J. Shellenberger,

Mortising Machine.

No. 7,636. Patented Sep. 10, 1850.

Fig. 2

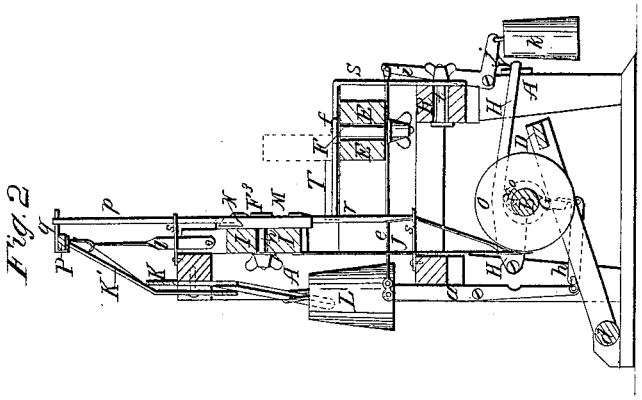


Fig. 5

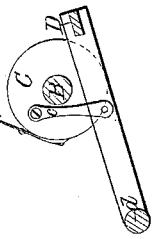


Fig. 4

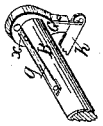
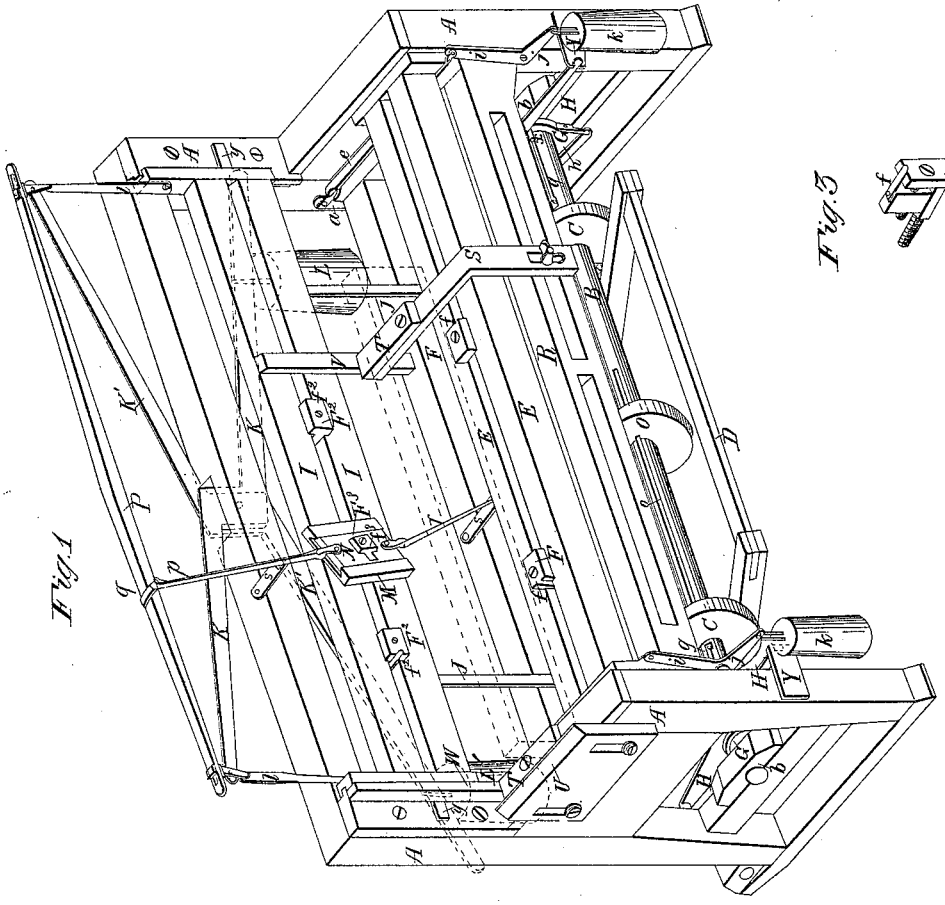


Fig. 3

Fig. 1



UNITED STATES PATENT OFFICE.

JOHN SHELLENBERGER, OF INDIANAPOLIS, INDIANA.

MACHINE FOR SCRIBING LUMBER.

Specification of Letters Patent No. 7,636, dated September 10, 1850.

To all whom it may concern:

Be it known that I, JOHN SHELLENBERGER, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Machine for Scribing Mortises and Tenons, in Timber and other Material; 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 perspective view. Fig. 2 is a transverse vertical section taken near the center. Fig. 3 represents one of the cutter heads. Fig. 4 represents the manner of attaching the lever for operating the horizontal sliding carriage. Fig. 5 represents the mode of operating the main shaft.

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

The nature of my invention consists in a frame provided with suitable rests and stops, upon and between which I place the stuff in which I desire to mark out and scribe the mortices or tenons. Two sliding carriages, provided with cutters or gages, one moving vertically and the other horizontally are operated by suitable mechanisms for scribing the sides and edges of the stuff. The cutting being set in any required position will scribe any number of pieces; a cutter or gage is also placed in one of the sliding carriages which on the carriage being fixed may be operated in a diagonal direction for the purpose of scribing bevel mortises.

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

A, A, is a frame of timber of suitable form and strength.

B, is the main shaft resting in suitable bearings *b*, *b*, in the end of the frame.

C, C, are pulleys or wheels fast on the axis of the main shaft.

D is a treadle hung on a center *d*. The treadle is connected to the pulleys C, by rods *c*, and is capable of giving part of a revolution to the shaft B.

E, E, is a horizontal sliding carriage formed of two planks of timber secured together at their ends by cross pieces resting on suitable guides attached to the frame and capable of being moved horizontally back and forth on the frame.

F, F, are cutter blocks or gages secured by set screws between the planks of the carriage E, E, and provided with cutters or scribers *f*, *f*, capable of being adjusted by screws so as to have their points or edges projecting above the blocks. G, G, are short levers fitted freely on the shaft B, within the bearings *b*, *b*. *g*, *g*, are flat steel springs secured at one end to the shaft B, and laying in grooves in the said shaft and are provided at their ends with pins H, H, fitting into recesses or mortises inside the socket of the levers G, G, for the purpose of causing the said levers to vibrate with the shaft.

a, *a*, are levers hanging on fixed centers in the sides of the frame and having their upper ends attached by straps *c*, *c*, to the back of the carriage E, E, and their lower ends attached by rods or links *h*, *h*, to the levers G, G. *i*, *j*, are levers hanging on centers secured in the frame having their upper ends attached by straps to the front of the carriage E, E, and having weights *k*, *k*, hung on their lower ends. H, H, are bars having their back ends hung on centers secured to the frame and having their lower sides over the pins H, H, of curved form and their front ends secured by notched plates Y, Y, attached to the front of the frame. The levers, G, G, the links *h*, *h*, the levers *a*, *a*, and the straps *c*, *c*, are for drawing back the carriage. The levers *i*, *j*, and weights *k*, *k*, are for drawing forward the carriage. The bars H, H, are for the purpose of releasing the pins H, H, on the ends of the springs *g*, *g*, from the sockets of the levers G, G, when the carriage has gone back.

I, I, is the vertical sliding carriage formed of two planks of timber united at their ends by cross pieces and capable of sliding up and down in suitable guides attached to the frame, A is provided with cutter blocks or gages F^2, F^2, having cutters or scribers f^2, f^2. J, J, are straps attached to the back of the carriage I, I, and to the peripheries of the pulleys C, C. K. K.′ are levers having one common center at the back of the upper rail of the frame and are attached at their upper ends by rods *l*, *l*, to the carriage I. L, L′, are weights suspended at or near the lower ends of the levers K, K′.

M, is a metal plate attached by a bolt *n*, to the vertical carriage I, I, and capable of being adjusted at any part of the carriage

I, I, and at any angle. N, is a plate sliding in suitable rabbets in the plate M, and carrying a cutter block or gage F^3, and cutter or scriber f^3, for marking bevel mortises.

O, is a pulley fitted so as to slide freely on the shaft B, in the direction of its length and having a groove or key-way fitting to a feather *o*, on the shaft. P, is a bar provided at or near its ends with slots fitting freely to bolts secured to the ends of the levers K, K′. *p*, is a strap attached to the upper end of the sliding plate N, and to a pin or stud *q*, which may be adjusted at any part of the bar P. *r*, is a strap attached to the lower end of the sliding plate N, and to the periphery of the pulley O.

s, *s*, are guides which may be provided with friction rollers for the purpose of keeping the straps *p* and *r* in place. R, is a rail of timber forming part of the frame and provided with slots extending nearly its whole length. S, is a bent bar of iron attached to the rail R, by a screw bolt *t*, passing through the slot and secured by a nut and is capable of being adjusted at any point on the bar forming a rest for the stuff. T, is an upper rest secured to the rest S. A similar rest T′ is placed on one end of the frame.

U, is a stop secured to the end of the frame for the purpose of resting the end of the stuff against.

V, is an upright adjustable stop attached to the carriage I, I. W, is an upright stop attached to the end of the frame. The piece of stuff to be scribed is represented by red lines upon the rest S, ready for having the lower edge scribed.

The operation of the machine is as follows: The required number of cutter blocks or gages are placed in the carriages, E, E, and I, I, at their required distances apart, and we will suppose that the mortises, are to be scribed in the stiles of paneled doors. The stile would be placed on edge one end resting on the frame against the stop U, and the other end supported on the rest S, which is adjusted to suit the length of the stuff, the cutter points having been previously set the required distance out from the blocks. The stile is firmly held against the front ends of the rests T, and T′, by the operator who presses down the treadle D, with his foot, the rods, *c*, acting upon the pulleys C, C, will cause the shaft B, to make part of a revolution on its axis, the lever G, communicating a backward motion (through the rod *h*, the lever *a*, and the strap *e*) to the horizontal carriage E, E, the cutters, or scribers *f*, *f*, will scribe the edge of the stuff, as soon as the carriage E, E, has reached the end of its path the pins *h*, *h*, on the end of the springs *g*, *g*, will be brought by the motion of the shaft to bear under the eccentric curves on the under side of the bars H, H, and will be removed from the recesses in the sockets of the levers G, G, and pressed down into the groove in the shaft leaving the lever G, quite free, the weights *k*, *k*, on the levers *i*, *j*, will then draw back the carriage, the treadle will at the same time operate the vertical carriage I, I, which upon the foot of the operator being removed will be raised by the weight L, L′, on the levers K, K′. The edge of the staff being scribed it is placed on the upper rests T, T′, its side being held by the operator against the stops W, and V, and the end being held close to the stop U; the treadle being pressed down and motion communicated to the shaft B, the straps J, J, will draw down the carriage I, I, and the cutters or scribers f^2, f^2, will scribe the side of the board; when the foot of the operator is raised or removed, the weights, L, L′, will cause the carriage to be drawn up.

If it is required to scribe bevel mortises or tenons the rods *l*, *l*, are disconnected from the carriage I, I, and the straps J, J, are disconnected from the pulleys C, C; the carriage is then secured by convenient set screws at *y*, *y*, to the frame, the plate M, is set at the angle required for the bevel of the mortise; the stuff is then placed on the upper rests T, T′, with the side to be scribed placed against the stops V, and W, and the end against the stop U; motion is then given to the shaft B, by means of the treadle, the pulley O, will operate the strap *r*, and draw this slide N, in the direction of the required bevel, the cutter or scriber F^3, will scribe the mortise or tenon. When the pressure of the foot is removed from the treadle the slide N, will be drawn upward by the weight L, L′, and levers K, K′. Any required number of plates M, provided with cutters or scribers may be attached to the carriage I, I.

This machine will give the greatest facility in scribing mortises, tenons, &c as when the required number of cutters or scribers are inserted in the carriages and set in the required positions the whole of the mortises or tenons may be scribed on one side or edge of the stuff by one stroke of the machine, and by shifting the stuff the other sides or edges may be scribed in a similar manner. Any number of pieces such as the stiles of doors, sashes, shutters, tables, bedsteads, can be scribed so as to correspond accurately with each other.

The operation of scribing when performed by hand requires great care and attention and is usually assigned to the best workman, but when performed by my machine might be done by a strong lad or by a man having no mechanical skill, all that will be necessary will be to keep the pieces of stuff (which will previously be planed and the ends squared) close to the rests and stops;

as much work may be performed by one person as could be accomplished in the same time by four or five by hand.

Having now described my invention I will now state what I claim as new and desire to secure by Letters Patent—

I claim the manner of operating the horizontal sliding carriage E, E, carrying the cutter blocks F, F, and cutters or scribers *f*, *f*, and the vertical sliding carriage I, I, carrying the cutter blocks F^2 F^2, and cutters or scribers in such a manner that they perform their duties in concert without interfering with each other, by means of the levers G, G, the rods *h*, *h*, the levers *a*, *a*, the straps *e*, *e*, the levers *i*, *j*, *i*, *j*, and weights *k*, *k*, in combination with the pulleys *c c*, the straps J, J, the rods *l*, *l*, the levers K, K^2, and the weight L, L′; the levers G, G, and the pulleys C, C, being hung upon the same shaft B, and operated by the same treadle D, substantially in the manner and for the purposes herein described.

JOHN SHELLENBERGER.

Witnesses:
DAVID REYNOLDS,
CHARLES LEARNED.