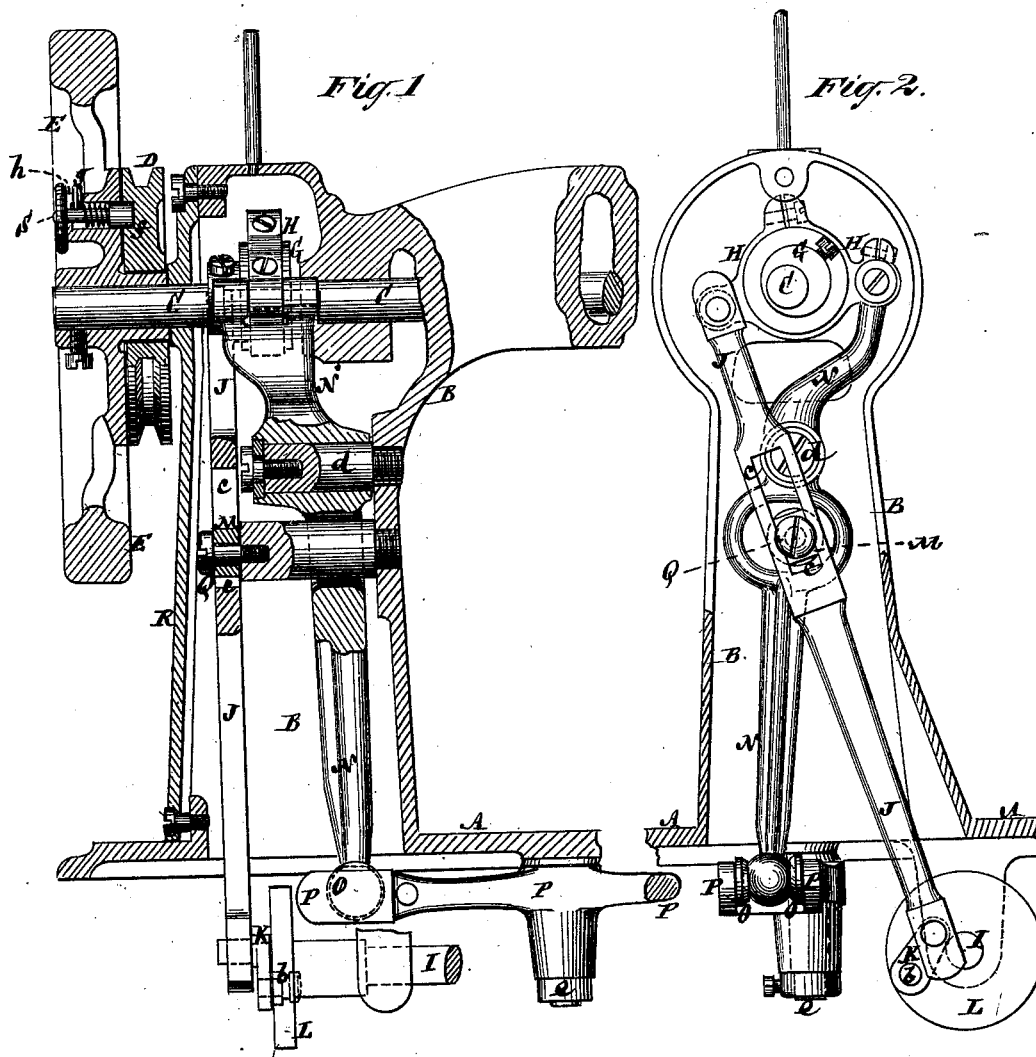


D. W. GOODELL.
Sewing-Machine.

No. 214,903.

Patented April 29, 1879.



Witnesses
John Becker.
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UNITED STATES PATENT OFFICE.

DEXTER W. GOODELL, OF FLORENCE, MASSACHUSETTS, ASSIGNOR TO
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IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **214,903**, dated April 29, 1879; application filed
September 6, 1878.

To all whom it may concern:

Be it known that I, DEXTER W. GOODELL, of Florence, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

The invention consists in certain novel combinations of devices with the main shaft which actuates the needle-bar, shuttle, and feeder, whereby motion is transmitted by an eccentric in a smooth, positive, and easy manner from the main shaft to the feed-shaft and shuttle-carrying lever.

The accompanying drawings only illustrate so much of a sewing-machine as is necessary to explain my invention, the remaining portion of the machine not necessarily differing from that of other shuttle-machines, in which the shuttle-driving lever and feed-shaft arranged below the bed are operated by connections with a needle-operating shaft in the arm or goose-neck of the machine.

Figure 1 represents a mainly sectional side elevation of the rear portion of a shuttle or double-thread sewing-machine having my invention applied; and Fig. 2 a partly-sectional rear elevation of the same, with the balance-wheel and driving-pulley of the machine, also a plate which covers a rear opening in the goose-neck or arm on the bed, removed.

A is the bed of the machine, and B the fixed arm or goose-neck mounted thereon. C is the main shaft, arranged to work within said arm or goose-neck, and serving to communicate motion to the needle-bar, the shuttle-carrying lever, and the feeding device of the machine. D is the driving-pulley, which may, if desired, be arranged loose on the shaft C, or on the hub of a balance-wheel, E, which is fast on said shaft, and is provided with a spring-catch or coupling-pin, S, that engages with any one of a series of apertures, *f*, in the driving-pulley D, when it is required to have the pulley D drive the shaft C; but this special construction of the driving-pulley, and means providing for its engagement with and disengagement from the main shaft, forms no part of this in-

vention. Secured on the shaft C, within the rear upright portion of the arm B, is an eccentric, G, on which is fitted a yoke, H, for actuating both the feeding device and the shuttle-carrying lever.

I is the feed-shaft, to which rotary motion for actuating the feeder of the material under operation is communicated as follows: J is a connecting-rod, pivoted at its one or upper end to the yoke H on one side of the shaft C, and attached at its opposite end to a vibrating crank, K, which has its shaft or center of motion *b* in an arm or disk, L, secured on the feed-shaft I, the shaft or center of motion *b* being in eccentric relation to said shaft.

To rotate the shaft I through or by means of the connecting-rod J and vibrating crank K in a smooth, positive, and easy manner, free from all liability of the feed-shaft moving in a reverse direction, or of the vibrating crank working forward and backward without producing a continuous rotation of the feed-shaft in its requisite direction, the connecting-rod J is fitted to rock upon an intermediate fulcrum, Q, and is guided in direction of its length to provide for the longitudinal movement of the rod by a slide, M, connected with said fulcrum, and working within a slot, *c*, in the rod J; or the rod J might have attached to it the intermediate fulcrum and slide arranged to work within a fixed longitudinal guide.

N is a shuttle-operating lever, having a fixed fulcrum, *d*, in the arm B, and pivoted at its one or upper end to the yoke H on the reverse side of the main shaft C to that on which the connecting-rod J of the feed-operating mechanism is pivoted. The lower or opposite end of this lever N is in free connection by a slide, O, with a shuttle-carrying lever, P, having its fulcrum *e* on the under side of the bed A. The opposite end of the lever P to that which is connected by the slide O with the lever N carries the shuttle.

The rear upright portion of the fixed arm B may be of open construction at its back, and be closed or covered by a removable back plate, R, to provide for access to the mechanism contained within said arm.

I claim—

1. The combination of the driving-shaft C,

the eccentric G, eccentric-yoke H, the feed-shaft I, the rod J, connected at one end with the yoke, and at its other end with the feed-shaft, and a slide connection and fulcrum applied to the connecting-rod, substantially as and for the purpose described.

2. The combination of the driving shaft C, the eccentric G, yoke H, the feed-shaft I, the rod J, connected at one end with the yoke and at its other end with the feed-shaft, and a fulcrum, Q, and a slide, M, connected with the fulcrum, and working in a slot, c, in the connecting-rod, substantially as shown and described.

3. The combination of the eccentric G, driving-shaft C, the crank K, feed-shaft I, the eccentric-yoke H, the shuttle-operating lever N, and sliding connection O with the shuttle-

carrying lever P and connecting-rod J and its fulcrum, substantially as described.

4. The combination of the eccentric G, driving-shaft C, the crank K, the shaft I, the eccentric-yoke H, the shuttle-operating lever N, and the connecting-rod J and its fulcrum and slide connection, substantially as described.

5. The combination of the eccentric G, driving-shaft C, the eccentric-yoke H, the feed-shaft I, connecting-rod J, the slide and fulcrum applied to said rod, the crank K on the feed-shaft, the shuttle-operating lever N, the slide connection O, and the shuttle-carrying lever P, substantially as described.

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Witnesses:

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