

No. 758,326.

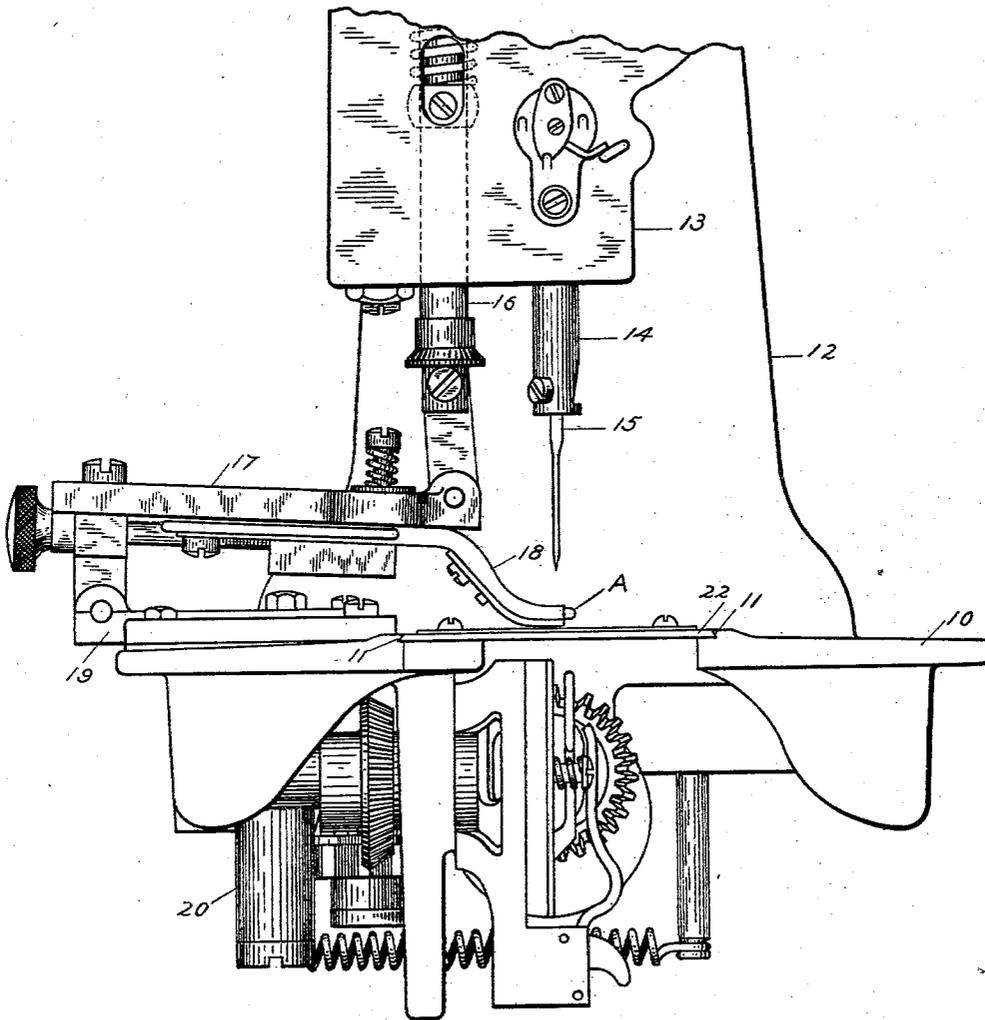
PATENTED APR. 26, 1904.

R. L. LYONS.  
BUTTON SEWING MACHINE.  
APPLICATION FILED NOV. 16, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

*Fig 1.*



WITNESSES

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INVENTOR

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BY *Henry J. Miller*  
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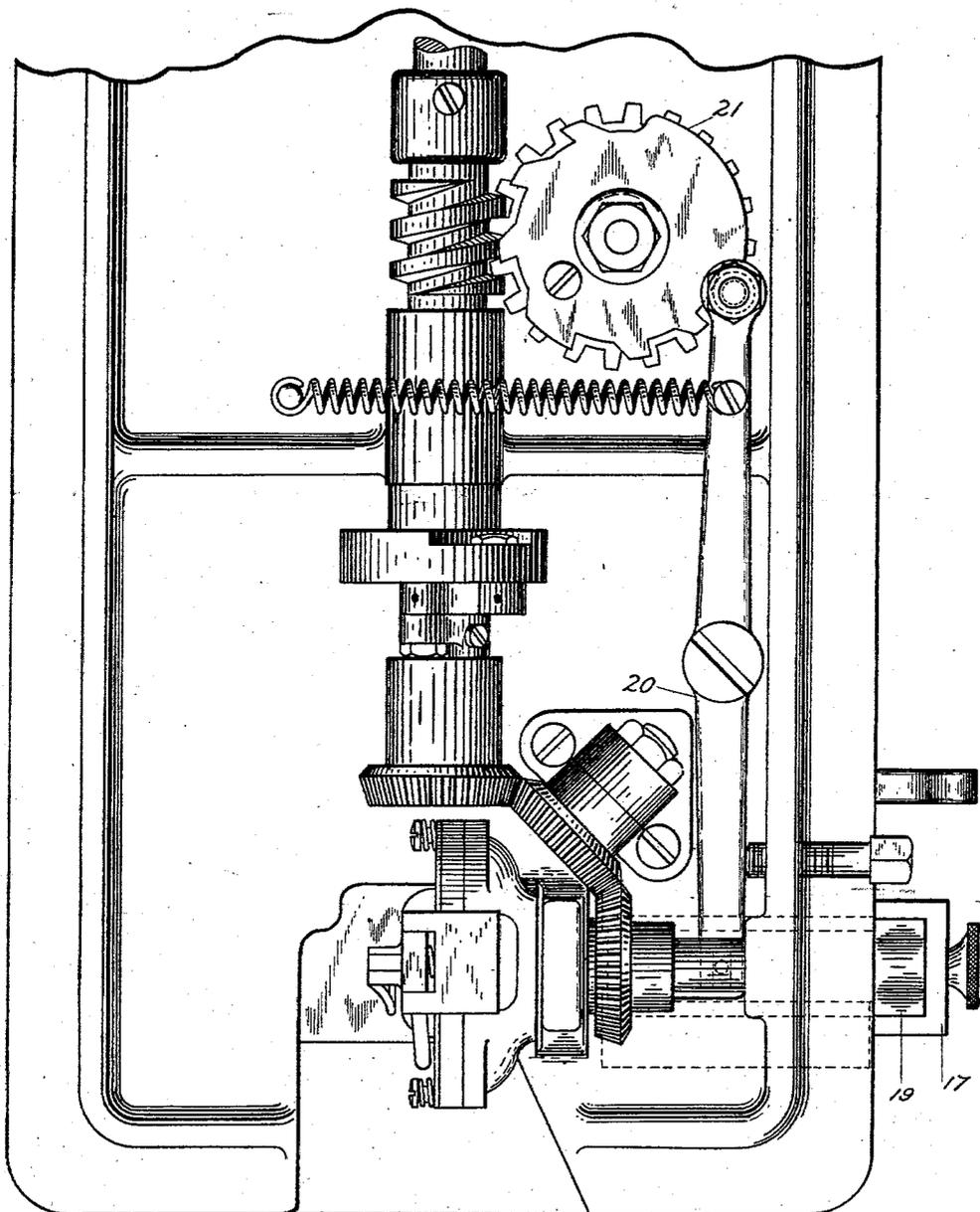
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3 SHEETS—SHEET 2.



WITNESSES

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*Fig. 2.*

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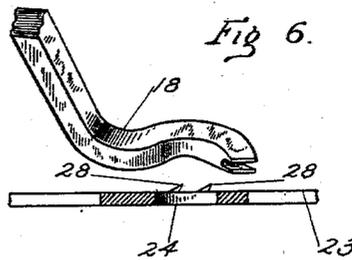
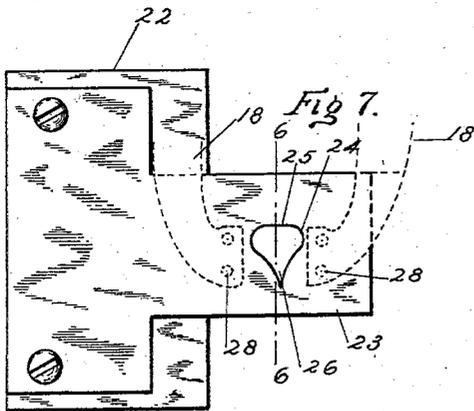
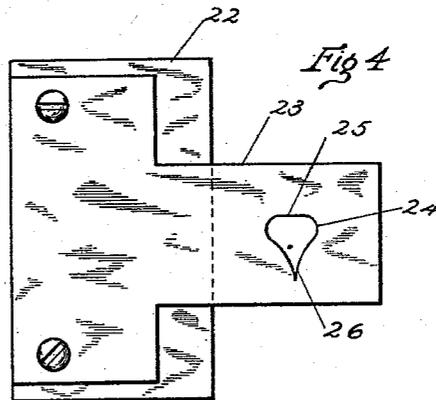
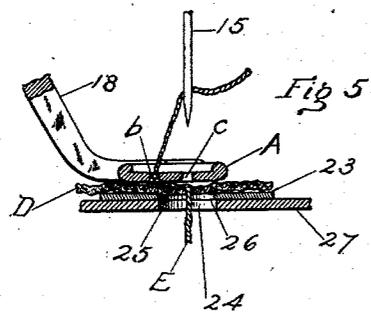
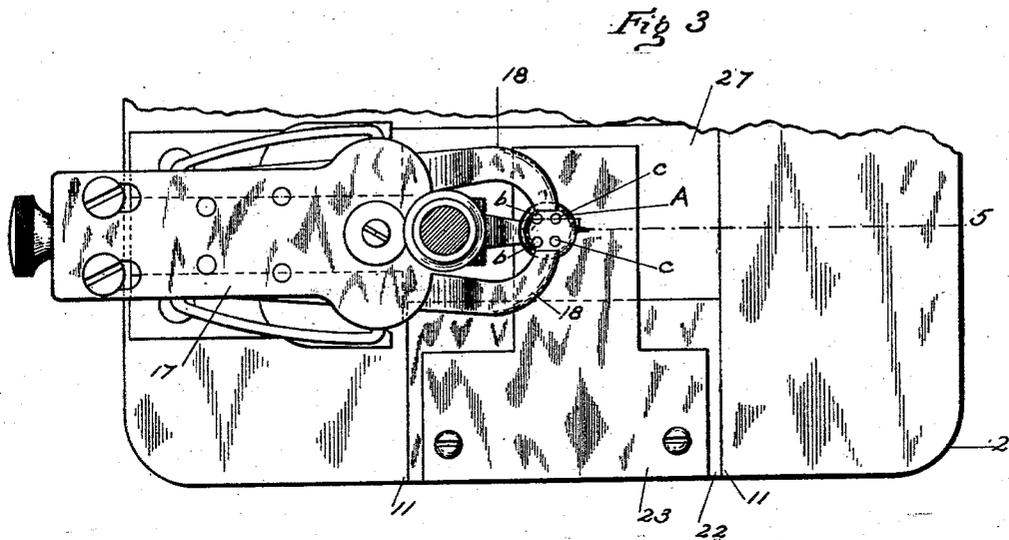
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NO MODEL.

3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

ROBERT L. LYONS, OF WALTHAM, MASSACHUSETTS, ASSIGNOR TO UNION  
BUTTON SEWING MACHINE COMPANY, OF BOSTON, MASSACHUSETTS,  
A CORPORATION OF MASSACHUSETTS.

## BUTTON-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 758,326, dated April 26, 1904.

Application filed November 16, 1903. Serial No. 181,318. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT L. LYONS, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Button-Sewing Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in button-sewing machines, and relates particularly to improvements in the means for supporting the cloth or other material to which the button is to be sewed and to the means for supporting the button independently of said cloth or material.

The object of the invention is to so move the button with reference to the cloth or material to which the button is to be sewed that a portion of the thread delivered by the first downward movement of the needle will be nipped or held between the button and said cloth or material.

Another object of the invention is to so construct a cloth-support for a sewing-machine that the cloth may be sufficiently engaged thereby as to prevent the movement of the cloth with the button (under the action of the button-clamp) until the second downward movement of the needle.

The invention consists in means whereby the button may be moved with relation to the cloth or material to which it is to be sewed.

The invention also consists in a button-sewing machine comprising a button-clamp and a cloth plate or support, the button-clamp being movable during the sewing operation with relation to the cloth-plate.

The invention also consists in the construction of the cloth-plate.

The invention also consists in such other novel features of construction and combination of parts as shall hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents a front end elevation of a sewing-machine illustrating this improve-

ment. Fig. 2 represents a bottom plan view of the machine, showing the usual means for actuating the button-clamp. Fig. 3 represents a plan view of portions of the machine to show the button-clamp in its relation to the improved cloth-plate. Fig. 4 represents a plan view of the cloth-plate in its preferred form when removed from the machine. Fig. 5 represents a partial sectional view taken on line 5, Fig. 3, of the button, the material, and the cloth-plate, showing the cloth as engaged by the rear edge of the opening in the cloth-plate and the button in the position to which it is moved prior to the second downward movement of the needle, thus engaging or nipping the first end portion of the thread between the cloth and the button-back, the size of the thread being exaggerated to more clearly show the same between the button and the cloth. Fig. 6 represents a sectional view on line 6 6, Fig. 7, of a modified form of the cloth-plate to show a more positive means for engaging and holding the cloth, the holding means or spurs being exaggerated in size and in the sharpness of their ends, it being understood that these spurs should not be sufficiently sharp or prominent to unduly retard the movement of the cloth with the button after the second downward movement of the needle. Fig. 7 represents a plan view of the structure shown in section in Fig. 6, the positions of the button-clamp feet being indicated in dotted lines.

Similar characters of reference designate corresponding parts throughout.

Button-sewing machines as heretofore constructed have been provided with button-clamps movably mounted and furnished with a pair of arms between which the button has been held. To the base-plate of the button-clamp and movable therewith was secured a cloth-plate extending beneath the button position and having an opening through which the needle was adapted to work in the process of sewing. A piece of cloth being placed in position, the forward end of the button-clamp was depressed to press the back of the

button against the cloth, and after this adjustment the sewing operation was commenced. The means for moving the button-clamp have been so regulated that after the needle had  
 5 made its first downward movement and had moved upward sufficiently to clear the button the clamp was moved to position another hole of the button in the path of the needle, and it is evident that the cloth was moved  
 10 coincidentally with the button.

As the loose end of the thread at the needle is necessarily short at the breaking thereof after the completion of a group of stitches, various devices have been employed to engage  
 15 this loose end of the thread below the work at or about the completion of the first downward movement of the needle. These devices must obviously be of an intricate nature and the driving means therefore must be  
 20 regulated to act precisely at the time required.

In carrying this invention into practice it has been my main object to dispense with any mechanism for engaging the loose end of the  
 25 needle-thread and to effect the holding or detaining of this end portion of the thread against the upward drag of the needle by engaging a portion of the thread between the button-back and the cloth or material to which the button  
 30 is being sewed.

As shown in the drawings, in its preferred form this improvement may be included in a  
 35 button-sewing machine of usual and well-known construction, in which 10 represents the bed-plate having the guide-lips 11 11 and supporting a shuttle mechanism of any approved construction and arrangement. 12 represents the usual frame-arm, and 13 a portion  
 40 of the machine-head, in which are movably mounted and actuated in any well-known manner the needle-bar 14, carrying the needle 15, and the button-clamp lifter and presser  
 45 rod 16.

The button-clamp 17 has the usual downwardly-extending arms 18 18, adapted to engage  
 50 and hold a button in position, this clamp 17 being pivotally connected at its forward end with the presser and lifter bar 16 and at its rear end with the slide or base 19, mounted  
 55 for sliding movement and operated in the usual manner by means of a lever 20, Figs. 1 and 2, pivoted at the lower side of the bed-plate 10 and periodically actuated by the usual cam 21 or by other approved means, attention  
 60 being particularly drawn to the fact that no cloth-plate or other cloth-support extends forward from the slide or base 19 and that the button-clamp is adapted solely for the support  
 65 and movement of the button.

In the beveled lips 11 11 or in equivalent holding means is mounted the plate 22, on  
 70 which is mounted the cloth-plate 23, having the needle-opening 24 furnished with the rear straight shoulder 25 and with the forward contracted portion 26, the edges of which are  
 75 adapted to engage and sever a thread drawn

into this portion. This cloth-plate is preferably independent of the usual throat-plate 27,  
 80 Figs. 3 and 5, and preferably has a polished surface; but this depends somewhat on the thickness of the throat-plate, and it is evident that on some machines the plate 23 may  
 85 be omitted and the opening 24 or other cloth-holding means may be supplied to the throat-plate.

In the modified construction shown in Figs. 75  
 6 and 7 I have shown the plate 23 as provided with spurs 28 28, which are adapted to engage and hold the cloth. These spurs are, however, herein purposely exaggerated in size  
 80 and in the sharpness of their points in order to call attention to one of several means for positively holding the cloth against movement during the first upward movement of the  
 85 needle. In practice these spurs would be extremely small, and their ends would be so shaped that after the second downward movement of the needle they would not interfere  
 90 materially with the movement of the cloth.

In preparation for the sewing operation the  
 95 button A is so adjusted between the arms of the button-clamp that one of the holes of the button will be in the path of the needle in making its first downward stroke, the cloth D, Fig. 5, being positioned on the cloth-plate 23  
 100 either before or after the adjustment of the button. Under the pressure of the back of the button, pressed down in the usual manner by the presser-bar of the button-clamp, a portion  
 105 of the cloth will be pressed into the opening 24 and will be bent over the shoulder 25, as is shown in Fig. 5. The machine being now started, the needle 15 will carry its thread E  
 110 down through one of the holes *b* in the button and through the cloth and then will make its upward movement. When the point of the needle has moved upward to a predetermined  
 115 point, the button-clamp is actuated in the usual manner to move the button backward, so that one of the holes *c* may be brought into the path of the needle, and as a resistance is offered  
 120 to the movement of the cloth, while the button is free to move independently thereof, the button moves over the cloth and carries the thread E with it, so that the portion of the  
 125 thread between the hole *b* and the path of the needle is nipped or engaged between the back of the button and the upper surface of the cloth. After the downward and upward  
 130 movement of the needle through one of the holes *c* of the button the button-clamp moves forward and carries with it the cloth, which has by this second passage of the sewing-thread, actually the completion of the first  
 135 stitch in a double-thread sewing-machine, become so secured to the button that any slight resistance to the movement of the cloth is overcome and the cloth and button move together thereafter in the usual manner, except  
 140 that the cloth moves over the surface of the cloth-plate 23 instead of moving with the cloth-

plate, as has heretofore been customary where the cloth-plate was attached to or moved with the button-clamp.

It is of course obvious that any means may be utilized for holding the cloth during the first movement of the button which will not materially retard the movement of the cloth with the button after the button has become partially secured to the cloth without departing from the spirit of this invention, whether said cloth-holding means be fixed, as the shoulder 25 of the plate 23, or is otherwise adapted to engage the cloth.

After the sewing operation is completed the cloth D is drawn forward to engage the shuttle-thread in the contracted portion of the opening 24 to sever said thread and to hold the severed end for the commencement of the next stitch.

The nipping of the thread between the button and the cloth in any manner is of course the prime object of this invention, and I do not desire to limit myself to any particular means for accomplishing this object.

The terms "lateral" and "laterally" used herein in relation to the movement of the material and of the button-clamp are intended to refer to paths of movement approximately parallel to the usual extension of the work-support or throat-plate and do not refer to the width or length of the material.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A button-sewing machine comprising means for supporting material and holding the same from lateral movement, means for supporting and moving a button laterally independently of such material-holding means, and stitch-forming means including a needle whereby the button may be attached to the material and the resistance of the material-holding means may be overcome by such attachment.

2. In a button-sewing machine, the combination with stitch-forming means including a needle, of means for changing the relative position of the button and the material, to which it is to be sewed, after the first downward movement of the needle to engage a portion of the needle-thread between the button and the material, and means for resisting the lat-

eral movement of the material during such change of position, such resistance being adapted to be ultimately overcome by the attachment of the material to the button.

3. A button-sewing machine comprising stitch-forming mechanism including a needle, means for supporting and vibrating a button transversely of said needle, a support for the cloth having means for engaging and holding said cloth against lateral movement during the first vibration of said needle, whereby a portion of the needle-thread is engaged between the button and the cloth.

4. A button-sewing machine comprising stitch-forming means including a needle, a fixed cloth-supporting plate having cloth-engaging means adjacent to the path of the needle and adapted to resist the lateral movement of the cloth, and a button-clamp independently movable and adapted to vibrate a button laterally of said engaging means, and adapted to press a button carried by said clamp against cloth on said plate to effect the engagement of the cloth with such engaging means.

5. A button-sewing machine comprising a fixed cloth-plate having an opening one edge of which is adapted to engage cloth pressed thereagainst to resist the movement of the cloth in one lateral direction, and means for pressing a button against the cloth positioned above said opening, to effect the engagement of the cloth with such edge, and, for moving the button laterally.

6. The combination with the button-sewing machine having a throat-plate furnished with a needle-hole, and a cloth-plate positioned above the throat-plate and fixed against movement, said cloth-plate having an opening registering with the needle-hole of the throat-plate and having a rear cloth-engaging edge, of a button-clamp mounted to move laterally above said cloth-plate and adapted to press a button against cloth supported on said plate, for the purpose described.

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

ROBERT L. LYONS.

Witnesses:

S. GOOSTRAY,  
H. J. MILLER.