L. F. PARKHURST.

ELECTRIC HEATING UNIT,

APPLICATION FILED MAR. 28, 1916.

1,240,771. Patented Sept. 18, 1917.

Fig. 1.

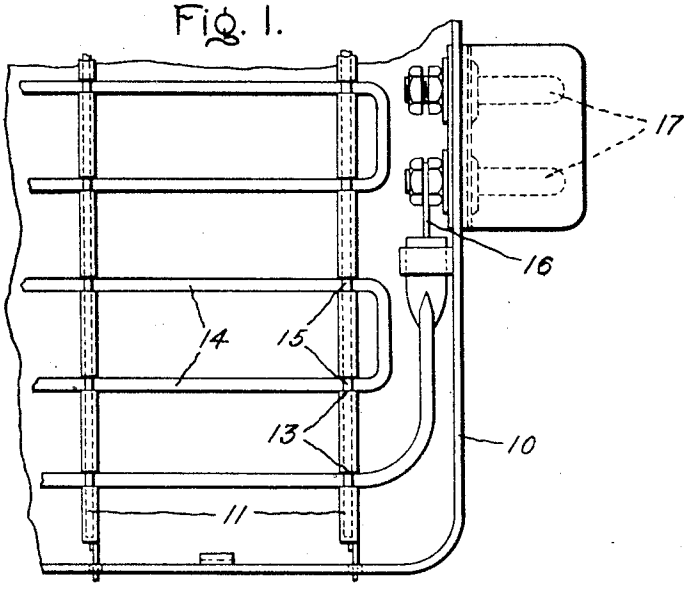


Fig. 3.

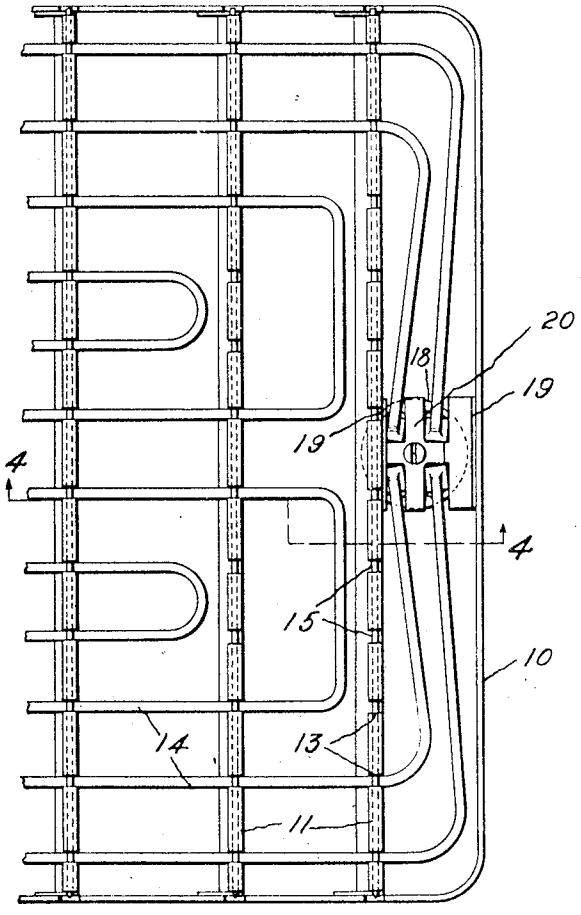


Fig. 2.

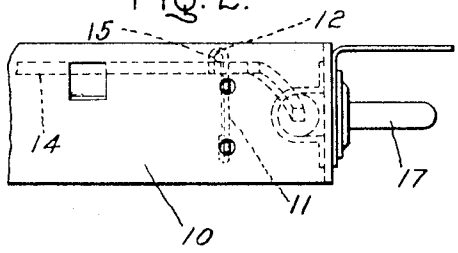
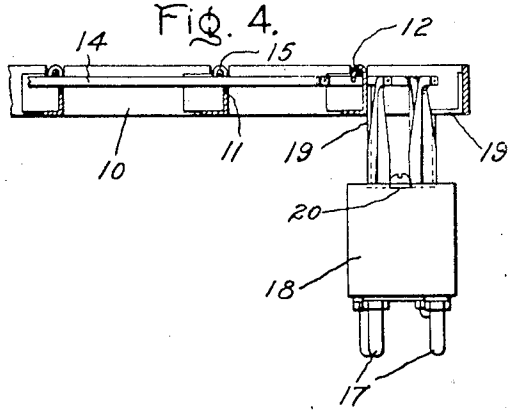


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ELECTRIC HEATING UNIT.

1,240,771. Specification of Letters Patent. **Patented Sept. 18, 1917.**

Application filed March 28, 1916. Serial No. 87,171.

To all whom it may concern:

Be it known that I, LEON F. PARKHURST, a citizen of the United States, residing at Pittsfield, county of Berkshire, State of Massachusetts, have invented certain new and useful Improvements in Electric Heating Units, of which the following is a specification.

My invention relates to a heating unit comprising a resistance wire of the type known in the art as "sheathed wire" and an open metallic frame which supports the heating element so that it is free to radiate its heat upon the article on which a cooking operation is to be performed, and it has for its object the improvement of a device of this character.

For a fuller understanding of my invention, reference may be had to the accompanying drawings, in which Figure 1 is a plan view of a portion of a heating unit embodying my invention, and which is particularly adapted for use as a grill; Fig. 2 is a side view of a portion of Fig. 1; Fig. 3 is a plan view of a portion of a heating unit embodying my invention, which is particularly adapted for use in the oven of an electric range; and Fig. 4 is a sectional side elevation taken on the line 4—4 of Fig. 3.

Figs. 1 and 2 are the same as Figs. 6 and 7 of a prior application of mine, Ser. No. 15,097, "Electric heating devices," which was filed March 17, 1915, and of which the present application is a division in part. I have there shown my invention embodied in a grill comprising a metallic supporting frame, including a continuous metal strip 10 and cross metal strips 11, the upper edges of which are bent over at 12 and formed with slots 13 in which the sheathed wire 14 is laid, and in which it is locked by rods or bars 15 passing through the reflexed part 12 of the cross strips and over the sheathed wire. Obviously, the reflexed part of the strip may be of any desired length, and may, if desired, be equal in length to the other part of the strip. The sheathed wire is coiled back and forth, and will ordinarily lie in a single plane, and it is apparent that it is held in such a position that it is free to radiate heat transversely to the coils. The slots or openings for the sheathed wire are alined as shown in Figs. 1 and 3 so that the wire is freely expansible longitudinally as shown, without disturbing the integrity of the wire. Resistance wire of the type suitable for my invention is disclosed in Patent #1,107,233, which was issued to Chester N. Moore, August 11th, 1914, to which reference may be had for fuller details regarding the structure and manufacture of the wire. Briefly, it may be stated, however, that such wire consists of a resistance core surrounded by a metallic envelop, or sheath, with an intervening layer of powdered material, such as magnesia, which is a good electrical insulator, but a good conductor of heat. The resistance wire of the sheathed wire 14 is connected at 16 to suitable terminal pins 17 which are carried by the metallic supporting frame (only one of these connections being shown in the drawing).

In Figs. 3 and 4, I have shown my invention embodied in a heating unit particularly suited for use in the oven of an electric range, where it is especially intended for performing baking, broiling, and similar operations. The metal supporting frame comprising the strip 10 and the cross strips 11 is arranged the same as in Figs. 1 and 2, and no detailed description is necessary. The sheathed wire 14 is also arranged in the slots in the cross strips, and locked therein in the same manner as already described. The resistance wires at the ends of the sheathed wire are connected to terminals 17 (the connections not being shown in the drawing), and these terminals are supported by a terminal block 18 supported from the metallic frame by means of a U-shaped metal strip 19, the legs of which are secured to the metal frame, and the transverse portion 20, which is here shown in the form of a cross, supports the terminal block 18. It will be apparent, therefore, that the unit shown in Figs. 3 and 4 may readily be placed in position in the oven by simply sliding the same into position on the side brackets in the oven in precisely the same manner as is done with the grid of an ordinary range.

It will be apparent from the foregoing description, that the sheathed wire is supported directly on the metal frame from which the resistance wire is insulated by the layer of insulating material intervening between the resistance wire and the metal sheath, and that the usual insulating members which it is usually found necessary to interpose between the resistance wire and the metallic

supporting frame, and which in practice are frequently broken and otherwise injured, are entirely dispensed with. The unit is, in consequence, of a rugged and simple construction which is not readily injured by the handling which in practice it receives.

In accordance with the provisions of the patent statutes, I have described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof; but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means.

What I claim as new, and desire to secure by Letters Patent of the United States, is:—

1. A heating unit comprising a frame provided with metal strips formed with openings, metal sheathed insulated resistance wire received within said openings, and means independent of the metal strips for locking the wire in the openings.

2. A heating unit comprising a frame provided with metal strips formed with openings in their edges, metal sheathed insulated resistance wire laid in said openings, and readily removable means for locking said wire in said openings.

3. A heating unit comprising a frame provided with metal strips formed in their edges with openings, insulated metal sheathed resistance wire laid in said openings, and independent means associated with the metal frame for locking said resistance wire in said openings.

4. A heating unit comprising a frame having an outer metal strip and metal cross strips secured within the same, said strips being reflexed at their upper edges and formed with slots in the edges of the reflexed portion, insulated resistance wire received within said slots, and rods passing through said outer strip and the reflexed portions of said cross strips and above the resistance wire, for locking the resistance wire to the cross strips.

5. A heating unit comprising a frame provided with metallic strips formed with a series of alined openings, a metal sheathed insulated resistance wire laid in said openings and freely expansible longitudinally therein, and means for locking the resistance member in said openings.

In witness whereof I have hereunto set my hand this 25th day of March, 1916.

LEON F. PARKHURST.