(No Model.)

J. S. DETRICK.

Mechanism for Applying Power to Sewing Machines.

No. 230,695. **Patented Aug. 3, 1880.**

Fig. 1.

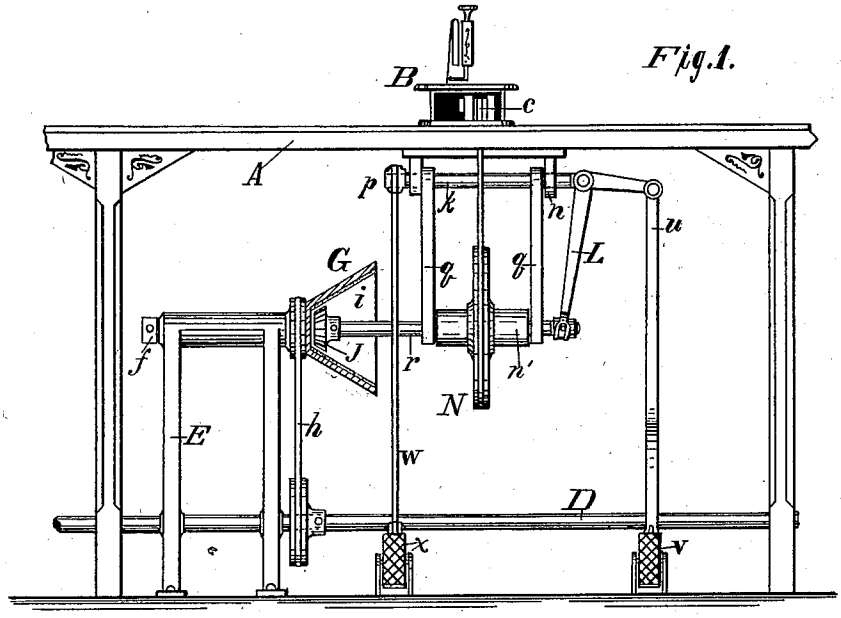
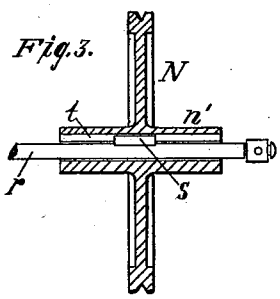


Fig. 3.



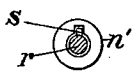


Fig. 4.

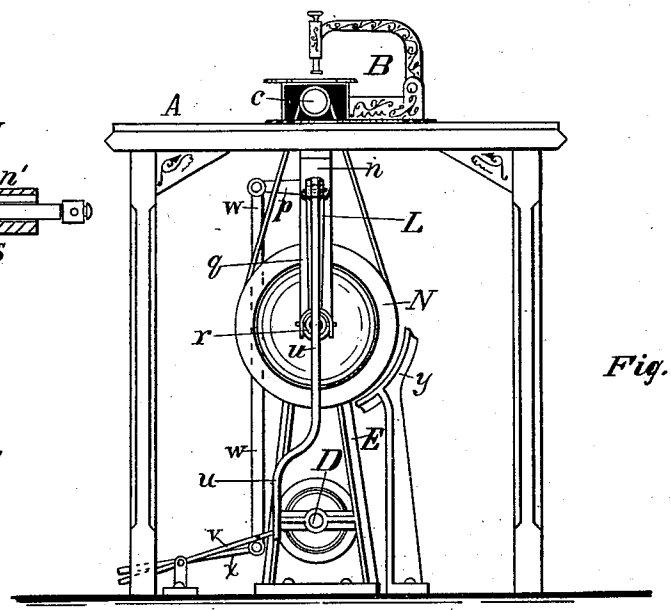


Fig. 2.

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UNITED STATES PATENT OFFICE.

JACOB S. DETRICK, OF BALTIMORE, MARYLAND.

MECHANISM FOR APPLYING POWER TO SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 230,695, dated August 3, 1880.

Application filed April 9, 1880. (No model.)

To all whom it may concern:

Be it known that I, JACOB S. DETRICK, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Mechanism for Applying Power to Sewing-Machines and other Light Machines; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention has particularly for its object to provide means for overcoming certain difficulties in applying motive power to sewing-machines or other light machines used in factories where the machines are run by power other than the foot-treadle.

By means of the combination of mechanism hereinafter described the speed of the machine may be varied and the machine may be stopped almost instantly.

In the drawings hereto annexed, Figure 1 is a front view of a sewing-machine to which my device is applied. Fig. 2 is a side view of same. Fig. 3 is a section of the swinging wheel and the slide-shaft. Fig. 4 is a cross-section view of same.

The letter A designates the table; B, the sewing-machine; *c*, its drive-pulley. D designates the main shaft, driven by power; E, standards supporting a shaft, *f*, which carries a hollow cone-pulley, G. This pulley is driven by a belt, *h*, over a pulley on the main shaft.

The hollow cone-pulley may be faced internally with leather or other material, as at *i*, to prevent the pulley J, hereinafter described, from slipping, and in the present instance said pulley G constitutes the driving-pulley of the mechanism.

A rock-shaft, *k*, is suspended in bearings *n* at the lower side of the table and directly below the drive-pulley *c*, which is above, and said shaft carries an arm, *p*, rigidly secured thereto, and at one end a right-angle lever, L, is pivoted so as to have movement on the pivot in the direction of the length of the shaft. By pivoting the lever to the end of the shaft the long arm will swing as the shaft rocks; but said lever may be pivoted to a hanger separate from the shaft, and so as to permit it to swing, if desired. Two arms, *q*, are keyed or made fast to the rock-shaft, and form a swing which supports a slide-shaft, *r*, on one end of which the beveled pulley J is secured. The shaft *r* has a feather, *s*, (see Figs. 3 and 4,) and carries the pulley N, the hub *n'* of which is bored out so as to permit the shaft to slide through it, and a straight groove, *t*, is cut through the bore.

It is obvious the construction might be reversed—*i. e.*, the groove cut on the shaft and the feather formed in the bore of the hub. As the hub fits between the arms *q* of the swing the pulley N is thereby prevented from lateral movement; but the feather and the groove permit the shaft *r* to slide endwise through the hub, whereby the position of the beveled pulley J may be shifted so as to have it bear against the interior cone driving-pulley G at any point from its inner to its outermost extremity.

At the other end of the slide-shaft one arm of the right-angle lever L is connected in such manner as not to interfere with the rotation of the shaft, and to the other arm of the same lever a rod, *u*, is attached, which rod is operated by the treadle V. From the arm *p* a rod, W, depends, and is operated by the treadle *x*. A stationary brake, *y*, is supported in any suitable manner in such position that when the toe part of the treadle *x* is depressed the pulley N will thereby be swung against the brake, causing the machine to stop almost instantly.

By the construction herein described the machine is started by depressing the heel part of the treadle *x*, thereby bringing the beveled pulley J in contact with the hollow cone-pulley.

The speed is varied by means of the treadle *v*. The depression of the toe part of the treadle has the effect to slide the shaft *r* toward the hollow cone G, which brings the beveled pulley J at that point of the hollow cone where the diameter is smallest and the speed imparted to the beveled pulley is lessened. The depression of the heel part of the treadle moves the beveled pulley in the opposite direction, and its contact with the hollow cone is at that point where the latter's diameter is largest and the speed of the beveled pulley is increased.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the pulley N, a horizontal rotary shaft, *r*, adapted by means of a groove and feather, arranged substantially as described, to permit the shaft to slide through the hub of the pulley, a right-angled lever having one arm connected to the shaft in such manner as to permit the latter to rotate, a rod, *u*, connected to the other arm of the lever, and a treadle, as set forth.

2. The combination of the horizontal rock-shaft *k*, having an arm, *p*, a rotary shaft suspended from the rock-shaft by arms *q*, a pulley mounted on the rotary shaft between the arms and secured by means of a groove and feather, a treadle, *x*, a rod connecting the arm on the rock-shaft with the treadle, a right-angled lever having one arm connected to the rotary shaft, a treadle, V, and a rod connecting the other arm of the lever with the treadle, as set forth.

3. The combination of a horizontal rock-shaft, *k*, having an arm, *p*, a rotary shaft suspended from the rock-shaft by arms *q*, a pulley mounted on the rotary shaft between the arms, a treadle, *x*, a rod connecting the arm on the rock-shaft with the treadle, and a stationary brake placed opposite the pulley, as shown and described.

4. In mechanism for varying speed, a hollow funnel-shaped pulley, G, having internal straight sloping sides, and a bevel-faced pulley, J, having the bevel to correspond with the slope of the internal shape of the hollow pulley and of lesser size than the smallest internal part of said pulley, as shown and described.

5. In mechanism for varying speed, a hollow funnel-shaped pulley, G, having internal straight sloping sides, and a bevel-faced pulley, J, having the bevel to correspond with the slope of the internal shape of the hollow pulley, a horizontal shaft on which one of said pulleys is mounted, a pulley, N, mounted on the shaft, and secured by means substantially as described, whereby the shaft may slide through the hub of the pulley, as set forth.

6. In mechanism for varying speed, a hollow funnel-shaped pulley, G, having internal straight sloping sides, and a bevel-faced pulley, J, having the bevel to correspond with the slope of the internal shape of the hollow pulley, a horizontal shaft on which one of said pulleys is mounted, a pulley, N, mounted on the shaft, and secured by means substantially as described, whereby the shaft may slide through the hub of the pulley, and a lever connected to the shaft in such manner as to permit the latter to rotate, as set forth.

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

JACOB S. DETRICK.

Witnesses:
CHAS. B. MANN,
JNO. T. MADDOX.