Dec. 20, 1932. R. GRIERSON 1,891,595

ELECTRIC WALL HEATER

Filed Feb. 7, 1930

Fig. 1.

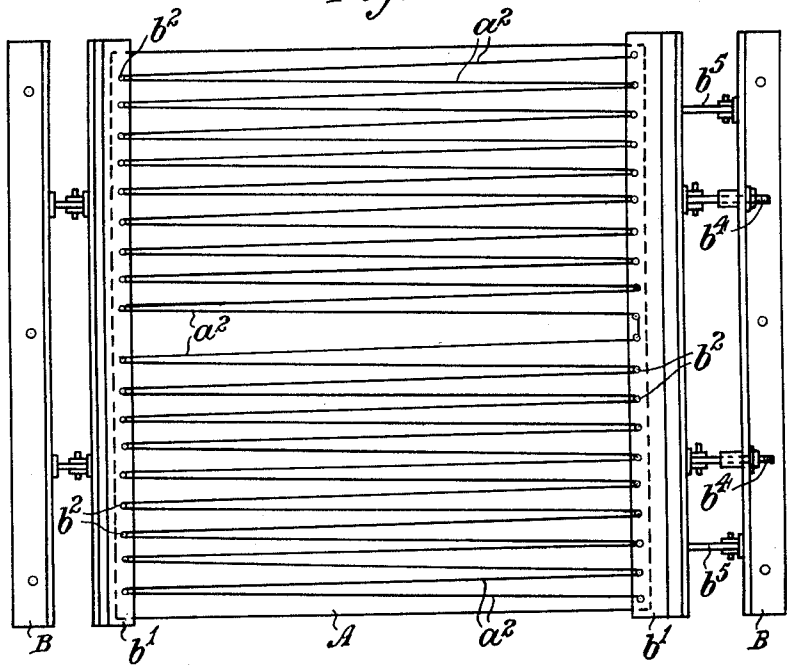


Fig. 2.

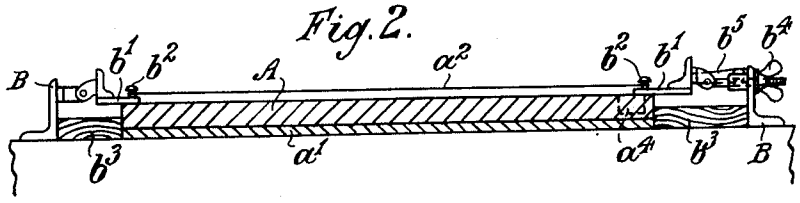
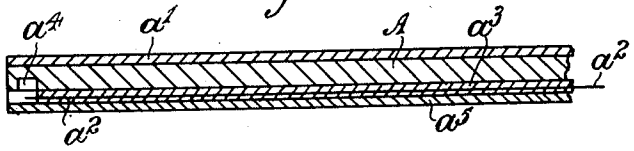


Fig. 3.



Inventor.
Ronald Grierson
Monroe E. Miller
Atty.

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UNITED STATES PATENT OFFICE

RONALD GRIERSON, OF LONDON, ENGLAND

ELECTRIC WALL HEATER

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This invention refers to the method of constructing and to the system of installing electrical conductors for use in obtaining radiant heat for warming rooms or buildings, and for other purposes where it is desired to obtain radiant heat, the object being to produce electrical conductors built up into sections or lengths or panels ready for erection in which all heat or practically all heat is thrown forward and not allowed to pass backwards so that practically the whole of the heat generated is radiated from the surface of the wall, floor or ceiling of the room or building.

According to this invention I employ a slab, preferably cork, or other suitable material having an area—say approximately twelve superficial square feet, and 1 inch thick to constitute a heat insulating medium behind the insulated conductors, and in order to add to the rigidity of the slab during the process of building up the panel, to facilitate the fixing of same, to prevent sagging after fixing, and to insert a non-ignitable partition or slab between the cork and the structure, we secure such cork slab to a cement-asbestos board or equivalent of suitable thickness. When however I use a material which is sufficiently rigid or otherwise suitable for my purpose I may dispense with the cement-asbestos slab.

Having secured the cork slab to the cement-asbestos board I then place the insulated wire in position, keeping it preferably about one eighth of an inch clear of the surface of the cork. This I accomplish by the use of what I term "formers", consisting of two L-shaped metal strips each carrying a movable and adjustable bar provided with a number of studs or pegs, the L shape strips being fixed the required distance apart to the workship bench. The cork-faced board is placed between the L strips and when the studded bars have been suitably adjusted the insulated wire is wound on the pegs thus keeping it clear of the surface of the cork. After the wire is wound plaster of Paris or other suitable material is poured over the wires on to the cork until the surface of the plaster is just about level with the upper surface of the wires. Immediately the plaster sets, the tension of the wires is released by loosening the adjustable bars, the whole element being then removed from the "formers", the result being a cork-faced board or panel carrying a thin layer of plaster of Paris in which the insulated wire is firmly embedded.

In order that the invention may be clearly understood I have appended the accompanying drawing.

Fig. 1 is a plan view of the "former" or frame showing the insulated wire wound thereon with the cork slab in position ready to receive the plaster of Paris in which the wires are embedded.

Fig. 2 is an elevation of Fig. 1.

Fig. 3 is a sectional view of a portion of a built-up panel with the rendering and finishing coat of plaster from the surface of which the heat radiates.

In building up the panel or unit ready for erection I take a slab A, preferably cork which I may render more rigid by securing it to a cement-asbestos board a^1. The conductor wires a^2 are now arranged in position, say about one eighth of an inch clear of the surface of the cork slab, and in order to accomplish this I employ what I term a "former", consisting of two L-shape strips B, each carrying a movable and adjustable bar b^1 provided with a plurality of pegs b^2.

The strips B are first fixed to the workshop bench the required distance apart, then the slab A is placed between these strips B, being maintained in position by the wood packing pieces b^3, and after the bars b^1 have been adjusted by the tightening screws b^4 so that the edges of said bars b^1 rest upon the edges of said slab A in which position they are held by the distance pieces b^5, the wire a^2 is wound on the pegs b^2, thus keeping it clear of the surface of the slab A, as clearly shown by Fig. 2.

Plaster of Paris a^3 or other material is now poured over the wires a^2 on to the slab A until the surface of the plaster is just about level with the upper surface of the wires a^2, then when the plaster a^3 is set the tension of the wires is released by loosening the tightening screws b^4 and freeing the bars b^1, the

result being a panel comprising a board a^1 faced with a cork slab A carrying conductor wires a^2 embedded in a thin layer of plaster a^3. Or I may constitute the bars b^1 so that the pegs b^2 project through holes provided in the slab A, thus enabling the coating of plaster a^3 to cover the whole surface of the slab A.

These panels or units are placed in position in or on the ceiling or other part either side by side or end to end, or other convenient manner, and to facilitate connections between the panels or units and between the circuit wires and the panel wires a^2, I provide small boxes a^4 which are countersunk into the surface of the cork face, in which the connections are made in the usual manner or the boxes a^4 may be otherwise arranged, the whole being then covered with the finishing plaster a^5 or equivalent, as clearly shown by Fig. 3, from the surface of which plaster a^5 the heat radiates. Or the finishing plaster a^5 may be laid on each panel when building up the unit in the workshop.

What I claim as my invention and desire to secure by Letters Patent is:—

An electrically heated wall board comprising a slab of heat insulating material, a reinforcing backing member for said slab, electrical resistance wiring spaced from said slab, and a monolithic slab formed on said insulating slab and embedding said resistance wiring therein, said resistance wiring being tensioned and securely held in a predetermined arrangement before being embedded to form convolutions extending throughout the entire area of said monolithic slab, and a slab of finishing material over said monolithic slab.

In testimony whereof I have affixed my signature.

RONALD GRIERSON.