

May 14, 1929.

F. W. WANDLESS

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ELECTRIC HEATER

Filed Aug. 25, 1928

Fig-1.

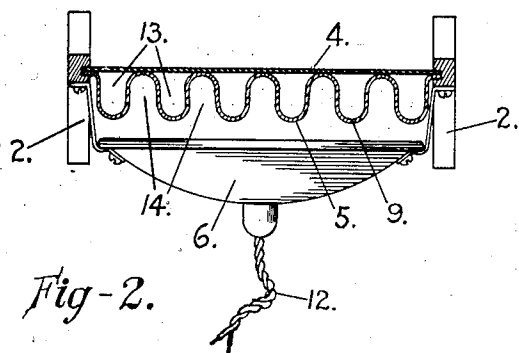
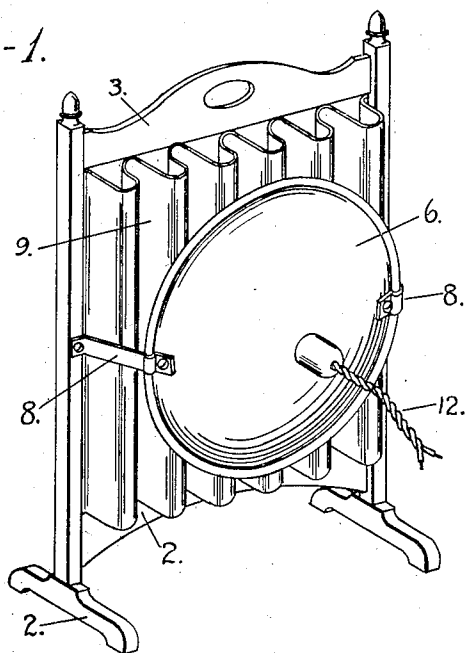


Fig-2.

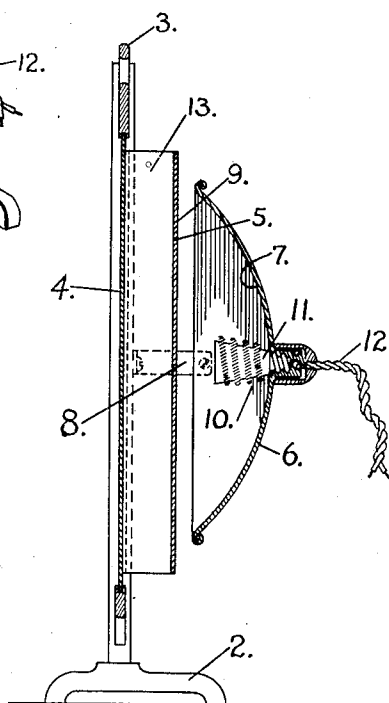


Fig-3.

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UNITED STATES PATENT OFFICE.

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ELECTRIC HEATER.

Application filed August 25, 1928. Serial No. 302,021.

The object of this invention is to provide an electric heater of novel, simple and efficient construction by means of which the heat from a heating element, such as an electrical resistance element, may be utilized by radiation, conduction and convection for heating the air within a room of a house or building.

With the foregoing and related objects in view, the invention consists of the elements and the combinations of them hereinafter described and claimed.

In the accompanying drawings, illustrating the invention,

Figure 1 is a perspective view of a heater showing one form of embodiment of my invention.

Figure 2 is a top view thereof.

Figure 3 is a vertical section through the heater.

Referring to the drawings, 2 designates a supporting base which may be of any suitable shape and size for its intended purpose. Rising from the base 2 is a frame or guard 3 enclosing and supporting a plate or sheet 4 which also rises from the supporting base 2. The plate or sheet 4 may be formed of any suitable heat conducting material, preferably metal and I have found a plate formed of copper to give very good results.

Secured to the plate 4 by riveting or other suitable means and covering one face thereof is a corrugated plate 5 which, like the plate 4, may be formed of any suitable heat conducting material such as copper.

Arranged opposite to the corrugated sheet 5 is a concave bowl-like reflector 6 which may be formed of suitable metal having its inner or concave surface 7 facing the corrugated sheet 5. This part or reflector 6 is supported in spaced relation to the sheet 4, as illustrated in the drawings, by side brackets 8 which project fixedly from the sides of the frame 3 and which are suitably secured to the part or reflector 6.

Supported by and within the reflector 6 centrally thereof between its concave surface 7 and the opposite surface 9 of the corrugated plate 5 is a heating element 10 in the form of a coil of electrical resistance wire which surrounds a core 11 of porcelain or other suitable material. Extending from the terminals of the element or coil 10 and through the reflector or part 6 are flexible, insulated, conducting wires 12 for supplying current to the coil 10 in the usual manner well known in the art of electric heaters, and it

will be understood that the coil 10 and wires 12 are suitably insulated from the metal part or reflector 6.

The inner or concave surface 7 of the part or reflector 6 is highly polished or otherwise made bright so as to form an effective heat reflecting surface directed toward the corrugated sheet 5, and the surface 9 of the corrugated sheet 5 is made dark and dull and of a heat absorbing character to receive and absorb the radiant heat from the heating element 10 reflected to the sheet 5 by the reflector 6.

The corrugations in the sheet 5 enhance the surface area thereof exposed to the radiant heat waves directed thereto by the reflecting surface 7 of the reflector 6, and these heat waves are absorbed by the dull heat absorbing surface 9 of the sheet 5 facing the reflector 6, and the heat waves thus absorbed are transmitted by conduction to the body of the sheet 5 and also to the body of the outer plain or flat sheet 4 which is in contact with the corrugated sheet 5.

The corrugations of the sheet 5 also provide vertically extending channels 13 between the sheets 4 and 5 and vertically extending channels 14 between the corrugations of the sheet 5 on the surface thereof which faces the reflector 6, so that as the bodies of the sheets 4 and 5 are heated by absorption and conduction as above explained they will heat the air which is in contact with the exposed surfaces thereof and thereby cause the air thus heated to ascend through the channels 13 and 14 and adjacent to the outer surface of the sheet 4 and thus set up a continuously moving current of air which will circulate through the room or enclosure containing the heater and which will be heated by the surfaces of the sheets 4 and 5 as it passes the same in contact therewith, and the heat thus received by the circulating air will be diffused throughout the air of the entire room or enclosure.

I claim as my invention:

1. The combination of a part having a bright heat reflecting surface, a part having a dull heat absorbing surface spaced from and facing the heat reflecting surface of the first named part, supporting means for said parts, and a heating element supported between said surfaces.

2. The combination of a part having a bright, concave, heat reflecting surface, a part having a dull, vertically extending, heat absorbing surface facing the heat reflecting sur-

face of the first named part, supporting means for said parts, and a heating element supported between said surfaces.

3. The combination of a part having a 5 concave heat reflecting surface, and a corrugated sheet of metal having a heat absorbing surface spaced from and facing said heat reflecting surface and providing hot air ascending channels between the corrugations 10 thereof, supporting means for said part and said sheet, and a heating element supported between said part and said sheet.

4. The combination of a part having a concave heat reflecting surface, a vertically extending sheet of heat conducting material 15 spaced from said part, a corrugated sheet of metal secured to the first named sheet and having a heat absorbing surface spaced from and facing said heat reflecting surface and 20 providing hot air ascending channels between said sheets and between the corrugations of the second named sheet, supporting means for said part and said sheets, and a heating element supported between said part and said 25 corrugated sheet.

5. The combination of a supporting base, a sheet of metal rising from the base and having a dull heat absorbing surface, a part having a bright, concave, heat reflecting surface facing said heat absorbing surface, means for 30 supporting said part with its heat reflecting surface spaced from the heat absorbing surface of said sheet, and a heating element supported between said sheet and said part.

6. The combination of a supporting base, 35 a sheet of heat conducting material rising from the base, a corrugated sheet of metal secured to said sheet and having a dull heat absorbing surface and providing hot air ascending channels between said sheets and be- 40 tween the corrugations of the second named sheet, a part having a bright, concave, heat reflecting surface spaced from and facing the heat absorbing surface of the corrugated sheet, supporting means for said part, and a 45 heating element supported between said part and said corrugated sheet.

In testimony whereof I affix my signature.

FRANKLIN W. WANDLESS.