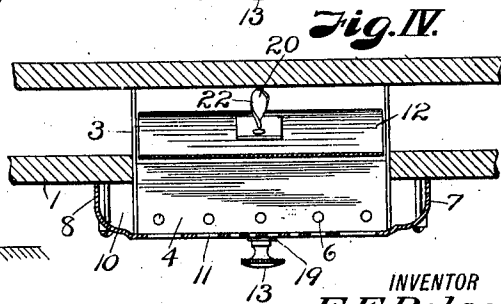
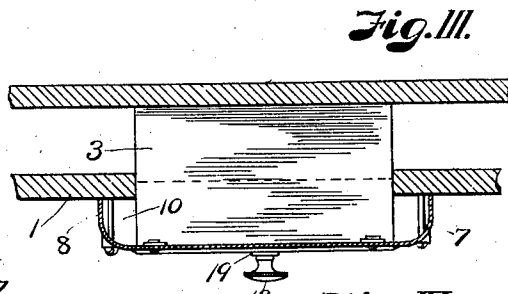
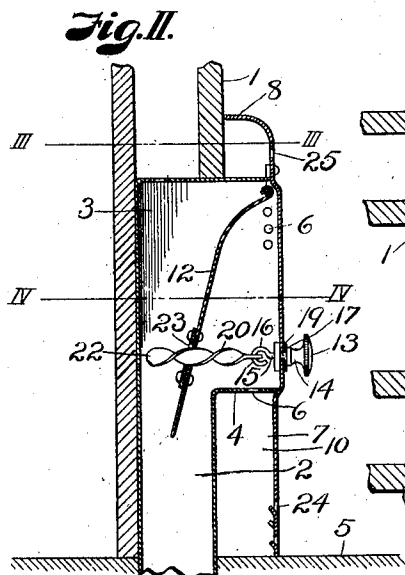
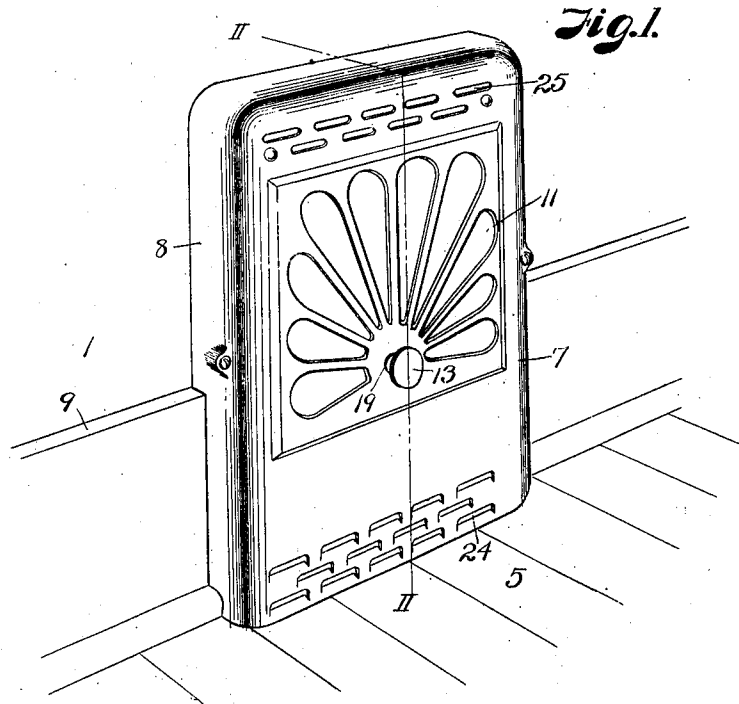


E. E. BOLLS.
HOT AIR REGISTER.
APPLICATION FILED APR. 9, 1912.

1,063,645.

Patented June 3, 1913.

2 SHEETS-SHEET 1.



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2 SHEETS—SHEET 2.

Fig.V.

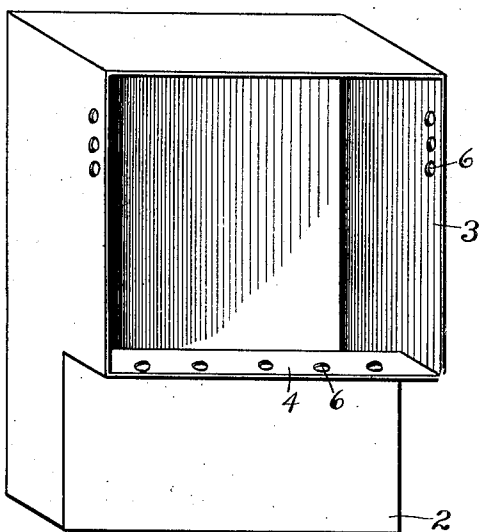


Fig.VI.

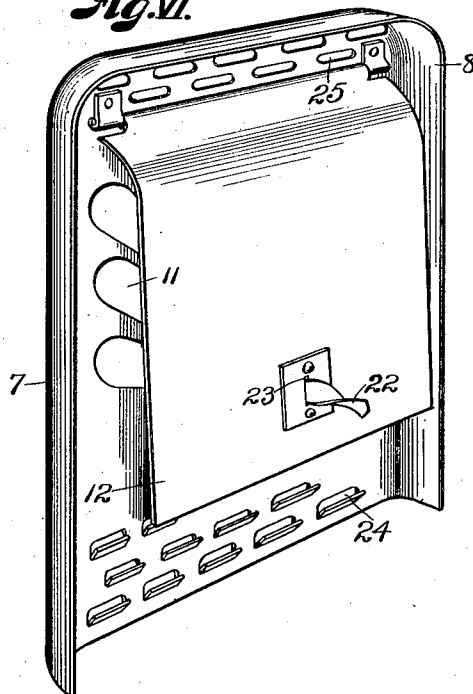


Fig.VII.

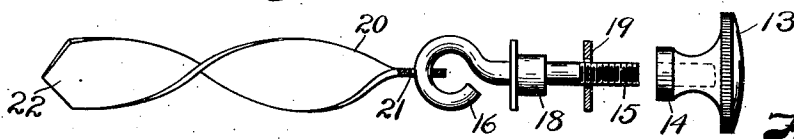
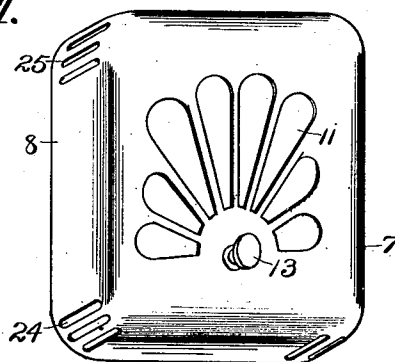
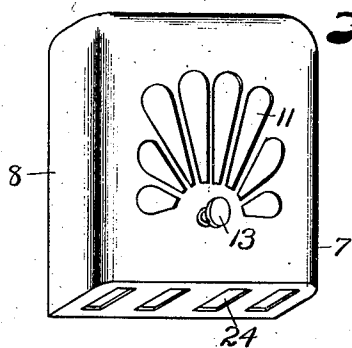


Fig.IX.

Fig.VIII.



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UNITED STATES PATENT OFFICE.

EDGAR E. BOLES, OF CARROLLTON, MISSOURI.

HOT-AIR REGISTER.

1,063,645.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed April 9, 1912. Serial No. 689,557.

To all whom it may concern:

Be it known that I, EDGAR E. BOLES, a citizen of the United States, residing at Carrollton, in the county of Carroll and State of Missouri, have invented certain new and useful Improvements in a Hot-air Register; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to hot air registers and has for its principal object to provide a device of that class whereby cold air from the lower portion of a room may be drawn into the register and passed therethrough in contact with the register box, so that it becomes heated and is afterward delivered from an upper portion of the register to again circulate throughout the room from which it was originally taken, thereby promoting circulation of air and facilitating the heating of the room. In accomplishing this object, I have provided the improved details of structure, hereinafter described and illustrated in the accompanying drawings, wherein—

Figure I is a perspective view of a register constructed according to my invention, showing its application to the wall of a room and its relation to the ordinary baseboard. Fig. II is a vertical section on the line II—II, of Fig. I showing the arrangement of the register box and register and the relation of such parts to the walls. Fig. III is a horizontal section on the line III—III of Fig. II. Fig. IV is a horizontal section on the line IV—IV Fig. II. Fig. V is a detail perspective of a register box adapted for use with my improved register. Fig. VI is a detail perspective of the register looking from the rear. Fig. VII is an enlarged detail view of the adjusting device. Fig. VIII is a perspective view of modified form of register showing an arrangement of intake and exhaust openings. Fig. IX is a perspective view of a further modification.

Referring more in detail to the parts: 1 designates interior walls of a building between which an ordinary furnace pipe 2 is located, the upper end of said pipe being provided with a register box 3 which projects through one of the walls to the interior

of a room, the lower edge 4 of said box being a short distance above the floor 5. In the bottom of the box, near the front edge thereof, and in the upper ends of the box sides, are apertures 6, of any suitable size, shape or number, through which air may pass into the box. Fitting over the box 3 is a register 7, which, in the preferred form, extends upwardly from the floor 5 and has edge and top flanges 8 whereby its face is spaced outwardly from the wall to about the depth of the baseboards 9, the outer edge of the box engaging the rear face of the register body so that channels or passages 10 are formed within the register around the box. The register may be formed of either cast or sheet metal and has openings 11 in its face through which hot air from the register box may be delivered into the room. Pivotaly hinged at its upper end to the rear face of the register, within the upper portion of the box 3, is a damper plate 12, which extends downwardly and rearwardly into the furnace pipe 2 and is adapted to lie against the rear edge of the box, as illustrated in Fig. II, the plate extending entirely across the box, or pipe, so that when the damper is in its forward or closed position no air from the furnace pipe can pass through the box.

For adjusting the damper plate I provide a device comprising a hand-wheel 13 (Fig. VII) having an interiorly threaded hub 14 for receiving the shank 15 of an eye-bolt 16. Said shank is adapted for projection through an opening 17 in the register, preferably below the discharge apertures 8, and has a collar 18 fixed thereto and adapted for free rotary movement within its opening, the fit of the collar being sufficiently close, however, to prevent lost motion or sagging of the hand-wheel or eye-bolt. On the shank at each side of the collar is a washer 19 for retaining the parts in place and covering the apertured portion of the register.

20 designates a screw member of flat metal having an aperture 21 through which the hook-bolt is projected, and having a free inner end 22 protected through a slot 23 in the damper plate 12, so that when the hand-wheel is manipulated the damper plate may be moved inwardly or outwardly, according to the direction of the movement of the wheel. In the lower portion of the register are apertures 24 through which cold air

from the lower portion of the room may be drawn by the rising current of hot air, which is delivered through the furnace pipe and register box. I also preferably provide
5 apertures 25 in the upper portion of the register, through which the excess volume of cold air may be re-delivered into the room after being tempered by contact with the furnace pipe and box.

10 While I have shown the register as rising flush from the floor, and with all of the air openings in the front face of the register, it is apparent that when a register is set above the floor the intake openings may be
15 placed in the bottom flange, as shown in Fig. VIII, or the corners or flanges of the register may be fluted, as shown in Fig. IX, without departing from the spirit of my invention.

20 Presuming the parts to be assembled, as shown and described, with hot-air rising through the furnace pipe and being delivered through the register, it is apparent that the rising current of heated air will tend to
25 draw air from the channels, or passages, surrounding the register box in through the box apertures 6, so that a continuous circulation is provided, the cold air being drawn in through the bottom register openings and
30 rising around the furnace pipe and register box to become heated during its passing, either entering the register box through apertures 6 and again being delivered through the register, or rising through the
35 top of the box and being delivered through the upper apertures in the face in the body of the register. It is apparent that by manipulating the hand-wheel 13 the area of

the discharge opening may be regulated to determine the volume of heated air to be delivered to the room. It is also apparent
40 that by placing the hand-wheel below the hot-air openings the wheel will not become heated as it is out of the path of the hot-air.

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

The combination with a furnace pipe for supplying heated air and having a register box provided with an open end, of a register having an apertured front portion disposed across the open end of said box and having end flanges spaced therefrom to form air channels thereabout, a damper plate having a vertical slot disposed therein adjacent
50 its lower edge, and being adapted for positioning in the open end of said box and projecting into the furnace pipe, a screw pivotally mounted on said register and disposed in said plate slot, whereby the said plate is
55 actuated by the revolution of the screw to regulate the volume of air from the said pipe, said register having a plurality of openings disposed in its upper and lower portions and communicating with the air
60 channels, to provide a continuous circulation of air around the box, the lower openings being adapted for admitting cold air into the channels and the upper openings for discharging air in a heated state.
70

In testimony whereof I affix my signature in presence of two witnesses.

EDGAR E. BOLES.

Witnesses:

LETA E. COATS,
N. A. BUDD.