

(No Model.)

2 Sheets—Sheet 1.

D. BULLOCK.
WOODWORKING MACHINE.

No. 571,186.

Patented Nov. 10, 1896.

Fig. 1.

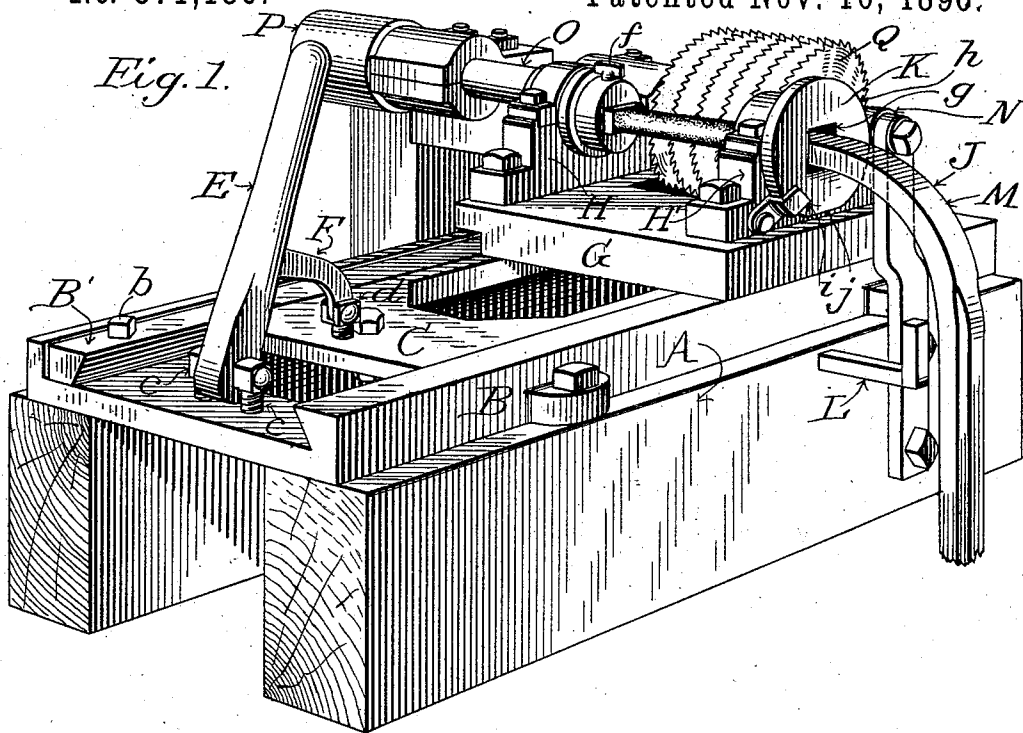
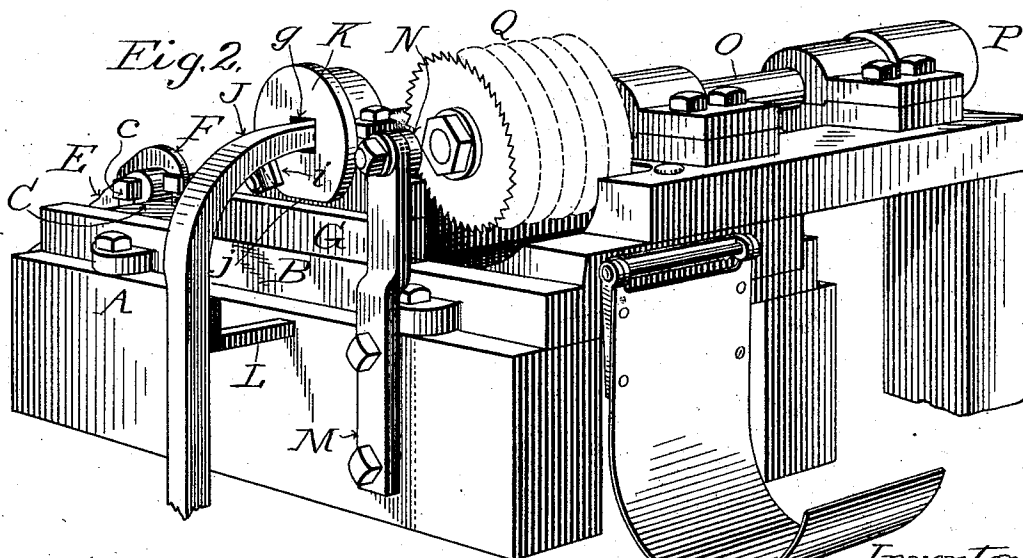


Fig. 2.



Attest
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UNITED STATES PATENT OFFICE.

DANIEL BULLOCK, OF FORT ATKINSON, WISCONSIN.

WOODWORKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 571,186, dated November 10, 1896.

Application filed June 12, 1896. Serial No. 595,336. (No model.)

To all whom it may concern:

Be it known that I, DANIEL BULLOCK, a citizen of the United States, residing at Fort Atkinson, in the county of Jefferson and State of Wisconsin, have invented certain new and useful Improvements in Woodworking-Machines, of which the following is a specification.

My invention relates to woodworking-machines, and more particularly to that class designed especially to form or shape the ends of carriage-bows and the like.

The object of the present construction is to produce a simple and strong machine, one that is efficient in its operation and also easy of manipulation.

In the accompanying drawings, Figure 1 is a perspective view of the machine, in which a carriage-bow is shown in place with the tenon formed thereon; Fig. 2, a perspective view looking at the rear of the machine; Fig. 3, a top plan view; Figs. 4 and 5, detail views of the work-holding heads or disks; and Fig. 6, a perspective view of one of the finished bows.

A indicates the frame or bed of the machine, and B B' suitable guides or ways mounted thereon. The guide B' is movable and may be adjusted in relation to the guide B through the medium of the set screws or bolts *a a* and securing-bolts *b b*.

C denotes a carriage or platform mounted in said ways and designed to be moved back and forth therein. To provide for its forward movement, or its advance toward the cutter, I employ a heavy spiral spring D, secured, as shown in Fig. 4, by dotted lines, to the under face of the carriage near its rear end, the other end of the spring being fastened to the frame at or near the head of the machine. Normally the spring tends to hold the carriage in the position shown in Fig. 1, that is, in its advance position, with the work against the cutters.

To provide for the retraction of the carriage, I employ a lever E, pivoted between two uprights *c c*, secured to the bed. A curved link F, pivotally connected at one end to the lever above its pivotal connection with the bed, connects said lever and the carriage, the link being pivoted at its opposite end to a stud or bolt *d*, formed upon or secured to the carriage. When the lever E is thrown down or in the position shown in Fig. 2, the pivotal points of

the link will be below that of the pivotal point of the lever, and hence the lever and its connections will act as a lock and prevent the spring from drawing the carriage forward. So soon as the lever is raised and the three pivotal points come into alinement the spring is free to act and draw the carriage forward. Of course the operator may control the force of the spring and the consequent movement of the carriage by applying more or less pressure upon the lever.

At the forward end of the carriage I provide a cross-head G, upon the opposite ends of which are secured boxes H and H'.

Within the box H is rotatably secured a head or disk I, said disk being shown in detail in Fig. 4. It is provided with two collars, which bear against the side faces of the box and prevent the disk from getting out of place and yet permit it to freely turn. Said disk is provided with a longitudinal recess or socket *e*, made of such shape as to receive the end of a bow J, which, after it is in place, is firmly secured by a turn screw or bolt *f*.

K denotes a head or disk designed to be mounted within the box H'. It is provided with a transverse opening *g*, one face of which is curved or slanting to permit the curved portion of the bow to be inserted and firmly seated therein. The head or disk is also provided with a collar or rim *h*, the outer edge of said rim being given the contour or form to which it is desired to reduce the tenon on the bow.

To maintain the disk in the box, a gravitating latch *i* is secured thereto and bears against the face of the disk.

A stop or gage L is adjustably secured to the frame, and is so placed that when the carriage is drawn back it will be in vertical alinement with the boxes H and H'. When the bow is inserted into the disks, the stop comes in contact with the downwardly-projecting part of the bow and prevents its further advance, and when in such position the screw *f* is turned down and the bow is thus rigidly secured in its proper adjustment.

M indicates an upright or standard secured to the frame and provided at its upper end with a small wheel N. The collar or rim *h* of disk K is designed to bear against this wheel when the carriage is advanced and the

cutters are working upon the bow. The operator taking hold of the downwardly-projecting end of the bow turns the same, and consequently the disks I and K with it. The rim *h* being forced against the wheel N by the spring will at all times bear against said wheel, but the carriage will advance and recede from the cutters according as the contour or shape of the rim *h* permits it to advance or forces it back.

It is to be understood that the shape of the rim may be varied as desired, and that the work will be inserted in the disks so that its different faces will occupy their proper relation to the configuration of the edge or rim of the disk.

O denotes a shaft or arbor mounted in suitable journals affixed to the head of the frame or bed. It is provided upon one end with a suitable belt-pulley P, and upon its opposite end with a cutter or series of cutters Q. The cutter illustrated in the accompanying drawings comprises a series of circular saws set staggering, which form of cutter answers the purpose in a very satisfactory manner.

A hood or cover R is hinged to the end of the frame, and may be closed down over the cutter and work while the machine is in operation.

In the manufacture of the metal sockets into which the finished bow ends are inserted there is formed a seam upon the inside. To provide for this seam, the bow end has to be cut away more on one side than on the other. This is secured by forming the edge or rim of the disk K with a flat portion, as will be clearly seen upon reference to Fig. 5 at *j*. The flattened face upon the bow will be seen at J upon reference to Fig. 6.

The operation of the machine is as follows: The carriage is brought back to the position shown in Figs. 2 and 3 by the depression of the lever E. When in this position, the bow is inserted into the disks the proper distance and secured as before described. The lever is then elevated and the carriage travels forward toward the rotating cutters, when the rim of disk K comes into contact with wheel N and prevents further forward movement. The operator then turns the bow by hand and that portion of the bow between the boxes H H' is acted upon by the cutter, the carriage receding and advancing according to the con-

tour of the rim *h*. When the tenon has been formed, the lever is again depressed and work withdrawn from the cutters. It is then removed from the machine and the end which was in the opening *e* cut off.

Various forms of cutters may be used, and, if found desirable, the cutter may be made to advance and recede from the work, the work in such instance being rotated about a fixed axis. The construction shown and described is, however, the preferred embodiment of my invention.

Having thus described my invention, what I claim is—

1. In a woodworking-machine, the combination of the frame or bed; a rotary cutter; a reciprocating carriage; boxes mounted on said carriage; a disk rotatably secured within one of said boxes; and work-clamping means carried thereby; a second disk rotatably mounted within the other box; said disk being provided with a transverse opening having one face inclined to the others; and a pattern rim or edge; and a roller secured to the frame.

2. In a woodworking-machine the combination of the frame or bed; a cutter; a reciprocating carriage; a spring for advancing the carriage; a lever pivoted to the frame in rear of the carriage; and a link pivotally connected to the lever and the carriage, the relation of the parts being such that when the carriage is drawn back and the lever depressed, the parts will be locked, substantially as described.

3. A work-holder disk for woodworking-machines comprising a solid head or body having a polygonal opening formed in and extending therethrough, and having one face curved or flared, substantially as described.

4. A work-holder disk for woodworking-machines provided with a longitudinal opening having one face curved or flared, substantially as described, and a rim or edge having the pattern which it is desired to impart to the work.

In witness whereof I hereunto set my hand in the presence of two witnesses.

DANIEL BULLOCK.

Witnesses:

L. B. CASWELL, Jr.,
J. F. SCHREINER.