

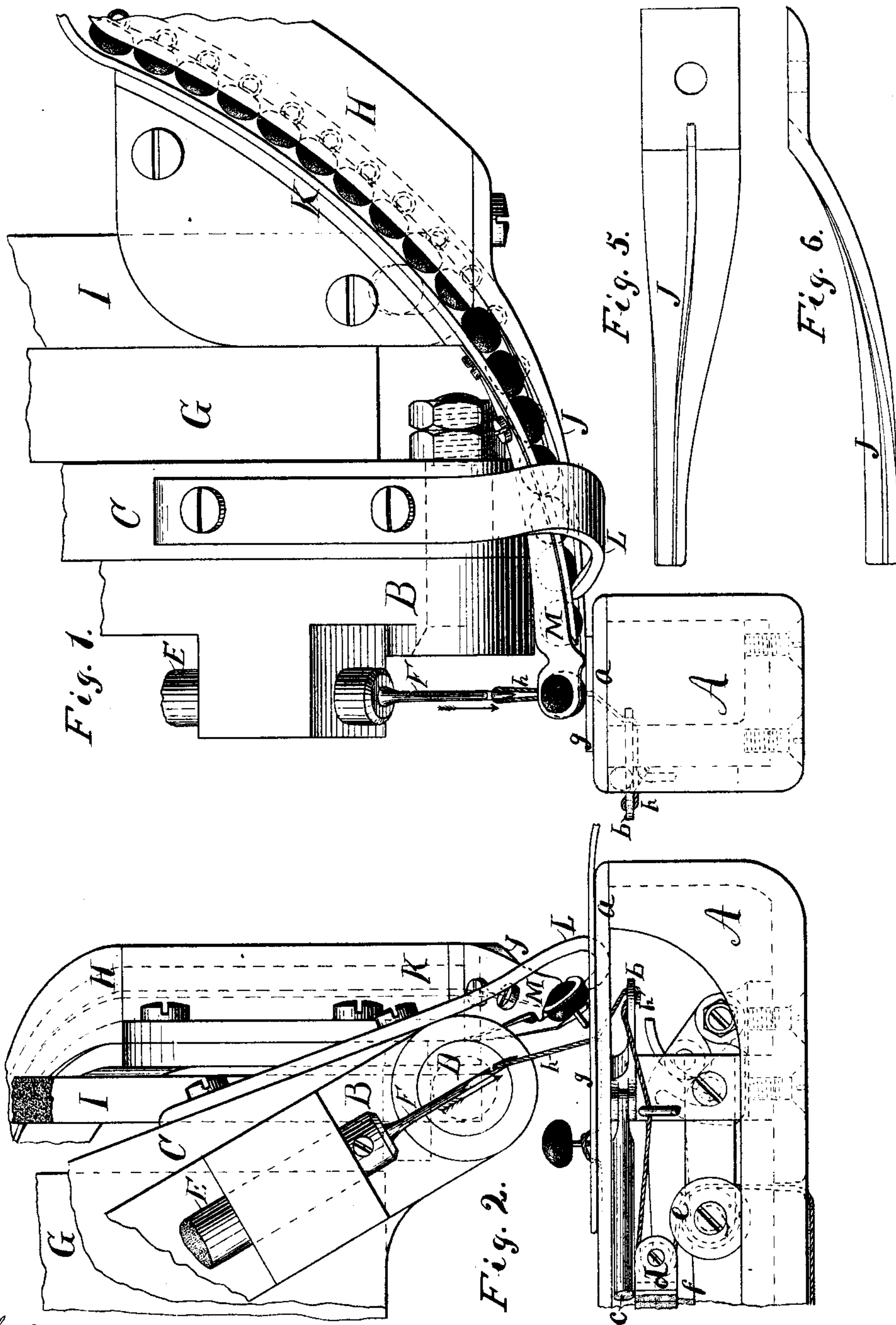
(No Model.)

2 Sheets—Sheet 1.

R. THOMPSON.
BUTTON SEWING MACHINE.

No. 388,796.

Patented Aug. 28, 1888.



Witnesses;
H. A. Thompson,
C. Edwin Thompson.

Inventor;
Roswell Thompson.

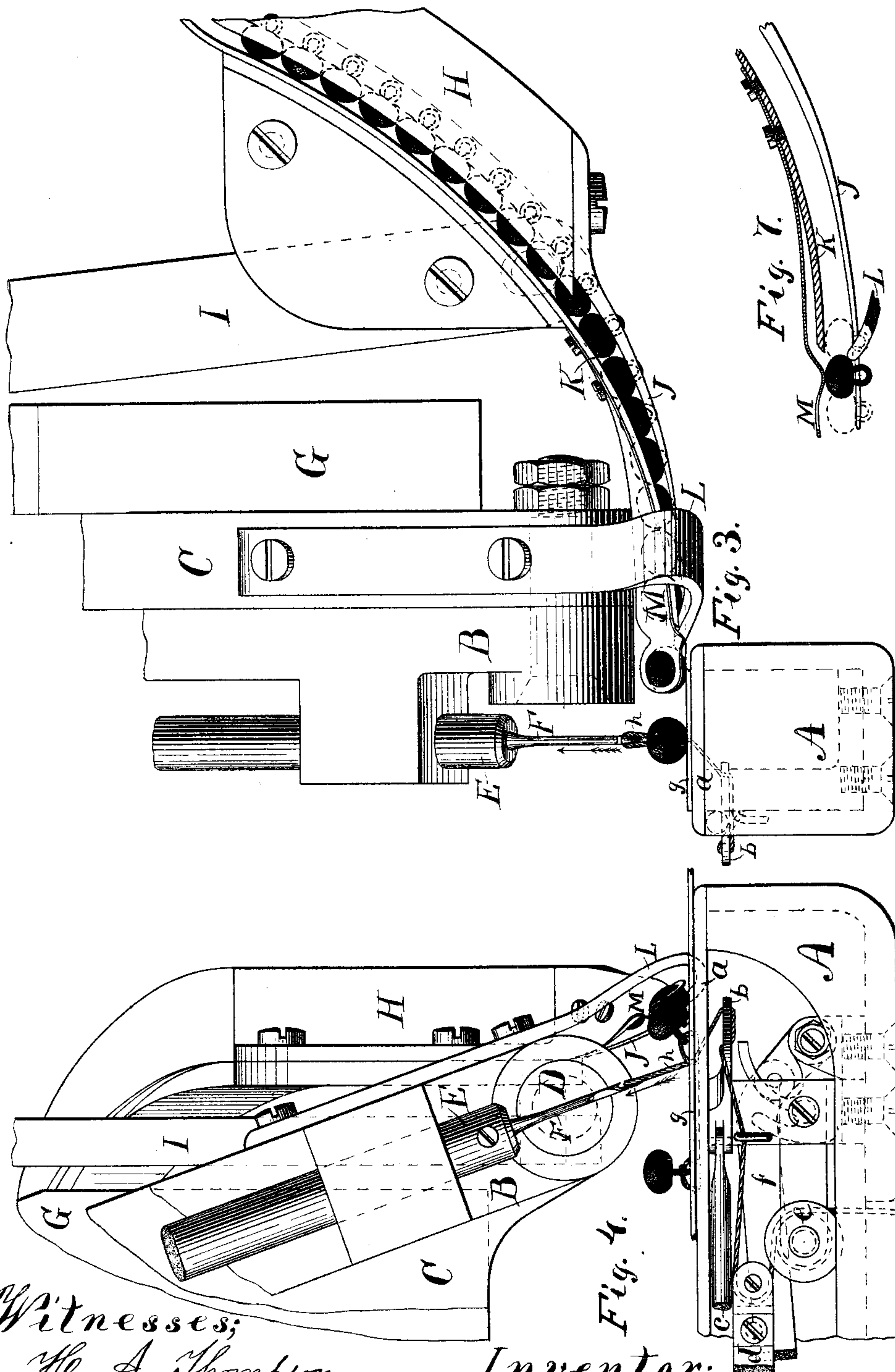
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UNITED STATES PATENT OFFICE.

ROSEWELL THOMPSON, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
MORLEY BUTTON SEWING MACHINE COMPANY, OF BOSTON, MASSACHU-
SETTS.

BUTTON-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 388,796, dated August 28, 1888.

Application filed March 20, 1888. Serial No. 267,870. (No model.)

To all whom it may concern:

Be it known that I, ROSEWELL THOMPSON, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and Improved Button Feeding and Holding Mechanism for Shank - Button Sewing - Machines; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being made to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in a part of the machine for which Letters Patent were granted to me November 30, 1886, No. 353,609, my object being to feed and hold the shank-buttons to be sewed on to the fabric by the needle and thread in a more positive and secure manner than by the means employed in the machine referred to; and I accomplish this by the use of a device I term a "pusher," which is secured to a certain portion of the machine in such a manner as to force a button toward the extreme end of the extended portion of the button-trough during the right-swinging motion of said trough, and then held in this position while said trough is swinging to the left by the use of a spring of certain shape and construction, the form and operation of which devices will herein be fully explained and described.

In the accompanying drawings, Figure 1 is a front view of a portion of my machine, with presser-foot and pivoted thread-guard removed, but with my improved button feeding and holding devices in their respective places and button-trough in its extreme left position. Fig. 2 is a side view of same portion of the machine, also with presser-foot and pivoted thread-guard removed and button feeding and holding devices in their proper positions. Figs. 3 and 4 are front and side views of the same portion of the machine and same devices shown in Figs. 1 and 2, but with button-trough in its extreme right position. Figs. 5 and 6 are top and side views of the extended portion of the button-trough, showing the slot which guides the button-eye in its passage to the extreme end of the same, and the partial spiral form which causes the button-eye to be

presented to the needle at a proper angle while being sewed to the fabric. Fig. 7 is a sectional view of the button-holding spring, portion of button-trough cover-plate to which said spring is secured, portion of back half of extended button-trough, and end of button-pushing device, showing a button passing under the bent portion of the clamping-spring during the right-swinging motion of the button-trough.

Similar letters of reference indicate corresponding parts.

A is the front end of the fabric-supporting arm of the machine.

B is the lower or jointed end of the needle-bar bearing, and C is the support for the same.

D is the pivot upon which the needle-bar bearing turns.

E is the needle-bar.

F is the needle.

G is the front end of the arm of the machine.

H is the front end of the swinging button-trough.

I is the lever which imparts the right and left swinging motions to the button-trough.

J is the button-trough extension.

K is the cover-plate for button-trough and its extension.

L is the button-pusher secured to the needle-bar bearing-support, and M is the button-clamping spring attached to the button-trough cover-plate.

a is the cover-plate and throat-plate of the fabric-supporting arm.

b is the thread-controlling device, and c is the rod which connects it with the cam in the body of the machine which imparts motion to the same.

d is the front end of the take-up bar.

e is the roll over which the thread passes.

f is the front end of the double-hook operating-bar.

g is the fabric upon which the buttons are sewed, and h is the thread.

The operation of the illustrated devices of the machine and my button feeding and holding mechanism is as follows: The take-up roll and thread-controlling device being threaded in a proper manner and the button-trough filled with buttons, the machine commences

its motion with the needle at its highest point, which is about the position shown in Fig. 2, there being at this time no thread in the eye of the same, and the button-trough in its extreme right position, as shown in Fig. 3, the first motion of the needle is downward, piercing the fabric outside the position of the button-eye, and when the eye of the needle is some distance below the fabric the thread-controlling device is swung to the right sufficiently far to force the thread into the open eye. Then the needle has an upward motion, drawing with it a loop of thread through the fabric until it is about as long as shown in Fig. 2. While in this position the button-trough is swung to the extreme left position, carrying with it the button which is under the end of the clamping-spring, as shown in Figs. 1 and 2. Then the needle-bar bearing is oscillated sufficiently far back to cause the point of the needle to pass through the button-eye and pierce the fabric under the same, carrying the loop of thread, which is in the eye of the needle, through the button-eye and fabric and some distance below the latter. Then the double hook, which is in the fabric-supporting arm, removes the loop of thread from the open eye of the needle and retains it while the needle has another upward motion. The loop of thread in the meantime is being drawn back some distance by the double hook. After the needle has reached its highest point, the needle-bar bearing is oscillated to its front position, so as to cause the point of the needle to again pierce the fabric in its first place outside the button-eye during its next downward motion. When the eye of the needle is some distance below the fabric, the thread-controlling device is again swung to the right sufficiently far to force the thread into the open eye. Then the needle has another upward motion, drawing with it a loop of thread as before; but this time it is first drawn through the bent-back loop of thread which is under the fabric, then through the fabric after the loop of thread is quite through the latter, and during its remaining upward motion, while the loop of thread is taut, the button-trough is swung to the right, and the threads, which have been passed through the button-eye, sufficiently secure the button to the fabric to cause it to be removed from its position under the end of the clamping-spring during the fore part of the right-swinging motion of the button-trough and remain in position (shown in Figs. 3 and 4) during the remaining right-swinging motion of said button-trough, another button in the meantime being forced into position at the end of the button-trough extension and under the clamping-spring by the stationary button-pusher, as shown in Figs. 3, 4, and 7, to be sewed to the fabric in the same manner

as described for preceding button. While the button-trough remains in said right position, and the second loop of thread is in its highest place above the fabric, the loop-spreading mechanism removes the loop from the eye of the needle and passes it over the body of the button. Then the take-up mechanism, with the aid of the tension, exerts sufficient strain upon the loop of thread to tighten it about the button-eye and threads which have been passed through it, thus completing the stitch, after which the feeding mechanism of the machine moves the fabric sufficiently far back to place the next button in its proper position upon it at the next left motion of the button-trough, and the operation of sewing it to the fabric is repeated, as above described. The buttons slide loosely in the button-trough, and also in the extension as far down as the end of the cover plate and bent portion of the clamping-spring which passes over the end of said plate, and the end of the pusher is in such a position as to be to the right of the button, which is next to said bent portion when the button-trough is swung to the extreme left, as shown in Fig. 1, so that the right-swinging motion of the button-trough will cause said button to be forced under said bent portion of the spring, as shown in Fig. 7, to its position under the end of the clamping-spring by said stationary pusher, as shown in Fig. 3, the hole in the end of said spring allowing the same to partially close over the body or head of the button, and thus securely clamp or hold the same while being sewed to the fabric; but said clamping-spring is sufficiently yielding to leave the button in its position upon the fabric after one loop of thread has been passed through the eye of the same, and before the stitch is fully completed, at the commencement of the right-swinging motion of the button-trough, as shown in Figs. 3 and 4.

Having thus fully described the construction and operation of my improved button feeding and holding mechanism, I claim as new and desire to secure by Letters Patent.

In a button-sewing machine, the combination, with its stitch-forming mechanism and work-table, of a button-pusher and swinging button-trough having on its end a button-clamping spring, M, the said spring having in its clamping end a downward bend, whereby the outermost button is separated from the next one, and a perforation which is less in diameter than the button-heads, all substantially as described, and for the purpose set forth.

ROSEWELL THOMPSON.

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