

(No Model.)

2 Sheets—Sheet 1.

C. M. DEWEY.
SEWING MACHINE.

No. 326,724.

Patented Sept. 22, 1885.

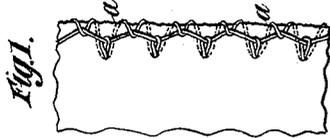
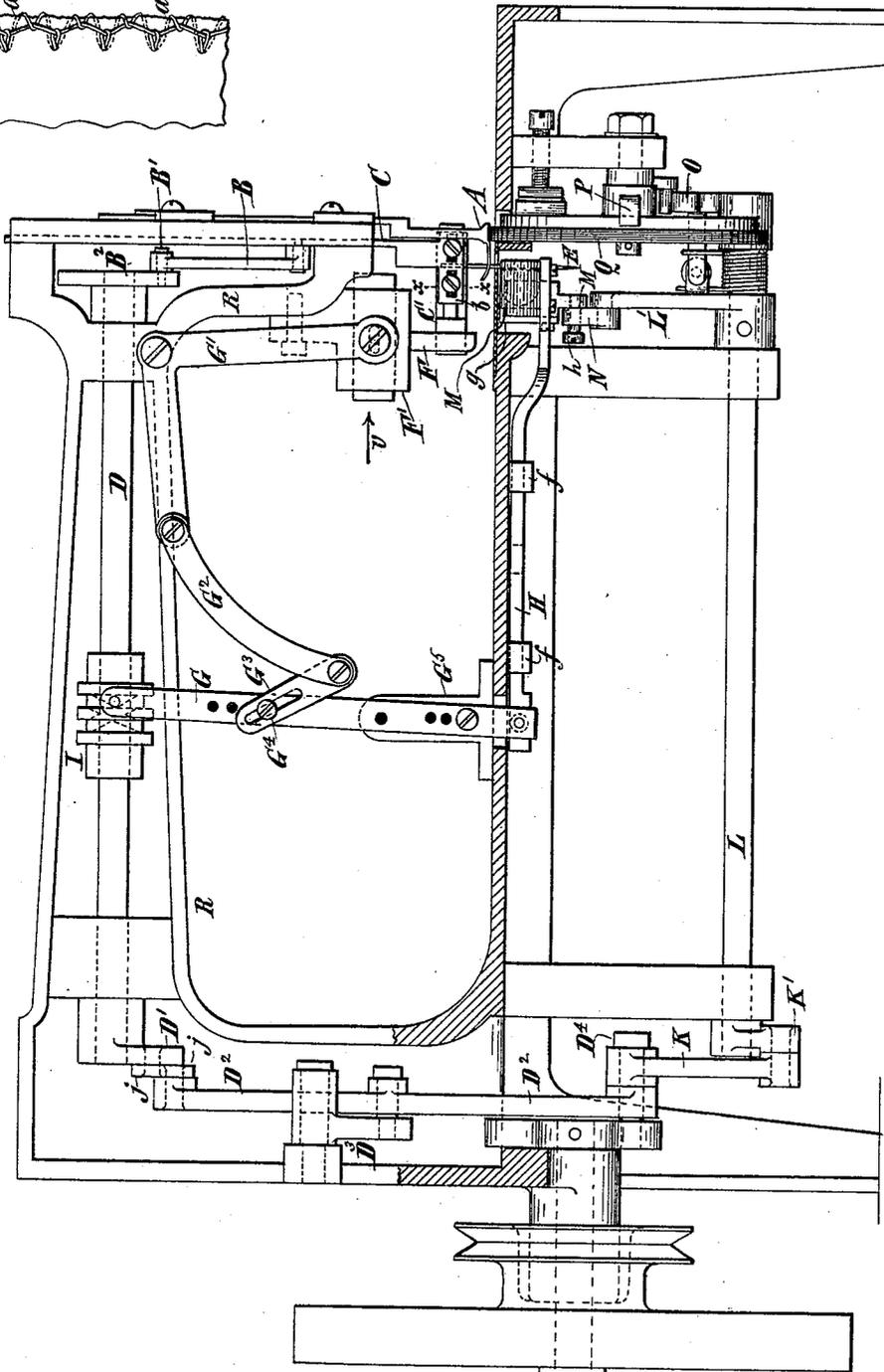


Fig. 2.



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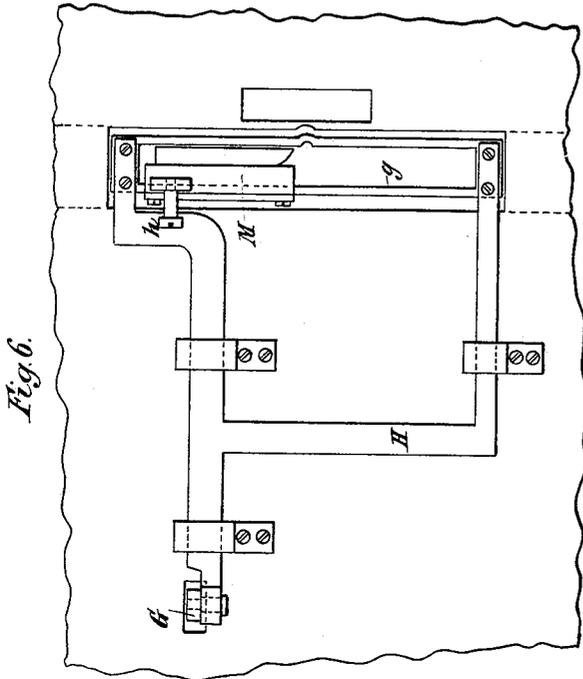


Fig. 6.

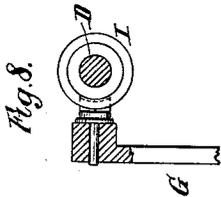


Fig. 8.

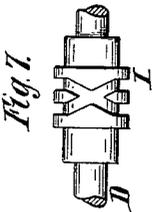


Fig. 7.

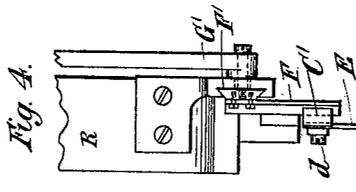


Fig. 4.

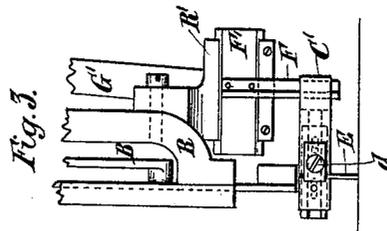


Fig. 3.

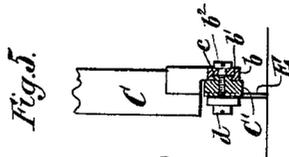


Fig. 5.

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UNITED STATES PATENT OFFICE.

CHARLES M. DEWEY, OF JERSEY CITY, NEW JERSEY.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 326,724, dated September 22, 1885.

Application filed December 27, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. DEWEY, of Jersey City, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Sewing-Machines, of which the following is a specification.

My improvement relates particularly to a sewing-machine whereby the serging or over-sewing of the cut edges of cloth with zigzag stitches may be performed.

In the accompanying drawings, Figure 1 is a face view of a piece of cloth serged according to my improvement. Fig. 2 is a sectional side view of a sewing-machine for serging the cloth. Fig. 3 is a view of certain parts, showing the opposite side to that which is illustrated in Fig. 2. Fig. 4 is a view of certain parts looking in the direction indicated by the arrow *v*, Fig. 2. Fig. 5 is sectional view of certain parts taken transversely to the length of the machine and at the plane of the dotted line *x*, Fig. 2. Fig. 6 is an inverted plan or under side view of certain parts. Fig. 7 is a side view of a cam used in the machine, and Fig. 8 is an end view of the cam and a sectional view of parts deriving motion therefrom.

Similar letters of reference designate corresponding parts in all the figures.

The piece of cloth shown in Fig. 1 is represented as having one of its cut edges serged by sewing over the same with zigzag stitches *a*. As here shown, these are lock-stitches, owing to the employment of a shuttle-thread in conjunction with a needle-thread in sewing them. These stitches preclude the cloth from tearing out or unraveling, and thus enable it to be united to another piece closer to the edge than otherwise would be practicable.

I will now describe the machine shown in the other figures of the drawings.

The frame may be of any suitable form, and comprises an arm, *R*.

A is the presser-foot bar. This bar may be made and operated in the ordinary manner. Any suitable tension devices may be employed.

C designates the main section of the needle-bar. This section is like an ordinary needle-bar, and is reciprocated up and down through the agency of a rotary shaft, *D*. A pitman, *B*, connected pivotally at one end to a wrist, *B'*, extending from a disk, *B''*, which is affixed

to the shaft *D*, and at the other end to the section *C* of the needle-bar, transmits motion to the latter from said shaft. At the lower end the section *C* of the needle-bar is provided with a horizontally-extending bar, *b*. On this horizontally-extending bar *b* fits the lower section, *C'*, of the needle-bar. This lower section of the needle-bar has a rib, *c*, which fits into a groove, *b'*, in the bar *b*. Screws *b''*, passing through a slot in the bar *b* and entering the section *C'* of the needle-bar, hold the two parts together, but nevertheless permit a horizontal movement of the section *C'* of the needle-bar relatively to the bar *b*. The needle *E* is secured to the section *C'* of the needle-bar by a clamping-screw, *d*, or other suitable means. It must be understood that the lower section, *C'*, of the needle-bar reciprocates horizontally to and fro, and also reciprocates up and down with the main section of the needle-bar. The section *C'* of the needle-bar has a vertical groove which fits a rod, *F*, extending downwardly from a horizontally-movable slide, *F'*. The slide *F'* is of dovetail shape and fits in a dovetail groove in an extension, *R'*, from the arm *R* of the frame. The extension *R'* is shown as made separately from the frame *R*, and secured thereto by a screw or screws. It may, however, be made integral. The movement of the slide *F'* causes the horizontal reciprocating movement of the section *C'* of the needle-bar.

The slide *F'* derives its motion from a bell-crank lever, *G'*, which is fulcrumed at the middle to the arm *R* of the frame of the machine, connected pivotally at one end to the slide *F'*, and at the other end to a link, *G''*. The link *G''* is pivotally connected at one end to the bell-crank lever *G'*, and at the other to an arm, *G''*, projecting from a lever, *G*. The arm *G''* is adjustably connected to the lever *G* by means of a screw, *G''*, passing through a longitudinal slot in the arm and entering a tapped hole in the lever. The lever *G* is fulcrumed to a standard, *G'''*, extending from the bed of the frame of the machine. The lever extends through the bed, and below the latter is connected pivotally to a sliding frame, *H*. This sliding frame reciprocates in the same directions and at the same times as the lower section, *C'*, reciprocates horizontally. It works in bearings *f*, affixed to the under

side of the bed. The shuttle-race *g* forms part of it; hence the shuttle is reciprocated to and fro horizontally when the lower section, *C'*, of the needle-bar and the needle are reciprocated horizontally; and this motion of the shuttle with the race is, of course, additional to the ordinary motion of the shuttle along the race. The lever *G* has motion imparted to it by means of a cam, *I*, affixed to the shaft *D*. The shaft *D* has affixed to one end a crank, *D'*. This crank *D'* has pivotally connected to it by a link, *j*, one end of a combined link and lever, *D²*, which between the ends is fulcrumed to a swinging arm, *D³*, and at the other end is connected with a crank-wrist, *D⁴*, carried by a driving-shaft, *J*. The driving-shaft *J* is provided with a fly-wheel, and also with a belt-pulley, through the agency of which it may derive motion. The crank-wrist *D⁴* has also connected to it one end of a link or rod, *K*, which at the other end is connected to a crank or arm, *K'*, that is affixed to a rock-shaft, *L*. The rock-shaft *L* is supported in bearings extending downwardly from the bed of the machine. It has affixed to it an arm, *L'*, which is connected to the shuttle-carrier *M*, that travels along the shuttle-race *g* by means of a link, *N*. This link *N* is pivotally connected in an ordinary manner to the arm *L'*; but it is connected to a pin, stud, or screw, *h*, extending from the shuttle-carrier *M* in such manner that the said pin, stud, or screw may slide in it when the shuttle-carrier reciprocates with the sliding frame *H*. On the shaft *L* is also affixed a cam, *O*, which imparts motion to a clutch-bar, *P*, whereby a feed-wheel, *Q*, is rotated. The needle and shuttle are reciprocated horizontally after each descent of the needle. The combined movements of the needle and shuttle result in the formation of zig-zag stitches. The shuttle is moved by the carrier in unison with the needle, in order to avoid the unequal tension of the shuttle-thread, which otherwise would be produced. The provision which is afforded by the holes in the lever *G* and the slot in the arm *G³* for changing the fulcrum of the lever and securing the arm *G³* to it in different position enables the transverse movement of the needle to be varied at pleasure. The machine may therefore be used for tacking or sewing stitches over a piece of cord.

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

1. In a sewing-machine, the combination of a needle-bar having reciprocating motions vertically and horizontally, a shuttle-carrier having a reciprocating motion corresponding to the horizontal reciprocating motion of the needle-bar, a lever for imparting the horizontal reciprocating motion to the needle-bar, a frame for imparting the horizontal reciprocating motion to the shuttle-carrier, and a lever with which said frame and the first-mentioned lever for imparting the horizontal motion to the needle-bar are connected to receive motion therefrom, substantially as specified.

2. In a sewing-machine, the combination of the needle-bar composed of two sections, *C C'*, the slide *F'*, having a horizontal motion only, the arm *F*, forming a connection between the slide *F'* and the section *C'*, the lever *G*, a connection between the lever and the slide *F'*, a shaft, *D*, and a connection between the shaft and the section *C* of the needle-bar, substantially as specified.

3. In a sewing-machine, the combination of the needle-bar composed of two sections, *C C'*, the slide *F'*, the standard *G⁵*, upon which a lever, *G*, is fulcrumed, said lever being vertically adjustable relatively to said fulcrum, a shuttle-race, the frame *H*, connected to the lever *G* and the shuttle-race, a shaft, *D*, and a connection between the shaft and the section *C* of the needle-bar, substantially as specified.

4. In a sewing-machine, the combination of the needle-bar composed of two sections, *C C'*, the slide *F'*, the lever *G*, the lever *G'*, the link *G²*, the arm *G³*, having an adjustable connection with the lever *G*, the shaft *D*, and a connection between the shaft and the section *C* of the needle-bar, substantially as specified.

5. In a sewing-machine, the combination of the needle-bar composed of two sections, *C C'*, the slide *F'*, the lever *G*, a connection between the lever and the slide, a shaft, *D*, and a connection between the shaft and the section *C* of the needle-bar, a shuttle-race, and the frame *H*, connected to the lever *G* and the shuttle-race.

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Witnesses:

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