

J. J. GRAFF.

Button-Hole Sewing-Machines.

No. 151,380.

Patented May 26, 1874.

Fig. 1.

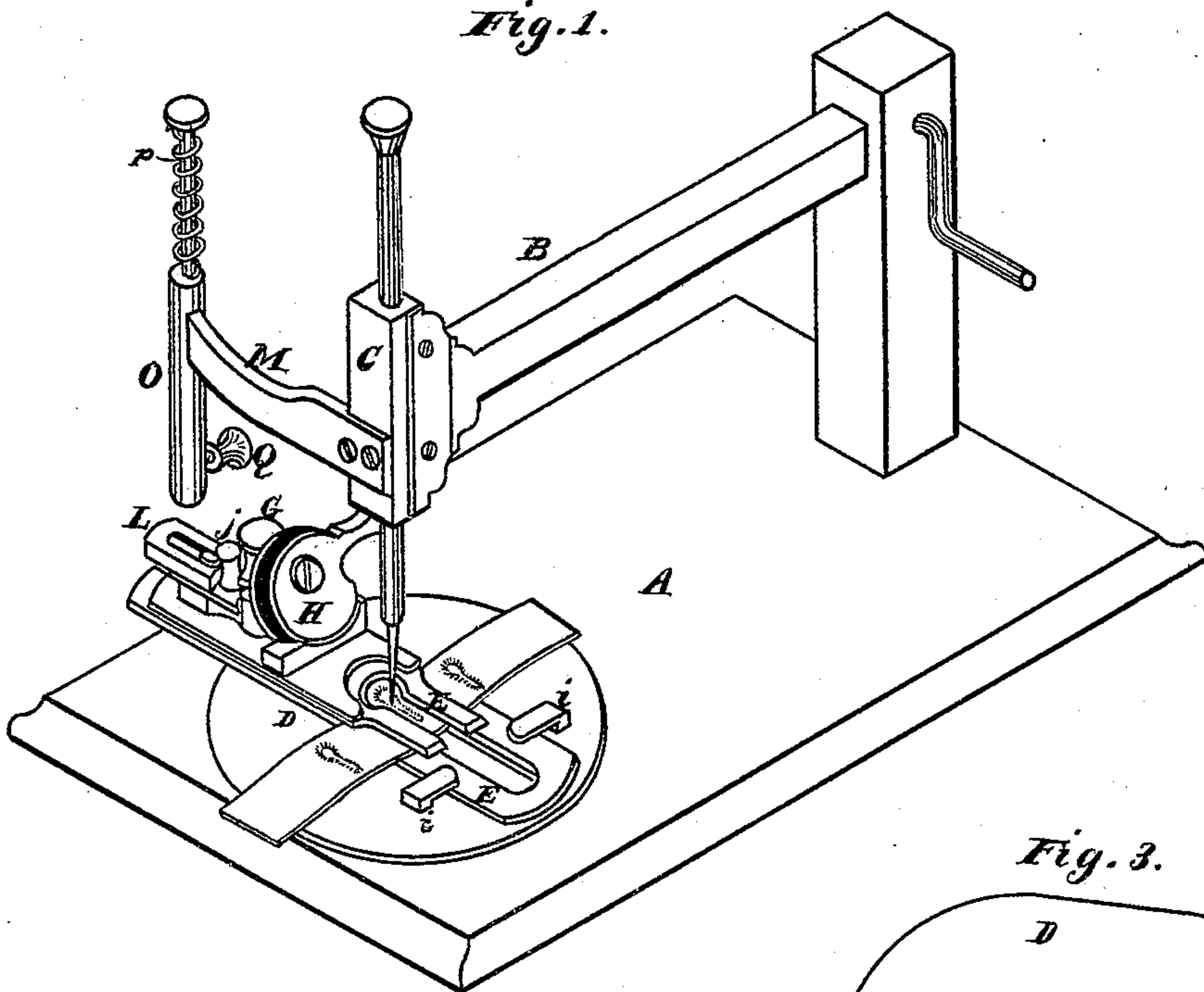


Fig. 2.

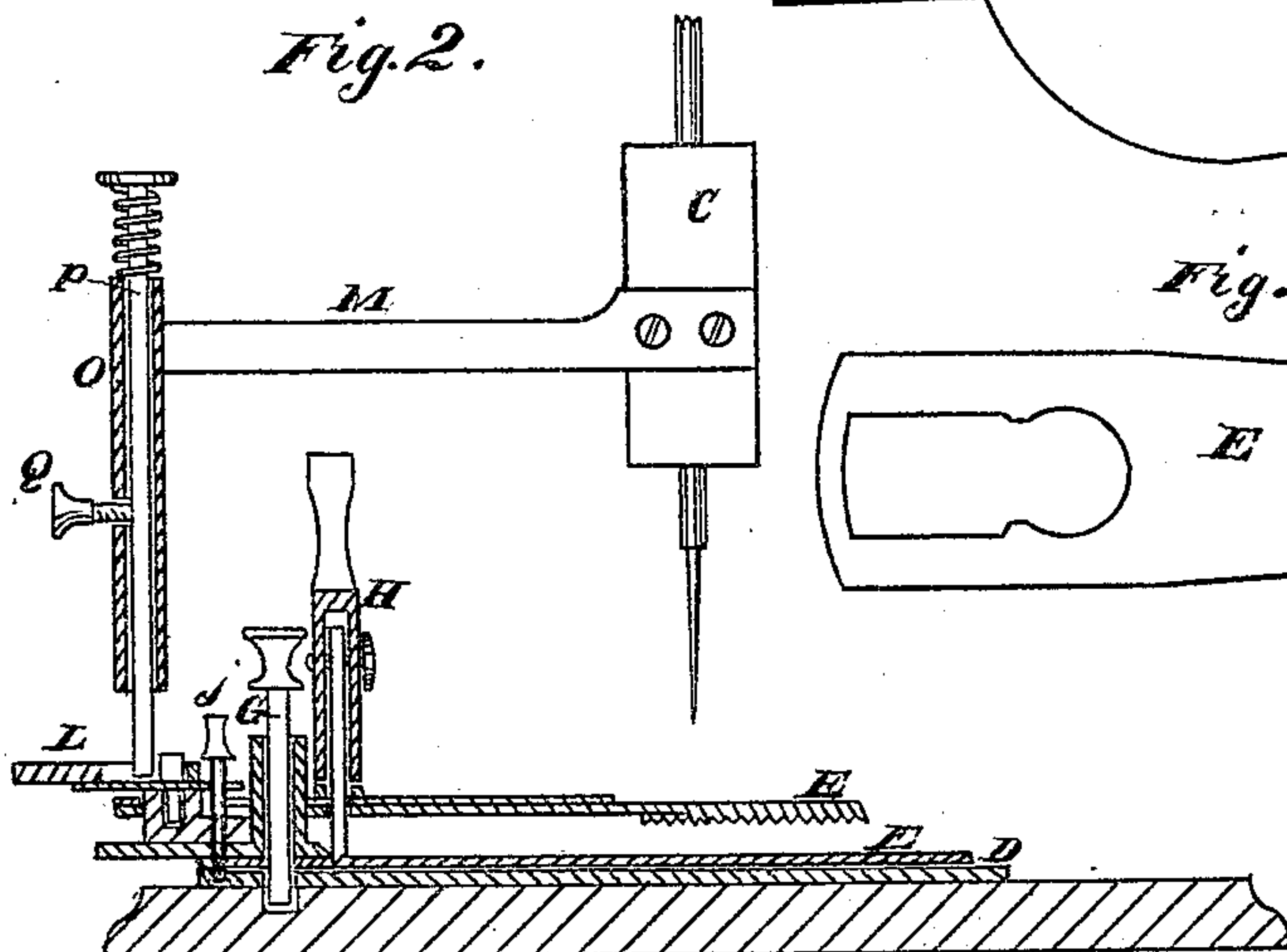


Fig. 3.

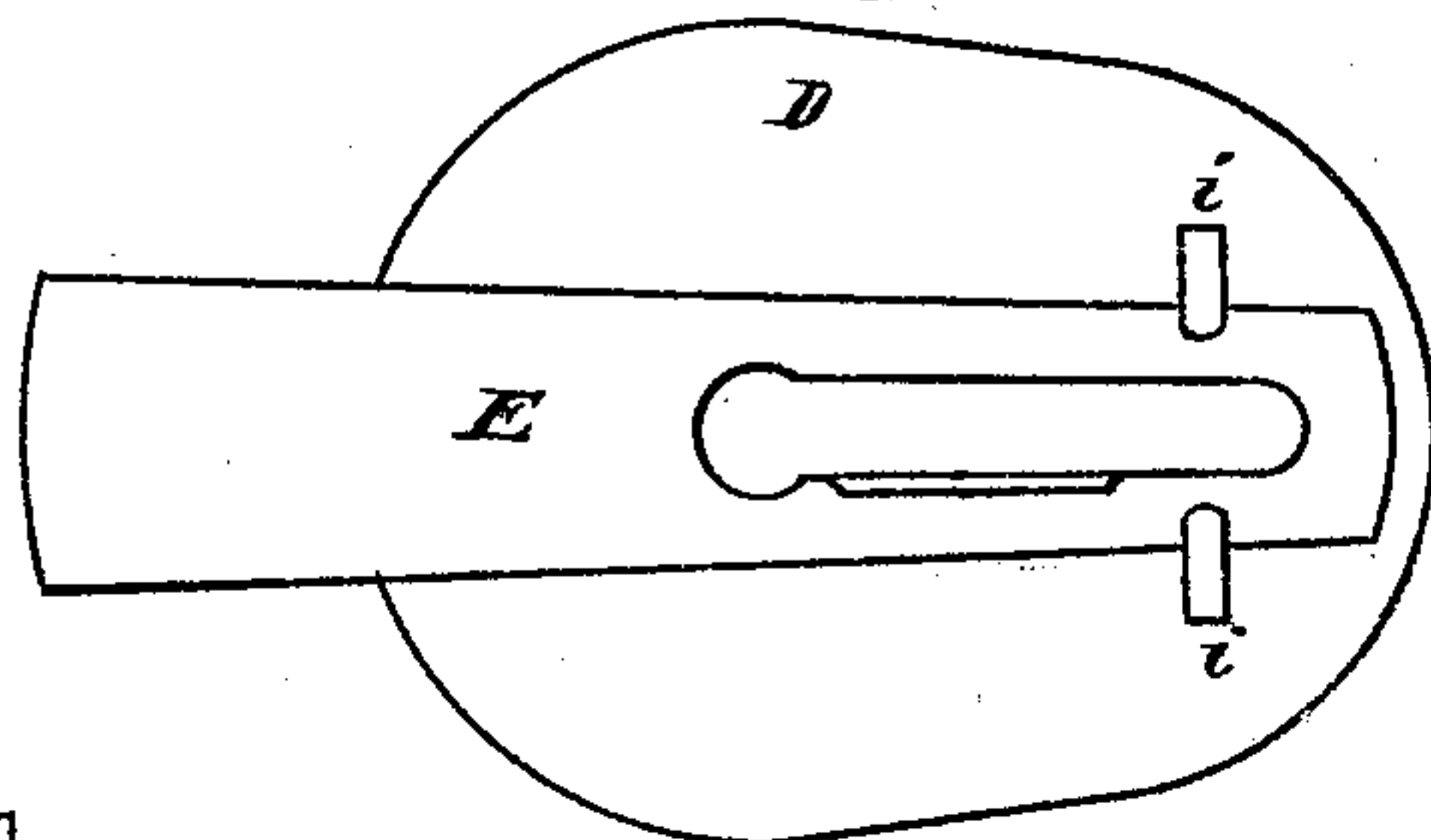
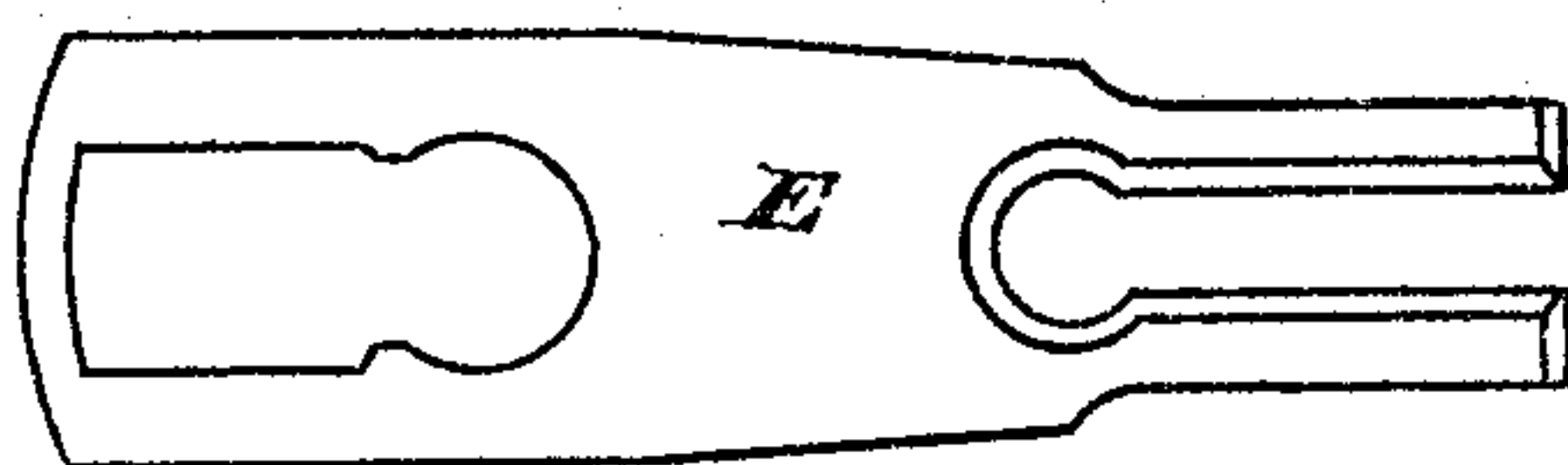


Fig. 4.



Witnesses

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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. 151,380, dated May 26, 1874; application filed March 25, 1874.

To all whom it may concern:

Be it known that I, JUSTIN J. GRAFF, of San Francisco city and county, State of California, have invented an Improvement in Button-Hole Sewing-Machines; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improvement in what is known as the "Humphrey button-hole sewing-machine," by which I am enabled to finish the button-hole before removing the cloth from under the needle. My improvement enables me to do this in an easy, simple manner.

In order to describe my improvement, reference is had to the accompanying drawing forming a part of this specification.

Figure 1 is a perspective view of the machine with my improvement attached. Fig. 2 is a sectional elevation. Fig. 3 is a view of plate D and one clamp. Fig. 4 is a view of the other clamp.

A is the table, B the arm, C the needle-bar carrier, and D the cloth-carrier or slotted circular plate, of an Humphrey button-hole sewing-machine, said slotted plate having the cloth-clamps E E secured upon its upper face. In the Humphrey machine the clamp-plates E are permanently secured to the slotted circular plate D, and the only stitch motion obtained is the circular traversing movement of the cloth-holding plate D, and the in-and-out motion of the needle as it makes the button-hole stitch. These motions are entirely sufficient to form the edge or button-hole stitch; but in order to complete the button-hole I provide another movement, as follows: I detach the clamp or cloth-holding plates E E from the slotted traversing circular plate D, and connect them together by a pivot or stud, G, just back of the cam H, and near one end of the plate D, so that the clamp-plates can move about this pivot as a center. A stop-plate, I, is secured to the circular plate D upon each side of the clamp-plates, and serves to limit the throw of the clamp-plates. Back of the stud or pivot G is a pin, J, which passes

down through the clamp-plates and into the circular plate D, so that when pressed down into the circular plate it serves to fasten the clamps immovably to the circular plate, and allow the machine to operate similarly to the ordinary Humphrey machine to form the edge stitch; but when raised up out of the circular plate, the clamps are left free to turn upon the pivot. Now, when the clamps are fixed to the circular plate by the pin, the button-hole can be sewed in the ordinary manner until the edge has been completely stitched to the point where it has been heretofore stitched by the ordinary arrangement; but, instead of then removing the cloth so that the button-hole may be finished by hand, I finish it on the machine by the following simple arrangements: To the rear end of the clamping-plates E, I secure a horizontally-slotted plate, L. I then attach to the vertical needle-bar carrier C an arm, M, which extends out over the slotted plate L, and which has a vertical barrel, O, secured to its extremity in line with the slotted plate L. A rod, P, passes down through the barrel, and can be held at any desired point by a set-screw, Q. Now, instead of removing the cloth from the clamps and finishing it by hand, I simply lift the pin J, so as to allow the clamps to be attached to the circular plate D by its pivot G only. I then lower the rod P until its lower end enters the slot in the plate L, and secure it in this position. It will, therefore, be evident that when the machine is again set in motion, the back-and-forth motion of the needle-bar carrier C will cause the rod P to throw the clamps back and forth about their pivot a distance equal to the movement of the needle-bar carrier, but in an opposite direction, thus securing a double motion and a stitch twice the length of the ordinary stitch. This double-length stitch will cross the end of the button-hole and finish the seam in the same manner that it is finished by hand. It will then only be necessary to tie or otherwise fasten the threads when the cloth is removed from the clamps.

Any device that connects the needle-bar carrier with the pivoted clamps so as to double the length of the stitch will answer the same purpose.

Having thus described my invention, what

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

1. The pivoted clamping-plates E, provided with the slotted plate L, in combination with the needle-bar carrier C, its arm M, and adjustable rod P, substantially as and for the purpose above described.

2. The circular traversing-plate D, with its pivoted clamping-plates E and the pin *j*, sub-

stantially as and for the purpose above described.

In witness whereof I hereunto set my hand and seal.

JUSTIN JOSEPH GRAFF. [L. S.]

Witnesses:

JNO. L. BOONE,

C. M. RICHARDSON.