

(No Model.)

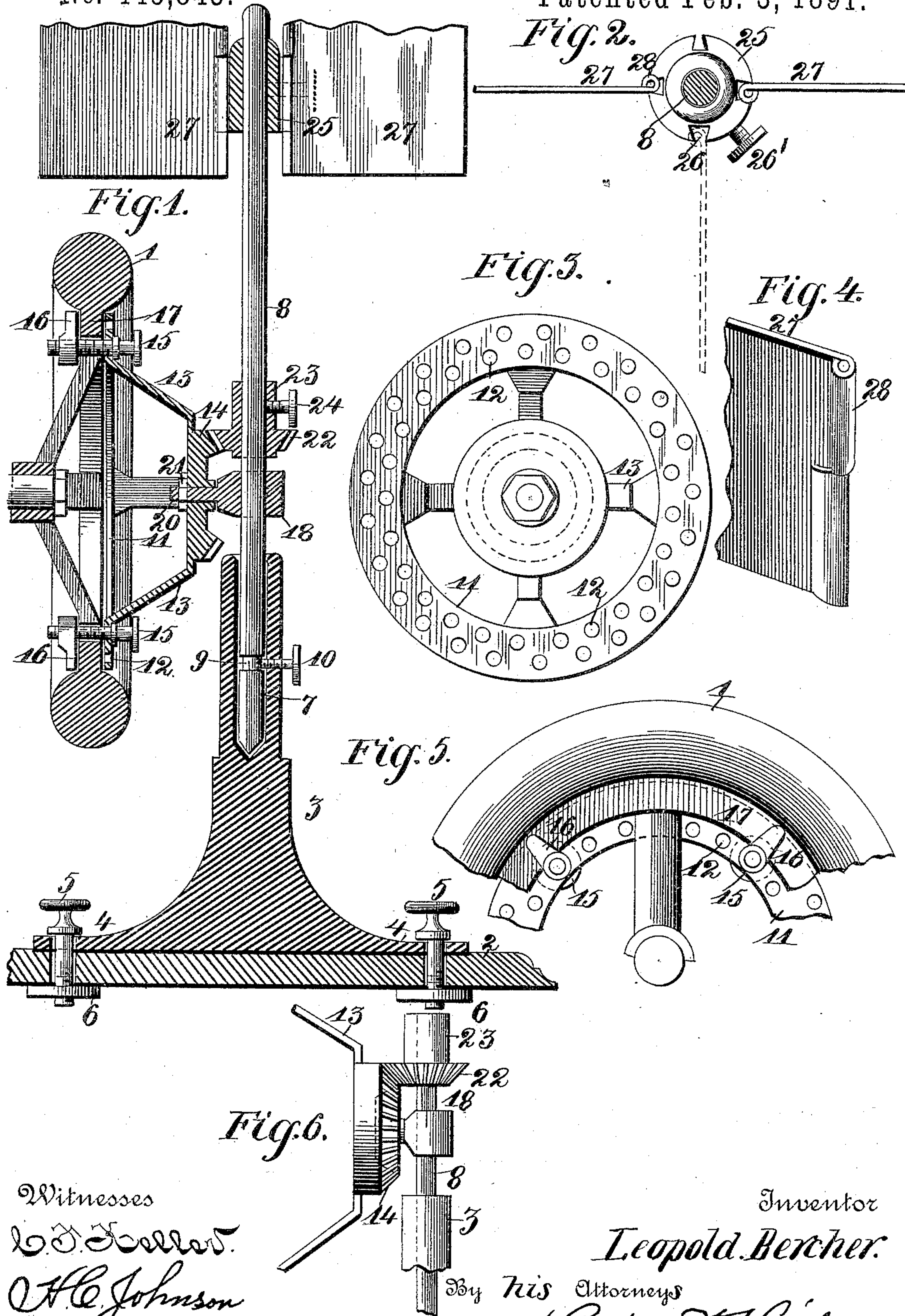
2 Sheets—Sheet 1.

L. BERCHER.

FAN ATTACHMENT FOR SEWING MACHINES.

No. 445,843.

Patented Feb. 3, 1891.



Witnesses  
L. D. Keller.  
W. C. Johnson

Inventor  
Leopold Bercher.  
By his Attorneys  
Higdon & Higdon

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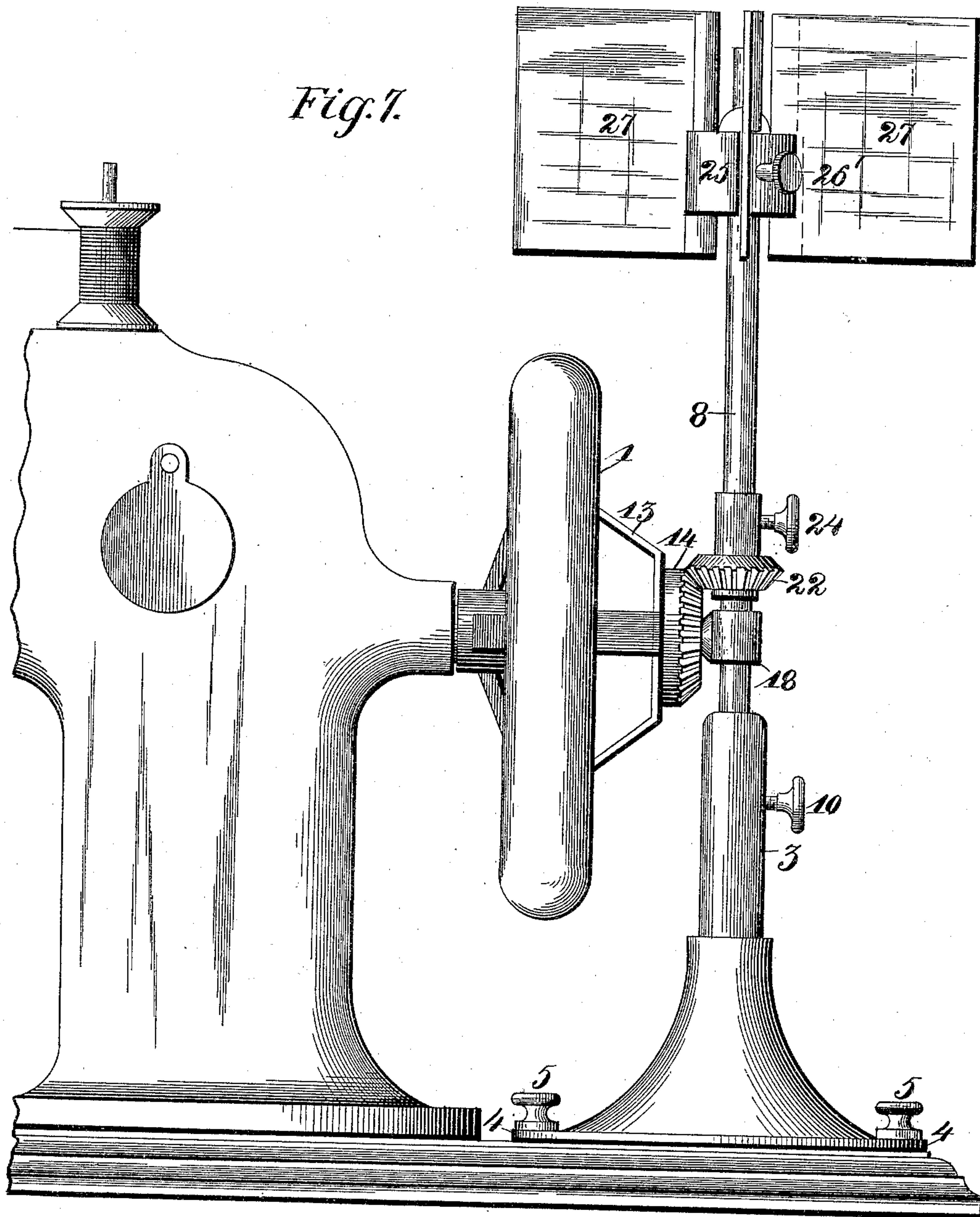
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*Fig. 7.*



WITNESSES:

L. D. Keller.  
H. C. Johnson

INVENTOR

Leopold Bercher.

BY

Alfred T. Alfredson  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

LEOPOLD BERCHER, OF FORT SMITH, ARKANSAS.

## FAN ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 445,843, dated February 3, 1891.

Application filed July 23, 1890. Serial No. 359,619. (No model.)

*To all whom it may concern:*

Be it known that I, LEOPOLD BERCHER, a resident of Fort Smith, Sebastian county, Arkansas, have invented certain new and useful  
5 Improvements in Fan Attachments for Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

10 My invention has for its object to provide a useful and ornamental construction in a fan attachment for sewing-machines; and it consists in the novel combination and arrangement of parts, as will be hereinafter fully de-  
15 scribed, and designated in the claims.

In the drawings, Figure 1 is a vertical longitudinal section of my complete invention as applied to a sewing-machine. Fig. 2 is a top  
20 plan view of the adjustable collar to which the fans are attached. Fig. 3 is a front elevation of the disk used for attaching the device to the sewing-machine. Fig. 4 is a perspective view of one of the fans detached. Figs. 5 and 6 are detail views, and Fig. 7 is  
25 a side elevation, of my invention, showing its application to a sewing-machine.

Referring to the drawings, 1 represents the ordinary fly-wheel of a sewing-machine to which my invention is applied, and 2 the stand  
30 or table for the said sewing-machine and to which is attached the support or base of the device.

3 represents the base of the device, having a flaring bottom 4, through which portion holes  
35 are formed to receive two turn-bolts 5 5, said bolts passing also through holes formed in the stand 2, the screw portions of which are screwed into washers 6, by means of which the said base is securely fastened to the stand.  
40 The upper portion of the base 3 is provided with a vertical cavity 7, within which the vertical shaft 8 revolves and is supported thereby. The vertical shaft 8 is provided with an annular groove 9 near the lower portion there-  
45 of, and is covered by the walls of the cavity 7 when the said shaft is in its proper position. A screw-threaded hole is formed in the upper portion of the base 3 for receiving a turn-bolt 10, the end of which enters the annular groove  
50 9 and prevents the vertical shaft 8 from be-

ing withdrawn when in a working position, as best shown in Fig. 1.

11 represents a circular disk, the face of which is provided with a number of openings 12, and having arms 13 formed therewith and  
55 extending rearward thereof, and which support a comparatively large bevel cog-wheel 14, by means of which the shaft 8 and its parts are revolved. A series of thumb-bolts 15 are inserted in the openings 12, the ends  
60 of which are screwed into clamps 16, by which means the circular disk 11 is firmly clamped upon the annular rim 17 of the fly-wheel.

The double row of openings formed in the face of the disk 11 is for the purpose of ad-  
65 justment, and by which means the same can be clamped to fly-wheels of different sizes.

Encircling the vertical shaft 8 is a collar 18, and to the said collar is fastened a lug 20, upon which the large bevel gear-wheel 14 re-  
70 volves, and which is prevented from moving off the same by the nut 21. A small bevel cog-wheel 22 also encircles the vertical shaft 8, the upper portion of which is provided with  
75 a collar 23, and through said collar is screwed a turn-bolt 24, the end of which bears against the vertical shaft 8 and serves to hold the said small bevel-gear in a working position  
80 with the large bevel gear-wheel 14 and meshing therewith.

25 represents an adjustable collar located upon the upper end of the vertical shaft 8, encircling the same, and made adjustable  
85 thereon by means of a turn-bolt 26. The adjustable collar 25 is provided with four vertical slots 26' of V-shaped construction, the sides of which verge or nearly meet at the outer sur-  
90 face of the said collar and which serves to hold four removable fans 27 when inserted therein. The fans, as shown, are provided with a rounded edge 28 about one-half their width, said  
95 rounded edge being formed by bending the metal around any suitable former, while the lower or remaining portion of the fans is bent flat upon itself, allowing the said portion to  
be freely inserted in the vertical slots 26' of the adjustable collar 25, the rounded portion of the fans resting upon the upper edge of the said adjustable collar.

If found convenient, the large bevel gear- 100



wheel may be cast with the fly-wheel of the sewing-machine, and the small bevel gear-wheel mesh with the same in the before-described manner, thereby dispensing with the disk and its parts.

In operation, to attach the device to a sewing-machine, the base 3 is located upon the stand of the machine in proximity to the fly-wheel, and then the clamps 16 are located on the opposite side the fly-wheel or the arms or spokes thereof, and the thumb screws or bolts 15 are inserted in the openings 12 and their ends screwed into said clamps, care being exercised during this operation that the center of the disk 11 is located in alignment with the center of said fly-wheel. Then by means of thumb screw or bolt 24 the small gear-wheel or pinion 22 is loosened upon the shaft and lowered into position to engage the large wheel 14, where it is to be secured by the same means, as is understood. The fan-holding collar 25 is next to be properly adjusted in position upon the shaft, so as to direct the current of air upon the operator's face, which may be done by manipulating the screw or bolt 26. The devices now being in proper position, as stated, the wings of the fan will be given a comparatively high speed during the ordinary operation of the machine, creating a blast or current of air, as will be understood.

It will be seen that the wings of the fan may be removed when desired and others supplied by simply sliding them upward in their fastenings as far as necessary.

What I claim is—

1. The combination, with a vertical revolving shaft, of a collar carried by the said shaft and having V-shaped slots upon its periphery, and fan-blades having the lower portion of

each of their inner edges bent flat upon itself and contained within the slots in the said collar, the upper portion of each of such edges being rolled back upon itself and rounded, as described.

2. In a fan, the combination, with a sewing-machine having a flanged fly-wheel thereon, of a base having a vertical cavity therein, a shaft stepped in the said base, a disk having perforations in concentric rows therein, bolts passing through perforations of one of the said rows and within the periphery of the fly-wheel, clamps upon the said bolts bearing against the flange of the said fly-wheel, a pinion carried by the said perforated disk, a gear-wheel upon the said shaft engaging the said pinion, and fans carried by the said shaft, as described.

3. In a fan, the combination, with a sewing-machine having a flanged fly-wheel thereon, of a base having a vertical cavity therein, a shaft stepped in the said base, a disk having perforations in concentric rows therein, bolts passing through perforations of one of the said rows and within the periphery of the fly-wheel, clamps upon the said bolts bearing against the flange of the said fly-wheel, a pinion carried by the said perforated disk, a gear-wheel upon the said shaft engaging the said pinion, a collar upon the said shaft having a lug thereon passing through the said pinion, and fans carried by the said shaft, as described.

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

LEOPOLD BERCHER.

Witnesses:

J. P. GREEN,  
JNO. R. MCBRIDE.