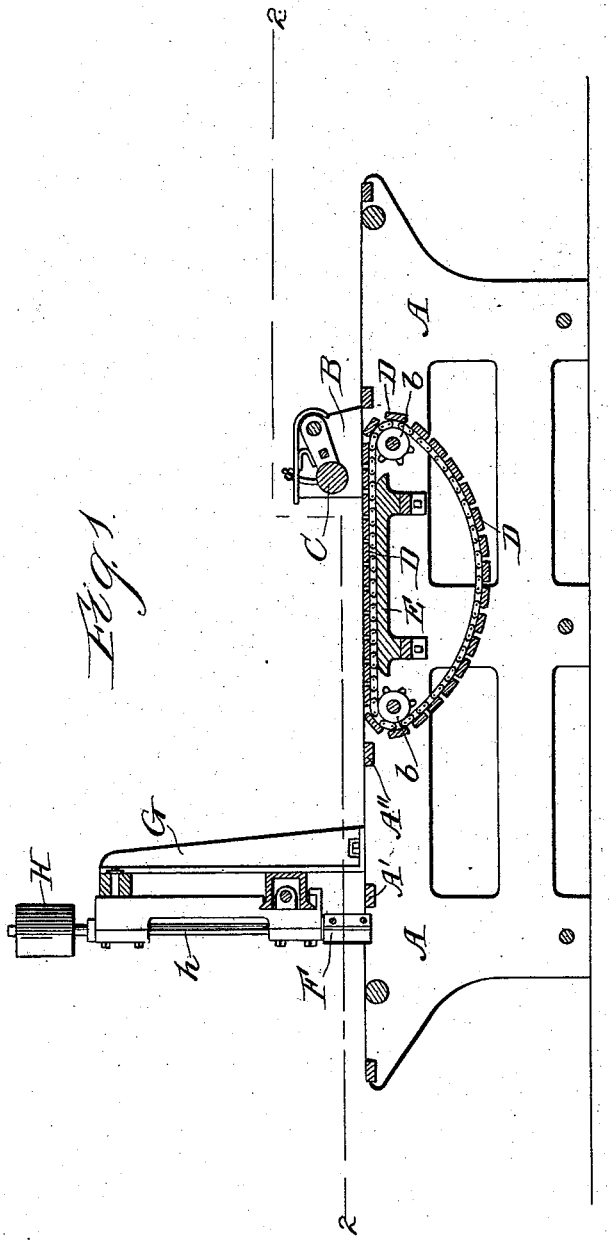
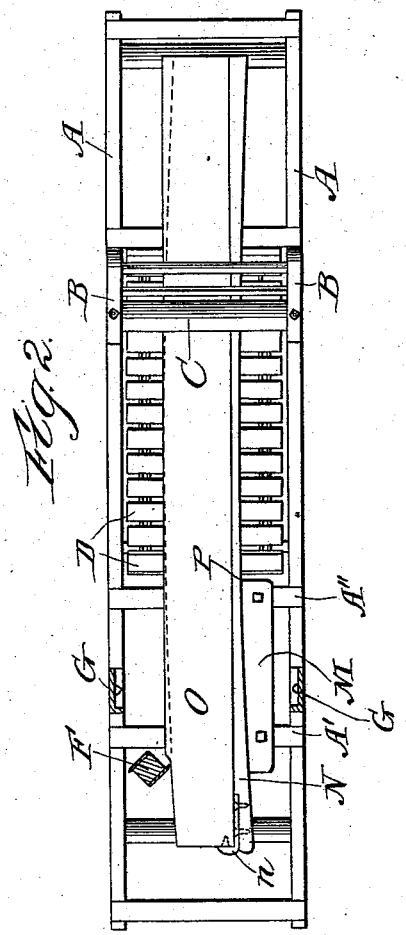
(No Model.)

W. LYON.

WOODWORKING MACHINE.

No. 522,475. Patented July 3, 1894.





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UNITED STATES PATENT OFFICE.

WILLIAM LYON, OF BURLINGTON, IOWA.

WOODWORKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 522,475, dated July 3, 1894.

Application filed August 17, 1893. Serial No. 483,369. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LYON, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented new and useful Improvements in Woodworking-Machines, of which the following is a specification.

My invention relates to improvements in wood-working machines of a novel and useful construction; and its object is to provide means for crowning one side of the joist or board leaving the other side straight. I attain this object by means of the mechanism illustrated in the accompanying drawings, like reference letters referring to like parts throughout.

Figure 1 is a longitudinal, sectional view of my invention, taken upon the central, vertical, longitudinal line of Fig. 2, in which the brackets and support of the cutter-head is illustrated. Fig. 2 is a top plan view of my invention, with the brackets and supports of the cutter-head and the shaft and pulley thereof removed.

One of the peculiar features of my invention is that it can be practicably applied to any of the well known planing machines for dressing lumber, without any material changes or modifications in their construction or arrangement. Inasmuch as I only propose to crown one side of the joist or board, I employ in my invention but one cutter-head, which may be made laterally adjustable or not as is desired.

Letter A represents the frame work of the woodworking machine, supporting the usual chain D, operated by means of the sprocket wheels (*b b*) whose upper portion rests upon and passes over the table E, supported in said frame.

Letter B represents one of the brackets or supports resting upon said frame and supporting the presser-roll C, there being, of course, two such brackets provided with springs, each respectively support the opposite ends of said presser roll.

Letter F represents the cutter-head carried by the shaft *h*, held in its bearing and supported by the brackets G which are rigidly attached to the frame work.

Letter H represents a pulley rigidly attached to the shaft *h* by means of which power is applied to the cutter-head F.

C represents the ordinary presser-roll employed in working the machine.

Letter E represents the usual table which supports the upper portion of the chain D which carries the material to be dressed forward, and assists in feeding it to the cutter-head.

Letter M represents a permanent guide rigidly attached to the frame of the wood-working machine by means of bolts or otherwise, and may be so constructed as to be laterally adjustable upon said frame.

Letter N represents a movable guide having a straight surface upon one side and a curved surface upon the other, and provided with means for attaching it to the board or joist to be crowned. The simplest mode of attaching it to the board or joist is by means of a hook or catch (*n*) attached to the front end of the movable guide N by screws or otherwise, as shown.

In the operation of my invention I employ movable guides N of different lengths and of different curvature, depending upon the length of the board or joist to be crowned and the degree of crowning to be effected. In crowning boards of different width, it is evident that some adjustment must be made of the distance between the cutter-head F and the permanent guide M; this may be effected in various ways. For instance, the cutter-head, itself, may be made laterally adjustable or the width of the movable guide N may be increased or diminished, or the location of the permanent guide M may be adjustable upon the frame work of the machine, or two or more of these modes of adjustment may be applied.

It will be seen by reference to Fig. 2 that the inner side of the movable guide N presents a straight surface against which the straight side of the board or joist to be crowned is to be placed. The movable guide N and the board or joist O are held together at the front end by the hook or catch *n*, as it is fed into the machine under the presser-roll C. They are subsequently held together by means of the presser-roll and the chain D upon which they rest.

The operation of my invention is very simple; when the board or joist O attached to the movable guide N is fed into the machine beneath the presser-roll, C, it is presented at such an oblique angle under the presser-roll C that it would bring the front point of the movable guide N directly in contact with the permanent guide M at point P and from this on in the movement of the board or joist to be crowned through the machine, the operation of the presser-roll C and the chain D will cause the movable guide N to bear constantly against the permanent guide M and thus describe the curve of the required radius, and the cutter-head F will cut or crown the opposite side of the board O in a corresponding curve.

It is evident that there may be very many variations and modifications in the construction and arrangement of the parts of my invention without departing from the spirit thereof, and I do not limit myself specifically to the construction and arrangements shown; but,

Having shown the construction and mode of operation of my invention, what I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a frame and a cutter head supported thereon at one side of the path of feed through the machine, of a traveling feed chain, a movable presser roll over said traveling feed chain, the fixed longitudinal guide M in line and at a point beyond the feed chain and situated opposite the vertical cutter head, and the endwise movable guide N provided with means for attaching the same longitudinally to one edge of the material to be crowned and having edge-wise contact with the guide M, the inner face of the shaping guide N adjacent to the material being straight and the outer face thereof being shaped according to the contour required to be made to the material, substantially as and for the purposes described.

2. In a wood-working machine, substantially such as herein shown and described, the combintaion with a frame and a feed mechanism, of the vertical cutter head F supported beyond one end of said feed mechanism and at one side of the path of feed through the machine, a fixed guide M arranged opposite to said cutter head and in line with the feed mechanism, means for adjusting the guide M to vary the distance between the same and the cutter head, and the endwise movable shaping guide N provided with means for attaching the same longitudinally to the off-side of the material to be crowned and arranged to travel between the cutter head and the fixed guide M, the inner face of said shaping guide which has contact with the material being straight and the outer face of the guide being curved to ride against the shaping guide M, substantially as and for the purposes described.

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