

UNITED STATES PATENT OFFICE.

EDWIN BENJAMIN, OF SOUTH EVANSTON, ILLINOIS.

MATCHER.

SPECIFICATION forming part of Letters Patent No. 476,221, dated May 31, 1892.

Application filed November 14, 1889. Serial No. 330,245. (No model.)

To all whom it may concern:

Be it known that I, EDWIN BENJAMIN, of South Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Matchers, of which the following is a specification.

My improvement relates to matchers which are adapted to work two pieces of lumber at once, and pertains especially to the supporting and driving mechanism for the cutter-heads which form the tongues or grooves upon the inner edges of the two pieces of lumber.

In an application filed by me May 1, 1889, Serial No. 309,163, I have shown two matcher-heads arranged nearly parallel with the line of travel of the lumber, each of which is adapted to operate independently of the other upon the inner edge of one of the pieces of lumber and have therein made claim to such arrangement. In the present invention I adopt the same arrangement of cutter-heads, but have devised a simpler and more easily-adjusted mechanism for supporting the cutter-heads and have simplified the driving mechanism materially.

In the accompanying drawings, Figure 1 is a plan view of a portion of the frame-work of the matcher and the driving mechanism for the cutter-heads. Fig. 2 is a side elevation of the same. Figs. 3 and 4 are plan and side views, respectively, of the cutter-heads and their supporting and adjusting mechanism. The latter will first be described.

2 is a cutter-head, which is supported on a vertical spindle 3, running in the boxes 4 4. The boxes 4 4 form part of a frame 5, the side of which is planed to fit into a groove in the bracket 6. The frame-work 5 is adjustable vertically in the bracket 6 by means of the screws 7, (*vide* Fig. 4,) which is tapped into the lug 8 of the bracket 6 and is fitted by means of collars 9 to the lug 10, attached to the frame-work 5. When its height has been properly adjusted, it is securely clamped in place by the screw 11. The cutter-head 2^a (*vide* Fig. 3) is attached to the spindle 3^a and is supported by a frame-work 5^a, which is fitted and adjusted to the bracket 6 in the same manner as the frame 5. The bracket 6 is bored out, as indicated by the lines partly dotted and partly full at 12, Fig. 3, and is fitted to a pivot 13, (indicated by dotted lines in Fig. 4,)

depending from the plate 14. This plate 14 is supported by a horizontal extension 15 of the end girt 16 of the matcher-frame, being attached thereto by bolts, as 17, or any other suitable manner. The pivot and plate 13 14 are capable of horizontal adjustment, the holes through which the bolt 17 passes being slotted for that purpose and the adjusting hand-wheel 18, having a screw (shown in dotted lines at 19, Fig. 3) provided for the purpose of making this adjustment. The screw is journaled in lug 20 and tapped into lug 21, these lugs being attached to the extension 15 and the plate 14, respectively. The adjustment just described of the plate 14 and pivot 13 provides for moving both cutter-heads 3 3^a to the right or left simultaneously.

To provide for adjusting their relative positions with reference to the line of travel of the lumber so as to regulate the depth of cut of each and to insure that each shall clear the edge of the piece of lumber which it is not operating upon, a swiveling adjustment of the bracket 6 upon the pivot 13 is provided. The bracket 6 fits closely but not tightly upon the pivot 13 and is prevented from slipping off the pivot by the washer 22, secured to the bottom of the pivot. (*Vide* Fig. 4.) Lugs 23 23, one of which appears in side elevation in Fig. 4 and both of which are shown in dotted lines in Fig. 3, depend from plate 14. They are tapped for the reception of screws 24, the ends of which abut against the face of the bracket 6. By screwing in one of these screws and correspondingly backing out the other the bracket 6 will be turned upon the pivot 13, thereby changing the positions of the heads 2 2^a relative to the line of travel of the lumber.

The spindles 3 3^a and their attached cutter-heads 2 2^a are driven by pulleys 25 at their lower ends. (*Vide* Figs. 1 and 2.) These pulleys 25 25^a are driven by quarter-twist belts 26 26^a from pulleys upon the horizontal shaft 27. As seen in the plan view, Fig. 1, the belts 26 26^a extend in a direction parallel to the line of travel of the lumber, so that the pulley 25^a, if viewed from the driving-belts on shaft 27, is nearly hidden by the belt 25. The belt 26^a, which drives the pulley 25^a, therefore comes in contact with the belt 26, which drives the pulley 25; but this does not interfere with the proper running of the belts, because the

two sides of the belts 26 26^a which are in contact are running in the same direction and the belts, being twisted in opposite directions, cause the spindles 3 3^a to be driven in opposite directions, as indicated by the arrows. The shaft 27 may be driven from any of the driving-shafts of the matcher.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, in a matcher adapted to work two pieces of lumber at the same time, of two cutter-heads rotatable on vertical axes placed relatively to each other in a line nearly parallel to the line of travel of the lumber and a frame-work supporting said cutter-heads and rotatable as a whole upon a vertical pivot,

whereby the relative positions of the axes of said cutter-heads to the line of travel of the lumber may be regulated.

2. The combination, in a matcher adapted to work two pieces of lumber at the same time, of two cutter-heads rotatable on vertical axes, each cutter-head being adapted to dress an inner edge of one piece of lumber, and a frame-work carrying both said cutter-heads and rotatable on a vertical pivot, said pivot being adjustable horizontally, substantially as described.

EDWIN BENJAMIN.

Witnesses:

IRWIN VEEDER,
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