

No. 606,792.

Patented July 5, 1898.

F. W. QUIDAS.  
ELECTRIC RADIATOR.

(Application filed July 22, 1897.)

(No Model.)

Fig. 1.

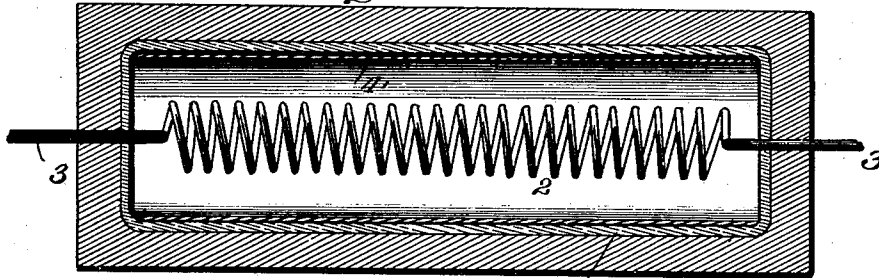


Fig. 2.

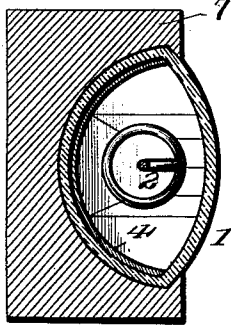


Fig. 3.

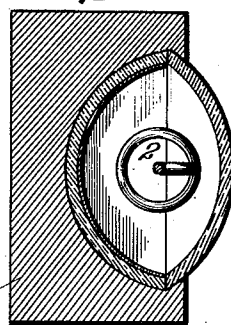


Fig. 4.

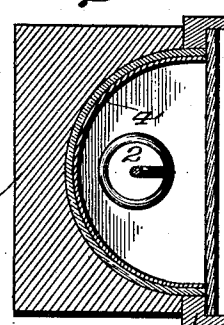


Fig. 5.

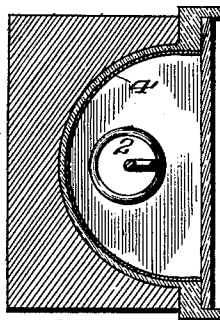


Fig. 6.

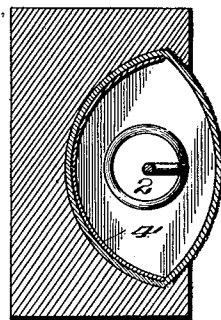


Fig. 7.

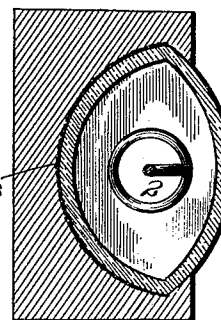
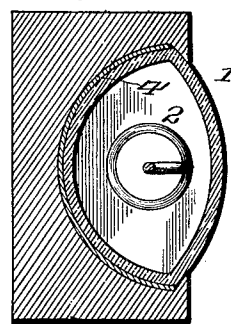


Fig. 8.



Witnesses

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# UNITED STATES PATENT OFFICE.

FREDERICK W. QUIDAS, OF MOUNT WASHINGTON, MARYLAND, ASSIGNOR  
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## ELECTRIC RADIATOR.

SPECIFICATION forming part of Letters Patent No. 606,792, dated July 5, 1898.

Application filed July 22, 1897. Serial No. 645,578. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK W. QUIDAS, a citizen of the United States, residing at Mount Washington, in the county of Baltimore, State of Maryland, have invented a certain new and useful Improvement in Electric Radiators, of which the following is a specification, reference being had to the accompanying drawings.

This improvement is designed to produce an electric radiator which will give the maximum of heat with the minimum of electric energy

To this end the invention consists in the construction hereinafter more particularly described, and then definitely claimed at the end hereof.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a radiator constructed according to my invention. Fig. 2 is a vertical cross-section of the same. Figs. 3, 4, 5, 6, 7, and 8 are vertical cross-sections showing modifications thereof.

Referring now to the details of the drawings by numerals, and more particularly to Figs. 1 and 2; 1 indicates an air-tight glass casing in which is secured in any convenient way a heating-wire 2, connected to terminals 3, passing through the opposite ends of the casing. At the back of the casing and inclosed therein is shown a reflector 4. Partly surrounding the casing is a non-conductor of heat, such as asbestos, but other material may be employed. This will form a backing 7, which I preferably make in the form shown in Figs. 2, 3, 6, and 7, so that it overlaps the edges of the inner casing; but I do not limit myself to this form, as it may be varied to suit circumstances, and instances of such variation may be seen in Figs. 4 and 5.

As shown in Figs. 1 and 2, the glass case is in one piece; but I do not limit myself to that, as it may be made in two pieces, as shown in Figs. 3, 4, and 5.

In Fig. 3 the back is formed of curved glass, and the front is also of curved glass, but of a larger curve.

In Figs. 4 and 5 the back of the case is of curved glass and the front flat; but in Fig. 4 the flat glass rests on a rabbeted frame 5, which may be made of any suitable material,

while in Fig. 5 the rabbet to receive the glass is formed integral with the back. The back and front when made separately should be secured together with cement of any kind that is not affected by heat. If the frame is made separately, that should also be cemented to the back and front.

I propose sometimes to make the casing of metal, as in Fig. 6, in which case it should be coated, as metal, while it readily conducts heat, does not allow the heat rays to pass through as readily as does glass, which allows heat rays to pass through without absorbing it to any appreciable extent. Metal, therefore, is not so good for the purpose of transmitting heat rays as glass; but metal may be coated with other substances which will render it a good transmitter of reflected heat rays. I have found a coating of a solution of tetrachlorid of platinum to be very good for this purpose, but ordinary lampblack will do.

In some cases I intend to silver the back of the glass case, as indicated at 6 in Fig. 7, thus making it a reflector. In other cases I may set a sheet-metal reflector at the back of the glass, as shown in Fig. 8.

I prefer to either form a vacuum in the casing or fill it with an inert gas, such as nitrogen.

In lieu of glass or metal for the casing I may sometimes use porcelain or similar material.

Among the advantages of my invention are the following: The minimum of heat is absorbed at the back, because the heat usually practically lost there is reflected forward in a horizontal direction, as indicated in Fig. 2. Hence greater economy results. The heating-wire is entirely protected from atmospheric influence. Greater durability of the radiator. More attractive appearance due to the glass front.

I have shown several forms of my invention, but do not limit myself to such, as it is obvious that many different styles of heaters and cases may be employed without departing from the spirit of my invention.

I am aware that electric lights have been provided with reflectors on the outside of the bulb containing such lights, and I am also

aware that incandescent lights are inclosed in a vacuum, and therefore make no claim to either of these features broadly.

What I claim as new is—

5 1. The combination in an electric heater, of a resistance, a casing surrounding the same, a block of poor heat-conducting material inclosing the back of the casing and in contact with it and having a portion of said  
10 material extending along the edges of the front to hold said casing in the block, substantially as described.

2. A car-heater comprising a casing having a partially-cylindrical back, a resistance in-

closed in said casing, a reflector in the rear 15 of the resistance and inside the casing, and a block of poor heat-conducting material in which the casing is partially embedded leaving its front mainly exposed, all substantially as described and shown. 20

In testimony whereof I affix my signature, in the presence of two witnesses, this 16th day of July, 1897.

FREDERICK W. QUIDAS.

Witnesses:

GEO. MCCAFFRAY,  
ISAAC L. NEWMAN.