

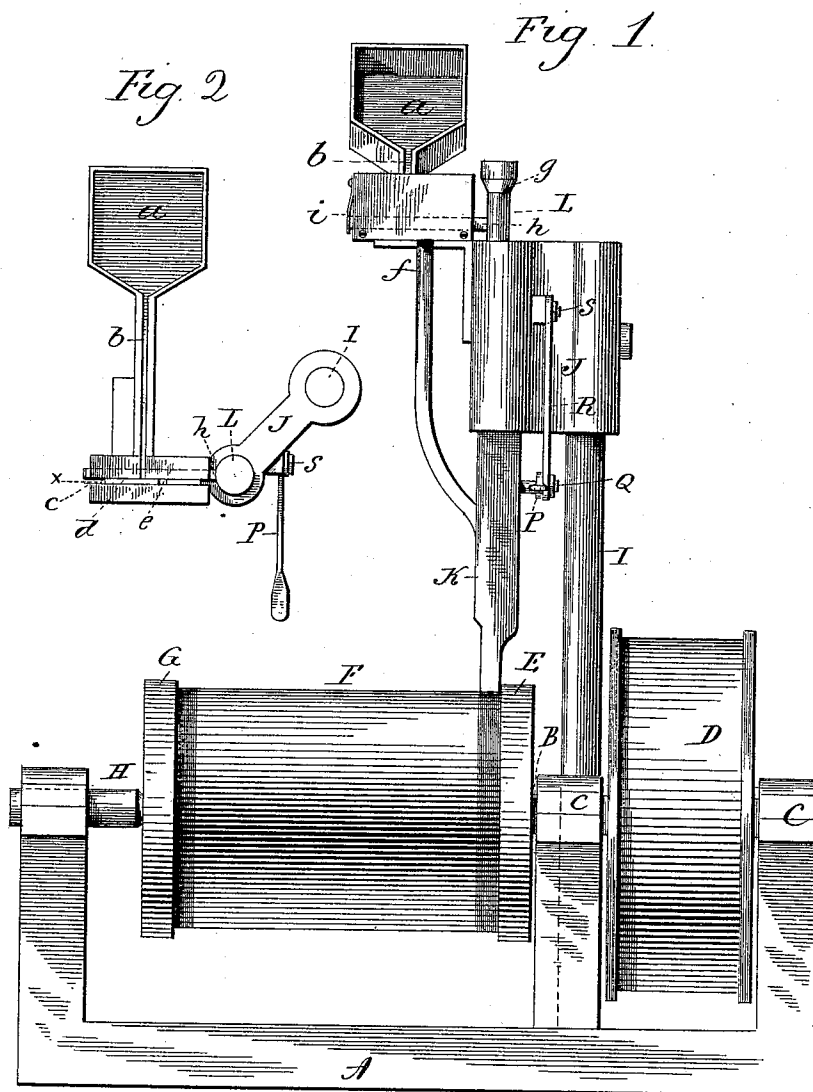
(No Model.)

3 Sheets—Sheet 1.

E. A. BURGESS.
PIN STICKING MACHINE.

No. 481,746.

Patented Aug. 30, 1892.



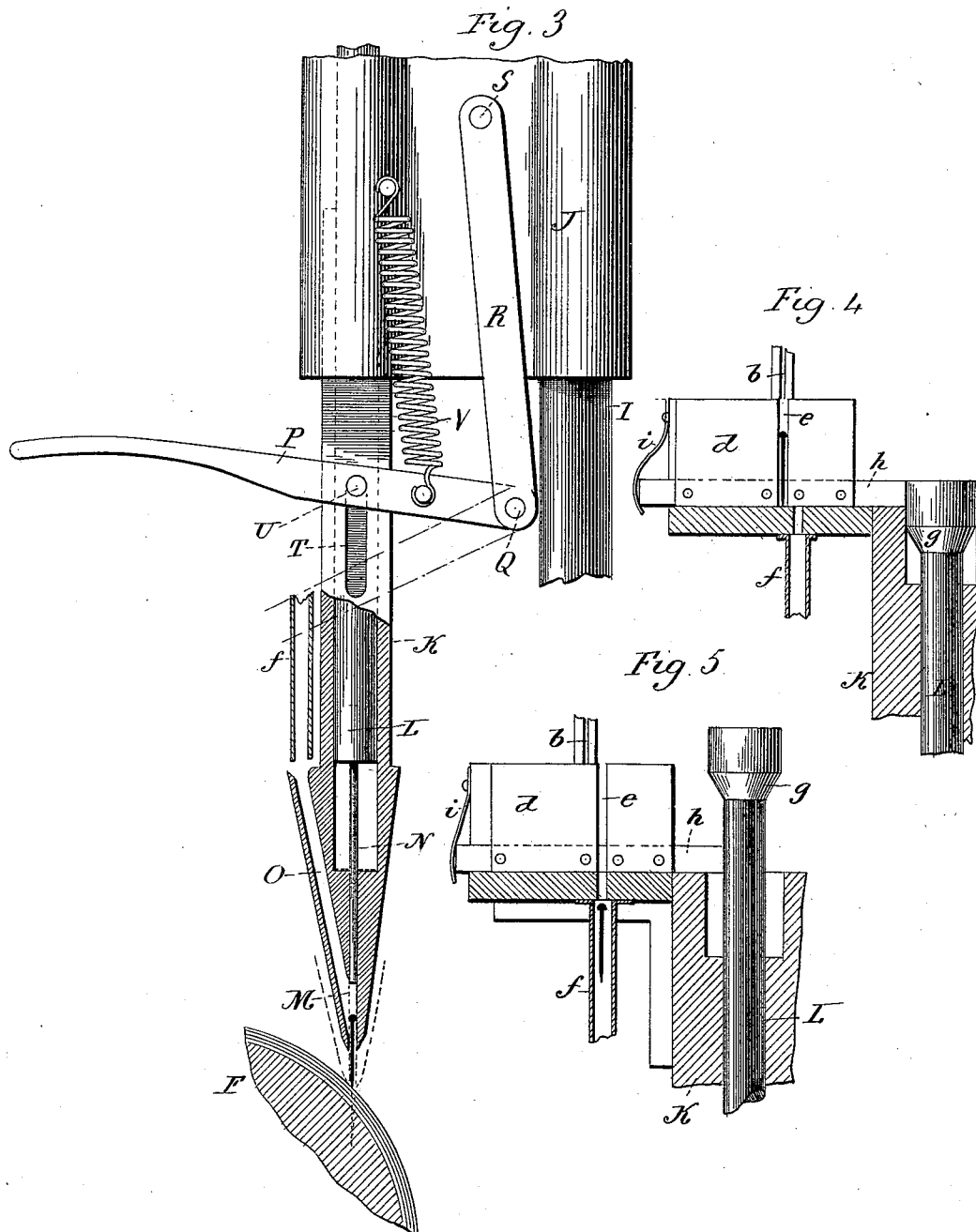
Witnesses
J. H. Shumway
F. W. Allen

Edward A. Burgess
Inventor
By atty.
Earle Heyman

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Earle Seymour

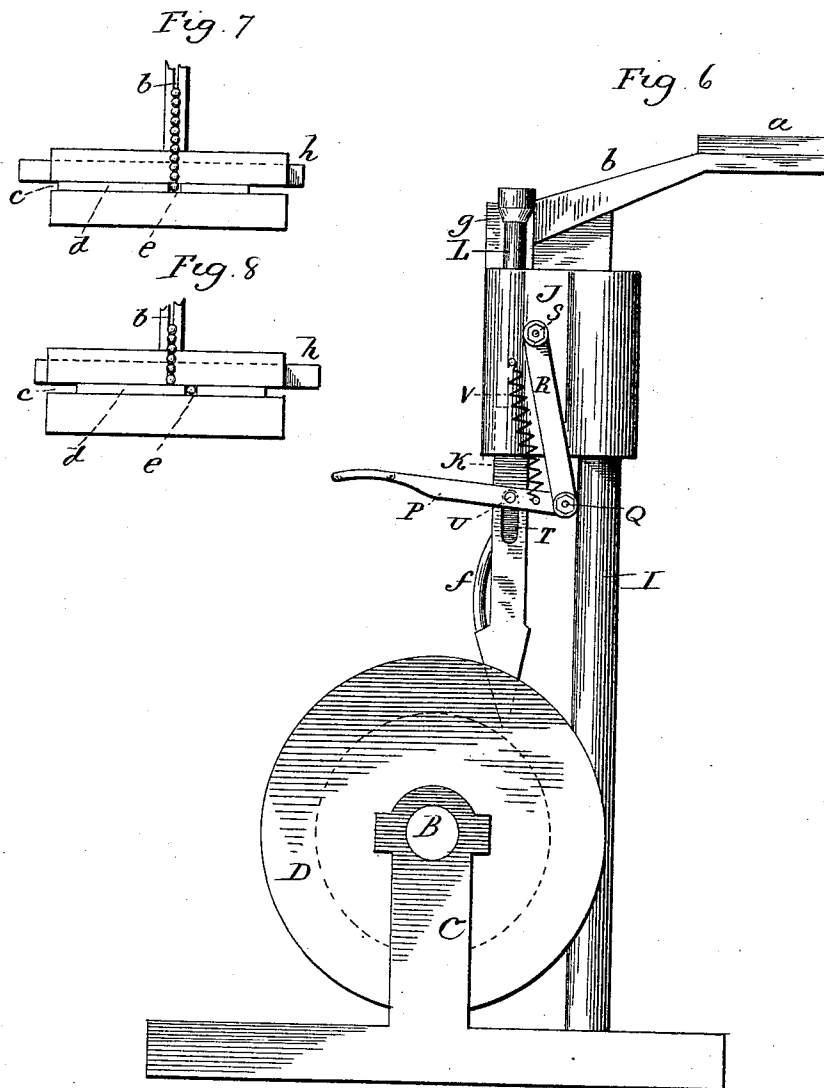
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J. H. Shumway
F. W. Peck

Edward A. Burgess
Inventor
By atty.
Earle Heymann

UNITED STATES PATENT OFFICE.

EDWARD A. BURGESS, OF NEW HAVEN, CONNECTICUT.

PIN-STICKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 481,746, dated August 30, 1892.

Application filed October 2, 1891. Serial No. 407,539. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. BURGESS, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machines for Sticking Pins in Rolls of Ribbons and for Like Purposes; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view of the machine; Fig. 2, top or plan view of the sticking mechanism; Fig. 3, side view showing the slide K and the conductor in partial vertical central section; Figs. 4 and 5, transverse views cutting through the upper part of the conductor and immediately forward of the slide *d* on line *xx* of Fig. 2 and showing the slide in the position of first receiving a pin and then as delivering the same; Fig. 6, side view of the machine complete; Figs. 7 and 8, top or plan views illustrating the operation of the slide *d*. Figs. 3, 4, 5, 7, and 8 are enlarged.

This invention relates to a device for mechanically sticking pins into rolls of ribbon, tape, or like material to secure the end when the roll is completed, the object being to automatically feed the pins to a device by which they may be mechanically forced into the roll presented to the apparatus; and the invention consists in the mechanism hereinafter described, and particularly recited in the claims.

Upon a suitable bed A an arbor B is arranged in bearings C C, to which rotation is imparted by means of a pulley D or otherwise. The arbor B carries a head E or other means by which the arbor may be coupled with the block, spool, or spindle upon which the ribbon, tape, or whatever it may be, may be wound. As here represented the block F is engaged with the head E at the arbor end and with a similar head G at the other end, supported on a center H, so that the block or spindle will revolve with the arbor. This mechanism is or may be substantially that usually employed for the winding of ribbon, tape, &c.

At a convenient point and in proper relative position to the roll is an upright I, which

carries a head J upon its upper end and in which head is a vertical slide K. This slide K extends downward toward the surface of the roll. The slide K is tubular, and within it is arranged a spindle L, which extends up through the head and so as to be guided both by the head and the slide K. The spindle is also adapted for vertical movement independent of the slide K. Through the lower end of the slide K and in line with the spindle L is an opening M of substantially the diameter of the heads of the pins to be stuck or somewhat larger, and on the lower end of the spindle L is a punch N, which extends down into the opening M so as to work freely up and down in that opening as the spindle L is moved. In the slide K is an oblique opening forming a conductor O. This conductor O leads into the opening M near the lower end or point of the slide K, as clearly seen in Fig. 3, so that a pin introduced into the upper end of the conductor O will slide down into the opening M, so as to stand in that opening M below the punch N, as seen in Fig. 3. In winding the ribbon the end is brought into a position directly below the lower end of the slide K, so that a pin standing in the slide, as seen in Fig. 3, and the punch brought down on the head of the pin with force will drive that pin through the end of the ribbon into the roll substantially as it would be placed there by hand.

To operate the slide and punch, a hand-lever P is hung at Q to one end of a link R, the other end of the link being hung upon a pivot S on the head J. Through the slide K is a slot T, and from the spindle L a stud U projects outward through the slot T and into the lever P, so that as the lever is depressed it will permit the slide K to drop until it reaches the surface of the ribbon, as represented in broken lines, Fig. 3. Then a continued downward movement of the lever P, as indicated in broken lines, Fig. 3, will bring the punch N to bear upon the head of the pin and force it into the roll of ribbon. This done, a spring V will return the lever to its up position.

The pins may be introduced into the conductor O by hand; but I prefer to feed the pins automatically. To this end I provide a hopper *a*, from which an inclined channel *b*

leads into a transverse slot *c*. (See Fig. 2.) The channel *b* is in width somewhat greater than the diameter of the pin, but less than the diameter of the head, so that the pins may successively slide down the channel in vertical position, in like manner to the feeding of pins to common "pin-stickers."

In the transverse slot *c* a slide *d* is arranged so as to reciprocate therein, and at one point in this slide is a notch *e*, which may be brought into line with the channel *b*, as seen in Figs. 4 and 7, so that the lower pin of the column may pass into the notch *e*, as seen in Fig. 7, so that the pin may stand therein in a vertical position. A longitudinal reciprocating movement is imparted to the slide *d*, which will take the notch *e* from the position at the end of the channel after having received a pin to one side, as seen in Figs. 5 and 8. In the last position the pin passes into a tube *f*, which leads downward and opens into the conductor *O*, as seen in Fig. 3, so that as the pin is presented over the upper end of this tube, as seen in Figs. 5 and 8, the pin will drop into the tube of its own gravity, as seen in Fig. 5, and thence be led to the lower end of the slide *K*, as seen in Fig. 3, where it is in position for the operation of the punch, as before described. The slide *d*, having delivered one pin, returns and receives another pin and brings it to the position for delivery, as before. The movement of the slide *d* occurs at each sticking operation and it is produced by a cam *g* on the upper end of the spindle *L*. (See Figs. 4 and 5.) When the spindle *L* is in its up position, as seen in Fig. 5, the cam stands above a projection *h* from the slide *d*, the slide then being in the position for delivering a pin; but as the spindle *L* descends to stick the pin the cam *g* bears against the projection *h* to return the slide to the position seen in Fig. 4, where it will receive the next pin. Then as the spindle returns to the position seen in Fig. 5 a spring *i*, operating upon the opposite end of the slide *d*, will force the slide forward to the position seen in Fig. 5 to deliver the pin which it has received.

If more than one pin is required for a roll, as many sticking devices may be employed as pins are to be stuck into the roll, or a single sticker may be employed and the roll moved longitudinally to bring the roll to the position to receive each successive pin.

While I prefer to make the slide *K* movable up and down, it may be stationary, it

being arranged in proper position relative to the surface of the roll where the pin is to be stuck.

I do not claim, broadly, a mechanism for feeding and delivering pins singly from a mass, as such, broadly considered, I am aware, is common and well known. Neither do I claim, broadly, a reciprocating punch within a tubular reciprocating slide and a feed-tube leading into the guide below the punch, as such, I am aware, is not new.

I claim—

1. The combination of the tubular slide *K*, the spindle *L*, arranged within said slide and carrying a punch *N* at its lower end, the slide constructed with a conductor *O*, leading into the opening below the said punch and so as to conduct a pin thereto, the slide constructed with a vertical slot *T*, a lever *P*, hung by one end in rear of the spindle and so as to swing in a vertical plane, the lever extending forward of the spindle so as to form a handle, with a stud *U* projecting from said spindle through said slot and into connection with said lever *P*, substantially as and for the purpose described.

2. The combination of the tubular slide *K*, the vertical reciprocating spindle *L*, arranged therein and carrying the punch *N*, a lever hung by one end in rear of the spindle so as to swing in a vertical plane, the lever extending forward of the spindle so as to form a handle, the said lever in connection with said spindle and slide, whereby the vertical reciprocating movement is imparted to said slide and spindle, a hopper adapted to receive a mass of pins, an inclined channel leading therefrom, a transverse slide *d*, arranged to reciprocate across the lower end of said channel, the said slide constructed with a vertical notch *e*, adapted to receive a pin, mechanism for imparting reciprocating movement to said slide transverse to the said channel, and a conductor *f*, leading from the said notch in the slide at one side of the lower end of said channel to the opening in the slide *K* below the punch *N*, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWARD A. BURGESS.

Witnesses:

FRED. C. EARLE,
JOHN C. EARLE.