(No Model.)

J. D. ULMER & J. S. COLLINS.

BUTTON HOLE CUTTING ATTACHMENT FOR SEWING MACHINES.

No. 302,802. Patented July 29, 1884.

Fig. 1.

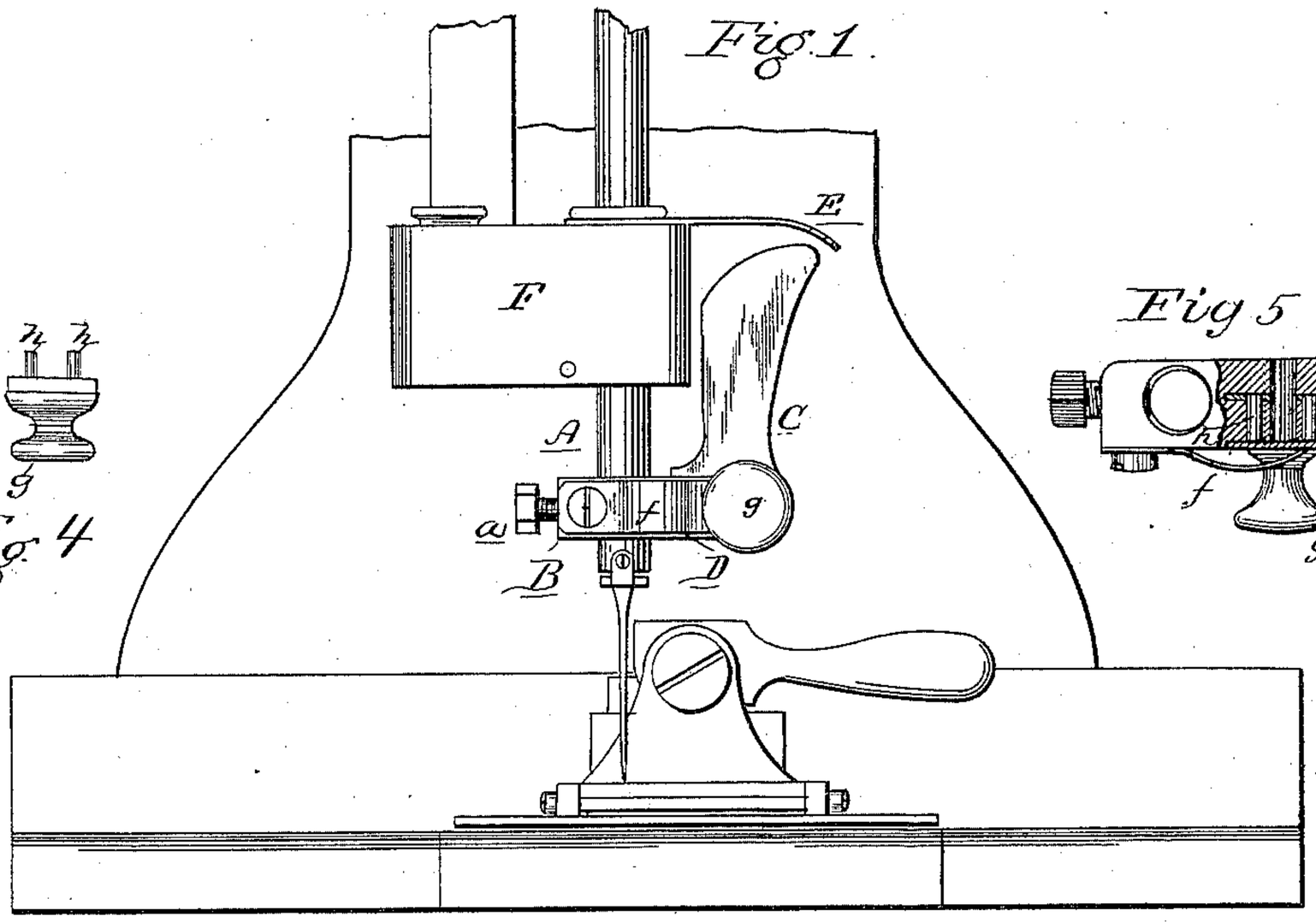
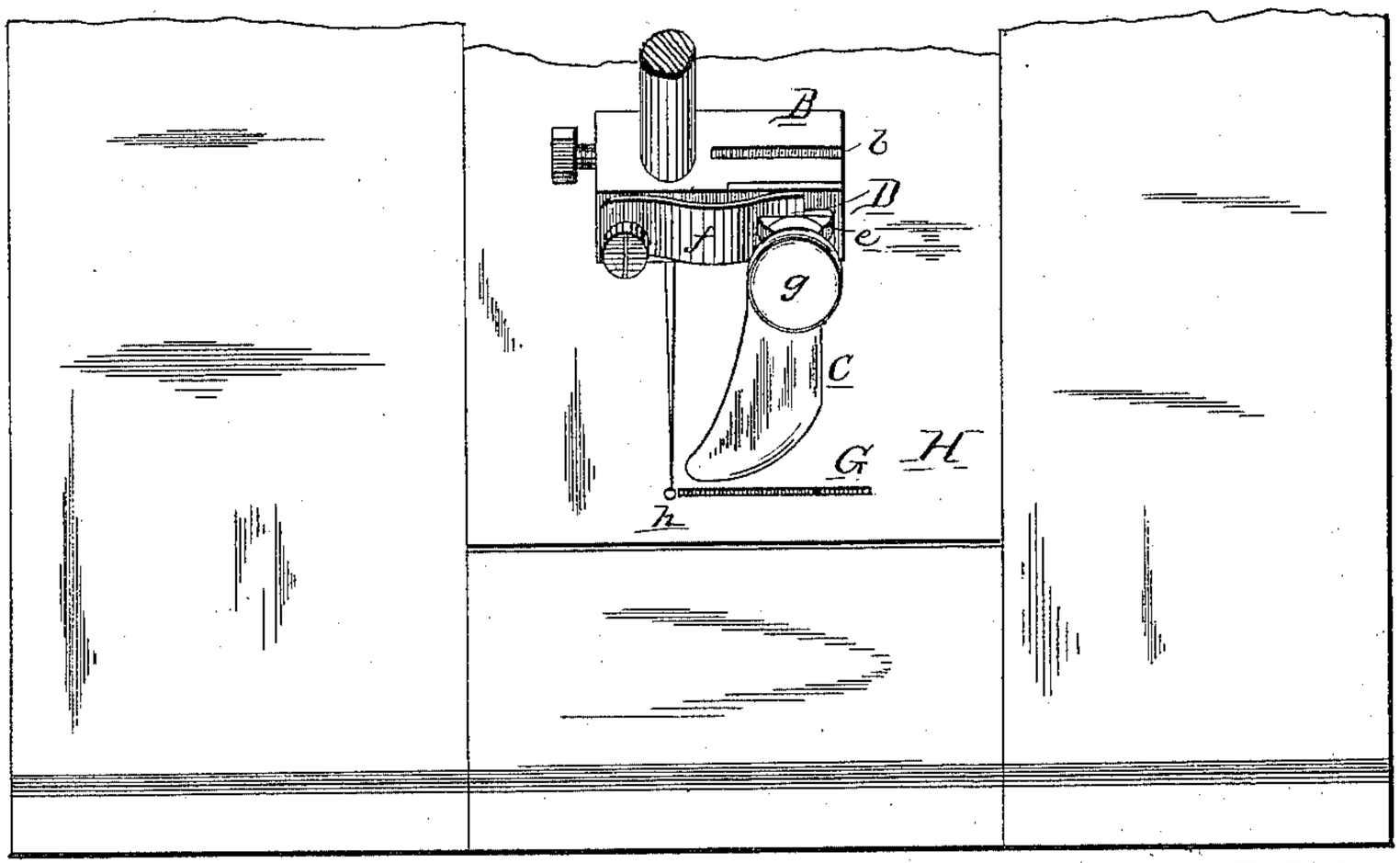


Fig. 4

Fig 5

Fig 2



Witnesses.
Jos. B. Connally
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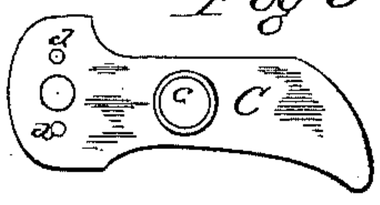
Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN D. ULMER AND JOSEPH S. COLLINS, OF PHILADELPHIA, PA.

BUTTON-HOLE-CUTTING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 302,802, dated July 29, 1884.

Application filed March 5, 1884. (No model.)

To all whom it may concern:

Be it known that we, JOHN D. ULMER and JOSEPH S. COLLINS, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Button-Hole-Cutting Attachments for Sewing-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a front view of a sewing-machine with our improvement in position thereon; Fig. 2, a perspective view of the same, and Figs. 3 and 4 details. Fig. 5 is a plan view of the cutter and connections, a portion of the supporting-block being in section or broken away.

This invention has relation to button-hole-cutting attachments for sewing-machines, and especially to that class of cutters adapted and designed to be used in connection with button-hole-feeding devices of that class wherein the cloth is fed laterally of the feed-plate, as shown, for example, in Letters Patent No. 203,287, of November 2, 1877.

The object of this invention is to provide a cutter which may be attached to the needle-bar of a button-hole sewing-machine, and so arranged that it may be brought into position for use before or after the button-hole has been stitched.

A further object of this invention is to provide a cutter of the character above stated, which may be so adjusted as to cut button-holes of any desired length with precision and without injury to the stitching.

The cutter embodying our invention is particularly intended for cutting button-holes in knit fabrics, but is equally adapted for cutting button-holes in any other kind of material.

Heretofore, where button-hole sewing-machines of the class above referred to have been used, it has been customary to cut the button-hole by hand after the same has been stitched upon the fabric. This process is objectionable, for the reason that there is constant danger of severing the stitches at the sides of the button-hole, causing the same to fray out. It has also necessitated the employment of a large force of hands where the work has been extensively carried on. Our invention aims at overcoming these difficulties by the substitution for hand-work of a special appliance adapted to be attached to the sewing-machine, and operating in connection with the moving parts thereof in such manner as to insure an exact cut without injury to the stitching.

Our invention consists, broadly, in the combination, with the needle-bar of a sewing-machine, of a button-hole-cutting device attached to and operated thereby.

Our invention further consists in the construction and arrangement of a button-hole-cutting device operating through the medium of the needle-bar, and capable of being brought into position for cutting, or swung out of the way, according to requirements.

Our invention finally consists in the combination, with the needle-bar of a sewing-machine, of a button-hole-cutting appliance, which may be adjusted to cut button-holes of different lengths.

Referring to the accompanying drawings, A designates the needle-bar of a sewing-machine.

B designates a block or yoke, secured thereto by means of a set-screw, *a*, which enables said block to be adjusted to any height on said needle-bar.

C designates a cutting-blade pivoted in a slot, *b*, in the end of block B, and provided with a knob, *c*, wherewith to move the same into and out of position. In the pivoted end of blade C holes *d d* are formed for the engagement of a spring-catch, D, secured to the block B, and adapted to hold said blade rigidly in an upright or pendent position. This spring-catch is composed of the block *e*, the bifurcated spring *f*, the knob *g*, and the pins *h h*. The blade C has its cutting-edge inclined, as shown, so as to produce a shear cut, and so that when the block B is adjusted the length of the cut will correspondingly be long or short. Thus when the block is set high up on the needle-bar, the blade will cut a short slit, and vice versa.

E designates a bent spring-plate, attached to the head F of the sewing-machine in the position shown, so as to cover and serve as a shield for the cutting-blade when the same is turned up. When in position for cutting, the blade plays through a slot, G, in the cloth-plate H of the machine. As shown, this slot is close to but divided from the needle-hole *h*, the object

of such division being to guard against the blade cutting the thread from the needle or the shuttle.

The operation of our invention is as follows: The blade is turned for use only when the stitching of the button-hole has been completed or before the same has been begun, and when the cloth is in such position that the blade will strike and cut exactly in the center of the stitching, so as to avoid danger of cutting the latter, or exactly in the place where it is intended to stitch. The blade is caused to penetrate the cloth by a single downward movement of the needle-bar, and the necessary movement is given to the needle-bar by turning the pulley-wheel, which is provided with a suitable handle for the purpose.

Having fully described our invention, we claim—

1. The combination, with the needle-bar of a sewing-machine, of a button-hole cutter attached thereto and operated thereby, said cutter consisting of a blade adjustably arranged, and located on a line or in the same plane with the needle, coinciding with the line of feed of the machine.

2. The combination, with the needle-bar of a sewing-machine, of an adjustable button-hole-cutting attachment operated thereby, and adapted to cut button-holes of different lengths, said attachment consisting of a blade lying in the same plane with the needle, coinciding with the line of feed of the machine, substantially as described.

3. The combination, with the needle-bar of a sewing-machine, of a pivoted cutting-blade for cutting button-holes, said blade being attached thereto, and adapted to be swung into and out of position for work, and being arranged on line or in the same plane with the needle, coinciding with the line of feed of the machine, substantially as described.

4. The combination, with the needle-bar A of a sewing-machine, of the block B, pivotally-supported blade C, and a catch or securing device to hold said blade rigidly in place when in position for use, substantially as described.

5. The combination, with the needle-bar A, block B, pivoted blade C, and machine-head F, of the guard-plate E, all constructed and arranged as described.

6. The combination, with needle-bar A, block B, and pivoted blade C, of the spring-catch D, adapted and designed to hold said blade in position, substantially as described.

7. The combination, with an adjustable cutting-blade applied to the needle-bar of a sewing-machine, and lying in the same plane or on line with the needle, and coinciding with the line of feed of the machine, of a cloth-plate having a slot for the passage of said blade, located adjacent to the needle-hole, but separate therefrom.

In testimony that we claim the foregoing we have hereunto set our hands this 1st day of March, 1884.

JOHN D. ULMER.
JOSEPH S. COLLINS.

Witnesses:
JOS. B. CONNOLLY,
JOHN URIAN.