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H. GATTI

MACHINE OPERATED PORTABLE FAN

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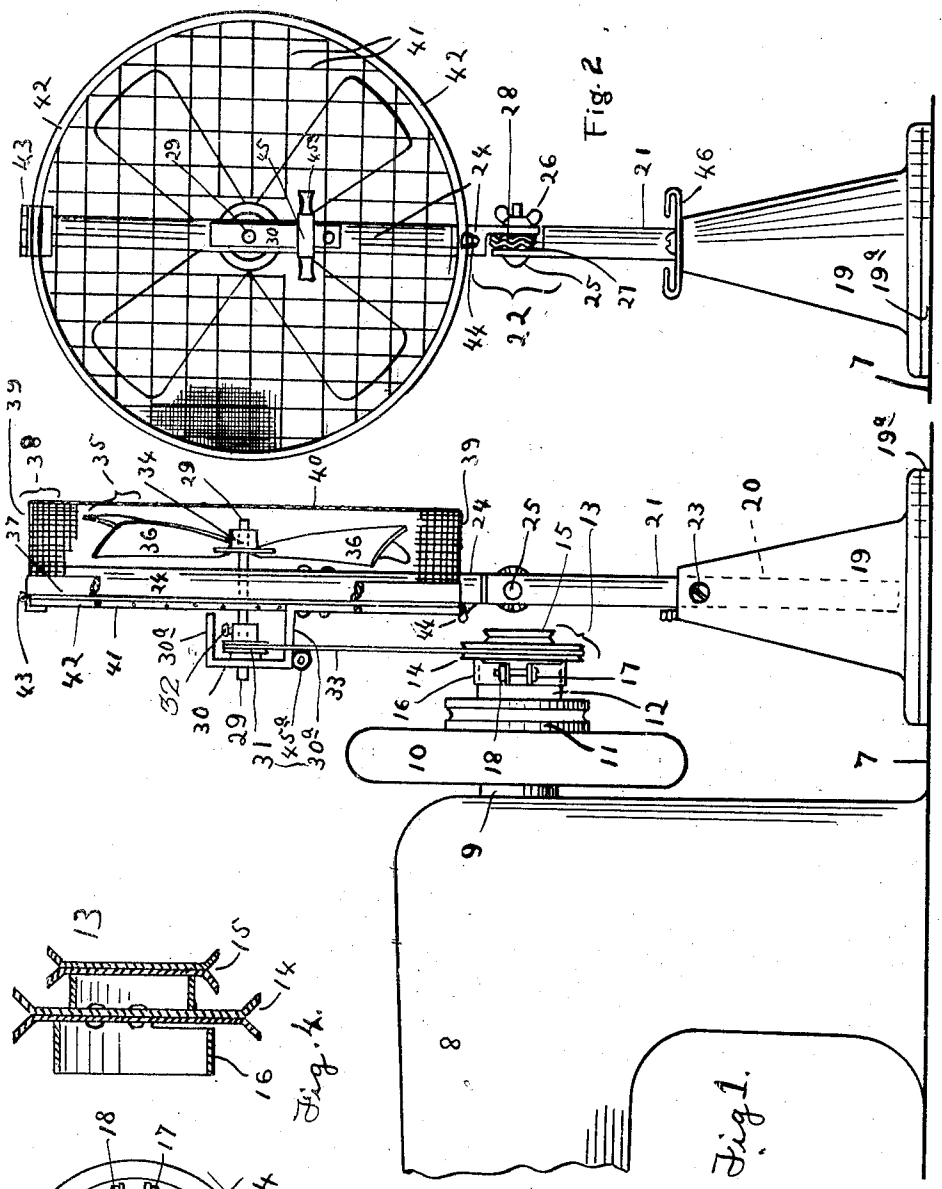


Fig. 2.

Fig. 4.

Fig. 3.

Fig. 1.

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UNITED STATES PATENT OFFICE.

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MACHINE-OPERATED PORTABLE FAN.

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My present invention relates to a machine-operated portable fan such as may be readily placed upon a sewing machine.

The purpose of my invention is to provide a device of the class described which is extremely simple and economical in construction and operation and also one which is particularly well adapted to be readily applied or easily removed from a sewing machine or other machine having a rotating part.

A further object of my invention is to provide a machine-operated portable fan of such construction, combination of parts and mode of operation that it may be placed in desired position upon the sewing machine table without the use of tools and without the use of any clamps, screws or other attaching parts and further to have the device of such construction that it may be placed in operating position upon practically any sewing machine or in various positions upon any given machine either without any adjustment or with a small amount of adjustment of the parts of the device.

Further purposes are to provide a fan which can be readily belted or operatively connected to practically any sewing machine or similar machine having rotating projecting parts and readily disconnected therefrom without the use of tools and without having to unscrew clamps or other attaching devices; to provide a fan which has a wide range of adjustability both as to height and angular arrangement of the fan; to provide a fan which is well guarded to prevent a person's hair or cloth or other material being worked on being drawn into the fan and to have the guard enclose the fan proper on all sides, but allow the fan shaft pulley to be readily accessible for connecting the belt thereto.

Other purposes and advantages of my invention will appear from the specification and claim herein.

Fig. 1 is a front view of a fan embodying my invention as applied to a sewing machine.

Fig. 2 is a side view of the machine looking at the side that is normally toward the sewing machine.

Figs. 3 and 4 are respectively side and sectional views on an enlarged scale through the pulley provided to be attached to the hand wheel nut.

Referring to the drawings in a more particular description it will be seen that my invention is shown as applied to a sewing machine of a conventional form having a table 7 and a head 8 from the right of which projects the revolving shaft 9 carrying the hand wheel 10 and pulley 11 for operating the machine in the usual way from below either by foot or other motive power. From the right end of the shaft 9 and beyond the pulley 11 there projects the usual friction nut 12 used to normally lock the driven pulley 11 to the shaft 12 and thereby to all of the operating parts of the machine. The friction nut 12 is accordingly continually rotating while the machine is in operation.

To the friction nut 12 there is clamped a readily attachable and detachable pulley 13 preferably having two grooved faces or peripheries 14 and 15 of different sizes with the smaller pulley face 15 to the outside or to the right of the parts as shown in Fig. 1.

The pulley 13 is constructed to be readily attached to the friction nut 12 as by fastening to the left hand side of the pulley a split flange 16 the ends of which are free with their extremities turned outwardly and perforated to receive a bolt 17 and nut 18 whereby the ends of the flange may be drawn together to adjust and hold the same to various sizes of friction nuts.

The heavy or weighted and wide bottomed base 19 is provided at the bottom with a thick cushion 19ª of felt or the like with the cushion thick enough to protect the sewing machine table 7 from injury and with the base 19 heavy enough to readily hold the fan supported thereabove in proper position wherever placed upon the table without further attaching means. In the base 19 is provided a central open-topped socket 20 into which is adjustably placed the lower end of the lower part 21 of the two-part post 22 with a set screw 23 set into the base near its upper end and adapted to be set up against the post 21 and so hold the post at desired elevation.

The upper end of the lower part 21 and the lower end of the upper part 24 of the post 22 are conveniently shaped or cut away so as to overlap and be adjustably connected as by a bolt 25 and thumb nut 26 engaging said adjacent extremities of the two parts of the post. Preferably the adjustable joint is provided also with correspondingly corrugated disks 27 and 28 mounted on the bolt 25 between the opposing faces

of the post parts so as to get a more positive holding of the fan in several desired positions.

About midway of the length of the upper part 24 of the post there is revolubly mounted in said post the fan shaft 29 as by said shaft being journaled in a suitable hole or bearing in the post and also in the preferred form by said shaft being supported near the end of its left hand projecting part by a bracket 30 secured to that side of the post. The part of the bracket directly supporting the shaft is spaced from the post. Upon the portion of the fan shaft 29 between the said bracket and the post is mounted the small pulley 31 as by its hub being set to said shaft by set screw 32. Above the pulley 31 the bracket 30 bends back towards the post 22 but with the extremity of said bracket spaced slightly from said post so that the belt 33 used to operatively connect the pulley 13 on to the sewing machine and the fan shaft pulley 31 may be readily placed over the top of the pulley 31. The inturned upper part 30[a] of the bracket forms a guard over the top of the pulley 31 both when the fan is connected to a sewing machine or when the fan may be separated therefrom.

Upon the part of the shaft 29 projecting to the right of the post 22 as the parts are seen in Fig. 1 there is fastened the hub 34 of fan 35 preferably of the form having several curved or slanting blades 36 adapted to catch the air and project it in the desired direction. To the upper part 24 of the post is firmly secured an annular sheet metal band 37 preferably channel-shaped in form between the two parts of which is fastened the edge of a relatively fine mesh wire work guard 38 which extends to the right from the metal band 37 as a cylindrical portion 39 to a plane beyond the reach of the fan blades 26 at which plane the flat or disk-like portion 40 of the guard completes the guard on the fan side of the post. The guard is completed on the other side by a disk of wire work 41 which may be of coarser wire as this is upon the side of the fan where the air is passing from the fan instead of to the fan. In order to give convenient access to the fan, this guard disk 41 may be mounted on an annular wire edge 42 so as to make it separate from the band 37 and the disk and its edge then swingingly mounted as by hinge 43 to the top of the post. This disk guard will be held firmly but detachably in place by a snap 44 on the post and engaging the lower part of the disk. Opposite the pulley 31 and bracket 30 the wire of the guard disk 41 is cut away so that the disk may be swung to the left without interference.

Upon the bracket 30 below the fan shaft is mounted an arm 45 the oppositely projecting ends of which form bearings for roller guides 45[a]. These roller guides are at right angles to the plane of the fan shaft and are in alignment with the upper or fan shaft pulley 31 with the belt 33 located to the right of the guide rollers as the parts are seen in Fig. 1. The purpose of these guide rollers is to guide the belt 33 in the proper plane to the upper pulley 31, that is in the plane of said pulley, even though the upper part of the post carrying said fan may have been swung appreciably to the left on its adjusting bolt 25 in order to direct the current of air from the fan downwardly more against the operator's face and hands. These guide rollers or one of them may also assist in case the fan has been turned bodily at a slight angle relative to the plane of the pulley 13 in order to direct the current of air from the fan either towards or from the person operating the machine.

Preferably the belt 33 used to connect the fan shaft pulley 31 to the pulley 13 on the sewing machine will be elastic and conveniently may consist simply of a small rubber band such as is commonly used to hold together small bundles of paper. This elastic belt gives a yielding traction and connection which enables the fan to be started easily and reduces any drag the fan would have against the sewing machine when the sewing machine is first started. The elastic band also enables the fan to be quickly connected to the sewing machine in that the band may be stretched to a considerable extent and run in that condition and so avoid stopping to adjust the post of the fan to any given height simply to fit the machine. This enables the fan to be used at the most convenient height as far as the comfort of the user is concerned instead of having to adjust the height of the fan proper to accommodate it to the length of the belt used.

In operation the pulley 13 is adjusted in an obvious way to the friction nut 12 of the sewing machine or to a similar projecting rotating part of any other machine in connection with which the fan is to be used, then the base of the fan is simply placed upon the sewing machine table 7 so as to bring the pulley 31 about over the sewing machine pulley 13 and the band or belt 33 placed over said pulleys. The fan is then ready for operation without the use of any tools or adjusting mechanism to hold the fan in place. The fan may be readily detached from the sewing machine by simply taking the belt off of the lower pulley 13. The detachable pulley 13 may be left upon the machine if the person expects to come back to that machine or to use the fan therewith later. One of the desirable features of the device is its extreme simplicity enabling it to be readily moved about from one machine to another in a factory if desired.

The purpose of the smaller pulley 15 is to get a less or gentler current of air by reducing the speed of the fan in case the sewing machine when connected through the larger pulley 14 is run so fast as to give too strong a current of air.

To the top of the base 19 may be secured a thread guide 46 for convenience in factory use.

What I claim as new and desire to secure by Letters Patent is:

A rotary fan for actuation by a sewing machine motor, comprising a weighted base adapted to be supported on a sewing machine table, a stem engaging the base and adjustable vertically relatively thereto, a fan head arranged for angular adjustment relatively to the stem, a fan shaft journaled in said head and carrying a fan, a pulley on said shaft adapted to be belt geared to a pulley driven by the sewing machine motor, and guide rollers to engage the belt to hold it in gear with the fan shaft pulley at different inclinations of the fan head.

In witness whereof I have affixed my signature, this 22nd day of March, 1923.

HECTOR GATTI.