J. S. DETRICK.

Belt Gearing and Shifting Mechanism for Applying Driving Power with Varying Speed.

No. 223,119. **Patented Dec. 30, 1879.**

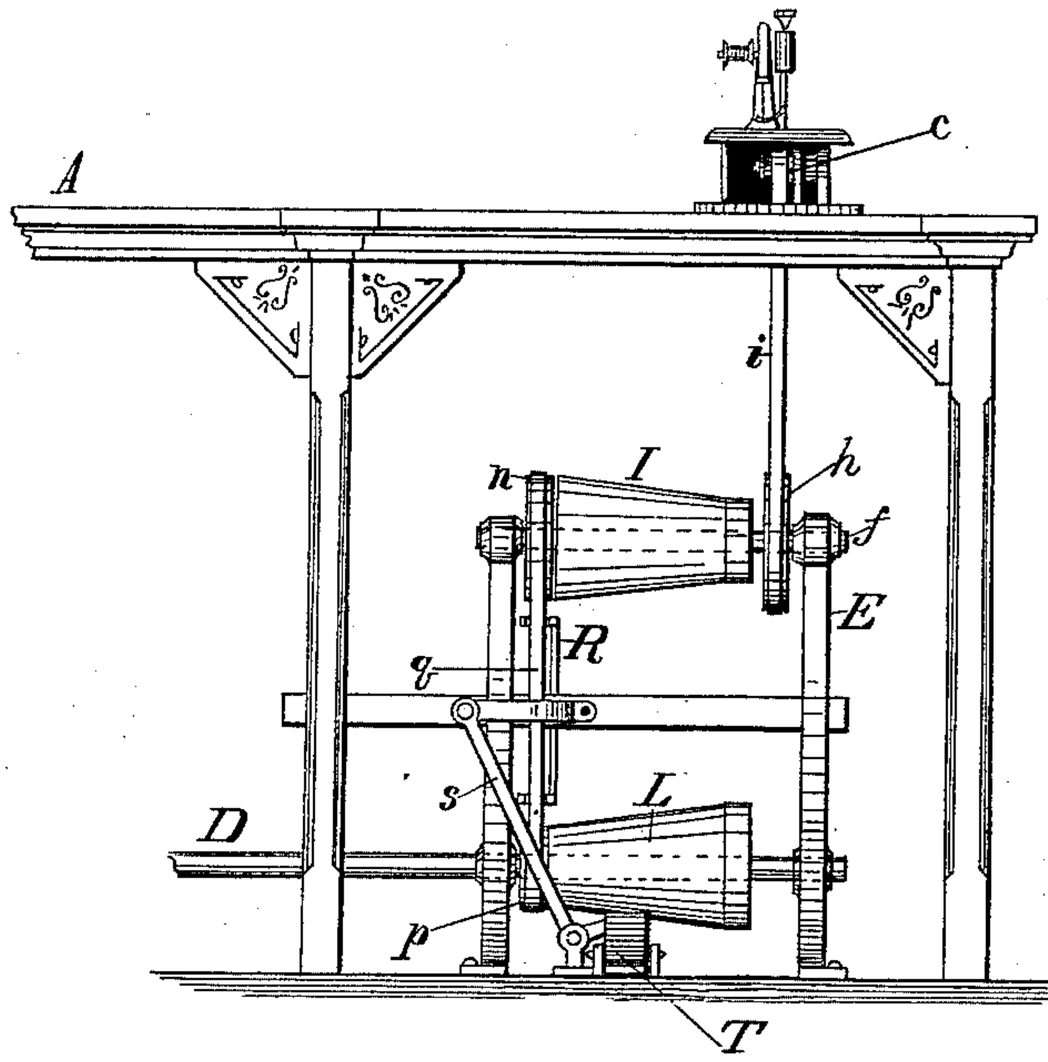

Fig. 1.

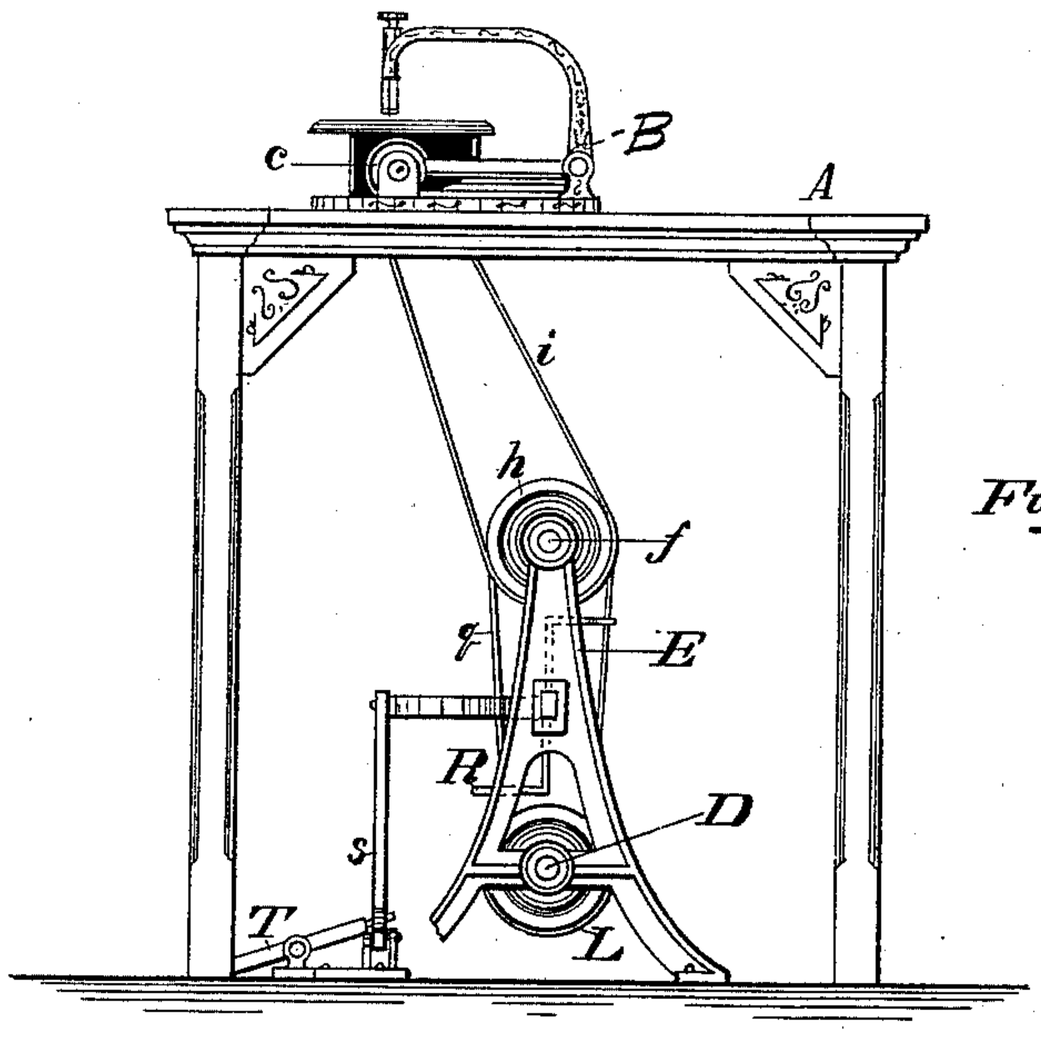

Fig. 2.

Witnesses:

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JACOB S. DETRICK, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN BELT GEARING AND SHIFTING MECHANISM FOR APPLYING DRIVING-POWER WITH VARYING SPEED.

Specification forming part of Letters Patent No. **223,119,** dated December 30, 1879; application filed November 7, 1879.

To all whom it may concern:

Be it known that I, JACOB S. DETRICK, of the city of Baltimore and State of Maryland, have invented a new and useful Improvement in Belt Gearing and Shifting Mechanism for Applying Driving-Power with Varying Speed, of which the following is a specification.

My invention has for its object to provide means for overcoming certain difficulties in applying motive power to sewing-machines or other machines used in manufactories where a large number of machines are run by steam or some power other than the foot-treadle. One of the difficulties referred to which the devices at present in use are the cause of is when the machine is started the moving parts have a too sudden impetus given them, which jerks and racks all parts of the machine. By the combination of the mechanism hereinafter described with the drive-pulley of a sewing-machine this difficulty is obviated.

Figure 1 is a front view of a sewing-machine table as used in factories. Fig. 2 is a transverse 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 which support the horizontal shaft *f*, whereon is placed a pulley, *h*, over which a belt, *i*, passes to the drive-pulley. Upon this shaft a cone-pulley, I, is secured and a loose pulley, *n*, is affixed, so that a belt may be shifted therefrom onto the large end of the cone.

The upper shaft and cone may be suspended from the table by hangers, for which purpose the standards E will serve by simply inverting them. Upon the main shaft another cone-pulley, L, is secured, terminating at its small end in a straight-faced section, *p*, cast integral with the main cone part. A belt, *q*, passes over the part *p* of lower cone and over the loose pulley *n* on the upper shaft. This belt is adapted to be shifted from the above-named position, to start the machine at first slowly by means of the belt-shifter R, which is actuated by gradually depressing one end of the foot-treadle T, which is placed in convenient position for the operator.

The depressing of the inner end of the treadle lowers the horizontal arm of the bell-crank lever *s* and causes the vertical arm of said lever to move the shifter. Thereby the belt is gradually shifted to the position at which it is designed to run the machine, and in the transition of the belt all jerking of the parts is avoided.

Other forms of belt-shifters may be employed, and they may be operated by means other than the foot-treadle.

Having described my invention, I claim and desire to secure by Letters Patent—

1. The combination, with the drive-pulley and belt of a sewing or other machine, of the cone-pulley L, terminating at its small end in a straight-faced section, *p*, cast integral therewith, the cone-pulley I, having at its large end a loose pulley, *n*, and the belt *q* passing over the pulleys, as set forth.

2. In combination, the cone-pulley L, terminating at its small end in a straight-faced section, *p*, cone-pulley I, having at its large end a loose pulley, *n*, a belt passing over the pulleys, and a belt-shifter, as set forth.

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Witnesses:

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