2 Sheets—Sheet 1.

J. L. FOLLETT.
Sewing-Machine.

No. 203,905. Patented May 21, 1878.

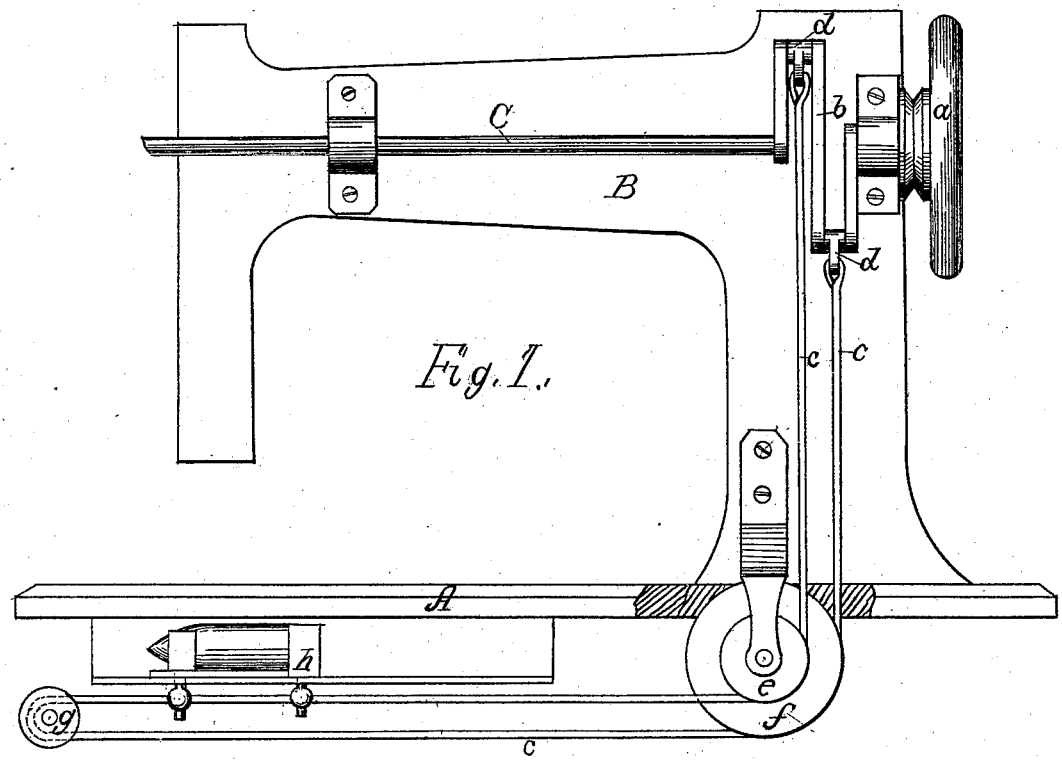

Fig. 1.

Witnesses:
M. George
Jno. D. Patten

Joseph L. Follett
Inventor:
by his attorney
W. Bailey

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

J. L. FOLLETT.
Sewing-Machine.

No. 203,905. Patented May 21, 1878.

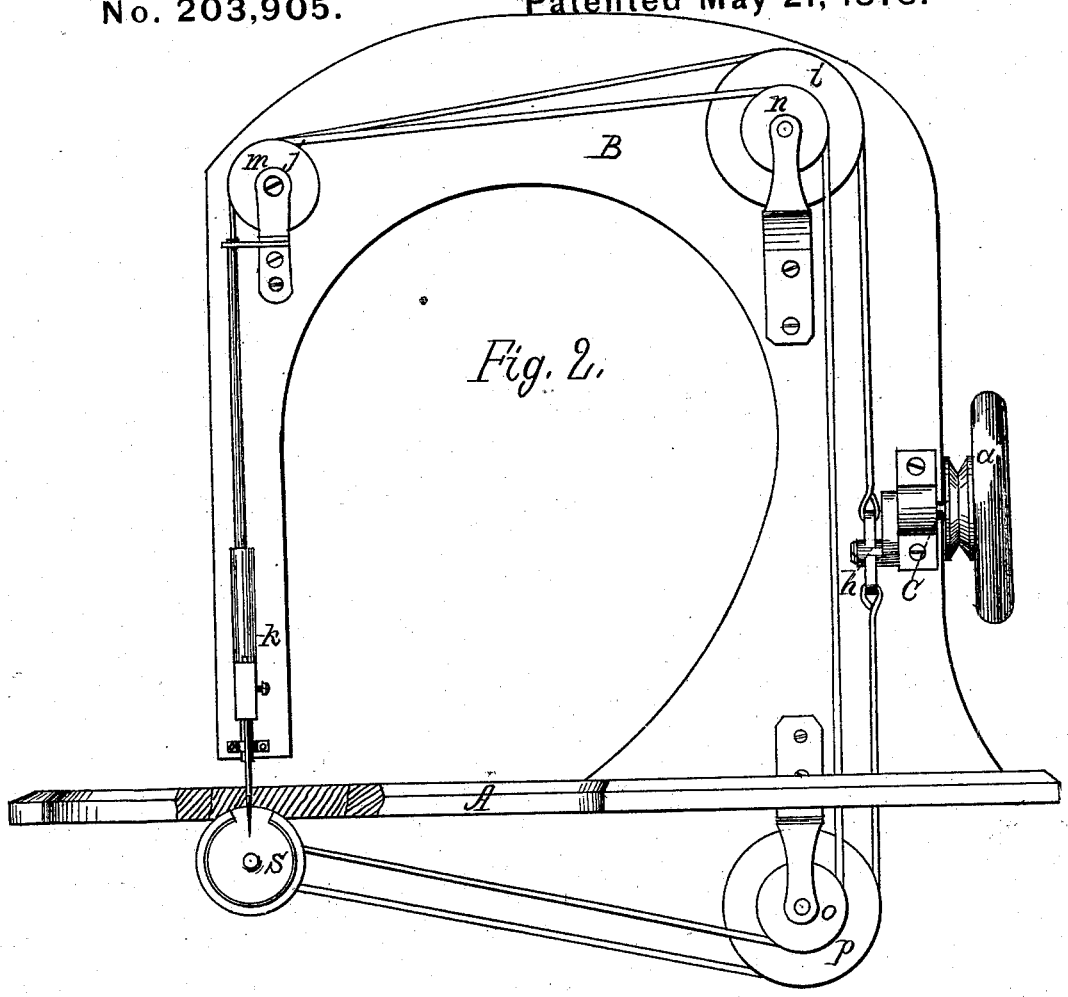

Fig. 2.

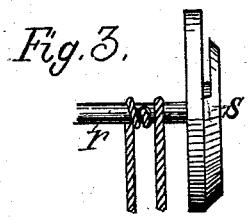

Fig. 3.

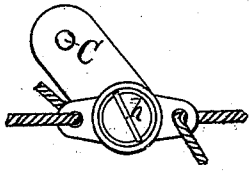

Fig. 4.

Witnesses:
Wm. Georgii
Jno. D. Patten

Joseph L. Follett
Inventor:
by his attorney
W. Baily

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH L. FOLLETT, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **203,905**, dated May 21, 1878; application filed March 8, 1878.

To all whom it may concern:

Be it known that I, JOSEPH L. FOLLETT, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification:

My present invention has reference to means for operating the stitch-forming devices of sewing-machines, particularly the hook or other under device—that is to say, a device below the cloth-plate—which co-operates with the needle. In another application for Letters Patent, now pending, I have shown and described the combination of a needle bar or holder, with cording, banding, or its equivalent, which receives a positive reciprocatory movement from some moving part of the machine, and transmits the same to the needle bar or holder. I now propose to operate in the same way the shuttle, hook, or equivalent device; and, by equivalent, I here intend any reciprocating or oscillating under device which co-operates with the needle to make the stitch.

The nature of my present improvement, and the manner in which the same is or may be carried into effect will be understood by reference to the accompanying drawing, in which—

Figure 1 is a side elevation of a mechanism embodying in one form my improvement, only so much of the sewing-machine being represented as needed for the purpose of explanation. Fig. 2 is a side elevation of a modified arrangement of mechanism. Figs. 3 and 4 are views of detached parts, hereinafter referred to.

In Fig. 1, A represents the cloth-plate of a sewing-machine, and B the goose-neck. C is the upper rotary shaft, which communicates movement to the reciprocatory needle-bar (not shown) in any ordinary or suitable manner, as will be understood without further explanation. The shaft receives rotary movement from the prime mover by means of belting, which passes over the grooved fly or hand wheel *a* on said shaft. The shaft is also provided with a double crank, *b*, to the respective arms of which are connected the two ends of the cording or banding *c*, which are attached to sleeves or thimbles *d*, mounted loosely on the crank-pins. The cording passes down under the cloth-plate, under the loose or idle pulleys *e f*, and thence around the loose pulley *g*, and is attached to the shuttle-carrier *h*, which is arranged to slide back and forth in suitable guides in the usual way.

When the upper shaft is revolved a positive movement of reciprocation will be imparted to the cording, and, through the cording, will be transmitted to the shuttle-carrier, to which said cording is attached.

In Fig. 2 I have shown an arrangement in which both the needle and the shuttle or its equivalent are operated by means of banding, deriving its reciprocatory movement from one crank-shaft. In this arrangement, A indicates the cloth-plate, and B the goose-neck, of a sewing-machine. C is the intermediate crank-shaft, operated, by a suitable prime mover, through the intermediary of belting passing around its grooved hand or fly wheel *a*. On the crank is mounted loosely a thimble or sleeve, *h*, to which are attached the two ends of the cording or banding, as shown. The arrangement of the cording or banding is as follows: Starting from the top of sleeve *h*, it passes up over a loose pulley, *i;* thence over a loose pulley on axis *j*, in rear of the loose pulley *m* on the same axis; thence down under a loose pulley, K, and thence to the reciprocating needle-bar, to which it is attached firmly; thence up over pulley *m*, and backward to loose pulley *n;* thence downward below the cloth-plate, and around a loose pulley, *o;* thence around the axis or shaft on which the hook *s* is mounted. The cord is made fast to said shaft, and thence is led backward around a loose pulley, *p*, and upward to the under part of the sleeve *h*, to which it is secured.

The cording takes several turns around the axis or shaft of the hook, as shown in Fig. 3, where *r* represents said shaft, this being for the purpose of giving a proper rotation in each direction, amounting to a full revolution, or little more than one revolution of the hook. The cord is secured to the shaft at its central or middle turn or coil.

In Fig. 4 is represented a front elevation of the crank-shaft.

When the shaft is put in revolution it will be seen that a reciprocatory movement will be imparted to the cording, which movement will, by the cording, be transmitted to both hook and needle.

I wish it understood that I do not here claim combining the needle-bar with cording, banding, or its equivalent having reciprocatory movement, for I have made that the subject of a separate application for Letters Patent, hereinbefore referred to.

In Fig. 2 I have represented a hook. It is manifest, however, that any other loop-taking or stitch-forming device acting in conjunction with the needle, and having a reciprocatory or oscillatory movement, may be employed. The same may be said of the shuttle shown in Fig. 1.

I may use any suitable instrumentality for banding or flexible connection—for instance, wire cord, leather, cat-gut, chain, steel band, &c.

The adjustment of the parts is very simple, and is easily effected.

The guide-pulleys over which the cording or banding passes may be made adjustable, to take up slack; or they may be mounted on movable bearings, pressed by springs, so as to tend continuously to tighten and keep under tension the banding.

Having described my improvements, I state, in conclusion, that I do not restrict myself to the details herein shown and described in illustration of my invention; but—

What I claim, and desire to secure by Letters Patent, is—

1. In a sewing-machine, the combination, with the shuttle or equivalent device which co-operates with the needle to form the stitch, of cording, banding, or its equivalent, connected with, and receiving a positive back-and-forth movement from, a rotary double crank or eccentric on the one hand, and on the other hand connected with, and imparting a positive back-and-forth movement to, said shuttle or its equivalent, as set forth.

2. In a sewing-machine, the combination, substantially as set forth, of a needle bar or holder and the shuttle or its equivalent, with cording, banding, or its equivalent connected with, and receiving positive reciprocatory movement from, some moving part of the machine, and imparting said movement to both needle bar or holder and shuttle, or the equivalent thereof, as described.

3. The combination, substantially as described, of the needle bar or holder, the hook or its equivalent, the intermediate crank-shaft, and the cording or banding connecting the said crank-shaft and hook and needle bar or holder, the combination being and acting as set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

JOSEPH L. FOLLETT.

Witnesses:

OSCAR W. ANGEL,

THOMAS F. BYRNE.