

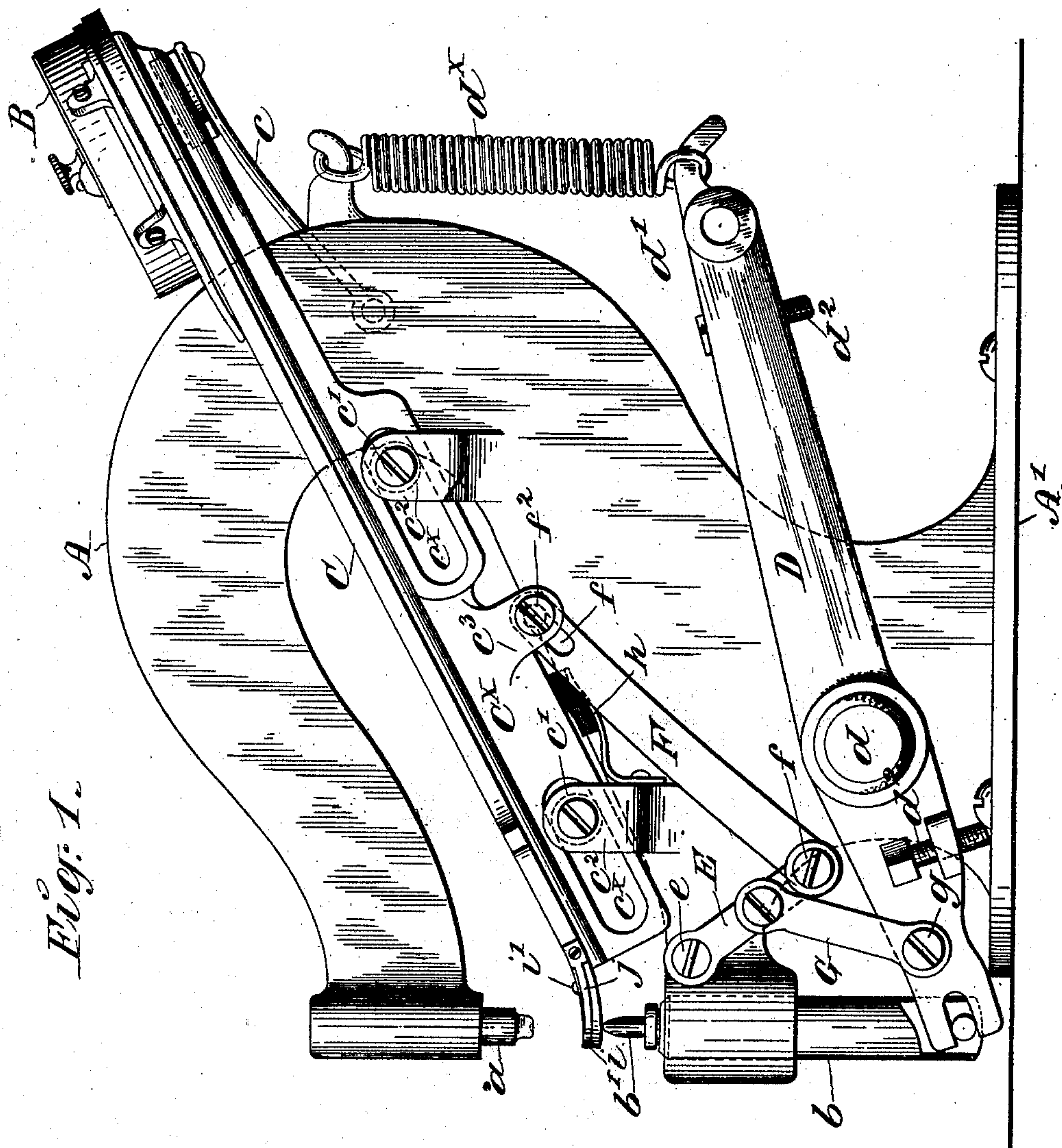
(No Model.)

2 Sheets—Sheet 1.

E. B. STIMPSON.
EYELETING MACHINE.

No. 502,327.

Patented Aug. 1, 1893.



INVENTOR:

WITNESSES:

Peter A. Ross.
Herbert Blossom.

Edwin B. Stimpson.

By *Henry Cornett*
Attorney.

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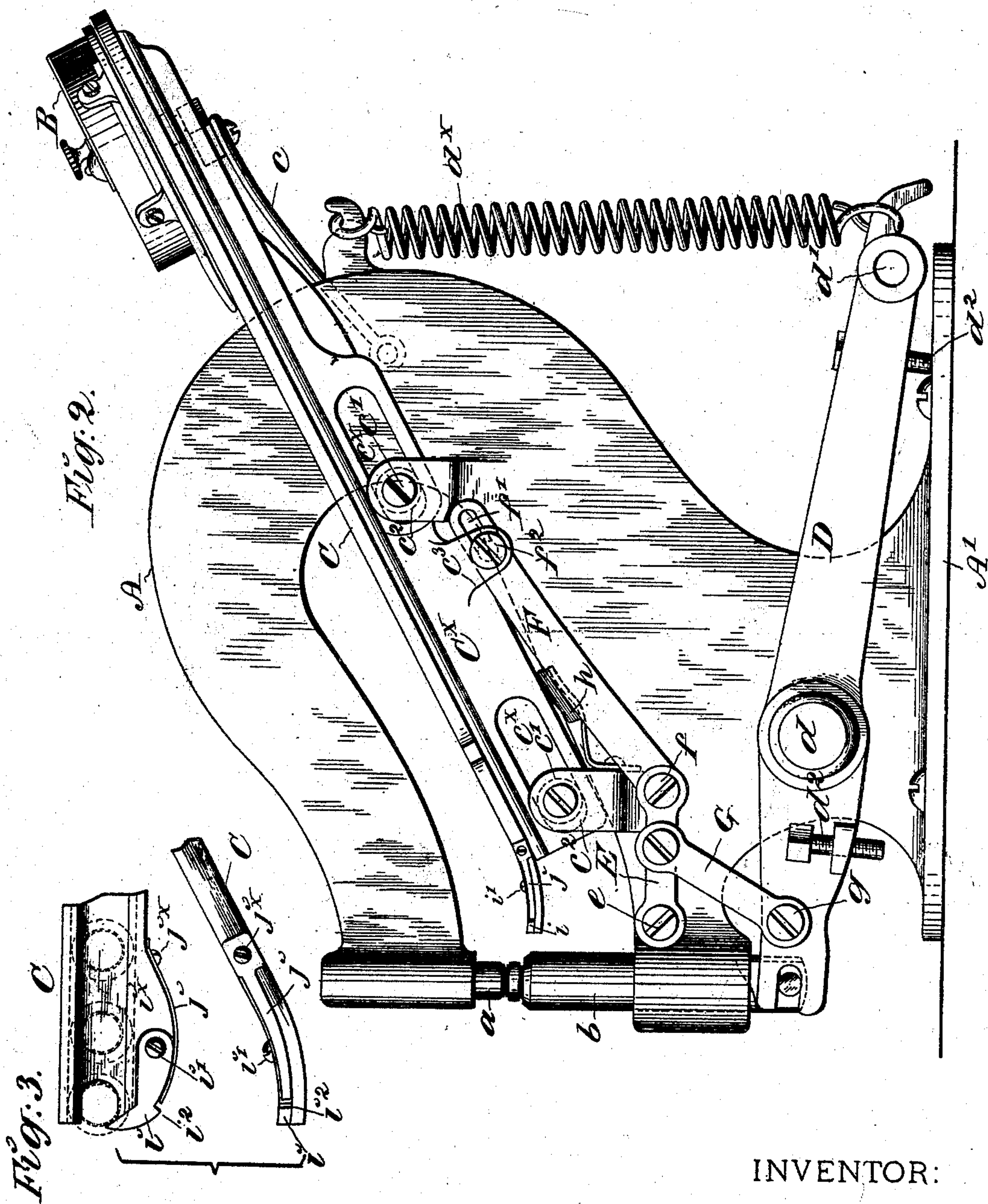
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Peter A. Ross
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By *Henry Bonnell*
Attorney.

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UNITED STATES PATENT OFFICE.

EDWIN B. STIMPSON, OF NEW YORK, N. Y.

EYELETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 502,327, dated August 1, 1893.

Application filed October 14, 1892. Serial No. 448,850. (No model.)

To all whom it may concern:

Be it known that I, EDWIN B. STIMPSON, a citizen of the United States, and a resident of the city, county, and State of New York, have
5 invented certain new and useful Improvements in Eyeletting-Machines, of which the following is a specification.

My invention relates to that class of eyeletting machines wherein the eyelet-box or holder,
10 and the eyelet-road on which it is mounted, retire at each working movement of the machine and return to their normal positions when the plunger is retracted. In this class of eyeletting machines the plunger moves up-
15 ward to the stationary anvil above, and when it starts on its upward movement it finds the eyelet which is at the lower extremity of the eyelet-road, in its path. The yielding point on the plunger passes upward through the
20 eyelet and the latter is disengaged from the spring detent-finger on the eyelet-road by the withdrawal of the latter. When the plunger is retracted the eyelet-road returns to its first position, another eyelet having taken the
25 place of the one removed.

My invention relates in part to the mechanism connected with the operation of the eyelet-road, whereby the latter is caused to advance and retire at the proper times, and in
30 part to the construction and arrangement of the spring detent-finger at the lower extremity of the eyelet-road.

The invention will be fully described hereinafter and its novel features carefully de-
35 fined in the claims.

In the drawings which serve to illustrate my invention an eyeletting machine embodying my improvements is shown.

Figure 1 is a side elevation of the machine
40 with its moving parts in their normal position, and Fig. 2 is a similar view showing the parts in another position. Fig. 3 shows the lower extremity of the eyelet-road in plan and side elevation on a larger scale than the principal
45 views. These detached views illustrate the improvement in the spring detent-finger.

A represents the frame of the machine and A', its base by which it may be secured to a table.

50 In the upper arm of the machine is set the anvil, *a*, and below the anvil is mounted, in a

suitable vertical guide-way in the frame, the sliding plunger *b*. The plunger is provided, as usual, with a yielding point, *b'*, on which the eyelet is received and guided on its way
55 up to the anvil.

B, is the eyelet-box or holder, and C, the eyelet-road to the upper end of which the box B is attached. The eyelet box contains a vibrating brush which is actuated through the
60 medium of a rod *c*, as usual, and serves to push the eyelets out from the box into the channel in the inclined eyelet-road, down which they slide by gravity to the delivery
65 point.

All of the above-described instrumentalities are common in this class of machines. The eyelet-road C has a web, C^x, on its under side, which has in it slots, *c^x*, to form guide-bearings or tracks for stud-rollers, *c'*, mounted ro-
70 tatively in brackets, *c²*, on the frame. In its movements to and fro, when advancing and retiring, the eyelet-road rides on these rollers *c'*.

D is the main operating lever, which is ful-
75 crumed on the frame at *d*. At its front end it is coupled by a pin and slot to the lower end of the plunger *b*, and at its other end it is coupled to a spring, *d^x*, which serves to re-tract the plunger. The lever D is usually op-
80 erated by a treadle, not shown, the rod of which will be attached to the lever at *d'*. Screws *d²*, in the lever D, serve to limit the rocking movements of the latter by imping-
85 ing on the base plate A'.

Movement is imparted to the eyelet-road from the operating lever D, through the medium of a pair of intermediate toggle links and a coupling link.

E is a short toggle link pivoted on the frame
90 at *e*, and F is a longer link, coupled to the free end of link E at *f*, and having in its other end a slot, *f'*, which is engaged by a stud, pin, or screw, *f²*, set in a lug *c³* on the eyelet-road. A link G is coupled at one end to the operat-
95 ing lever D at *g*, and at the other end to the shorter link E at a point between the knuckle of the toggle and the point *e*.

The operation of the last described mechanism is as follows: When the rear end of
100 the operating lever is drawn down and the plunger *b* driven upward, the link G acts on

the toggle to move the longer link F obliquely upward longitudinally, but the eyelet-road will not at first partake of this movement owing to the slot f' therein playing over the pin f^2 . This slot allows the plunger b to rise and its point to engage the eyelet in its path; but as soon as this engagement takes place play allowed by the slot in the link F will have been exhausted and the link will then move the eyelet-road quickly back and out of the way, detaching itself from the eyelet on the point of the plunger, which latter moves upward to the anvil, where the eyelet is set and clinched. This last position of the parts is illustrated in Fig. 2.

It will be noted that the links E, F and G are so set with respect to each other and to the operating lever and eyelet-road, that the first retiring movement imparted to the eyelet-road is quite abrupt and quick, but as the toggle straightens out the movement is slower. This serves to detach the terminal eyelet the more readily and also to impart a more vigorous and abrupt movement to the brush in the box B. When the pressure is removed from the treadle and operating lever and the spring d^x is permitted to retract the plunger, the slot f' again comes into play to permit the point of the plunger to descend before the eyelet-road is advanced to the position seen in Fig. 1.

In order to cause the eyelet-road to remain steady in its two positions shown and particularly to maintain it in the retired and elevated position seen in Fig. 2, against the action of gravity, I provide a spring friction pad, h , arranged to press on some part of the road. As herein shown this pad comprises a leaf spring secured at one end to the frame and having at its other end a pad of leather or like material arranged to bear on the web on the eyelet-road.

Fig. 3 illustrates the improved construction of the spring-finger which retains the eyelets in place on the road. Heretofore, so far as I am aware, this finger, or retainer has been made in the form of a lever fulcrumed on the side of the road and held up in place elastically by means of a light coil spring arranged under the tail of the lever and held and guided by a screw. As the retaining finger should have durability to withstand the strain of constant use and should be compact so as to avoid disarrangement from contact with the materials on which the eyelets are set, I mount in a recess in the thickened wall i^x of the eyelet-road, a finger or latch, i , which is pivoted at i' ; and I provide a leaf spring, j , secured to the road at j^x . This spring conforms to the convex contour of the surface on which it rests and its free end bears on the back of the finger i , as shown. This construction provides a durable and reliable detent having no salient points for the material or work to catch on and avoids the use of a spiral spring. The finger i may have a shoulder, i^2 , to screen

the free extremity of the leaf spring and thus prevent it from catching in the work or in the clothing of the attendant.

While usually denominated eyeleting machines, this kind of machine is also employed for setting and clinching other sheet metal fasteners and the like. Only slight changes are required to adapt it to this latter work.

Having thus described my invention, I claim—

1. In a machine for setting eyelets and the like, the combination with the movable eyelet-road, adapted to advance and retire, of the operating lever, mechanism between the eyelet-road and operating lever whereby the latter moves the former, in both directions and a friction pad, h , arranged to bear on some part of the eyelet-road and hold it against shifting its position by gravity when free from the control of the operating lever.

2. In a machine for setting eyelets and the like, the combination with the frame, the plunger, the longitudinally movable eyelet-road, and the operating lever coupled to the plunger, of mechanism between and connecting the operating lever and eyelet-road, said mechanism comprising a toggle having one of its links coupled to the frame and the other to the eyelet-road, and a link connecting the operating lever with one of the toggle links, said intermediate mechanism having a slot at one of its couplings to permit of some independent movement of the operating lever, as set forth.

3. In a machine for setting eyelets and the like, the combination with the frame, the plunger, the eyelet-road, and the operating lever, coupled to the plunger, of the intermediate mechanism between and connecting the operating lever and eyelet-road said intermediate mechanism comprising the toggle-links coupled at one extremity to the frame and at the other extremity to the eyelet-road by a slotted connection, and the link G, coupled at one end to the operating lever and at the other end to that link of the toggle which is coupled to the frame, substantially as and for the purpose set forth.

4. In a machine for setting eyelets and the like, the combination with the frame, the plunger mounted therein, the movable eyelet-road mounted on the frame, and the operating lever fulcrumed on the frame and coupled to the plunger, of the mechanism connecting the operating lever with the eyelet-road, said mechanism comprising the shorter toggle link E, coupled at one end to the frame, the longer toggle link F, coupled by a slotted connection to the eyelet-road, and the link G, coupled at one end to that arm of the operating lever which is coupled to the plunger, and at the other end to the toggle link E, the knuckle of the toggle being directed toward the operating lever, as shown.

5. In a machine for setting eyelets, the combination with the plunger b , provided with a

point *b'* which takes the eyelet from the road, the eyelet-road, and mechanism for drawing away the eyelet-road as the plunger rises, of means for retaining the eyelets in place, normally, but permitting the lowermost eyelet to be forcibly displaced, said means comprising a latch *i*, pivotally mounted at *i'* in the eyelet-road at its extreme, forked end, with its point extending part way into the path of the eyelets, and the leaf spring *j*, fixed to the eyelet-road and bearing at its free end on the

back of said latch, whereby the withdrawal of the eyelet-road is permitted to disengage the eyelet, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EDWIN B. STIMPSON.

Witnesses:

HERBERT BLOSSOM,
JAS. KING DUFFY.