(No Model.)

J. H. VINTON.

MACHINE FOR SLOTTING TUBES.

No. 381,297. Patented Apr. 17, 1888.

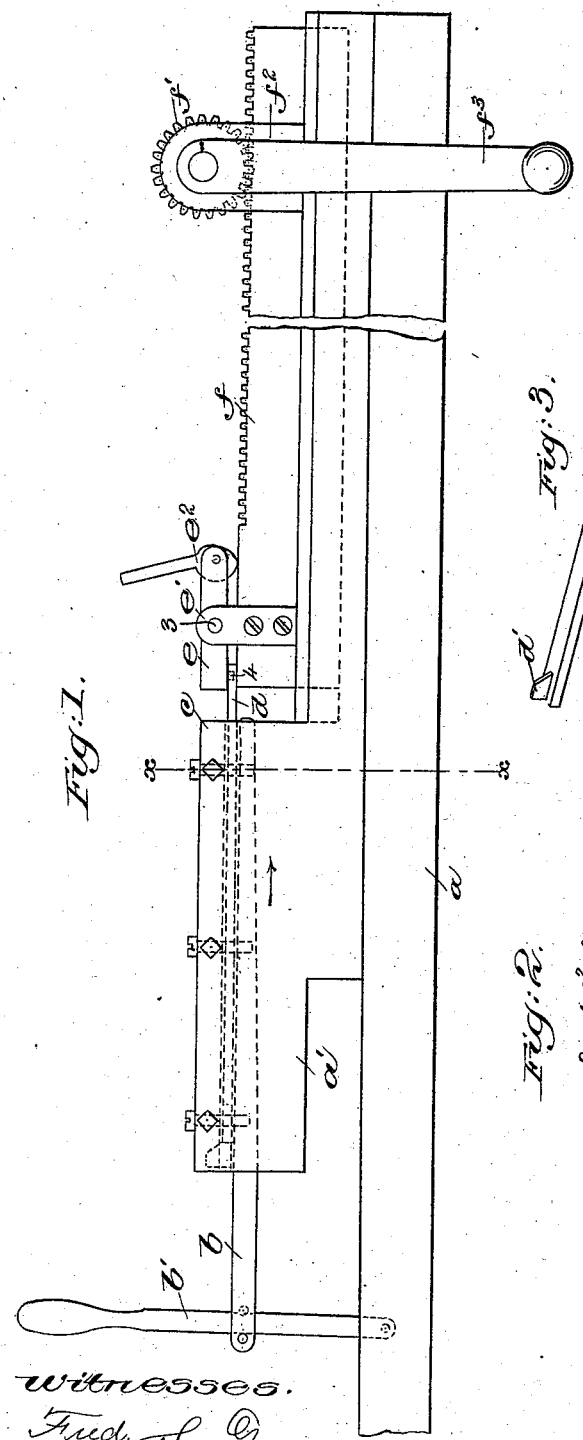

Fig. 1.

Fig. 3.

Fig. 5.

Fig. 4.

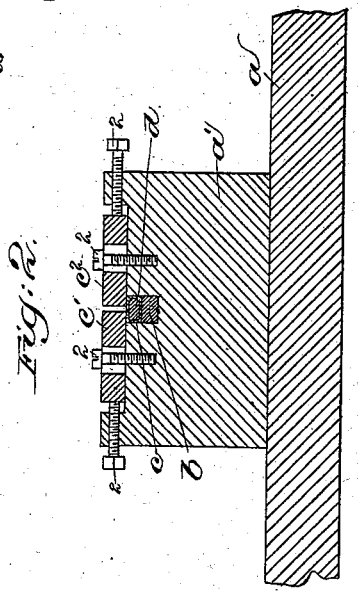

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN H. VINTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE PENINSULAR NOVELTY COMPANY, OF GRAND RAPIDS, MICHIGAN.

MACHINE FOR SLOTTING TUBES.

SPECIFICATION forming part of Letters Patent No. 381,297, dated April 17, 1888.

Application filed January 14, 1888. Serial No. 260,698. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. VINTON, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Machines for Slotting Tubes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of an apparatus for slotting longitudinally metallic tubes.

The invention consists of a suitable clamp to hold the tube to be slotted, said clamp being constructed with a slot at one side substantially of the width desired for the slot in the tube, combined with a cutter adapted to be drawn through the tube coincident with the slot in the clamp, and means for drawing the cutter through the tube.

The tube herein shown to be slotted is made of sheet metal by the method shown and described in application Serial No. 226,129, filed by me February 1, 1887, such tube being especially designed for receiving staples having buttons pendent therefrom, the eye shanks of the buttons following in the slot.

The clamp is herein shown as composed of a block having a longitudinal recess of sufficient depth to receive a wedge-shaped bar and also the tube to be slotted resting upon it. Two parallel gage-bars are secured to the block, partially covering the recess, the width between the bars being substantially the width desired for the slot in the tube.

The cutting-tool for cutting the slot consists of a cutting-blade secured to or made integral with a bar, which bar is placed within the tube. The tube containing the cutter-carrying-bar and resting in the recess of the block upon the wedge-shaped bar is lifted by said wedge-shaped bar firmly up against the parallel gage-bars secured to the block, so that the cutting-blade enters the space between said gage-bars.

An engaging device adapted to engage the cutter-carrying bar is provided, which is attached to a movable block or carrier, movement of said block or carrier acting to draw the cutter-carrying bar and its attached cutting-blade through the tube, said cutting-blade co-operating with the two parallel gage-bars to cut the slot.

The slot is cut from the inside outward, so that should there be a projecting fin or upwardly-turned edge such edge will be formed upon the outside of the tube.

Figure 1 shows in side elevation a tube-slotting apparatus embodying this invention; Fig. 2, a cross-section of the same, taken on the dotted line *x x*; Fig. 3, a perspective view of the cutter; Fig. 4, a cross-section of the tube previous to being slotted, and Fig. 5 a similar cross-section of a tube after it has been slotted.

The main frame *a* has secured to it a block, *a'*, recessed at its upper side to receive a wedge-shaped bar, *b*, and above it the tube *c* to be slitted. The wedge-shaped bar *b* is loosely connected with an operating-lever, *b'*, pivoted to the frame *a* or base of the apparatus, movements of the said lever *b'* effecting a substantially horizontal movement of the wedge-shaped bar in the recess of the block.

Two parallel gage-bars, c' c^2, are secured by screws 2 to the upper side of the block *a*, partially covering the recess formed therein, as best shown in Fig. 2, the distance between the two gage-bars being of substantially the width desired for the slot to be cut in the tube *c*. The tube *c* is herein shown as rectangular in cross-section, although it is obvious that a tube of any desired shape in cross-section may be operated upon. The tube *c* of sheet metal receives a cutter-carrying bar, *d*, to which is secured a cutting tool or blade, *d'*; or said cutting tool or blade may be formed integral with the bar, the cutting-blade and bar together forming the cutter.

The tube inclosing the cutter-carrying bar *d*, as shown in Fig. 1, is placed in the recess in the block *a* upon the wedge-shaped bar *b*, and the said bar is thereafter moved in the direction of the arrow, Fig. 1, thereby firmly holding the tube against the under side of the gage-bars c' c^2.

The cutter-carrying bar *d* is engaged by a suitable engaging device, herein shown as an arm, *e*, pivoted at 3 to a standard, *e'*, said arm having upon its under side a projecting pin or stud, 4, (see dotted lines,) which enters a hole cut in the bar *d* near its end. A cam-block,

e^2, pivoted to the arm e, bears upon the upper side of a rack-bar, f, arranged to slide in an extended portion of the frame a'. The standard of the arm e is attached to the rack-bar f, so that as said rack-bar is moved the engaging device for the cutter will be moved with it.

A toothed wheel, f', is mounted upon a shaft having its bearings in a standard, f^2, attached to the main frame, said shaft revolved by a crank, f^5, so that after the tube has been wedged into the position shown in Fig. 1, and above described, by turning the crank f^3 the cutter will be drawn through the tube, removing the material thereof between the two parallel gage-bars $c' c^2$, leaving the tube as shown in Fig. 5.

It is obvious that tubes of any desired shape in cross-section may be operated upon in this manner, that the slots cut may be of any desired width, and that the projecting fins or edges left by cutting it will be turned outward.

I claim—

1. In an apparatus for slotting tubes, a clamp to hold the tube and a cutter adapted to be drawn through the tube, combined with means for drawing said cutter through the tube, substantially as described.

2. In an apparatus for slotting tubes, the clamp to hold the tube, the cutting tool or blade, and its carrying-bar adapted to be placed within the tube, combined with an engaging device for the cutter-carrying bar, and means for moving the engaging device to draw the cutter carrying bar and its cutting tool or blade through the tube, substantially as described.

3. In an apparatus for slotting tubes, a clamp composed of a recessed block to receive the tube to be slotted, two parallel gage-bars partially covering the recess of the block, and means for holding the tube to be slotted firmly against the two parallel gage-bars, combined with a cutter adapted to be drawn through the tube coincident with the opening between the said parallel bars, and means for drawing the cutter through the tube, substantially as described.

4. In an apparatus for slotting tubes, the clamp to hold the tube, the said clamp consisting of a recessed block, two parallel gage-bars partially covering the recess in the block, and a wedge-shaped bar to firmly raise the tube against the parallel bars, combined with a cutter adapted to cut the tube coincident with the space between the parallel gage-bars, substantially as described.

5. In an apparatus for slotting tubes, the clamp to hold the tube and a cutter adapted to operate within the clamp to cut the slot in the tube, combined with an engaging device for the cutter, and means, substantially as described, for moving the engaging device, as and for the purposes set forth.

6. In an apparatus for slotting tubes, a clamp composed of a recessed block to receive the tube to be slotted, two parallel gage-bars partially covering the recess of the block and formed at their lower edges to present cutting-edges, and means for holding the tube to be slotted firmly against the two parallel gage-bars, combined with a cutter adapted to be drawn through the tube coincident with the opening between said parallel bars, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN H. VINTON.

Witnesses:

BERNICE J. NOYES,

FREDK. L. EMERY.