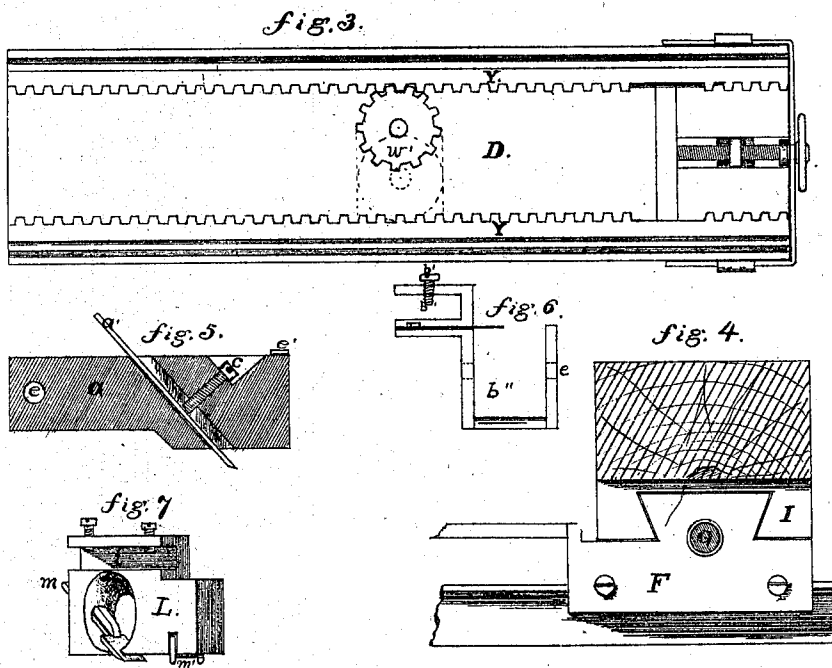


VALENTINE FOLAND'S,  
 No. 105,930 Combined Aug. 2 1870.  
 RECIPROCATING TRAVERSER.



WITNESSES  
 Spencer Heiatt  
 John Pollitt.

Valentine Foland INVENTOR.

# UNITED STATES PATENT OFFICE.

VALENTINE FOLAND, OF INDIANAPOLIS, INDIANA.

## IMPROVEMENT IN TRAVERSING MACHINE.

Specification forming part of Letters Patent No. 105,930, dated August 2, 1870.

I, VALENTINE FOLAND, of Indianapolis, in the county of Marion and State of Indiana, have invented certain Improvements in Traversing Machines, of which the following is a specification:

### *Nature and Objects of the Invention.*

The invention consists, first, in mechanism to convert rotary into reciprocating motion, and applying it to propel traversing and other tools, the parts having such relations to each other that mortising and boring attachments may be applied to the machine, and operated simultaneously or separately. It also consists of a feeding device, whereby the stuff can be fed up in either direction or thrown out of gear at pleasure.

### *Description of Accompanying Drawing.*

Figure 1 is an end elevation of a machine embodying my invention. Fig. 2 is a top view. Fig. 3 is an inverted view of the table D. Figs. 4, 5, 6, and 7 relate to parts which will be described in the course of this specification.

The same letters of reference indicate like parts in the several figures.

### *General Description.*

A is the frame of the machine. B is the driving-pulley, which is hung on the main shaft C of the machine, from which latter motion is communicated to the operating parts. E is a horizontal slider, having the flange or bar E'. The tools are secured to this. This slider runs in V-guides on the cross-head F. This cross-head has dovetails, and travels vertically in the guides I. It is supported and operated in a vertical direction by upright screw-shafts G G by means of the bevel-wheels H H H' H' and crank N.

M, Fig. 1, is a rod fastened to the plate O, having screw-threads traced on it. n is a nut, which can be adjusted to different points on the rod M. n' is a piece fastened to the cross-head, and limits its descent by coming in contact with nut n. The slider E is reciprocated by means of the crank N and connecting-rod N'.

In Fig. 5, a is a block, with the mortise a running through with the proper angle to receive the traversing bit a'. c is a tightening bolt or screw, to fasten and hold the bit. K

is a double-slotted tool-carrier, to receive the block a. It has the slot b, (see Fig. 6,) to embrace the flange E'. The tightening-bolts b' hold it to its place. The slot b'' receives the tool-stock a, which is pivoted therein by the pin e. A spring, e', holds the bit down to its work, and allows it to yield therefrom on the reverse motion. These bit-stocks are made right and left, one of each being used for traversing.

L, Fig. 7, is a tenoning-tool. It has the slot or groove i, by which it is attached to the slider. It is fastened by screws i'. It carries the bit m and the shoulder-cutter m'.

P, Fig. 1, is a cross-cutting saw. It is held in a frame consisting of the slider E and the pieces s s, and the saw is stretched by screws s' at the top, obtaining a leverage on the pieces s. The pieces s and the saw are removed when the machine is used as a traverser. D is a sliding carriage or table, in which the stuff to be operated on is placed.

Y, Fig. 3, are cog-segments. w is a pinion on an upright shaft, which has bearings in the sliding block Q, Fig. 1. This shaft and pinion are revolved by the bevel cog-wheels R R'. The worm-wheel T gives motion to the shaft U and wheel R' through the pinion t.

V is a lever, working on a pin, v, as a fulcrum. It is attached at one end to the block Q; the other end serves as a handle to shift block Q. There is a catch on the lower side of lever V, which fits into notches u on the piece W. This arrangement is for holding the block Q in any one of its positions for propelling table D in either direction, or for letting the pinion w remain out of gear.

The travel of the carriage D is reversed by shifting the lever V by hand, or it may be thrown out of gear.

X is a supplemental table, secured on table D by the comb-clamps D'. Various operations may be performed on this second table, as sawing, tenoning, &c. d is a lever, for holding the stuff. g is a movable clamp, to gage it.

The operation of the machine will be obvious from the drawing and the above description.

### *Claims.*

I claim as my invention—

1. The reciprocating sliding bar E, when

constructed, arranged, and operated substantially as and for the purpose hereinbefore set forth.

2. The tool-carrier K and bit-block *a*, constructed and combined substantially as and for the purpose hereinbefore set forth.

3. The shifting block Q, combined with the

gearing R, R', *t*, and T, and the pinion *w*, and segment Y, substantially as and for the purpose hereinbefore set forth.

VALENTINE FOLAND.

Witnesses:

SPENCER HIATT,

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