July 4, 1933. W. G. ROGERS 1,916,332

AIR COOLING ATTACHMENT FOR ELECTRIC FANS

Filed Aug. 24, 1931

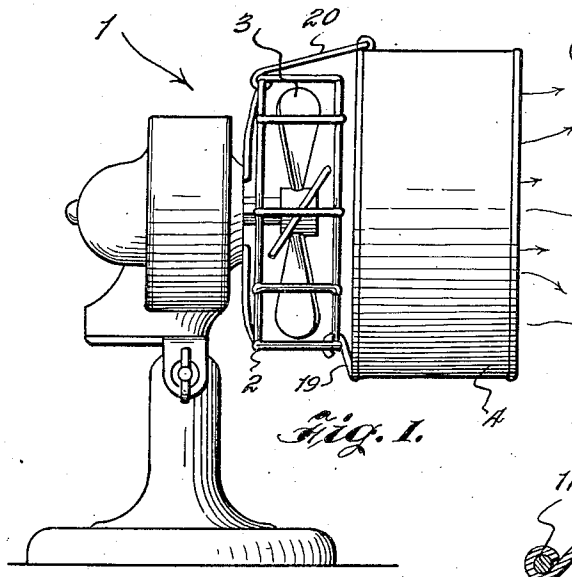

Fig. 1.

Fig. 5.

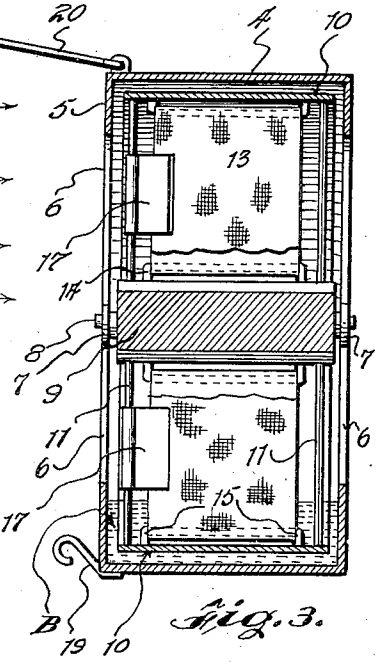

Fig. 3.

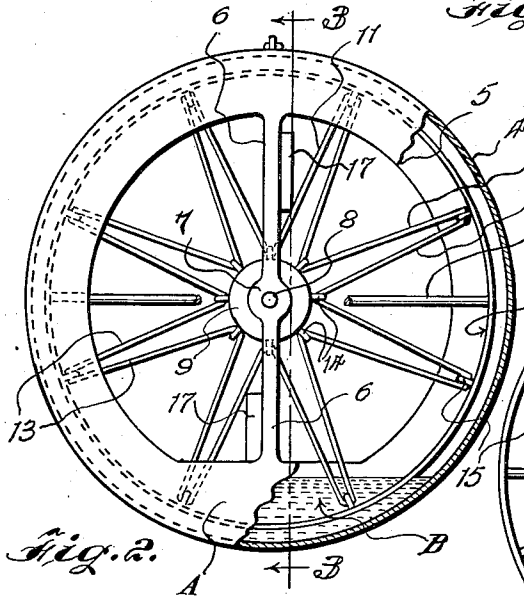

Fig. 2.

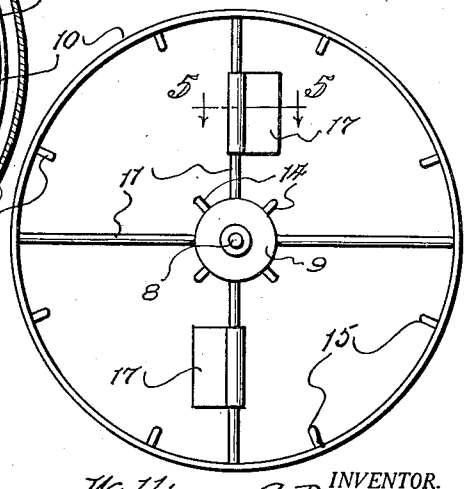

Fig. 4.

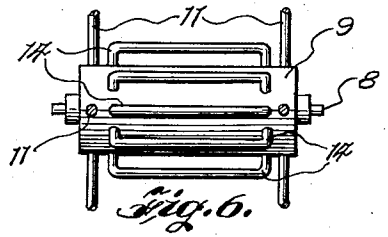

Fig. 6.

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UNITED STATES PATENT OFFICE

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AIR COOLING ATTACHMENT FOR ELECTRIC FANS

Application filed August 24, 1931. Serial No. 558,911.

This invention relates to improvements in air-cooling attachments for electric fans, and primarily the object of the invention is to provide an attachment for an electric cooling fan and wherein the attachment is a complete unit in itself and may be moved about with the fan and wherever the fan is to be used.

Another object of the invention is to provide an attachment of this character which can be used with an ordinary cooling fan and also with a cooling fan of the oscillatory type and capable of being built on the principle involved to accommodate any size cooling fan of either of the types mentioned.

Generally the attachment consists of a revoluble hub mounted on a shaft, and associated with the hub is a circular rim member. Radially spaced members between the rim and hub carry cloths or water-absorbent material which the force of the fan causes to rotate and to cool the air set in motion by the fan. An outer rim member with a circular flange provides means for holding water and through which the inner rim with the cloths revolves.

The invention will be better understood from a perusal of the following detailed description, taken in connection with the accompanying drawing, and wherein:

Figure 1 is a side elevational view of an electric cooling fan and illustrating an embodiment of the invention.

Figure 2 is an open end elevational view of the attachment removed from the fan with part broken away and showing the relation of the inner rim and outer rim members with the cloths or cloth connecting the hub with the inner rim.

Figure 3 is a transverse vertical sectional view of Figure 2, taken on the line 3—3 thereof.

Figure 4 is an edge or open end view of the hub and the inner rim member with the absorbent material or cloth removed, and

Figure 5 is a detail sectional view of one of the blades for rotating the hub and inner rim member, the view being had on the line 5—5 of Figure 4, while

Figure 6 is a side elevational view of the hub with the absorbent material removed.

Proceeding in accordance with the drawing, 1 indicates an ordinary electric fan for air cooling purposes having the usual guard 2 for the blades 3.

The attachment which embodies the invention comprises first an outer rim member 4 with a circular flange 5. This flange forms a continuation with the spoke elements 6 which provide at 7 a bearing for a shaft 8. A hub 9 is carried on the shaft, the hub having connection with an inner rim member 10 by means of the radials 11 and as will be apparent from Figure 4.

In Figure 2 the flange 5 of the outer rim member 4 together with the rim itself provides a run-way or partial closure for the rotating elements and also provides a receptacle as at A at the bottom thereof for the water B. The water is taken up and absorbed by means of a continuous strip or length of cloth 13. This cloth may be of any suitable material, and in placing it in operable position it is threaded successively through the loops 14 on the hub and through the loops 15 on the inner rim member 10. This threading operation can be easily performed without removing the hub from its bearings. Disposed on one of the radials 11 are preferably two blades 17 for the purpose of causing the rotation of the hub with the textile spaced between the loops, although this arrangement may be modified by the addition of more blades if desired or a reduced number of blades placed at any suitable and practicable point so as to cause the rotation. Fastening elements 19 and 20 hold the attachment to the fan guard 2, directly in front of the fan blades 3. The force of the air current generated by the fan slowly revolves the hub and its textile, that is the cloth or absorbent material which radiate from the hub to the inner rim member, in the form shown. It will be noticed that in the construction of the attachment and placement of the loops 14 and 15, the air current can flow along and over the surface of both sides of the cloth, thus utilizing the entire surface of both sides. In actual practice no water or

spray is blown off the cloth or falls outside the rim members.

The blades 17, while snugly embracing the radials 11, are capable of being adjusted to required angle, to bring about the best effect suitable for proper rotation.

The attachment is suitable for both oscillating and ordinary non-oscillatory type of fans and may be built for use with any size of fan. Likewise various modifications may be made in the construction involving the principle involved and as would be within the scope and meaning of the appended claims.

What is claimed as new is:

1. In combination with a cooling fan having a guard mounted over the fan blades, a humidifier comprising a stationary drum having both ends open to permit the passage of air therethrough, a flange extending a limited distance into the open ends, hooks carried by said drum for removably securing the drum to said fan guard, a shaft revolvably mounted within said drum, a second open ended drum mounted upon said shaft and adapted to revolve with said shaft, a series of loops mounted upon the inner surface of said second drum and upon the shaft, a strip of absorbent material secured to said loops, and at least two adjustable blades secured to said second drum in such a manner that air from the fan will rotate the shaft and the second drum.

2. In combination with an air cooling fan, a humidifier comprising a drum having openings in both ends, hooks secured to said drum and adapted to removably attach the drum to the fan frame guard, a shaft mounted within said drum, a second drum mounted upon said shaft and adapted to revolve therewith, at least two adjustable blades secured to said second drum, a series of spaced loops on the inner surface of said second drum and the shaft, and a strip of absorbent material secured to said series of loops and adapted to come into contact with a liquid contained in said first drum.

In testimony whereof I affix my signature.

WILLIAM G. ROGERS.