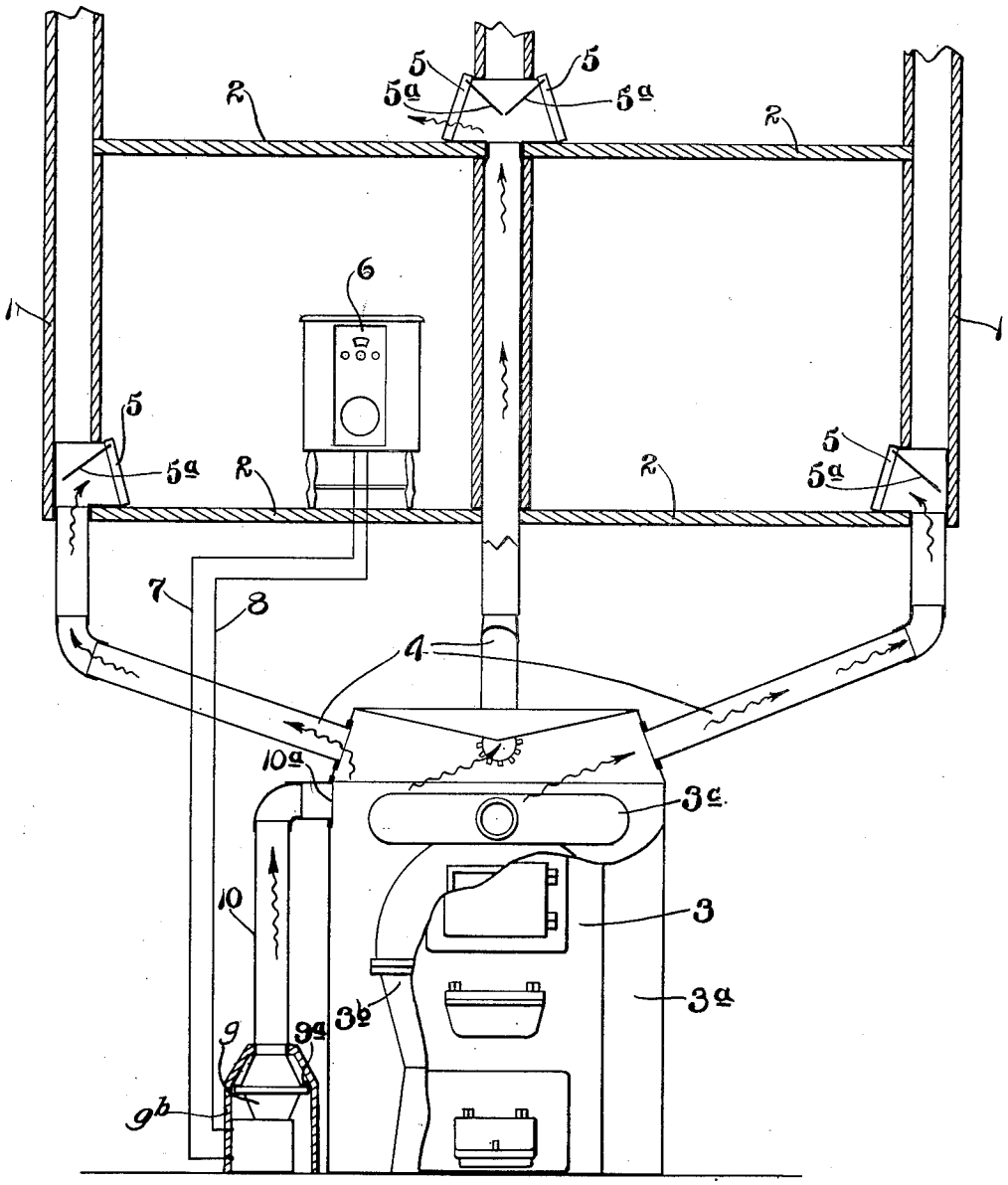
March 27, 1934. C. M. SELBY 1,952,514

RADIORECEIVER DISTRIBUTING SYSTEM

Filed Nov. 9, 1931



Inventor
Charles M. Selby
By Livingston and VanSanten
Attorneys

Patented Mar. 27, 1934 1,952,514

UNITED STATES PATENT OFFICE

1,952,514

RADIORECEIVER DISTRIBUTING SYSTEM

Charles M. Selby, Holland, Mich., assignor to Holland Furnace Company, Holland, Mich., a corporation of Michigan

Application November 9, 1931, Serial No. 573,938

2 Claims. (Cl. 181—18)

This invention relates to radios, and more particularly to a new and improved method of and apparatus for distributing the program received by a radio set throughout the various rooms of a home, school, hospital or other building in which a hot air heating plant has been installed.

The average American home of today contains a radio receiving set, but it is unusual to find more than one such instrument in a single family. Radios are made with nicely finished cabinets, and as articles of furniture are frequently placed in the parlor or best room of the house. This being the case, it is not an infrequent occurrence to find one or more members of a family deprived of the use of the radio when they would otherwise enjoy hearing it, as when company comes, or when they may be variously occupied in different rooms of the house. Again, it is often the case that one working at home enjoys music, although the presence of other people in the same room would be a distracting influence. Further, schools have found the radio to be of educational and recreational value, yet many such institutions, particularly those of the country type where a hot air system is used to heat several rooms, cannot afford more than one receiving set. Small hospitals have a like problem, notably those in which patients are segregated in a number of separate rooms.

A purpose of this invention is to provide a system whereby the music or other program from a radio receiving set may be transmitted to all the rooms of a dwelling, school, hospital or other structure.

A further purpose is to provide a means whereby with maximum economy the program emanating from the loud speaker of a radio receiving set may be selectively transmitted to the various rooms of a building.

These and other objects made apparent throughout the further description of this invention are accomplished by means of my radio receiver distributing system and apparatus therefor, a thorough understanding of which will be attained by reference to the accompanying drawing which is a view in fragmentary elevation, partially in cross section, with a segment of the front of the furnace broken away, illustrating a preferred embodiment of my invention.

Referring to the drawing, 1 represents the side walls and 2 the floors of a building, in which has been installed a conventional hot air heating system consisting of a furnace 3 with warm air pipes 4 in which are installed registers 5 having closure members 5*a*. The furnace 3 is constructed with a casing or jacket 3*a* which envelops and surrounds a composite inner heating unit 3*b* as shown. A radio receiving set 6, with the loud speaker removed, is stationed preferably in one of the upper rooms of the building, and speaker extension wires 7 and 8 lead therefrom to a loud speaker 9 located in the basement. Ground, aerial, and other connections may form a part of the installation of the receiving set 6, but are not shown in detail herein as not being necessary to a complete disclosure of the instant invention.

Special attention is now directed to the member 9. This device may be the regular loud speaker removed from the radio set, and which may be of either the magnetic or dynamic type; or may comprise a larger and specially constructed speaker unit for a particular building, as when a large number of rooms are to be served. The size and capacity of the member 9 is a matter of discretion and depends upon the requirements of the use to which it is to be put. In the ordinary case the regular loud speaker coming with the set is sufficient. In order that the heat of the furnace, when in operation, may not damage the speaker, the member 9 may be surrounded with a protecting covering 9*b* as clearly shown in the drawing. A pipe 10 extends upwardly from and is connected to the face of the horn 9*a* of the dynamic loud speaker 9 as shown in the drawing, it being intended that the sound waves emanating from said speaker shall be directed in a generally upward direction as indicated by the arrows. The pipe 10 terminates and connects with the interior or jacket 3*a* as at the point 10*a*, it being preferable that such connection be made near the top of the furnace jacket, or as close to the warm air pipes as possible.

In operation my device works as follows. The receiving set 6 is actuated in the usual manner, as by an operator in the room above manipulating the necessary switches, tuning dial and volume control to thereby direct current along the wires 7 and 8 to the loud speaker 9 below. This member converts said current into sound in a manner well known to those familiar with the art, and the program being received is transmitted through the pipe 10 into the space between the jacket 3*a* and the unit 3*b*, and hence up through the various warm air pipes to the rooms of the building. If for any reason it is desirable to exclude the program from one or more of the rooms, it is only necessary to close the register damper, or shutter, of the pipe com-

municating with that room, and thereby shut out the sound waves from that particular room. Thus, without employing apparatus additional to that ordinarily found with a hot air heating system, I am enabled to selectively control the distribution of music, singing, speaking or other program, to an entire building, and every room thereof.

Several possible modifications suggest themselves, as in a warm climate where the furnace is used but a few months each year it might be practicable to eliminate expense by installing the loud speaker within the jacket of the furnace itself, for instance on top of the radiator 3c, in which case the advantages of my invention would be fully realized, although it would be necessary to remove the speaker when the furnace was in operation as otherwise the loud speaker unit might be damaged or rendered inoperative by the heat. The arrangement I have disclosed in the drawing enables the device to be used the year around, and is designed to preclude damage by heat to the speaker.

Under certain conditions it may be desirable to retain the original loud speaker within the radio set 6, and consider the member 9 as a supplementary device, it being then possible to operate the speakers either separately or together. That is, by means of a simple throw-off switch (not shown) the speaker 9 may be energized, in which case two speakers will be operating from the same receiving set; or the speaker in the radio cabinet may be cut off by a switch (not shown) and thus leave the member 9 operating to distribute music throughout the building as contemplated in the earlier part of this specification. These and other modifications are to be taken as broadly within the scope of this invention and an interpretation placed upon the claims herein which will give the applicant the protection to which his contribution entitles him.

At this point it might be remarked that the upward movement of the air in the warm air pipes serves to facilitate in part the movement of the sound waves in a like direction, when the furnace is in operation, and that the heating system and radio distributing device operate together in perfect harmony, the result being highly desirable, economical and efficient. It has been observed that the tone quality of the music or other program transmitted from the speaker 9 through the apparatus which is a part of the instant invention is improved rather than diminished by such transmission, the explanation possibly being that music heard too close to its point of origin (as in the same room with a loud speaker) is apt to be unbalanced and distorted, whereas if heard from a proper distance a better composite musical picture results. It is a known fact that the best place from which to hear a symphony orchestra is not directly behind the conductor.

From the foregoing it is apparent that I have disclosed a new, useful and unique radio receiver distributing system. That by means of my invention it is possible to selectively distribute an incoming radio program to the various rooms of a dwelling, school, hospital, or other structure. That my invention enables every member of a family, from the housewife working in the kitchen to the student reading above, to enjoy the radio programs that might otherwise be denied them. That my system is economical in that it largely employs structure and apparatus already existing within a building equipped with a hot air heating system, a system that ordinarily lies dormant and useless several months out of every year, but which may now be put to a useful purpose twelve months out of each year in conjunction with my invention.

I claim:

1. In combination with a building having rooms and a furnace having a relatively large closed casing and pipes leading to the rooms of said building from the casing, a radio receiving set located in one room, a loud speaker, controlled by said set, located adjacent to said casing, hollow means leading from said loud speaker to the casing, said hollow means connecting onto said casing immediately adjacent that pipe which leads to the room containing the said receiving set and individual closure means for each of the said pipes.

2. In combination with a building having a plurality of pipes leading to different points in the said building, said pipes emerging from a common center, a radio receiving set located adjacent the outlet of one of said pipes, a loud speaker, controlled by the said radio set, located adjacent to the common point of the several pipes, said loud speaker being closely positioned to the pipe which leads to the said radio receiving set for the purpose described and individual closure means for each of the said pipes.

CHARLES M. SELBY.