

J. A. SMITH.
Sewing-Machines.

No. 140,654.

Patented July 8, 1873.

Fig. 1.

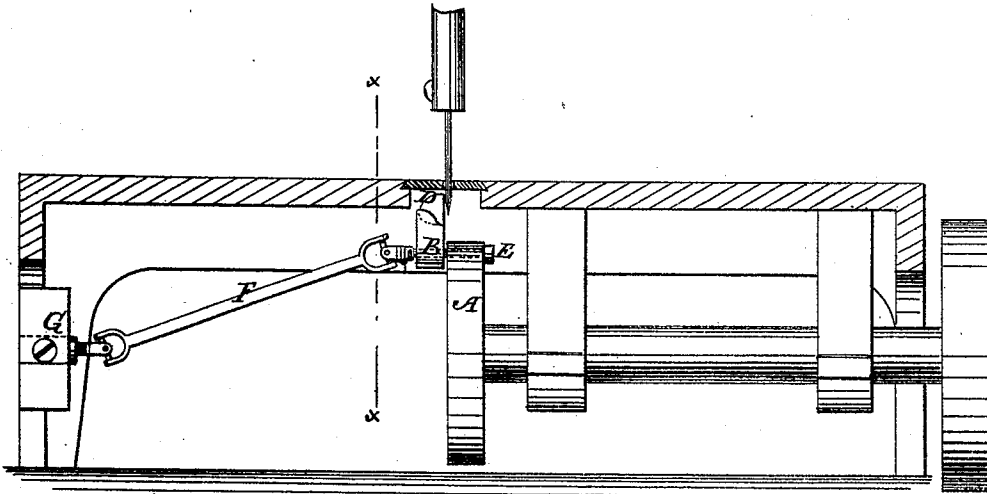
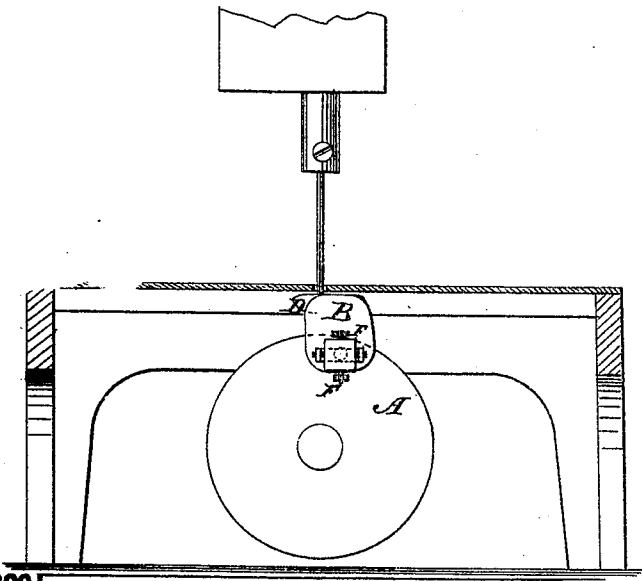


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN ALBERT SMITH, OF COLUMBUS, OHIO.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **140,654**, dated July 8, 1873; application filed April 12, 1873.

To all whom it may concern:

Be it known that I, JOHN A. SMITH, of Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Improvement in Sewing-Machine Shuttle-Motion, of which the following is a specification:

My improvement consists in a new combination of machinery, by which rotary motion is imparted to the shuttle. The object of my invention is to lessen friction and save power, by not having to overcome momentum, thereby lessening the power necessary to work the machine, and the noise and jarring incident to vibratory or walking motion.

Several machines have been patented in which the shuttle is driven in an elliptical or circular path; but this is imparted by means of rods or shafts, which themselves have a vibratory or walking motion. I dispense with all vibratory motion, obtaining by my combination nothing but rotary or curvilinear motion.

When vibrating shafts are used to impart rotary motion to the shuttle, either more shafts and pivots than I employ are required, or else a slotted bar working back and forth upon a pin is used. In either case the machine is less simple, more expensive, and the friction in working greater than in my construction; besides, the motion of these has to be reversed twice for every stitch taken, and their momentum has as often to be overcome. This materially increases not only the amount of power required to work the machine, but

also the noise and jarring when rapidly operated.

Figure 1 is a longitudinal sectional elevation of part of a sewing-machine with my improved shuttle-motion, and Fig. 2 is a transverse section taken on the line *x x* of Fig. 1.

A is the rotary disk for carrying the shuttle-carrier B. It is mounted on the end of the pulley-shaft C, and is arranged with its face, to which the carrier is pivoted, in the plane of the needle, so that the carrier will pass the needle close to its side, suitably for passing the shuttle D through the loop. The carrier is connected to it by the pin E, which is fitted into the disk so as to turn therein, or so that the disk can revolve without turning the pin, and it is connected by a universal joint with the rod F, which is similarly jointed to the frame at G, so that it can swing with the pin around the axis of the shaft, but not turn itself, and thus prevent the carrier from turning as it swings around with the disk.

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

The combination of the disk A, shuttle-carrier B, pin E, and the rod F, said rod being jointed to the pin or shuttle-carrier and to the frame, all substantially as described.

JOHN ALBERT SMITH.

Witnesses:

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