2 Sheets—Sheet 1.

H. VAN GEASEN.

MACHINE FOR MAKING WIRED-TICKETS.

No. 192,798. Patented July 3, 1877.

Fig. 1.

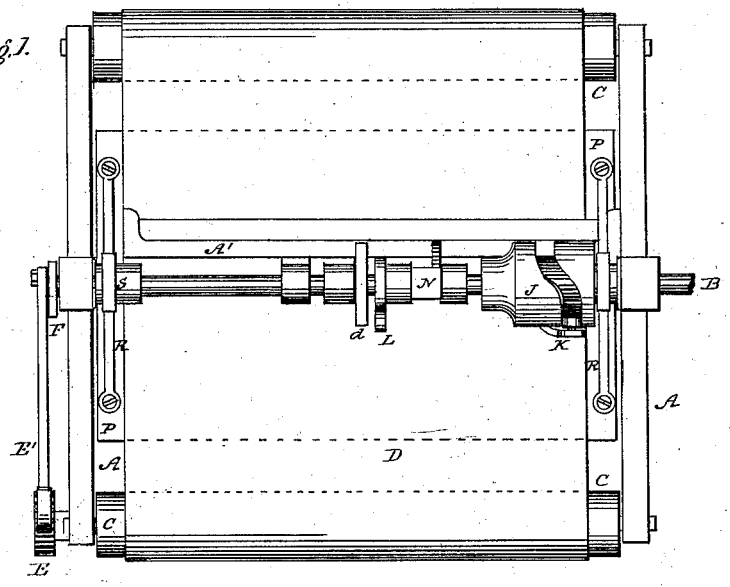
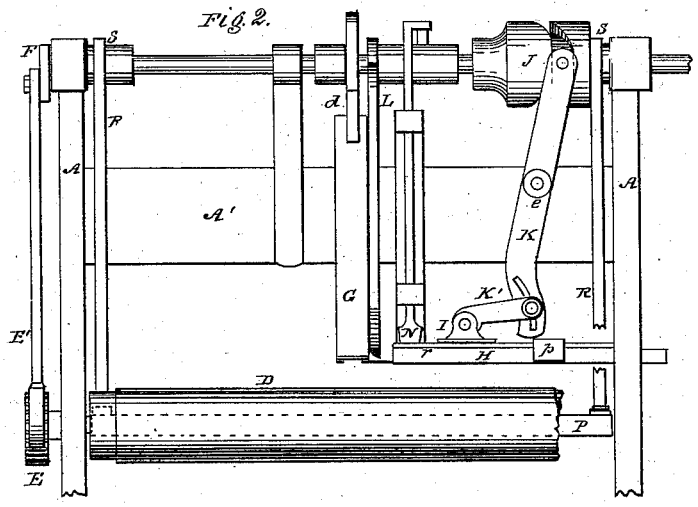


Fig. 2.



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2 Sheets—Sheet 2.

H. VAN GEASEN.

MACHINE FOR MAKING WIRED-TICKETS.

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Fig. 3.

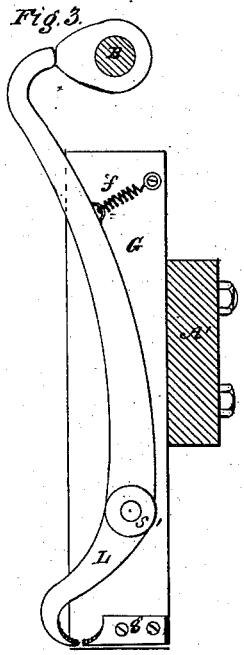

Fig. 4.

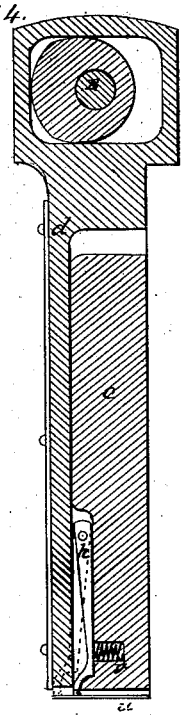

Fig. 5

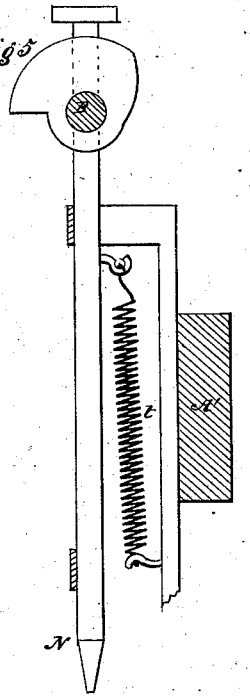

Fig. 6

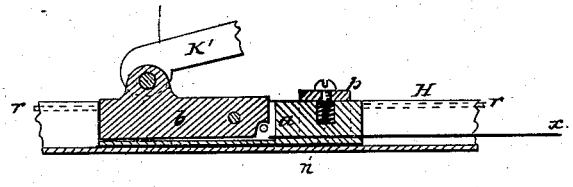

Fig. 7

Fig. 8.

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UNITED STATES PATENT OFFICE.

HALMEAGH VAN GEASEN, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR MAKING WIRED TICKETS.

Specification forming part of Letters Patent No. **192,798**, dated July 3, 1877; application filed March 21, 1877.

To all whom it may concern:

Be it known that I, HALMEAGH VAN GEASEN, of the city of Paterson, in the county of Passaic and State of New Jersey, have invented an Improved Machine for Making Wired Tickets; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification.

The object of this invention is to construct a machine for manufacturing in a rapid and economical manner a certain "size and quality ticket" for which Letters Patent were granted to me on the 21st day of April, 1874.

My invention consists in certain novel and peculiar devices for feeding in the wire, for forming the wire fasteners, and for inserting the same in the card-board; and in the combinations and arrangements of the said devices with each other, in such a manner that the wire fasteners may be formed and inserted in the card-board automatically, and with rapidity and precision.

In the accompanying drawing, Figure 1 represents a plan view of my improved machine. Fig. 2 is a front elevation of the same; and Figs. 3, 4, 5, 6, 7, and 8 are detail views hereinafter referred to and particularly described.

A represents a portion of the frame of the machine, which may be of any suitable form and dimensions for holding the working parts. B is a shaft, having bearings in the upper part of the said frame, to which the power is applied for driving the machine. C C are cylindrical rollers, having bearings in the lower part of the said frame, over which is stretched an endless web, D, upon which the card-board or paper from which the tickets are made is laid.

An intermittent motion is imparted to the web D by means of a ratchet, E, secured to one of the said rollers C, which said ratchet is driven by a pawl, E′, operated by an eccentric, or cam, or crank, F, on the end of the shaft B, by which means the said web D is moved, at each revolution of the shaft, a distance equal to the length or size of each of the tickets which are being made. By this movement the said web carries the said sheet of paper or card-board under the wire-forming device G, which latter is hereinafter described.

I represents my improved wire-feeding device or shuttle, for feeding the wire from a continuous roll to the forming device G. It consists of a rectangular piece of metal, *a*, which is slotted to receive a tongue, *b*, that is pivoted therein, as shown in Fig. 6, which represents a longitudinal vertical section of the same. This shuttle travels in a box, H, which is secured to the frame A in any suitable manner in a horizontal position, about one inch above the upper surface of the web D.

A reciprocating movement is imparted to this shuttle by the levers K and K′, to the latter of which it is pivoted, and which are operated by a grooved cam, J, fixed on the shaft B, so that the said shuttle has a movement back and forth equal to the length of wire required to form one of the wire fasteners.

The lever K is attached, by the pivot-pin *e*, to the cross-bar A′, and the lower end thereof is slotted, for the purpose of adjusting the length of the stroke of the shuttle. The solid portion of the shuttle is perforated longitudinally to admit the wire, which latter passes through the same and between the under surface of the tongue *b* and the bottom of the slot, and the tongue *b* being pivoted near its rear end, the forward end of the same is, by the action of the lever K′, pressed firmly down upon the wire on the forward stroke of the shuttle, and slightly raised as the latter is drawn back.

A sufficient degree of friction is imparted to the shuttle by means of a suitable spring, *n*, that presses against the under side of the plate or bar *p*, which latter is attached to the shuttle, and travels on the guides *r*, provided on the sides of the box H.

L is a knife for cutting the wire into the proper lengths, which is located between the shuttle or feeding device last described and the forming device G, and which is most plainly shown in Fig. 3, which represents a side elevation of the same. The cutting-edge of this knife is at its lower end, and the body of the knife is pivoted to G, as shown at *s′*. It is operated by a cam on the shaft B, its upper end being kept in contact therewith by

a suitable spring, *f*. The cutting-edge of the knife works in connection with a stationary knife, *g*, so as to give a slanting cut, and thus form a sharp point on each part of the wire thus cut.

N is a presser-foot, which is actuated by a suitable spring, *t*, and lifted by a cam on the shaft B, and is for the purpose of holding the wire at the bottom of the box H, and preventing its being drawn back by the shuttle on its backward movement.

In Fig. 5 is shown a side elevation of this device.

The forming device G, a vertical section of which is shown in Fig. 4, consists of a metal box, *c*, (which is secured to the cross-bar A′,) in which works a plunger, *d*, actuated by a cam on the shaft B, and having a vertical movement, and a lever or tongue, *h*, which is pivoted within the portion *c*, and is moved in one direction by the plunger *d*, and in the opposite direction by a spiral or other suitable spring, *v*. At the rear side of the extreme lower end of the tongue *h* a groove is cut, into which the wire is received when the said tongue is driven inward by the descent of the plunger, which said groove extends across both sides of the tongue, to receive the shanks of the wire when thus drawn inward, by which means the wire is brought into the form shown in Fig. 7, and on the under side of the metal box *c* is secured a slotted plate, *u*, upon which the wire lies, with its shanks or ends projecting from the front of the box. By the completion of the stroke of the plunger these projecting ends are forced downward, and thereby brought into the form shown in Fig. 8, and are held in this position within the box until, by the ascent of the plunger, the spring *v* comes into play, and throws outward the lower end of the tongue *h*.

P is a table (shown in Figs. 1 and 2) suspended below the upper sheet of the web D by straps or stirrups R R, operated by cams S S on the shaft B, which are arranged so as to raise the said table and the upper sheet of the web, while the wire fastener is still held at the foot of the box *c*, with its sharp ends directed downward, as above described, by which means the latter are caused to penetrate the paper or card-board on the web.

The operation is as follows: The wire (marked *x*) is fed from a coil through the wire-feeder I, each revolution of the shaft B giving one forward and backward movement to the same, and during the forward movement of the same the wire is held firmly by the tongue *b*. On reaching the end of the forward stroke the presser-foot N descends, and holds the wire until the shuttle has completed its backward stroke. The wire is then cut by the knife L, and that portion of the same which is within the forming device G is first bent into the form shown in Fig. 7, by reason of the plunger *d*, in its descent, forcing the tongue inward, and by the completion of the stroke of the said plunger is bent into the form shown in Fig. 8, with its points directed downward, and is held in this position while the table P is raised by the action of the stirrups R R and cams S S, so as to bring the sheet of paper or card-board, as it lies on the web D, in contact with the under side of G, by which means the points of the wire are inserted through the paper. These several movements are repeated for each wire formed and inserted, and between each repetition of the same the web D, carrying the sheet of paper or card-board, is moved the distance of the length of a ticket by the ratchet E.

The card-board or paper is generally placed on the web in sheets containing ten tickets one way and fourteen the other, (or any other convenient size,) and the wires are inserted, as above described, in rows at equal intervals. And I may mention that the card-board or paper is generally laid upon a thin block of cork or similar material, which the points of the wires will readily penetrate while it is being passed through the machine.

What I claim as my invention is—

1. The wire-feeding device I, composed of the following parts: the shuttle or piece *a*, perforated longitudinally to admit the wire, and slotted to receive the tongue *b*, which is pivoted near the rear end thereof, the box H, and the spring *n* and plate *p*, or other suitable friction device, in combination with the cam J and levers K K′, substantially as shown and described, for the purposes specified.

2. The wire-forming device G, composed of the slotted metal box *c*, the tongue *h*, the slotted plate *u*, and the plunger *d*, constructed and arranged substantially as herein described, for the purposes specified.

3. In combination with the wire-forming device G, constructed as described, the endless web D, suspended table P, and the cams S S, arranged in relation to each other substantially as shown and described, to operate as set forth.

4. The combination of the feeding device I, forming device G, knives L and *g*, presser-foot N, suspended table P, and endless web D, arranged relatively with each other and with the several cams on the driving-shaft, substantially as set forth, to operate conjointly in the manner and for the purposes specified.

HALMEAGH VAN GEASEN.

Witnesses:

THEO. H. FRIEND,

JOHN S. THORNTON.