(No Model.)

R. F. LIVERMORE.

TICKETING MACHINE.

No. 529,502. Patented Nov. 20, 1894.

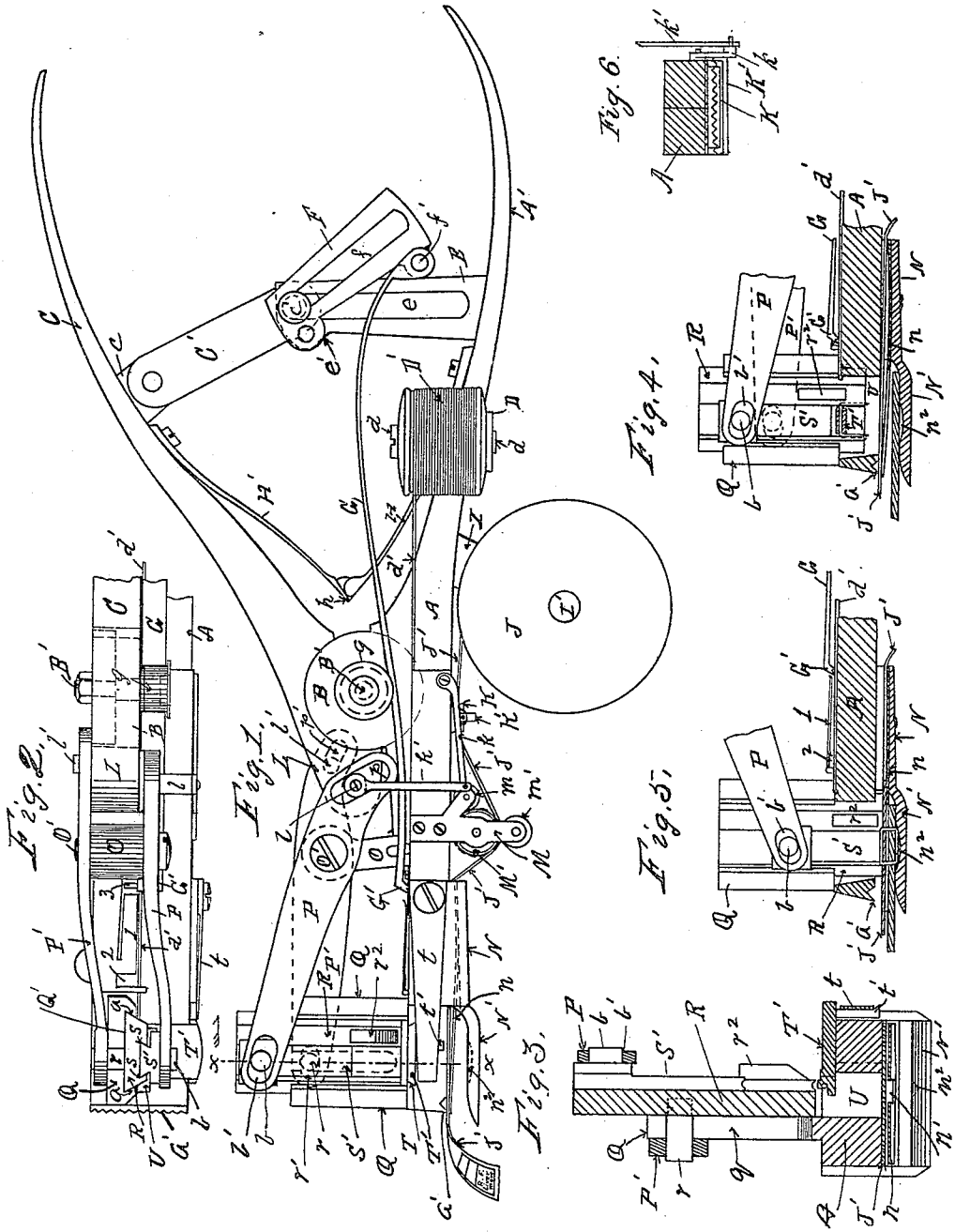

Fig. 6.

Fig. 4.

Fig. 5.

Fig. 3.

Witnesses.

Ralph A. Sturgeon.

F. Einfeldt.

Inventor.

Ray F. Livermore

By Ralph A. Sturgeon

Att'y.

UNITED STATES PATENT OFFICE.

RAY F. LIVERMORE, OF CORRY, PENNSYLVANIA.

TICKETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 529,502, dated November 20, 1894.

Application filed August 9, 1893. Serial No. 482,740. (No model.)

To all whom it may concern:

Be it known that I, RAY F. LIVERMORE, a citizen of the United States, residing at Corry, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Ticketing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, forming part of this specification.

My invention consists in the improvements in ticketing machines, hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1. is a side elevation of my improved ticketing machine. Fig. 2. is a top or plan view of a portion of the same. Fig. 3. is a transverse vertical section of the same on the line *x*, *x*, in Fig. 1, looking in the direction of the arrow. Fig. 4. is a detail view of a portion of the same partly in elevation and partly in section, showing the staple cut from the wire and bent over the anvil. Fig. 5. is a like detail view showing the staple after it is forced through the material and clinched. Fig. 6. is a detail end view of the perforating mechanism.

In the construction of my improved ticketing machine, A is the base of the machine, which is extended so as to form an operating handle A′ thereon. On the upper side of the base A is an ear B to which, on a pintle B′, is pivoted the other operating handle C. Upon the frame A is a laterally projecting arm D upon which a spool of wire D′ is secured by means of a stud *d*, so that it will revolve freely thereon. Projecting upward from the handle A′ is an upright fixed arm E provided with a longitudinal slot *e* and an ear *e′* and to the ear *e′* is pivoted a swinging arm F provided with a longitudinal slot *f* and an ear *f′* on the lower end thereof, to which ear is pivoted a reciprocating spring dog G as and for the purpose hereinafter set forth. On the handle C is a lug *c* to which is pivoted an arm C′, and in the lower end of the arm C′ is a laterally projecting stud *c′* which passes through the slot *e* in the upright arm E, and the slot *f* in the swinging arm F, and when the handles A′ and C are moved toward each other, the stud *c′* travels down the slots *e* and *f* and operates to bring the swinging arm F parallel with the fixed arm E, which moves the spring reciprocating dog G forward, and when the handles are moved apart, the stud *c′* travels back moving the arm F and the dog G back to the position illustrated in Fig. 1. To the handle A′ is secured a spring H, and to the handle C a spring H′, the outer ends of these springs meeting at *h* and operating on the handles A′ and C to normally force them apart so that they normally stand in the positions illustrated in Fig. 1. Projecting downward from the base A is an arm I provided with a laterally projecting stud I′ adapted to support a spool J containing a ribbon of paper J′. There is also secured to the under side of the frame A a guide K, within which a transverse saw toothed bar K′ is operated by means of a lever *k* pivoted to the frame A, and to the lower end of the link *k′* which extends upward and is pivoted to a stud *l* on a projection L on the handle C in front of the pivot B′ upon which it operates, so that each time the handle C is moved toward the handle A′, the bar K′ is forced up against the ribbon J′ and operates to partially sever the same.

Projecting downward from the frame A in front of said perforating mechanism, are downward projecting arms M, between which I mount a type roller M′, an inking roller *m* and an impression roller *m′*, so that the ribbon of paper J′ after passing through the perforating mechanism hereinbefore described, passes between the type roller M′ and the impression roller *m′* and receives the impression of the type on the type roller M′ on the upper surface thereof, as it is moved along between them. From the type roller M′ the ribbon of paper J′ passes on through a guide N, secured to the under side of the frame A, and out over a projection N′ on said guide N, which projection N′ also operates as an anvil as and for the purpose hereinafter set forth.

On the base A in front of the projection L on the handle C is secured an upwardly projecting arm or standard O, on the upper end of which, on a pintle O′ thereon are pivoted two levers P and P′, one on each side thereof.

The rear ends of these levers extend back on each side of the projecting end L of the handle C, and are provided with slotted openings p and p', the slotted opening p engaging with a stud pin l and the slotted opening p' with a stud pin l' on the projection L. These stud pins l and l' are located at different distances from the pivot or fulcrum O' of the levers P and P', the stud pin l being nearer the pivot or fulcrum O' than the stud pin l' which operates to make the forward end of the lever P travel farther and at a greater rate of speed than the lever P', as and for the purpose hereinafter set forth.

On the front end of the frame A is an upright projection Q, within which is a dovetail slot Q' which form the edges of vertical guides a, a in which a vertically moving piece R operates. From the rear of this piece R a stud pin r projects through a vertical slot q in the upright projection Q into a slotted opening r' in the outer end of the lever P', so that the movement of the lever P' operates to move the piece R up and down in the guides a, a. In the face of the vertically moving piece R is a dovetail slot S, within which a vertically moving piece S' operates. On the upper end of the vertically moving piece S' is a stud pin b which operates in a slotted opening b' in the end of the lever P, by means whereof the piece S' is operated. In a transverse dovetail slot T in the top of the front end of the frame A is a laterally moving block or anvil T', the inner end of which extends under the lower ends of the vertically moving pieces R and S', and on the side of the frame A is secured a spring t which engages with a downwardly projecting lug t' on the outer end of the block or anvil T', which normally operates to force the block or anvil T' inward. Near the end of the frame A is a vertical slot or opening U, through which the lower ends of the vertically moving pieces R and S' pass downward; and in the guide N is secured a spring n which extends forward under the ribbon of paper J' and over the jaw or anvil N' thereon, to the end of the frame A. In the center of this spring n is a longitudinal slot n' as and for the purpose hereinafter set forth.

On the end of the spring reciprocating dog G is a sharp jaw G' which is firmly pressed down upon the wire d' by the pressure upon the spring portion of the dog G exerted by the tension roller g operating thereon, so that each time the dog G is moved forward by the closing of the handles A' and C together, it carries the wire d' forward under the vertically moving pieces R, S' and over the inner end of the movable block or anvil T'. Then as the movable pieces R, S' are moved downward by the operation of the handle C through the levers P and P' the sharp corner of the piece R passing down in close proximity with the inner end of the slot U in the frame, first operates to cut off the wire d' and bend the section so cut off over the inner end of the block or anvil T' into the shape of a staple, as illustrated by the dotted lines in Fig. 4. At this instant the vertically moving piece S', moving faster than the piece R, has contacted with the wire d' on top of the block or anvil T', and simultaneously therewith the inclined projection r^2 on the vertically moving piece R has contacted with one side of the block or anvil T' and moved it back, so that the vertically moving piece S' operates to drive the staple on downward through the paper ribbon and a piece of cloth or other material inserted under the slotted spring n on the top of the jaw or anvil N', until the points of the staple contact with the depression n^2 therein and are bent inward and clinched, as illustrated in Fig. 5, after which the cloth with the ribbon of paper are pulled outward and the ribbon of paper torn off against the saw toothed end a' of the frame A, leaving a portion of the ribbon of paper firmly secured to the cloth.

On top of the frame A, at a point coincident with the travel of the jaw G' of the reciprocating dog G thereon, is a spring plate 1 provided with a slot 2, and as the jaw G' moves forward, a laterally projecting pin 3 thereon passes under the spring plate 1 and travels thereunder until the end of its forward traverse is reached, when the pin 3 passes out of the slot 2 and travels back over the top of the spring plate 1, thus raising the jaw G' of the dog G out of contact with the wire d'. Thus the wire d' is automatically fed forward a sufficient distance to form a staple; cut off, formed into a staple, inserted into the ribbon of paper and a piece of cloth under it, and firmly clinched therein, each time the handles A' C are moved toward each other the normal distance of their traverse. The paper ribbon on the spool J is pulled forward by hand, intermittently, for the required extent in operating the machine.

Having thus fully described my invention so as to enable others to construct and operate the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination in a ticketing machine, of a frame A having a rigid handle A' thereon and an operating handle C pivoted thereto, a lever P' coupled to and operated by said handle C, and a vertically moving plate R pivoted to and operated by said lever P', a lever P coupled to and operated by said handle C, and a vertically moving plate S' pivoted to and operated by said lever P, a movable anvil T' and a fixed anvil N', a wire spool mounted on said frame, and a dog G for feeding wire from said spool forward under said vertically movable plates R and S', a spool on said frame for supporting a ribbon of paper, a type and an impression roller between which said ribbon of paper passes, an inking roller for inking said type roller, and a guide N through which said ribbon of paper

passes from said type and impression rollers to and over the fixed anvil N′, substantially as and for the purpose set forth.

2. The combination in a ticketing machine, of a frame A provided with a rigid handle A′ and a pivoted operating handle C, a lever P′ coupled to said pivoted handle C, a vertically movable plate R pivoted to and operated by the lever P′, and another lever P coupled to the handle C, a vertically movable plate S′ pivoted to and operated by said lever P, a laterally movable anvil T′, a fixed anvil N′, a wire spool mounted on said frame A, and a dog G operated by lever mechanism between the handles A′ and C, for feeding wire from said spool forward under the vertically moving plates R and S′, substantially as and for the purpose set forth.

3. The combination in a ticketing machine, of a frame A having a rigid handle A′ thereon, and an operating handle C pivoted thereto, a wire spool mounted on said frame and a dog for feeding the wire forward, a spool mounted on said frame, and a ribbon of paper leading therefrom through guides to and over a fixed anvil N′ at the forward end of the frame A, a lever P′ pivoted to said handle C, and a vertically movable plate R coupled to said lever and operated thereby, and the lever P pivoted to said handle C and a vertically movable plate S′ coupled to said lever and operated thereby, and a laterally movable anvil T′ operated by the downward movement of the plate R, substantially as and for the purpose set forth.

4. The combination in a ticketing machine, of a frame A having a handle A′ thereon, a handle C hinged thereto, lever mechanism between said handles operating a reciprocating dog G, a spool of wire said wire being intermittently fed forward by said dog, staple forming and driving mechanism R, S′ T′ on said frame, and levers P, P′ connecting the handle C with the parts R, S′ of said staple forming and driving mechanism, and a spool of paper ribbon operated by hand said paper being moved forward under said staple making and driving mechanism, substantially as and for the purpose set forth.

5. The combination in a ticketing machine, of the frame A having a handle A′ thereon, a handle C pivoted to the frame A, spring mechanism and lever mechanism between said handles, a reciprocating spring dog G operated by said lever mechanism, and a spring plate 1 under which a pin 3 on said dog passes during its forward traverse, and over which it passes on its return traverse, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

RAY F. LIVERMORE.

Witnesses:
ORA MATHER,
CLYDE WILCOX.