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C. B. SIMONEAU

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HEAT DISTRIBUTION FOR BUILDINGS

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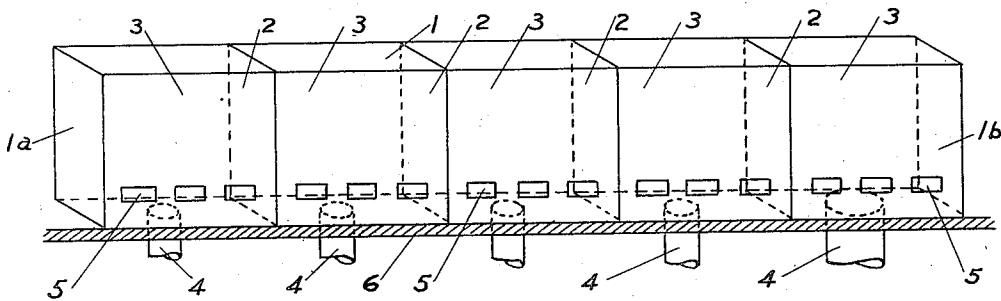


FIG 1

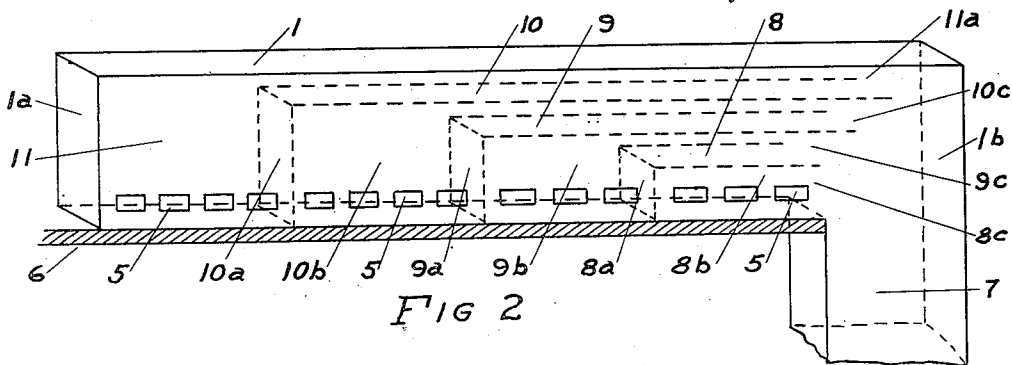


FIG 2

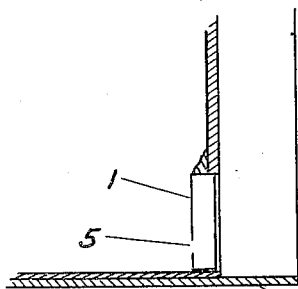


FIG 3

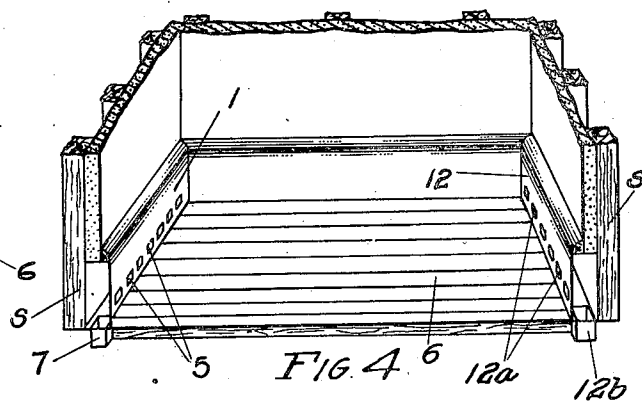


FIG 4

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HEAT DISTRIBUTION FOR BUILDINGS

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2 Claims. (Cl. 98—32)

My present invention pertains to heat distribution for buildings and has particular application to the distribution at the baseboard of heat supplied by hot air as a heating medium, with or without the use of means for air conditioning.

As is well known, the usual means for supplying such heat is through a pipe of large diameter which leads to a "register" positioned in an opening in the floor, or in the wall at or near the baseboard. The register is usually equal to or slightly greater in diameter than the supply pipe and when heat is sent through the pipe and register convection results and is depended upon for heating purposes.

In my device, instead of supplying heated air to a room at a single point, as is done where such a register is used, the heat is supplied over a wide area in the manner which I will describe hereinafter, thus providing efficient heat with a minimum of convection, and also providing direct radiation of heat at or near the floor by means of low temperature heating. I shall describe several modifications of my device for accomplishing this purpose, all of them embodying the principle of my invention. One of these modifications combines the distribution of heat as stated with means for air conditioning without draft, and this I consider a decided advance in the art of air conditioned heating.

Before proceeding to describe my invention, I desire to call attention to the drawing which accompanies this application for a patent as a part thereof and in which Figure 1 illustrates the combined heating units with multiple feeds; Figure 2 shows the baffle units with single feed; and Figure 3 is a detail showing the position of my invention in a room; Figure 4 shows my combined heating and air withdrawal units positioned in a room.

In houses as usually constructed there is a baseboard running around the walls at the floor. When this baseboard is removed from old construction there is a space averaging about 1½ to 2 inches deep and with a height equal to the height of the baseboard. It is in this space that my device is positioned in both old and new construction. I accomplish this in the manner hereinafter described, but it should be understood that the following description is for illustration of the principle of my invention only and that modifications thereof come within the scope of my invention.

(a) *Combined heating units with multiple feeds.*—I provide one or more rectangular metallic casings 1 to meet the predetermined heating

requirements of each room. The metallic casing is closed at both ends 1^a, 1^b and is divided by partitions 2 into a plurality of chambers 3. In the bottom of each chamber is an intake opening 4 and into this opening is fitted a pipe which passes upward through the floor 6 from the supply pipe containing the heating medium. In the front wall of each chamber is a plurality of openings 5 into the room.

Heat supplied to the room through the supply pipe passes through all of the intake pipes to the chambers in the baseboard casing. The result is that hot air passing through the openings in the front walls of the chambers is widely distributed instead of being concentrated as heretofore; and, instead of being forced to the ceiling by convection, the lower part of the room is heated more quickly thereby than by the old methods now in use. Furthermore, the walls of the chambers are heated and thus heat is radiated into the room from the baseboard casing, the direct flow of heat and radiated heat combined resulting in efficient heating of the room at a lower temperature than is supplied from a single register, which latter is intended to and does, if the heating plant is efficient, project into the room a blast of hot air through the register.

(b) *Baffle units with single feed.*—In this form of my invention, the same rectangular metallic casing 1 is placed at the baseboard as already described. The partitions are omitted and a single intake opening 7 is connected with the supply pipe, the position of this opening being preferably through the bottom of the casing near one end thereof. I divide the interior of the casing longitudinally into compartments, as shown in Figure 2. This is done by providing horizontal partitions 8, 9, 10 of unequal lengths, affixed to the front and rear walls of the casing and extending into the path of projected hot air as it enters the casing 1 from intake 7, the lowest partition 8 being the shortest and the upper 10 the longest. None of the partitions extends to the end walls of the casing. From the end that is farthest from the intake opening, vertical partitions 8^a, 9^a, 10^a extend between the front and rear walls and bottom of the casing to partitions 8, 9, and 10, respectively, thus providing compartments 8^b, 9^b, 10^b and 11, all of which are of predetermined, graduated sizes with openings 8^c, 9^c, 10^c and 11^a at or near the intake opening. The positions of these openings are "staggered" to meet the requirements of heat supply to the compartments. Thus, the lowest compartment 8^b stops slightly beyond the edge

of the intake partly intercept the flow of hot air from intake 7, the next farther across, and so on, according to the number of partitions and compartments provided, thus forming baffles which
 5 cause the hot air entering through the intake to be distributed uniformly in the compartments. In the front walls of the compartments are apertures 5 as already described.

The operation of this modification of my device is as follows:

When hot air passes through the intake, the baffles intercept its flow so that the compartments are heated throughout, the hot air passes into the room and heat is radiated into the room from the casing, as already described.

(d) *Combination of a or b with air conditioning.*—When used in combination with air conditioning means, the air conditioned heating medium passes into the room widely distributed instead of through a single opening as now practiced, thus avoiding an objectionable feature of air conditioning. In conjunction with air conditioning thus distributed I provide a casing 12, having apertures 12a in the front wall thereof, positioned as already described along another wall of the room and through this casing and an outlet 12b therein the air of the room is drawn back to the air conditioning apparatus without perceptible draft, thus avoiding another unsatisfactory feature of air conditioning, there being
 30 no contracted suction of air as heretofore practiced.

All parts of the casing containing the heating medium, except the front, may be insulated to
 35 prevent loss of heat. When in position, the

front of the casing has the same appearance as the usual baseboard.

Having described my invention and the operation thereof, what I claim is:

1. In a device of the class described, means for providing diffused baseboard hot air distribution in a room, said means comprising a casing, an intake opening for admission of hot air into the casing, partitions of predetermined unequal lengths dividing the casing into compartments, the partitions forming baffles extending beyond the edge of the intake opening into the path of entering hot air and adapted to intercept hot air entering the casing through the intake opening and distribute it uniformly in the compartments, and openings in the front walls of the compartments adapted to emit hot air uniformly from the compartments into the room.

2. In a device of the class described, means for providing diffused baseboard hot air distribution and direct radiation of heat into a room, said means comprising a casing, an intake opening for admission of hot air into the casing, partitions of predetermined unequal lengths dividing the casing into compartments, the partitions forming baffles extending beyond the edge of the intake opening into the path of entering hot air and adapted to intercept hot air entering the casing through the intake opening and distribute it uniformly in the compartments, and openings in the front walls of the compartments adapted to emit hot air uniformly from the compartments into the room.

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