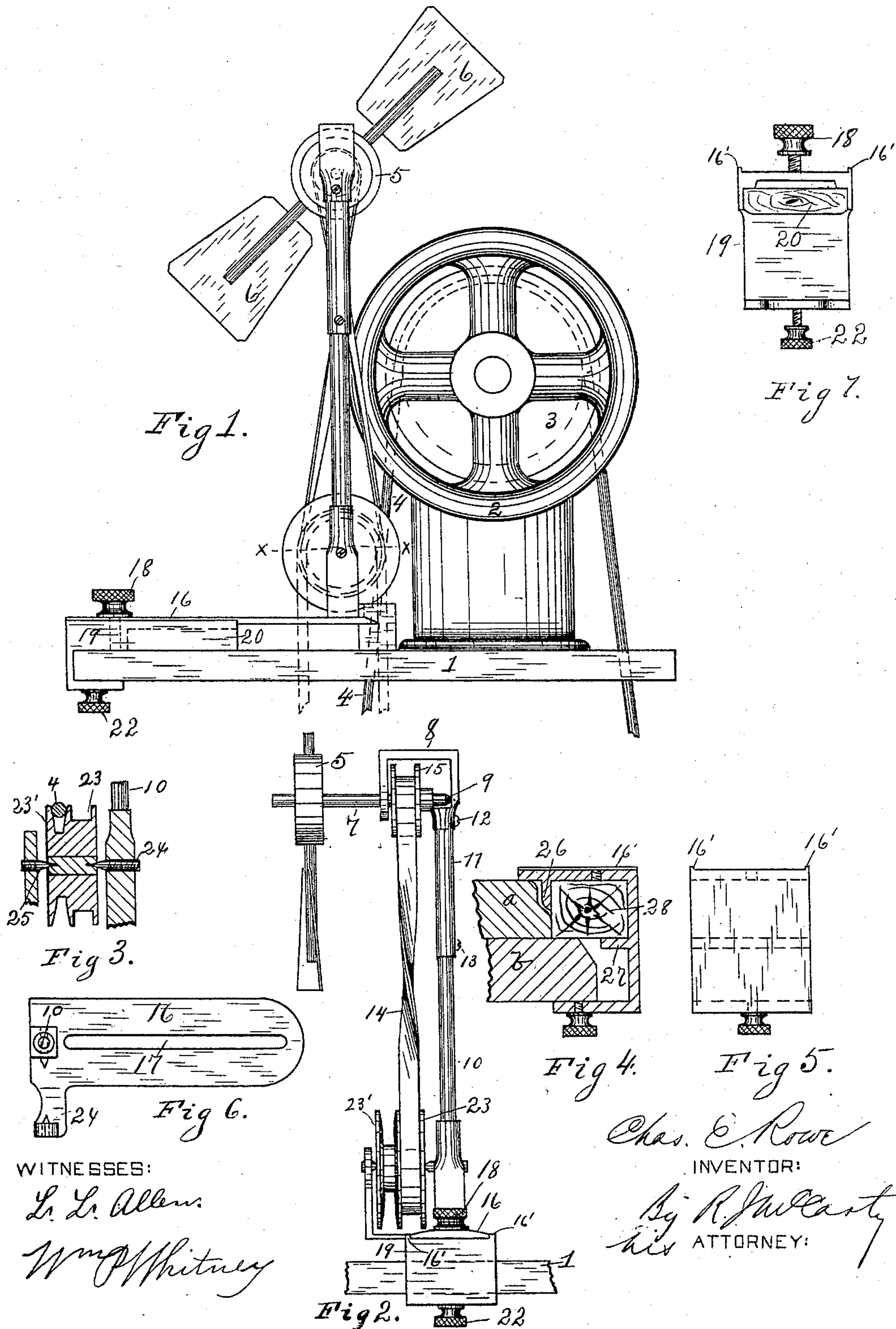


(No Model.)

C. E. ROWE.
ROTARY FAN.

No. 584,524.

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ROTARY FAN.

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To all whom it may concern:

Be it known that I, CHARLES E. ROWE, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Rotary Fans; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to new and useful improvements in rotary fans, and is especially designed for attachment to a sewing-machine.

The object of the invention is to provide an easy-running fan that is adapted to be driven from the driving-belt of a sewing or other machine while said machine is operated for other purposes and which will offer no perceptible resistance to the working of said machine.

While, as stated, the fan is especially intended to be attached to a sewing-machine to create a current of air, it may be applied to other machines for a like purpose and different uses. For example, the attachment may be applied to a dentist's lathe to keep the work free from dust, &c.

To the foregoing ends the invention has reference to the various parts and their arrangements, as will be hereinafter more fully described in the specification, and set forth in the claims.

Referring to the accompanying drawings, Figure 1 is an elevation of my improved fan attached to a sewing-machine. Fig. 2 is a front elevation of the fan. Fig. 3 is a section on the line *xx* of Fig. 1. Fig. 4 is an enlarged sectional view of the clamp used to attach the fan to a sewing-machine of the cabinet type. Fig. 5 is a plan view of said clamp. Fig. 6 is a plan view of the foot-plate used to attach the fan to the board of a machine of the ordinary single-top type or the cabinet type. Fig. 7 is an elevation of the clamp shown in Fig. 1, looking on the inner end thereof.

1 designates the board or top of a sewing-machine.

2 is the hand-wheel of the machine, and 3 is the driving-pulley. 4 is the driving-belt surrounding said pulley and the lower crank-wheel, (not shown,) all of which are well-known features in sewing-machines.

5 designates the hub of the fan, which is preferably constructed of wood to obtain as much lightness as possible, lightness being one of the essential features of the fan.

6 designates the fan-blades, which are constructed of pressed cardboard with a glazed coating that offers no resistance to the air as the blades are revolved. The shafts of said fan-blades are socketed in the hub and retained in position by friction. By reason of this friction mounting of said blades they may be easily adjusted to positions to send the current of air in opposite directions, either toward or from the operator of the machine.

The hub 5 is frictionally mounted on a shaft 7, that is journaled in a bracket 8. This shaft 7 is of a length that permits of a suitable range of adjustment of the fan.

One of the main objects of the invention is to obtain a broad range of adjustment, which will be apparent throughout this specification. Thus far it is seen that the blades themselves may be easily adjusted to change the direction of the current of air by loosening the shafts of said blades and turning them to the desired positions and then replacing them tightly in the hub, and the hub itself may be moved to any point along its supporting-shaft 7 to move the fan a suitable distance from the hand-wheel so as to avoid the hand of the operator coming in contact with the blades in turning said hand-wheel in stopping or starting the sewing-machine or to increase or decrease the breadth of the current of air. The inner end of the shaft 7 has a pointed or conical-shaped bearing-point 9, that enters a corresponding bearing in the side of the bracket.

The upright or tubular shaft upon which the bracket 8 is supported consists of two sections 10 and 11, to the latter of which the said bracket is adjustably secured by a thumb-screw 12. Section 10 is secured to section 11 by a thumb-screw 13. This latter adjustable connection of the parts is to regulate the height of the fan when placed in position on the machine, and the screw 12 may be

used to take up any looseness in the belt 14, and also to obtain a rotary adjustment of the bracket 8 to place the fan in a position to throw the current of air in any desired direction. This adjustment is made by elevating the bracket and turning it to the desired position and retightening the screw 12. The belt 14 is passed around a flanged friction-pulley 15, which is frictionally engaged with the shaft 7. The lower end of section 10 of the fan-supporting shaft is rigidly attached to a foot-piece 16, which has a longitudinal slot 17, through which a thumb-screw 18 penetrates to secure the attachment of said foot-piece to the clamp 19 in position on the machine, as shown in Fig. 1.

In order to prevent any marring or defacement of the wood or finish of the machine by the attachment of the clamp 19, I place a block of wood 20 or other suitable material between said clamp and the table, as shown in dotted lines, Fig. 1. The foot-piece 16 is inclosed between guide-flanges 16', that project from the upper sides of the clamp. The said clamp is secured to the table of the machine by a thumb-screw 22.

By means of the slot 17 and the thumb-screw 18 the attachment of the device may be at any desired distance from the edge of the machine as the position of the driving-belt may require, and also by means of this slot and screw the fan may be moved to a position to permit of the sewing-machine being closed by the cover thereof—for example, by loosening the screw and turning the device around or in moving it in any position desired.

23 and 23' designate, respectively, a driving-pulley and a friction-pulley, both formed of one solid piece of wood and the latter having the essential characteristics presently described. The axis of said pulleys is mounted on conical-shaped antifriction-bearings 24 in the lower portion of section 10 of the fan-bracket support and in an upright standard 25, that rises from a side of the foot-piece 16.

The inner surfaces of the flanges of the friction-pulley 23' are an important feature of my invention and are shown to be slightly rounded or bulged a short distance from the periphery of the wheel in order to provide an engaging surface for the variety of belts to be found on the various makes of machines and to prevent the belt from entering too far into the groove. In other words, it is desirable to have the belt engage with the pulley near the periphery to avoid said belt acting as a brake by too much friction. This form of a groove and this result were obtained after much experiment, and it was found to be the only form of groove in cross-section that would insure the proper engagement of the belt with the groove.

Referring to Figs. 4 and 5, they are views of a form of holding-clamp that may be used

for attaching the device to a cabinet form of sewing-machine which usually has two or more top boards *a* and *b*. This clamp has two inwardly-projecting flanges 26 and 27, which inclose a block of wood 28 or other similar material. This block of wood engages with the upper side of part *b* and the edge of board *a* and prevents any damage being done to the woodwork of the machine. A piece of felt or other soft material may be placed between the clamp and the upper surface of the top board *a* to prevent any injury to the said upper board by the attachment of the clamp.

Referring, further, to the fan-blades, it may be stated that in addition to the advantage of lightness there is no danger of the hands or any part of the person being cut by accidentally coming in contact with the revolving fans or blades, as would be the case if they were constructed of metal.

Having fully described the various features of my invention, the following features may be summed up as the result thereof: the anti-friction-bearings throughout the device, the multiplicity of adjustments that may be obtained, the specific lightness of the device, adding no perceptible weight to the load for the operator of the machine, the utility and the easy attachment thereof, together with its attractiveness.

Having described my invention, I claim—

1. In a rotary fan, the combination of a telescopic shaft, one section of which has a bracket adjustably attached thereto, and the other section of which has a slotted foot-piece rigidly attached; a shaft journaled in said bracket; a fan frictionally mounted on said shaft; a pulley mounted adjacent to the lower end of said telescopic shaft and adapted to be driven by the driving-belt of a machine, the said pulley having the inner surfaces of its flanges bulged or rounded near the peripheries of said flanges, substantially as described; and means for transmitting power from the shaft of said pulley, to drive the fan, as herein shown and described.

2. A rotary fan, comprising a two-part telescopic shaft; a bracket adjustably mounted on one of said parts, and a slotted foot-piece rigidly attached to the other of said parts; a compound pulley mounted on said foot-piece, and adapted to be driven from the driving-belt of a sewing-machine; a rotary fan mounted on the bracket, and driven from said compound pulley, and a clamp adapted to be secured to the table of the machine, and to which said slotted foot-piece is adjustably attached, as herein shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES E. ROWE.

Witnesses:

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