J. FRANZMANN.

Bung-Cutting Machine.

No. 197,114. Patented Nov. 13, 1877.

Fig. 1

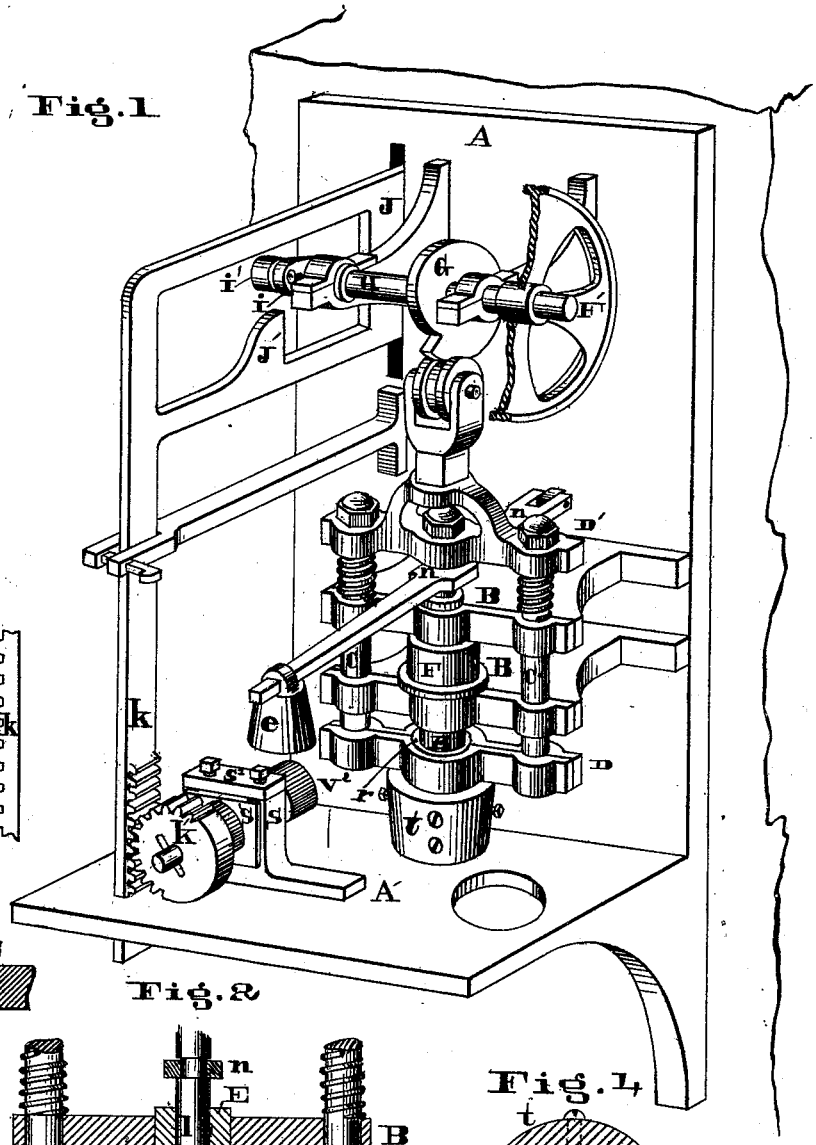


Fig. 3

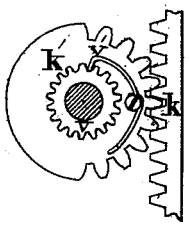


Fig 5

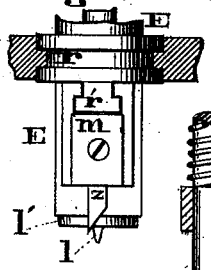


Fig. 2

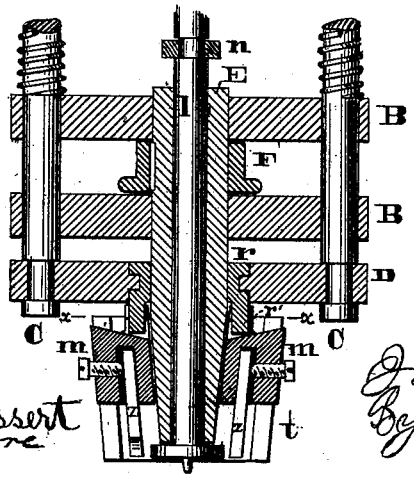
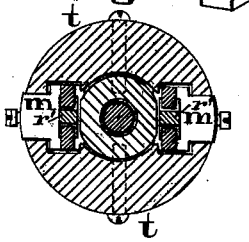


Fig. 4



Attest

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UNITED STATES PATENT OFFICE.

JACOB FRANZMANN, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY VARWIG, OF SAME PLACE.

IMPROVEMENT IN BUNG-CUTTING MACHINES.

Specification forming part of Letters Patent No. **197,114**, dated November 13, 1877; application filed February 19, 1877.

To all whom it may concern:

Be it known that I, JACOB FRANZMANN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Machine for Cutting Bungs, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of the machine. Fig. 2 is a vertical section of the revolving mandrel, cutter-head, and their connections. Fig. 3 shows a portion of the automatic feeding device. Fig. 4 is a transverse section of the cutter-head, taken through the line *x x* of Fig. 2; and Fig. 5 is a view of the mandrel and knife-holder in a plane at right angles to the view shown in Fig. 2, the clamps *t* being removed.

The object of this invention is a machine for cutting bungs; and consists in combinations of devices for automatically feeding the strips of material from which the bungs are to be cut, centering and holding the bung while it is operated upon by the cutters, stamping the bung, after it is cut, with the name or card of the manufacturer, and discharging the finished bungs from the machine successively.

In the drawing, A represents a metal plate, to which are secured the bearings for the operative parts of the machine. A′ is the bed-plate. These two I prefer to make of one piece, so that the machine may be fitted up complete in the machine-shop, so that when it is to be put up for use it is only necessary to secure the plate to a pillar or other support. B B are standards secured to plate A, to serve as journal-bearings for mandrel E and guides for the frame, composed of yokes D D′ and side guide-bars C C, which carries the sliding tool-holder *r* and centering-shaft or bung-holder *l*. F and F′ are driving-pulleys, the former for driving mandrel E and the latter for driving shaft H, which shaft carries the cam G and arm I, with its anti-friction roller I′.

The feeding mechanism is composed of the rack and pinion *k* and *k′*, ratchet *v*, pawl v^1, and feed-wheel v^2. The frame J, which carries the rack, is fitted to slide in plate A, and is depressed by the anti-friction roller I′ on arm I, striking the projection J′, and elevated by its striking the upper bar of the frame at each revolution of the shaft H. The pawl v^1 is pivoted to the side of the loose pinion *k′*, and kept in contact with its ratchet by a spring, as shown, or other suitable means. The shaft upon which the feed-wheels are is journaled in a boxing, s^1, which is fitted to slide vertically in standard *s*, and is kept down by a spring between the boxing and the cap s^2, so that the feed-wheel v^2 may adjust itself to unequal thicknesses of stuff passing under it. *r* is a coupling, in the form of a sleeve, loosely fitted on the mandrel E, and grooved on its periphery, to receive a corresponding projection in the yoke D′. Projecting down from it on each side are T-shaped lugs *r′*, to enter corresponding cavities in the tool-holders *m m*. These tool-holders are held and guided on an incline with reference to the axis of rotation by the beveled sides of the mandrel and inclined grooves in the clamps *t t*, which receive the tenons which project from the edges of the tool-holders.

The weighted lever *n* is pivoted to the plate A, and secured to the centering-shaft *l*, which passes through it. *l′* is a plate secured to the lower end of the bung-holder or centering-shaft *l*. It is intended to press upon the wood, and hold it firmly while it is being cut, and it may have the card of the manufacturer or other letters raised upon its under face, if desired.

The clamps *t t* are two segments, having each a central bearing-surface fitting the mandrel, and an inclined groove on each side of this bearing for the reception of the tenons of the tool-holders *m*, as seen best in Fig. 4. These clamps are secured by screws to the mandrel E, and revolve the tool-holders while permitting them to be carried down at the proper inclination by the sleeve-coupling *r*. *z* are the cutters, which are held in slots in the holder *m* by set-screws.

When it is desired to set the knives farther out, to cut larger sized-bungs, thin plates of metal are placed between the knives and the inner side of the slot in the holder, the slot being sufficiently large to admit of the knives being adjusted to cut several sizes of bungs.

It will be necessary to vary the feed according to the size of bung. This is done by adjusting the anti-friction roller I′ nearer to or

farther from the axis of rotation in the slot in arm I.

In operation the frame carrying the sleeve-coupling *r* is driven down by cam G on shaft H, and when it has passed the offset on the cam the springs, coiled around the side guides C C and compressed between the upper standard B and yoke D′, return the frame to its elevated position. At this moment the anti-friction roller I′ on arm I, striking the projection J′, feeds a sufficient length of stuff for another bung. As the frame starts down, the point on the lower end of centering-shaft *l*, which is in advance of the cutters, will be brought down by weight *e* upon the wood, thus holding the bung and steadying the movement of the cutters. Just as the bung is cut from the strip the yoke D′ will strike the lever *n*, and print the letters on plate *l′* upon the bung, and as the frame is returned by the springs the bung will be pushed off from the point of centering-shaft *l* by the strip as it is fed forward, and discharged through the opening in bed-plate A′. This opening also permits the knives to be removed for the purpose of adjusting or sharpening them.

I claim—

1. The combination, substantially as specified, of the localized rotating mandrel, the reciprocating sleeve *r*, the tool-holders connected therewith, and the clamps which are fixed to the mandrel and form guides for the tool-holders.

2. The combination, substantially as specified, of the localized rotating mandrel, the cutter-head attached thereto, the reciprocating frame for moving the cutters rectilinearly, the cam for depressing the frame, and the springs for holding it in contact with the cam.

3. The combination of rack and pinion *k k′*, ratchet and pawl *v v*^{1}, spur-wheel *v*^{2}, and frame J, operated by cam-wheel I on shaft H, for feeding the material to the cutters, substantially as specified.

4. The combination, substantially as specified, of the hollow localized rotating mandrel, the cutter-head attached thereto, the rotating cutters having also a slanting rectilinear motion, the centering-shaft, and the weighted lever connected therewith.

JACOB FRANZMANN.

Witnesses:
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GEO. J. MURRAY.