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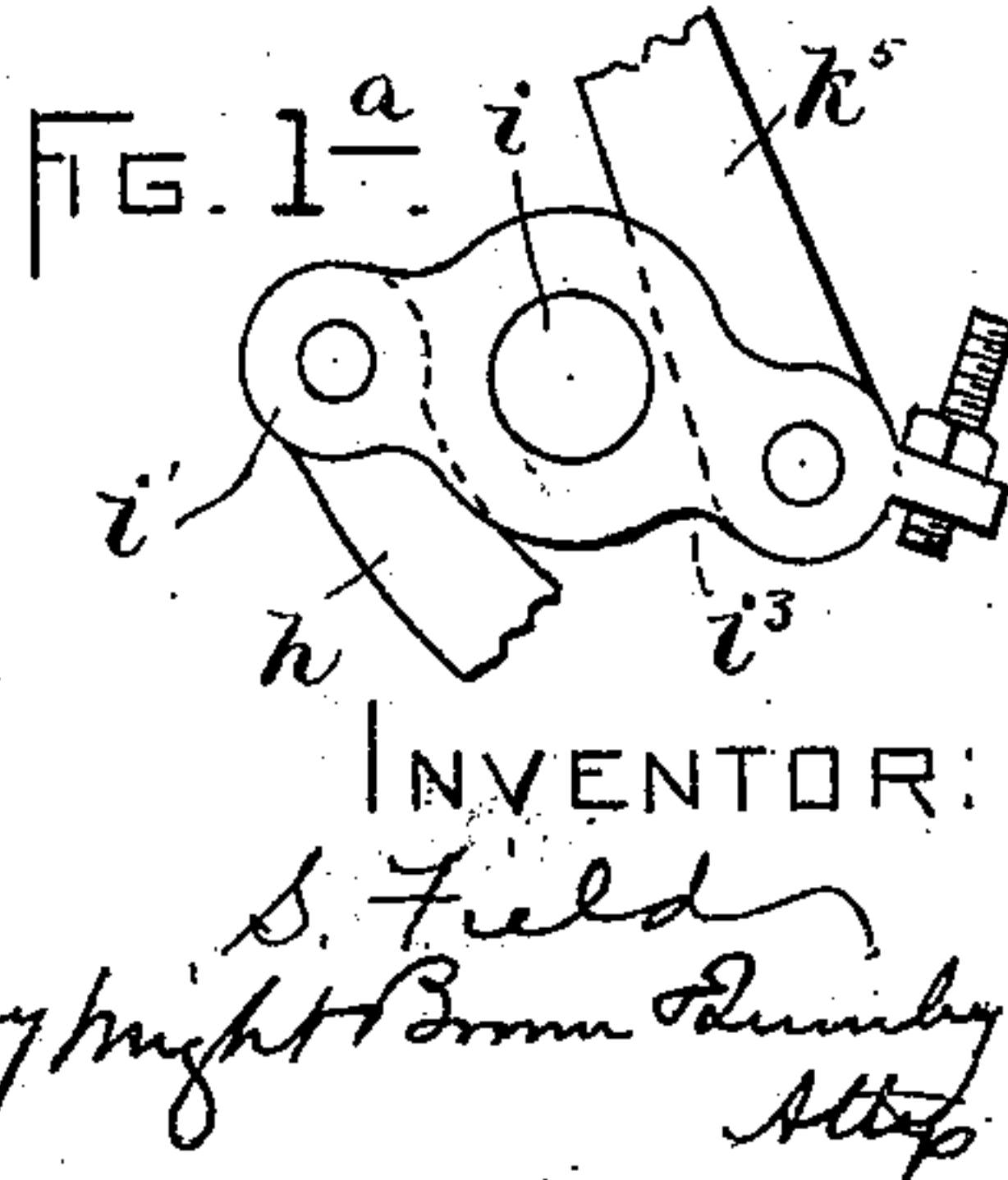
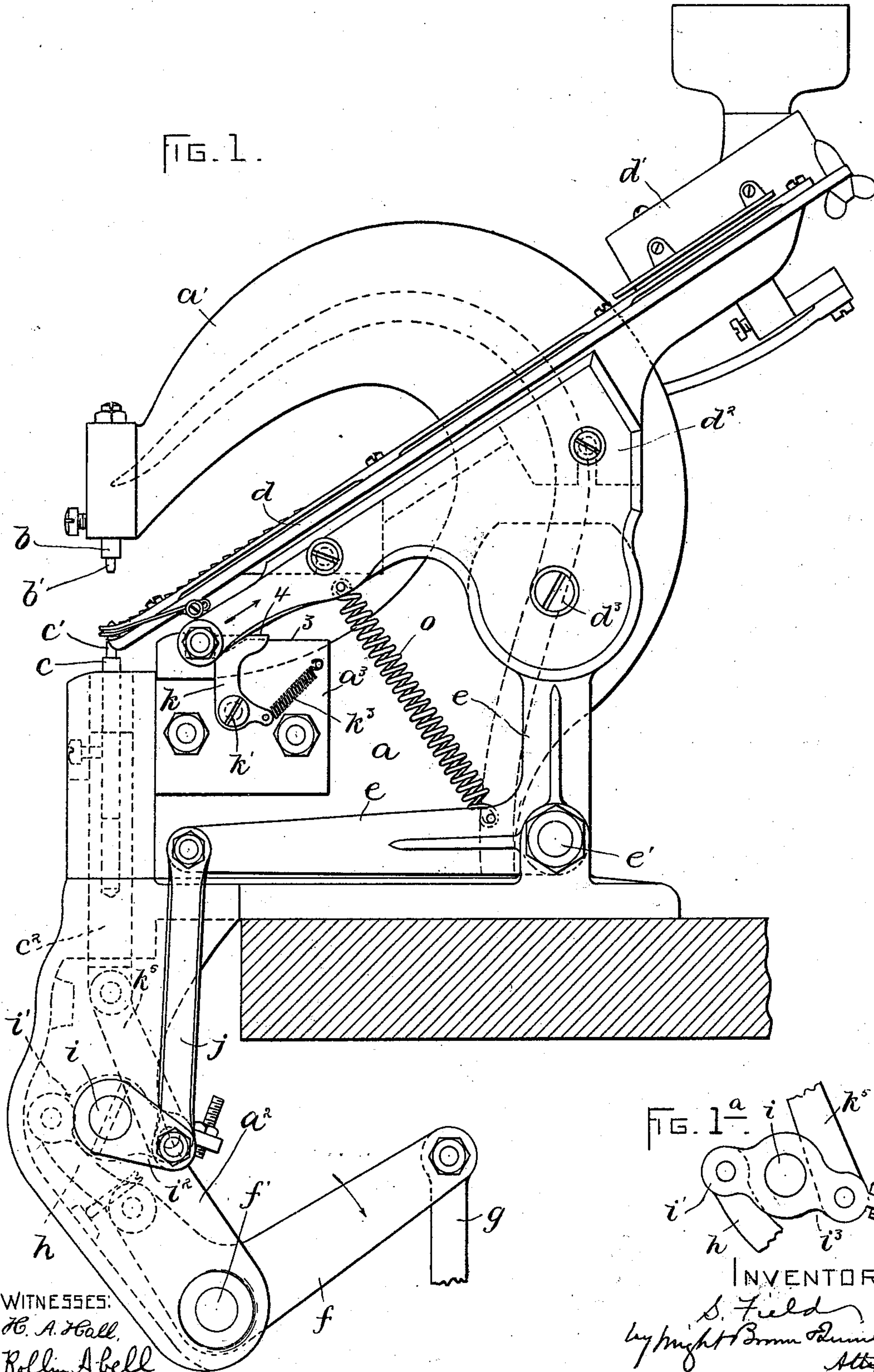
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S. FIELD.
FOOT POWER EYELETING MACHINE.

No. 545,468.

Patented Sept. 3, 1895.

FIG. 1.



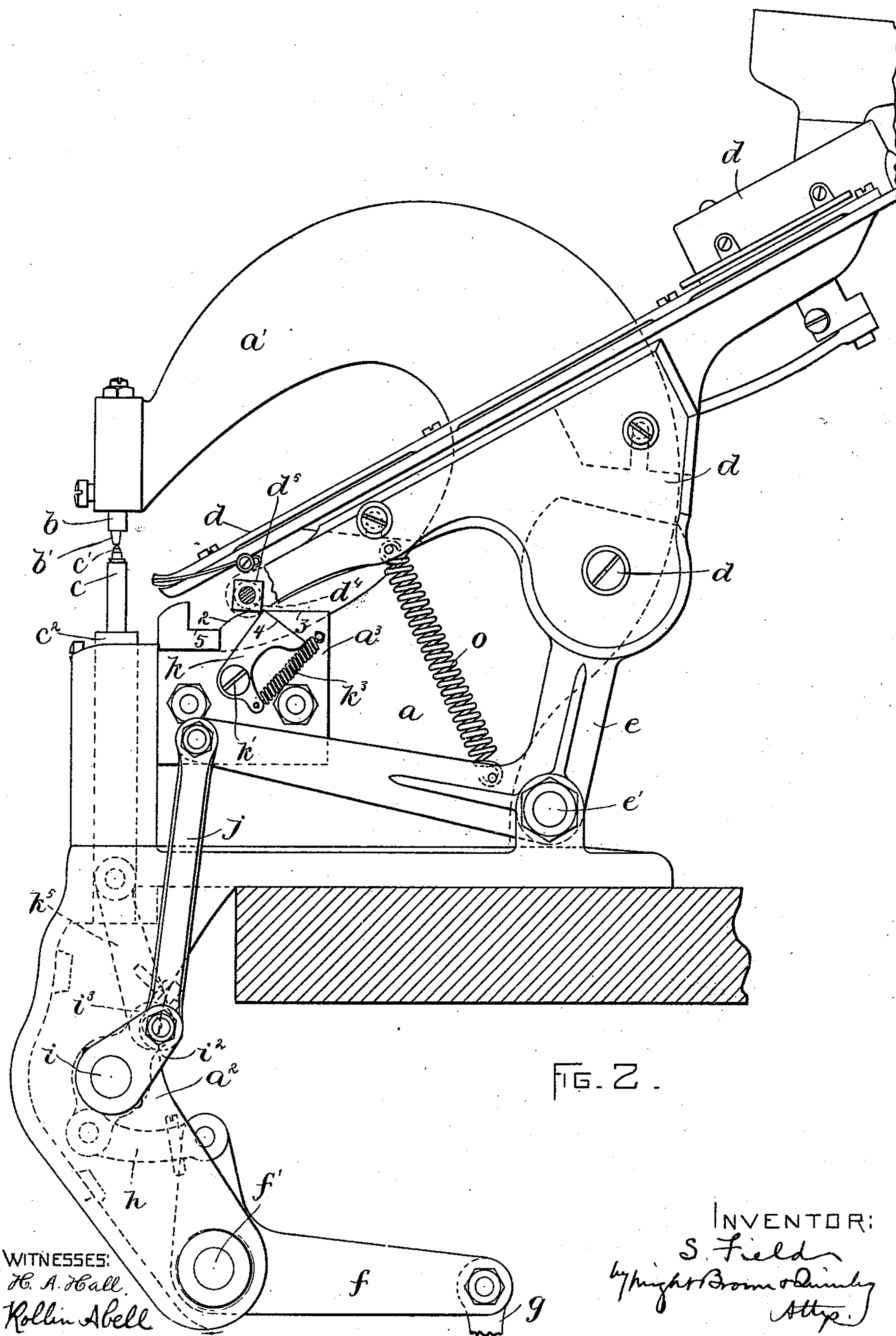
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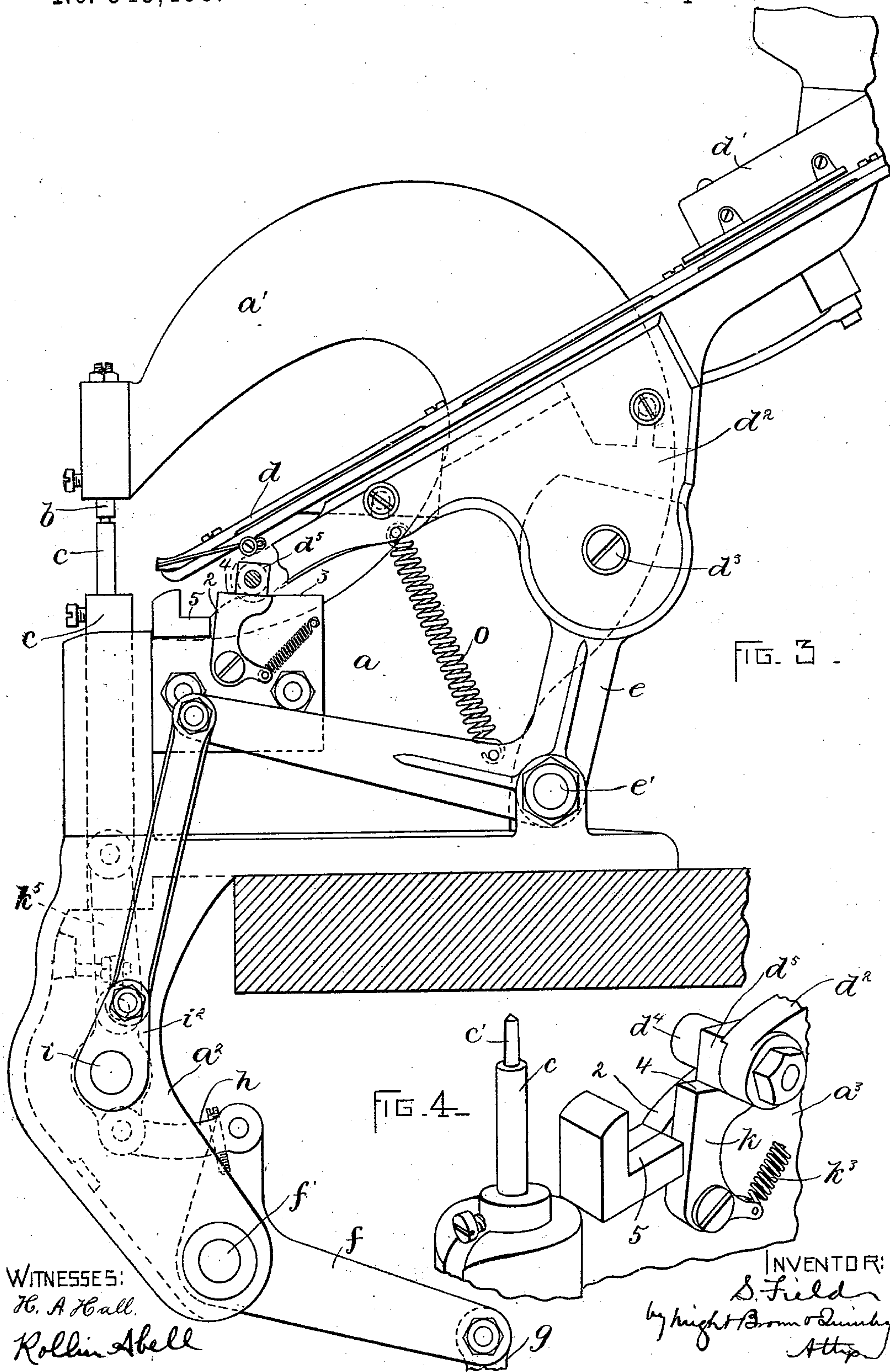
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WITNESSES:

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INVENTOR:

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by night Born & Quincy
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4 Sheets—Sheet 4.

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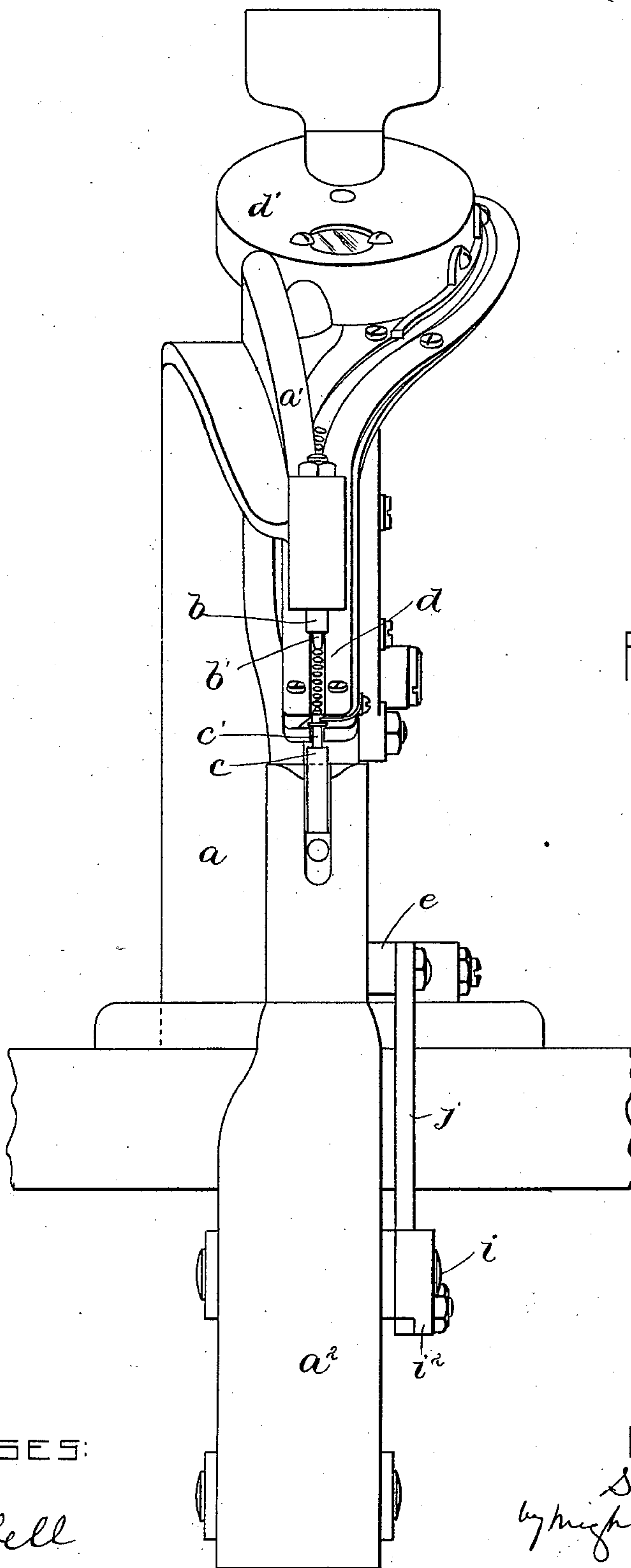


FIG. 5

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UNITED STATES PATENT OFFICE.

SEYMOUR FIELD, OF QUINCY, ASSIGNOR TO THE MERRICK SEWING MACHINE COMPANY, OF BOSTON, MASSACHUSETTS.

FOOT-POWER EYELETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,468, dated September 3, 1895.

Application filed June 3, 1895. Serial No. 551,455. (No model.)

To all whom it may concern:

Be it known that I, SEYMOUR FIELD, of Quincy, in the county of Norfolk and State of Massachusetts, have invented certain new and
5 useful Improvements in Foot-Power Eyeletting-Machines, of which the following is a specification.

This invention relates to eyeletting-machines in which the operations of advancing
10 the chute to present an eyelet to the bottom set and of raising the bottom set to carry the lowest eyelet upwardly to the top set and at the same time withdrawing the chute are performed by mechanism actuated by a treadle,
15 the downward movement of which causes the setting of the eyelet, while the upward movement causes the depression of the bottom set and the advancement of the eyelet-chute.

The invention has for its object, first, to
20 provide improved means for guiding the eyelet-chute during its forward and backward movements, so that it may advance with positiveness and certainty to its eyelet-presenting position and be quickly removed therefrom,
25 and, secondly, to provide improved mechanism for advantageously imparting the muscular force of the operator to the bottom set in the operation of upsetting the eyelets.

To these ends the invention consists in the
30 improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figures 1, 2, and 3 represent side elevations of the machine,
35 showing it at different stages of the operation. Fig. 1^a represents a sectional detail of a portion of the machine. Fig. 4 represents a perspective view of certain parts of the machine. Fig. 5 represents a front elevation of
40 the machine.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents the fixed frame of the machine, having an overhanging arm
45 *a'*, to which is affixed the top set *b*, the latter having the downwardly-projecting yielding finger *b'*, which engages the work by entering the hole provided therein as usual.

c represents the bottom set, which is provided with the yieldingly-supported eyelet-engaging finger *c'*. The bottom set is verti-

cally reciprocated by the mechanism herein-after described and engages the lowest eyelet in the chute, raises the eyelet to the top set, inserts it in the work held upon the top set, and co-operates with the top set in upsetting and securing the eyelet, all in a manner common to eyeletting-machines and requiring no detailed description.

d represents the eyelet-chute, which is
60 formed in a well-known manner to guide the eyelets from a reservoir *d'* at the upper end of the chute and to present the lowest eyelet to the finger *c'*, said chute being affixed to a carrier *d²*, which is pivoted at *d³* to an operating-lever *e*, said lever being pivoted at *e'* to the frame of the machine.

f represents the operating-lever, which is pivoted at *f'* to a downwardly-projecting arm or extension *a²* on the supporting-frame. One
70 arm of the lever *f* is connected by a rod *g* with a treadle, (not shown,) whereby said lever may be moved in the direction indicated by the arrow in Fig. 1. The other arm of said lever is connected by a link *h* with an
75 arm *i'*, affixed to a rock-shaft *i*, which is journaled in bearings in the arm *a²*. Said rock-shaft is connected by an arm *i²* and a link *j* with the chute-supporting lever *e*, said arm *i²* being rigidly affixed to the rock-shaft and
80 pivotally connected with the link. The rock-shaft *i* is connected by means of an arm *i³*, Fig. 1^a, and a link *k⁵* with the carrier *c²* of the bottom set *c*. When the lever *f* is raised, as shown in Fig. 1, it holds the arms *i' i³* substantially horizontal, as shown in Fig. 1^a, the link *k⁵* being inclined, as shown in dotted lines in Fig. 1, and the bottom set depressed. When the lever *f* is depressed, as shown in Fig. 3, the arms *i' i³* are turned to a substantially vertical position, the arm *i³* and link *k⁵* being thus caused to act like a toggle-joint in raising the bottom set and expanding the power applied to the lever *f* in an advantageous manner in compressing the eyelet, the
95 toggle-joint action of the arm *i³* and link *k⁵* being one important feature of my invention.

The chute-carrier *d²*, which, as already stated, is pivotally connected to the lever *e*, is provided at its lower end with a trundle-roll *d⁴*,
100 which is adapted to move upon a fixed track which comprises the curved edge 2 and the

horizontal edge 3 of a plate a^3 , affixed to the frame a , said track co-operating with the trundle-roll d^4 in raising the lower end of the chute during its backward movement, as hereinafter described.

k represents an arm pivoted at k' to the plate a^3 and having its upper end formed as a movable track 4, which, when the arm k is in one position, constitutes a continuation of the horizontal portion 3 of the fixed track and overlaps the curved portion 2 of said track, as shown in Fig. 3. When the arm k is in another position, its track 4 is displaced, as shown in Fig. 2. The object of the arm k and its track 4 is to support and guide the lower end of the chute during its forward movement and cause said end to move forward horizontally to position over the finger c of the bottom set and then drop vertically onto said finger, this result being accomplished in the following manner: When the chute is in its raised and retracted position, as shown in Fig. 3, the arm k stands with its track 4, forming a continuation of the portion 3 of the fixed track, so that the under side of a block or shoe d^5 , mounted upon the chute-carrier d^2 , beside the trundle-roll d^4 , will be supported and guided by the track 4 after leaving the portion 3 of the fixed track, so that when the chute and its carrier are moved forward from the position shown in Fig. 3 the lower end of the chute will be supported by the track 4 until the block d^5 passes from the track 4, this being when the lower end of the chute has reached a position over the finger c' of the bottom set, whereupon the chute drops until its block d^5 rests upon a seat or rest 5 at the lower end of the inclined portion 2 of the fixed track, this movement bringing the eyelet-chute to the position shown in Fig. 1 and depositing the lowest eyelet in the chute upon the finger c' of the bottom set. The parts being in the position last described, and as shown in Fig. 1, the operator, to insert an eyelet, depresses the lever f by means of the treadle, thus raising the bottom set and at the same time forcing the chute backwardly, the chute being raised while moving backward by the inclined portion 2 of the fixed track. During the first part of the upward and backward movement of the chute the arm k yields to the block d^4 , as shown in Fig. 2, until the block passes back from the front edge of the said arm, whereupon a spring k^3 throws the arm forward to the position shown in Fig. 3, thus locating the track 4 in position to support the block d^5 and the chute during the forward movement of the chute. The forward end of

the chute-carrier is pulled downwardly by a spring o , connected at one end with said carrier and at the other end with the frame a . After the depression of the lever f by the treadle said treadle may be raised to restore the parts to the position shown in Fig. 1 by a spring. Not shown.

I claim—

1. In an eyeleting-machine, the combination with the eyelet-setting devices, the eyelet-chute, and mechanism for operating said parts, of the fixed track formed to raise the chute during its backward movement, and the movable track adapted to guide the chute horizontally during its forward movement.

2. In an eyeleting-machine, the combination with the eyelet-setting devices, the eyelet-chute, and mechanism for operating said parts, of the fixed track formed to raise the chute during its backward movement, the swinging arm having one end formed as a track adapted to constitute an extension of a part of the fixed track, and a spring whereby said arm is permitted to yield to the backward movement of the chute and is thrown forward to operatively locate its track under the chute.

3. An eyeleting-machine comprising in its construction the supporting frame having the fixed track, the lever e pivoted to said frame, the carrier d^2 pivoted to said lever and provided with a device such as a trundle-roll to bear on the fixed track and with a shoe adjacent to said roll, the arm k pivoted to the frame and provided with the movable track 4, a spring controlling said arm, a stop or rest 5 arranged to support the chute at one end of the fixed track.

4. In an eyeleting-machine, the combination with the supporting frame, the eyelet-setting devices, and the chute and its carrier, of the operating mechanism comprising the chute-supporting lever e , the rock-shaft i having the arms i' i^2 and i^3 , links j k^5 connecting the arms i^2 i^3 with the lever e and the bottom set, respectively, the treadle-lever f and the link h connecting said lever with the arm i' , the said arm i^3 and link k constituting a toggle-joint which raises the bottom set.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 20th day of May, A. D. 1895.

SEYMOUR FIELD.

Witnesses:

A. D. HARRISON,
ROLLIN ABELL.