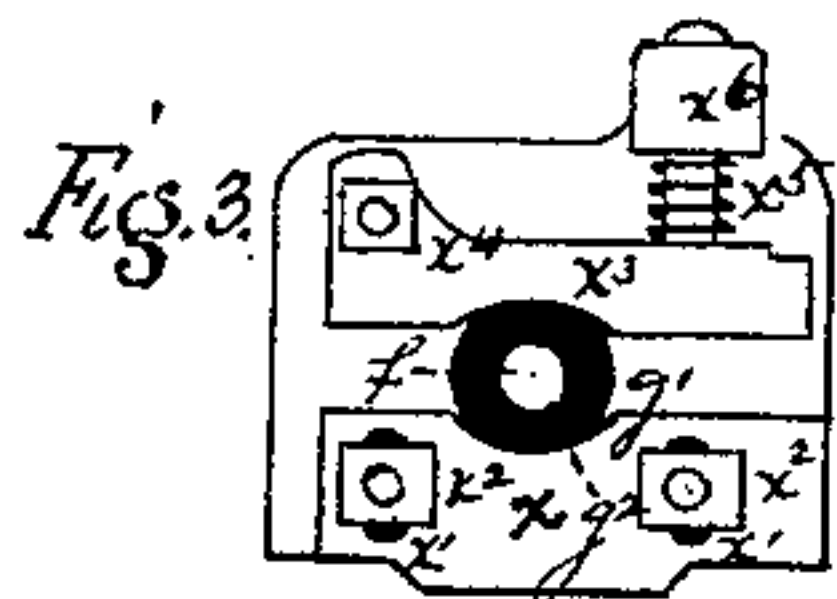
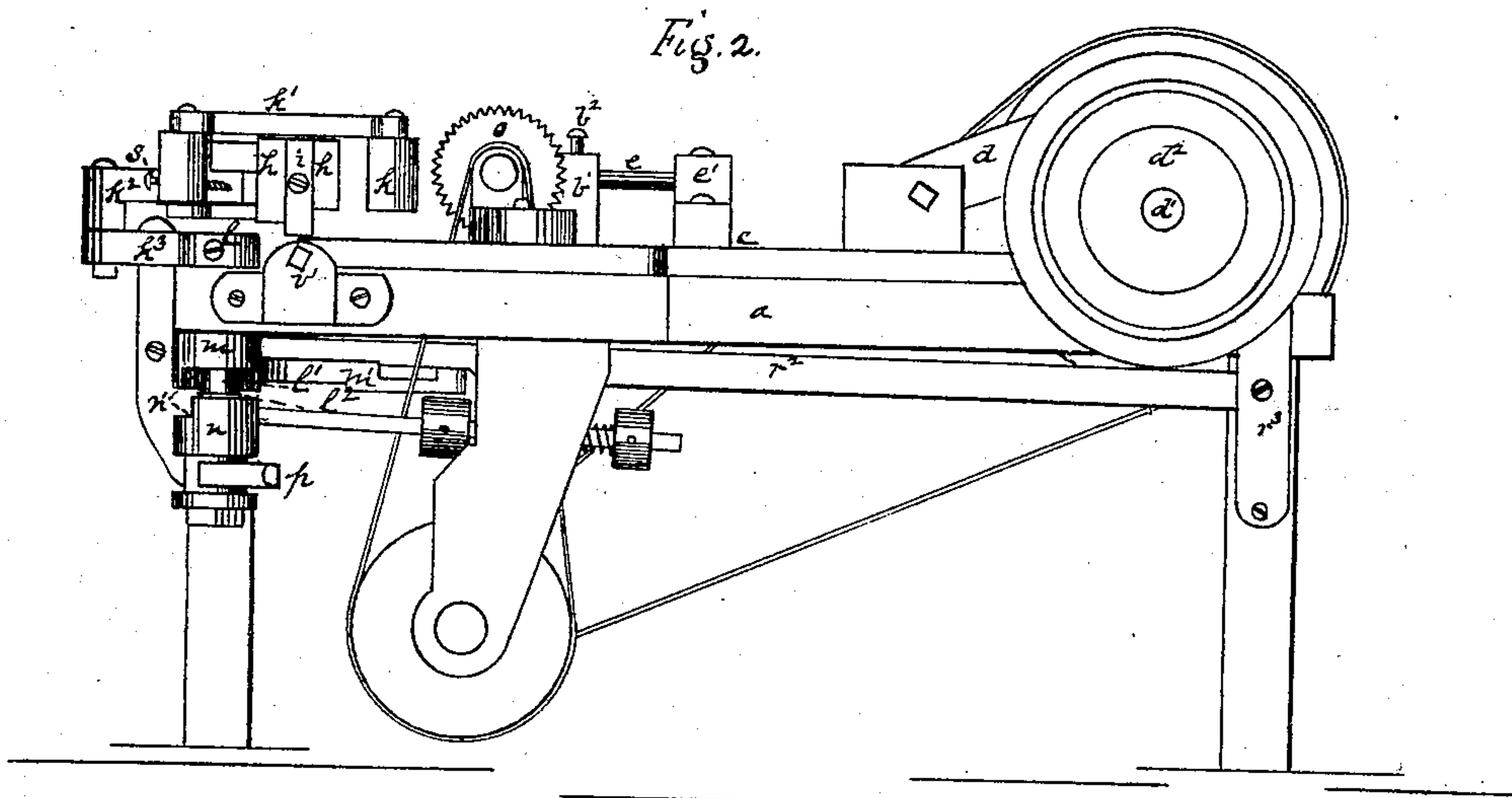
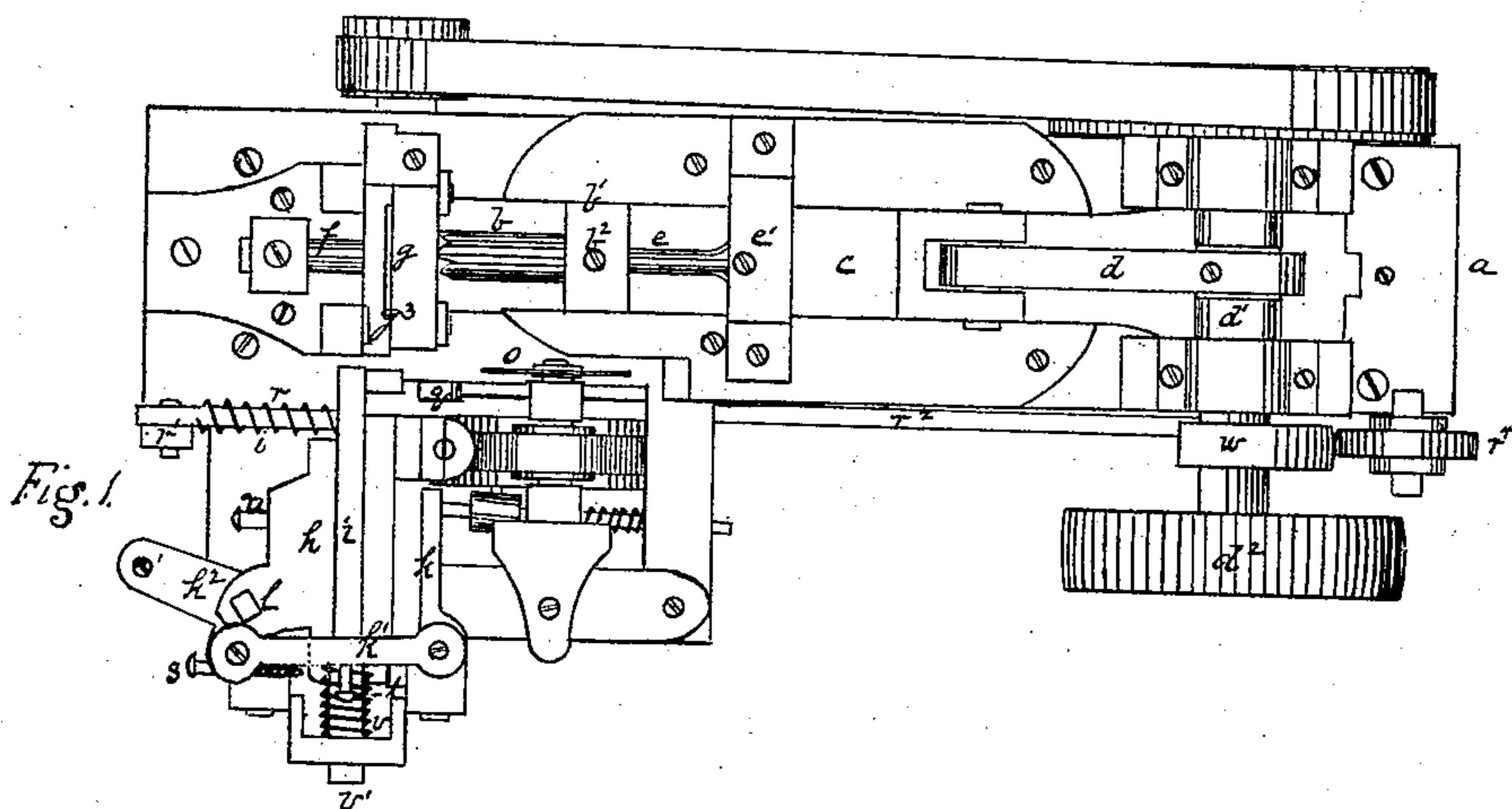


W. L. STANDISH.  
Bung-Cutting Machines.

No. 149,164.

Patented March 31, 1874.



WITNESSES

James L. Hay  
Frederick Standish

INVENTOR

William L. Standish  
by Bakewell & Co.  
Attorneys



# UNITED STATES PATENT OFFICE.

WILLIAM L. STANDISH, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN BUNG-CUTTING MACHINES.

Specification forming part of Letters Patent No. 149,164, dated March 31, 1874; application filed March 3, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM L. STANDISH, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Bung-Cutting Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a plan view of my improved machine. Fig. 2 is a side elevation; and Fig. 3 is a detached view of the box.

My invention consists of certain improvements in the feeding apparatus and cutting-box of machines for cutting bungs.

To enable others skilled in the art to make and use my improvement, I will describe its construction and manner of use.

The machine, in its general character, is much the same as that patented to me July 23, 1867. It has a frame, *a*, for supporting the operative parts. The cutter *b*, which is made hollow and with a serrated cutting-edge, consisting of two points extending forward to cut the bung by a continuous advancing cut, is mounted in a cutter-frame, *b*<sup>1</sup>, to which it is secured by a set-screw, *b*<sup>2</sup>. The cutter-head *b*<sup>1</sup> is mounted on a slide, *c*, which has a reciprocating motion communicated to it by the crank *d*, shaft *d*<sup>1</sup>, and fly-wheel *d*<sup>2</sup>. A rod, *e*, extends through the hollow cutter from the block *e*<sup>1</sup>, to which it is attached. The function of this rod is to force the bung out of the cutter. In front of the cutter is the box, into which the strip of wood is fed. In the rear of the box there is a stationary die, *f*. The inside of the hollow cutter *b* tapers from the point backward, so that when the bung has been cut, and is forced into the hollow cutter by the stationary die *f*, it is compressed in the tapered center of the cutter to give it the proper taper. The retraction of the cutter causes the bung to be forced out by the rod *e*. Arranged at the end of the box *g* is the feed apparatus, and in front of the feed apparatus mounted on a vibrating frame is the saw *o*, by which the strip is cut into suitable blanks prior to being fed into the box in front of the cutter. The saw is caused to advance with the slide to cut the blanks from the bar during the time the

latter is held stationary. These devices, except the feed apparatus and box, are old, being embodied in the patent above referred to. The feed apparatus consists of a slide, *h*, moving in a frame, *i*. Pivoted to the front end of the slide is a clamping-arm, *k*. At the forward end this arm is connected to the bent lever *k*<sup>2</sup> by the link *k*<sup>1</sup>, and the lever *k*<sup>2</sup> is pivoted at its opposite end to the arm *k*<sup>3</sup>, which is rigidly attached to the upper end of the shaft *l*. The shaft *l* is round at its upper end and square at its lower end, as indicated at *l*<sup>1</sup> and *l*<sup>2</sup>. Upon the round portion is pivoted the forward end of the lever *m*, which at its rear end is connected by the lever *m*<sup>1</sup> to the slide *c*. On the lower or square end of the shaft *l* is a sliding sleeve, *n*. The adjacent faces of the lever *m* and the sleeve *n* are provided with a clutch, *n*<sup>1</sup>. The sleeve *n* is raised or lowered on the shaft by the pivoted lever *p*. When not attached to the sleeve *n*, by means of the clutch *n*<sup>1</sup>, the lever *m* turns freely on the round shaft *l* without moving it; but when the sleeve is raised, and secured to the lever *m* by the clutch *n*<sup>1</sup>, the vibration of the lever *m* causes the vibration of the sleeve *n*, which, being mounted on the square end of the shaft *l*, causes the latter to be turned also. This vibrates the arm *k*<sup>3</sup>, which, by means of the lever *k*<sup>2</sup> and a link, *k*<sup>1</sup>, moves the slide *h* forward and back upon the frame *i*, and opens and closes the clamping-arm *k*, by which the board or strip is held. During the advance or feed of the slide *h* the board, being inserted between the arm *k* and the slide *h*, is grasped between them and carried forward into the path of the saw *o*, where it is seized by a clamp, *q*, and held while being operated upon by the saw. The block or blank which is cut off remains in the box after the clamp *q* and saw *o* have been retracted, and the further feeding forward of the bar causes it to be pushed in front of the cutter. The pressure-screw *u* operates upon an elastic rubber set in the side of the slide *h*, pressing it against the frame *i* to draw the clamp *k* firmly against the strip, and to prevent the slide being shot forward beyond the movement of the levers. The screw *s* projecting through the forward arm of the lever *k*<sup>2</sup> against the side of the slide, is to regulate the throw of the clamp *k* to give a longer or shorter feed. The longer



the throw of the clamp the longer it is closing on the strip, and the shorter is its forward motion, and vice versa. The screw  $t$  is a stop to prevent the slide from receding too far. The slide  $h$  is forced back by the spring  $v$  mounted on the rod  $v'$ , the clamp  $k$  opening to allow the board to lie stationary, and to secure a new hold farther back. The clamp  $q$  is pivoted on the side of the machine, and is caused to be advanced and retracted by means of a rod,  $r$ , which extends forward, and is attached to the pivoted arm  $r^1$ , which arm is moved by the rod  $r^2$  attached to the pivoted arm  $r^3$ , which, at its upper end, carries a wheel,  $r^4$ . This wheel is caused to bear upon the cam-wheel  $w$  by the spring  $i$ , which presses against the arm  $r^1$ . The eccentricity of the cam  $w$  retracts the clamp  $q$  during the forward motion of the slide  $h$ , after which it is thrown forward by the spring  $r$  during the passage of the plain side of the cam. The box  $g$  is provided with a lower side,  $x$ , adjustable by means of the slots  $x^1$  and screws  $x^2$ . The upper side  $x^3$  is adjustable by means of the screw  $x^4$ , and is provided with a spring,  $x^5$ , mounted on the screw  $x^6$ , for giving it a steady yielding pressure, to provide for any irregularity in the block. The box has an opening,  $g^1$ , through which projects the die  $f$ . The opening  $g^1$  is large enough to admit of the passage of the end of the cutter  $b$ . For the purpose of centering the blank, the box has a yielding raised bottom,  $g^2$ , which brings the blank directly in front of the edge of the cutter. This enables me to make the strip but little wider than the bung to be made. This compresses the block when it passes over it, and when withdrawn the block springs back to center the next blank. To suit the box for bungs of different sizes it is provided with an opening for the insertion of liners or plates  $g^3$ , which are slipped down back of the sides  $x$ .

This box is adjusted to the width of the blank by the screws and slots  $x^1$  and  $x^2$ , and to its thickness by the liners inserted behind the sides. These liners are, of course, provided with holes corresponding to the hole  $g^1$ , for the passage of the cutter.

The feed apparatus herein described is peculiarly adapted to secure the perfect feeding of the blank into this machine. The board from which the blanks are cut must be held stationary in the feeding-slide, and clamped at its forward end during the operation of sawing off the blank, while the automatic and mechanical movement of the slide makes a perfect feed.

The advantages of making the box adjustable to suit the size of the bung to be cut are too evident to need comment. It obviates the necessity of inserting a separate box for each separate size.

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

1. The slide  $h$ , provided with a clamping-arm  $k$ , and having a limited reciprocating motion imparted to it from the cutter-slide by means of a series of interposed levers, substantially as described.

2. The clamp  $q$ , operated by means of a cam and lever extending from the power-shaft, for the purpose of clamping and holding the board while the blank is being cut therefrom.

3. The box  $g$ , having adjustable sides  $x$  and an opening for the insertion of liners, so that the same may be adjusted for cutting bungs of any desired size, substantially as described.

In testimony whereof I, the said WILLIAM L. STANDISH, have hereunto set my hand.

WILLIAM L. STANDISH.

Witnesses:

REUB. WILLIAMS,  
A. S. MILICE.