

(No Model.)

3 Sheets—Sheet 1.

G. W. COPELAND & M. BROCK.

Tacking Machine.

No. 234,854.

Patented Nov. 30, 1880.

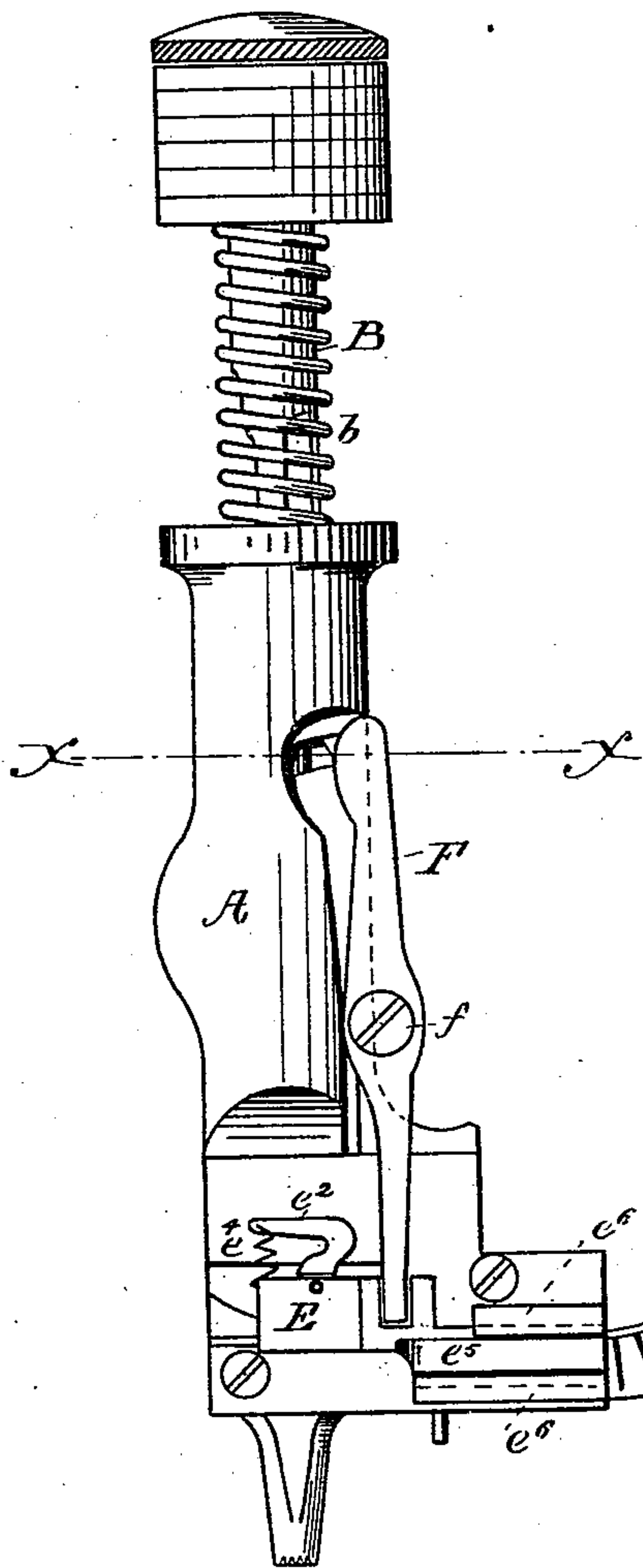


Fig. 1.

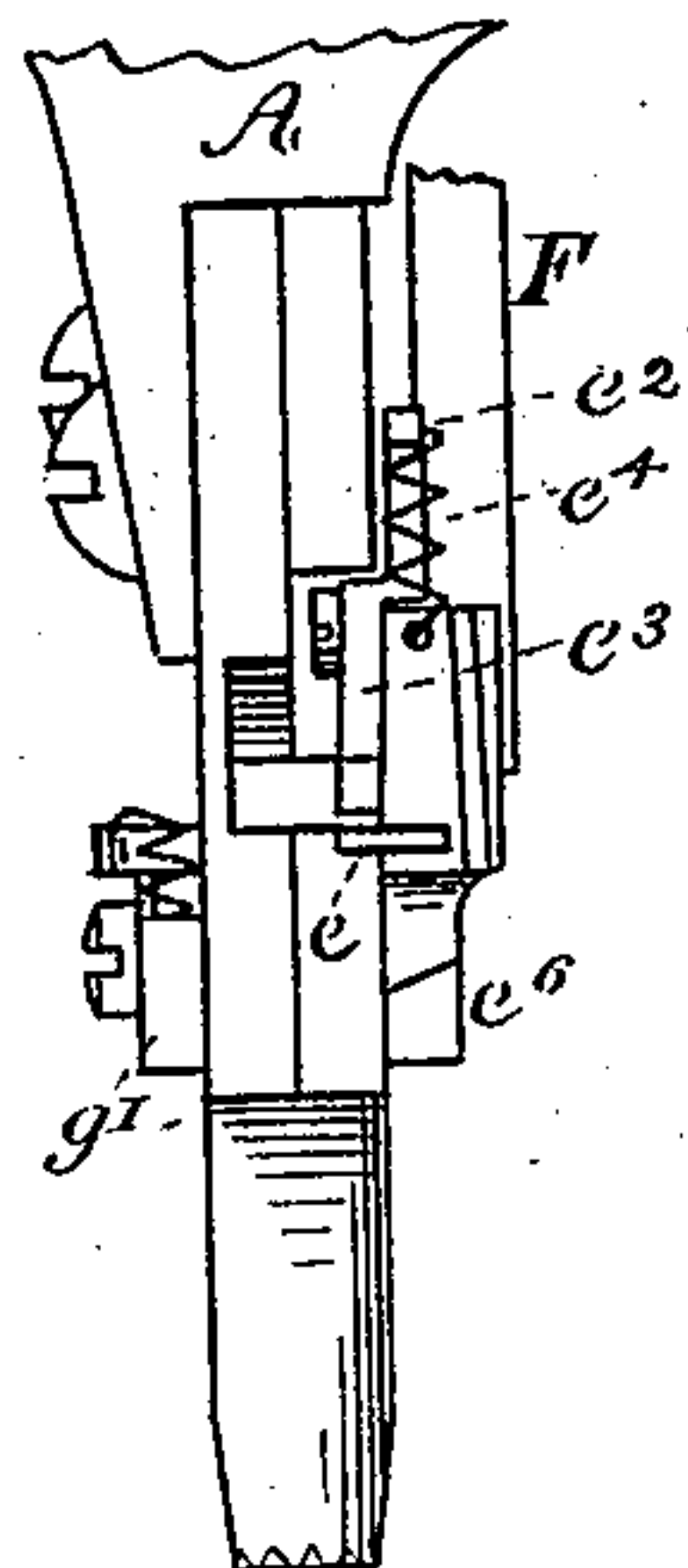


Fig. 2.

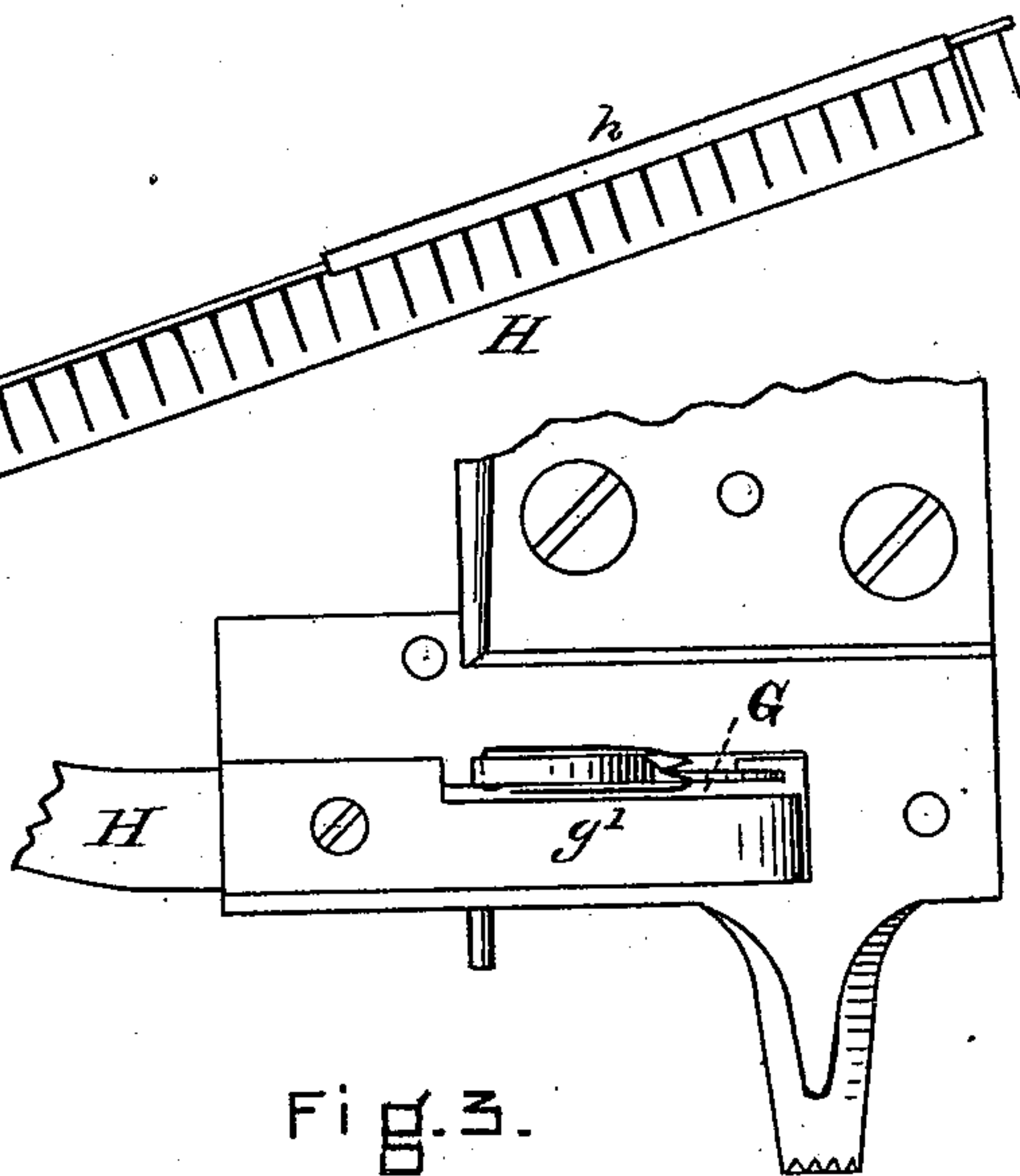


Fig. 3.

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3 Sheets—Sheet 2.

Tacking Machine.

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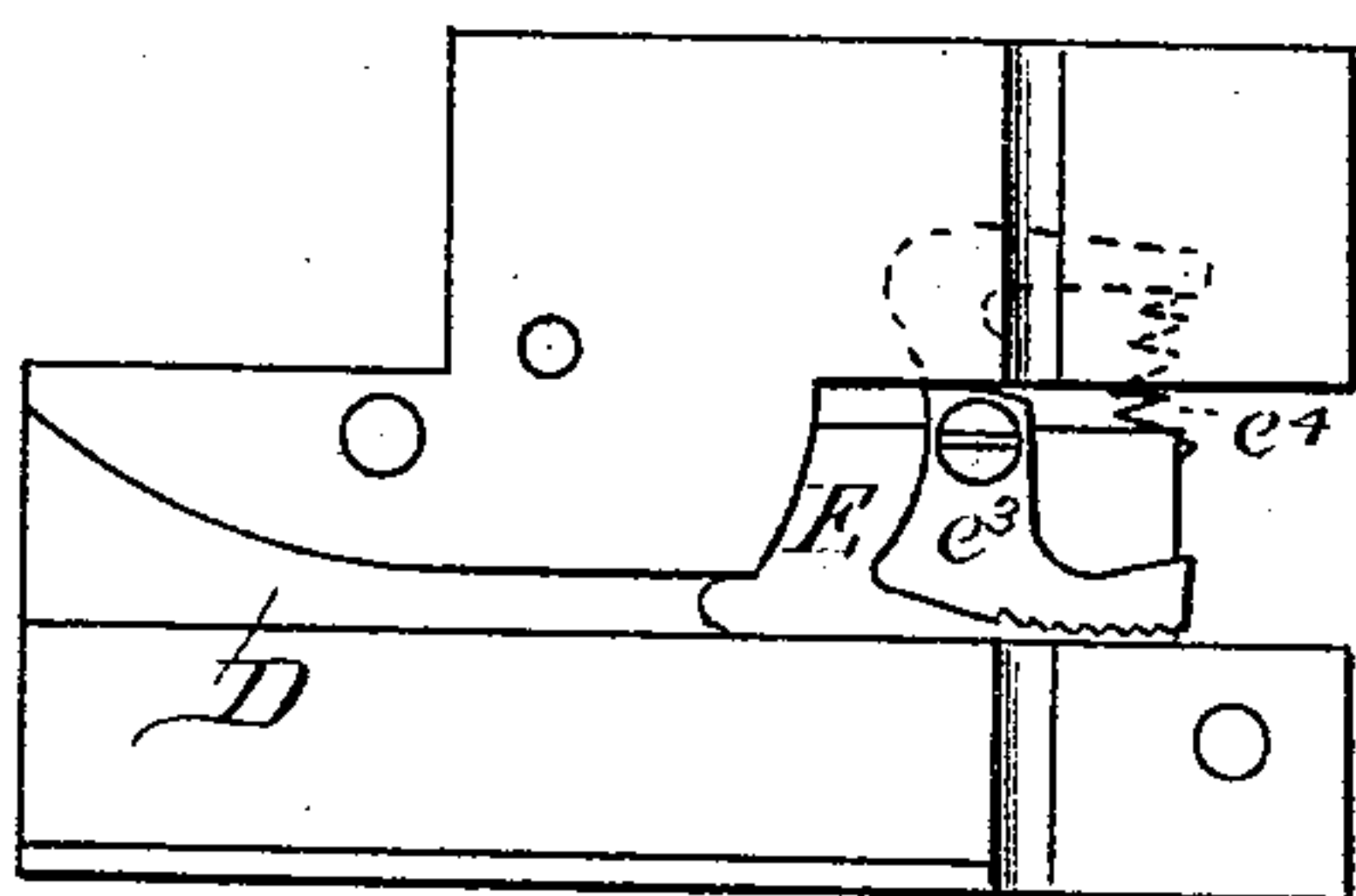


Fig. 4.

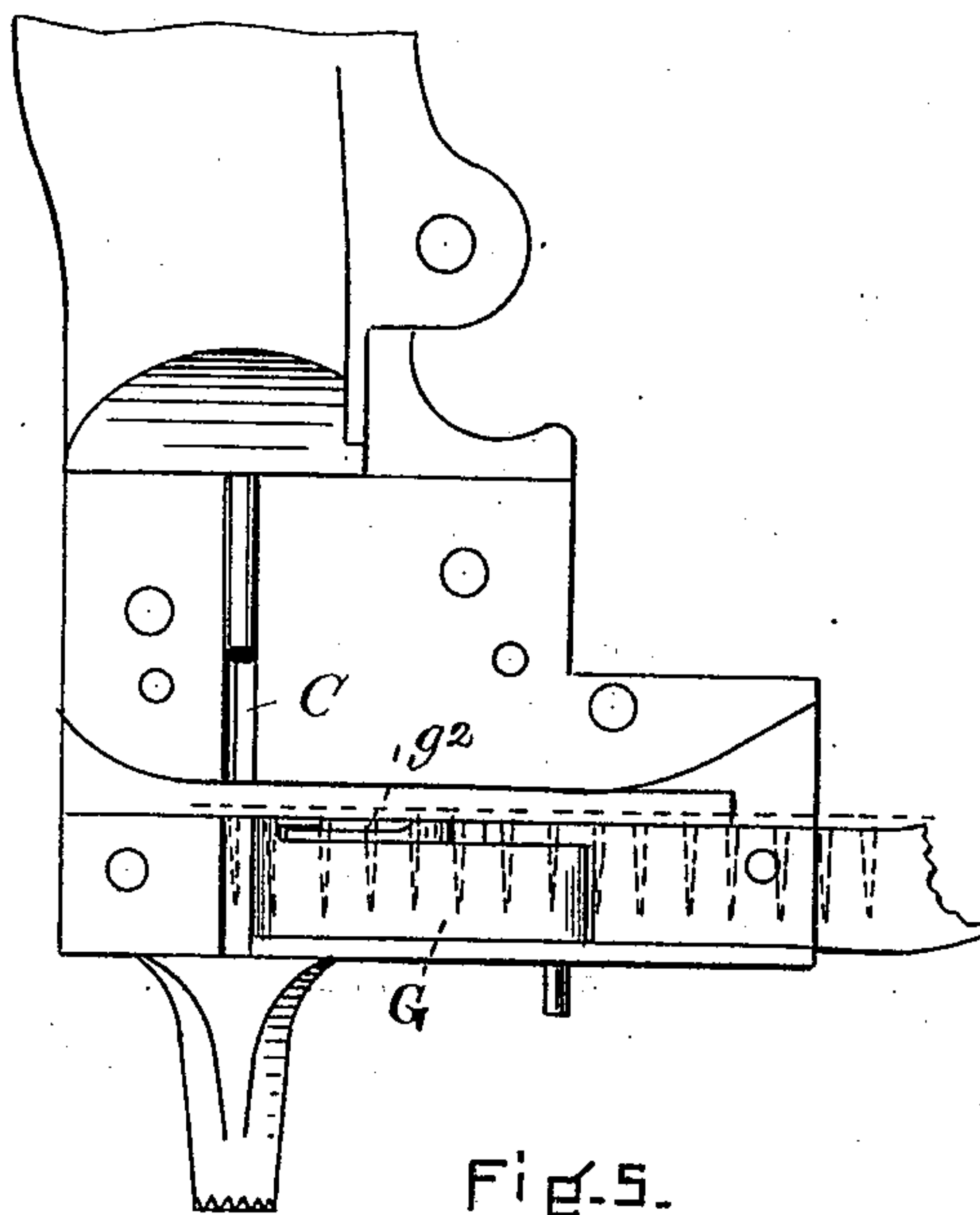


Fig. 5.

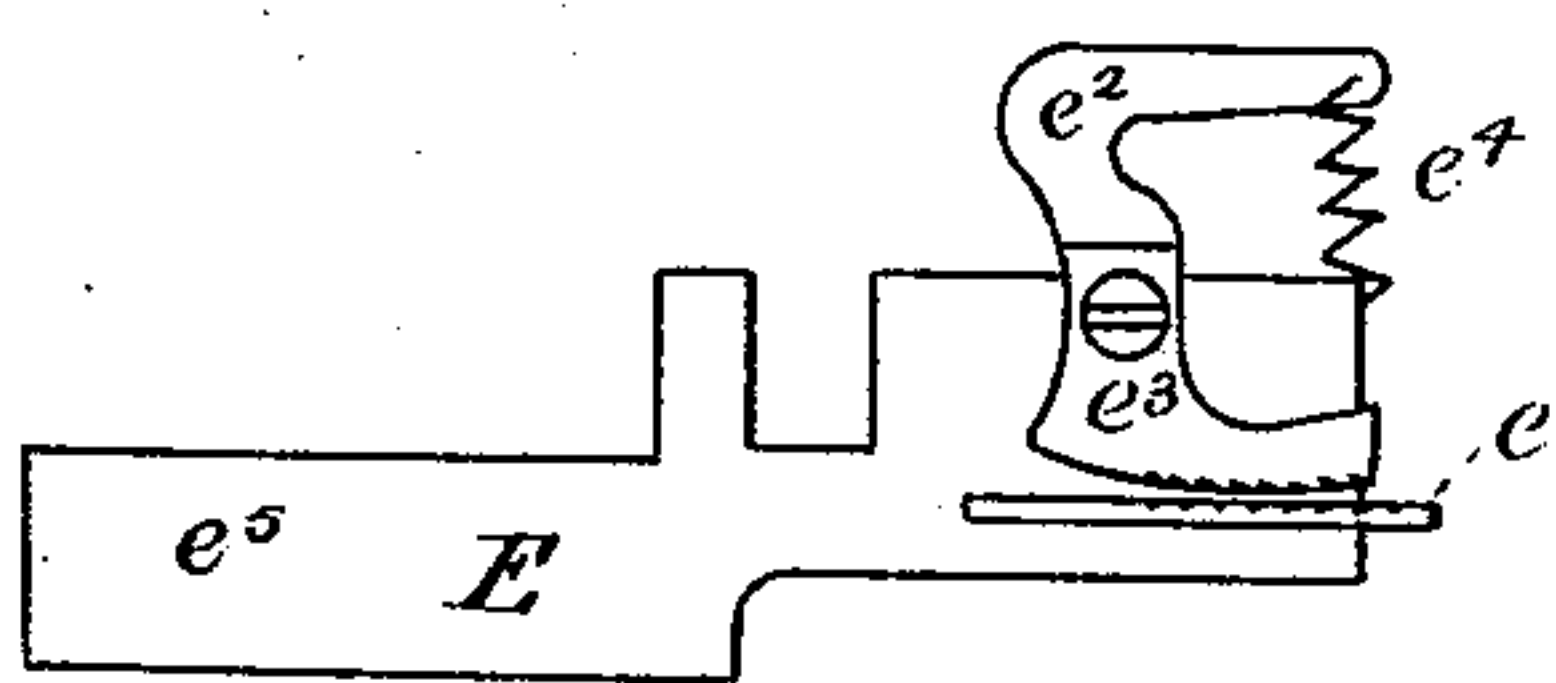


Fig. 6.

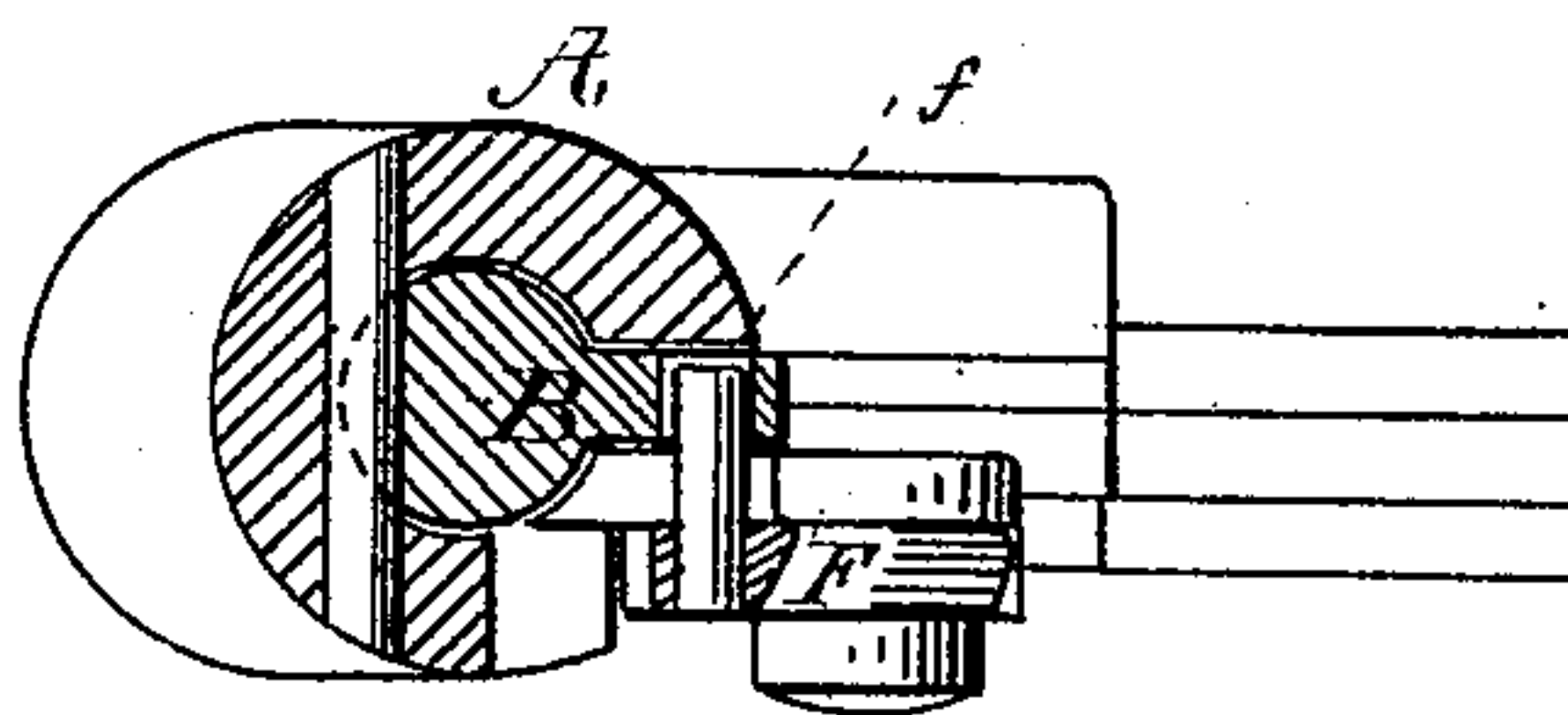


Fig. 7.

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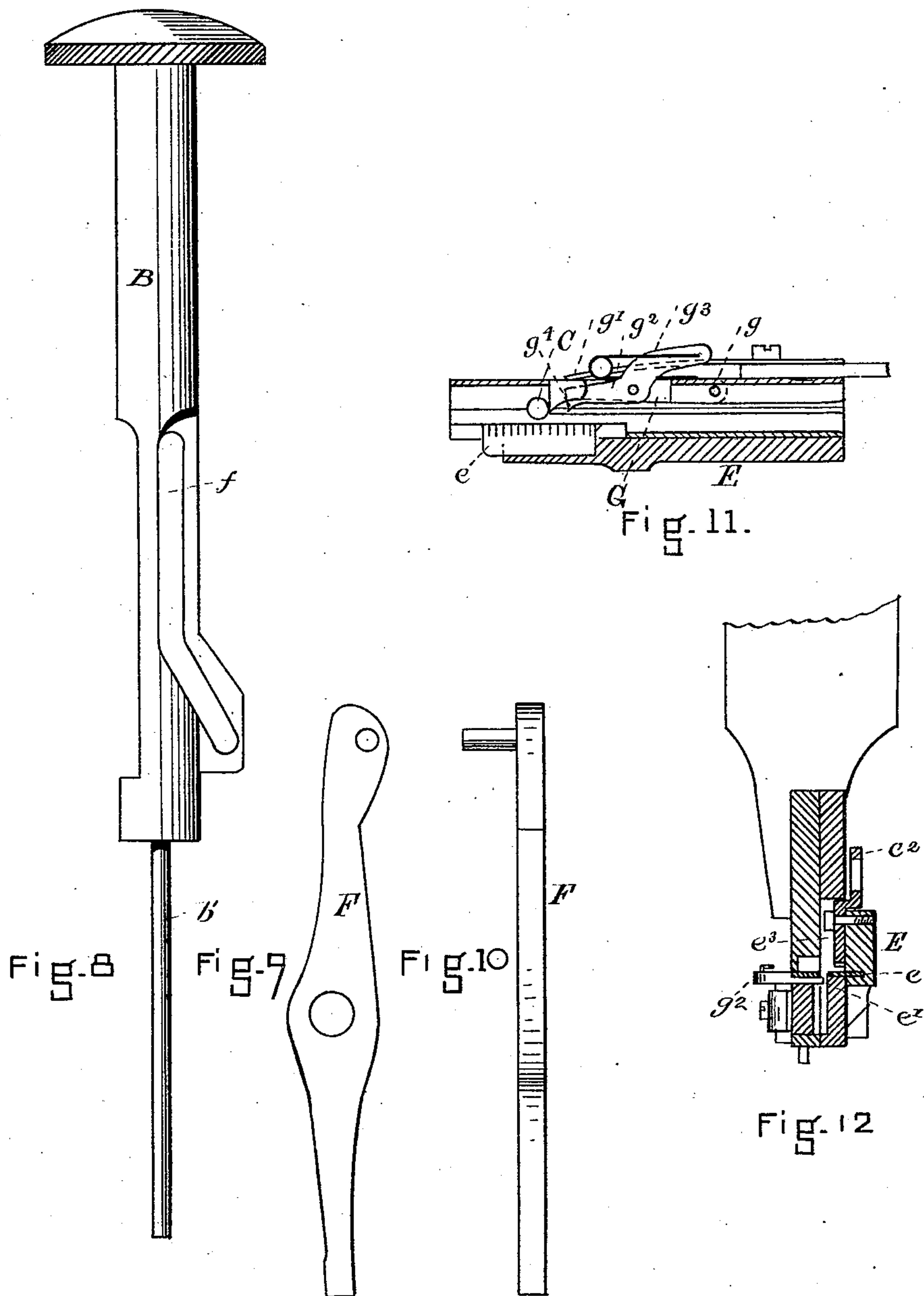
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# UNITED STATES PATENT OFFICE.

GEORGE W. COPELAND, OF MALDEN, AND MATTHIAS BROCK, OF BOSTON,  
MASSACHUSETTS, ASSIGNORS TO THE COPELAND LASTING MACHINE  
COMPANY, OF HARTFORD, CONNECTICUT.

## TACKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 234,854, dated November 30, 1880.

Application filed April 5, 1880. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE W. COPELAND, of Malden, county of Middlesex, and Commonwealth of Massachusetts, and MATTHIAS BROCK, of Boston, county of Suffolk, and Commonwealth of Massachusetts, have invented an Improvement in Tacking-Machines, of which the following is a specification.

This invention is especially adapted for driving tacks from the tack-strip described in Letters Patent No. 186,663 and No. 197,609. It is an improvement upon the tacking-machine described in Letters Patent granted George W. Copeland, Erastus Woodward, and Matthias Brock, assignors to said Copeland, dated November 27, 1877, and numbered 197,608; and it consists in a device for feeding the tack-strip by its head-connecting portion to the throat of the machine; and, further, in an abutment, automatically operated, for preventing the withdrawal of the tack from the throat upon the reverse movement of the feeding mechanism.

It further consists in the combination of these devices with the tack-driving mechanism in an organized tacking-machine.

Reference is made to the accompanying drawings, forming a part of this specification, in explaining the nature of our invention, in which—

Figure 1 is an elevation of our tacking-machine. Fig. 2 is an end view of the lower portion thereof. Fig. 3 is a back view of the lower part. Figs. 4 and 5 are elevations of a portion of the feeding mechanism. Fig. 6 is a detail view further illustrating the feeding mechanism. Fig. 7 is a cross-section on the line *xx* of Fig. 1. Figs. 8, 9, and 10 are detail views. Figs. 11 and 12 relate to feeding devices and mechanism for closing the throat.

In the tacking-machine described in said Patent No. 197,608 the strip is fed by a feed-pawl, which shuts behind the shank of each tack, and then advances the strip a distance equal to the distance between two tacks, and the edge of a thin metallic plate, operated by a spring, is closed into the feedway at the rear of the throat to prevent the displacement of the tack after it has entered it.

In this machine the tack-strip is fed by a clutch, which lays hold of the edge of the head-connecting portion, and an abutment (in addition to the spring-plate, if desired) is used for holding the tack in position in the throat of the machine after the feeding by the clutch.

Within the metallic stock *A* there is arranged a driving-rod, *B*, provided with a retracting-spring, *b*, and carrying at its lower end the tack-driver *b'*, which is reciprocated in the throat *C*.

The feedway *D* opens into the throat *C*, and it may be of any desirable shape for supporting the tack-strip as it is fed.

Upon one side of the feedway there is arranged a block, *E*, from which projects the narrow plate *e*, which slides in a recess, *e'*, on the edge of the feedway. To the inner surface of the block, near its upper edge, is pivoted a lever, *e<sup>2</sup>*, having the foot *e<sup>3</sup>*, which is immediately over the plate *e*, and the under surface of which is somewhat curved, as shown. The spring *e<sup>4</sup>* serves to maintain the foot in a uniform position in relation to the said plate *e*. The upper surface of the plate and the under surface of the foot may be roughened, if desired. The block *E* is further provided with the guide-plate *e<sup>5</sup>*, which is arranged to slide in the ways *e<sup>6</sup>*, and the block *E* is positively reciprocated by means of the lever *F*, which is pivoted at *f* to the stock of the machine, and the cam-slot *f'* on the driving-rod. The lower end of the lever shuts into the recess in the block *E*.

The foot *e<sup>3</sup>* and the plate *e* are so arranged in relation to the feedway that the space between them substantially forms a portion of its horizontal part, the upper surface of the plate being on a level with the horizontal portion of the feedway, and these two parts act together as a clutch in laying hold of the edge of the strip and in feeding it, the forward movement of the block causing the foot to take firm hold of the edge of the strip, clamping it between its under surface and the plate *e*, while the backward movement of the block causes the foot to release its hold upon the strip; and this peculiar operation of the foot is on account of the relation which its working-surface bears to the pivotal point *e*.



A metallic plate, G, hinged at  $g$ , forms a section of the back of the feedway, and is pressed inwardly against the tack-strip by means of the spring  $g'$ . This plate has pivoted at its upper surface a pawl,  $g^2$ , which is so shaped that by means of the spring  $g^3$  its end  $g^4$  shuts into the feedway beyond the inner surface of the plate, and serves as an abutment in preventing the drawing back of the tack-strip by the clutch feeding mechanism.

It is not essential that this abutment be fastened upon the hinged plate G, as it can be fastened to any part of the machine in a position to operate substantially as indicated, and it is not necessary that the plate G be used in connection therewith.

Any plate which shall be caused to move into the feedway at the rear of the throat after the feeding of the tack to serve as an abutment in preventing the withdrawal of the tack-strip by the clutch mechanism will answer the purpose of the pawl  $g^2$ , and therefore we do not intend to confine ourselves to this especial construction for maintaining the tack in the throat after the tack-strip has been fed.

The machine is provided with an arm, H, which carries a holding device,  $h$ , for supporting the end of the tack-strip.

It is substantially immaterial how great a distance the tack-strip is advanced by the feeding mechanism described, if two tacks are not fed into or beyond the throat, as upon the reverse movement of the feeding device the tack-strip is moved backwardly until the shank of the tack contacts with the abutment, which automatically shuts into the feedway upon the passage of the tack beyond it.

It will be observed that, as this tacking-machine is intended for driving the tacks from a tack-strip in which disconnected tacks are held together by a paper head-covering portion or its equivalent, there is no necessity for a severing mechanism, the tacks being removed from the strip by this driver.

It will also be observed that the pawl  $g^2$  is

arranged to close behind the second or third tack from the advanced end of the strip, while the end of the hinged plate closes the feedway, forms a wall to the throat, and thus enables the tack to be driven without liability of the point striking upon the bottom of the feedway, and it may or may not act to determine the position of the tack in the throat.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a tacking-machine, the combination of the driving mechanism with the feeding-clutch for laying hold of the edge of the tack-strip and advancing the same, substantially as and for the purposes described.

2. In a tacking-machine, the combination of the driving mechanism, the clutch for laying hold of the edge of the tack-strip, and for feeding it, as described, and the automatic device arranged to close the feed-passage at the rear of the throat upon the feeding of a tack past the same, substantially as and for the purposes set forth.

3. In a tacking-machine, the combination of the block E, carrying a clutch arranged to lay hold of the edge of the tack-strip, as described, the lever F, and the cam  $f'$  and the driving-rod B, all arranged to operate substantially as described.

4. In a tacking-machine, as a means for feeding the tack-strip to the throat of the machine, the clutch adapted to lay hold of the edge of the strip to move the same, substantially as and for the purposes described.

5. In a tacking-machine, the combination, as a means for laying hold of the edge of a tack-strip for the purposes of feeding it, of the foot  $e^3$  and the plate  $e$ , arranged in relation to each other and operated substantially as described.

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MATTHIAS BROCK.

Witnesses:

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M. W. SAWYER.