UNITED STATES PATENT OFFICE

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DIFFUSER FOR VENTILATING FANS

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3 Claims. (Cl. 230—274)

1. An important object of this invention is to provide an accessory having deflectors which are held together as one unit by flexible spring arms. This accessory when attached to the guard of a fan or heater will cause the air or the warm air of a heater to be spread out and diffused instead of being forced out in a straight blast which is, many times, annoying and has ill effects on the person in direct range.

Another object is to provide an accessory or attachment comprising annular deflectors, which may be of any number, and a supporting member therefor, with three or more flexible spring arms which not only hold the annular deflectors, but hold the entire accessory taut to the fan or heater guard, fastened by means of a center nut, and also enable the accessory to be easily fitted to the guard of any fan or heater regardless whether guard is rounded or flat.

Another object is to provide an accessory which can be used to beautify or freshen up the appearance of any old fan or old heater. By manufacturing the accessory in colorful plastic for fans, or light metal for heaters, it can be attached to the guards of old heaters and old fans which may have rusted or deteriorated and thus make the electric unit look new again. It may be made of other material than metal or plastic.

Other objects and advantages are made clear in the following description and the several features are defined in the appended claims. While the drawings show a preferred embodiment of the invention, minor alterations in structure can, of course, be made without basically changing any of the characteristics.

On the drawings:

Figures 1, 2, 3, 4 and 5 each shows one of the member of the deflector assembly. This does not limit the accessory to five members; it may be made up of any number, depending on the size of the guard on the heater or fan for which it is designed. The Figures 1, 2, 3, 4 and 5 have slots 20 cut in them, to receive the flexible spring supporting arms 6, shown in Figures 6, 7, 8, 9, 10, 11, 12 and 13.

Figures 6 and 7 are perspective views of the entire deflector assembly in two different positions of adjustments. Figure 6 shows how the assembly looks when the spring, tension, arms 6 hold it in a rounded arc form, so it can be attached to a rounded shaped guard of a fan or heater. Figure 7 shows how the assembly looks when it is depressed or flattened against the tension of the spring supporting arms 6, and in this way can be attached to a flatter shaped guard of a fan or heater.

Figures 8 and 9 are perspective views of the supporting member in different adjustments. Figure 8 shows the spring, tension arms 6 in a rounded arc form, similar to its form in Figure 6.

Figure 9 shows the spring, tension arms 6 in a depressed, flattened shape similar to its use in Figure 7. Figures 8 and 9 show a center unit or hub 8, which holds the spring, tension arms 6 together. Center unit 8 has a nut 7 in its center. The screw stud 9, shown in Figures 14 and 16 through 24 inclusive, fits into this hole 21, shown in Figures 8 and 9. The nut 7, which is preferably a hand nut, shown in Figures 8 and 9, is made up onto the screw stud 9, Figures 21 through 24 inclusive, and thus holds the entire deflector attached to the guard of a heater or fan, as shown in Figures 21 through 24 inclusive.

Figures 10, 11, 12 and 13 are side views of the deflector assembly in different positions of adjustment, ranging from a rounded arc shape to a flattened shape to fit whatever shape the guard of the fan or heater happens to be.

Figures 14, 15 and 16 illustrate the member which is to be permanently installed onto the guard or protecting grill of a fan or heater. This member is made up of 2 parts, 10 and 12. Figure 14 shows a side view and a front view of the unit 10 in which the screws are 11. There is a threaded projection 9 which can be called the threaded stud. Figure 15 illustrates the side view and front view of the unit 12, in which the number 13 designates the female threaded screw holes and these 13 are to accommodate the screws number 14 in Figure 14. The quantity of screws 11, or threaded holes 13, can be two or more. Figure 16 is a perspective drawing of units 10 and 12. When units 10 and 12 are assembled as shown on the guards of fans, Figures 17 and 18, and on the guards of heaters, Figures 19 and 20, they are attached permanently to the approximate center area of the wire guard in front of the blades of the fan or heater.

In Figures 17, 18, 19 and 20, the units 10 and 12 make a head and are screwed together onto the front wire guard of a fan or heater, with unit 10 on the front side of the front wire guard, and unit 12 on the back side of the front wire guard. Unit 10 with its center threaded stud 9 is firmly fastened to the front guard by use of the screws 11 going into the threaded holes 14 of the unit 12 which is on the back side of the front wire guard. The units 10 and 12 are placed in such position that the wire guard between them does not hinder or obstruct the driving of the screws 11 of unit 10 into the threaded holes 13 of unit 12.

Figure 17 is a perspective view of an arc-shaped or rounded front wire guard of an electric fan, illustrating the unit 10, installed on the wire guard 14. Unit 10 has a center threaded stud 9.

Figure 18 is a perspective view of a rather flat-shaped front wire guard of an electric fan, showing the unit 10 installed on the front wire guard 18. Unit 10 has a center threaded stud 9.
The spring arms 6 of the support are radially arranged and are held together on a central hub 8. The support is mounted by means of a threaded stud 9 having a head 10, in conjunction with a clamping ring 12. The head has openings for screws 11 by which the head 10 and the ring 12 are joined together on either side of the front guard of a heater or fan. The head with its three threads 13 has threaded opening 14 to receive the screws 11. This head and ring can thus be secured to the center of the guards 15, 16, 17. This remains on the guard of the fan or heater as a permanent installation. The deflector assembly can be attached or removed at will by the hand nut 7. The fan guard 64 is of the usual open wire construction, and is attached to the main casing for the fan motor, indicated at 18 and 19 in Figures 19, 20, 23 and 24. This casing may, if desired, support an electric heater with or without a fan.

Having described my invention, I claim:

1. A diffuser assembly for an electric fan having a guard in front, comprising concentric circular rings, all flaring in the same outward direction, a supporting member having three or more radiating spring arms engaging said rings, and means for affixing the member to the middle of the guard for said fan, said rings having slots through which said radiating spring arms extend, the spring arms being flexible so that, by the bending of the said spring arms, the deflector assembly can be given a form that is either flat, slightly curved in an arc form, or greatly curved into a marked curve or arc, so as to fit the shape of the guard for said fan.

2. A diffuser assembly for an electric fan having a guard, the assembly comprising concentric circular rings, all flaring in the same outward direction, a supporting member having three or more radiating spring arms engaging said rings, said member forming a central hub with a central opening, a central head having a bolt thereon to be secured to the guard, said opening in said central hub receiving said bolt to mount the diffuser on the guard, and a fastening nut on said bolt.

3. A diffuser assembly for an electric fan, comprising concentric circular rings, all flaring in the same outward direction, the fan having a guard in front, a supporting member for said assembly having three or more radiating arms engaging said rings through slots cut in said rings, said radiating arms being adapted to be bent to a curve corresponding to the curvature of said guard, said supporting member forming a central hub with a central opening, and a mounting stud to be installed on the guard, said diffuser assembly being attached to said guard through said hub and said central opening receiving said stud.

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