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A. J. HUCK

2,467,479

SAFETY GUARD FOR HEATERS

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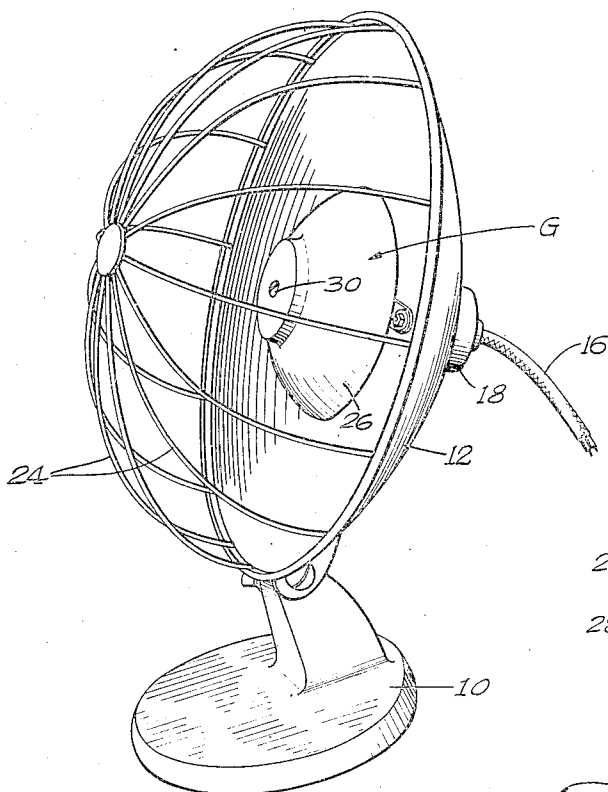


Fig. 1

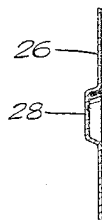


Fig. 6

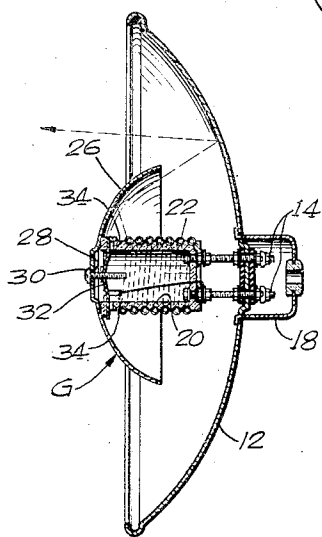


Fig. 2

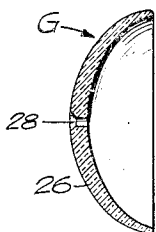


Fig. 3

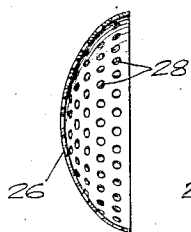


Fig. 4

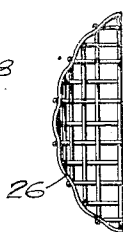


Fig. 5

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UNITED STATES PATENT OFFICE

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SAFETY GUARD FOR HEATERS

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1 Claim. (Cl. 219—34)

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My present invention relates to a guard of extreme simplicity for those types of heaters which have normally exposed heating elements such as electric resistance wires, wound on a core and located within a reflector.

One object of the invention is to provide a very inexpensive type of guard for this general type of heater which prevents dresses, sashes or the like, which might get through the usual wire cage at the front of a reflector type heater, from coming into contact with the glowing resistance wire of the heater.

Another object is to provide a guard which does not materially interfere with the flow of heat from the heater to the space in front of it, yet which effectively prevents articles from coming into contact with the energized resistance wire of the heater and being burned or scorched thereby.

Another object is to provide a guard in the form of a disc, at the front of a heater within a reflector, so that it prevents articles from contacting with the heating element, the guard being formed of sheet metal or other suitable material.

Still another object is to provide the guard of cupped formation so that it partially encloses the heating element, thus increasing the effectiveness of the guard.

A further object is to provide a guard which may be formed of transparent material which readily permits the passage of infra-red rays, or of perforated material to reduce the restriction of the guard to the passage of heat rays, yet serve effectively as a guard against objects contacting the heating element.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim and illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of a heater of the exposed electric element-reflector bowl type to which my invention has been applied;

Fig. 2 is a vertical sectional view showing the relationship of the guard to the heating element and the reflector;

Fig. 3 is a sectional view of a guard per se of modified shape and of transparent material;

Figs. 4 and 5 are similar sectional views showing respectively perforated sheet metal and woven wire material; and

Fig. 6 is a similar sectional view showing a sub-

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stantially flat disc guard as distinguished from a cupped or bowl-shaped guard.

On the accompanying drawing I have used the reference numeral 10 to indicate a supporting base for a reflector 12. The reflector 12 supports a pair of terminals 14 suitably insulated relative thereto, which are connected with supply wires 15 within a cup-shaped housing 18 for the connections. A heating element is supported on the terminals 14 and consists of a core 20 of ceramic or the like and a resistance wire 22 wound thereon.

The foregoing described parts are a more or less standard type of heating element-reflector bowl type of heater, and, usually, a guard is provided in front of the reflector in the form of a wire cage 24 suitably attached to the periphery of the reflector.

A heater of the character just disclosed has the drawback that articles of clothing, and, particularly, sashes, may get between the wires of the cage 24 and contact with the glowing resistance wire 22, thereby catching fire. The cage 24 can be fabricated of wire mesh or the like, or, at least, have more wires than illustrated in Fig. 1, to reduce this hazard, but the manufacturing cost of the heater is materially increased thereby. In order to provide a safety guard of relatively inexpensive construction I use a guard G which, as shown in Figs. 1 and 2, may be cup-shaped, with a central raised portion 26 at the center. This raised portion is perforated as indicated at 28, and a screw 30 extends therethrough and is threaded into a cross-bar 32 having its ends received in openings 34 of the heater core 20. Thus the guard G is readily mounted on the core and kept in alignment by engagement with the forward end thereof. At the same time, the marginal edge of the guard partially overhangs the heating element 22 well within the reflector 12. This prevents the contact of articles thrust through the wires 24 with the resistance wire 22, and the guard G may therefore effectively serve as a safety guard without being of prohibitive size or cost.

As shown in Fig. 6, the guard need not be dish-shaped, as shown in Fig. 2, but may be in the form of a relatively flat disc. In Fig. 3, I show another modification wherein the guard is in the form of a molded structure, the material being preferably heat resistant glass, such as "Pyrex." This will serve effectively as a guard, and, at the same time, permit ready passage of infra-red rays from the heating element 22 to the space in front of the reflector 12. As shown

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in Fig. 4, the guard may be of perforated sheet metal instead of solid sheet metal, as in Figs. 2 and 6. The perforations are indicated at 28 and they may be of suitable size and number, as desired.

In Fig. 5, I show another modification wherein the guard is formed of heavy wire mesh or "hardware cloth." Any of the guards illustrated may be cupped or flat, as desired, and it is obvious from the foregoing description that a number of materials may be utilized and will still serve the mechanical purpose of effectively preventing contact of extraneous articles with the glowing heating element 22.

When the guard disc is made of metal, it is preferably chromium plated or polished to reflect heat toward the reflector to thereby conserve the heat rays emitted from the heater and gain a maximum of efficiency.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified shapes of guard disks or forms of structure or use of mechanical equivalents which may be reasonably included within their scope without sacrificing any of the advantages thereof.

I claim as my invention:

An electrical safety heater comprising a cylindrical heater core, a resistance element thereon,

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a reflector for heat from said resistance element, a cupped guard element attached to the forward end of said heater core and adapted to prevent inflammable articles entering said reflector from engaging said resistance element, said guard element having its terminal edge at least twice the diameter of said cylindrical heater core and extending rearwardly to terminate at a position behind the front end of said heater core and surrounding the same to partially enclose said core and resistance element, said guard element being formed of heat conducting material and being polished to reflect heat rearwardly toward said reflector.

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