

(No Model.)

F. EGGE.

BUTTON HOLE ATTACHMENT FOR SEWING MACHINES.

No. 376,297.

Patented Jan. 10, 1888.

Fig 1

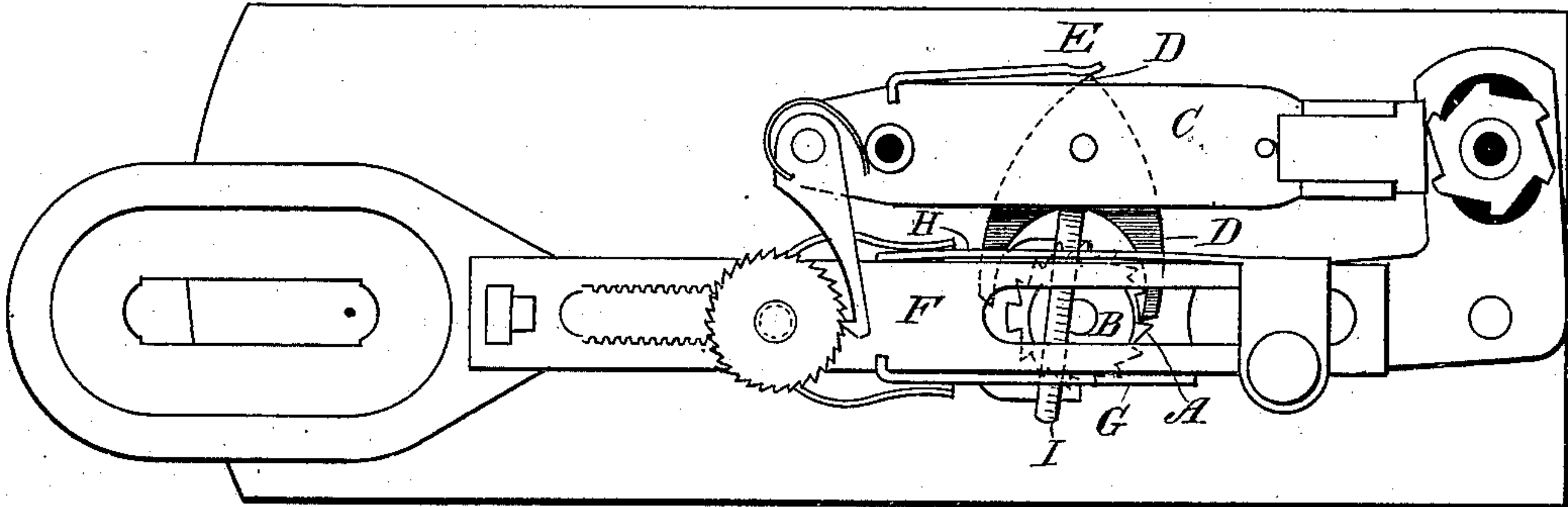


Fig 2

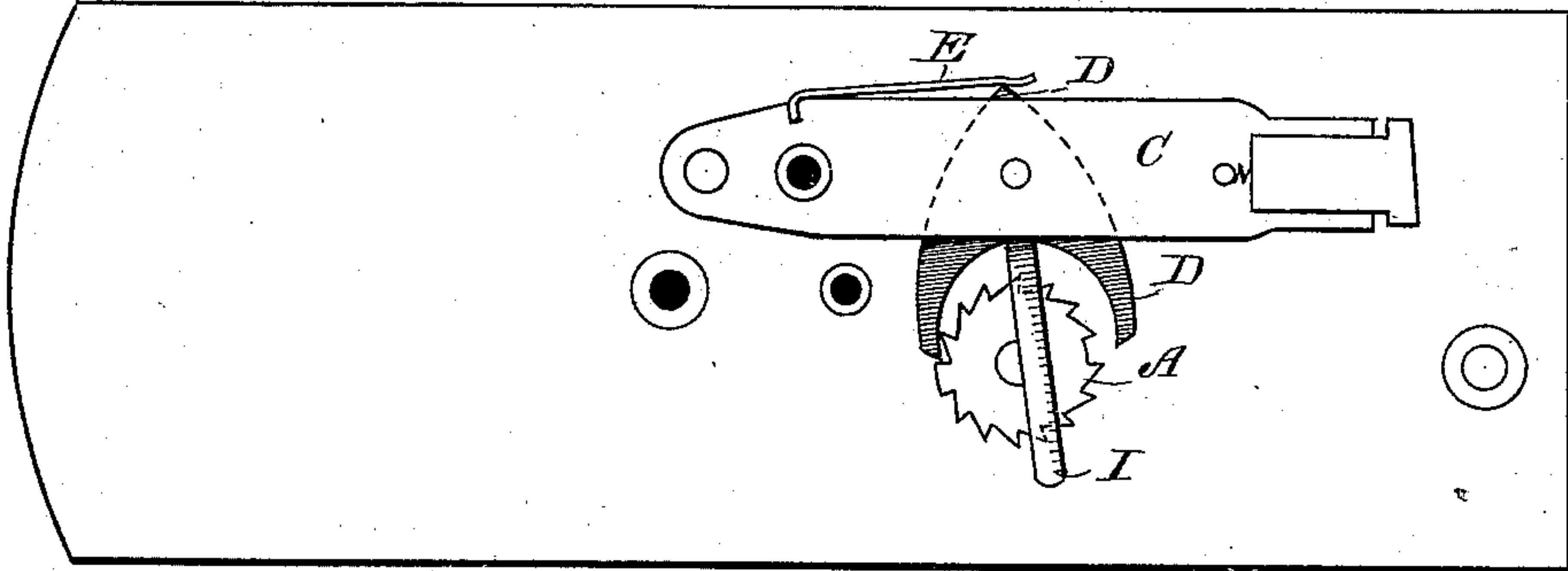


Fig 3

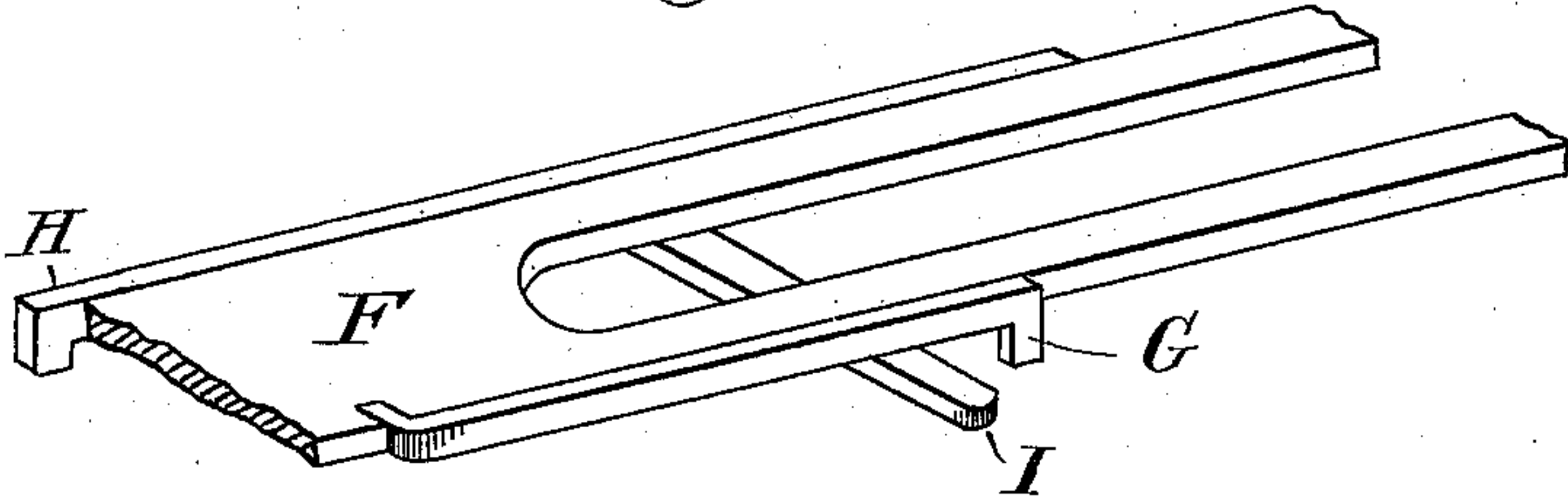


Fig 4

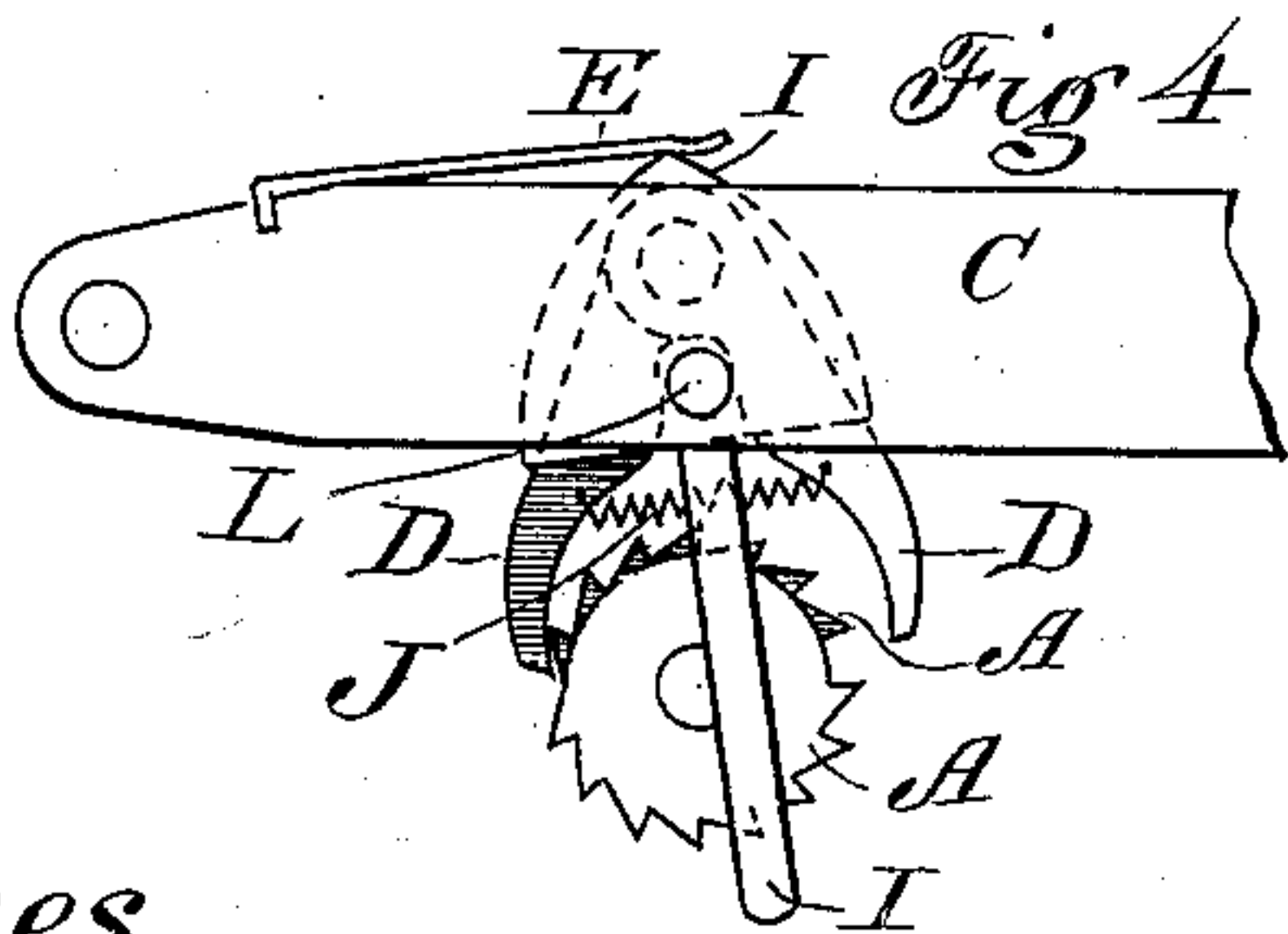
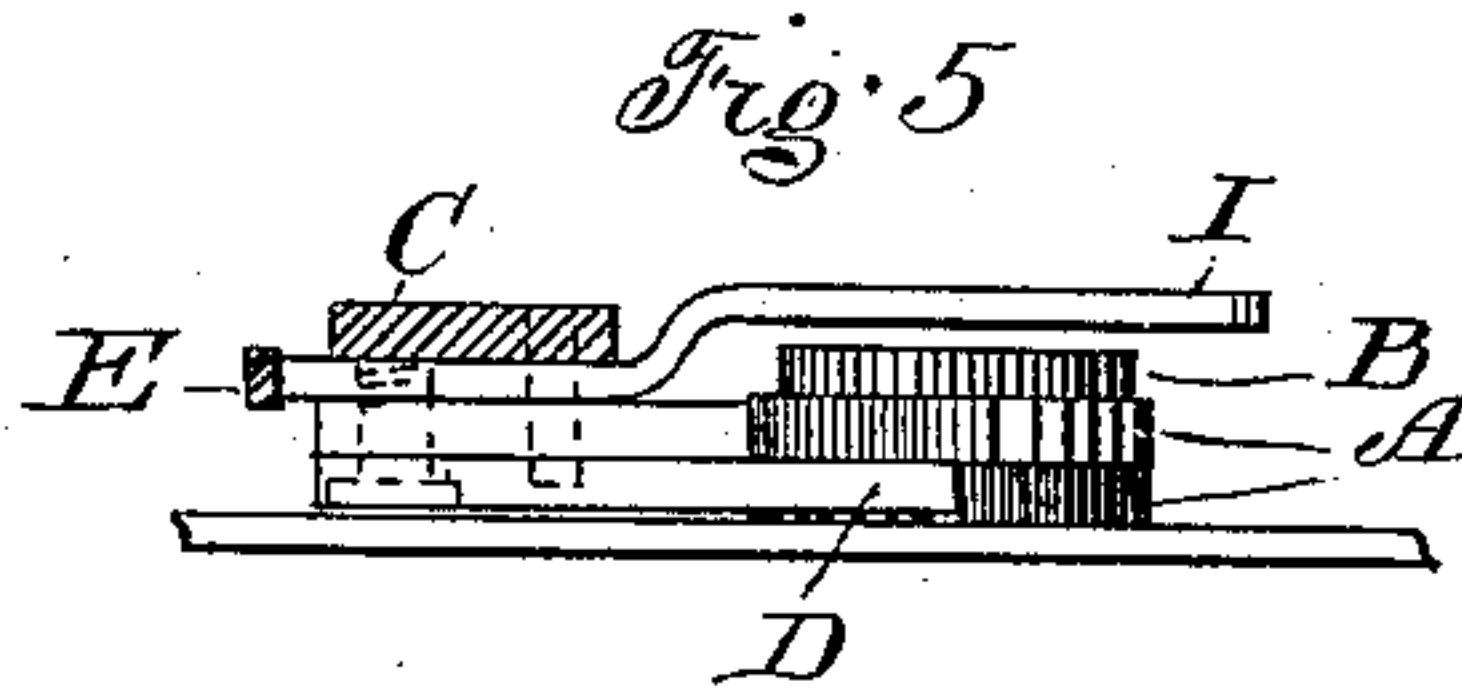


Fig 5



Witnesses
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E. S. Sumner

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UNITED STATES PATENT OFFICE.

FREDERICK EGGE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
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BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 376,297, dated January 10, 1888.

Application filed April 25, 1887. Serial No. 236,040. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK EGGE, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Button-Hole-Sewing Attachments for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to button-hole-sewing attachments for sewing-machines, and has for its object to improve the construction exhibited in the Letters Patent, No. 322,811, granted to me jointly with C. J. A. Sjöberg on July 21, 1885; and with these ends in view my invention consists in the details of construction, hereinafter set forth, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand how to make and use my improvement, I will describe the same in detail, referring by letter to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of the machine set forth in said patent, illustrating my improvement attached thereto; Fig. 2, a similar view with all the parts removed except the actuating-lever and my present improvement; Fig. 3, a detail perspective showing the relative position of the trip and push bars; Fig. 4, a modification in detail showing an arrangement of two pawls instead of one; and Fig. 5, a side elevation of the same, the operating-lever being sectioned.

Similar letters denote like parts in all the figures of the drawings.

It is not deemed necessary to enter into any description whatever of the feeding or oscillating mechanisms, as my invention has reference only to the barring of the button-hole.

In the machine exhibited in the aforesaid patent the shifting-cam X, the operating-ratchet W, and trippet Y were all secured so as to rotate together, and in order to bring this ratchet into proper operative position push-bars V' B'' were attached to opposite sides of the feed-bar, which carried the trippet to a

sufficient distance to enable the actuating-pawl T to pass beyond the long teeth of the ratchet, so as to operate the latter, and thereby effect the shifting of the feed-bar.

The present improvement merely contemplates the substitution for this construction of different means for producing precisely the same result.

A is a ratchet-wheel rigidly secured to the shifting-cam B. The teeth of this ratchet on one side of the wheel extend in one direction and on the other side in the reverse direction.

C is the actuating-lever through which motion is communicated to the attachment.

D is a double-acting pawl, which I preferably make in the shape of an anchor. This pawl is pivoted at the crown to the lever C, and a spring, E, at the back of said lever bears against the pawl in such manner as to keep the latter in its two positions, and at the same time allow it to shift, as will be presently explained. The shank I of the pawl projects underneath the feed-bar F, within the field of travel of the push-bars G H, in the same manner and for the same purpose as the trippet Y in the aforesaid patent, one of said bars being stationary and the other adjustable. The pallets of the pawl extend to opposite sides of the ratchet-wheel, as shown. During the forward travel of the feed-bar the push-bar G will strike against the shank I of the pawl and carry the same along until one of the pallets is brought into position to operate the ratchet, it being of course understood that the pawl is being constantly reciprocated by the action of the actuating-lever C. The ratchet is therefore operated by the engaging-pallet until the reverse teeth are reached, thereby revolving the shifting-cam B to permit the formation of the barring-stitches in the button-hole, as will be readily understood. During the backward movement of the feed-bar the push-bar H will cause the other pallet to be thrown into engagement with the reverse teeth of the ratchet in the same manner and with the same results as previously set forth. The spring E serves to keep the pawl in its proper position, and at the same time imparts the ordinary spring movement to the pawl during its operation.

In Fig. 4 I have illustrated the operation of two separate pawls; but in this construction

I make the shank separate from the pawls and pivot the latter, one above the other, directly to said shank. A coil-spring, J, connects the two pawls and imparts to the latter the desired spring action. The shank is pivoted to the operating-lever C by a pin, L, which extends between said pawls and in contact therewith, as shown. Any other pin projection will answer this purpose; but I have utilized the pivot of the shank as the most convenient means.

The spring E keeps the shank and the pawls carried thereby in their proper position, to which they are carried by the action of the feed-bar. Two ratchets are used with teeth on one side only, said teeth extending in opposite directions. With these teeth the two pawls are adapted to engage in precisely the same manner and with the same results as above set forth in the description of the operation of my improvement.

What I claim is—

1. In a button-hole-sewing attachment for sewing-machines, the combination, with the feed-bar and the push-bars carried thereby, of a double spring-acting pawl pivoted to and reciprocated by the means by which motion is communicated to the attachment and having a shank projecting within the field of travel of said push-bars, and a ratchet having two reverse series of teeth and having means which by its revolution actuates the shifting mechanism, substantially as shown and set forth.

2. In a button-hole-sewing attachment for sewing-machines, the combination, with a double-acting spring-pawl pivoted to and reciprocated by the means which communicates motion to the attachment and having a shank projecting therefrom, and a ratchet-wheel having two reverse sets of teeth and having means which by its revolution actuates the shifting mechanism, of means carried or controlled by the feed-bar for throwing said pawl into engagement first with one series of said teeth and then with the other, whereby the shifting mechanism is operated to effect the barring of the button-hole, substantially as set forth and specified.

3. In a button-hole-sewing attachment for sewing-machines, the combination, with the shifting mechanism whereby the barring is effected, of a ratchet-wheel having two reverse series of teeth and means to actuate said shifting mechanism, and a pawl or pawls having means whereby at predetermined times the said pawl or pawls are thrown into operative engagement first with one of said series and then with the other, whereby the shifting in reverse directions is accomplished, substantially as set forth.

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

FREDERICK EGGE.

Witnesses:

F. W. SMITH, Jr.,
S. H. HUBBARD.