particularly to that class which are designed to be supported beneath the floor of a room to be heated and which are associated with a register-box in the floor.

A further object of the invention is to so construct the heater and the burner thereof that the full benefit of the heat units of the products of combustion will be derived therefrom without employing them directly in the heating of the room.

In the accompanying drawings:—Figure 1 is a vertical sectional view through a heater constructed in accordance with the invention; Fig. 2 is a horizontal sectional view on the line A—A of Fig. 1; Fig. 3 is a view similar to Fig. 2 on the line B—B of Fig. 1; Fig. 4 is a view similar to Figs. 2 and 3, but taken on the line C—C of Fig. 1, and Fig. 5 is a detail perspective view of a portion of the burner of the structure.

As shown in the drawings, the body of the heater is in the form of a cylindrical sheet metal casing 6, the bottom of which is indicated by the numeral 7. At its upper end the casing 6 is provided with a neck or pipe extension 9 which connects with a register box 10 supported beneath a floor 11, which is the floor of the room or hall to be heated, it being understood that the heater is supported in position by the said register box.

In the casing 6 are located two heating drums, the lower one of which is indicated by the reference character "A" and the upper one by the reference character "B." The lower one of these drums is of less diameter than the upper one, and is supported by means of suitable legs or standards 12, upon the bottom 7 of the casing 6 of the body of the heater. This lower drum "A" is provided with a central flue 13, opening through the ends of the drum, the ends being otherwise closed, and located within the heating drum "A" upon the bottom thereof and surrounding the lower end of the flue 13 thereof is the burner of the heater, said burner being substantially annular in form consisting of two substantially semi-annular pipe sections

14, which are connected by means of a union 15, and have their communicating ends closed by means of nipples 16. A gas or fuel supply pipe 17 connects with the union 15 and serves as a means whereby gas or other suitable fuel may be supplied to the burner, said pipe extending through the wall of the casing 6 of the heater, and is provided exteriorly of the said casing with a cut-off valve 18, which may be manipulated to regulate the supply of fuel to the burner.

Connected to the stem of the valve 18 and extending vertically from the valve is a rod 19, the upper end of which extends into an opening 20, formed in the floor 11, adjacent to the register box 10, the said upper end of the rod being square for the engagement therewith of a key, whereby the valve 18 may be turned from the room being heated, the key employed being of any suitable construction.

Draft flues 21 lead from the drum "A" to a point directly above the plane of the burner 14, through the wall 6 of the casing of the heater, and fitted upon the outer end of each of these draft flues is a cap 22, provided with a draft opening 23 and an opening 24 which is covered with a sheet of isinglass or other transparent material, so as to provide means whereby a person may ascertain whether or not all the jets of the burner are lighted.

As is clearly shown in the view of the burner, the pipe sections 14 of the burner are provided each with a plurality of series of openings, one series being indicated by the numeral 25, and the other by the numeral 26, and a third by the numeral 27, the openings 25 being so arranged as to direct their jets of flame toward the wall of the drum "A", the opening of the series 27 being formed in such manner as to direct their jets of flame toward the central flue 13 of the drum "A". The upper series of openings 26 provide for a series of vertical flames. The heating drum "B", as in the case of the drum "A", is cylindrical and is provided with a central flue which is indicated by the numeral 28, the flue being of considerably greater diameter than the flue 13 of the drum "A". The drum "B" is also provided with a plurality of flues 29, which extend in an annular series around the central or main flue 28, and leading from the drum "B" and opening through the wall of the casing 6 of the

heater is a smoke discharge flue 30, communication being established between the interior of the drum "A" and the interior of the drum "B" by means of a flue 31. The
 5 flue 31 leads into the side of an inverted heating cone 31', and connecting this cone and the drum "B" is a short flue 32', the cone being supported concentrically within the drum "B" with its apex terminating at
 10 the upper end of the drum "A". The drum "B" is supported above the drum "A" by means of braces 32.

From the foregoing description of my invention, it will be understood that the products of combustion generated within the
 15 heater are passed from the interior of the drum "A" up through the flue 31, through the heating cone 31', thence through the drum "B", and out through the discharge flue 30. The three series of flame jets serve
 20 effectually to heat the flue 13 and the outer wall of the drum "A", thereby heating not only the air which passes up around the drum "A", as the heated products of combustion
 25 are discharged into the drum "B", they serve to heat the flues 28 and 29 of the latter drum, and thereby further heat the air which is drawn into the casing of the heater through the opening 8, this air passing
 30 up through the central flue 28 of the drum "B" and the auxiliary flue 29 thereof and being discharged by way of the pipe extension 9 into the register-box 10. It will be noted that at no time do the heated products
 35 of combustion come into contact with the heated air which is discharged into the room to be heated, and that the air drawn in through the opening 8 is thoroughly heated without waste of fuel.

40 For the purpose of directing the heated air through the pipe extension 9 and into the register-box 10, I provide within the casing

6 of the heater, and above the drum "B" therein, an annular deflector 33.

Having described my invention, what I
 45 claim as new, and desire to secure, by Letters Patent, is:—

1. In a heater, a casing, a drum within the casing, a flue extending vertically through the drum, a heater within the drum
 50 surrounding the flue, a hollow closed heating cone arranged above the drum, a flue opening through the cone below its upper end and extending downwardly and opening through the upper end of the said drum, a
 55 heating drum arranged above the first mentioned drum, a flue establishing communication between the upper end of the last mentioned drum and the upper end of the said cone, the cone being partly inclosed by the
 60 last mentioned drum and projecting below the same with its apex directly above the upper end of the flue in the first mentioned drum.

2. In a heater, a casing, a drum within the casing, a flue extending vertically through the drum, a heater within the drum surrounding the flue, a hollow heating cone arranged above the drum and in communication therewith, a heating drum arranged
 70 above the first mentioned drum and in communication with the cone, the cone being partly inclosed by the last mentioned drum and projecting below the same, with its apex directly above the upper end of the flue in the first mentioned drum.
 75

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HERMAN E. CARLETON.

Witnesses:

LOUIS BLOHM,
 F. W. COMBS.