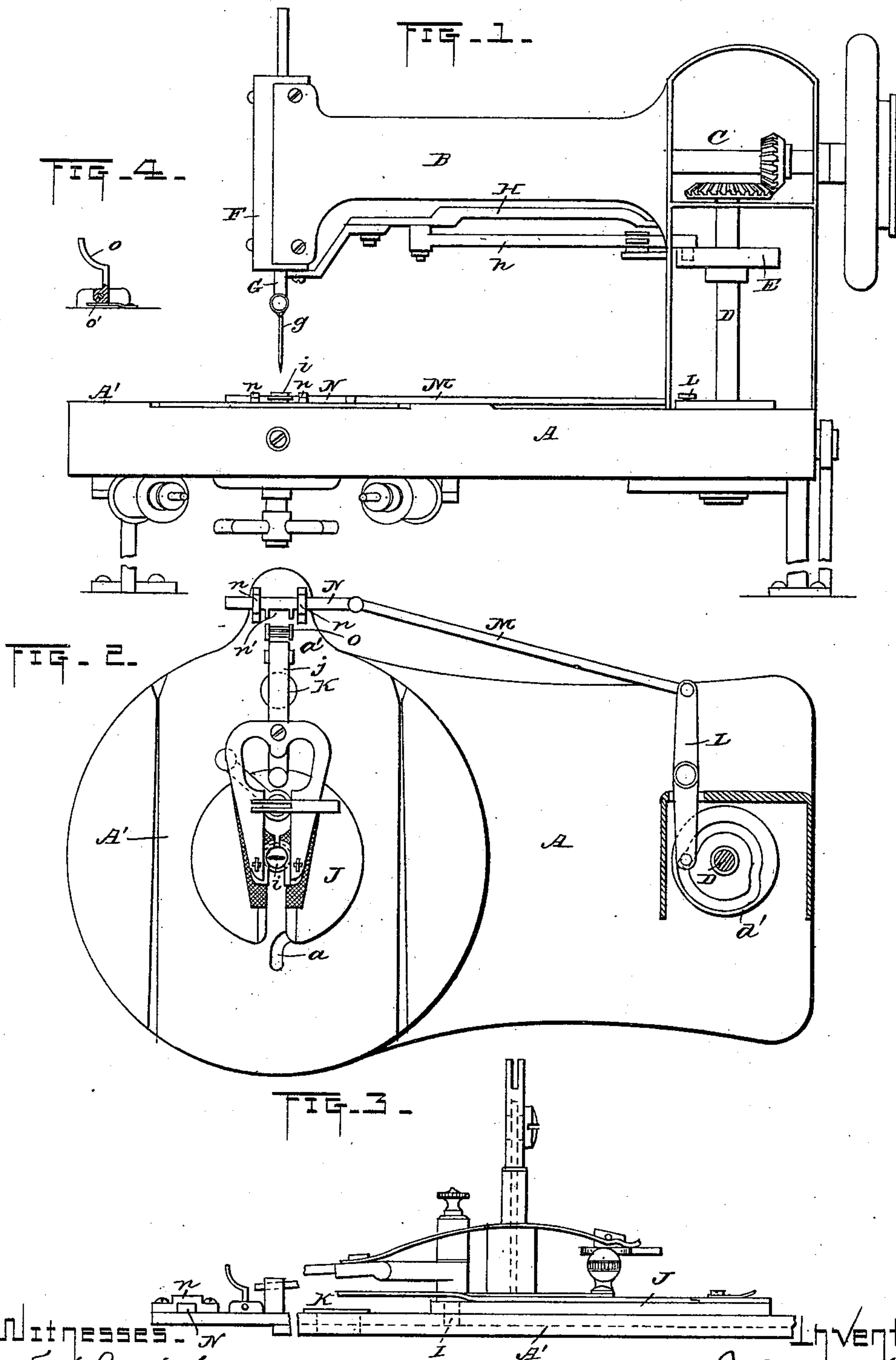


(No Model.)

J. Q. A. HOUGHTON.  
BUTTON HOLE SEWING MACHINE.

No. 449,075.

Patented Mar. 24, 1891.



Witnesses  
E. S. Smith  
A. V. Cushman

Inventor  
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by Henry F. Lewis  
Att'y.



# UNITED STATES PATENT OFFICE.

JOHN Q. A. HOUGHTON, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR  
TO THE SINGER MANUFACTURING COMPANY OF NEW JERSEY.

## BUTTON-HOLE SEWING-MACHINE.

**SPECIFICATION** forming part of Letters Patent No. 449,075, dated March 24, 1891.

Original application filed February 3, 1887, Serial No. 226,336. Divided and this application filed September 13, 1890. Serial No. 364,871. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN Q. A. HOUGHTON, a citizen of the United States, formerly of Baltimore, Maryland, but now residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Button-Hole Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This application is a division of my application, Serial No. 226,336, filed February 3, 1887.

The object of my invention is to provide a simple automatically-operating mechanism for forming barring stitches across the ends of eyed button-holes when they have been otherwise completed.

To this end my invention consists in certain combinations of parts, as will be hereinafter indicated by the claims at the end of this specification, by which the work-clamp is moved laterally or across its line of feed when the end of a button-hole is reached to form a series of barring-stitches across the end of such hole to fully finish the same.

In the drawings, Figure 1 is a side view of a machine with my invention applied thereto. Fig. 2 is a plan view of the work-plate and clamp with the vertical shaft and vertical portion of the arm in section. Fig. 3 is a detail elevation to show certain parts. Fig. 4 is a detail to show the spring-latch.

In the machine herein shown the bed-plate A, work-plate A', arm B, driving-shaft C, vertical shaft D, gears *c* and *d*, connecting said shafts, cam E on said vertical shaft, horizontally-moving needle-head F, needle-bar G, needle *g*, and connections H *h* between said needle-head and cam are or may be of any well-known form in button-hole machines, as may also be the looping mechanism co-operating with the needle and the work-clamp feeding mechanism.

J is the work-clamp, having the usual feeding-pin I, which passes through the guiding-slot *a* in the work-plate A' into the groove of the usual feeding-cam (not shown) beneath said plate, said work-plate A' having an ordinary guiding-button *i* fixed thereto.

The work-plate A', on which the base-plate of the clamp travels in the usual manner, is pivotally attached to the bed-plate of the machine by a fulcrum-pin K, so that it can be vibrated laterally when desired, sufficient looseness being left between the sides of said plate for the purpose, as shown in Fig. 2. On the vertical shaft D is a cam *d'*, the groove of which is entered by a pin on a lever L, jointed to a rod M, connected with a slide N, which latter is guided in ears *n* on a rearward extension *a'* of the work-plate A', said slide having a notch *n'* between said ears.

Pivotally attached to the plate A' is a spring latch or catch *o*, which is in the line of movement of an extension *j* of the clamp J. Said catch or latch may be held up by a spring, as *o'*, which when the said catch or latch is partly pushed over will throw it down suddenly, and as it is in such position as to be struck by the extension *j* of the clamp it will be turned down into the notch *n'* of the reciprocating slide N when thus struck, thus connecting the clamp and the work-plate to which the clamp is attached by the guiding-button *i* to the said slide, so that the movements of the latter received from the cam *d'* will cause the work held in the clamp to be vibrated beneath the needle to form barring-stitches across the end of the button-hole. The extension *j* of the clamp will not engage the latch or catch *o* to throw it into the notch *n'* of the slide N until the stitching of the last side of the button-hole has been nearly completed, the clamp traveling rearward as the stitching of the last side of the button-hole is being performed.

The cam *d'* is so arranged in relation to the cam E, from which the needle receives its lateral movements, that the lateral movements of the work-clamp will be in opposition to the lateral movements of the needle to cause long barring-stitches to be made across the ends of the button-holes. When three or four barring-stitches have been made, the machine will be stopped, either automatically or by the operator, for the removal of the work and its readjustment preparatory to stitching and barring another button-hole.

I do not claim, broadly, a pivoted or vibra-

tory work-plate in a button-hole sewing-machine; but

What I do claim, and desire to secure by Letters Patent, is—

5 1. In a button-hole sewing-machine, the combination, with a stitch-forming mechanism, a work-clamp, and its feeding mechanism, of a pivoted work-plate carrying a clamp-guiding button and a latch or catch, a slide  
10 guided in ears on said work-plate and provided with a notch, an extension or projection on said clamp to strike said catch or latch and cause it to engage said notch, and means for reciprocating said slide, substantially as  
15 set forth.

2. In a button-hole sewing-machine, the

combination, with a stitch-forming mechanism, a work-clamp J, having a projection or extension *j*, and feeding mechanism for said work-clamp, of the pivoted work-plate A, hav- 20 ing the catch or latch *o*, the guiding-button *i* and the ears *n*, the slide N, guided in said ears and having the notch *n'*, the vertical shaft D, having the cam *d*, and the lever L, operated by said cam and connected with said slide, 25 substantially as set forth.

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

JOHN Q. A. HOUGHTON.

Witnesses:

A. S. BROWNE,  
CARLETON E. SNELL.