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ELECTRIC FAN

Filed July 18, 1931

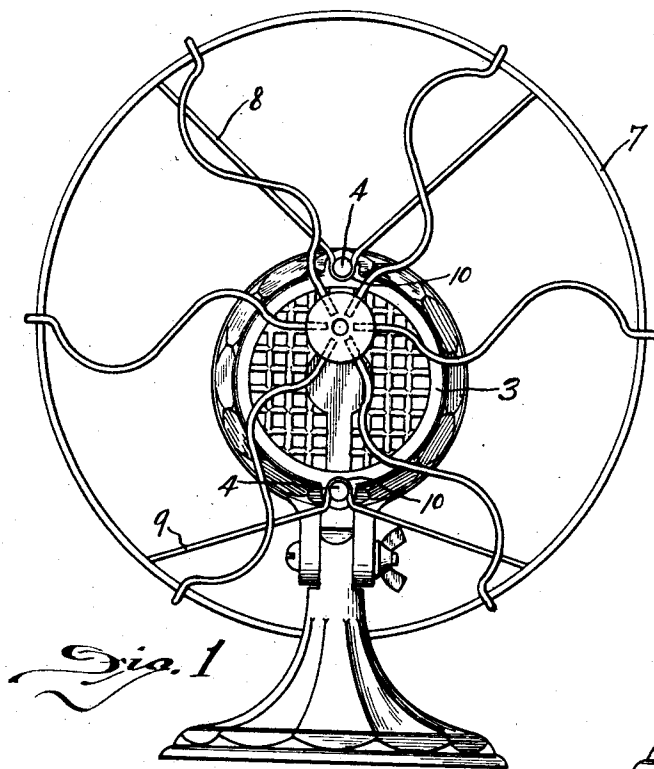


Fig. 1.

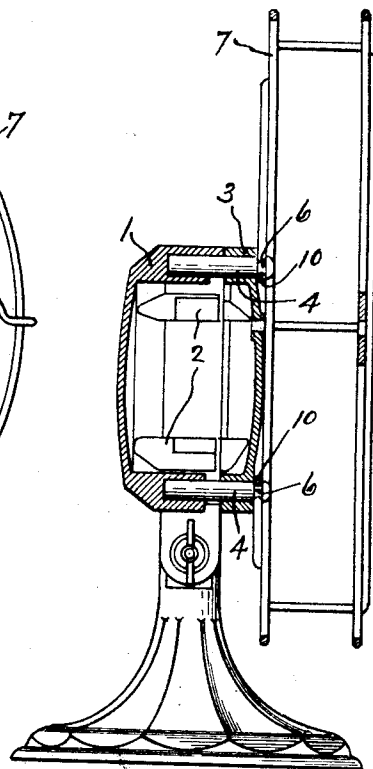


Fig. 2.

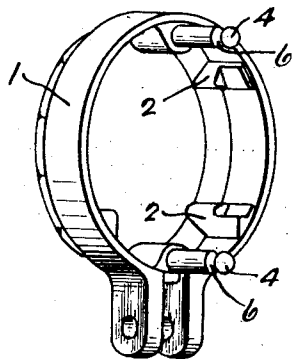


Fig. 3.

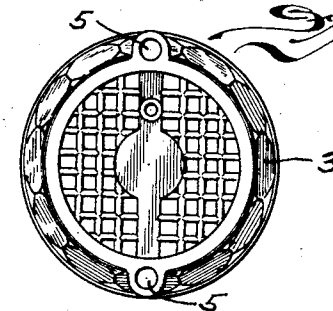


Fig. 4.

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UNITED STATES PATENT OFFICE

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ELECTRIC FAN

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This invention relates to electric fan construction, and more particularly to the construction and interconnection of the motor case and fan guard.

5 The present invention pertains more especially to means whereby the closure head and fan guard may be demountably secured to the motor housing which will enable the parts to be quickly and readily disconnected and
10 reassembled by unskilled persons without the use of tools.

The object of the invention is to simplify the construction as well as the means and mode of assembling fan motor housings and
15 guards, whereby they will not only be cheapened in construction, but may be easily and quickly assembled, of strong sturdy construction, having few parts, and unlikely to get out of order.

20 A further object of the invention is to provide duo-functional mounting means for the motor casing closure and the fan guard.

A further object of the invention is the utilization of the fan guard for securing the
25 closure head upon the motor casing.

A further object of the invention is the utilization of the resiliency of structural parts of the fan guard for securing the guard upon the motor housing.

30 With the above primary and other incidental objects in view, as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof and the mode of operation, or their equivalents, as hereinafter described and set forth in the claims.

In the drawing, wherein is shown the preferred, but obviously not the only form of embodiment of the invention, Fig. 1 is a
40 front elevation of a portable type electric fan motor housing and fan guard embodying the present invention. Fig. 2 is a vertical sectional view of the assembled motor casing and fan guard. Fig. 3 is a perspective view of the motor casing with the closure head removed. Fig. 4 is a detail view of the closure
45 head removed from the motor casing.

50 Like parts are indicated by similar characters of reference throughout the several views.

While the present invention is applicable to motor housings of various sizes and proportions, and the adaptation thereto of structures other than fan guards, it has been illustrated as embodied in an electric fan of the
55 small portable type wherein the motor casing and supporting pedestal are preferably formed from synthetic resins, phenolic condensation material or other plastic compound. The casing supports a wire fan case
60 or guard of approximately standard design.

The motor casing 1 is contoured and proportioned to agree with the shape and size of the motor to be enclosed. Mounting lugs
2 are formed interiorly of the casing to support the motor. The casing 1 is provided
65 with a removable closure head 3 engageable with the side of the motor casing, to which the fan guard is to be secured.

The casing 1 is provided with laterally
70 projecting studs 4—4 which, in the event the casing is molded from plastic material, are fixedly embedded in the casing at the time of its manufacture. Otherwise these studs may be screwed, riveted, or otherwise mounted
75 upon the casing. The closure head 3 is provided with holes 5 registering with the studs 4, which are of sufficient length to project through the holes 5 and beyond the closure head when the closure is in adjusted position upon the casing. The protruding portions of the studs are provided with peripheral grooves 6 within which structural portions of the wire guard are engageable.

The fan guard 7 is constructed of wire as is
85 usual and is therefore somewhat resilient, and may be of any suitable design. Included in the guard structure are a pair of wires 8 and 9 which extend across the periphery of the motor casing when the guard is positioned thereon. In the present instance these wires are of substantially V-shape and are disposed in reverse relation, although wires extending either transversely or vertically as chords of the circular fan guard may be employed in lieu of the V-shaped formations. The latter, however, are preferred for their
95 trussing effect and also because of the facility with which they may be engaged and disengaged. The supporting wires, whether
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straight or angular, are formed with bights 10 positioned to engage within the peripheral grooves of the mounting studs 4. These bights are turned in opposite directions preferably, though not necessarily, and engage the grooved studs 4 about their adjacent or inner sides. The bights are engaged about the protruding portions of the studs by somewhat distorting the fan guard, which is of resilient character, and the engagement is maintained under influence of the inherent tension of the guard.

The closure head is slidingly adjusted over the studs 4 by engaging them in the holes 5; and the bights 10 of the fan guard are then engaged with the grooved extremities of the studs. Thus the fan guard serves to hold the closure head in its adjusted position, the mounting studs 4, 4 being common to the closure head 3 and the fan guard 7. The parts are easily disengaged without the use of tools by merely distorting the guard 7.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of the parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise the preferred form of several modes of putting the invention into effect; and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. In a fan having a housing including a cover, an electric motor mounted in said housing, and a fan driven by said motor characterized by a plurality of studs fixedly carried by said housing and passing through apertures in said cover, said studs having a shoulder and a guard provided with supports having U-shaped clasps for snapping under the shoulders of said studs so as to lock the cover in position and support the guard in a fixed relation with respect to said fan.

2. In an electric fan having a housing, a covering therefor, an electric motor mounted in said housing, and a fan propelled by said motor characterized by a plurality of studs fixedly attached to said housing and extending through apertures provided therefor in said cover, said studs being provided with annular grooves adjacent to the outer sur-

face of the cover, and a guard having supports including U-shaped clasps snapping into said annular grooves to hold the cover in position and to support the guard in a fixed relation with respect to said fan.

3. In an electric fan having a housing, a covering therefor, an electric motor mounted in said housing, and a fan propelled by said motor characterized by a plurality of studs fixedly attached to said housing and extending through apertures provided therefor in said cover, said studs being provided with suitable seats adjacent to the outer surface of said cover, and a guard including supports and means snapped into said seats for holding the cover in position and for supporting the guard in a fixed relation with respect to said fan.

4. In an electric fan, a housing, a cover therefor, said housing and cover being made of phenolic condensation product, the periphery of said housing being provided with enlargements, studs fixedly attached to said enlargements and extending through apertures provided therefor in said cover, said studs being provided with seats adjacent to the outer surface of the cover, and a guard having supports snapped into said seats, said guard supports holding the cover in a fixed relation with respect to the housing.

5. A housing for an electric fan motor, studs fixedly mounted in the housing, a closure having holes therein registering with the studs and slidable onto and off the studs, the studs having peripheral grooves therein beyond the closure, and a fan guard having therein indentations within which the peripherally grooved portions of the studs are engageable to prevent sliding movement of the closure on the studs.

6. A housing for an electric fan motor, studs fixedly carried thereby, a removable closure for the housing through which the studs project, and a fan guard including resilient spaced supporting members having therein oppositely disposed bights within which the studs are engageable to retain the closure in adjusted position.

7. A housing for an electric fan motor, mounting studs carried thereby, a removable closure for the housing through which the studs project, and a fan guard including oppositely disposed V-shaped supporting members within the vertices of which the mounting studs are engageable to detachably connect the guard with the housing and thereby retain the closure in adjusted position.

8. A housing for an electric fan motor, a removable closure therefor, projections upon the housing for engagement of said closure and a fan guard, and a resilient fan guard detachably engageable with said projections upon distortion of the guard against its inherent tension to retain the closure.

9. A housing for an electric fan motor, a removable closure therefor, a guard for the fan, including oppositely disposed substantially V-shaped wires, and bights formed at the vertices of the V-shaped wires, studs fixedly mounted in the housing and extending through the closure with which the bights of the V-shaped wires are engaged.

In testimony whereof, I have hereunto set my hand this 14th day of July A. D. 1931.

EVERETT P. LARSH.

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