

(No Model.)

2 Sheets—Sheet 1.

N. WHEELER & W. F. DIAL.

FEEDING MECHANISM FOR SEWING MACHINES.

No. 331,174.

Patented Nov. 24, 1885.

Fig. 1.

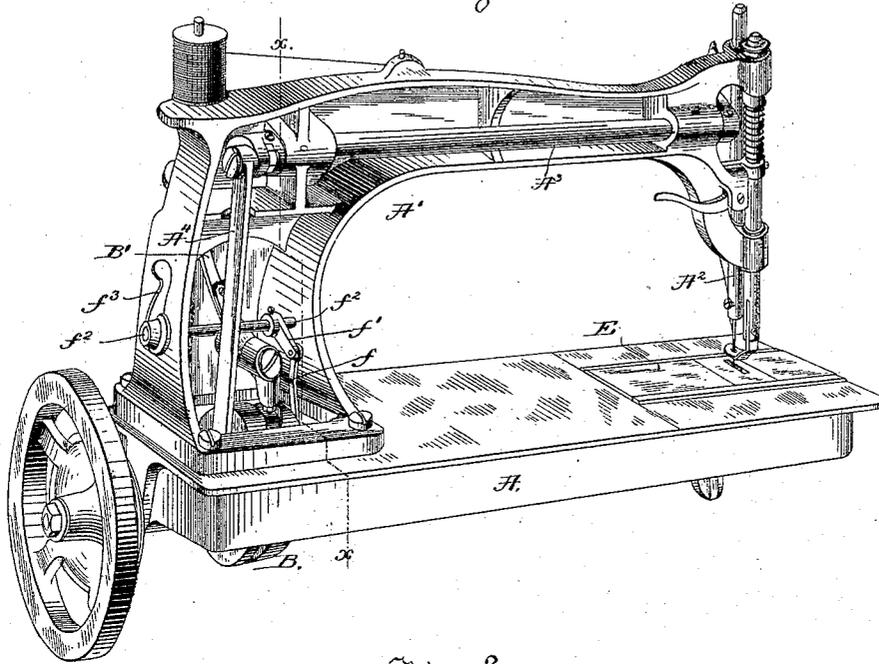
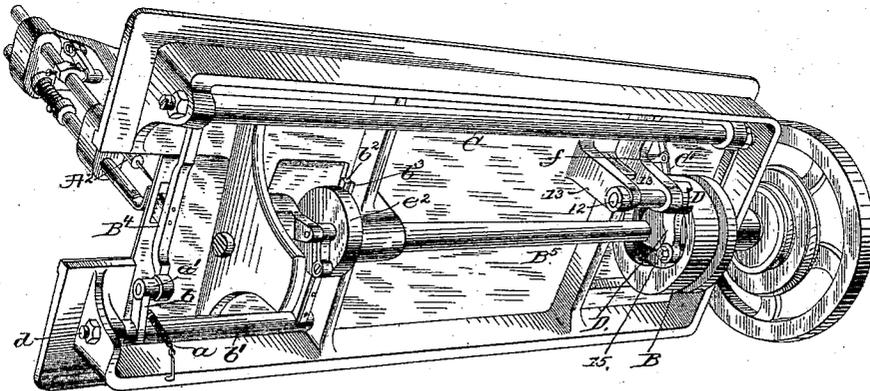


Fig. 2.



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2 Sheets—Sheet 2

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Fig. 3.

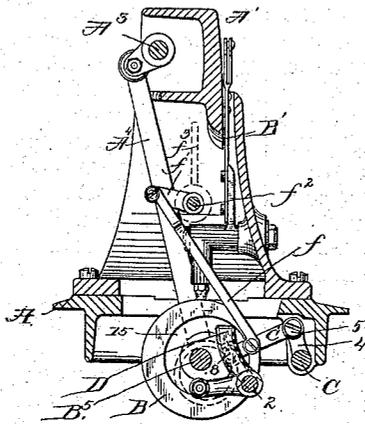
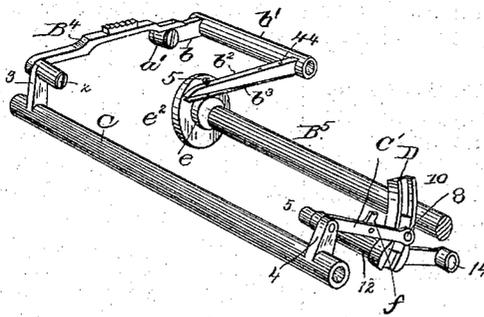


Fig. 4.



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UNITED STATES PATENT OFFICE.

NATHANIEL WHEELER AND WILBUR F. DIAL, OF BRIDGEPORT, CONN., ASSIGNORS TO WHEELER & WILSON MANUFACTURING COMPANY, OF SAME PLACE.

FEEDING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 331,174, dated November 24, 1885.

Application filed July 2, 1885. Serial No. 170,466. (No model.)

To all whom it may concern:

Be it known that we, NATHANIEL WHEELER and WILBUR F. DIAL, both of Bridgeport, county of Fairfield, and State of Connecticut, have invented an Improvement in Feeding Mechanism for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to simplify and improve the feeding mechanism; and it consists, essentially, in a feeding mechanism which includes a rotating shaft located below the bed-plate, a cam thereon, a grooved elbow-lever actuated by the said cam, a link, a rock-shaft having two arms, and a feed-bar, combined with a second rock-shaft having two arms, and a cam to operate it, as will be described; also, in a rotating shaft located below a bed-plate, a cam thereon, a segmentally-slotted elbow-lever to move the said cam, a rock-shaft provided with two arms, a feed-bar, and a second rock-shaft having two arms, and a cam to move the latter shaft, combined with a link having a shoe to enter the slot in the segmentally-slotted elbow-lever and with a link, and a rock-shaft and its arms, to operate substantially as will be described.

Figure 1 in perspective represents a sewing-machine provided with the improved feed herein to be described; Fig. 2, an under side perspective thereof; Fig. 3, a section on the line *x x*, Fig. 1, looking toward the left, the parts being, however, in a different position; and Fig. 4 is a diagram in perspective to illustrate the parts of the feeding mechanism below the bed-plate.

The bed-plate A, overhanging arm A', needle-bar A², needle-bar-actuating rock-shaft A³, link A⁴, the lower end of which embraces an eccentric on the cam-hub B, the shaft B⁵, the take-up B', and the feed-bar B⁴ are all common to the Wheeler and Wilson machine No. 10. The feed-bar B⁴ is connected by screw 2 with the arm 3 of the rock-shaft C, extended longitudinally under the bed to nearly the rear end of the machine, where it has a second arm, 4, connected by a screw, 5, with the link C', provided at its free end with a shoe or pin, 8, which

is made to enter the segmental slot 10 in the arm of the elbow-lever D, the latter having for its center of motion a rod, 12, which has its bearing in the lugs 13, the said slot being extended from end to end of the said arm and across the said rod, to thus enable the feeding of the fabric to be entirely suspended. The elbow-lever D has an arm provided with a roller stud or shoe, 14, (see Fig. 4,) which enters a cam-groove, 15, in the cam-hub B, the rotation of the shaft B⁵ and the said cam-hub attached to it causing the elbow-lever D to be vibrated or moved uniformly at each rotation of the said shaft; but the said lever turns the rocking shaft C a greater or less distance, according to the position of the shoe or pin 8 in the segmental slot 10—the nearer the said shoe or pin to the center line of the rod or shank 12 the less the extent of the rocking movement of the said shaft and the shorter the feed.

The free end of the feed-bar B⁴ is held by a spring, *a*, (see Fig. 2,) down upon a roller, *a'*, on a pin, *a''*, at the end of an arm, *b*, connected with a rocking shaft, *b'*, held at its ends between suitable screws, *d*, one only of which is shown, a second arm, *b''*, (see Fig. 4,) of the said rock-shaft being extended toward the main shaft of the machine and provided with a plate, *b''*, preferably of steel, attached to its under side by screw 44, and made adjustable by an adjusting-screw, 5, the said plate resting upon the cam *e* at the rear side of the crank *e''*, rotation of the screw 5 by a screw-driver, the slide or cover E being removed for the purpose, serving to raise or lower the feed.

The link C' is joined by the connecting-rod *f* with the arm *f'* of the rock-shaft *f''*, held in the upright part of the frame-work, the said rock-shaft at its other end, and preferably at the rear side of the said upright, having a hand-lever, *f''*, by which to turn the rock-shaft *f''*, and thus raise or lower the shoe or pin in the said segmental groove 10, for the purposes described.

In practice the lever *f''* will co-operate with a suitable friction spring or device by which to retain it in the position in which it is left by the operator.

We claim—

1. The main rotating shaft located below the bed-plate, the cam B thereon, the elbow-lever D, grooved as described, and actuated by the said cam, the link C', the rock-shaft C, having the arms 4 and 3, and the feed-bar B', combined with the rock-shaft b', its two arms b b', and the cam e, to operate all substantially as described.

2. The main rotating shaft located below the bed-plate, the cam B thereon, the segmentally-slotted elbow-lever D, moved by the said cam, the rock-shaft C, provided with arms 3 and 4, the feed-bar B', the rock-shaft b', having the arms b and b', and the cam e, combined with the link C', having a shoe to enter the slot of the lever D, and with the link f, rock-shaft f', and its arms f' f', to operate substantially as described.

3. The main shaft, its attached cam-grooved hub, the rock-shaft C, and the feed-bar pivoted to it, and the arm to support the free end of the feed-bar, and the link C', having the shoe or pin, combined with the segmentally-slotted elbow-lever, the connecting-rod extended above the bed-plate, and the rock-shaft f', having arms f' and f', the combination being and operating substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

NATHANIEL WHEELER.
WILBUR F. DIAL.

Witnesses:

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