April 28, 1925. 1,535,555

F. THORNTON, JR

INDUSTRIAL AIR HEATER

Filed Dec. 27, 1922

Fig. 1.

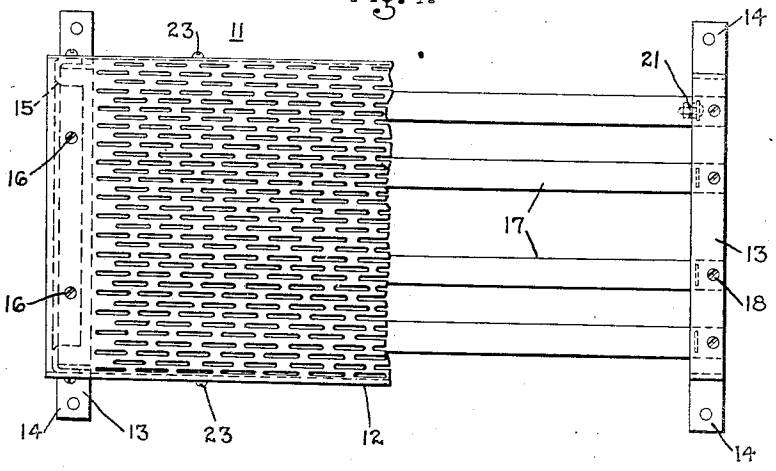


Fig. 2.

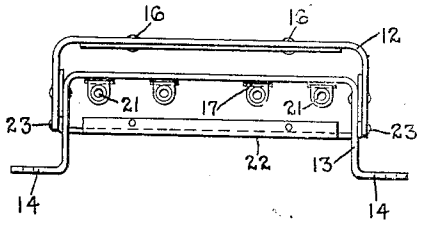
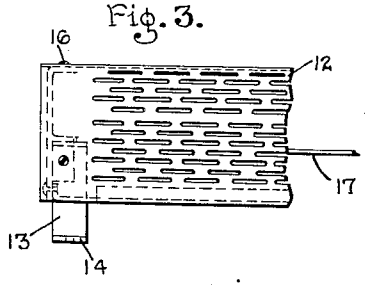


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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INDUSTRIAL AIR HEATER.

Application filed December 27, 1922. Serial No. 609,193.

To all whom it may concern:

Be it known that I, FRANK THORNTON, Jr., a citizen of the United States, and a resident of Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Industrial Air Heaters, of which the following is a specification.

My invention relates to electric heating devices and particularly to electric air heaters.

The object of my invention is to provide a relatively simple, inexpensive, compact and rugged air heater.

In practicing my invention, I provide a pair of spaced metal supporting straps, a perforated sheet metal reflector back secured to said support, and a plurality of elongated heating elements held in parallel-spaced relation by said straps. A pair of sheet metal end closure members, which are provided, are secured by integral flange portions to the cover member and to the supporting straps. The supporting straps also serve to permit the device to be mounted upon a suitable surface.

In the single sheet of drawings,

Figure 1 is a top plan view, with a part of the cover removed, of a device embodying my invention,

Fig. 2 is a view, in end elevation thereof, with one end closure member removed, and

Fig. 3 is a partial view, in side elevation, of a device embodying my invention.

An electric air heater 11 comprises a perforated sheet metal cover member 12, of substantially U-shape, in lateral section, the ends of which are suitably secured against spaced metal supporting members 13, also of substantially U-shape, and provided with integral lateral extensions 14 which serve as feet and through which suitable means, such as screws or bolts, may pass to secure the heater 11 against a supporting surface. At each end of the heater there is provided a suitable sheet metal end member 15 which is provided with integral flange portions to permit of securing the end members to the intermediate portions of the cover member 12 by screws 16.

Extending longitudinally of the heater 11 are a plurality of flat armored heating units 17 located in parallel-spaced relation within the cover 12 and having their respective ends secured to the supporting strap members 13 by means of suitable machine screws 18. Any suitable or desired type of heater may be employed, but I prefer to employ relatively thin, flat elongated heaters usually termed "space heaters" in the art. These heaters are provided with suitable terminal members 21 insulatedly mounted thereon adjacent to each end thereof, to which the respective ends of the resistor member comprising a part of the space heater are connected and to which the ends of suitable supply circuit conductors, not shown, may be connected.

In order to insure that substantially all of the heat shall be given up to air traversing the perforated casing and that as little as possible shall reach the outer surface of the support against which the heater 11 may be secured, I provide a metal reflector member and back 22 which is substantially plane and of substantially the same contour as the heater 11. The reflector and back 22 is provided with integral and laterally extending relatively narrow flange portions, the end portions of which are suitably connected to and secured against the end closure members 15. The integral side flanges operatively engage the side portions of the cover member 12 and the two members are held in proper operative positions relatively to each other by a plurality of sheet metal screws 23. The hereinbefore described construction of perforated cover member 12, end members 15 and the back 22 provides a substantially rectangular casing within which the heating units 17 are located.

The heater is adapted to be secured against a vertically extending wall or surface and air traverses the perforated casing, entering at the lower portion thereof and leaving at the upper portion thereof. The device embodying my invention provides an electric air heater of relatively simple construction in which a pair of spaced supporting straps serve not only to support the heater structure on or from a supporting surface but also serve to support all of the other parts of the device.

Various modifications and changes in detail and arrangement may be made without departing from the spirit and scope of the

invention, and such modifications are intended to be covered by the appended claims.

I claim as my invention:

1. In an electric air heater, in combination, a pair of spaced metal supports, of substantially U-shape, a perforated metal cover, a sheet metal reflector back, common means for securing said cover and said reflector against said supports and a plurality of heating elements directly supported by said supports of U-shape.

2. In an electric air heater, in combination, a perforated cover, of substantially U-shape in lateral section, a sheet metal reflector back, said back having side flanges for operatively engaging the side edges of said cover, means for securing said side flanges to said cover, a plurality of heating elements located within the casing constituted by said cover and said back, and a pair of spaced metal supports, of substantially U-shape, for directly supporting said cover, back, and heating elements in proper operative positions.

In testimony whereof, I have hereunto subscribed my name this 8th day of December 1922.

FRANK THORNTON, JR.