

W. S. HADAWAY, JR.
ELECTRIC HEATING SYSTEM.
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1,098,436.

Patented June 2, 1914.

Fig. 1.

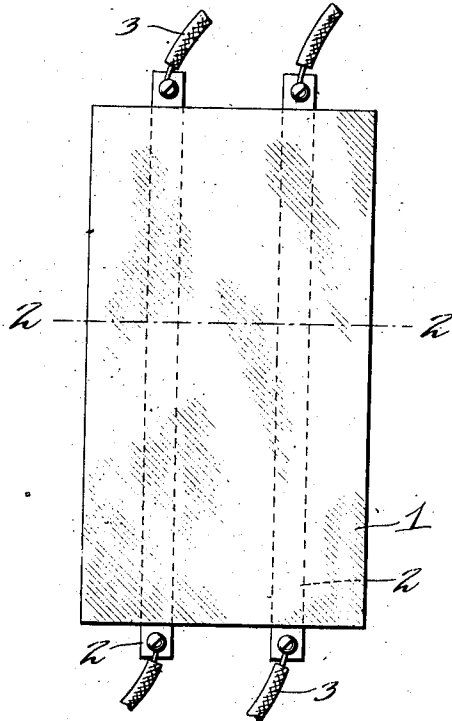
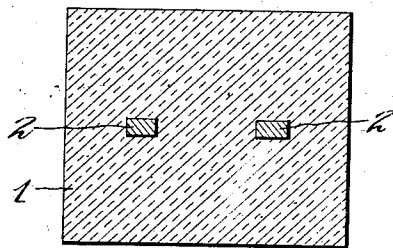


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM S. HADAWAY, JR., OF NEW YORK, N. Y.

ELECTRIC-HEATING SYSTEM.

1,098,436.

Specification of Letters Patent.

Patented June 2, 1914.

Application filed September 5, 1911. Serial No. 647,694.

To all whom it may concern:

Be it known that I, WILLIAM S. HADAWAY, Jr., a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Electric-Heating Systems, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to electric heating systems.

It has among its objects to provide an electric heating system which is particularly adapted for use in heating masses of heat-absorptive material wherein the material is reinforced by reinforcing members embedded in the same.

A further object of my invention is to provide an improved heating system which is adapted to use as a means for heating buildings, such as those of steel and concrete construction, the steel and concrete used in these buildings being utilized as elements of the heating system.

Other objects and advantages of my improved construction will hereinafter appear.

In accordance with a preferred form of my invention, I connect electric conductors to the reinforcing members which are embedded in the heat absorptive material from which the structure is made, and supply current to these reinforcing members. The current supplied to these members is transformed by them into heat which is absorbed from these members by the material surrounding the same. This material serves to store this heat and forms with the reinforcing members a low temperature heat reservoir.

In the accompanying drawings I have illustrated diagrammatically one form which my invention may assume in practice. My invention is not, however, limited to this specific form.

In the views of these drawings:—Figure 1 shows a side elevation of a portion of my improved heating system. Fig. 2 shows a sectional view on line 2—2 of Fig. 1.

In these figures I have for purposes of illustration, shown a mass of material 1, having reinforcing members 2 embedded in the same, and conductors 3 connected to the ends of these reinforcing members. The

mass 1 may be formed of any suitable material which has the capacity of absorbing heat. If desired, I may use such a material as concrete. The reinforcing members may be formed of any material which has the property of radiating the heat supplied to it from an electrical source. For instance, I may use reinforcing members of steel or iron, such as are usually found in steel and concrete constructions. The forms which these reinforcing members 2 may assume may be widely different, any form of reinforcing member being used which is capable of radiating heat and which would serve to supply a continuous path for the current.

By the employment of my improved system I am able to heat either large or small structures wherein reinforcing members are embedded in a mass of insulating material, the reinforcing members serving as the conductors or resistance elements of the heater, and the mass of insulating material serving as the heat absorbing element of the heater. Since both of these elements are found in the usual steel and concrete constructions, I am able to provide a heating system which utilizes these two elements and provides a complete heating system without any additional expense, other than that incident to connecting the conductors to the extremities of the reinforcing members.

Further, by the use of my improved system, I am able to supply current to the reinforcing or conducting members at any time, since the insulating material which surrounds the same serves as an efficient heating storage receptacle. Consequently I may pass current through the embedded resistance elements when the load on the central station is low; for instance, during the early hours of the morning or during the day; so that I am able to utilize the heretofore unused maximum capacity of the central station during the whole twenty-four hours of the day, the heat which is being supplied to the conductors being stored in the insulating material which surrounds the same. It is obvious that the heat stored in this material will be transmitted, as for instance in the heating of a room, to the atmosphere in the room when the atmosphere has a temperature below that of the heat absorptive material, which in this instance forms the walls of the room. With such a construction the walls of the room serve as a low heat reser-

voir which by radiation or conduction heats the room when the temperature of the room falls below that of the walls.

While I have in this application described my invention as applied to one specific use and have illustrated it in one specific form, I do not wish to be limited either to this specific use or to this specific form. I wish rather to cover all of those uses and forms of my invention which fall within the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is as follows:—

The method of heating a concrete building having metallic reinforcing members

disposed in its walls which consists in intermittently supplying current to said members to heat the same, the said concrete acting to absorb the heat generated by the passage of the current and forming a low temperature heat reservoir from which the heat is slowly and evenly distributed by radiation.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM S. HADAWAY, JR.

Witnesses:

A. B. HUBBELL,

EDWIN N. LIGHTFOOT.