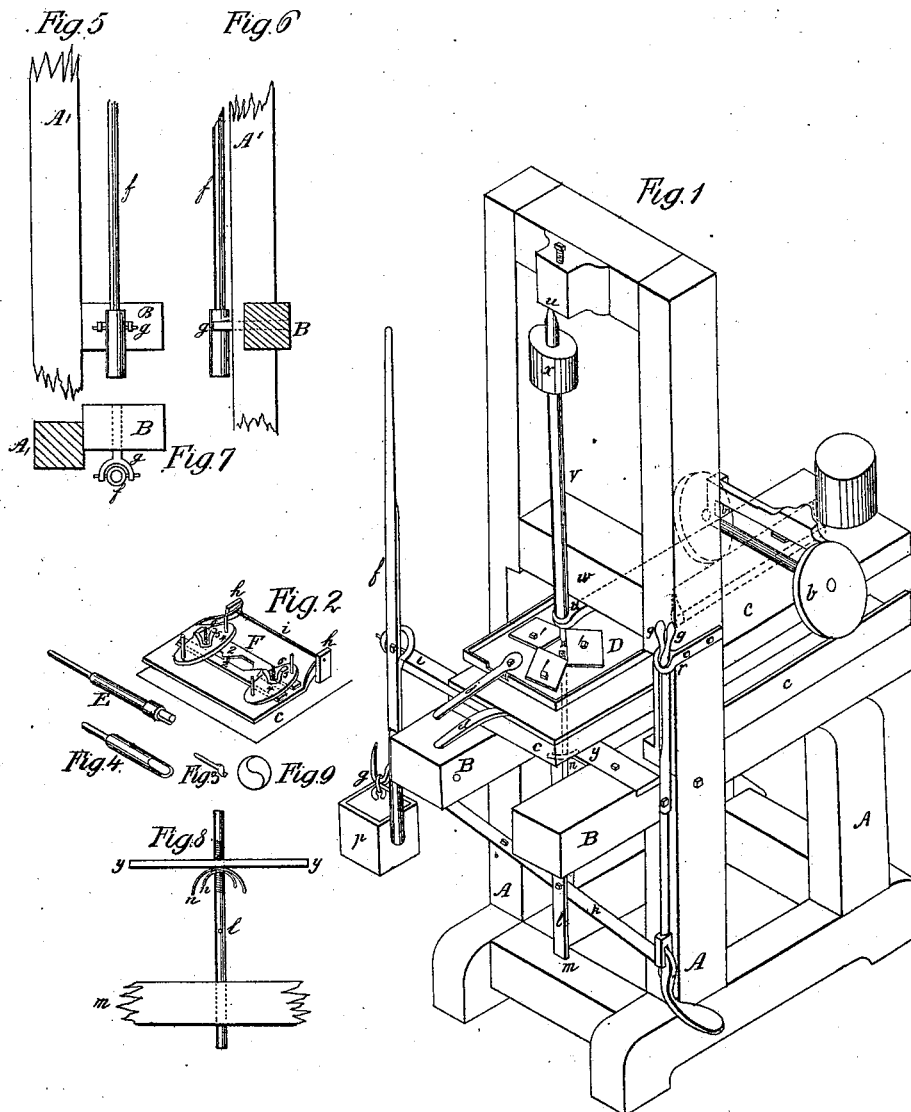


T. Blanchard,
Boring Wood.

Patented Aug. 31, 1836.

No. 18



UNITED STATES PATENT OFFICE.

THOMAS BLANCHARD, OF NEW YORK, N. Y.

MACHINE FOR COUNTERSINKING TO RECEIVE BUSHES IN THE SHEAVES OF SHIPS' TACKLE-BLOCKS.

Specification of Letters Patent No. 18, 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 Methods of Cutting in or Countersinking Metal or other Bushes in the Sheaves for Ships' Tackle-Blocks, and the said improvements and the machinery by which I effect the same are detailed and set forth in the following description, which refers to the drawings hereunto annexed and making part of specification, wherein—

The drawing Figure 1, exhibits an orthographic perspective plan of a machine for bushing sheaves, and the detached figures are orthographic projections of detached parts shown more clearly, and representations of the alterations or additions required to effect the cutting in, or countersinking the same in other ways by certain shifting, or changeable parts whose uses are hereafter described, and the same letters and figures of reference apply to the same parts in all the figures so far as they are alike in their forms, and uses.

A, A, are the standard frame, and legs on which the machinery is fixed, represented as of wood, but may be of iron, two of which legs rise above the frame, and are connected by a lintel, or head piece at their upper ends.

B, B, is a fixed platform bed of wood, or iron on which the required work is to be performed.

C, is a shifting or traveling platform of wood, or iron supported at one end by the iron arbor *a*, the two ends of which arbor, have their bearings in the roller wheels *b*, *b*, and these travel each on a railway of metal *c*, *c*, secured on the main frame if of wood, or rising out of the same if metal, as may be most convenient.

At the opposite end of the platform C, is a handle *d*, for the purpose of lifting the platform, and a guide piece *e*, having an eye in the outer end in which eye is the guide bar *f*, whose foot is a universal joint in the point of the bracket piece *g*, whose operation is shown in the detached figures 5, 6, and 7. In the middle of the platform C, toward the roller wheels is a pair of small carriages *h*, forming the bearings of

the arbor *i*, to which arbor is secured one end of the metal mold plate, or apron stock D, which has a handle *j*, at the opposite end, under the platform bed B, is the lever bar K, whose fulcrum is on the standard post, A¹. In the middle part of this lever is the gage shaft *l*, standing vertically under a metal slide plate in the lower side of the platform C, and the shaft being jointed to the lever bar K, is long enough to slide its lower part in the cross bar *m*, and is to be adjusted by a pair of two part cross nuts, *n*, *n*, below the cross bar *y*, each on a screw thread cut on the gage shaft *l*, by which the ascent of the shaft is regulated in the working as shown in the detached Fig. 8. The lever bar *k*, has a weight *p*, at the farther end which causes it to ascend as high as the nuts in the gage shaft will allow, and the operation of this lever bar, *f*, is again regulated by the two part spring latch *q*, *q*, whose lower end is jointed to the bar *k*, and the upper end goes through the staple ring *r*, and when the operation of the weight *p*, is not needed the latch is forced down so that the catch of the latch takes below the staple ring, and puts the weight *p*, out of use. The mold stock D, is so made that a set of templet mold plates 1, 1, 1, to surround the required bush can be screwed down upon it, in such a way that when the machine is at a rest the center of the templet mold shall be vertical or in the same line with the center of the middle stud pin 3, which is made to shift into, and out of a round hole through the platform C, into the metal plate over the head of the gage shaft *l*, and thus allow a metal pin to be placed on whose head may be of any required size to fit the bore in the sheave which is to be bushed. Immediately above this is a cutting or countersinking bit *t*, whose form is shown on a larger scale by the detached Fig. 3, and in end section in Fig. 9, which bit works vertically in the stock, or vertical arbor *v*, having a steel guide piece above. The guide piece being the same diameter as the cutting bit the shaft of which passes through the guide piece, and is secured into the lower end of the arbor by a set screw, the arbor is maintained in place by two vertical bearings *u*, *u*, one in the lintel head of the main frame, and one on the stretcher, or girt piece W, on which stock, or arbor is the drum, or pulley X, to receive

a band by which very rapid rotary motion may be given to the bit *t*, from any prime mover.

The method of using this machine so far as the same is thus described in bushing sheaves is as follows: The metal center stud 3 of the same size as the hole through the sheave which is to be bushed is first placed, the rough sheave is then put down with the stud 3 through the pin hole, the sheave being under the metal mold stock D. The workman attending now grasps the handles *d* and *j* with his right hand by which he holds the sheave firmly between the platform C and the mold stock D and with his left hand holds and moves the guide bar *p* and platform C and mold stock D so as to bring every part of the sheave not covered by the templet mold pieces screwed on the mold stock D in rapid succession under the bit *t* which enters into the wood material and removes so much as is required to form the cavity or countersink space for the flanches of the bush. The edge of the opening being formed by the steel guide piece above named running in contact with the inner edges of the templet molds and the depth to which the bit is to cut being regulated by the ascent of the gage shaft C a hole is thus countersunk of the required depth, and exactly of the same form as the templet mold, which form being the same as the flanch of the bush that side of the sheave is thus prepared for the workman to place the bush into a countersink accurately fitted to receive it. When the bushes are cast not all precisely alike in shape or fullness of parts these differences are to be overcome and allowed for in countersinking to receive the flanches of the bush by removing the templet plates 1, 1, 1, and substituting the gig plates 2 for them. These are represented in the detached plate, Fig. 2, as affixed to a metal mold stock F prepared to receive them and attached to the arbor *i* in place of the mold stock D. On the face of this mold plate F are four studs over which the keeper plates 4, 4, are placed so as to confine the gig plates 2, 2, to any required point by the operation of thumb nuts 5, 5, upon the screw shafts 6, 6, and these shifted or changed parts are to be used as follows: The workman places the sheave with the barrel of the bush in the hole prepared for it in the sheave upon the

metal center stud 3 and then adjusts the interior edges of the gig plates 2, 2, 2, to the outer edges of the bush, then places a pair of reverse, or as they are technically termed "Lewis tongs," into the hole in the bush and compressing the arms of the tongs the expansion of the points jams them in the hole and enables the workman to remove the bush. He then countersinks the sheave by bringing the countersink bit *t* into work precisely as herein before described for doing so by the common templet pieces. The workman can use the bit shown in detached Fig. 3 first described and which is in the form of an S, having two cutting lips, or in form of a C, having one cutting lip the form of which is shown in detached Fig. 4, as may be found best according to the quality of the wood to be operated upon; or the third bit formed of a round shaft having a cavity to receive a lip of hardened steel on one side, which lip has a flat end and is secured by a collar and set screw into place in the bit, as shown in the detached Fig. E, may be brought into operation and any other description of countersinking for these purposes may be performed in the same manner by similar bits, gigs, templet plates, and templet molds fitted to act in conjunction to produce the effect required in the manner and on the principle herein before substantially described and set forth. And I, the said THOMAS BLANCHARD, do hereby declare that I claim as my invention—

The formation of the bit first described herein and the movable entering lip of the bit last described and the application of the same to countersinking the bushes of block sheaves in conjunction with the apron plates, templet plates, or pieces and gig plates, or pieces, and countersinking molds as herein substantially set forth and described and applicable to countersinking the sheaves of blocks to receive the bushes all which in combination and in their application constitute my improvements in the method of effecting the objects in view.

In testimony whereof I have hereunto set my hand July 26, 1836.

THOS. BLANCHARD.

Witnesses:

JOHN C. GODDARD,
W. SEVRELL.