P. C. GARRISON & R. BOOMER.

ELECTRIC HEAT UNIT.

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1,092,790. Patented Apr. 7, 1914.

Fig. 1.

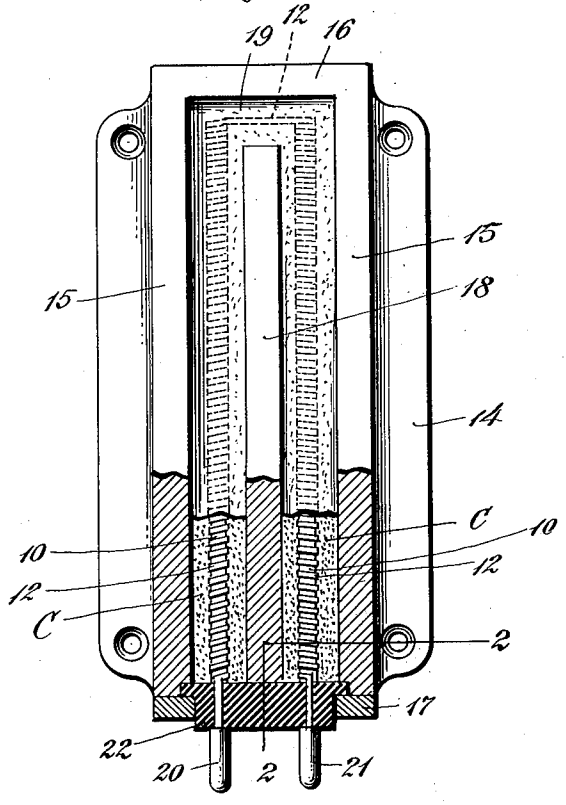
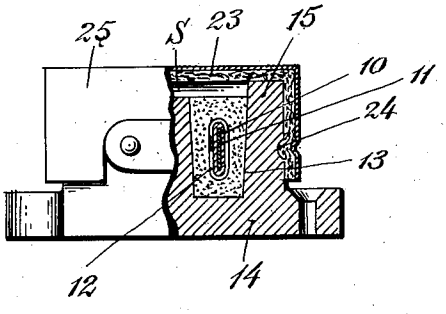


Fig. 2.



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UNITED STATES PATENT OFFICE.

PHILIP C. GARRISON AND RICHARD BOOMER, OF DETROIT, MICHIGAN.

ELECTRIC HEAT UNIT.

1,092,790. Specification of Letters Patent. Patented Apr. 7, 1914.

Application filed November 18, 1911, Serial No. 660,982. Renewed September 11, 1913. Serial No. 789,402.

To all whom it may concern:

Be it known that we, PHILIP C. GARRISON and RICHARD BOOMER, citizens of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electric Heat Units, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to electric heat-units which are adapted for use in connection with different classes of devices, and may be detachably secured thereto, and it has for one of its advantages a heat-unit which can be easily made and possesses great heat-producing qualities, whereby the efficiency of the device, as such, is considerably enhanced.

Further objects of invention will hereinafter appear and be particularly defined in the claims.

The invention has been clearly illustrated in the accompanying drawings in which similar characters denote similar parts, and in which—

Figure 1 is a top view partly in horizontal section, of a unit embodying the invention, and Fig. 2 is an end view partly in section on line 2, 2 of Fig. 1.

Referring to the drawings, our improved heat-unit comprises primarily a bar 10 of insulating material which consists preferably of mica strengthened or stiffened by a central core 11 preferably made of soft iron. Closely wound around the insulated bar 10, is an electric conductor 12 preferably flat in cross-section, and the successive coils of which are spaced apart so as to insulate the several coils or convolutions from each other. In the present instance we have shown a pair of bars 10, disposed in parallelism within grooves or troughs 13, provided in a base comprising a bottom plate 14, side plates 15 and end wall 16, leaving a metallic ridge or bar 18 between said troughs which is furthermore connected at one end by a channel 19 through which the conductor 12 passes from one bar to the other, above mentioned. In this manner the conductor 10 is a substantially continuous member, the ends of which are provided with terminals 20, 21 insulated from each other and secured in an insulating plate 22 held in place in any desired manner, as for instance by a cap-plate 17. These terminals 20, 21 are adapted to receive plugs of any desired construction to pass a current of electricity therethrough.

Completely surrounding the conductor 12, and contacting with the insulating bar 10, is a body of cement C which is composed of asbestos stone cement, and plaster of Paris which is subsequently treated with muriatic acid to rust the metallic base which preferably consists of iron, and thus forms a close union with the cement so that the heat generated by the current passes through the conductor and will be transmitted to the base in a direct manner.

By referring to Fig. 2 it will be noted that the side walls 15 extend slightly above the top of the cement and also of the spacer or ridge 18, thus leaving an air space S between the latter and a cover 23 which may be made of asbestos or other non heat-conducting material, and may be secured to said base, as for instance by a tongue-and-groove connection indicated at 24. The entire cover may be inclosed by a metallic or other cap 25 adapted to have its side walls also engaging in a groove of the cover, so that consequently radiation of heat from the metallic base will be entirely prevented.

It should be understood that the construction and organization of some of the elements of our improved device may be varied without departing from the spirit of the invention.

We claim:—

1. An electric heat unit comprising a metallic casing having a plurality of connected troughs spaced from each other by a metallic ridge, a heat-generating element consisting of metallic cores disposed within said troughs, and having adjacent terminals at their free ends, each core being surrounded by a shell of insulating material, an electric conductor closely wound around each shell, a body of cement completely enveloping said conductor and in close contact with the walls of the troughs, and a terminal-plate of insulating material closing the open ends of said troughs.

2. An electric heat unit comprising a metallic casing having a plurality of connected troughs spaced from each other by a metallic ridge of less height than that of the casing-walls, a heat-generating element consisting of metallic cores disposed within said troughs, and having adjacent terminals at their free ends, each core being surrounded

by a shell of insulating material, an electric conductor closely wound around each shell, a body of cement completely enveloping said conductor and in close contact with the walls of the troughs, a cover of heat-insulating material for closing the open face of the trough and spaced from the cement body, and a cap for holding said cover in place and insulated against the transmission of heat from the casing.

3. An electric heat-unit comprising a metallic core, a shell of insulating material surrounding the same, an insulated electric conductor closely wound around said shell, a body of cement completely enveloping said conductor, a metallic casing having a trough to receive said cement body and having its inner walls in close contact therewith, a cover of heat-insulating material for closing the open face of the trough and spaced from the cement body, and a cap for holding said cover in place and insulated against the transmission of heat from the casing.

In testimony whereof we affix our signatures in presence of two witnesses.

PHILIP C. GARRISON.
RICHARD BOOMER.

Witnesses:
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