

United States Patent Office.

S. C. BLINN, J. J. ALVORD, AND H. BREWER, OF TECUMSEH, MICHIGAN,
ASSIGNORS TO S. C. BLINN.

Letters Patent No. 75,352. dated March 10, 1868.

IMPROVEMENT IN MACHINES FOR CUTTING HOOPS FROM THE EDGE OF A BOARD.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, S. C. BLINN, J. J. ALVORD, and H. BREWER, of Tecumseh, in the county of Lenawee, and State of Michigan, have invented a new and useful Improvement in Machines for Cutting Hoops; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation,

Figure 2 is a plan,

Figure 3 is a vertical cross-section, and

Figure 4 is a bottom view of the feed-table.

The same letters are employed in all the figures, when designating the same parts.

Our improvements relate to that class of machines in which a strip, to be used as a barrel-hoop, is cut by the action of a knife, from the edge of a board, a reversed inclination being given to the different sides of the hoop. Our improvements relate to the mechanism for actuating the knife, so as to give to the hoop the form that is most to be desired.

In the drawings, A A is the framework of the machine, arranged to include the machinery. Power is applied through the shaft B, on which is a bevel-pinion, B¹, for the purpose of driving the feed-mechanism, and a crank, B², for the purpose of driving the knife. The pinion B¹ drives a wheel, C, on the end of the shaft D, on which is placed a cam, shaped as represented in fig. 3. The table F is hinged to the frame under the knife, the other side resting upon the cam E. As the cam revolves the table receives an oscillating motion, being held in a horizontal position during one-half of the revolution of the cam, and in an inclined position during the remainder of its revolution. The board to be cut is placed upon a feed-table, F', which rests upon the table F, and is gradually moved forward towards the knife, as the hoops are cut by the following means: A pawl, I, attached to the frame, bears against the ratchet-wheel G, on the end of the counter-shaft G', which turns in boxes placed on the under side of the table F. On this shaft is a pinion, H, the teeth of which engage those of the rack H', attached to the lower side of the feed-table F'. As the table F is raised by the cam E, the pawl I slips over the teeth of the ratchet-wheel G, and as the table falls the pawl, pressing against the ratchet-wheel, will cause the feed-table to be moved towards the knife, the gearing being so arranged that this movement shall be equal to the thickness of the hoop to be cut.

The hoop is cut by the knife K from the edge of a plank placed on the feed-table. The knife is moved by the pitman K', connecting it with the crank B², which gives it a slicing cut. It is desirable, to secure the best form to the hoop, that its faces should be rounded on both sides, giving it a concavo-convex form, as well as an alternate bevel given to the hoop by the action of the oscillating table. This concavo-convex form is secured by attaching the knife, by the arms M and M', to the guide-rods N and N', on which the arms slide, and at the same time oscillate, so that the knife shall be forced to move on the circumference of a cylinder, of which the arms M and M' are the radius. The knife is suspended from the frame A by oscillating-rods L L, and in order that it may receive both the longitudinal and vertical reciprocating motion, and also the circular one described, it is necessary that the rods L shall be connected, both with the knife and with the frame, by ball-and-socket joints, and also that the pitman K' should be connected with the knife by a ball-and-socket joint, and that the crank-pin should also be constructed in the same form. By this means the knife may accommodate itself to the complex motion required for its proper action. The mechanism is so arranged that the knife makes two cuts to each revolution of the cam E. One cut is made while the table is horizontal, and as the knife is raised the board is inclined by the rising of the table, so that the edges of the hoops successively cut shall be alternately inclined, the second cut being made while the table is thus inclined, and as the table falls again to its horizontal position, as the knife is raised, the feed-table is moved forward the width of a hoop, the feed for the other hoop being obtained by the inclination of the table, as set forth.

We do not claim herein, mechanism for giving a slicing cut to the knife, acting in a vertical plane; nor do we claim cutting the hoops upon an alternate bevel, from the edge of the plank; but

What we do claim as our invention, and desire to secure by Letters Patent, is—

The combination of the knife K, arms M and M', and guides N and N', with the crank B², pitman K', and rods L, when the parts are constructed and arranged to operate so as to permit the knife to travel with a reciprocating and curved transverse movement, substantially as set forth.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

S. C. BLINN,
J. J. ALVORD,
H. BREWER.

Witnesses:

E. B. WOOD,
WM. HAYDEN.