Jan. 1, 1963 M. ALIS 3,071,315

FAN ATTACHMENT FOR SEWING MACHINES

Filed July 11, 1961

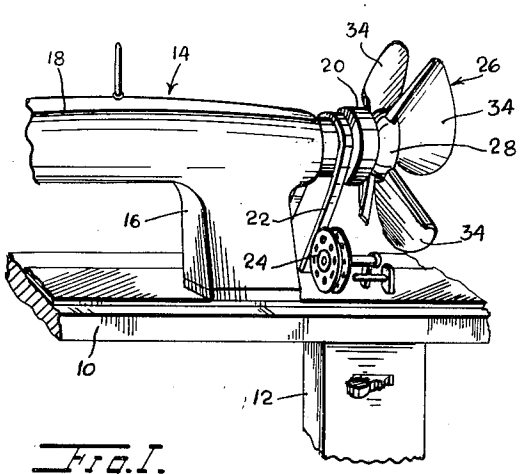


Fig. 1.

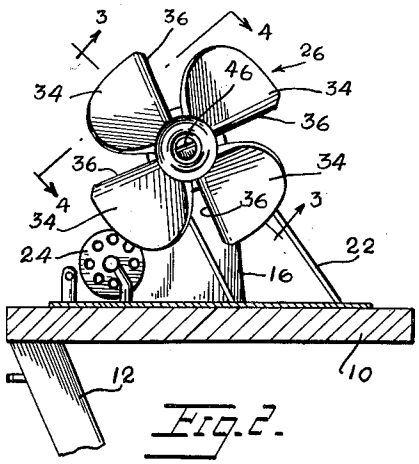


Fig. 2.

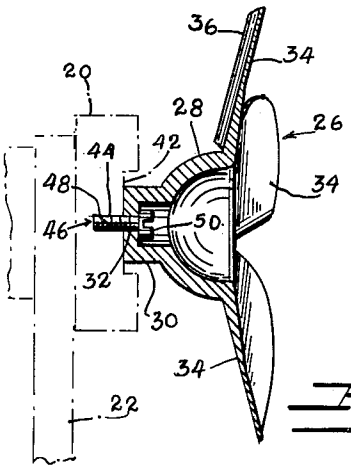


Fig. 3.

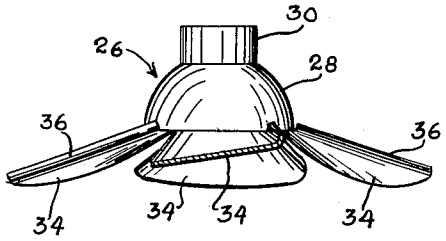


Fig. 4.

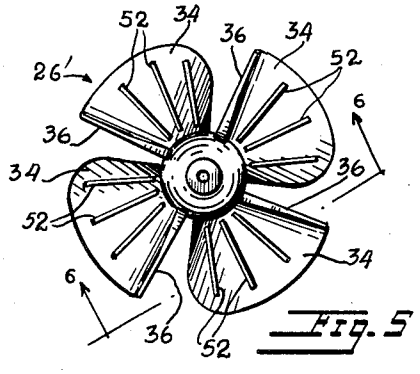


Fig. 5

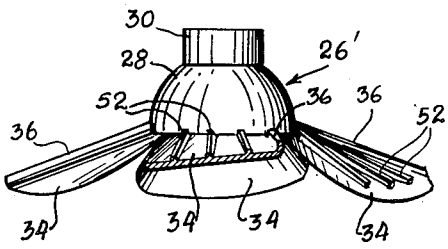


Fig. 6.

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FAN ATTACHMENT FOR SEWING MACHINES

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This invention relates generally to electric fans and more particularly to an all-plastic fan especially adapted to be attached to a sewing machine.

It has heretofore been suggested to associate a fan with a sewing machine, but in the prior constructions the mounting section of the fan requires especially shaped and constructed fastening members for securing the fan to the machine.

Furthermore, as the fan is usually positioned directly adjacent the flywheel and bobbin winder to which the operator, in a hand operated machine, finds occasion to frequently apply the hand, such fans, unless properly protected or guarded, are a menace to the operator's hands.

The principal object of the present invention is to provide an all-plastic fan attachment for a sewing machine with a stiff hollow perforated hub portion and soft flexible blades.

Another object is to provide a fan attachment for a sewing machine with a hub portion of sufficient length to space the blades remote from the flywheel, bobbin winder and the like.

A further object is to provide an attachment for a sewing machine that is adapted to be attached and secured to a sewing machine of ordinary construction by means of the fastening members available on the machine.

A specific object is to provide a fan attachment for a sewing machine with a hollow hub portion providing sufficient clearance for inserting fastening members through the perforated hub portion thereof.

Other objects of the invention are to provide a fan attachment for a sewing machine that is easily and quickly attached to and removed from the machine; that is readily attached without requiring any change in present constructions and that in nowise interferes with the proper manipulation of the machine; that is provided with a mounting section smaller in diameter than the diameter of the flywheel in order to increase the speed at which the machine and fan attachment operates; that is simple in construction and economical to manufacture.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a top perspective view of a fragment of a sewing machine with a fan attachment embodying my invention applied thereto.

FIG. 2 is a view looking from the right-hand end of FIG. 1.

FIG. 3 is an enlarged cross-sectional view through the fan attachment taken on the line 3—3 of FIG. 2, the flywheel and drive being shown in dot-dash lines.

FIG. 4 is an enlarged cross-sectional view taken through the fan attachment on the line 4—4 of FIG. 2.

FIG. 5 is a front view of a fan attachment embodying a modified form of the invention.

FIG. 6 is a cross-sectional view taken on the line 6—6 of FIG. 5.

Referring in detail to the drawings, in FIG. 1 a fragment of a worktable 10 supported on legs 12, only one leg being shown, is illustrated with a fragment of a sewing machine 14 fastened thereon. The machine is of usual construction with standard 16 and crossarm 18 and mounted on the outer projecting end of the crossarm is a flywheel 20 driven by a belt 22 in the usual manner. Adjacent the standard 16 and underneath the flywheel is a bobbin winder or reel 24. The foregoing are all parts of a conventional sewing machine.

In accordance with the present invention, a fan attachment 26 is attached to the flywheel 20. The fan attachment 26 is composed of suitable plastic material and is molded, forming a curved hollow semispherical body portion 28 continuing into and communicating with a cylindrical hollow hub portion 30 formed with a central hole 32. The walls of the body portion and hub portion are of the same thickness. A series of integral broad blades 34 radiates from the outer periphery of the body portion in closely spaced relation. The bodies of the blades are thin and gradually taper outwardly thereby providing flexible and soft bodies. The outer edge and one side edge of each blade are curved and the third exposed edge is straight. The straight edge is turned outwardly slightly forming a low flange 36, extending the length of the edge and is disposed in the path of turning movement of the blade. The blades are so arranged that the flanged edges and curved edges are adjacent each other.

In attaching the fan attachment 26, the hub portion 30 is seated in the countersunk portion 42 in the hub portion of the ordinary flywheel 29, with the hole 32 therein in register with a threaded hole 44 found in the hub portion of the flywheel. An ordinary machine screw found on all sewing machines, such as the screw 46 shown in FIG. 3, having a shank 48 and slotted head 50, in inserted through the hole in the hub portion and threaded into the threaded hole in the flywheel as shown in FIG. 3. The fan attachment is securely fastened to the flywheel and rotates therewith, when the flywheel is driven by the belt 22.

In use, when the air strikes the flanges 36 of the blades 34, it moves off at an angle to the plane of the blade in the direction of the operator of the machine thereby making the operator's working conditions more comfortable, and it does not move off radially of the blade so that it would just generally agitate the air in the room.

Since the blades are flexible and soft, the possibility of the operator of the machine being injured by the fan is substantially obviated since the flexible material will yield if a person enmeshes his hand or fingers therewith. Furthermore, by providing a long hub portion 30 a simple means is provided for spacing the span attachment from the flywheel 20 and bobbin winder 24 to insure that the operator cannot touch either the flywheel or the bobbin winder.

It will be noted that the hollow in the body portion 28 communicates with the hollow in the hub portion so that the hand of a person may readily be inserted into the hub portion for manipulating a fastening screw, such as the screw 32.

In FIGS. 5 and 6, a modified form of fan attachment 25' is shown, but this form differs merely in that a series of spaced short ribs 52 are formed on the face of each blade 34'. These ribs tend to direct the air stream in the direction of the operator instead of agitating the air in the room generally.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

A fan for attachment to a sewing machine comprising a body of plastic material including a hollow semispherical body portion, an integral hollow cylindrical hub portion extending from the base of the body portion and communicating therewith, closely spaced integral flexible blades radiating from the outer periphery of the body portion, said hub portion having a central hole for receiving a fastening element for fastening the hub portion to a rotating part of a sewing machine, and means on the edges of the blades and on the faces of the blades for directing the air off of the plane of the body portion at an angle thereto, said latter means including integral flanges on one of the long edges of the blades and spaced radial integral ribs on the faces of the blades extending lengthwise of the blades and in the same direction as the flanges.

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