F. O. HELLSTROM.

HEATING SYSTEM.

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1,168,304. Patented Jan. 18, 1916.

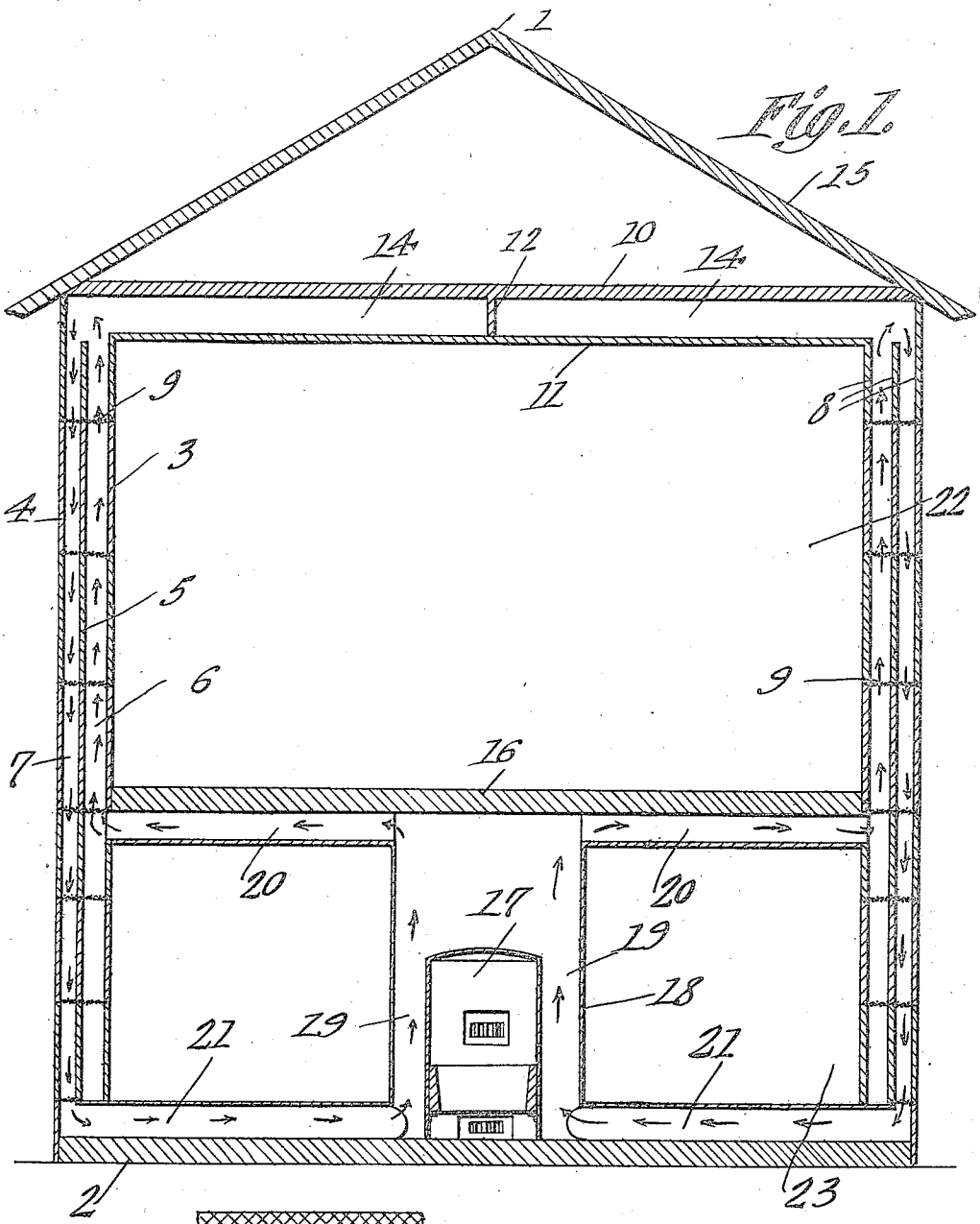


Fig. 1.

Fig. 2.

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HEATING SYSTEM.

1,168,304. Specification of Letters Patent. Patented Jan. 18, 1916.

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To all whom it may concern:

Be it known that I, FRANK O. HELLSTROM, a citizen of the United States, residing at Bismarck, in the county of Burleigh and State of North Dakota, have invented a new and useful Heating System, of which the following is a specification.

The device forming the subject matter of this application is a heating system, and the invention aims to provide a novel means whereby the air within an apartment may be heated through the walls of the apartment, by radiation from the walls, there being no registers or flues opening from the heating system directly into the apartment which is to be heated.

It is within the province of the disclosure to improve, in particulars to be pointed out hereinafter, a heating system of the type above mentioned.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:—Figure 1 shows in cross section, a building wherein the present heating system has been installed; Fig. 2 is a plan of the reinforcement which is used in connection with the walls of the building.

In the accompanying drawing there is shown a building 1 of any desired size and form, embodying a foundation 2. The building 1 comprises an inner wall 3, an outer wall 4 and an intermediate wall 5. The walls 5 and 3 define a passage 6 through which heated air is adapted to flow upwardly, the walls 5 and 4 defining a passage 7 through which the air, having been cooled more or less, flows downwardly.

All of the walls 3, 4 and 5 preferably are made up of superposed blocks 8 arranged in horizontal courses. Lying between the courses of blocks 8 and binding together the walls 3, 4 and 5 are reinforcements 9 of open-work construction, the reinforcements 9 being in the form of expanded metal laths, if desired. The reinforcements 9 serve to tie the walls together, as hereinbefore stated, but, being of foraminous or open-work construction, in nowise interfere to an appreciable extent with the upward flow of hot air through the passage 6 and the downward flow of cooled air through the passage 7.

The ceiling of the building embodies an upper member 10 and a lower member 11 between which is interposed a vertical partition 12, defining upon each side of the partition, passages 14 which communicate with the upper ends of the passages 6 and 7, the intermediate walls 5 preferably terminating adjacent the lower member 11 of the ceiling.

The numeral 15 indicates a roof which may be of any desired construction and the floor is shown at 16, the floor 16 and the ceiling 11—10 defining an apartment 22.

The floor 16 and the foundation 2 define a basement 23 in which is located a heater 17 of any desired construction, the heater in the present instance being shown as surrounded by a casing 18, forming with the heater, an air space 19. Conduits 20 open through the inner wall 3 and through the casing 18 and communicate with the passage 6, the conduits 20 being adapted to conduct the heated air from the heater 17. Conduits 21 lead from the lower portion of the casing 18 through the inner wall 3 and through the intermediate wall 5 and communicate with the passage 7.

In practical operation, the air in the space 19 is warmed by the heater 17 and passes by way of the conduits 20 into the passage 6. The air rises in the passage 6 and, having been cooled, descends through the passage 7, the cooled air being returned to the casing 18 through the conduits 21. In this manner, a continuous circulation is obtained and the inner walls 3 are heated, the air within the apartment 22 being heated by radiation from the walls 3.

It is to be observed that no openings are formed in the inner wall 3, the air warmed by the heater 17 never being conveyed directly into the apartment 22.

The various walls, ceiling members and the conduits are all fashioned from fireproof material.

Having thus described the invention, what is claimed is:—

1. A building comprising an outer wall; an inner wall of less height than the outer wall; superposed upper and lower ceiling members projecting respectively from the walls and forming a compartment commu-

nicating with the space between the walls; an intermediate wall between the inner and outer walls and having its upper edge spaced from the upper ceiling member; a floor extended from the inner wall; a heater; a supply conduit leading from the heater to the space between the inner and intermediate walls; and a return conduit leading from the heater to the space between the outer and intermediate walls; the inner wall, the lower ceiling member and the floor defining an apartment which is heated by radiation from the lower ceiling member and the inner wall.

2. In a device of the class described, a building comprising an inner wall; an outer wall; an intermediate wall, the walls being made up of superposed courses; an open-work reinforcement lying between the courses; a heater; a conduit leading from the heater to the space between the inner and intermediate walls; a conduit leading from the heater to the space between the intermediate and outer walls; and the upper ends of the intermediate walls being open, to permit a return circulation thereacross.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

FRANK O. HELLSTROM.