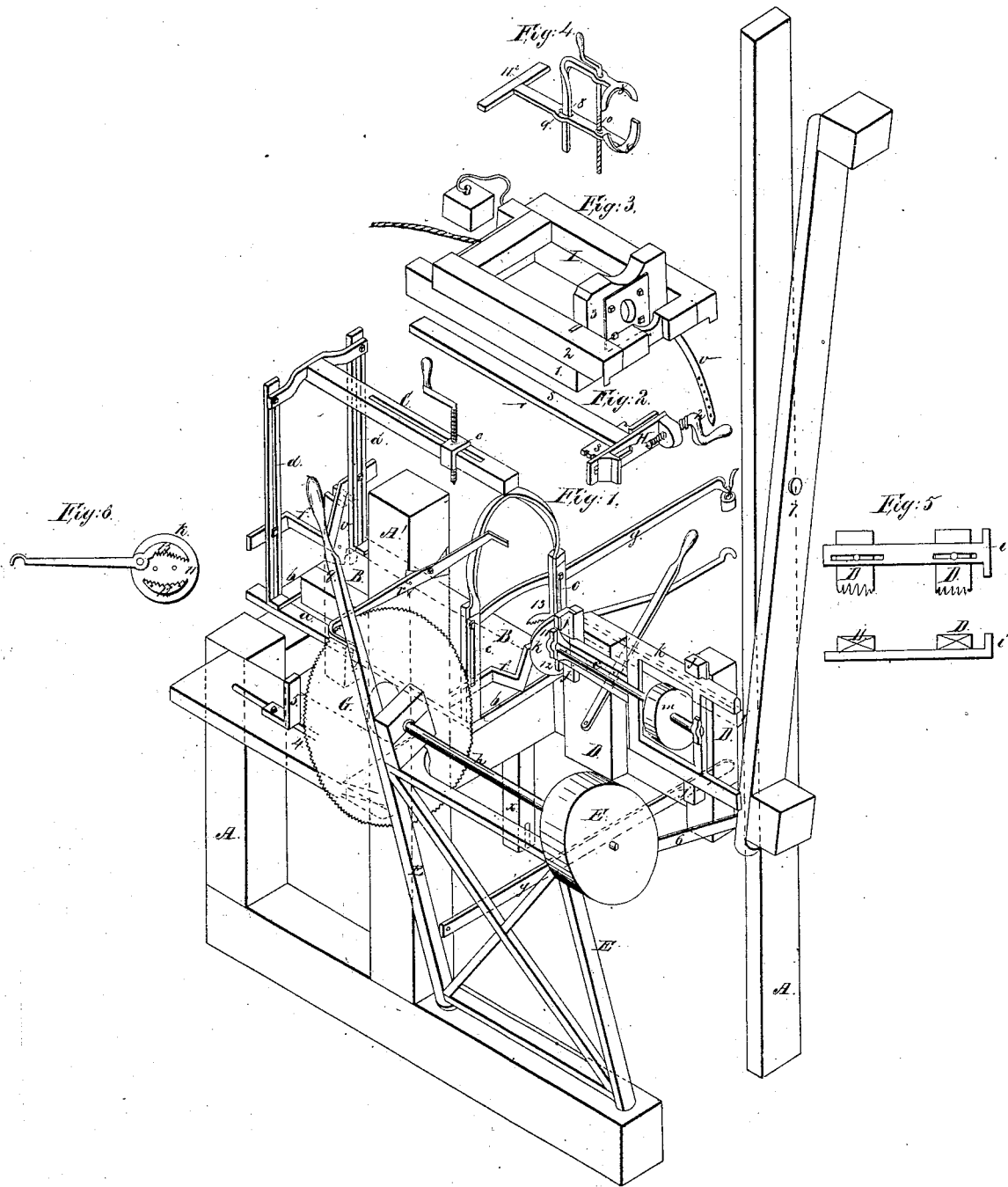


T. Blanchard,
Circular Sawing Machine.

No. 17.

Patented Aug. 31, 1836.



UNITED STATES PATENT OFFICE.

THOMAS BLANCHARD, OF NEW YORK, N. Y.

MACHINE FOR CUTTING OUT SHEAVES AND PINS AND BORING SHEAVES OF SHIPS' TACKLE-BLOCKS.

Specification of Letters Patent No. 17, 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 the method of cutting out the sheaves and pins of ships' tackle-blocks and pulleys from the rough log and boring the sheaves, whereby both sheaves and pins are better prepared for turning and finishing for use, which are shown and set forth in the following description and references to the drawings hereunto annexed and making part of this specification, wherein—

The drawing Figure 1 contains a representation of the whole machine, and certain detached, and shifting or changeable parts whose uses are respectively, and consecutively set forth hereinafter, are represented separately, and the same letters, and figures of reference apply to the similar parts in all the figures so far as the same are alike in their forms, and uses.

In Fig. 1, Sheet 1, A, A, is the standard frame in which the working parts of the machine are fixed for use, shown as if of wood, but may be of iron.

a, a, are two metal slides with hollow inner edges in which the wood or metal bed B, travels, and which is retained down, and guided by being screwed on a metal frame *b, b*, whose outer edges are beveled to fit, and move in the hollows in the edges of the slides *a, a*, at one end a wood, or metal upright, or head stock frame, *c, c*, is attached to the lower frame *b, b*, having two slots in the vertical arms, at the opposite end of the frame *b*, is the vertical, or tail stock frame *d*, having also long slots in the vertical arms, and connecting the two frames *c*, and *d*, is the holding down or keeper piece *e*, and keeper screws, and slide nut *e*, working through a slot in *e*. Attached to each of the frames *c*, and *d*, is a bent carrier bar *f, f*, so fitted by nuts and screws through the slots in the frames *c*, and *d*, that the bars *f, f*, may be secured at any required height. Upon the side of the frame *c*, is jointed one end of the holding lever *g*, having a hook whereon hangs a weight, and at the opposite end, upon the standard frame *a*, in front, and in a right line from the head stock frame *c*, are two short vertical standards

D, D, on the exterior sides of the standards D, D, is the gage slide, and stop *i* regulated by screws going through slots into the standards D, D, and shown in sections in the detached Fig. 5. On the interior sides of the standards D, D, are two slide pieces *j, j*, screwed through slide slots on the standards D, D, and fitted to carry the sliding horizontal mandrel frame *k*, and *l*, with its pulley, or drum *m*, which mandrel slide is moved by the lever *n*, whose fulcrum is below on one standard D, and which lever has a slot to receive a stud on the mandrel frame *k*, by which the lever moves the frame in either direction. Upon the lower horizontal part of the standard frame A, opposite the standards D, D, is a swinging frame E, the lower part of which is joined to the standard frame ground piece, and the upper part is fitted with bearings O, O, to receive the mandrel, or arbor *p*, on one end of which is the driving drum F, and on the other end the circular saw G, which is directed to the required cut or withdrawn therefrom by the hand lever *q*, the arc of the motion being limited by the regulating, or keeper bar *r*, fixed at the head of one of the standard posts A, which post is made of an extra length for this, and for other purposes hereinafter explained, and the machine as thus far described is to be used as follows.

When it is desirable to saw a log of wood into the proper thickness for making sheaves, the log is to be placed in the hollow of the bed B, and supported at either end by the carrier bars *f, f*, and held down either by the lever *g* and its weight, or by the keeper screw *e*, from the keeper piece *e*, or both as may be needed, and with very crooked pieces, wedges, or chocks may also be required. The gage slide *i*, is being regulated so that the required thickness of sheave may constitute the distance between the gage head and the saw, the bed B is to be pushed up by hand until the end of the log touches, and is stopped by the gagehead *i*. The workman then by the saw lever *g*, forces the saw toward the log, and saw having motion given by a band or belt on the pulley F, which is connected in any usual mode to a first moving power will rapidly saw off the sheaves as required. When it is desired to saw out pins for sheaves, the material is to be first cut from

the log into proper lengths in the same manner as the sheaves as above described, and then the screw clamp H, and its bearing plate S, shown in the detached Fig. 2, which are all fitted for the purpose are to be laid into the frame upon the bent carrier bars *f, f*, and the pieces to be formed into pins are successively placed and screwed by the screw Q, into the clamp, and the gage head *i* being regulated with saw to the size of the pin wanted, the operation of sawing out the pins is performed with the saw precisely as herein before described for sawing the sheaves, only that when the wood is sawed into thicknesses, it has to be sawed again to form a piece of square wood whose side shall be the diameter of the pin. When it is intended to bore the rough sheave for the pin hole, the traveling bed B, and all its frames and attendant fixtures are entirely removed by slipping it endwise out of the slide pieces *a, a*, and off the standard frame A, A, and the saw is thrown out of gear in any usual mode, and the two part sliding bed I, shown detached in Fig. 3, is substituted for it. The lower part of this frame I, is fitted to work on the slide pieces *a, a*, and is to be stopped at any required point by a wedge, or block behind, and between it, and the movable sheave davit *v*, (shown by dotted lines on the plan). The upper part of the frame 2, slides on the lower part having the head block 3, on the lower frame 1, between the ends, and across the length of the frame 2, and the upper part of the frame 2, is connected to the mandrel frame R, by the strap W, at the head end, and passed around the next bar of the mandrel frame and at the tail end a cord going over the upper part of the movable sheave davit *v*, and under by the lower sheave over the sheave in the bumpkin davit *w*, connects the upper part of the frame 1, and leads now to the treadles *y*, and the operation of these last described parts is as follows. The workman places the rough sheaves in the clamps formed between the head stock 3, and the head end of the frame 2, and then pressing his foot on the treadles *y* compresses and holds it firmly there with the center opposite the drill in the mandrel *l*, then with the *w*, moves the mandrel frame R up toward the sheave, and rapid rotary motion being given by a belt over the drum *m*, by any first mover, the drill enters, and makes the pin hole, and when a round bush is used the drill is made so as to form the required countersink. When this is done the workman moves the lever back, and removes his foot from the treadle at the same time, thus opening the chops between the frames. The strap *w*, as the mandrel frame moves drawing the frame 2 with it, the sheave then drops out below, leaving the chops open for others in succession to be

inserted, and operated upon in the same way, and in the same manner any description of boring for other operations on block sheaves within the size of the machine may be separately effected.

Whenever it may occur that larger sheaves are required from this machine any increased size of cross cut sawing may be effected thereby within the size of the machine by laying the material either upon the main frame, upon the front, or upon the bench board 4, at the back of the saw, in either case the material may be held by a pointed lever, the point being inserted into poles in metal plates not shown in the drawing, but which may be made in the long standard post shown in the drawing of the machine to which this specification refers below where it is marked A, 1. Upon the bench board 4, is the shifting gage stop 5, to measure any required length of material to be cut, and connected by a bar 6, to the saw frame. The vertical swinging balance lever 7, having a weight at the upper and lower ends will assist the workman to swing the saw frame E, in or out as may be needed.

When it is required to saw short pieces of wood into sheaves, a pair of chops made of metal, shown detached in Fig. 4, whose lower part forms a horizontal T standard may be placed on the traveling bed B and secured down by a block under the keeper screw *e*, so that the T piece 7½ may be held under it. The piece to be operated on may now be placed on the chops 8, 8, which are to be regulated by the gage pin 9, and the piece to be held by the screw 10, so as to be cut up to a very short length of wood. The bed B, and the slide gage *i*, being used exactly as is before described, when used without this auxiliary apparatus. In cases where from the form of the piece, or from other causes it may be desirable to saw up still shorter lengths of material, the apparatus K, shown detached Fig. 6, may be used as follows: The metal plate 11, is prepared so that it may be fitted, and screwed securely on one side to the end of the gage slide *i*. On the other side is the metal claw piece 12, having teeth on its outer edge. Above this the movable metal claw 13, is jointed to the face of the plate 11, and fitted with teeth in the same way, and with a long lever beyond the joint reaching outside the plate 11. By a cord ascending to a pulley, and descending from the pulley to a treadle, the workman can with the pressure of one foot on the treadle hold securely any short piece of material between the claws with one end close to the face of the plate 11, and this being adjusted so that the distance from the face of the plates to the saw is the same as the thickness of material required to be cut. The other end of the piece may be steadied by one hand of the workman, while

with the other hand he brings up the saw to the material and cuts it as required. The machine being used with this last auxiliary part in all other respects as heretofore described and set forth.

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

The having made and applied to use the several combinations of known mechanical apparatus herein before substantially set forth and described as applicable to the several uses herein specified.

I do not claim any of the parts of said machinery separately, and independently of their connection in the aforesaid combination, but I claim their application, and use in the above said combination, or any other substantially the same whereby the aforesaid or same results are produced.

In testimony whereof I have hereunto set my hand Aug. 11, 1836.

THOMAS BLANCHARD.

Witnesses:

JOHN N. TAYLOR,
JAS. A. SANFORD.