

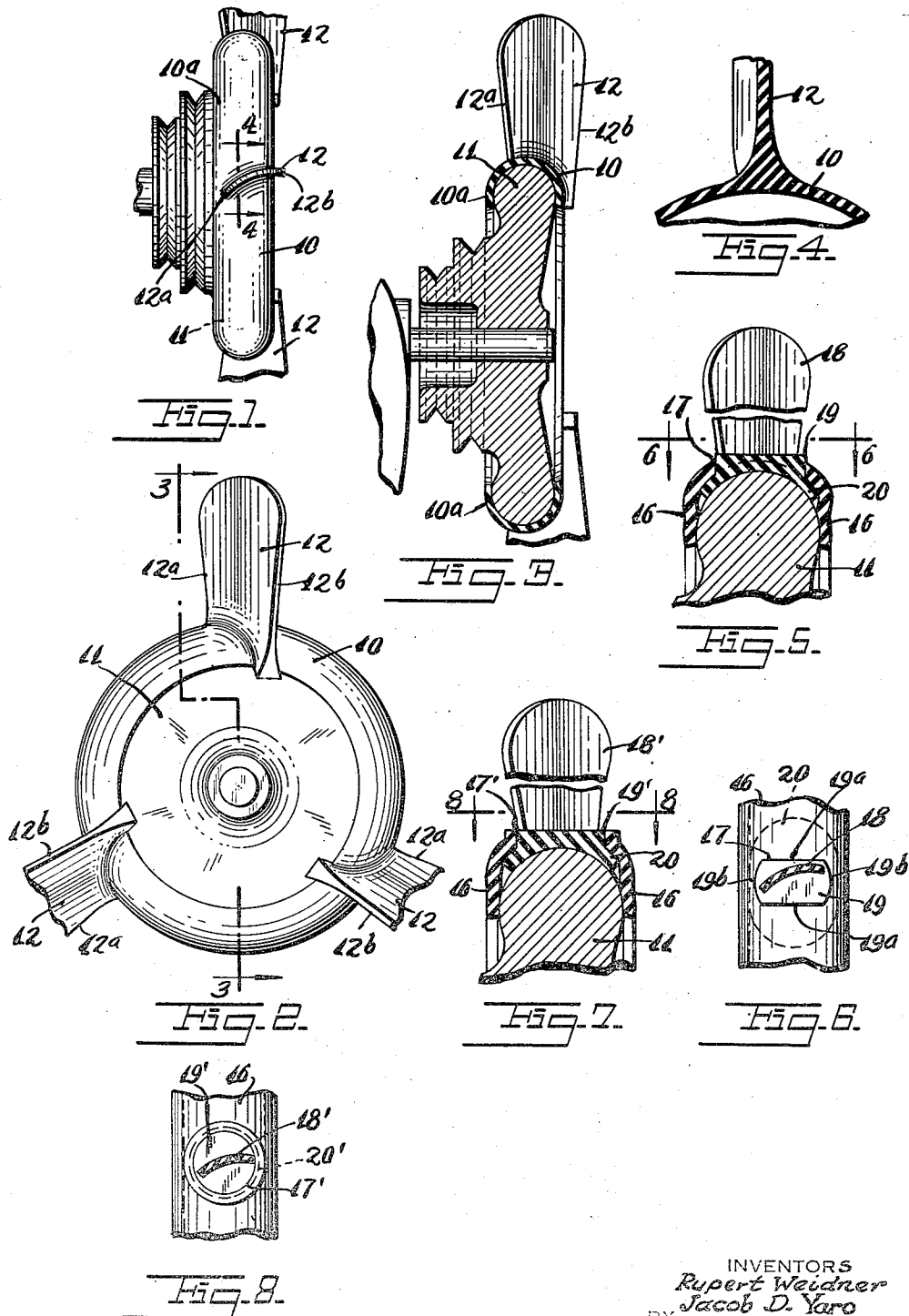
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FAN BLADES FOR FLYWHEELS OF SEWING MACHINES

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## FAN BLADE FOR FLYWHEELS OF SEWING MACHINES

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This invention relates to new and useful improvements in fan blades for the flywheel of a sewing machine.

The invention proposes a fan attachment for the flywheel of a sewing machine which is characterized by an annular rubber casing for engaging on the flywheel and having a plurality of radially projecting fan blades. It is proposed that the fan attachment be constructed for clockwise or counter-clockwise rotation, to fit on a flywheel of a sewing machine.

The advantage of the fan attachment resides in the fact that it will produce a current of air to cool the operator of the machine. More specifically, it is proposed that the annular rubber casing be in the nature of a small rubber body simulating an automobile tire which may be forced open and engaged over the flywheel of a sewing machine and allowed to close down on the flywheel so as to maintain its position due to its inherent resiliency. It is proposed that this annular rubber casing be provided with at least three fan blades equally spaced from each other and capable of throwing the air in the direction of the operator of the sewing machine.

Still further the invention contemplates various modified constructions which include an arrangement in which the fan blades are made of rubber material separate from the material of the annular casing, but firmly held in position by overlapping edge portions of these parts.

The invention also contemplates an arrangement whereby the fan blades may be adjusted to control the direction in which the current of air is thrown.

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

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

Fig. 1 is an elevational view of the flywheel of a sewing machine provided with fan blades constructed in accordance with this invention.

Fig. 2 is an end elevational view looking from the right hand end of Fig. 1.

Fig. 3 is a vertical sectional view taken on the line 3-3 of Fig. 2.

Fig. 4 is a fragmentary enlarged vertical sectional view taken on the line 4-4 of Fig. 1.

Fig. 5 is a fragmentary sectional view similar to Fig. 3 but illustrating a modified construction.

Fig. 6 is a horizontal sectional view taken on the line 6-6 of Fig. 5.

Fig. 7 is a fragmentary sectional view similar to Fig. 5 but illustrating another modified construction.

Fig. 8 is a fragmentary sectional view taken on the line 8-8 of Fig. 7.

The fan blades for the flywheels of sewing machines, in accordance with this invention, include an annular rubber casing 10 for engaging on the flywheel 11 of a sewing machine. This casing is provided with a plurality of radially projecting integral fan blades 12, which are moulded or otherwise formed in one piece, of any suitable material, such as rubber composition, compressed fabric, etc. The casing 10 is substantially of semi-circular shape in transverse cross section. The fan blades 12 are equally spaced from each other but may also be unequally spaced. These blades have one of their edges 12<sup>a</sup> set in from one side 10<sup>a</sup> of the rubber casing 10 so that this side is free and may be flexed open to disengage the casing from the flywheel or to engage it in position. The other sides 12<sup>b</sup> of the blades 12 extend down along the outer sides of the casing 10, as clearly shown in the drawing. The blades 12 are set at a desired angle so as to be capable of throwing a current of air towards the operator of the sewing machine. These blades are curved transversely to strengthen the same against bending and are preferably made wider at the bottom.

In Fig. 3 a hand flywheel 11 which is proposed to rotate in a clockwise direction is disclosed. It is proposed that the fan attachment be capable of being applied also to a hand flywheel of a sewing machine rotating in a counter-clockwise direction. The only change necessary would be in the angle of the blades 12. They must be turned in a direction opposite to that shown on the drawing.

In Figs. 5 and 6 a modified form of the invention has been disclosed which distinguishes from the prior form essentially in the fact that the fan attachment comprises an annular tubular casing 16 for engaging on the flywheel 11 of a sewing machine and having several apertures 17 equally spaced from each other around the circumference of the casing. Several fan blades 18 have base portions 19 extending through the apertures 17. These base portions 19 have flange portions 20 engaging beneath the edge portions of the apertures 17.

The fan blades 18 may be mounted upon the rubber casing 16 by engaging them through the openings 17 from the inner side of the casing.

When the casing is mounted on the flywheel 11 the resiliency of the casing serves to hold the fan blades in position. The base portions 19 of the fan blades are shown formed with flat sides 19<sup>a</sup> opposed to each other and curved ends 19<sup>b</sup> (see particularly Fig. 16). The flange portions 20 are substantially of oval shape and extend a material distance forwards and rearwards of the base portions 19, as indicated in Fig. 6. This construction is capable of firmly holding the blades 18 in position.

In Figs. 7 and 8 another modified form of the invention has been disclosed which is very similar to the forms shown in Figs. 5 and 6, distinguishing merely in the fact that the base portions 19' and the apertures 17' and the flange portions 20' of the blades 18' are circular. With this arrangement it is possible to turn the blades 18' to selected positions so as to better control the discharge of a current of air towards the operation of the sewing machine. In other respects this form of the invention is similar to the previous forms.

It is to be understood that the fan blades and the annular casing may be of rubber, compressed fabric, or of any other suitable, pliable or semi-soft material.

It is also to be understood that the casing 10 may be attached either directly on the flywheel of a sewing machine or on an extension flywheel which may be made to protrude from the drive-shaft or from any other rotating part of the sewing machine.

The casing 10 may be either one piece or may be made of a number of small sections and attached to the flywheel by a suitable mechanical arrangement.

While we have illustrated and described the preferred embodiments of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A fan blade attachment for the flywheel of a sewing machine having an annular rubber casing and a plurality of rubber fan blades projecting radially from said casing, each of said fan blades, comprising a fan blade portion, and a disc-like base portion integrally formed on the bottom end of said fan blade portion and said rubber casing being formed with spaced circular openings through which each of said blade portions is projected to extend radially of said flywheel.

2. A fan blade attachment for the flywheel of a sewing machine having an annular rubber casing and a plurality of rubber fan blades projecting radially from said casing, each of said fan blades, comprising a fan blade portion, and a disc-like base portion integrally formed on the bottom end of said fan blade portion and said rubber casing being formed with spaced circular openings through which each of said blade portions is projected to extend radially of said flywheel, said base portions being of a size greater

than said openings so as to have the edge portions clamped between the adjacent faces of said flywheel and the material of said casing surrounding said openings to frictionally retain said fan blades in various turned positions relative to said casing.

3. A fan blade attachment for the flywheel of a sewing machine having an annular rubber casing and a plurality of rubber fan blades projecting radially from said casing, each of said fan blades, comprising a fan blade portion, and a disc-like base portion integrally formed on the bottom end of said fan blade portion and said rubber casing being formed with spaced circular openings through which each of said blade portions is projected to extend radially of said flywheel, said base portions being of a size greater than said openings so as to have the edge portions clamped between the adjacent faces of said flywheel and the material of said casing surrounding said openings to frictionally retain said fan blades in various turned positions relative to said casing, said casing being capable of being lifted away from said flywheel to free said fan blades to be turned relative to said casing to vary their angular positioning with relation to said casing.

4. A fan blade attachment for the flywheel of a sewing machine having an annular rubber casing and plurality of rubber fan blades projecting radially from said casing, each of said fan blades, comprising a fan blade portion, and a disc-like base portion integrally formed on the bottom end of said fan blade portion and said rubber casing being formed with spaced circular openings through which each of said blade portions is projected to extend radially of said flywheel, said fan blade portions being arcuate in cross-section and the cord between the ends of said arc at the junction of said blade portions and base portions being substantially equal to the diameter of the openings in said casing causing the edge portions of said blade portions to engage the edge portions of said casing around said openings and maintain said base portions concentrically aligned with said openings.

5. A fan blade attachment for the flywheel of a sewing machine having an annular rubber casing and a plurality of rubber fan blades projecting radially from said casing, each of said fan blades, comprising a fan blade portion, and a base portion integrally formed on the bottom end of said fan blade portion and said rubber casing being formed with spaced openings through which each of said blade portions is projected to extend radially of said flywheel.

6. A fan blade attachment for the flywheel of a sewing machine having an annular rubber casing and a plurality of rubber fan blades projecting radially from said casing, each of said fan blades, comprising a fan blade portion, and a non-circular base portion integrally formed on the bottom end of said fan blade portion and said rubber casing being formed with spaced non-circular openings through which each of said blade portions is projected to extend radially of said flywheel.

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