A. H. POWER.
REGISTER FOR HOT AIR HEATING APPARATUS.
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REGISTER FOR HOT-AIR HEATING APPARATUS.  

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To all whom it may concern:  

Be it known that I, ALBERT H. POWER, of  
the city of Toronto, in the county of York,  
Province of Ontario, Canada, have invented  
certain new and useful Improvements in  
Registers for Hot-Air Heating Apparatus,  
of which the following is a specification.  

In heating rooms by hot air it is recognized that hot air should be introduced preferably above the floor level and the cooler air to be returned to the furnace taken away at the floor level so that there may be a circulatory movement of the air without interference of the incoming and outgoing flow.  

In ordinary house heating one or more cold air registers are provided in the floor and either floor or wall registers for the hot air, but it is seldom any attempt is made to take return air from each room owing to the inconvenience of the separate floor registers for the cold air and the extra expense of installation.  

My object is to devise a unitary register combining the functions of both a hot air and return flow register which will be effective in each capacity and which, without being unduly large or clumsy, permits of the proper separation in level of the hot and cold air.  

I attain my object by forming a register of somewhat increased height and depth provided with two grilles, one above the other, one for hot air and the other for cold air, and having a transverse heat-insulated partition across the lower part bent forward at its upper end to contact with the front of the register between the grilles. A cold air chamber is thus formed in the register in front of a hot air chamber opening respectively through the cold and hot air grilles. With these chambers cold and hot air fluxes will be connected, one lying in front of the other and preferably heat insulated from one another where they contact.  

The invention is hereinafter more specifically described and illustrated in the accompanying drawings in which—  

Figure 1 is a front elevation of my improved register;  

Fig. 2 a vertical cross section of the same; and  

Fig. 3 a section on the line a—b in Fig. 2.  

In the drawings like numerals of reference indicate corresponding parts in the different figures.  

The register is shaped as a rectangular metal box of cast or sheet metal. The depth of the box from the back to the front is somewhat greater than in ordinary registers so that the projection beyond the wall line is greater than the ordinary wall registers. The register is also of greater height than ordinarily and the front is formed with two grilles 1 and 2, the lower for the passage of return cold air to the furnace and the upper for the discharge of hot air. The upper grille 2 is inclined rearwardly as shown so that the hot air passing therethrough is discharged somewhat in an upward direction.  

Inside the register is fitted a transverse partition 3, the top of which is curved forwardly to substantially contact with the front wall of the register between the two grilles. This partition is preferably sheathed with asbestos or is otherwise insulated to prevent the conduction of heat through it. This partition divides the register into two chambers, a hot air chamber 4 opening through the grille 2, and a cold air chamber 5 opening through the grille 1.  

The lower part of the register is adapted to receive the upper ends of the hot air flue 6 and the cold air flue 7, which communicate respectively with the chambers 4 and 5.  

The hot air grille may be closed by means of the deflecting plate 8 pivoted at 9 at the top of the register and controlled by means of a pivoted handle 10. When open as shown it forms with the upper curved end of the partition 3 means for deflecting the hot air from the chamber 4 through the grille 2.  

With the arrangement shown the flow of hot air and the return flow of cold air are kept entirely separate and at different levels so that a natural circulation is obtained in which the air currents flow in opposite directions and do not interfere with one another. It will be seen from the above description that the device satisfactorily attains the objects of my invention as set out in the preamble to this specification.  

What I claim as my invention is:—  

A hot air register having an open bottom and two grilles formed in its front, one
above the other, the lower for cold air and the upper for hot air; a transverse heat-insulated partition extending from side to side of the register, extending from the bottom of the register and curving forward at its upper end to the front of the register between the grilles, thus dividing the register into two non-communicating chambers, a cold air chamber in front opening through the lower grille and a hot air chamber behind opening through the upper grille.

Signed at Toronto, Canada, this 9th day of June, 1916.

ALBERT H. POWER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D.C."