





# United States Patent Office.

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Letters Patent No. 102,054, dated April 19, 1870.

## IMPROVEMENT IN EYELETING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELIJAH SHAW, of the city and county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Eyeletting-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side view of my invention;

Figure 2, a vertical section view;

Figure 3, a front view of the lower portion of the machine;

Figure 4, a sectional view of the hopper D; and

Figure 5, cross-sectional view of the chute F.

### Nature and Object of the Invention.

My invention relates to the manner of feeding the eyelets to the machine, and the combination of machinery to fix them in the work, and not to have the dirt interfere with the operation, and to have the eyelets securely fastened in their place.

A is the supporting-frame of the machine.

B, a bent lever held fast upon the shaft B' by a set-screw, f, which actuates the several parts of the machine, its throw being determined and controlled by an adjusting screw-stop, e.

C is a rod which connects the long arm of the bent lever B to a treadle, not shown, to which the power is applied to work the machine.

D is a hopper which holds the eyelets. It is supported in proper position upon a frame, E, secured to the main frame A. It is provided with a central shaft, u, having bearings in the frame E and cover m, by which the bottom p and carrying-brushes g are revolved. The cover m is held in place by a screw-nut, n, and the bottom is adjustable in height by a collar, q, and set-screw s, on the shaft u.

At one side of the hopper a perforation, k, approximating the shape of an eyelet, is made, and the height of its opening is determined by a curb, h, fitted within the hopper, and adjustable to a fixed position by means of set-screws i. Through this opening the eyelets pass into the chute. This curb has an inside flange under which the eyelets pass through the opening k to the chute or conduit F, which is made of two pieces set a short distance apart, to form a central longitudinal opening to permit the passage of the body of the eyelet.

These pieces are internally grooved at their upper edges to receive the flange of the eyelet, and the chute itself is so bent as to receive the eyelet-flange down from the hopper, and turn it over in its passage to the delivering end of the chute, where it presents its flange up to the setting mechanism.

This chute is adjustable by means of a supporting-bracket, d, held by a set-screw to the rear of the frame A.

G is a swinging arm secured to the shaft B'. It is provided with holes C', in which the rod H is adjusted. This rod H is connected at one end to the arm I, which is attached by a loose collar to the shaft u, and carries on its under side a dog, L, held to duty by a spring, D', which acts upon the ratchet-wheel K, fixed upon the lower end of the shaft u, and revolves it and the carrying-brushes intermittently, pressing the eyelet into the chute.

M is the anvil or setting-bed upon which the eyelets are forced and clinched.

N is a holding-pin, which takes the eyelet from the mouth of the chute, and carries it forward and down upon the anvil or setting-bed.

O is a spring band, forked or slotted to admit the holding-pin of the set carrying the eyelet, which it sustains thereon until the set reaches a point over the setting-bed, and the holding-pin has been brought in contact therewith.

P P are jaws hinged near the mouth of the chute, which they close, held to duty by flat springs v.

Q is a rod attached to the rear of the swinging frame T, and provided with a head and with a spiral spring, l, which is wound around it, and seated at one end upon the head y and at the other upon the main frame of the machine, which is perforated at this point to permit the passage of the pin. The duty of this pin and spring is to return the swinging carrier to a position to receive an eyelet from the chute, after it has been carried forward to set an eyelet.

A link, R, connects the bent lever B to a rod, S, whose lower portion is hollow, to receive the set W and its sliding pin N, the latter being elastically seated therein upon a spiral spring, V, and the former attached to the lower end, but adjustable to fixed positions thereon. These parts reciprocate in the swinging frame T, and are actuated by motion communicated through the link R from the lever B.

A spiral spring, U, surrounds the rod S, and is seated at one end upon a projection of the frame T, and at the other upon an adjustable hub upon the rod S. Its duty is to assist the return of the rod S to its normal position after it has been depressed to clinch an eyelet.

The face of the set W is concavely grooved, as is usual, to insure the turning of the eyelets to form the securing flange.

The parts just described are supported within and carried to their proper positions during the operation of setting an eyelet by a swinging-frame, T, which is hinged at its upper end upon the shaft B'.

X is a guide-block having an inclined face adjustably attached to the inside of the frame A. Its purpose is to force the swinging frame and the mecha-



ism it carries forward during the operation of setting the eyelet. This is accomplished by means of a bearing provided with a friction-roller upon the lower end of the rod S. These parts are so adjusted that the rod S shall be depressed far enough to permit the pin N to enter an eyelet in the mouth of the chute before the roller Y comes in contact with the guide-block X. When this is accomplished the frame will be carried forward to a point over the setting-bed or anvil, in which position it is held by a locking-lever, Z, which catches on the face of the main frame. Upon the return of the rod S this lever is unlocked by a stud, b, on the face of the lower end of rod S, which strikes the long arm of this locking-lever. It will be observed that the lever is not unlocked until the set and its pin have risen far enough for the latter to clear the end of the chute. This is to prevent its striking the eyelets in the chute and misplacing them. The forward motion of the swinging frame is limited by a cross-bar o. The locking-lever is held to duty by a spring, a, attached to its long arm and to the frame T. The anvil M is seated in a hub, M', and is adjustable vertically by a screw, m'. This hub is seated in a slot in the bed of the frame A, and is adjustable by means of set-screws c c. Its position relative to the sides of this slot may also be determined by the set-screws c c.

#### Operation.

The several parts of the machine being in opposition, as shown in the drawings, and the hopper having been filled with eyelets, and the curb and bottom adjusted to permit the passage of the right-sized eyelets into the chute, by which they may be conducted to the mouth, ready for delivery to the setting mechanism, being prevented from falling out by the fingers P.

The holes having been punched in the work to be eyeleted and slipped over the projecting point of the anvil, the lever B is depressed and forces down the set, and with it its projecting holding-pin N, until it enters an eyelet in the end of the chute.

The roller Y, coming in contact with the guide-block X, forces the swinging frame, set, and holding-point forward, carrying the eyelet out of the mouth of the chute, which is at once closed by the spring fingers. The eyelet thus released is supported upon the holding-pin, and prevented from falling off by the hand O. As the operation continues, the swinging frame is carried forward until it is locked in position by the lever Z, directly over the setting-bed, and the setting-pin carried down until its point comes in contact with the anvil-pin. The hand O is now released, and the pin N retracts within the set W, and the flanges of the eyelets are compressed on each side of the material between the set and the bed of the anvil. As the lever B is depressed the arm G, fixed to its shaft, is carried forward, and with it the rod H, the latter rotating through arm I, dog L, and ratchet K,

the bottom of the hopper and its brushes thus agitating the eyelets and supplying the chute therewith, this sliding way being arranged so that the eyelets go into it flange down, and turn over till they present their flange up before coming to the point of delivery. The brushes revolve in the box D, and carry the eyelets to the chute opening; but if an eyelet comes opposite the opening to the chute bottom side up, it will not pass through, but will be brushed by. The eyelets being the heavier on the flange side, will have a tendency to keep that side down, so that they will generally be right side up.

If an eyelet is not fully set down, all you have to do is to put your hand against the moving part of the machine and push the hanger forward, and the point N will pass down by the eyelet, and not disturb it in any way at all. Upon releasing the lever B the spring V around the rod S, having been compressed by the operation of setting, will force the rod upward, and as the holding-pin N attached to it rises to a point higher than the mouth of the chute, the stud b releases the locking-lever Z, and the frame T carries the operating parts back to a point over the mouth of the chute, and then the machine is ready to repeat the operation.

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

1. Spring hand O, and set W, and pin N, arranged substantially as described.
2. The combination of the locking-lever Z, swinging carrier T, and frame A, substantially as described.
3. Guide-block X, friction-roller Y, swinging carrier T, rod Q, and spring l, arranged substantially as described.
4. Locking-lever Z, in combination with swinging carrier T, frame A, and set N, substantially as described.
5. Adjustable rod H, swinging arm G, arm I, pawl L, and ratchet-wheel K, combined and arranged substantially as described and for the purpose set forth.
6. The swinging carrier T, locking-lever Z, rod Q, spring l, set W, holding-pin N, spring hand O, anvil or setting bed M, hopper D, revolving bed p, curb h, chute F, spring jaws P P, bent lever B, arm G, rod H, pawl L, and ratchet-wheel K, combined and arranged as described.
7. Hopper D, revolving bottom p, horizontal brushes g, adjustable curb h, chute F made of two pieces and bent so that the eyelets go into the chute F flange down and turn over, so as to present themselves to the anvil flange up, handle I, ratchet-wheel K, pawl L, adjustable rod H, and swinging arm G, all combined substantially as described.

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Witnesses:

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