

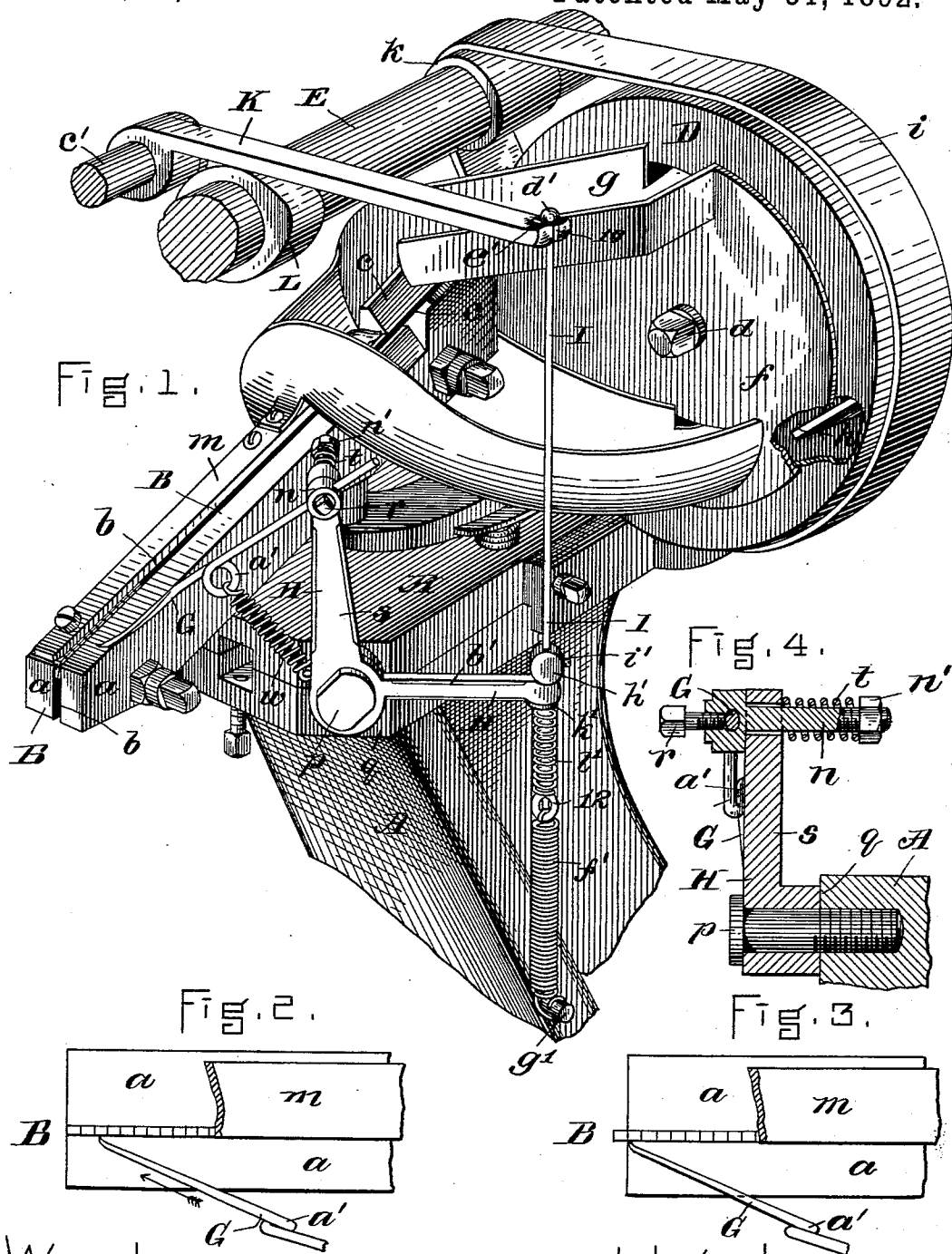
(No Model.)

J. HYSLOP, Jr.

FEEDING MECHANISM FOR PEGGING MACHINES.

No. 475,868.

Patented May 31, 1892.



WITNESSES.

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FEEDING MECHANISM FOR PEGGING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 475,868, dated May 31, 1892.

Application filed November 4, 1891. Serial No. 410,850. (No model.)

To all whom it may concern:

Be it known that I, JOHN HYSLOP, Jr., a citizen of the United States, residing at Abington, in the county of Plymouth and State of Massachusetts, have invented certain Improvements in Feeding Mechanism for Nailing and other Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the nail track or raceway of a nailing-machine having my improved feeding mechanism applied thereto, showing, also, the nail-feeding drum or reservoir, a portion of the main or driving shaft, and a portion of the frame-work of the machine which supports the said nail-track and nail-reservoir. Figs. 2 and 3 are plans of the lower portion of the nail track or raceway and nail pusher or ejector, showing the latter in different positions. Fig. 4 is a sectional detail of a portion of the nail-feeding device.

This invention relates to an improved feeding mechanism for nailing and other machines using a track or raceway for loose nails or other articles, and has for its object to insure the proper delivery of the nails or articles from the lower end of the raceway or track, whereby all liability of skipping or failure to deliver a nail or article at the proper time and place is entirely avoided.

To this end my invention consists in the combination, with a raceway or track, of an ejector or pusher of novel construction located upon the upper surface of the raceway and adapted to act upon the heads or portions of the nails or other articles extending to or above the same, whereby the certain delivery of the nails or articles from the end of the raceway at the proper time is insured, as hereinafter more particularly set forth.

My invention also consists in certain combinations of parts and details of construction, as hereinafter set forth, and specifically claimed.

In the said drawings, A represents a portion of the frame-work of a nailing-machine, to which is secured the inclined nail track or raceway B, composed, as usual, of two adjustable parallel bars *a a*, set at such distance apart as to leave a space *b* between them for

the reception of the shanks of the nails, the heads of which rest upon and are supported by the upper edges of the bars *a a*, by which they are guided as they slide down to the lower end thereof. The upper end of the track is enlarged and provided with inclined or flaring sides *c c*, which direct or guide the nails as they fall thereon into the space *b*.

D is the nail-receiving drum or reservoir, which is supported by and rotated upon a stud *d*, projecting from an arm bolted to the frame-work. The entire front of the reservoir D is covered by a plate *f*, through an aperture in which passes the upper end of a trough *g*.

Within the drum D, around its inner periphery, is arranged a series of buckets *h*, which pick up the nails in small quantities as the drum revolves and drop them into the upper end of the trough *g*, down which they slide into the open upper end of the inclined track or raceway B. The drum D is rotated continuously by a belt *i*, passing over its periphery and over a small pulley *k* on the main or driving shaft E, a portion only of which is shown in the drawings.

The track B is provided, as usual, with a cap plate or cover *m*, which is formed and screwed down thereon in such manner as to leave a space between it and the bars *a a* to permit of the free passage of the heads of the nails as they slide down the raceway, and at the same time prevent them from being displaced or thrown out by any jar or concussion to which they may be subjected.

As the nails slide down the raceway, they are liable occasionally to stick or become obstructed at or near its lower end, either owing to the shape of the nails or from other cause, thus preventing a nail from being delivered to the nail-driver at the proper time, resulting in imperfect work. To avoid this skipping or failure of the raceway to deliver the nails to the nail-driver with absolute certainty at the proper time, I employ a pusher or ejector G, consisting of a wire or rod pointed or otherwise properly shaped at its lower end, as seen in Figs. 1, 2, and 3, to act upon the sides of or behind the nails, its upper end being connected by means of a stud or bolt *n* with a bell-crank or angle lever H, fulcrumed at *p* to the flattened corner *q* of the frame-

work A, the position of the lever H with respect to the track B causing the pusher or ejector G to advance and recede in a path at an angle to a vertical plane passing longitudinally through the track, as seen in Figs. 1, 2, and 3.

The stud or bolt *n*, through which the upper end of the pusher G passes and to which it is secured by a set-screw *r*, passes loosely through the upper end of the arm *s* of the angle-lever H and extends beyond the same on the inner side, as seen in Figs. 1 and 4, this projecting portion being encircled by a light spiral spring *t*, held in place by a nut *n'*, said spring serving to hold the pusher up to the lever H, while the lower end of the pusher is held down upon the upper surface of the track by a light spring *w*, one end of which is fastened to an eye *a'* in the pusher and the other end to the lever H near its fulcrum, the loose motion of the stud *n* within its bearing in the arm *s*, combined with the springs *t* *w*, thus rendering the pusher-rod elastic or yielding in all directions, as required.

The horizontal arm *b'* of the angle-lever H is connected by means of a rod I with a lever K, pivoted on a stud *c'*, projecting from the frame-work, said lever being acted upon by a cam L on the driving-shaft E. The outer end of the lever K is provided with an open slot 10 for the reception of the upper end of the rod I, which is provided with a ball *d'*, which rests within a concavity or depression *e'* at the end of the lever K, as seen in Fig. 1. The rod I extends downward through the end of the arm *b'* of the lever H and is provided at its lower end with an eye 12, to which is attached a stiff spiral spring *f'*, secured at *g'* to the frame-work, the lever K being raised by the cam L against the resistance of this spring *f'*, which keeps the lever constantly in contact with the cam.

Upon the rod I, above and resting upon the arm *b'* of the lever H, is an adjustable collar *h'*, secured when adjusted by means of a set-screw *i'*, whereby as the rod I is drawn down by the spring *f'* the arm *b'* of the lever H is depressed positively, causing the pusher or ejector G to be drawn back away from the line of nails into the position seen in Fig. 1. Immediately under the arm *b'* the rod I is provided with a loose collar or washer *k'*, between which and the eye 12 the rod is encircled by a light spiral spring *l'*, through which the upward movement of the rod I is communicated to the angle-lever H, the spring connection thus formed enabling the pusher G to yield in case it should meet with any obstruction, in which case the rod I would slide through the end of the arm *b'* against the stress of the spring *l'* without moving the lever H, thus avoiding the breakage or injury to the parts which would otherwise occur.

The operation of the feeding mechanism is as follows: The raceway being properly supplied with nails and the parts being in the position shown in Fig. 1, the cam L as it re-

volves lifts the lever K and rod I, thus rocking the lever H and causing the pusher or ejector G to slide forward at an angle over and upon the surface of the raceway until it is brought into contact with the line or column of nails therein, as seen in Fig. 2, which occurs only a short time before it has reached the end of its forward movement, in which position it either frictionally bears against the side of the head of a nail or introduces itself between the heads of two contiguous nails, and as it continues to advance into the position seen in Fig. 3 it pushes the nails forward until the lower nail is ejected and arrested by contact with a stop or other device. (Not shown.) The delivery of the lowermost nail from the end of the raceway without any possibility of failure and the delivery of a nail at each advance of the pusher or ejector, provided the raceway is supplied with nails, is thus insured, and any skipping or failure to drive a nail at every descent of the nail-driver avoided—a very important consideration in machines of this character. The springs *t* and *w* serve to keep the lower end of the pusher G always on the upper surface of the track and in contact with the nails during the latter part of its forward movement, the nails being moved forward by the friction of the pusher against the sides of their heads as it advances, unless it gets behind a nail, in which case the movement of the nails in front will be positive so far as the pusher is concerned, which by reason of its spring connection will of course yield if the line of nails require a movement less than that of the remaining forward movement of the pusher, which, being yielding in all directions, will readily conform itself to any position required. On the return movement of the lever H, which is produced by the contact therewith of the collar *h'* on the rod I, the pusher or ejector G is drawn back clear of the line of nails, leaving them entirely free, as seen in Fig. 1, when it is again thrust forward as before, each revolution of the driving-shaft causing it to be advanced and withdrawn once, as above described. The position of the lower end or point of the pusher G upon the surface of the raceway when drawn back, as seen in Fig. 1, may be varied by adjusting the pusher within the stud *n* and securing it by means of the set-screw *r*. Although the above-described feeding device is especially well adapted for feeding nails in nailing-machines, it will be obvious that it may be applied equally as well to a great variety of other machines employing a raceway or track for conducting loose articles to a predetermined point.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a track or raceway, of a pusher or ejector at one end thereof, a horizontal axis at one end of the pusher or ejector, and mechanism, substantially as described, for imparting to it a lateral move-

ment whereby the opposite end of the pusher or ejector may move in horizontal and vertical planes, said pusher being laterally inclined from its axis toward the raceway, whereby its working end may move over the surface of said raceway and engage and periodically operate upon the portions of the nails or loose articles extending to or above said surface, substantially as herein described.

2. The combination of a track or raceway, a laterally-inclined pusher or ejector having its forward end movable over the upper surface of the raceway to engage and periodically operate upon portions of the nails or loose articles extending to or above said surface and having its opposite end mounted upon a horizontal transversely-moving axis, whereby the front end of the pusher may move in vertical and horizontal planes, a rocking support for said axis, and means for operating the support, substantially as herein described.

3. The combination, with a track or raceway, of a pusher or ejector mounted at one end upon a horizontal axis and adapted to reciprocate at a lateral angle upon the surface of the raceway and arranged to operate upon the portions of the nails or loose articles extending to or above said surface, an actuating-lever carrying said pusher, and a loose or spring joint between the lever and outer end of the pusher, substantially as set forth.

4. The combination, with a track or raceway, of a reciprocating yielding pusher or ejector, an actuating-lever for said pusher, loosely connected therewith by a horizontally-disposed yielding spring-joint, and a spring for holding the pusher in contact with the surface of the raceway, said pusher being out of contact with the line of nails or loose articles at the commencement of its forward movement and completing the said movement in contact with the said nails or loose articles, whereby they are pushed forward and ejected from the raceway, substantially as set forth.

5. The combination, with a track or raceway, of a pusher or ejector adapted to recip-

rocate upon the surface of the raceway at an angle thereto and push forward and eject the nails or loose articles by contact therewith at or above the surface of the raceway, a lever carrying said pusher and connected therewith, a horizontal laterally-yielding spring-joint whereby the pusher is caused to advance at an angle to the line of nails or loose articles and after contact therewith complete its forward movement in a direction substantially parallel with the raceway in the direction of its length, a spring for holding the pusher down upon the raceway, and a device for actuating the pusher-lever, said device having a yielding connection therewith, substantially as herein described.

6. The combination, with a track or raceway, of the angle-lever H, the pusher or ejector G, loosely connected with the lever H by means of the stud *n* and spring *t*, the spring *w*, the connecting-rod I, having a spring or yielding connection with the angle-lever H, the spring *f'*, the lever K, and the cam L, all constructed to operate substantially as and for the purpose set forth.

7. The combination, with a track or raceway, of the angle-lever H, pusher or ejector G, connected therewith by means of the stud *n* and spring *t*, the spring *w*, connected with the pusher G and adapted to hold the same upon the surface of the raceway, the connecting-rod I, sliding through the end of the arm *b'* of the lever H and provided with the collar *h'* and spring *l'*, arranged on opposite sides of the arm *b'*, the spring *f'*, connected with the lower end of the rod I, the lever K, provided with an open slot 10 and a concavity or depression *e'* for the reception of the ball *d'* at the upper end of the rod I, and the cam L on the shaft E, all operating substantially in the manner and for the purpose set forth.

Witness my hand this 30th day of October, A. D. 1891.

JOHN HYSLOP, JR.

In presence of—

RANDALL RICHARDS,
OTIS W. SOULE.