Sept. 18, 1928. 1,684,601

D. SHPATER

FAN ATTACHMENT FOR SEWING MACHINES

Filed Dec. 4, 1925

Fig. 1

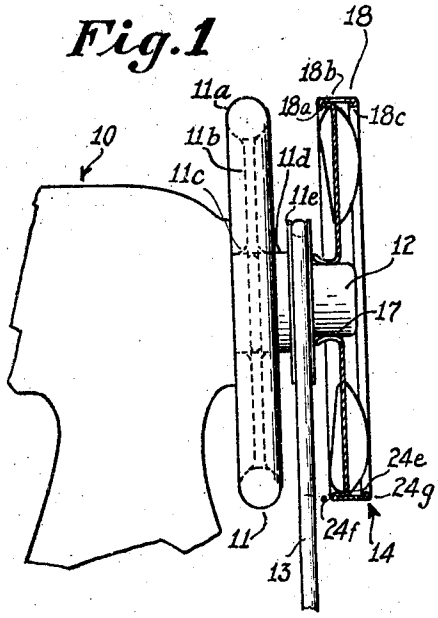


Fig. 2

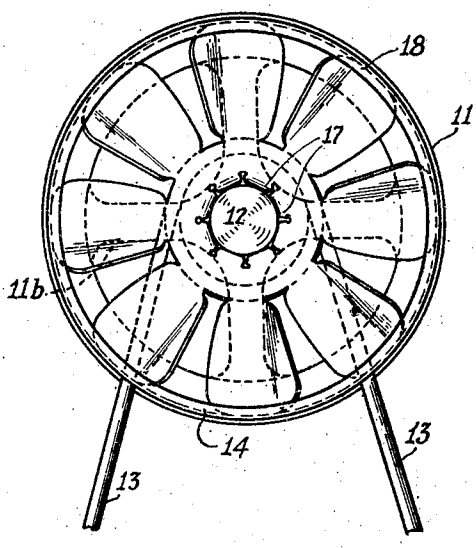
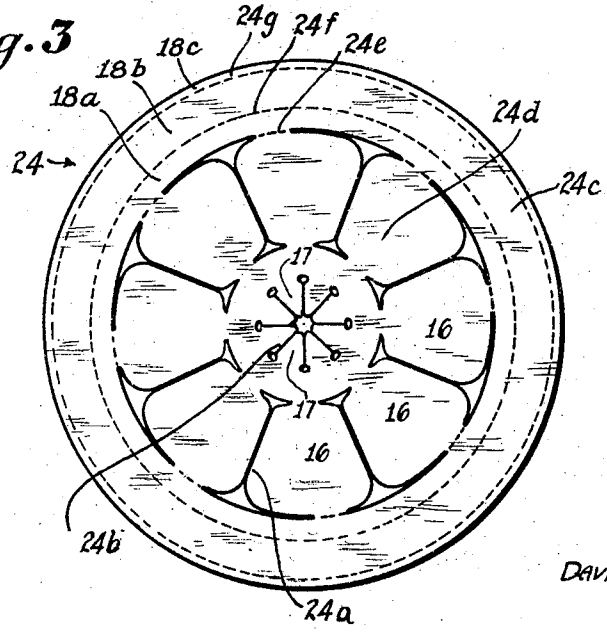


Fig. 3



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FAN ATTACHMENT FOR SEWING MACHINES.

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This invention relates to ventilating devices and more particularly is directed to a fan of improved construction adapted to be demountably attached on a rotatable shaft of a sewing machine or other rotary apparatus for providing a stream of air to the operator.

Among the objects of the invention is the provision of an improved fan of the character described including guarding means to prevent injury to the user or the apparatus, which shall be simple in construction, cheap to manufacture, easily to apply or remove, and practical and efficient in operation to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a front elevational view of a fragmentary portion of a sewing machine with a fan embodying the invention applied thereto, the fan being shown in cross-section;

Fig. 2 is an end elevational view of the sewing machine and fan shown in Fig. 1; and

Fig. 3 is a developed view showing the cut blank from which the fan is formed.

Referring in detail to the drawing, 10 denotes a fragmentary portion of a sewing machine of any well known construction having the usual hand drive-wheel 11 which is seen to comprise a smoothly rounded rim 11^a supported by spaced arms or spokes 11^b radiating from a central hub 11^c. The latter is fastened to turn with a drive-shaft 12 of the machine 10 and has an extension 11^d about which a grooved pulley 11^e is formed for receiving a driving belt 13.

A fan 14 embodying the invention is adapted to be demountably attached to turn with the drive shaft 12 and is either secured to the hub of the wheel 11, or as here shown, releasably engages the projecting end of the shaft 12. Said fan may be of any suitable construction comprising separate parts joined together, but is preferably made as shown in the drawing from a single stamped sheet of metal forming a blank 24 having radially extending cut portions 24^a and 24^b and a rim portion 24^c.

The cut portions 24^a form equally spaced radially extending fan blades 16 in the mid-annular section 24^d of the blank 24, the radially extending edge portions of each blade being suitably bent transversely to the normal plane of the blank to provide effective and efficient air propulsion means as is well understood.

The cut portions 24^b form equally spaced concentrically disposed gripping members 17 which may be bent to extend outwardly from one side of the fan and adapted to form a quick detachable clamping means for engaging the shaft 12 as shown in Figs. 1 and 2.

Fold lines 24^e, 24^f, and 24^g indicated by concentric dotted circles shown in Fig. 3 divide the rim portion 24^d into annular sections 18^a, 18^b, and 18^c respectively. By bending the section 18^a on line 24^e to upstand from the blank 24, folding section 18^b on line 24^f to overlie section 18^a and infolding section 18^c on line 24^g, a peripherial guard ring 18 is formed, the size of said sections being proportioned so that the fan blades 16 lie wholly between the planes of the rim edges of the guard 18, as shown in Fig. 1.

In using the invention, the fan 14 is detachably mounted in effective position by simply slipping the gripping member 17 over the end of the shaft 12, said fan being retained to the shaft by a frictional clamping engagement. The operation of the machine 10 rotates the fan which effectively propels the surrounding air toward the operator.

Preferably the diameter of the fan is made equal to or less than the diameter of the hand-wheel 11 so that accidental contact of the operator's fingers when applied to the hand-wheel with the fan blades is greatly diminished.

It should be noted that the frictional engagement of the gripping members 17 of the fan on shaft 12 permits the fan to slip with respect to said shaft should any of the fan parts or guard come in contact with any obstruction, thus injury to the operator or the fan is practically eliminated. It is also apparent that the gripping members 17 may be proportioned to serve as means for spac-

ing the fan from the end of the hub extension portion 11^d. (See Fig. 1.)

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A fan of the character described made of a single piece of sheet material cut, bent and folded to form gripping means adapted to frictionally clamp the fan to a drive shaft, spaced fan blades extending on opposite sides of the plane of said sheet material, and a guard member extending about said blades to protect against accidental contact therewith, as and for the purpose described and specified.

2. A fan of the character described adapted to be mounted on a sewing machine, said fan being made of sheet material cut, bent, and folded to form spaced fan blades and a guard member extending about said blades to protect against accidental contact therewith, said guard member extending on opposite sides of the plane of said sheet material, as and for the purpose described and specified.

3. A fan adapted to be mounted on the drive shaft of a sewing machine comprising a unitary, one-piece structure formed of sheet material, said fan having radial blades extending on opposite sides of the plane of said sheet material and a peripherial rim guard for said blades bent to extend on opposite sides of said plane, said blades being disposed wholly between the planes of said rim guard.

In testimony whereof I affix my signature.

DAVID SHPATER.