(No Model.)

A. F. CHAMPLIN.

CONNECTING ROD.

No. 560,837. Patented May 26, 1896.

Fig. 1.

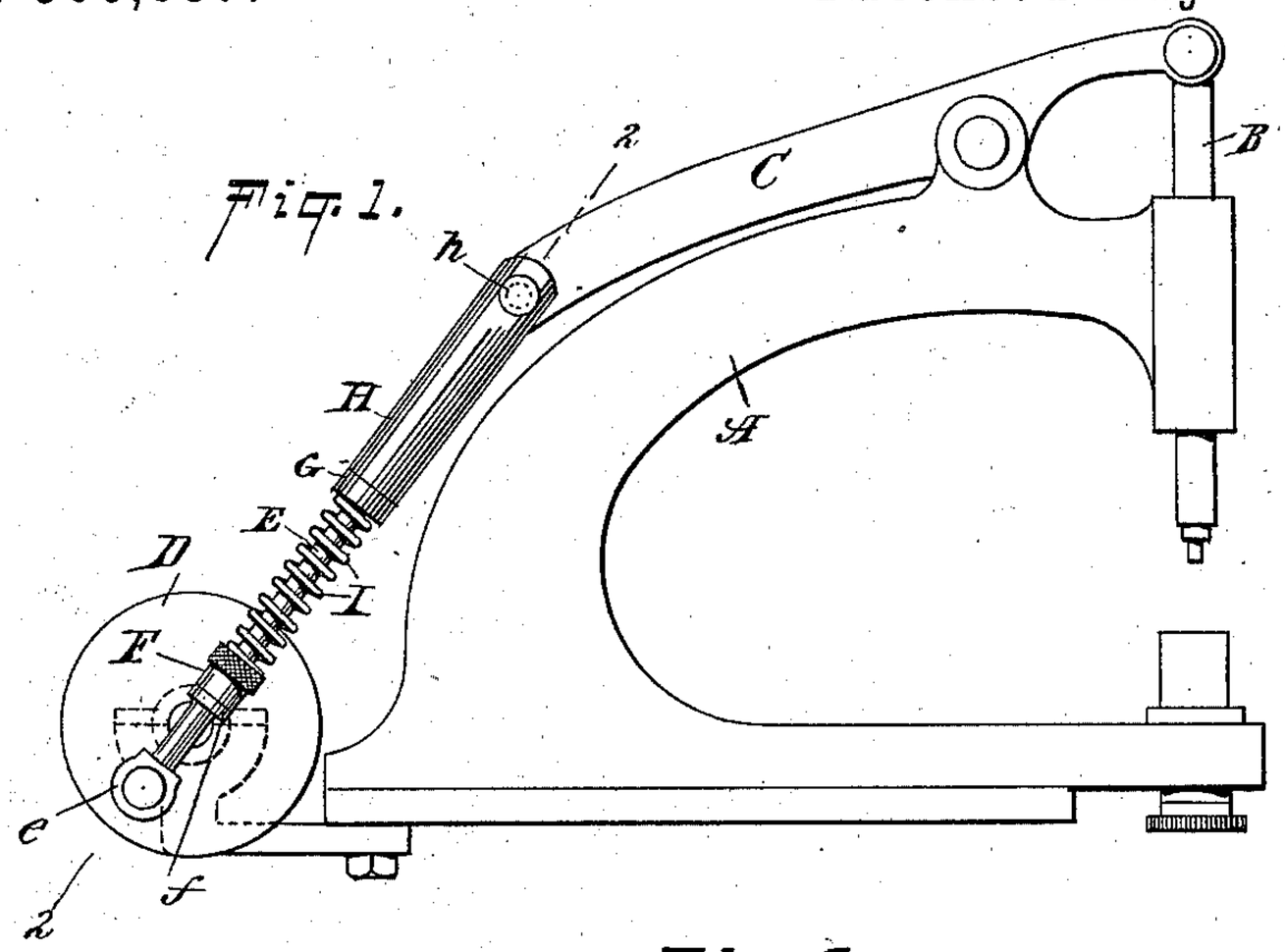


Fig. 4.

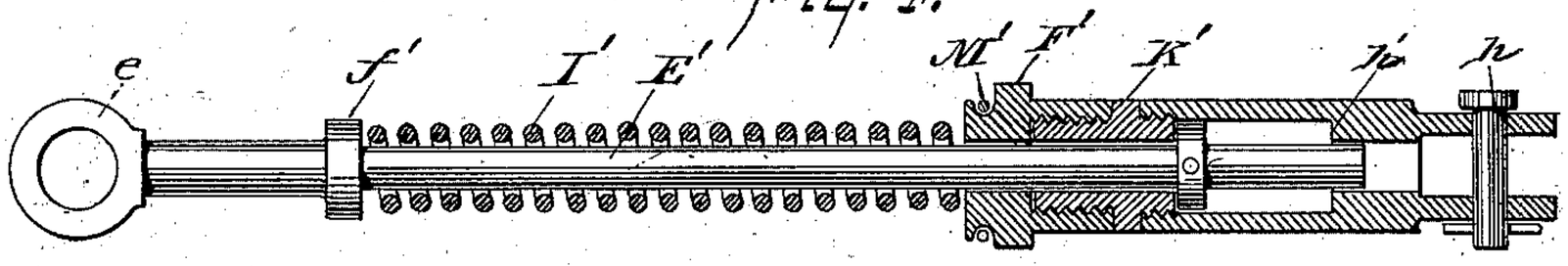


Fig. 2.

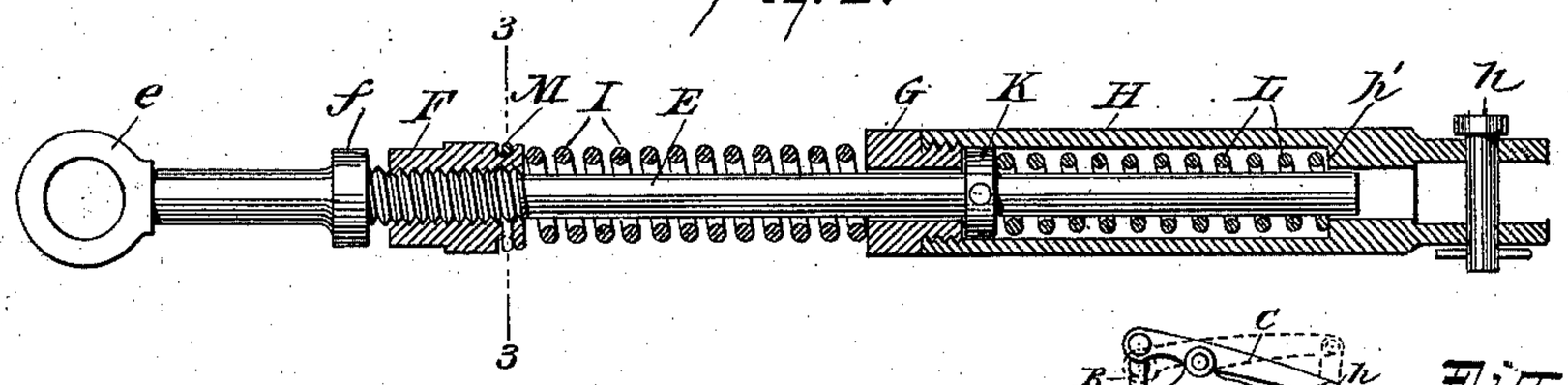


Fig. 3.

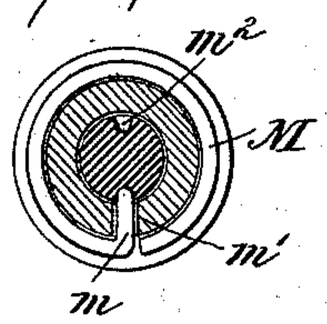
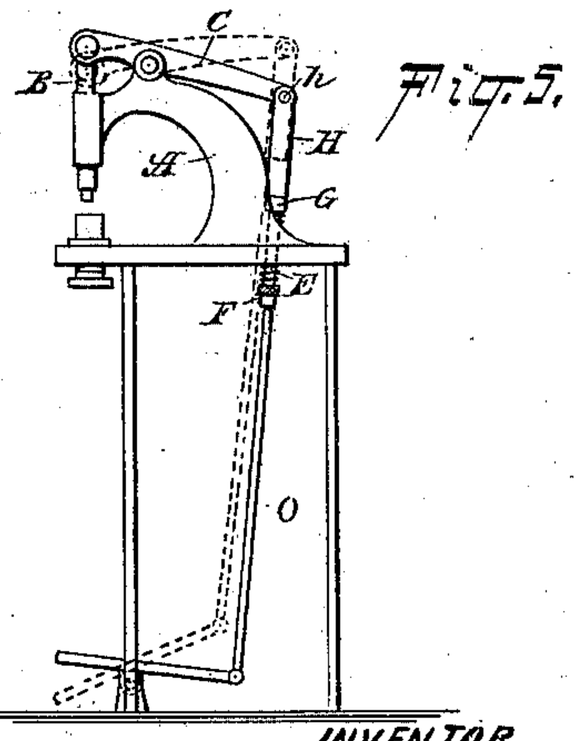


Fig. 5.



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UNITED STATES PATENT OFFICE.

AMOS F. CHAMPLIN, OF WATERBURY, CONNECTICUT.

CONNECTING-ROD.

SPECIFICATION forming part of Letters Patent No. 560,837, dated May 26, 1896.

Application filed December 26, 1895. Serial No. 573,252. (No model.)

To all whom it may concern:

Be it known that I, AMOS F. CHAMPLIN, a citizen of the United States, and a resident of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Connecting-Rods, of which the following is a specification.

My invention relates to an improvement in levers or connecting-rods, the object of the same being to construct a connecting-rod for attachment to a disk and lever operating a plunger, whereby the pressure or force of the latter may be nicely adjusted or regulated.

With this and other ends in view my invention consists in certain novel features of construction and combination of parts, as will hereinafter be fully described, and pointed out in the claims.

In the present application I have described my invention as being utilized in connection with a button-setting machine, but do not intend to limit it to such application, as it will readily occur to persons skilled in the art that it is equally well adapted to all machines where a plunger is made use of.

In the accompanying drawings, Figure 1 is a side view of a portion of a button-attaching machine to be operated by power having my improved connecting-rod applied thereto. Fig. 2 is a sectional view of the rod, taken on line 2 2 of Fig. 1. Fig. 3 is a sectional view taken on the line 3 3 of Fig. 2. Fig. 4 is a sectional view of a modification. Fig. 5 is a view of a button-machine operated by foot-power and having my invention applied thereto.

Referring to the accompanying drawings, A represents the frame or bracket of a button-machine; B, the plunger; C, the lever operating the plunger, and D the disk to and through which the power is imparted in the usual way in this class of devices, the several parts above mentioned being constructed and arranged in the ordinary manner.

To the disk D and lever C is pivoted my improved connecting-rod, which consists of the rod proper, E, one end *e* of which is rounded into a bearing where it is pivoted to the disk D. Near this end the rod has threaded thereon the adjusting-nut F, a shoulder *f* being formed on the rod to limit the travel of said nut. Near the opposite end of the rod E is located the sleeve G, which latter has threaded thereon the barrel H, the outer end of the latter being slotted for the reception of the end of the lever C, a pin *h* being passed through the ends of said barrel and lever C for the purpose of pivotally securing them.

Between the sleeve G and adjusting-nut F is a spring I, coiled around the rod E, the tendency of which is to force said barrel in a direction away from said nut F. In order to prevent the barrel from being entirely forced off the rod, a collar K is pinned or otherwise firmly secured to said rod E and against which the sleeve G is held by the spring I, the diameter of said collar being such as to nicely fit and slide within the barrel H. Within the barrel and between the collar K and the shoulder *h'*, formed in said barrel, is located a second spring L, also coiled around the rod E, the tendency of which, like the spring I, is to keep the barrel H elevated and away from that end of said rod E which has the nut F threaded thereon.

It will be understood from the above description that when disk D is revolved the connecting-rod is raised, thereby raising one end of the lever C and lowering the plunger B, the latter thereupon forcing the button and fastener into contact in the way usual in this class of devices. When the connecting-rod has been raised to its highest point, the springs I and L will be slightly compressed, the rod E being forced inwardly into the barrel H, the tension of said springs I and L being such as to exercise a sufficient pressure upon the lever C and plunger B to set the button, but without crushing it, the tension being regulated by turning the adjusting-nut F to the right or left in accordance as to whether it is to be increased or decreased.

Around one end of the adjusting-nut F is formed a groove or recess, in which is fitted a wire spring M, one end *m* of which is bent inwardly and passes through an opening *m'*, formed in the nut, and into one of the grooves m^2, formed in the rod E on opposite sides thereof, said wire spring thus acting to hold the nut F in its different adjustments. When the nut F is turned, the bent end *m'* of the spring M will ride out of the groove m^2, said nut in its adjustments being turned until a bent end of said spring enters one of the

grooves m^2, the tension of said spring M being such as to allow the nut F to be turned by hand, but to prevent it from turning accidentally.

Instead of constructing the rod with two separate springs, as described, it may be formed with but one, as illustrated in Fig. 4, in which instance the spring I′ is lengthened and the adjusting-nut F′ located near the opposite end of the rod E′, said nut being threaded and adjustable on the sleeve K′. By turning the nut F′ the tension of the spring I′, which bears against the latter and the shoulder f', may be regulated as described in the first instance.

When adapted to be used on machines operated by foot-power, the rod will be secured to and practically form a part of the pitman O, as shown in Fig. 5.

It will now be understood that my improved connecting-rod is exceedingly simple in its construction, that while it remains of one length, yet at the same time its lifting force or pressure on the lever C may be readily, easily, and nicely adjusted at will.

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

1. A connecting-rod consisting of a rod proper and a barrel into which said rod extends, and springs coiled around said rod within and without said barrel for retaining said barrel in its normal position, substantially as described.

2. A connecting-rod consisting of a rod proper, and a barrel into which one end of said rod extends, a collar immovably secured to said rod, and within said barrel, an adjusting-nut located on said rod and without said barrel, and a spring coiled around said rod outside of said barrel and fitting against said nut, substantially as described.

3. In a connecting-rod, the combination with the rod E, adjusting-nut F threaded thereon, and collar K immovably secured thereto, of the barrel H movable on said rod, the spring I coiled around said rod between the nut F and outer end of said barrel, and the spring L coiled around said rod within said barrel and fitting against said collar K, substantially as described.

Signed at Waterbury, in the county of New Haven and State of Connecticut, this 4th day of December, A. D. 1895.

AMOS F. CHAMPLIN.

Witnesses:
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