May 29, 1951 O. A. SUTTON 2,554,601

MOUNTING MEANS FOR GUARD GRILLES OF FANS OR SIMILAR APPLIANCES

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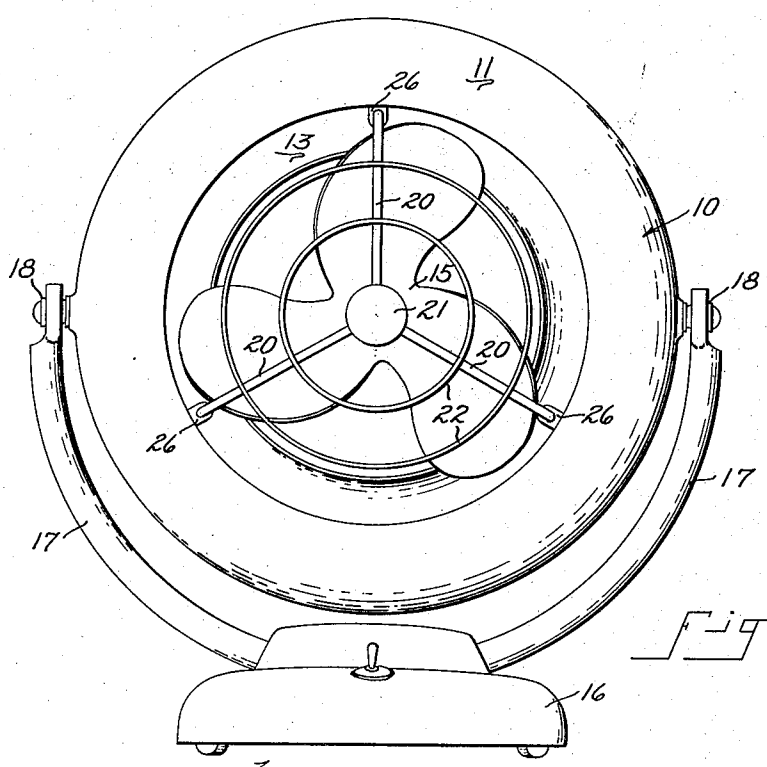


Fig. 1.

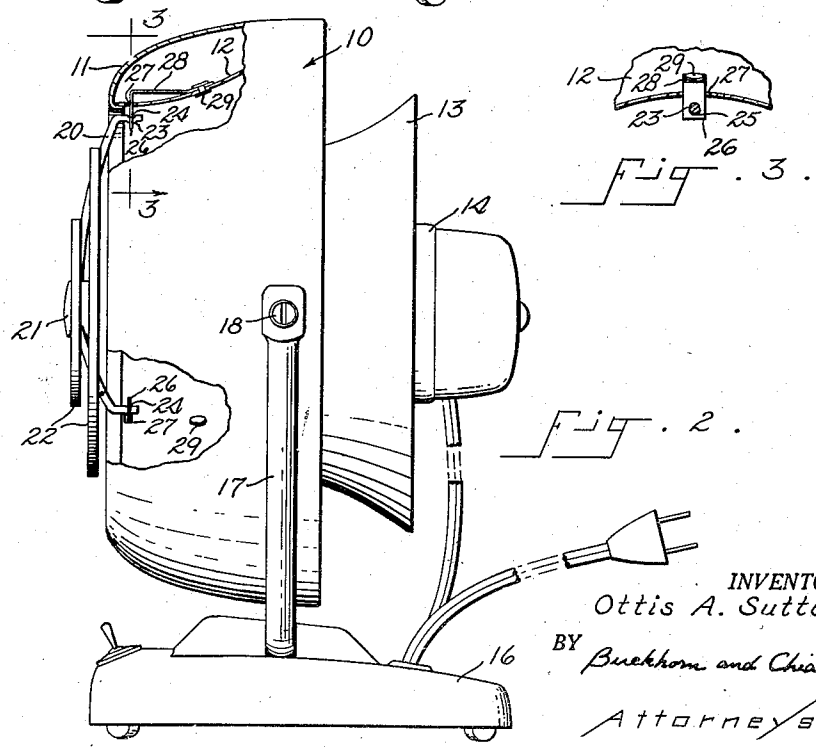


Fig. 3.

Fig. 2.

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MOUNTING MEANS FOR GUARD GRILLES OF FANS OR SIMILAR APPLIANCES

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4 Claims. (Cl. 230—275)

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The present invention relates to mounting means for a grille or equivalent guard for household fans or similar appliances. In the present illustration the structure comprises a fan, but it is to be appreciated that the present invention may be utilized in other appliances such as heaters or the like. The object of the present invention is to provide mounting means for a guard grille or equivalent structure which is simple and easily assembled, and yet is mounted in a manner to prevent excessive vibration or rattling thereof and accidental displacement thereof in normal usage.

The objects and advantages of the present invention will be more readily ascertained from inspection of the following specification taken in connection with the accompanying drawings wherein like numerals refer to like parts throughout, while the features of novelty will be more distinctly pointed out in the appended claims.

In the drawings,

Fig. 1 is a front elevation of a fan embodying the present invention;

Fig. 2 is a side elevation of the invention, with parts broken away to illustrate details thereof; and

Fig. 3 is a partial vertical section, on an enlarged scale, taken substantially along line 3—3 of Fig. 2.

In the present invention the fan comprises a body structure including a cowl 10 formed by uniting an outer shell 11 to an inner shell 12 defining an annular enclosed space, and an air-directing funnel 13 suitably retained in spaced relation thereto. The funnel surrounds a motor 14 having a fan 15 connected thereto and lying within the cowl 10 beyond the inner end of the funnel 13 so as to draw air axially through the spaces between the cowl 10 and the funnel 13 and between the funnel 13 and the motor 14 and project the air forwardly through the front end of the cowl. The body structure is preferably mounted upon a base 16 by means of a yoke including a spaced pair of arms 17 extending upwardly about the cowl 10 in spaced relation thereto and connected thereto through the medium of conical mounting members 18 extending along a horizontal diameter of the cowl. Details of such a mounting are more completely illustrated and described in my copending application, Serial No. 120,502, filed concurrently herewith, and details of the cowl are more fully illustrated and described in my copending application, Serial No. 120,504, filed concurrently herewith.

In accordance with the present invention, the

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grille comprises a plurality of radially extending rods 20 having their inner ends joined together as by means of a central member 21. The arms are welded or otherwise fastened to a plurality of concentric guard rings 22 surrounding the member 21, thus providing an open grille through which the air may be moved with the minimum of resistance while preventing the entry of most objects and parts of the body of the user. The outer end of each radial rod 20 is bent to provide a rearwardly extending horizontal finger of relatively short length, with the horizontal fingers lying along the circumference of a circle of lesser diameter than the inner diameter of the cowl 10. Each of these rearwardly projecting portions is provided with an offset 23 extending radially inward and providing a notch 24 facing radially outward. The end of each rod is passed through an opening 25 in the end of a radially extending mounting member 26 which is resiliently urged radially inward of the cowl through an opening 27 in the inner shell 12. Preferably the mounting member 26 comprises the laterally bent end of a leaf spring 28 fastened to the inner surface of the shell 12 by means of a rivet 29 or equivalent structure. The spring 28 is preferably stressed normally to lie against the inner surface of the shell 12 so that the openings 25 normally lie along the circumference of a circle of lesser diameter than the diameter of the circle defined by the offset portions 23 of the grille rods 20. The grille may be easily assembled by positioning each offset portion 23 in a corresponding opening 25 in one of the mounting members, this being accomplished by manually pushing the mounting members radially outward through the opening 27 until the rod end may be inserted, whereupon the mounting member will snap into position. The grille is thereby resiliently maintained in position with all parts in spaced relation to the body structure of the fan. Disassembly may be readily accomplished if desired, but the grille is held in position during normal handling of the fan.

Having illustrated and described a preferred embodiment of the invention, it should be apparent to those skilled in the art that the invention permits of modification in arrangement and detail. I claim as my invention all such modifications as come within the true spirit and scope of the appended claims.

I claim:

1. A fan comprising a body member having a circular opening therein, an aerodynamic device mounted within said body member for propelling

air through said opening, and means to guard said opening comprising a grille spanning said opening, said grille including a plurality of radially directed rods having their outer ends bent rearwardly to provide fingers lying along the circumference of a circle of smaller diameter than that of said opening, each of said fingers having a notch in its outer surface, a plurality of mounting members projecting radially into said opening from said body member, each of said mounting members comprising a flat strip having an opening therethrough for reception of the rearwardly bent end of one of said rods, and resilient means urging said mounting members radially inward.

2. A fan comprising a body member having a circular opening therethrough, an aerodynamic device mounted within said body member for propelling air through said opening, and means to guard said opening comprising a grille spanning said opening, said grille including a plurality of radially directed elongated members having their outer ends bent rearwardly to provide fingers lying along the circumference of a circle of smaller diameter than that of said opening, a plurality of mounting members projecting radially into said opening from said body member, each of said mounting members and fingers having cooperating means for detachably connecting said fingers to said mounting members, and resilient means urging said mounting members radially inward.

3. A fan comprising a cowl including an inner and an outer shell defining an annular enclosed space, a grille spanning one end of said cowl, said grille including a plurality of rearwardly directed fingers lying in a circle of lesser diameter than the inner diameter of said cowl, each of said

fingers having a notch in its outer surface, a plurality of flat leaf springs mounted in said enclosed space and having their free ends bent laterally and projecting radially inward of said cowl, said cowl having openings therein through which the free ends of said leaf springs project, each of the free ends of said leaf springs having an opening therethrough normally lying along the circumference of a circle of lesser diameter than the diameter of the circle defining said notches, said rods projecting through the openings in said leaf springs with the notches thereof engaging said leaf springs.

4. A fan comprising a cowl, a grille spanning one end of said cowl, said grille including a plurality of rearwardly directed fingers lying in a circle of lesser diameter than the inner diameter of said cowl, a plurality of flat leaf springs mounted on said cowl and having their free ends bent laterally and projecting radially inward of said cowl, each of the free ends of said leaf springs comprising detachable finger retaining means normally lying along the circumference of a circle of lesser diameter than the diameter of the circle defining said fingers, said fingers and finger retaining means being cooperatively associated to hold said grille resiliently in position.

OTTIS A. SUTTON.

REFERENCES CITED

The following references are of record in the file of this patent:

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