

T. A. Dickinson.
Card-Setting Machinery.
Nº 75388 *Patented Mar. 10, 1868.*

Fig. 1.

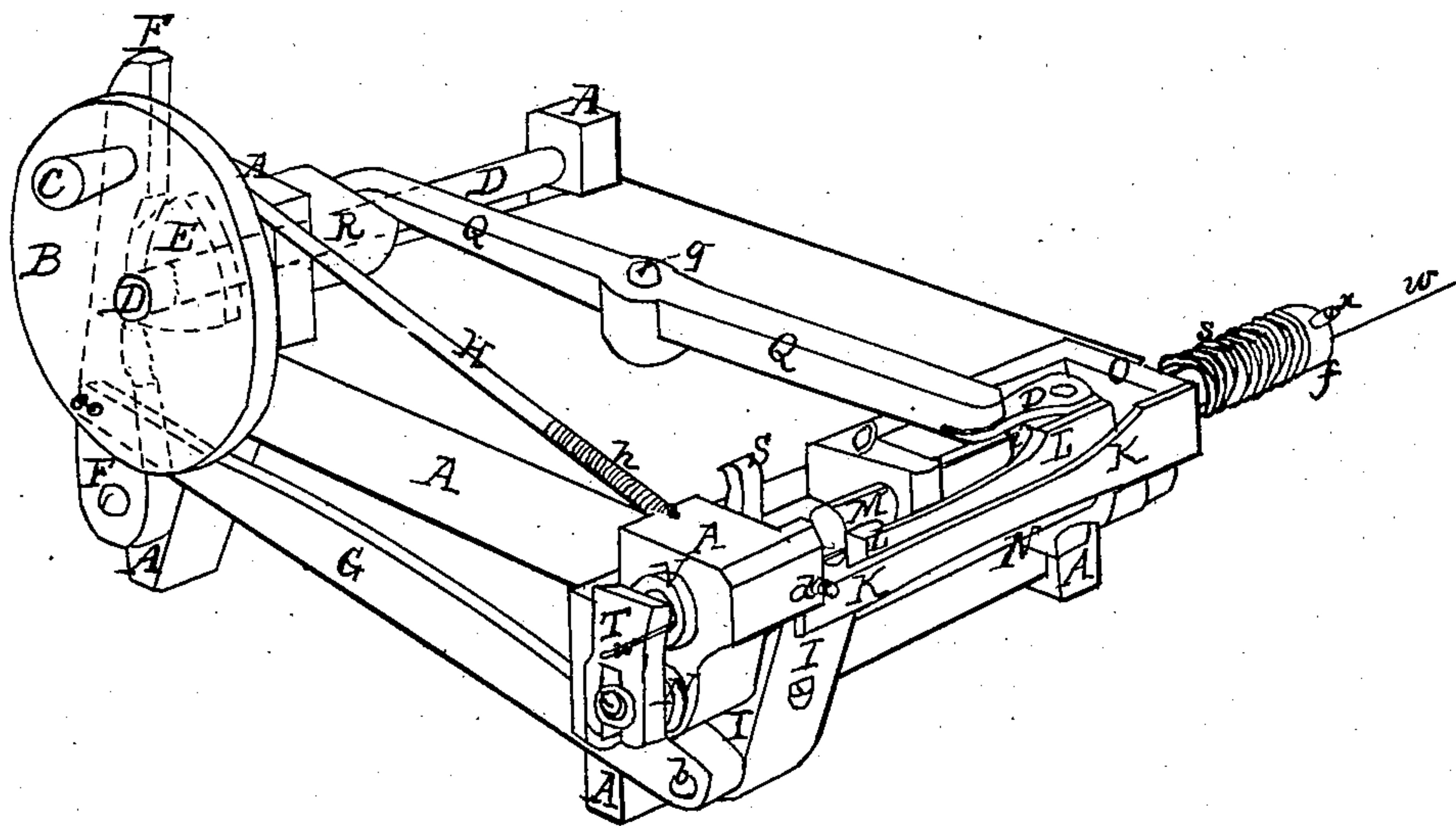


Fig. 2.

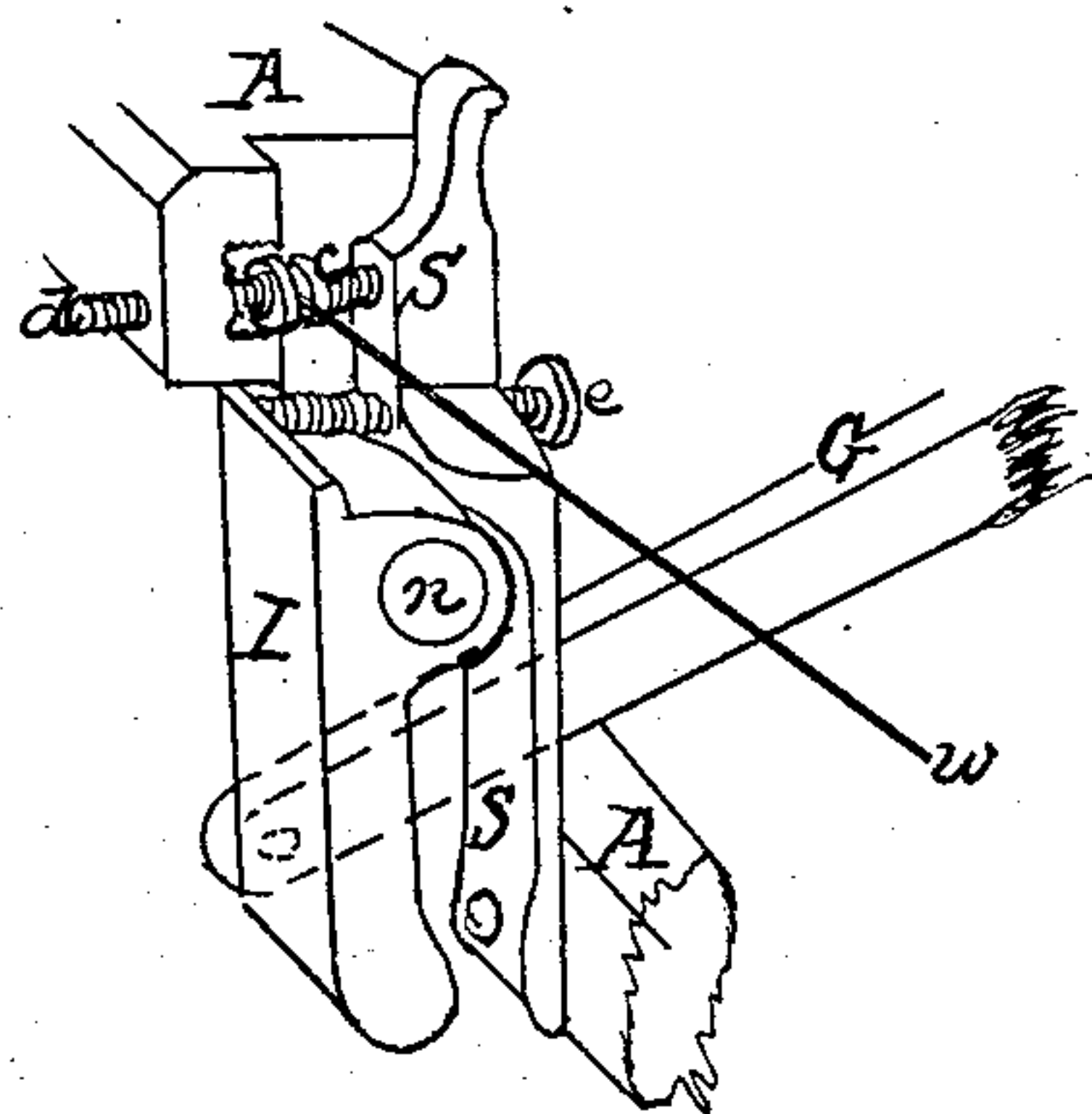
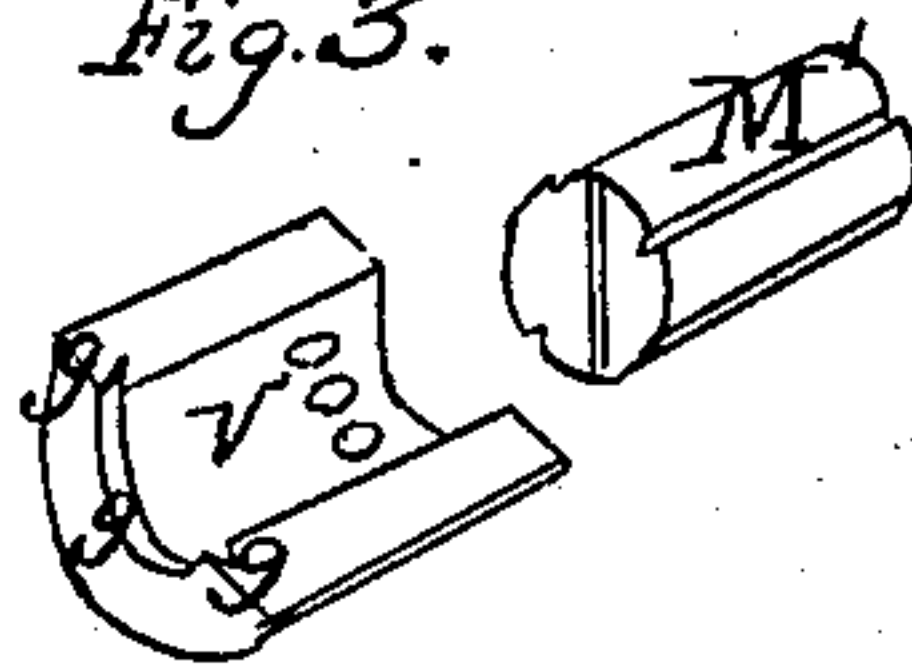


Fig. 3.



Thomas A. Dickinson
By his Attorney
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Witnesses

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United States Patent Office.

THOMAS A. DICKINSON, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 75,388, dated March 10, 1868.

IMPROVEMENT IN CARD-SETTING MACHINERY.

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, THOMAS A. DICKINSON, of Worcester, in the State of Massachusetts, have invented certain new and useful Improvements in Card-Setting Machinery; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the portion of the machinery having my improvements.

Figure 2 is a detail view of the device for clamping the forward end of the wire while the slide is drawn back to grasp it for the next tooth.

Figure 3 is a similar view of the cylindrical cutter and pipe, the cutter being shown in section.

The same letter indicates the same part wherever it occurs.

The nature of this invention consists in improvements in the slide for carrying the wire, in the mode of driving it, and in the devices for holding and cutting off the wire, all as hereinafter more particularly set forth.

To enable others skilled in the art to make and use my improved machinery, I will proceed to describe its construction and operation, referring to the drawings by the letters of reference marked thereon.

A marks a stout frame, to which the operative parts are attached; B, a wheel on the end of the main shaft, revolved by means of the handle C, which indicates the driving-power. D is the main shaft, near one end of which is the cam E, shown in dotted lines in fig. 1, by which lever F is operated. A spring, h, draws lever F forward in counter action of cam E. Lever F operates rod G, which is pivoted to the lower arm of lever I, which is fixed upon knife-shaft N, which rocks in its bearings as rod G moves backwards and forwards. K is a long spring, the free end of which is in contact with the upper and outer end of lever I. Except when thrown off by lever I, this spring constantly presses against the free end of the spring-jaw L, which is thus forced against the round slide M to gripe the wire w. The round slide M is one of the peculiar features of my invention, its simplicity and cheapness of construction, as compared with the ordinary V-slides, rendering it an important improvement. It reciprocates in guides O O, being driven backwards by the spiral spring s, which surrounds it, and reacts against the head f on its outer end, and driven forward by the lever Q, to which it is attached by the link P and the slide z, to which that link, the slide M, and the spring-jaw L are attached. This slide reciprocates in ways in the frame O. The lever Q has its fulcrum at q, and is driven by the cam R on the main shaft D.

A slit in the slide M receives the wire to be driven, which is firmly held at the forward end of the slide, between the slide and the free end of the spring-jaw L, while the spring K bears upon the jaw L. It is thus held while the wire is being driven forward. When the wire has been advanced the distance necessary to drive a tooth, the hold of jaw L upon it must be released that the slide M may move back upon the wire the distance required to form the next tooth. While this movement takes place, the spring K is forced backward by the action of lever I, the upper end of which bears against the free end of spring K. This relieves jaw L, which springs out of contact with slide M, and releases the wire from the gripe by which it was previously held. While thus released from jaw L, it is griped between two jaws, c d, one of which, d, is fixed to the frame A, and the other, c, is attached to the free end of spring S. A screw, e, passes through spring S, and bears against a shoulder in the upper end of lever I, (see fig. 2.) By the inward movement of the upper end of lever I the screw e is forced back, and carries with it the spring S, which releases the wire from the gripe of the jaws c d. From these jaws the wire passes into a groove in pipe M', fig. 3, which lies within the hollow cylinder V, the forward end of which forms the cutter, by which, in conjunction with the oscillating-knife T, the teeth are severed from the end of the wire. The cutter-cylinder V is seen in section in fig. 3. Its forward end is bevelled, as shown, and, just within the bevelled end, is cut a V-shaped groove, g, which, with the bevelled end, forms a sharp cutting-edge. Across the face of this cylinder plays the oscillating-knife T, which is fixed to the end of the rocking-shaft N, operated by lever I, of which it forms the fulcrum, passing through it at n, fig. 2. The cylinder V can be turned upon the pipe M', so as to present, as often as may be required, a new cutting-surface when the edge has become dull at any point. When the whole circle has been thus applied, the edge may be restored by grinding the bevelled end and renewing the groove g. A ring, f, is applied to the end of the round slide M, and confined by a set-screw, x. Its office is to keep the wire w in place.

The operation is as follows: Power being applied, the operative parts receive motion from the cams E and R on the main shaft D. The wire *w* is inserted in the groove provided for it in the slide M, and is firmly held between that slide and the spring-jaw L, by the operation of spring K, until the slide M has advanced to the end of its forward stroke. At that point the lever I presses the spring K back, so as to relieve the jaw L from its pressure, and release the wire. By the same movement of lever I the point of the screw *e* is relieved from the pressure of the shoulder on the upper end of lever I, and the spring S (see fig. 2) brings the jaw *c* into close proximity to jaw *d*, and firmly holds the wire *w* while the slide M makes its backward stroke. When this slide gets to the end of its backward stroke, the lever I is withdrawn from spring K, which at once closes the jaw L upon the slide M, and grips the wire. By the same movement of lever I the shoulder on its upper end presses back the screw *e* and spring S, opening the jaws *c d*, and releasing the wire from their hold. As slide M again advances, the wire is driven through pipe M' into the leather to form the card. At the end of each forward stroke of slide M the oscillating-knife T, acting in conjunction with the concave sharp edge *g* of the cutter V, cuts off the wire that has been set in the card.

Having thus fully described my improvements, what I claim, and desire to secure by Letters Patent, is—

1. The round slide M, constructed and operating as described.
2. The combination of the slide M, slide *i*, link P, and lever Q, in the manner described.
3. The mode described of clamping the wire to the slide M by means of the jaw L and spring K, operating as specified.
4. The clamping-jaws *c d*, operated by the spring S substantially in the manner set forth.
5. The cutter-cylinder V, constructed and operating as described.

The above specification of my said invention, signed and witnessed at Boston, this 31st day of October, A. D. 1867.

THOMAS A. DICKINSON.

Witnesses:

WILLIAM C. CLEVELAND,
CHAS. F. STANSBURY.