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FAN HUB

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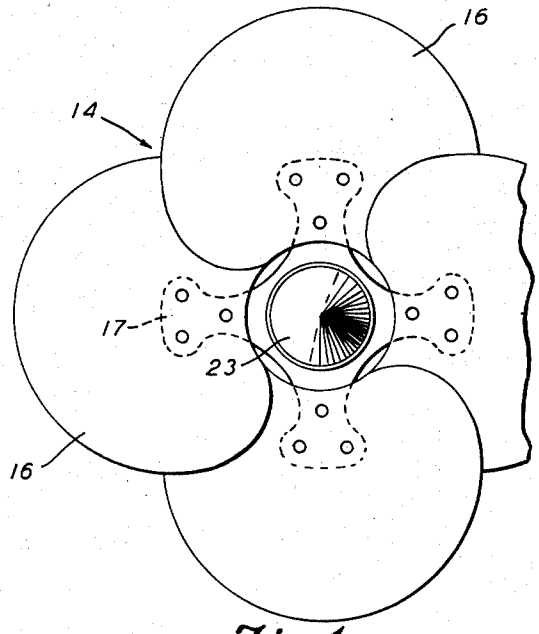



Fig. 1.

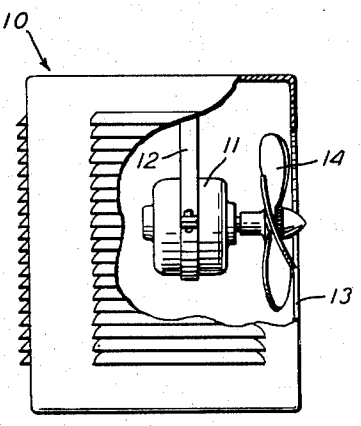



Fig. 3.

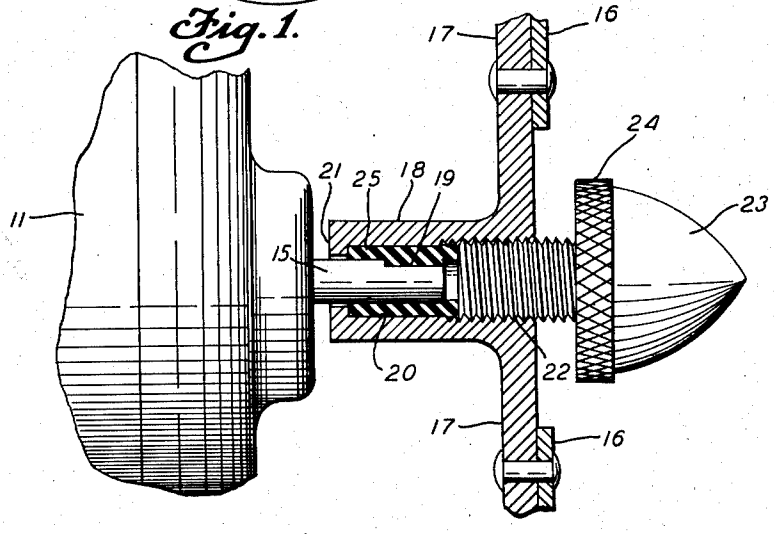



Fig. 2.

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## FAN HUB

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1 Claim. (Cl. 64—11)

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This invention relates to tool improvements in hubs for electric fans and the like. Particularly, the invention has reference to fans mounted on the ends of motor shafts in evaporative coolers and wherein the motor is substantially enclosed in a housing. Ordinarily, the hubs of the fans are secured on the shafts by means of set screws which are inwardly positioned relative to the fan opening in the cooler housing, and which screws are difficult to reach when removing the fan from its shaft.

An object of the invention is to provide a construction and arrangement whereby fans mounted on the ends of motor shafts may be readily installed or removed from a position outwardly of the outer face of the fan and without the use of tools.

Another object of the invention is to provide a simplified construction for retaining a resilient tubular sleeve or shock absorber between the hub and the shaft.

A further object of the invention is to provide a simplified means for firmly attaching a fan hub of a given size on different sizes of motor shafts.

These and other objects of the invention will become apparent from the following description and the accompanying drawings, wherein:

Figure 1 is a broken front elevation of a fan and fan hub embodying the features of the present invention.

Figure 2 is an enlarged broken side elevation of a motor and motor shaft, and showing the present hub, in vertical section, mounted thereon.

Figure 3 is a side elevation of an evaporative cooler housing having one side broken away to illustrate the relative positions of the motor and fan in a typical cooler assembly.

In the drawings, the numeral 10 indicates an evaporative cooler housing having a motor 11 suspended therein by means of a bracket 12. An annular opening 13 is formed in one side of the housing 10 and opposite the face of a fan 14 which is mounted on the motor shaft 15. The fan 14 is comprised of overlapping angularly disposed blades 16 riveted or otherwise secured to the spider 17 which includes a tubular hub 18 integral and perpendicular with the legs thereof.

Ordinarily, the hub 18 is secured to the motor shaft 15 by means of a set screw (not shown) threadedly engaged in said hub and bearing against a key-way or flat area 19 on the outer end of said shaft. In the present invention, the bore 20 of the hub 18 is substantially larger than the diameter of the shaft 15, and is provided with an inwardly directed annular flange 21 at its inner end adjacent the motor 11. The outer end of the hub 18 is threaded, as at 22, for threadedly receiving the threaded end of a relatively large conical spinner 23. The base periphery of the spinner 23 is knurled, as at 24. Within the bore

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20 of the hub 18 there is a tubular sleeve 25 of resilient material, such as rubber, and the length of which extends from the flange 21 outwardly and beyond the inner end of the threads 22. Preferably, the resilient sleeve 25 is a slip fit within the hub bore 20 prior to mounting the hub 18 on the shaft 15.

In operation, the hub 18 and fan 14 are mounted on the shaft 15 by placing the former over the latter and with the resilient sleeve 25 therebetween. By reason of the relatively large diameter of the knurled base 24, the threaded end of the spinner 23 may be rotated by hand to compress the length of the tubular sleeve 25, thus causing the same to be compressed and thereby reducing its inner diameter. The action causes the material of the sleeve 25 to bear against the flat surface 19 on the shaft 15, and thereby securely mount the hub 18 and fan 14 on the motor shaft. In view of the foregoing description of assembly, it will be apparent that the reduction in the inner diameter of the sleeve 25 provides a means for fitting the hub assembly on motor shafts 15 of different diameters. Within the scope and intention of the invention, the flat surface 19 on the shaft 15 may be eliminated by reason of the binding effect on the compressed sleeve 25. However, the flat surface 19 is to be preferred when relatively high torque loads are involved.

The described form of the invention is not restrictive, but may be made in many ways within the scope of the appended claim.

What is claimed is:

Means for mounting a fan hub on the end of a shaft projecting from a motor, and wherein said means includes a flat surface on the projecting end of said shaft, a tubular hub body having its inside diameter greater than the outside diameter of said shaft and including an inwardly directed flange on the end thereof adjacent said motor when said body is mounted on said shaft, threads in said tubular body in the end thereof opposite said flange, a tubular sleeve of resilient material received within said body and having one end thereof positioned against said flange and having the other end thereof positioned between the ends of said threads, a threaded spinner received within said threads in said body and adapted to bear against the end of said tubular sleeve opposite the said end thereof in contact with said flange.

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