(Model.)

M. A. DILLEY.

FEED MECHANISM FOR SEWING MACHINES.

No. 263,689. Patented Sept. 5, 1882.

Fig. 1.

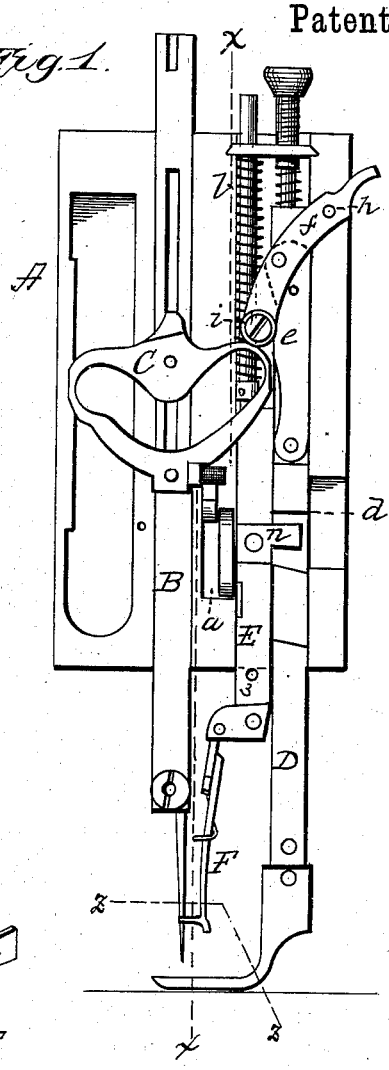


Fig. 2.

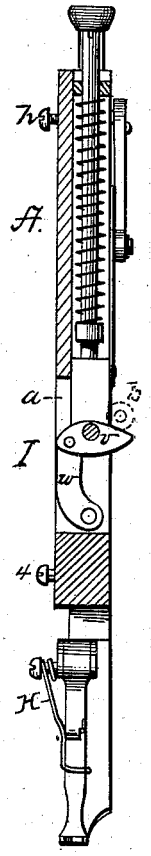
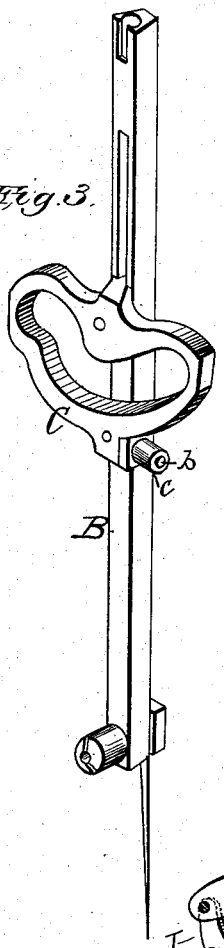


Fig. 3.



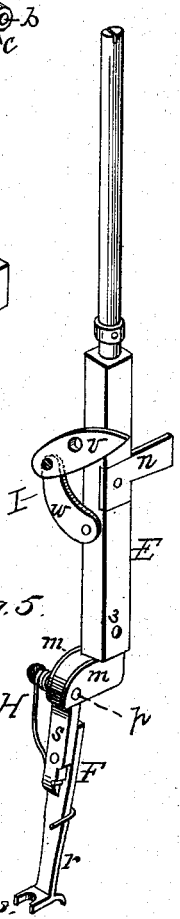


Fig. 5.

Fig. 6.

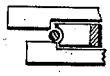
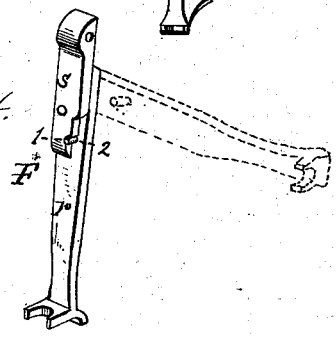


Fig. 4.



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UNITED STATES PATENT OFFICE.

MARTIN A. DILLEY, OF WASEPI, MICHIGAN.

FEED MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 263,689, dated September 5, 1882.

Application filed January 12, 1882. (Model.)

To all whom it may concern:

Be it known that I, MARTIN A. DILLEY, a citizen of the United States of America, residing at Wasepi, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Feed Mechanism for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements for the feed mechanism for sewing-machines as shown and described in United States Letters Patent granted to me October 4, 1881, and numbered 247,750.

My improvement consists in making the face-plate of convenient width to admit the helper or holder bar, and arranging the trip and lever between the helper or holder bar and the needle-bar, whereby in the downward movement the cam-lifter will act upon the trip, thus causing the helper or holder bar to be raised.

My improvement further consists in the lifting device of the presser-bar, so arranged that the long arm of the trip device is pivoted to the face-plate by means of a screw-pin, as will be hereinafter more fully described.

My improvement further consists in the helper or holder being made in two parts and hinged to the lower end of the holder-bar.

My improvement further consists in the helper or holder being made in two parts and hinged to the lower end of the holder-bar, in combination with a spring for maintaining the same in position for action.

My improvement further consists in the cam-lift provided or formed with an anti-friction roller, in combination with a trip device.

My improvement further consists in the novel construction and combination of parts, as will be hereinafter more fully set forth.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front view or elevation of the helper or holder bar mechanism and means for operating the same. Fig. 2 is a sectional view of the same, taken through the line *x x* of Fig. 1. Fig. 3 is a perspective view of the cam-lift with the anti-friction-roller attachment. Fig. 4 is a detached view of the hinged helper or holder foot. Fig. 5 is a perspective view of the helper or holder bar and its attachments, and Fig. 6 is a sectional view taken through the line *z z* of Fig. 1.

In the annexed drawings, the letter A represents the face-plate, formed with a vertical slot, *a*, for the purpose hereinafter stated.

The letter B represents a needle-bar of a sewing-machine of the ordinary construction, to which the cam-lift C is firmly secured. This cam-lift C (see Fig. 3) is formed or provided at its lower end with a journal-bearing, *b*, upon which is mounted the anti-friction roller *c*.

The letter D represents the presser-bar, formed with the shoulder *d*, and provided with the pivoted arm or link *e*, connected at its upper end to the pivoted lever *f*, as seen in Fig. 1 of the drawings. The lever *f*, which works on an axis, *h*, attached to the face-plate, is provided with an anti-friction collar or washer, *i*, at its lower end for engagement with the upper surface of the cam.

The letter E represents the helper or holder bar, (see Fig. 5,) having its upper portion reduced to receive the encircling coil-spring *l*, and at its lower end formed or provided with the ears or arms *m*, serving as means for a hinge or pivotal connection, and also formed or provided with the extension *n*, which engages with the shoulder *d* of the bar D.

To the lower end of the helper or holder bar, between the side ears, *m*, is attached the holder-foot F by means of the hinge-connection *p*. This holder-foot device is composed of two parts, *r* and *s*, pivotally riveted or united together, the part *r* being formed at its base with a slot for the passage of the needle, and a heel similar to that shown in my patent hereinbefore referred to. The upper portion of the part *s* is formed with an eye to form the hinge-connection, through the means of a pin or pivot, to the arm *m* of the bar E. One end of the pivot forming the hinge-connection is extended or prolonged, as seen in Fig. 2 of the drawings, and around which is wrapped or coiled and secured one end of the spring H, and the op-

posite end of which is extended downward, and is curved around so as to embrace the part *r* of the holder-foot, and serves the office of a tension in retaining the holder-foot to the needle for action. The lower end of the part *s* is formed with a notch or shoulder, 1, which engages with a little pin or stud, 2, attached to the portion *r*, for the purpose of maintaining the parts in a vertical plane, in connection with the connecting-rivet and spring. This mode of connecting the parts *r* and *s* permits the part *s* to be swung or lifted to one side, as indicated by the dotted lines in Fig. 4 of the drawings.

The lower end of the helper-bar is formed with a hole, 3, which, when the said bar is raised to its highest point, receives the inner end of the set-screw 4, and thus retains the helper or holder foot from contact with the fabric or the sewing-machine table. In the front of the face-plate is also the set-screw *h*, which extends through the long arm of the trip *f* and serves to retain the trip *f* in position, or, under the circumstances hereinafter mentioned, is to be unscrewed.

It will be observed that the face-plate is made wide enough to admit the holder-bar, and the trip and lifter are placed between it and the needle-bar, the cam of which is provided with a roller, which, in its downward movement, acts upon the trip, causing the bar to rise.

The letter I represents the trip device, composed of the curved vertical arm *w*, pivotally connected to the helper-bar E, and the transverse arm *v*, pivoted to the upper end thereof, and also to the face-plate within the slot *a*, as shown in Fig. 2, and so arranged that the free end of the transverse arm *v* reaches under and engages with the anti-friction roller of the cam-lift C.

It will also be observed that there are some attachments—such as foot hemmers, gatherers, rufflers, &c.—used on sewing-machines, which make it necessary to disconnect this mechanism during the time such attachments may be in use. To meet this I have provided ready and convenient means for the purpose. Therefore to disconnect the presser-bar unscrew the set-screw *h* in the face-plate until the long end or arm of the trip is released, and to disconnect the holder or helper foot raise it to the highest point, when the hole 3 will register with the set-screw 4, which screw in place, then press back the spring of the foot, draw the foot to one side, and the device is disconnected, and by disengaging the free end of the spring H from the holder or helper foot and turning it to one side the holder or helper foot can be thrown back and free access had to the needle for threading and other purposes.

The same kind of a lift-lever is used as shown in my patent heretofore mentioned.

The operation of this mechanism is substantially the same as that fully described in my Letters Patent heretofore referred to.

I reserve the right to vary the construction and arrangement of the parts without departing from the spirit of the invention.

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

1. A cam-lift, C, provided at its lower end with a journal-bearing and an anti-friction roller, substantially as described.

2. A cam-lift provided at its lower end with a journal-bearing and an anti-friction roller connected to a needle-bar, in combination with a helper or holder bar and holder-foot with a trip device, operating substantially as described.

3. A helper or holder bar having its upper portion reduced in diameter to receive a surrounding coil-spring, and at its lower end with arms for a hinge-connection, substantially as described.

4. A helper or holder bar having its upper portion reduced in diameter to receive a surrounding coil-spring, and its lower end with arms for a hinge-connection, and with a lateral arm or extension, *n*, substantially as and for the purpose set forth.

5. A hinged helper or holder foot composed of the two parts *r* and *s*, substantially as described.

6. The combination of a needle-bar and its needle, the helper or holder bar E, having hinged thereto at its lower end the hinged holder-foot F, spring H, and operating mechanism, substantially as described.

7. The presser-bar D, formed with the shoulder *d*, and provided with the connecting arm or link *e* and lever *f*, substantially as and for the purpose set forth.

8. The combination, with the needle-bar and its cam-lift C, of the presser-bar D, provided with the connecting link or arm *e*, pivoted lever *f*, and anti-friction roller *i*, substantially as described.

9. In a sewing-machine, the combination of a needle-bar having attached thereto a cam provided with an anti-friction roller, a helper-bar with a hinged helper-foot, a trip device, and a presser-bar and its foot, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MARTIN A. DILLEY.

Witnesses:
JULIEN B. ANDERSON,
N. H. ANDERSON.