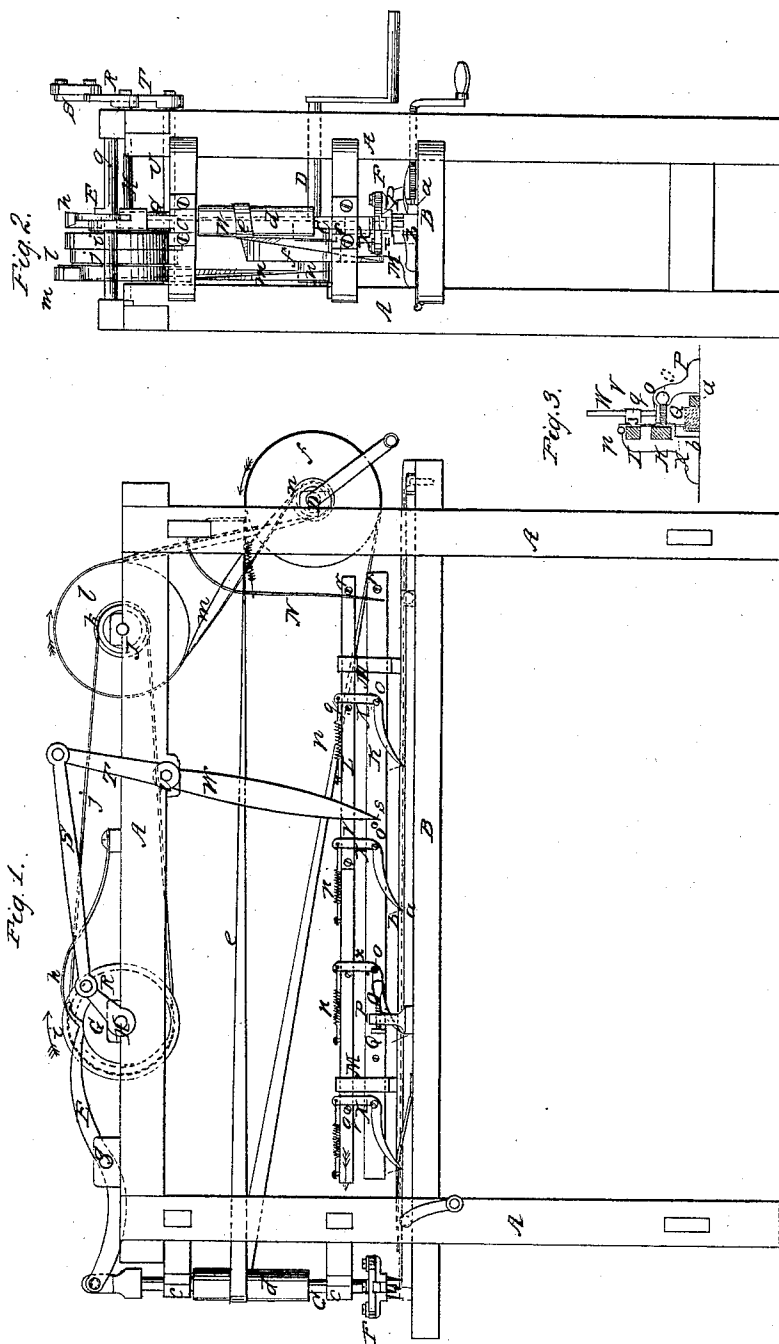


*S. Ingersoll,*

### *Turning Bungs.*

N<sup>o</sup> 9,799.

*Patented June 21, 1853.*



# UNITED STATES PATENT OFFICE.

SIMON INGERSOLL, OF NEW YORK, N. Y.

## FEED-MOTION IN PLUG-CUTTING MACHINES.

Specification of Letters Patent No. 9,799, dated June 21, 1853.

*To all whom it may concern:*

Be it known that I, SIMON INGERSOLL, of the city, county, and State of New York, have invented certain new and useful Improvements in Machinery for Cutting Plugs and Bungs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a machine constructed according to my improvement. Fig. 2 is a front view of the same. Fig. 3 is a transverse section of the feeding apparatus.

Similar letters of reference indicate corresponding parts in each of the several figures.

This invention consists in the employment of a feed motion which is constructed and operated so as to move the board or slab from which the plug or bung is cut, at intervals between the longitudinal motions of the cutter spindle, after cutting one plug, to a proper distance to cut another one, and which has certain provisions made for forcing the feed dogs into the work and withdrawing them therefrom preparatory to the feeding and retrograde movements, for the prevention of injury to their edges and to the face of the work.

To enable those skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, is the frame of the machine, and B, is the cutting table on which the slab or board from which plugs are to be cut is placed; the latter must be of suitable width to cut one plug and of any convenient length, and is shown in the drawing by red lines between two guides *a*, and *b*.

C, is the cutter spindle; *c*, *c*, the bearings in which it turns and slides up and down, and *d*, a pulley by which rotary motion is communicated to it through a belt *e*, from a pulley *f*, on the driving shaft D.

F, is the cutter head whose cutters are adjustable for cutting plugs of different sizes.

E, is a lever working on a fulcrum *g*, and attached at one end to the top of the cutter spindle, and having its other end resting upon, and held by a spring *h*, to the periphery of a cam G, on a shaft H, which receives a slow motion by a pulley *i*, through a belt *j*, from a small pulley *k*, on a shaft J,

which receives its motion by a pulley *l*, through a belt *m*, from a pulley *n*, on the driving shaft D. The cam G, is of such form that its revolution will operate on the lever F, in such a way as to depress the cutter spindle slowly to urge the cutters to their work, but to raise it quickly after the cut, and to allow the spindle to be stationary, as far as its longitudinal motion is considered, for a short time between its elevation and depression, for the purpose of giving time for the feeding on of the board or slab.

The feed motion consists of two parallel wooden or iron bars K, L, working in guides M, secured to the table B. To the lower bar K, a series of dogs X, X, are attached by pins *o*, *o*, on which they work freely; the upper ends of these dogs are connected in front to the upper bar L, by springs *p*, *p*, in such a way as to draw their points down to the board or slab, but they also rest against pins *q*, *q*, screwed into the upper bar, which prevent the spring operating except at suitable times; both bars are held back when the feed is not in operation, by a spring N, acting on two studs *v*, *v*, in their back ends, and the backward position of the lower bar is regulated by a screw O, working in a standard P, and acting as a stop to a stud or projection Q, on the bar. The spring N, must be stronger than *p*, *p*. The feed is set in operation at the proper intervals by a crank R, suitably arranged on the cam shaft H, which connects by a connecting rod S, with an arm T, on a rock shaft U; another arm W, on this rock shaft acts on a projecting piece V, on the front of the upper bar L, at suitable times, and moves the bar forward, when the dogs being released from the action of the pins *q*, *q*, are acted upon by the springs *p*, *p*, and their points forced into the surface of the board or slab. Shortly after acting on the projecting piece V, the arm W, comes in contact with a stud *s*, on the lower bar K, and moves the bar forward the required distance.

In Fig. 1 of the drawing the cutter shaft is shown in its elevated position, with the points of the cutters raised above the surface of the board or slab, supposed to have just cut a plug and been raised. The feed motion is just commencing to act, the arm W, having just come in contact with the projection V, on the upper bar L, and having moved it far enough forward or in the

direction of the arrow shown at its front end to relieve the dogs from the retarding action of the pins *g, g*, sufficiently to allow the springs *p, p*, to force their points down upon the surface of the board or slab. The arm *W*, has nearly reached the stud *S*, to move the bar *K*, with the dogs and thus move the board or slab. The form of the dog is such that when their points are in contact with a surface, the forward longitudinal motion of the bar *K*, makes them bite. When the end of the arm *W*, has reached its most forward position, it returns; and, as it returns, it leaves the spring *N*, uncontrolled and free to move back. As the spring, *N*, commences moving back, its operation on the stud, *r*, of the upper bar, *L*, causes the said bar to be drawn back, and the drawing back of this bar raises the dogs from the face of the board. As the retrograde motion continues, it comes in contact with the stud, *r*, on the lower bar, *K*, and moves it back as far as is desired, to be in readiness for the next feed. The motion thus given to the dogs, to make them bite the work before they commence their forward motion, and release their hold before commencing their retrograde motion, prevents them scraping the face of the boards, and the consequent injury to their edges, and at the same time prevents injury to the face of the board.

The length of the feed is regulated by the screw, *O*, in the standard, *P*, which stops the backward motion of the feed bars, which always move forward to the same point.

By screwing the point of *O*, farther forward the feed is shortened, and by screwing it farther backward it is lengthened.

This variation is necessary for plugs of different sizes.

By making the cam *G*, of the proper shape the cutter spindle is only kept stationary in its elevated position long enough to admit of the feed, which occupies but a short time, as it is not until near the end of its forward motion that the arm *W*, comes into operation on the feed motion. The longitudinal movements of the cutter spindle, and the movements of the feed motion not taking place in very rapid succession, the revolution of the shaft *H*, carrying the cam *G*, and the crank *R*, which works the feed motion must be slow in comparison to the revolution of the cutter spindle, and therefore the shaft *J*, and its pulleys and belts are introduced between *H*, and the driving shaft *D*, to reduce the speed.

Having thus fully described my invention I will proceed to state what I claim and desire to secure by Letters Patent.

I claim—

The combination, substantially as described, of the slide-bar, *L*, having studs or projections, *V, r*, and the slide-bar, *K*, having studs or projections, *s, r*; the said studs or projections, being all so arranged in relation to each other; that the devices which move both slide bars longitudinally shall first give motion to the slide bar, *L*, for the purpose of forcing the dogs into the board or piece preparatory to the feed, and relieve the dogs therefrom previous to their retrograde motion for commencing a new feed.

SIMON INGERSOLL.

Witnesses:

S. H. WALES,  
E. C. POLHAMUS.