July 26, 1966 J. V. MILITELLO 3,262,638

OPEN MESH FABRIC FAN GUARD

Filed Jan. 20, 1964

Fig. 1.

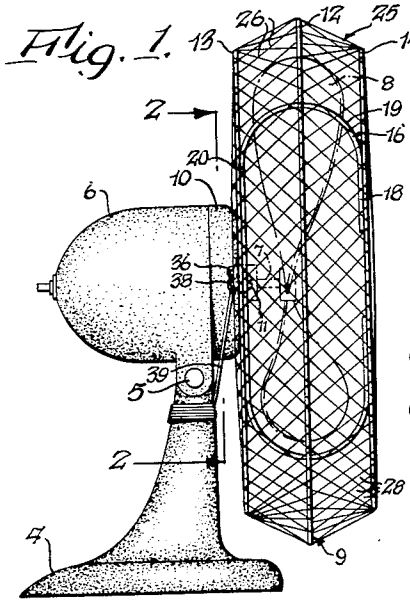
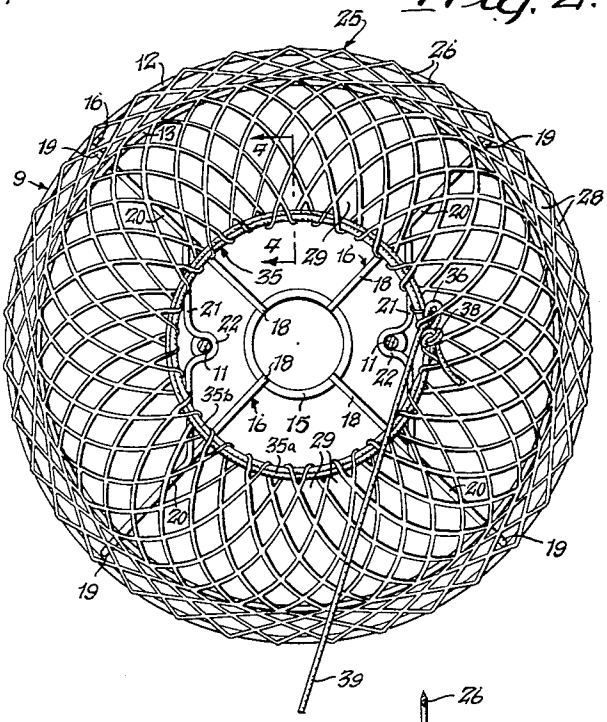


Fig. 2.



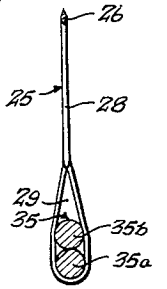
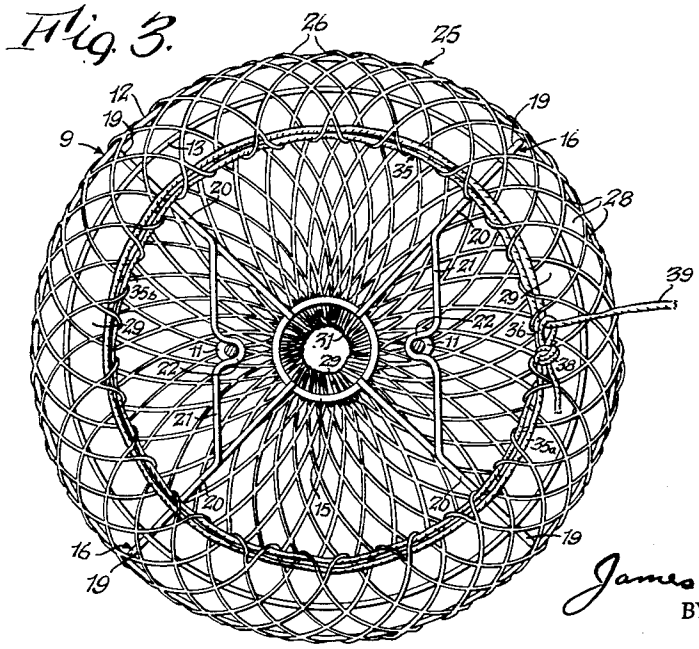


Fig. 4.

Fig. 3.



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OPEN MESH FABRIC FAN GUARD

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1 Claim. (Cl. 230—275)

This invention relates to an open mesh stretchable fabric fan guard to envelop the rigid openwork metal cage surrounding the blades of an electric fan, the fan guard protecting against bodily contact with the revolving fan blades and stopping objects from being drawn into the zone of action of the fan blades.

An important object of the present invention is to provide such a fabric mesh fan guard which adequately protects against bodily contact with the fan blades from the front, rear and peripheral portions thereof and also stops objects from entering the zone of action of the blades of the fan.

Another object is to provide such a fan guard which is made from open mesh stretchable fabric and tightly fits the rigid openwork metal cage for the fan.

Another object is to provide such a fan guard which has slight interference with air movement.

Another object is to provide such an open mesh stretchable fabric fan guard which can be quickly and securely applied to the cage of the fan, application merely requiring pulling on the free end of a double convolution draw string.

Another object is to provide such a draw string the convolutions of which hold themselves contracted by virtue of the friction between the convolutions thereof.

Another object is to provide such a fan guard which is low in cost, the body portions being made of a simple tube of woven fabric mesh.

Another object is to provide such a fan guard made from an open mesh stretchable fabric of high tensile strength which is easily laundered and is attractive in appearance and color.

Other objects and advantages of the invention will be apparent from the following description and drawings in which:

FIG. 1 is a side elevational view of a table fan having the rigid wire cage for its blades provided with an open mesh stretchable fabric fan guard embodying the present invention.

FIG. 2 is a fragmentary vertical section taken generally on line 2—2, FIG. 1 and showing the fan shaft and fan blades removed.

FIG. 3 is a view similar to FIG. 2 but showing the draw string for the woven fabric mesh fan guard before being tightened.

FIG. 4 is a greatly enlarged vertical section taken generally on line 4—4, FIG. 2.

The fan protected by the fan guard forming the subject of the present invention can be of various forms and is shown as having a base **4** pivotally supporting, as indicated at **5**, an electric motor housing **6** having the usual drive shaft **7** and fan blades **8** which for the purposes of clarity of illustration are shown in broken lines in FIG. 1. These fan blades **8** in a conventional table fan are enclosed in a metal cage **9** made of wire or the like and secured to the end head **10** of the electric motor **6** by screws **11** or the like.

The fan cage **9** is shown as comprising a large outer wire ring **12** flanked by smaller coaxial, axially spaced outer rings **13**, **14** being on the side of the fan remote from the motor housing **6**. In the same plane as this ring **14** of the fan is a much smaller concentric hub ring **15**. These rings **12**, **13**, **14**, **15** are joined together, and to the motor housing **6**, by a pair of wire spoke members

16 each of which comprises a pair of front arms **18** having their inner ends secured to the small ring **15** and projecting radially outwardly therefrom as best shown in FIG. 2; arching portions **19** each forming a continuation of the outer end of the corresponding radial arm **18** and secured to each of the outer rings **14**, **12** and **13**; portions **20** forming continuations of the ends of the arching portions **19** and extending radially inwardly therefrom and a bridging portion **21** connecting the companion inner ends of each pair of radially projecting portions **20**, this bridging portion **21** for each spoke member **16** being provided with an offset **22** through which the shank of the corresponding attaching screw **11** extends.

The open mesh stretchable fabric fan guard embodying the present invention is indicated generally at **25**, and is made of a tube of open mesh stretchable fabric, preferably nylon, the strands **26** of which are woven in helical relation to one another to provide diamond shaped openings **28** throughout the body of the fan guard and terminating in diamond shaped loops **29** along its opposite annular edges. At the end of the tube remote from the motor housing **6**, these diamond shaped loops **29** are drawn together and secured in a contracted condition, as by a ring or loop member **31** threaded through the openings **29** at this end of the guard.

The feature of the present invention resides in the means for drawing together the opposite annular edge of the open mesh stretchable fabric tube so as to cause its body to be drawn into firm engagement with the outer rings **12**, **13** and **14** and so as to bring this opposite annular edge close to the motor housing **6**. This closure means comprises a draw string **35** having two convolutions **35***a* and **35***b* threaded in side-by-side contacting relation jointly through the openings **29** forming the circular end edge of the open mesh stretchable fabric adjacent the motor housing **6**. At one end one convolution **35***b* is formed to provide a small loop **36** as by the provision of a knot **38** forming this loop. The free end **39** of the other convolution is drawn through this loop **36**.

The application of the fan guard is very simple. The part of the fan guard **25** formed into a small circle, as by the provision of the small ring **31** threading the corresponding end loops **29**, is placed adjacent the small ring **15** of the cage of the fan and the body of the fan guard **25** is drawn over the large rings **14**, **12** and **13** of the cage, the convolutions **35***a* and **35***b* of the draw string **35** being distended for this purpose. The operator then draws on the free end **39** of the draw string **35**, this contracting the two convolutions **35***a* and **35***b* of the draw string so as to bring these convolutions into close embracing relation to the end head **10** of the motor casing **6** and so as to draw the center part of the body of the woven fabric mesh fan guard **25** into stretched tightly embraced relation with the large rings **12**, **13** and **14** of the wire cage of the fan. It will particularly be noted that since the convolutions **35***a* and **35***b* are in side-by-side contacting relation to each other, they are frictionally engaged their entire extent and hold themselves contracted and hence hold the fan guard taut. This feature of the fan guard **25** holding itself taut following pulling on the draw string **35** is an important feature of the invention. The loose end **39** of the draw string **35** can then be tucked away in any suitable manner as by being wound around the upper part of the base **4** of the fan as shown in FIG. 1.

From the foregoing it will be seen that the woven fabric mesh fan guard of the present invention can be applied to the rigid cage **9** of a table fan very quickly and by one having little mechanical skill. It will also be seen that upon merely tightening the draw string **35** the fan guard of the present invention holds itself taut and adequately

protects the blades 8 of the fan from inflicting bodily injury or from drawing objects into their zone of action.

I claim:

A guard for an electric fan having a base, a motor housing supported by said base and a rigid fan cage including axially spaced outer rings and spoke members securing said rings together and to said motor housing, said fan guard comprising a tube of stretchable flexible open mesh fabric with its central part snugly embracing said outer rings of said fan cage, means holding the annular end edge of said tube remote from said motor housing in a contracted condition to form a radially extending circular wall at the side of said fan cage remote from said motor housing, two convolutions of a single length of string threaded successively through the openings of said open mesh fabric along the annular edge of said tube adjacent said motor housing, said convolutions being in side-by-side contacting relation with each other substantially their entire length, and a loop at the end of one of said convolutions and through which the free end of the other convolution extends to maintain both convolutions in such contacting relation with each other and in; close concentric relation to said motor housing and thereby form a radially extending circular wall at the motor side of said fan guard, the friction between said two convolutions of said string so held by said loop serving to prevent them from enlarging to relax their force holding the fan guard in position.

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