

(No Model.)

3 Sheets—Sheet 1.

A. STEWARD.

MACHINE FOR SEWING BUTTONS TO GARMENTS.

No. 302,871.

Patented July 29, 1884.

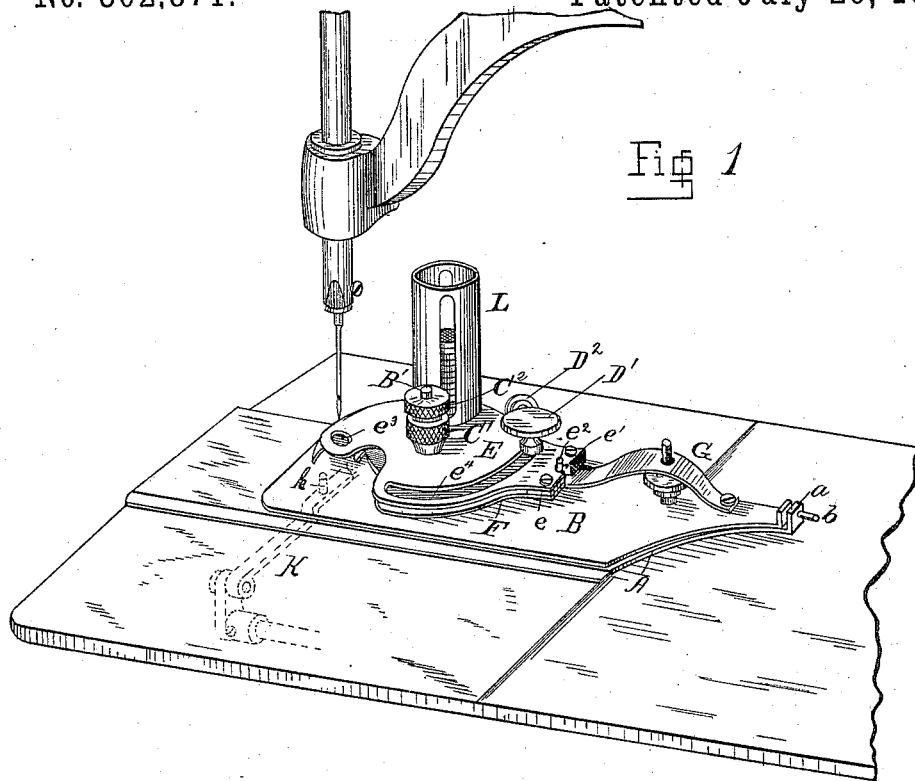
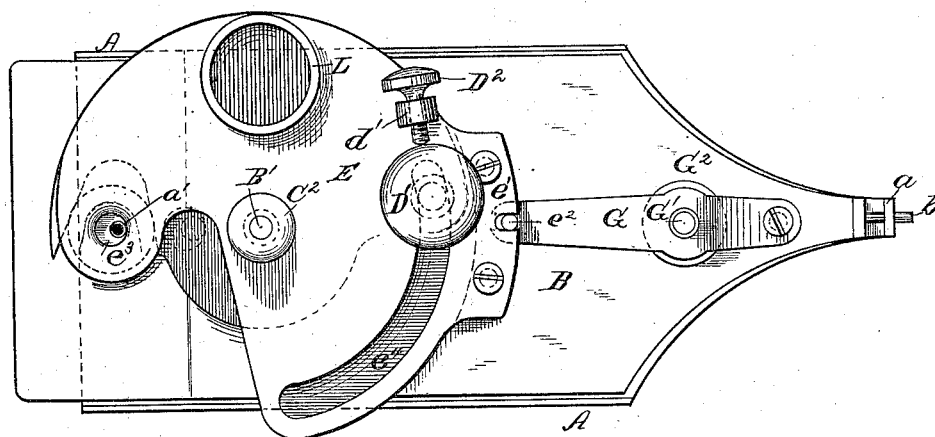


Fig. 1

Fig. 2.



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INVENTOR.

Charles Steward
by his attorney
R. E. E. E.

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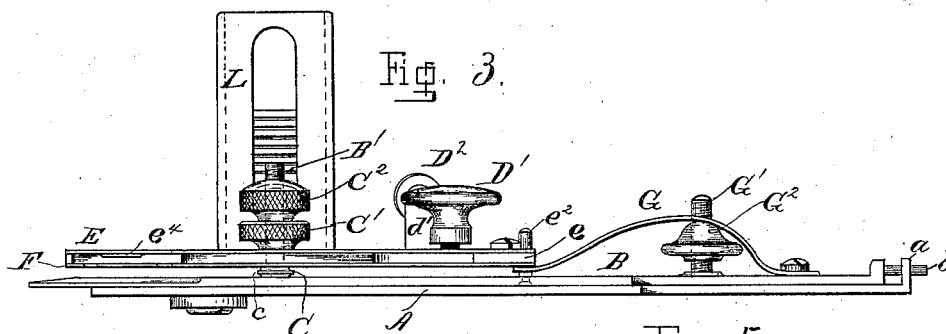


Fig. 5.

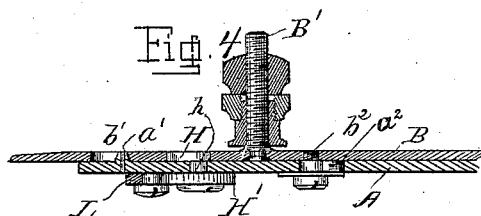


Fig. 6

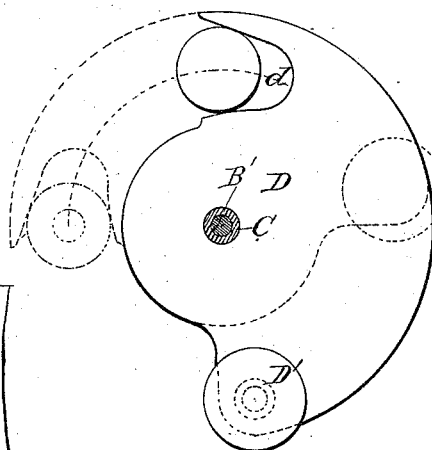
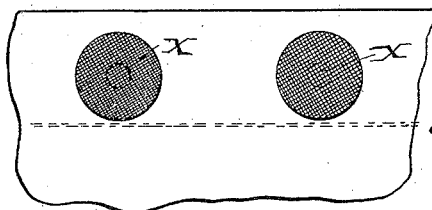


Fig. 7.

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Inventor:
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(No Model.)

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3 Sheets—Sheet 3.

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Fig. 8.

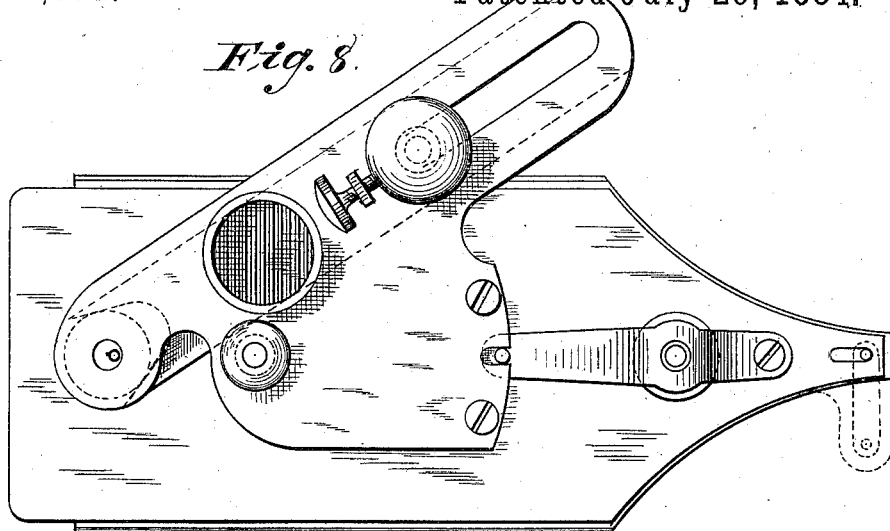


Fig. 11.

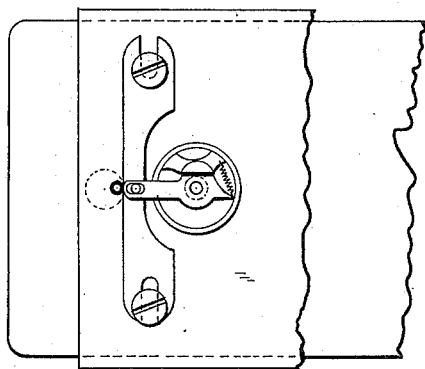


Fig. 9.

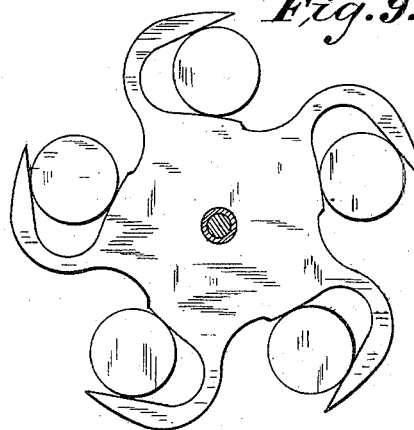
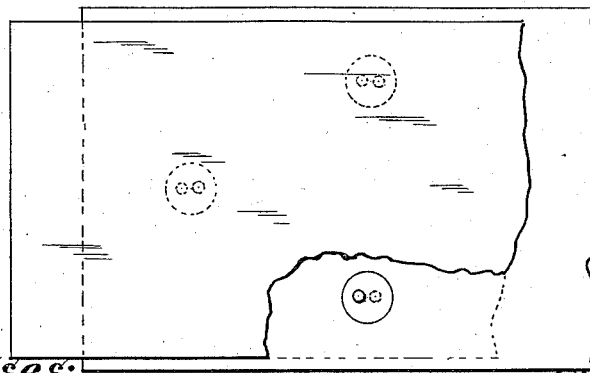


Fig. 10.



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Inventor.

Amos Steward
by his attorney
W. E. Kille

UNITED STATES PATENT OFFICE.

AURELIUS STEWARD, OF BRIDGEPORT, CONN., ASSIGNOR TO WHEELER & WILSON MANUFACTURING COMPANY, OF SAME PLACE.

MACHINE FOR SEWING BUTTONS TO GARMENTS.

SPECIFICATION forming part of Letters Patent No. 302,871, dated July 29, 1884.

Application filed November 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, AURELIUS STEWARD, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Sewing Buttons to Garments; 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.

My invention consists of certain novel combinations, set forth specifically in the claims at the close of this specification, whereby the buttons may be taken successively from a hopper, carried thence to the proper point under the needle, and properly fed, together with the fabric, as the sewing on proceeds.

In order that my invention may be clearly understood, I have illustrated in the annexed drawings, and will proceed to describe in detail, a practical form thereof which is more particularly adapted for sewing on that type of buttons which have a cloth center through which the needle may pass promiscuously.

Figure 1 is a perspective view of my invention as applied to the well-known Wheeler & Wilson sewing-machine, only such parts of the latter being shown as were deemed necessary for an illustration of the mode of applying and using my attachment. Fig. 2 is a top or plan view of my attachment. Fig. 3 is a side elevation of the same. Figs. 4 to 6 illustrate various parts of the attachment in detail. Fig. 7 illustrates a portion of the garment or fabric with cloth-center button sewed on by my attachment. Figs. 8, 9, 10, and 11 illustrate modifications of some of the parts.

The same letters of reference indicate identical parts in all the figures.

The various parts of my attachment are mounted upon a plate, A, made of such dimensions that it can be put in the place of the ordinary throat-plate and back plate of the sewing-machine when said throat-plate has been removed, after unscrewing it from the bed. This plate A is stationary when on the machine, and I therefore term it the "bed-plate" of the attachment.

The garment or fabric on which buttons are

to be sewed is supported upon a movable cloth-plate, B, which is superimposed upon and lies flat on the bed-plate A. The tail end of the cloth-plate is connected to the tail of the bed-plate by a movable pivotal connection, consisting in this instance of a pivot-pin, *b*, projecting through a hole in the lug *a* on the bed-plate, in which hole the pivot-pin fits loosely enough to permit the cloth-plate to vibrate horizontally, as well as to move endwise. The cloth-plate is moved by an eccentric, H, on a pin, *h*, journaled in and projecting down through the bed-plate A, below which it carries a ratchet-wheel, H'. A reciprocating slide-bar, I, carrying a click, *i*, for engaging the ratchet-wheel H', is mounted on the under side of bed-plate A in position to be engaged by a pin, *k*, which is substituted for the ordinary feed-dog on the feed-bar K of the sewing-machine. By means of the reciprocating slide-bar, click, and ratchet-wheel, the feed-bar turns the eccentric H intermittently, which effects a compound endwise and lateral motion of the cloth-plate. The eccentric is located near the needle-hole *b'* of the cloth-plate, so that a point directly under the needle and within the compass of the said needle-hole *b'* will describe substantially a circle during each full rotation of the eccentric. The needle-hole *b'* is concentric with but of larger diameter than such circle.

In order that in puncturing the garment it may be supported all around the needle, notwithstanding the large needle-hole *b'* in the cloth-plate, I form or attach a perforated nipple, *a'*, on the bed-plate at the point where the needle descends through it. This nipple projects up into the needle-hole *b'*, which is eccentric thereto, and its upper end is flush with the upper surface of the cloth-plate. The cloth-plate is held down on the bed-plate by an additional connection therewith, in the shape of a headed stud, *b''*, in this instance, the stem of which passes through a hole, *a''*, in the bed-plate, and is screwed into the cloth-plate, while its head bears against a washer under the bed-plate. The hole *a''* is of sufficient size to permit the free horizontal movement of the stud with the cloth-plate.

The button to be sewed on is pressed down

on the garment and the latter pressed down on the cloth-plate, so that both the button and the garment will partake of the movements of the cloth-plate by a button-holding presser, which is so connected with the cloth-plate as also to partake of the movements thereof. The button-holding presser overlies the cloth-plate, and is supported by a vertically-adjustable sleeve, C, screwed on a vertical screw-threaded stud, B', fixed to the cloth-plate, and is prevented from turning on the sleeve by a steady-pin, e^2 , on the cloth-plate, which pin stands in line with the needle-hole b' and the stud B', and engages a slot, e' , in the tail end of the button-holding presser. The presser is mounted somewhat loosely on the sleeve C, between the collar c on the lower end thereof and confining-nut C', screwed on the upper end thereof. Thus loosely mounted, it may have some vertical rocking play on sleeve C. A curved spring, G, secured at one end to the cloth-plate, presses with its free end on the under side of the tail end of the button-holding presser, so as to depress the other end, which overlies the needle-hole b' , and force the garment with a yielding pressure against the cloth-plate. By running the sleeve C up or down on the stud B' the button-holding presser may be readily adjusted to garments of any thickness. A jam-nut, C', is provided to lock sleeve C on stud B' after the proper adjustment of the button-holding presser has been effected; and in order that the sleeve C may be run up or down on the stud B' by operating on the confining-nut C', the latter should be quite tightly screwed down on the sleeve, to prevent its unscrewing therefrom. For the purpose of adjusting the tension of the presser-spring G, I provide a screw, G', fixed to the cloth-plate, so as to project through a hole in the spring, and a nut, G², under the spring.

The button-holding presser is shown as composed of two parallel horizontal plates, E and F, united at the tail end by a web, e . The contour of the upper plate, E, somewhat resembles in miniature that of a painter's palette, the needle-hole e^2 occupying the position which the thumb-hole occupies in a palette. The needle-hole e^2 is of about the same diameter and is concentric with the needle-hole b' of the cloth-plate. A bead is formed around the needle-hole e^2 on the under side of plate E, for the purpose of pressing the button firmly down on the garment. The lower plate, F, has the same contour as the upper plate, E; but the side of its needle-hole fronting the operator is cut away to permit the removal of the garment after a button has been sewed on. The space between the plates E and F should be about equal to the thickness of the buttons to be used. The buttons are placed flatwise in a hopper, L—an open-ended tube fixed in a hole in the upper plate, E, of the presser. They are transferred one at a time from the open bottom of the hopper to the proper position under the needle by a button-

carrier, D—a flat plate which is interposed and fits snugly between the two plates of the presser, and is journaled on the sleeve C. It may have the form shown in Fig. 5, and is constructed with a flaring jaw, d , adapted to receive various sizes of circular buttons up to the largest size which the hopper can receive. The button-carrier is provided with a handle, D', projecting upward through a segmental slot, e^4 , in the top plate, E, of the presser. When the handle is turned to the left-hand end of slot e^4 , the jaw of the button-carrier will be under the hopper, so that the lowest button therein can descend into the jaw. This button may then be carried to position under the needle by turning the button-carrier in the reverse direction. The center line of the flaring jaw d is substantially coincident with an arc struck from the center of the button-carrier through the center of the needle-holes e^2 and b' , so that the button-carrier is bound to carry the center of every button, whether large or small, to the center of said needle-holes. In order that the carrier may be stopped at the instant when the center of the button arrives at the center of said needle-holes, I provide a stop-pin, D², screwed through a post, d' , on plate E, and located in the path of the handle D' of the button-carrier. The stop-pin is adjustable so that the button-carrier may sweep through a greater or lesser arc according to the size of the button.

To sew buttons on garments by this attachment, the operator should first see to it that the presser is properly adjusted to the thickness of the garment, that the spring G has the proper tension, and that the stop-pin stops the button-carrier at the proper point. He then places the garment on the cloth-plate under the presser, with the point where a button is to be sewed on directly under the needle. The button-carrier is then operated to take a button from the hopper and transfer it to position under the needle. These sewing-machine being put in operation, the garment and button will be so moved under the needle that the latter will sew the button to the garment by circular line of stitches, (shown at X in Fig. 7,) repeated as often as may be necessary to sew the button securely to the garment.

The details of my attachment for sewing on buttons may be greatly changed without departing from the principle of my invention. For instance, the button-carrier may be a sliding instead of an oscillating one, as shown in Fig. 8, or it may be a step-by-step rotatable disk with a series of button-apertures, as shown in Fig. 9. The form of the button-holding presser may be greatly varied to suit varying conditions or the views of manufacturers. A crank may be used instead of the eccentric for moving the cloth-plate and its adjuncts, as shown in Fig. 10. The pivotal connection for connecting the cloth-plate to the bed-plate may consist of a vertical pin on the bed-plate engaging a longitudinal slot in the cloth-plate, or

of a crosswise-arranged link, as shown in Fig. 8, full lines and dotted lines, respectively. The movable cloth-plate can be used without any of the other parts described, except the bed-plate, by holding the garment and button down on it by hand. A wheel and a dog or grip such as used to operate the wheel-feeds of sewing-machines may also be substituted for the ratchet-wheel H' and the click i, as shown in Fig. 11.

I claim as my invention—

1. The combination, substantially as before set forth, of the cloth-plate connected to a bed-plate by a movable pivotal connection, and an eccentric for actuating the cloth-plate.

2. The combination, substantially as before set forth, of the cloth-plate connected to a bed-plate by a movable pivotal connection, an eccentric for actuating the cloth-plate, and a ratchet and click for turning the eccentric intermittently.

3. The combination, substantially as before set forth, of the bed-plate provided with an upwardly-projecting perforated nipple, the movable cloth-plate connected to the bed-plate by a movable pivotal connection, and provided with an enlarged needle-hole eccentric to said nipple, which projects into said needle-hole and terminates flush with the upper surface of the cloth-plate.

4. The combination, substantially as before set forth, of the cloth-plate connected to a bed-plate by a movable pivotal connection, an eccentric for actuating the cloth-plate, and a presser partaking of the movements of the cloth-plate.

5. The combination, substantially as before set forth, of the movable cloth-plate, the rocking yielding presser mounted thereon, and the adjustable spring of the presser.

6. The combination, substantially as before set forth, of the movable cloth-plate, the rocking spring-presser mounted thereon, and the vertically-adjustable support of the presser.

7. The combination, substantially as before set forth, of the hollow button-holding presser, the hopper mounted thereon, and the button-carrier.

8. The combination, substantially as before set forth, of the hollow button-holding presser, the hopper mounted thereon, the button-carrier, and the adjustable stop-pin therefor.

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

AURELIUS STEWARD.

Witnesses:

W. F. DIAL,
FREELAND W. OSTROM.