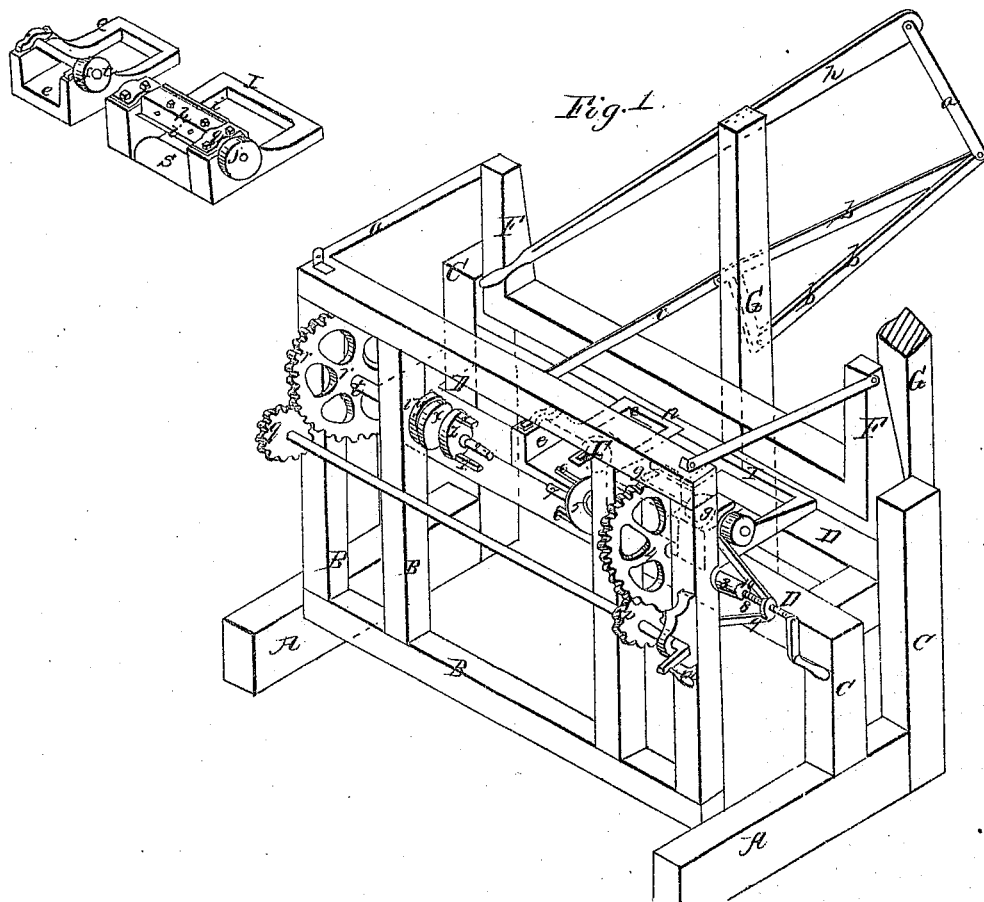


T. Blanchard,
Wood Molding Machine.
Patented Aug 10, 1836.



UNITED STATES PATENT OFFICE.

THOMAS BLANCHARD, OF NEW YORK, N. Y.

STOCK SHAVING OR ROUNDING MACHINE FOR EDGES, ENDS, &c., OF SHIPS' TACKLE-BLOCKS.

Specification of Letters Patent No. 4, dated August 10, 1836.

To all whom it may concern:

Be it known that I, THOMAS BLANCHARD, late of Springfield, in the county of Hampden and State of Massachusetts, but now of the city, county, and State of New York, have invented, made, and applied to use certain new and useful Improvements in Machinery for Manufacturing Ship's Tackle-Blocks, whereby the operation technically known among blockmakers as the stock shaving or rounding the edges or joints and ends of the block may be performed better, quicker, and cheaper than by hand labor, and that the said improvements and the methods of constructing and using the machinery by which the same are effected are set forth and shown in the following description and in the drawing annexed to and making a part of this specification, wherein—

The principal Figure 1 represents an orthographical projection of the whole machine, and the several detached figures shown separately contain parts of the machinery to make the same, and this specification more easily understood, the same figures and letters of reference being used to designate the corresponding parts in all the figures.

A, A, are two lower cross bearers.

B, B, is a large swinging frame centered on pivots which go through one end of each of the bearers A, A, into the lower part of the frame B, B.

C, C, C, C, are four posts, supporting D, D, two long, and D, D, D, three short bearers.

F, F, is a steady frame, and arms supported, and centered on pivots through C, C.

G, G, are two vertical posts, or standards to the right of the center of the machine, all shown as of wood, but may be made of iron. On these several posts, and standards the working parts of the machinery are fixed as follows:

a, a, are two iron arms jointed at these ends to, and connecting the arms of the steady frame F, F, with the swing frame B, B. On the side of one of the posts G, is the swing frame crank b, b, on the vertical arm of which is the bar c, connecting that arm of the crank b, b, to the swing frame B, on the horizontal arm of the crank b, is the

rod d, connecting that arm to the large lever H, hung on a center on the same side of the post G, and by these collectively the motion of the swing frame B, is regulated.

e, e, is a metal frame whose cross pieces are fitted with slots to allow of the frame being slidden laterally on the screw bolts by which it is secured to the frame D, and the position as required of the frame is given by the back screw 12 in the frame D. On the head of this frame e, are two bearings fitted to receive the arbor f, and guide, or form wheel f.

I, is a fixed iron frame on the frame D, having bearings g, g, to carry, and retain the journals of the rotary cutter block h and on this block h are mounted two cutters i, i, fitted with a cap, or double iron precisely similar in principle, and operation to the cutting iron of a carpenter's double ironed smoothing plane.

j, is a drum, or pulley to receive a belt by which a rapid rotary motion is to be communicated from any first mover to the cutters i i. On the swing frame B, are two bearings in which are mounted the arbor o, on which the pinion p, sliding on a key, and groove is fitted, and at the other end of the same arbor the corresponding pinion q, is fixed. At this end of the arbor the pinion q, gears into the wheel r, which wheel is fitted tightly on the standing form piece mandrel t, mounted in bearings on the frame B. At the other end of the mandrel t, is one fixed oval formed chuck x, made to receive the form piece G, and having a socket to receive the center of the shifting oval formed chuck z. This chuck x is also made to hold the form piece y, firmly by two bolts, and the shifting chuck z, is made with two slots at the conjugate ends in which by two screw bolts the shifting spur dogs 1, 1, are mounted, and held to the required distance apart. The conjugate centers of both these chucks, and of the form piece are eccentric with the center of the mandrel t to allow the center pin hole of the block intended for rounding to come in the center of the pin 2, so that the pin 2, enters the hole, and at once fixes the position of the block for rounding and helps to secure it in place.

In the drawing which accompanies this specification, the standing mandrel t and

cheeks are shown as all in one piece by which the form piece *y* cannot be changed without removing the mandrel *t* out of the bearings *v*, *v*, and making the wheel *r*, to slide the form piece on the mandrel, and fix the form piece in the back of the chuck *x*, which thereby gives the chucks the appearance of being back to back. By the mode which is specified this delay, and inconvenience is obviated as the form piece *y*, can be placed on the mandrel *t*, by merely removing the chuck *z*, while the form *y* is fixed on the chuck *x*, and then replacing the chuck *z*, for work as hereafter described.

At the other end of the swing frame B, and corresponding with the standing mandrel *t*, is the sliding mandrel *s*, which slides on bearers on the frame B, and carries the wheel 4. This wheel gears into the sliding pinion *p*, already named as being mounted on the long arbor O. By these means the motion of the two mandrels is always the same upon being set to work as hereinafter described. Upon the inner end of the sliding mandrel *s*, is the fixed oval formed chuck 5, which is made with slots to hold spur dogs 6, and screws to secure them, the set eccentric with the center of the mandrel *s* and having a pin 7, for the hole in the block, the same as the before described shifting chuck, both the pins 2, and 7, being made to shift for the convenience of putting in larger, or smaller pins, as may be needed, and when one of the required size is put in place it is kept there by a small set screw through the side of the mandrel. The sliding mandrel *s*, is regulated as to position by the long back center screw 8, in the stirrup 9, having the nose turned to button from which button is retained to the end of the mandrel by the valved flanged cover 10, screwed on so that it incloses the button of the screw nose.

On the screw 8, is the crank handle 11, by which the workman's hand gives, and regulates the sliding motion of the mandrel *s* and the mode by which this machine is set in operation is as follows: The shifting form piece *y* being made in the form, and size of the block intended for rounding is placed by the workmen so as to screw it on the fixed chuck *x*, and the centers of the form wheel *f'*, and cutter block *j*, being adjusted accurately coincident, or in the same continuous line, and the centers of the mandrels *t* and *s*, being adjusted accurately parallel to this line, the cutter *i*, *i*, being also adjusted to describe a circle exactly of the same diameter as the form wheel *j*, 1. The workman takes a block for rounding, and placing it so that the lower, or as it is technically termed the arse end of the block is against that dog spur which is at the least distance from the pins 2, and 7. He now enters those pins in

the holes on each side of the block, and seeing that the dog spurs come into the line of the longitudinal center of the block, he now by the crank handle 11, turns the screw 8, so as to bring the chucks *x*, and *z*, toward each other, and thereby makes them compress, and hold the block firmly in the position for rounding, and the cutters *i*, *i*, on the block *h*, having rapid rotary motion given by a belt on the drum *j*, the workman allows the swing frame B, to approach them until the form piece *y*, and form wheel *f*, 1, are in contact. The cutters will have then begun to operate on the block, and the workman gives the mandrels and chucks a rotary motion in the contrary direction to that of the cutters *i*, *i*, by the crank handle *m*. On the arbor O, and the gear wheels through which this is connected moves the mandrels *t*, and *s*, and the contact of the block with the cutters, being regulated by the form piece *y*, the cutters will operate like a plane to shape the block precisely similar to the form piece *y*. The workman must bring that part of the block where the cutters act against the grain move slowly around to avoid stripping, or splitting the wood, than is needful where the cutters act with the grain. When the rotation of the mandrels is completed the block will be finished, and is to be removed by reversing the previous operation, to make room for another to be entered, and operated on in precisely the same manner. By these means a set of blocks will be rounded exactly alike in size, and appearance. When it is required to have the block rounded somewhat smaller than the form piece this may be done by setting the form wheel frame so much back from the center line as is required to allow the cutters taking off more of the material, and if on the contrary it is desired to round the block larger than the form piece, this may be accomplished by setting the form wheel frame forward of the center so as to make the cutters take off less material.

And, I, the said THOMAS BLANCHARD, do hereby declare that I claim as my invention—

1. The application of rotary cutters fitted with a double iron, or cap to make them cut more smoothly either with, or against the grain of the wood.

2. I also claim as my invention the form of chucks with the dog spurs, and center pins herein described for holding the block, and carrying the same around by compressing the same on both sides while the same is being operated on the said chucks being fitted eccentrically with the mandrels for the purpose of placing the block in a proper position for the cutters to form the side of the block as the same is presented to them by the shape of the form board.

3. And I claim as my invention the combination of machinery, as herein before substantially specified, and described by which such cutters, and chucks are brought into
5 operation for the purpose of rounding, or stock sheaving blocks.

In testimony whereof I have hereunto set my hand August 11, 1835.

THOMAS BLANCHARD.

Witnesses:

JOHN N. TAYLOR,
JAS. H. SANFORD.