

No. 764,962.

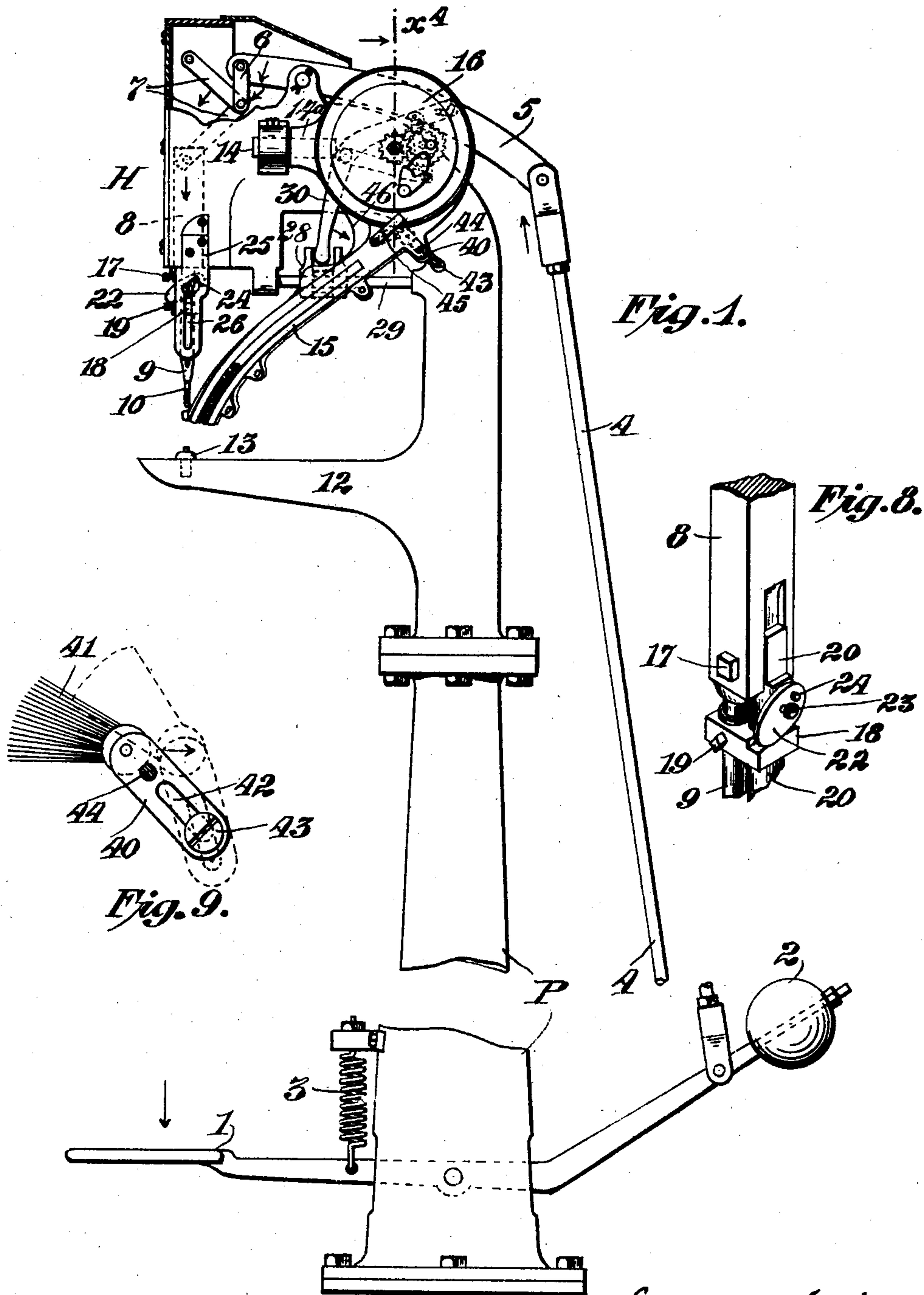
PATENTED JULY 12, 1904.

E. B. STIMPSON.
EYELET SETTING MACHINE OR THE LIKE.

APPLICATION FILED NOV. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
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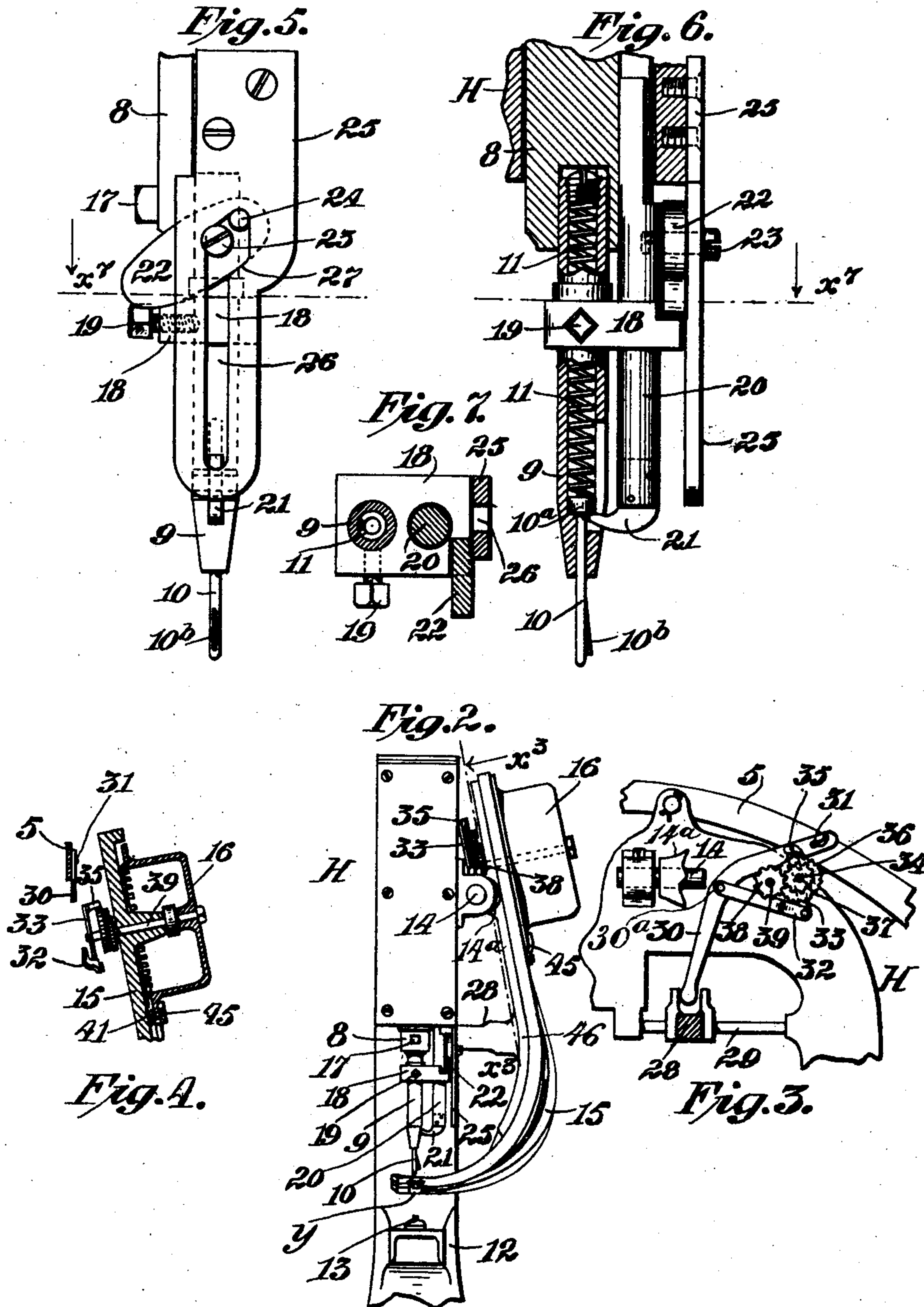
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UNITED STATES PATENT OFFICE.

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

EYELET-SETTING MACHINE OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 764,962, dated July 12, 1904.

Application filed November 21, 1903. Serial No. 182,108. (No model.)

To all whom it may concern:

Be it known that I, EDWIN BALL STIMPSON, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings and city and State of New York, have invented certain new and useful Improvements in Eyelet-Setting Machines or the Like, of which the following is a specification.

This invention relates to the type of machines of this class wherein the eyelets or the like are supplied from a box and are fed to the setting-point by means of a vibrating track; and the object of the invention is in part to provide automatic means for freeing the terminal eyelet from the track after it is threaded on the descending spindle and in part to provide automatic means for preventing the eyelets from clogging the track at or near where the eyelets enter the track from the box.

Other features will be hereinafter described and the novel features of the invention carefully defined in the claims.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a side elevation of the machine. Fig. 2 is a front elevation of the head or upper part of the machine. Fig. 3 is a side elevation of same with the eyelet box and track omitted, being cut away along the line x^3 in Fig. 2. This view shows the mechanism behind the eyelet-box. Fig. 4 is a diametrical section of the eyelet-box, taken at line x^4 in Fig. 1. All of the above views are on a relatively small scale. Fig. 5 is a detail side elevation of a part of the machine-head, illustrating the automatic detaining device for the spindle. Fig. 6 is a sectional front elevation of said device. Fig. 7 is a cross-section at line x^7 in Fig. 6, and Fig. 8 is a perspective view of a part of this device. Fig. 9 is a detached detail view of the clearing-brush.

P designates the pedestal of the machine, and H the head of the same as a whole.

1 designates the treadle for operating the machine; 2, the treadle-weight, and 3 the treadle-spring. The treadle is coupled by an operating-rod 4 with the longer arm of a lever 5, fulcrumed on the head, the shorter arm of said lever being coupled by a link 6 to the knuckle of a toggle 7, one link of which

is pivotally attached to the head and the other to a plunger 8, slidably mounted in the head. In Fig. 1 the incasing portion of the head is partially broken away in order to show the features last mentioned. In the plunger 8 is secured (see Fig. 6) a hollow top-set 9, in which plays a spindle 10, backed by a spring 11 in the hollow of the set. On a bracket 12, Fig. 1, is the anvil 13, alined with the reciprocating spindle 10. Mounted to slide on a bearing 14, Figs. 1 and 2, on the head is the eyelet-track 15, and rotatably mounted on the upper end of this track is the eyelet-box 16. The track 15 leads the eyelets down from the box to the path of the spindle 10, the terminal eyelet in the track being brought into alignment with the descending spindle, which passes through and impales it. The track now swings back, leaving the eyelet threaded on the spindle, which carries it down into the goods on the anvil. As the top-set continues to descend the spindle is driven up by the anvil into the hollow of the said set, the spring thereon yielding to permit of this.

All of the above features are known in some form in this class of machines; but it is found in the practical operation of these machines that as the spindle continues its downward movement, while the track is freeing itself by a lateral movement from the impaled eyelet, there is undue friction and chafing, which is liable to produce defects and injury to the eyelet. To obviate this difficulty, the present invention provides means for momentarily arresting the descent of the spindle after the eyelet has been impaled and holding the spindle stationary until the eyelet-track moves back and frees the impaled eyelet. This means is best illustrated in Figs. 5 to 8 and will now be specifically described.

The top-set 9 is secured removably in the plunger by a set-screw 17, Fig. 5, and carries a cam-stop 18, which is secured to it adjustably by a set-screw 19. An upright detainer-bar 20, slidable in a slot or way in the side of the plunger, carries at its lower end a detainer or hook-like finger 21, which plays in a slot in the top-set 9 and takes under a head 10^a on the spindle 10. The bar 20 plays through the cam-stop 18, as clearly shown in

Fig. 7. This bar 20 carries a lever-cam 22, which turns about a fulcrum screw or stud 23. The longer arm of the cam bears on the stop 18, and in the shorter arm of the cam is a stud 24. A plate 25, fixed on the head of the machine, has in it a slot 26 for the fulcrum-screw 23 to play in as the plunger descends, and a wider portion of the slot 26 at its upper end permits of some play of the stud 24.

The operation is as follows: As the plunger moves down the stop 18, the bar 20, and cam 22 move down with it until the spindle 10 has passed through the eyelet. This movement is permitted by the slot 26 without changing the relative positions of the parts; but when the plunger has descended to the extent stated the stud 24 impinges on a shoulder 27 on the plate 25, and as the plunger continues to descend the cam is turned about the fulcrum 23, the stud 24 being arrested by the shoulder 27 and the longer arm or rounded end of the cam turning on the cam-stop 18. The effect of this is to turn the cam and cause the detainer 21 to uphold and arrest the downward movement of the spindle 10 until the impaled eyelet is disengaged from the eyelet-track. When the plunger ascends, the cam and parts resume their first or normal positions. The spindle 10 has or may have a spring 10^b to provide the necessary friction for holding the eyelet in place on the spindle. This is a known device.

The means for displacing the eyelet-track when the spindle shall have impaled the terminal eyelet, thus freeing the latter from the track, will now be described and also in connection therewith the means for rotating the eyelet-box.

On the back of the eyelet box and track is a plate 46, fixed rigidly in place on said track and box, and this plate has an upper lug 14^a, which is bored to fit slidably on the bearing-rod 14 on the head of the machine. The plate also has a longer arm or lug 28, which is bored to fit slidably on a lower bearing-rod 29, parallel with the rod 14. In the lug or arm 28 is a keeper-recess, (see Fig. 3,) which is engaged by the pendent arm of the lever 30, fulcrumed at 30^a on the head of the machine and provided at its upper end with a slotted coupling 31 to the main lever 5. The rocking of the lever 5 acts through the lever 30 to slide the eyelet box and track to and fro at each setting operation of the machine.

On a stud 34 in the back of the eyelet-box is rotatively mounted a ratchet-wheel 36, which carries a toothed wheel 37, that gears with a similar toothed wheel 38, fixed on the spindle or arbor 39 of the eyelet-box, Fig. 4. A pawl-lever 33 is fulcrumed on the stud 34 and carries on one arm a pawl 35, which engages the teeth of the ratchet-wheel, while its other arm is coupled to one end of a link 32, the other end of which is pivoted on the head of the machine and conveniently on the stud 30^a.

The operation of this mechanism is as follows: When the treadle 1 is depressed, the longer arm of the lever 5 is elevated and through the connection 31 rocks the lever 30 to shift the eyelet track and box along the slide-bearings 14 and 29; but this lever 30 does not shift the track until the spindle 10 shall have moved down far enough to impale the eyelet and has been arrested. As the eyelet track and box shift they carry the ratchet device with them away from the point 30^a, and the link 32 swings the pawl-lever, thus causing the pawl to impart a partial rotation to the eyelet-box. When the pressure is removed from the treadle, the parts are returned to their first position, the pawl being retracted. The eyelet-track has a lateral outlet near its delivery end for the escape of the eyelet, as indicated at *y* in Fig. 2.

The means for agitating and clearing the eyelets from the point where they pass from the box to the track and the brake on the box will now be described, with especial reference to Figs. 1, 4, and 9, premising that there is a liability in this class of machines for the eyelets to clog at the outlet to the track and that it is desirable to agitate them frequently.

Pivotally mounted on the eyelet-track by means of a stud or pin 44 is a lever 40, which carries a flat thin brush 41, of wire or bristles by preference. This lever has in it a slot 42, which engages a screw or stud 43 set in the frame or fixed part of the machine. This provides a means for imparting a sudden reciprocating movement to the brush when the eyelet-track moves to and fro. The brush extends into the slot through which the eyelets pass from the box to the eyelet-track. Consequently at each reciprocating or to-and-fro movement of the track the brush is caused to sweep back and forth in the slot of the track and free it, if the eyelets are clogged or wedged therein.

The eyelet-box, Fig. 4, has a marginal flange, and on this flange bears a spring-blade 45, which acts as a friction-brake to prevent the too free rotation of the box.

Obviously the invention may as well be applied to machines of this class dealing with other things than eyelets, as gromets, spangles, and the like.

The specific construction of the parts herein described may be varied and equivalents substituted without departing materially from the invention. For example, the plate 25 merely serves as a retainer for the bar 20 and to provide a shoulder 27. Any means for effecting these ends may be employed.

Having thus described my invention, I claim—

1. A machine for the purposes specified, having a reciprocating top-set, a yielding spindle carried thereby, a movable eyelet-track which guides the eyelets into the path of said spindle, means for moving said track, and an

automatic detaining mechanism which arrests the movement of the spindle while the eyelet-track is disengaging itself from the impaled eyelet.

5 2. A machine for the purposes specified, having a reciprocating top-set, a yielding spindle mounted therein and having a head, a spring back of said spindle, a cam-stop carried by the top-set, a detainer-bar slidable in
10 the cam-stop, a detainer on said bar, which plays in a slot in the top-set and takes under the head of the spindle, a cam-lever mounted on the detainer-bar and bearing on the cam-stop, a plate on the machine-frame which has
15 a shoulder 27, and a stud 24 in said cam-lever, said stud playing above said shoulder and adapted to engage the latter when the top-set descends.

3. A machine for the purpose specified, hav-
20 ing a movable eyelet-track, means for moving said track, an eyelet-box mounted rotatively on the track, means for imparting intermittent rotation to said box as it is carried to and fro, a lever-like brush-holder fulcrumed on
25 the track, a flat brush carried by one arm of said holder and extending into the slot in the track where the eyelets enter the same from the box, and a projecting part on the frame which engages the other arm of said brush-
30 holder when the latter is carried to and fro, thus imparting a vibrating motion to the brush.

4. A machine for the purpose specified, hav-
ing a movable eyelet-track, means for moving
said track, an eyelet-box mounted rotatively 35
on the track, means for imparting a rotary movement to said box as it is carried to and fro, the slotted, lever-like brush-holder 40, fulcrumed at 44 on the said track, the brush 41, fixed in one arm of said holder and said 40
brush extending into a slot in the eyelet-track adjacent to the rotating eyelet-box, and a stud 43 engaging the slot in the slotted arm of the holder.

5. A machine for the purpose specified, hav- 45
ing a slidably-mounted eyelet box and track, a stud 34 mounted in the support of the eyelet-box, a ratchet-wheel rotative on said stud, a toothed wheel carried by said ratchet-wheel, a wheel fixed on the arbor of the eyelet-box 50
and gearing with said toothed wheel, a pawl-lever fulcrumed on the stud 34, a pawl on said lever and engaging said ratchet-wheel, and a link coupled at one end to a fixed part and at the other end to said pawl-lever, substantially 55
as set forth.

In witness whereof I have hereunto signed my name, this 19th day of November, 1903, in the presence of two subscribing witnesses.

EDWIN BALL STIMPSON.

Witnesses:

HENRY G. HOSE,
WILLIAM J. FIRTH.