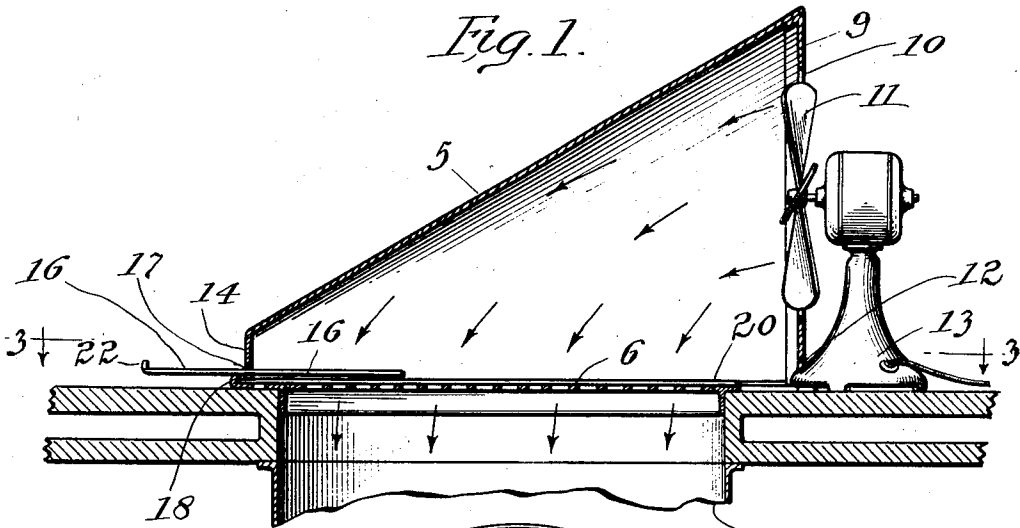
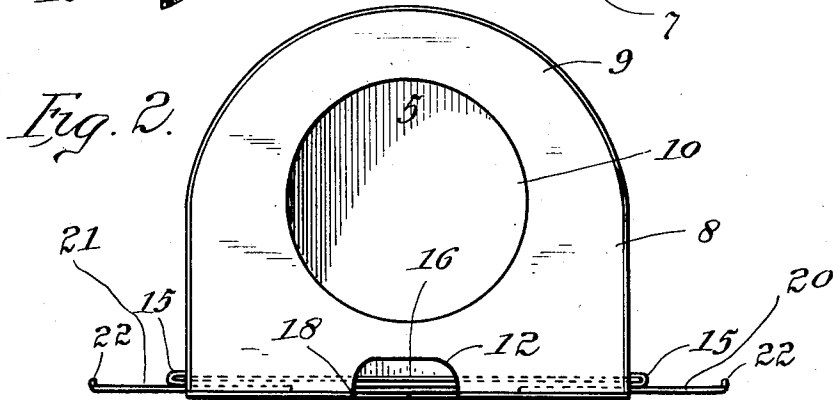
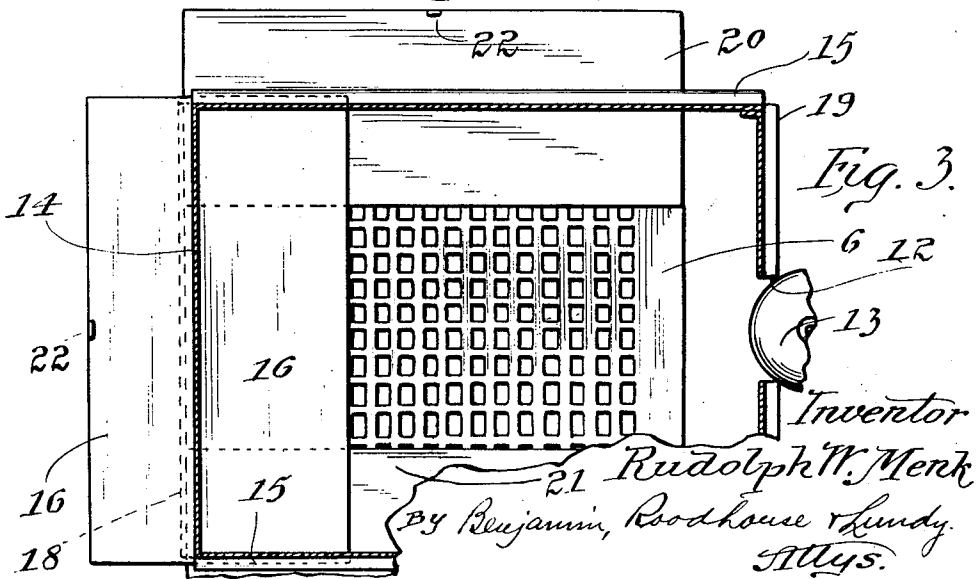


R. W. MENK.
COLD AIR SUPPLY DEVICE FOR HEATERS.
APPLICATION FILED OCT. 20, 1920.

1,383,477.

Patented July 5, 1921.



UNITED STATES PATENT OFFICE.

RUDOLPH W. MENK, OF JOLIET, ILLINOIS, ASSIGNOR TO THE EXCELSIOR STEEL FURNACE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COLD-AIR-SUPPLY DEVICE FOR HEATERS.

1,383,477.

Specification of Letters Patent.

Patented July 5, 1921.

Application filed October 20, 1920. Serial No. 418,242.

To all whom it may concern:

Be it known that I, RUDOLPH W. MENK, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented a new and useful Improvement in Cold-Air-Supply Devices for Heaters, of which the following is a specification.

My present invention appertains to systems for heating houses and apartments with warm or hot air by circulating the cooler air in the apartment back around a heater or furnace where it becomes reheated and ascends in the warm air distributing pipes or conduits. In such systems it is often the practice to install in the floor of the apartment being heated, suitable registers for the intake of the cooler air and its return through the return pipes or conduits to the heater. Such cool air return registers are usually disposed one or two to each floor and are frequently not large enough to pass a sufficient quantity of air to heat the premises to a desired temperature, as such systems depend upon the relative weights, or the differential between the weights, of equal volumes of hot and cold air. I have found that heaters or furnaces of a given rating are invariably able to heat a larger volume of air than will flow through them under the influence of gravity between the cold and the hot air. Where the cold air inlets lead to the exterior of the building and receive the colder outside air there is a somewhat faster circulation than when the cold air supply leads from the inside of the building. With these inherent objections in mind, I have designed an attachment to be placed over a cool air intake or return register whereby the amount and the velocity of the air entering the register and flowing through the system is increased.

The principal object of my invention is the provision of an attachment that is capable of effectively increasing the amount and velocity of the air passing through the system and thereby increasing the efficiency of the heating plant. Among other objects of my present invention is the provision of an attachment that is portable so that it may be moved from place to place as desired in the apartment being heated, and may be stored away during warm weather when the

heating system is not in use. Still other objects are the provision of an apparatus of this kind that is simple in construction, made of a minimum of parts, and, therefore, capable of being readily manufactured and sold for a moderate price, light and easy to handle or install, and which is effective and dependable in performing the functions for which it is designed.

I prefer to accomplish the divers objects of my invention in substantially the manner and by the instrumentalities hereinafter fully described, and as more particularly pointed out in the claims, reference being now had to the accompanying drawings that form a portion of this specification in which

Figure 1 is a central vertical section of my invention showing the apparatus installed upon a floor register of a hot air heating system.

Fig. 2 is a vertical front elevation of my invention.

Fig. 3 is a horizontal or transverse section taken on the plane of line 3—3 of Fig. 1.

In the several views of the drawings I have designated similar parts by the same reference characters, and by referring to said drawings, it will be seen that my apparatus preferably comprises a hood 5 of sheet metal of a suitable gage and of a size sufficient to cover the usual cold air intake or return register 6 of a hot air heating system. The register 6 is of the usual type having a grille, ornate or otherwise, covering an opening in the floor of the apartment being heated, and discharges into the cold air conduit 7 leading therefrom down to the heating drum of the furnace or heater.

A front wall or plate 8 is provided for my apparatus the lower edge whereof is preferably straight and having right-angular side edges, as seen in Fig. 2 of the drawings. The upper portion of the front wall or plate 8 is semi-circular, as shown at 9 in the drawings, and said wall or plate is provided with a substantially centrally disposed opening 10 through which the air is forced to the interior of the apparatus by means of a suitable blower or electric fan 11. This fan is so positioned that its blades operate partly outside and partly inside the apparatus so that the blades will be able to gather the air from the outside and force it

into the interior of the apparatus. In order to properly position this fan the front wall or plate 8 is provided with a recess 12 in its lower portion so that the base 13 of the standard supporting the fan may be seated therein, as shown in Fig. 1 of the drawings, and thus afford means for accurately positioning the fan and blades.

The front portion of hood 5 curves to fit the edges of the front wall 8 and slopes downwardly therefrom to the rear where said hood is bent laterally in a horizontal plane parallel with the floor to provide the short vertical rear wall 14.

Means are provided for controlling the quantity of air reaching and passing through the register grille, which I prefer to do by means of dampers or sliding plates disposed in the lower portion of the chamber formed by the hood and walls above described. The opposite edges of the metal forming the hood member 5 is headed or bent outwardly and then inwardly to provide beads or inwardly facing grooves 15 to receive and guide a damper plate 16 inserted through a longitudinally disposed horizontal slot 17 in the lower portion of the short rear wall 14. Similarly formed beads or inwardly facing grooves 18 and 19, respectively, are made by bending the lower edges of the rear wall 14 below the plane of the slot 17 and the front wall 8 upon each side of recess 12. These beads or grooves 18 and 19 receive the edges of and guide the oppositely disposed damper plates 20 and 21, and in order to afford handy means for moving or adjusting the relative positions of these three damper plates 16, 20 and 21, suitable up-turned lips or lugs 22 are made upon the outer edges of the damper plates which also act as stops to prevent the damper plates passing entirely within the walls of the structure. These damper plates are of such dimensions that when all have been moved into the structure to their limit they will not entirely close the opening above the register grille.

What I claim as new is:

1. A device for introducing air into the cold-air return register of a heating system comprising a portable boxlike structure to be positioned over a register, said structure having a vertical wall provided with an inlet opening, means for forcing air through the opening into said structure, and an inclined wall extending downwardly and rearwardly from said vertical wall, whereby the inclined portion of said wall provides means for directing the air downwardly through the register.

2. A device for introducing air into a cold-air register of a heating system comprising an apertured vertical front wall the upper portion of which is segmental in shape, and an inclined top wall extended downwardly and rearwardly from said front wall, the upper forward portion of said top wall being semi-cylindrical in section and conforming with the contour of the segmental portion of said front wall and said top wall merging at its rear into a horizontally disposed substantially straight edge adjacent the bottom of said structure.

3. A device for introducing air into the cold-air return register of a heating system comprising a portable box-like structure to be positioned over a register, said structure having a vertical wall provided with an inlet opening, means for forcing air through the opening into said structure, an inclined top wall extending downwardly and rearwardly from said vertical wall and terminating upon the remaining sides of said structure in the same plane with the lower edge of said front wall, dampers movable transversely of the lower open portion of said structure, and means for guiding said dampers.

Signed at Chicago, county of Cook and State of Illinois, this 11th day of October, 1920.

RUDOLPH W. MENK.

Witness:
FLORENCE MITCHELL.