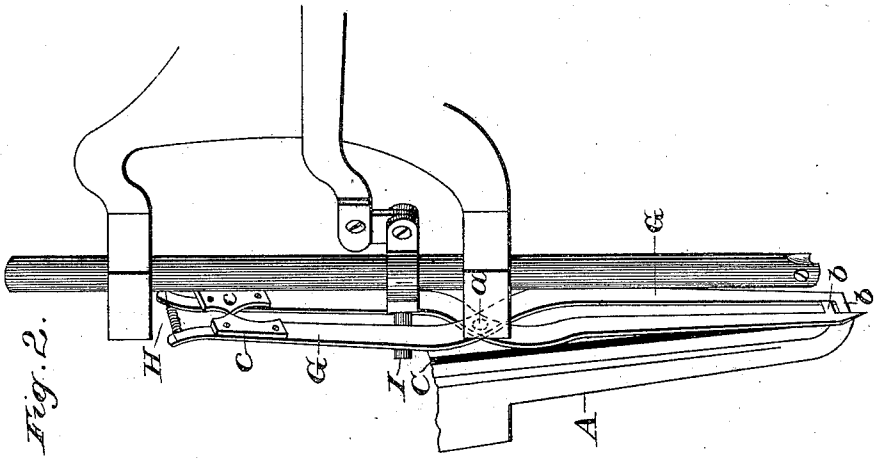
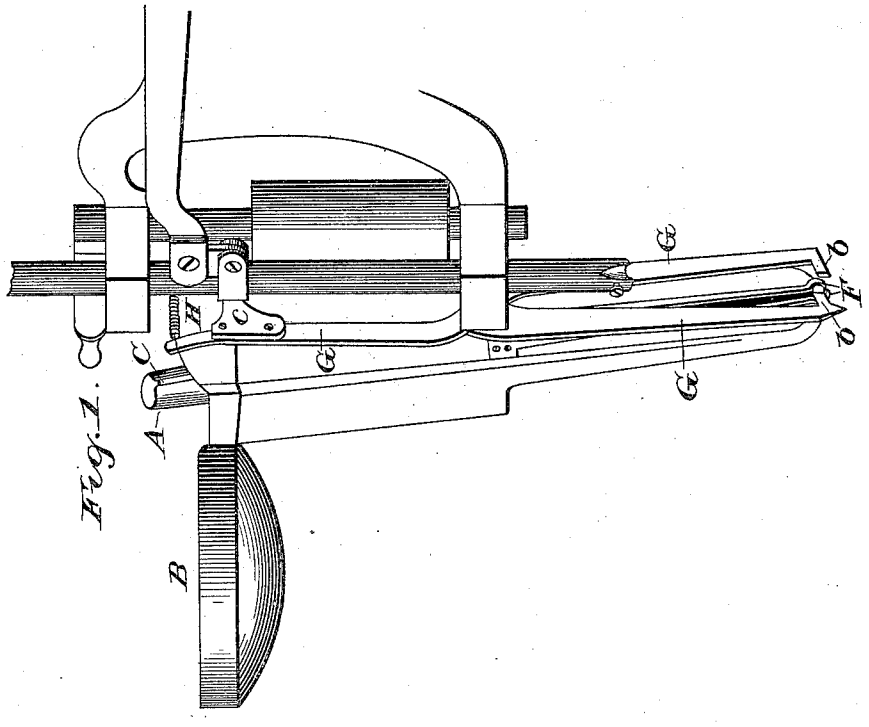
(No Model.) 2 Sheets—Sheet 1.

F. EGGE.

BUTTON SEWING MACHINE.

No. 298,958. Patented May 20, 1884.





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(No Model.) 2 Sheets—Sheet 2.

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BUTTON SEWING MACHINE.

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Fig. 3.

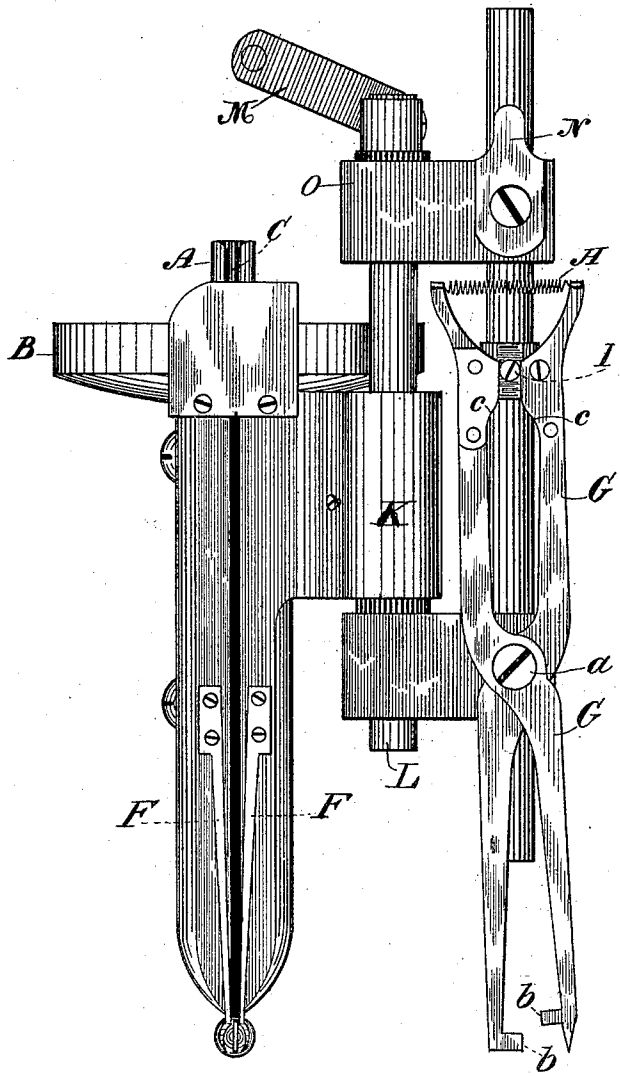
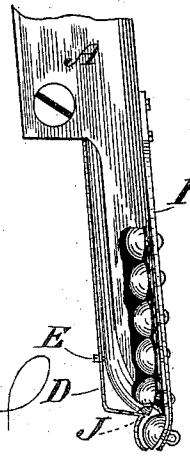


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK EGGE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE SMITH & EGGE MANUFACTURING COMPANY, OF SAME PLACE.

BUTTON-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 298,958, dated May 20, 1884.

Application filed June 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK EGGE, 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 Button-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.

My invention relates to certain novel and useful improvements in devices for feeding buttons having a shank-eye, and arranging them in the proper manner in order that they may be grasped by any suitable clamping mechanism and conveyed to the leather, cloth, or other fabric to which they are to be sewed, and has for its object to feed and arrange the buttons uniformly and positively, while at the same time the device shall be so constructed that any accidental clogging up of the feeding-tube can be readily remedied; and with these ends in view my invention consists in a tube adapted to the shape of the body of the button, and provided at its lower portion with an adjustable spring-rest for the buttons, and spring devices for holding them in said rest, and adapted to be swung or turned out of operative position, for the purpose presently explained.

My invention also consists in pivoting two fingers to the frame of the sewing-machine in such a manner that the action of the needle-bar shall cause them to operate upon the loop of the button-eye and bring it into the position as will be hereinafter fully set forth, and designated by the claims.

In order that those skilled in the art to which my invention appertains may more fully understand its construction and operation, I will proceed to describe the same in detail, referring by letters to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view, with the needle-bar up and the parts in operative position, and showing the fingers distended; Fig. 2, a similar view with the needle-bar down and the fingers closed, and also showing the lugs operating on the button-eye loop; Fig. 3, an elevation showing the fingers pivoted to the frame of the machine and their connection with the needle-bar, also the tube swung back; Fig. 4, a detail view with the tube broken away, illustrating the adjustable spring-rest for the buttons, with the latter arranged in the order in which they are fed into the tube.

Similar letters denote like parts in the several figures of the drawings.

A is the feeding-tube, and B a reservoir for the buttons attached thereto. This tube is attached to a post on the sewing-machine or to the presser-foot bar in such a manner as to swing freely.

C is a longitudinal opening extending through the tube.

D is a spring-rest secured to the tube in such manner as to project below the tube. The shape of this rest is such as to conform to the contour of the head of the button, while at the same time it affords a support for the button.

E is an ordinary adjusting-screw, by means of which the spring-rest may be set in or out, as will be presently explained.

F F are spring-arms attached to the tube, and extended below the same, so as to bear against the button and keep the same in position within the rest, the construction of both the rest and spring-arms being such that they will readily yield, and thereby allow the button to be withdrawn for the purpose of placing it on the leather or fabric in order to be sewed thereto.

G G are fingers which are crossed and pivoted, as seen at *a*, at or near their central portion. At their lower ends are lugs *b*, projecting toward each other in planes one above the other. Near the upper portion of these fingers the inner edges thereof are beveled or inclined toward each other, as seen at *c*, and the upper extremities of said fingers are connected by a coil-spring, H, which imparts to them a spring movement.

Secured to the needle-bar collar or cast integral therewith is a pin, I, which has a reciprocating movement between the fingers G simultaneous with that of the needle-bar. The

diameter of said pin is such, that, after the needle-bar has completed its downward stroke, and the fingers are in the position as shown at Fig. 2, it will move freely between said fingers during the upward movement of said needle-bar until it strikes the bevels *c*, when it will ride up the latter, and thereby cause the fingers to open and assume the position shown at Fig. 1, and as the needle-bar descends the action of the spring H will close the fingers.

The tube A is provided with a laterally-projecting collar, K, through which passes the presser-foot bar L in such manner as to permit the tube to be freely swung. Pivoted to the top of the presser-foot bar is a lever, M.

N is a piece of metal secured to the cross-bar O, as shown at Fig. 3, in such manner that, when the tube is swung into position for operation, the lever M may be thrown down behind said piece of metal, thereby retaining or locking the said tube in such position.

In assembling the parts of my improvement I preferably attach the tube A to the presser-foot bar, so that the former will have a swinging or hinge like movement in a horizontal plane, and when brought into operative position and locked the relation of the several parts is such that the body of a button may be supported and retained by the rest D and arms F, while the eye will project forward within or beyond the vertical plane of the lugs *b* in the position to be operated upon by the latter, as seen at Fig. 1. For convenience, I attach to the casing a reservoir, B, for the buttons.

When the several parts are in the position as shown at Fig. 1, the device is ready for operation. As the needle-bar descends, the action of the pin I will cause the fingers G to close, and the lugs *b* will strike the loop of the button-eye above and below, and thereby turn the same around, as seen at Fig. 2, until it assumes a position at right angles to that shown at Fig. 1, so that it can be readily seized by a pair of clamping-jaws and forced out of the rest D down upon the leather or fabric in the proper position for being sewed on. It will be readily understood that, by turning the button-eye to the position as shown and described, it can be brought down in a straight line upon the leather or fabric and lie flat thereon, which position is necessary in sewing buttons onto shoes, &c.

By reference to Fig. 4 it will be seen that the button which is operated upon is not in contact with the button immediately above, since the latter is supported by a shoulder, J, in the spring-rest.

Whenever a button is withdrawn, as hereinbefore described, both the rest D and the arms F will be forced against their spring-action, and the shoulder J will accordingly cease to support the next button which will immediately drop and be held within said spring rest and arms in the same manner as the preceding button.

Should it become necessary to set the eye of the button farther forward or backward this can be readily accomplished by means of the adjusting-screw E within the rest D.

By the foregoing description it will be readily understood that the buttons are continually fed into the tube at the top and brought into the required position at the bottom, and then withdrawn by any suitable device for the purpose of sewing onto the fabric, &c.; also, during the latter process the lugs on the spring-arms are operating upon the next button.

In adapting the tube to swing, as shown, a great advantage is obtained, since, should an irregular button become lodged within the tube, a wire or other suitable device can be inserted in the same and the button readily ejected.

I preferably make the bevels at the upper part of the fingers of separate pieces and attach them thereto by screws, and am thereby enabled to renew the beveled edges should the friction arising from their contact with the pin in the needle-bar collar wear them away.

It will be observed that the spring-arms are adapted to steady the body of the button and at the same time to grasp the eye when it has been turned around, as hereinbefore described, and keep it from wabbling.

I am enabled to accomplish the opening and closing of the fingers by combining them with the needle-bar in various ways, but have illustrated and described the most simple and effective way; and I do not wish to be confined and limited in this particular, the gist of my invention in this respect lying in the broad idea of the pivoted fingers actuated by the needle-bar.

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

1. In combination with means for feeding the buttons, as described, means connected with the needle-bar for operating on the loop of the button-eye intermittently, whereby the button is turned and the said loop brought into a plane parallel with the work-plate of the machine, substantially as set forth.

2. In a button-sewing attachment or sewing-machine, a device for feeding buttons arranged to swing on the machine and be locked in position, in combination with means for operating upon the loop of the button-eye, as described, substantially as set forth.

3. In a button-sewing attachment, the fingers pivoted to the frame of the machine and provided with lugs at the lower extremities, and connected by a coil-spring at the upper extremities, and having their inner upper edges beveled, in combination with a pin attached to the needle-bar collar, and means for feeding the buttons, whereby the loop of the button-eye may be operated upon and brought into the required position, substantially as set forth.

4. In a button-sewing attachment, fingers

pivoted to the frame of the machine and adapted to operate on the loop of the button-eye, in combination with mechanism for vibrating said fingers, substantially as set forth.

5. In a button-sewing attachment, the fingers pivoted to the frame of the machine and adapted to operate on the loop of the button-eye, in combination with mechanism for vibrating said fingers, and means for feeding the buttons, substantially as shown and described.

6. The tube A, provided with longitudinal opening C, and having secured at its lower extremity the spring-rest D, with shoulder J, and spring-arms F F, in combination with mechanism for operating on the loop of the button-eye, substantially as set forth.

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

FREDERICK EGGE.

Witnesses:
S. S. WILLIAMSON,
W. W. MORTIMER.