

J. J. GRAFF.  
Button-Hole Sewing-Machine.

No. 216,670.

Patented June 17, 1879.

Fig. 1.

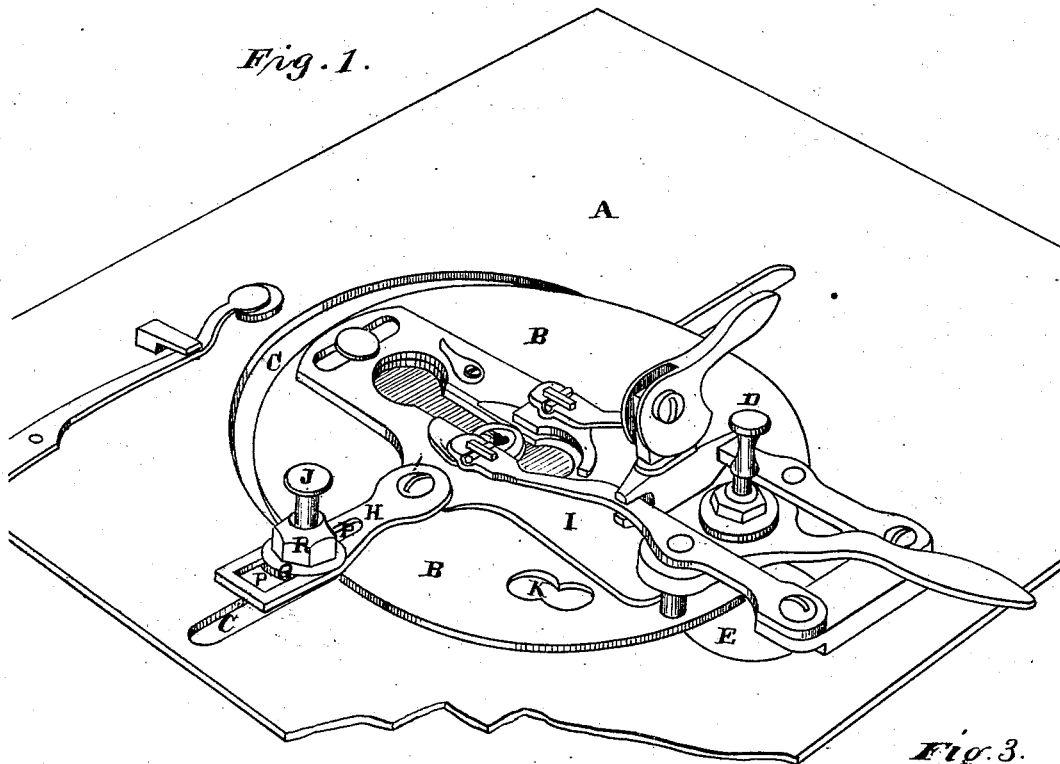


Fig. 2.

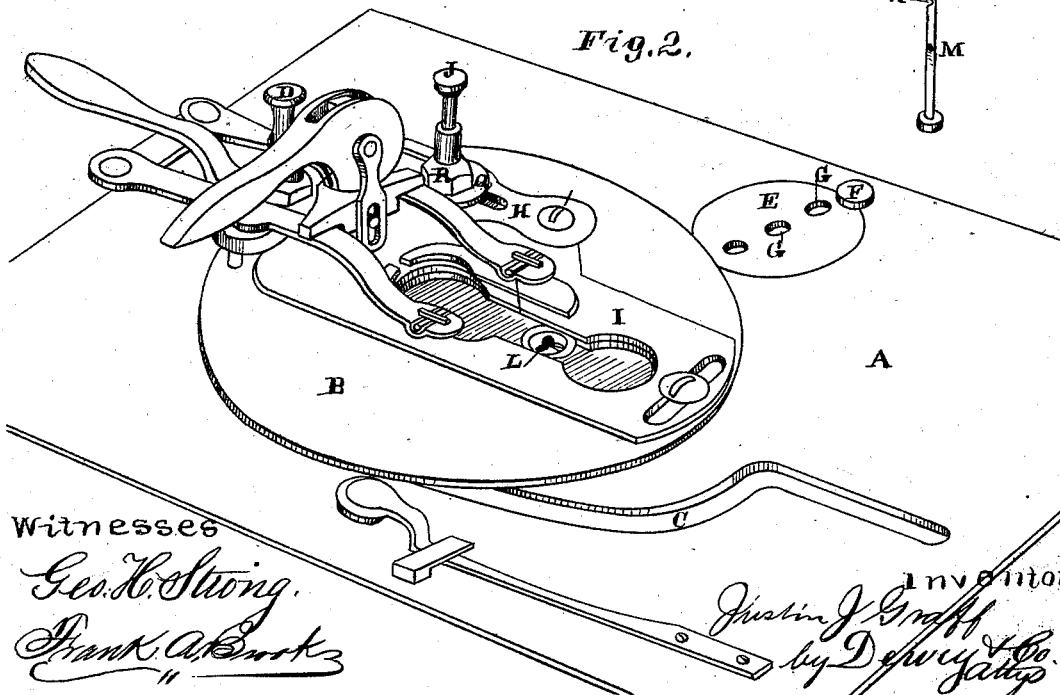
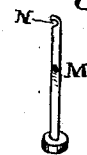


Fig. 3.



Witnesses

Geo. H. Strong.  
Frank A. Burk.

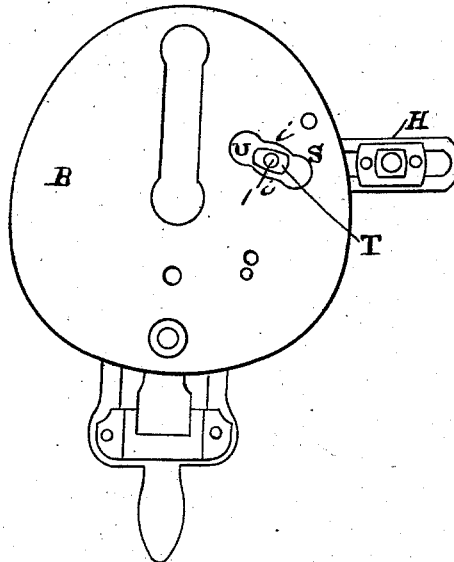
Inventor  
Justin J. Graff  
by Dewey & Co.

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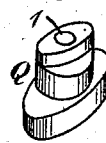
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



Witnesses

*Geo. H. Strong*

*Frank A. Bowers*

Inventor  
*John J. Graff*  
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# UNITED STATES PATENT OFFICE.

JUSTIN J. GRAFF, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN BUTTON-HOLE SEWING-MACHINES.

Specification forming part of Letters Patent No. **216,670**, dated June 17, 1879; application filed August 9, 1878.

*To all whom it may concern:*

Be it known that I, JUSTIN J. GRAFF, of the city and county of San Francisco, and State of California, have invented an Improvement in Button-Hole Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to certain improvements in machines for sewing button-holes, and it is more especially adapted to be used upon a machine for which Letters Patent were issued to me May 26, 1874; and it consists in the construction and combination of parts, as hereinafter more specifically described and claimed.

In order to more fully explain my invention, reference is made to the accompanying drawings, in which Figure 1 is a view of the plate carrying and guiding the cloth-plate, with the latter in its first position. Fig. 2 shows the second or finishing position of the parts. Figs. 3, 4, 5, and 6 are details to be referred to hereinafter.

A is the bed-plate, which is secured upon the top of the machine, and which supports the primary cloth-plate, B. The plate A is provided with the guiding-slot C, through which the pin D passes, and enters the grooved cam below said plate. This cam is fully shown and explained in the Humphrey patents, upon which my improvements are based, and I have therefore omitted it.

By this cam the cloth-plate is moved backward and forward as it is carried around in the proper manner, so that the stitching and cording will be formed along the edge of the button-hole, commencing at the point, running up one side, around the head, and down the other side, back to the point. It has then been usual to finish the button-hole by simply stitching it across the point; and my improvement consists in mechanism for finishing the part longitudinally with the button-hole. To effect this I raise the pin D when the point of the button-hole has been reached in the stitching, and turning the cloth-plate B around the needle and threads as a center until it stands at right angles with its former position, the pin D will drop into a hole in the supplemental plate E, being assisted by its spring.

The plate E is, in the present case, made

circular, and fits a similar hole in the plate A, being secured by a set-screw, F. This plate E is provided with holes G, into which the pin D will fall when turned, so as to stand over the hole. The length of the button-holes which are being worked will determine the hole into which the pin will fall, and the plate E may be set for the particular hole desired by turning it around, first loosening the set-screw F.

An arm, H, is hinged or pivoted to the lower jaw, I, of cloth-clamp, which has a motion about the pin D. While the first part of the button-hole is being made, a pin, J, in the end of this arm rests in a slight indentation or perforation, K, in the plate B, and it is not used; but after the stitching has been completed to the point of the button-hole, and the plate B has been turned to right angles with its first position, as before described, (see Fig. 1,) this pin is raised, and the arm H is turned until the pin J will drop into the slot C, and the jaw I is pushed over until the pin will drop into the slot in the cam at the point just left by the pin D. This brings the button-hole into the proper position for the stitching to start to cross the point, and this portion is then completed by a few stitches, the cloth and holder being fed transversely as far as desired by the arm H.

The pivot-pin I, on which arm H turns, passes through a circular opening in lower jaw, I, of the cloth-clamp, and has on its end an elongated fixed button, T, which runs in a peculiarly-shaped diagonal slot, U, (see Fig. 4,) having its outline enlarged in curved lines on opposite sides of its center, as seen at *i i*. The width of the slot at *i i* is just equal to the length of button T, so that only at this central point can arm H be turned onto plate B, so that it can lock in hole K by means of pin J, and the construction is such that at the same moment must jaw I lie in a central line for sewing, and pin J, resting in the recess K, firmly secures it in that position.

The cording is usually brought up through a hole, L, near the needle-hole, and passes along beneath the edge of the button-hole, being stitched therein; but when it is desired to finish the button-hole with the cording on the top or upper edge, the spool containing it is

mounted above the table, and the cord is brought in above the cloth. A pin, M, passes up through the hole L, and a hook-notch, N, is made in its point, which projects to about the thickness of the cloth. The cording is then passed through the hook, and the latter is then drawn down to the lower edge of the button-hole, this being the right side when finished. When the end of the button-hole is reached, and in finishing it off, it is desirable to bring the end of the cording through to the wrong side. The cording is, therefore, detached from the hook N, when the plate is turned around to complete the end of the button-hole, and this allows it to come up to the top or wrong side, when it is cut off.

The pin J is made adjustable in the arm H, as follows: A slot, P, is made longitudinally in the arm H, and a sliding block, Q, fits into this slot. The pin J passes through the sliding block, and a nut, R, upon the spindle, which projects upward from the slide, serves to fix it at any point upon the arm H, and this adjustment insures the pin J to be in the proper position to drop into its place through the slot C, whatever may be the size of button-hole that is being made.

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

1. The bed-plate A of a button-hole sewing-machine, provided with a guiding-slot, C, in

combination with the lower jaw, I, of the cloth-clamp, the arm H, slotted longitudinally, as shown, the sliding block Q, nut R, and pin J, substantially as and for the purpose described.

2. The plate A, provided with a recess adapted to receive circular plate E, in combination with said circular plate E, having holes G, the pin D, the set-screw F, and the means, substantially as described, for holding and guiding the cloth while the button-hole is being sewed, as and for the purpose herein described.

3. In combination with means, substantially as described, for holding and guiding the cloth while the button-hole is being sewed, the pin M, having the hook-notch N in its end to receive the cording and place it upon the upper edge of the button-hole, substantially as herein described.

4. The plate B, provided with the slot V, having curvatures *i i* on its opposite sides, in combination with arm H, provided with the pivot I, bearing an elongated fixed button, T, and lower jaw, I, of the cloth-clamp, substantially as and for the purpose described.

In witness whereof I have hereunto set my hand and seal.

JUSTIN J. GRAFF. [L. S.]

Witnesses:

GEO. H. STRONG,  
FRANK A. BROOKS.