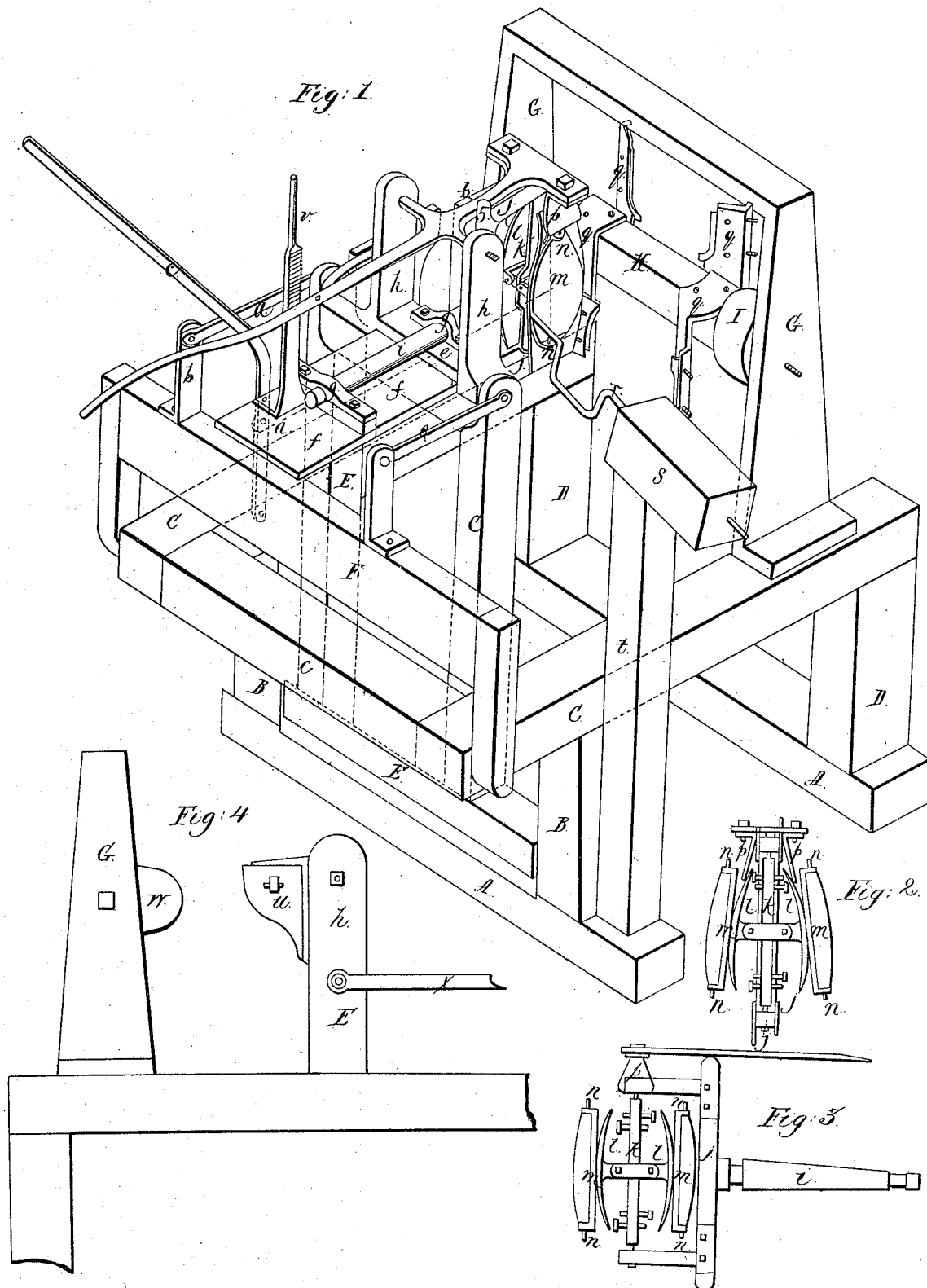


T. Blanchard,
Wood Molding Machine.

No. 19.

Patented Aug. 31, 1836.



UNITED STATES PATENT OFFICE.

THOMAS BLANCHARD, OF NEW YORK, N. Y.

MACHINE FOR FORMING THE CHEEKS OF PLANK OR MADE SHIPS' TACKLE-BLOCKS.

Specification of Letters Patent No. 19, dated August 31, 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 making ships' tackle and pulley blocks, which machinery is applicable to forming or shaping the sides of blocks the shells of which are made in pieces and conveniently known as plank or made blocks, as distinguishable by such name from common or solid shell blocks, and that the said machinery and the method of constructing and using the same are correctly and fully set forth and shown in the following description and in the drawing annexed to and forming a part of this specification, wherein is shown an orthographical perspective of the machine, Figure 1, in which—

A, A, are two lower bearers, B, B, are two short posts, or legs supporting *c, c, c*, three pieces forming a frame on which the working parts of the machinery are mounted, and which at one end joint into D, D, two other standard posts or legs, these are shown in the drawing as of wood but may be made of iron. Between the legs B, B, is fixed the swing frame E, mounted on centers, or pivots going through the end pieces into the frame B, B, and supported by the steady frame F, to which it is jointed by the bars *a, a*, and ears *b, b*, and the direct motion of these two frames is given by the crooked lever C, whose fulcrum is fixed on the frame *e*, the lever being jointed by the bar *d*, to one side of the frame E. Between the two upper parts of the frame E, is fixed the block *e*, mounted on centers which come through the frame E, and having a wide flanch on the end next the lever C. Behind this block *e* is the plate *f*, and at right angles to this are the posts or standards *h, h*, and centrically upon the plate *f* and between the standards *h, h*, is fixed the conical shaft *i*, held in place by bearings *g, g*, upon the outer end of the shaft *i*, is the forked carriage *j*, and between the points of this fork the swing center plate K, is mounted on a pivot or center at each end centrically in this swing center plate is a pair of flanches on each edge so fitted that they stand out at right angles to, and lengthwise parallel with the edges of the plate *k*. The two adjusting

plates *l, l* are fitted in the same manner with flanges behind them and are mounted on the plate *k*, by screw centers, which go through the flanches of the plates *l, l*, into the flanches of the plate *k*, and the distances of the ends of the adjusting plates *l, l*, from the face of the plate *k*, are regulated by set screws in the swing plate *k*. Upon the face of the adjusting plates *l, l*, are fitted the cheek plates *m, m*, so fixed by screws that they may be removed, and give place to larger or smaller plates when needful. Each end of the cheek plates M, M, is turned up to form a permanent nut through which four holding screws, *n, n, n, n*, are fitted to work either with center points or to spur plates for the purpose hereafter described. The clutch lever *o*, is mounted in center working into a pair of cross arms on the lever from the standard posts *h, h*. This lever is formed with a T head on the under side of which at each end is one of the clutch plates *p, p*, having flanches by which they are screwed onto the T head of the lever through slots in the head which allow of these clutch plates being adjusted at any required distance from the center of the lever *o*. These parts are shown in orthographic projection in a front view, in the detached Fig. 2, and in a side view in the detached Fig. 3, and the same letters of reference apply in all the figures.

The brace *r* is fixed with its shaft in a wood or metal stock *s* on the head of the post or standard *t* at the side of the cheek plates in such a way that the center or nose of the brace *r* is corresponding with and fitted to receive the heads of the screw centers *n, n, n, n*, and turn them in or out of the nuts on the ends of the plates *m, m*, upon the frame *l, l*. In front of the last described parts are two standards G, G, connected by a lintle-head, and between these standards the rotary cutter shaft H, is hung on centers, and has mounted on it four cutter stocks *q, q, q, q*, each having fixed upon it a cutter blade with a curved edge, the stock and cutters being fixed at right angles to the shaft and diagonally to cut at a similar angle to that of a carpenter's plane iron. On one end of the cutter shaft H is the drum on pulley I, to give a rapid rotary motion to the cutters by a belt, or band from any first moving power, and the method of using this machine as thus far described, is as follows. A piece of plank to form the side of a block

having been cut into a rough form and planed on the part intended to go inside is placed by the workmen between the two nuts on the ends of the cheek plates *m, m*, while the plates are laid horizontally by turning the fork *j*. The workman then enters the screw centers *n, n*, into the ends of the wood by the aid of the brace *r*, then rolls the spring and cheek plates round on the center in the fork to put a second piece in on the opposite side in the same manner. Having done this he sets the fork vertically under the clutch plates *p, p*, under the end of the lever; the stop pieces *s, s*, on the sides of the fork come against the lever *o*, preventing the apparatus from rolling too far on the conical joint *i*, and the guide piece *t* aids in bringing down the lever *o*, so that the clutch plates *p, p*, come tightly down one on each side over the adjusting plates *l, l*, and the lever having a click stud which takes into the ratchet teeth in the vertical spring bar *u*. The workman by lifting the outer end of the lever fixes the whole apparatus so firmly that it can only move toward the cutters on the lower center of the swing frame *E*, with a limited motion on the centers of the joint block *e*. In this direction the workman now by the lever *c*, makes the whole approach the cutters *q, q*, which are to be in rapid rotation, and they will now cut the middle part and edge of each wooden cheek piece to their own shape as they revolve. The form board *u*, on the flanch of the joint block *e*, now comes in contact with the guide board *w*, shown in the detached Fig. 4, and the workman depressing the clutch lever *o*, the compound curve formed by moving with the edges of the form board and guide board in contact will bring the apparatus and wooden cheeks upward in such a direction that the cutters will finish the lower and forward quarters of each pair of cheeks in the required form. The operation of these cutters being such that they cut diagonally from the grain of the wood operated on so as to make a drawing stroke, or cut by which the work is at once finished with a smooth surface, and by the set screws on the plate *K*. The plates *l, l*, are allowed to be drawn

in at top by the clutch plates *p, p*, so as to let out the opposite ends of the cheeks for the cutters to cut the ends thinner than the middle of the cheek, and by these conjoined adjustments the cheeks are formed in the proper curves both transverse and lengthwise as the same are required to give a finished form to the side of the block. The workman then withdraws the apparatus from the cutters, and disengages the lever *o*, from the ratchet bar *v*, and raises the clutch plates so as to turn the cheeks, and apparatus upon the center of the swing plate, and present the opposite lower quarters of the cheek to the cutters, then securing the whole by the clutch plates, lever, and ratchet bar, he repeats the motion above described, and thereby the second lower quarter of the wooden cheeks is cut to form. He then withdraws as before, and disengages the lever and clutch plates, and turns the forked carriage *j* end for end on its conical shaft *i*, and again repeats the previously described operations, thereby cutting successively the four quarters of each cheek into a precisely similar form. These are then taken out by reversing the operation by which they have been placed in successively to be formed for use in a similar manner.

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

1. The application of rotary cutters in the form hereinbefore described to the purpose of shaping the cheeks of plank blocks.

2. And I also claim as my invention the combination of mechanical means for fixing and holding block cheeks, and presenting the same to the operation of the cutters as hereinbefore substantially described and set forth, by which such cheek pieces are cut without being moved from the machine into the form and curves required on a cheek piece of a finished block.

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

THOS. BLANCHARD.

Witnesses:

JOHN N. TAYLOR,
JAS. H. SANFORD.