June 3, 1941. S. MAURER 2,244,426

WOODWORKING DEVICE

Filed Nov. 13, 1939 2 Sheets-Sheet 1

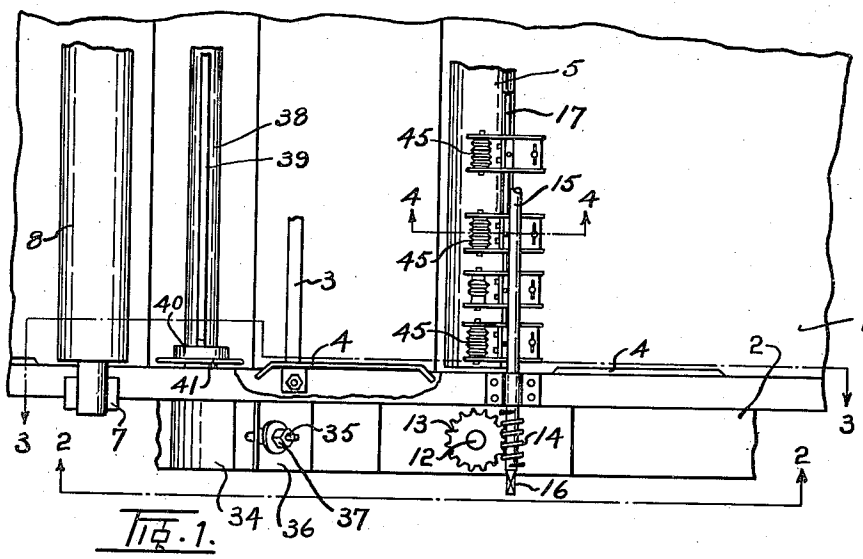


Fig. 1.

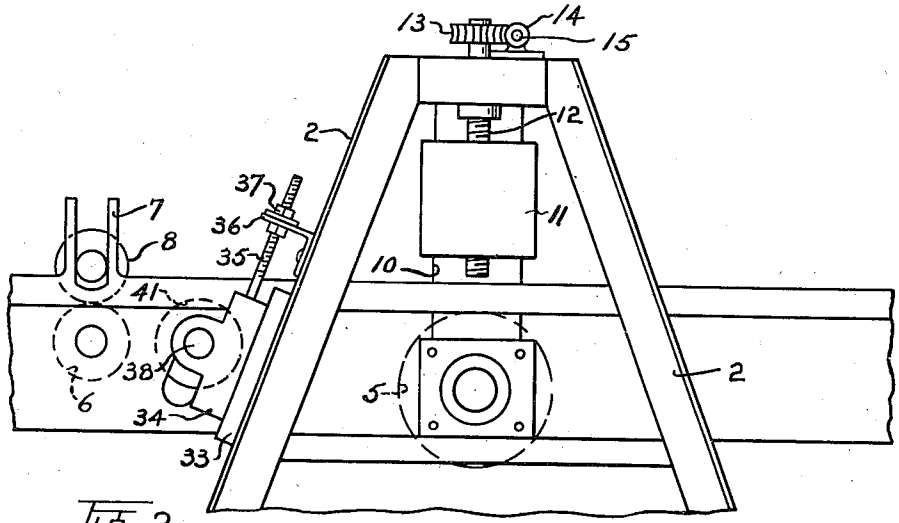


Fig. 2.

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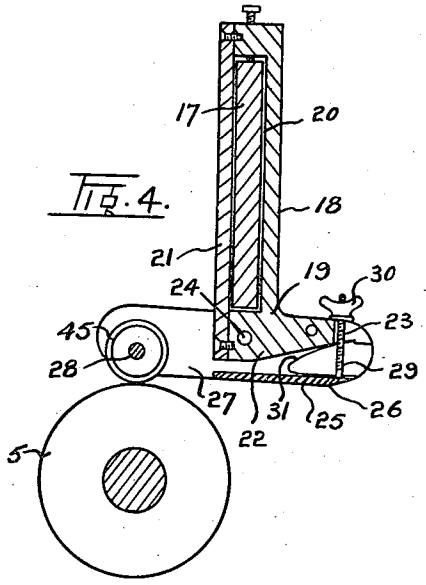


Fig. 4.

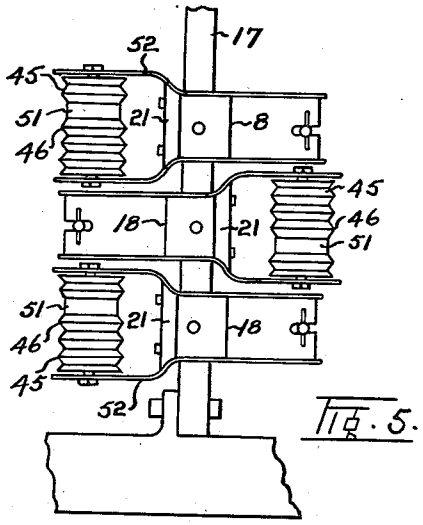


Fig. 5.

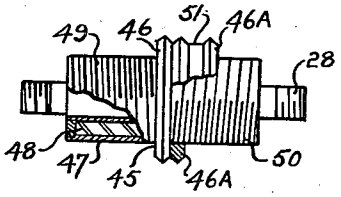


Fig. 6.

Fig. 3.

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UNITED STATES PATENT OFFICE

2,244,426

WOODWORKING DEVICE

Sam Maurer, Vancouver, British Columbia, Canada

Application November 13, 1939, Serial No. 303,994
In Canada December 17, 1938

2 Claims. (Cl. 164—61)

My invention relates to improvements in wood working devices, which are particularly adapted for incising or indenting the surfaces of laminated wood panels and the like.

The object of the device is to provide means whereby incised or indented lines may be made longitudinally of the grain of the wood without fracturing or lifting the grain at the sides of the lines.

It has heretofore been proposed to use circular dies in incising machines wherein the dies are of a diameter of eight inches or more and in such machines the pressure required for the indenting is so great that the shaft carrying the die springs out of line with the result that the impressions are of lesser depth at the centre of the shaft than adjacent its ends. It is with the object of preventing this defect that the present device is designed.

The invention consists essentially of a table having one or more feed rolls and a stationary member carrying circular dies above said roll or rolls, as will be more fully described in the following specification and shown in the accompanying drawings, in which—

Fig. 1 is a fractionated plan view of the invention.

Fig. 2 is a fractionated elevational view taken on the line 2—2 of Figure 1.

Fig. 3 is a fractionated sectional view taken on the line 3—3 of Figure 1.

Fig. 4 is a sectional view of a die carrier taken on the line 4—4 of Figure 1.

Fig. 5 is a plan view of a modification of the die carrier.

Fig. 6 is a detail view of the die.

In the drawings like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates a table partly supported upon a pair of side frames 2, one only shown, which extend above the level of the table intermediate its length. The table is slotted transversely at intervals of its length as at 3 to adjustably accommodate guides 4 which are adapted to align the material to be treated in its passage over the table. Journalled in the frames 2 below the table is a feed roll 5 which is driven from any suitable source of power, not shown, and at a suitable distance beyond the feed roll is a driven live roll 6 which serves to take away the material which has been fed through the machine by the feed roll. Forks 7 are provided in the side frames 2 which serve as journals for a press roll 8 extending lengthwise of the live roll 6.

In the upper portion of each of the side frames 2 parallel guides 10 are provided, between which a slide 11 is mounted. Each of the slides is carried by a vertical screw 12 which is journalled at its upper end in the side frame and is fitted with a worm gear 13 at its upper extremity. The worm gears 13 are simultaneously rotated by complementary worms 14, one only shown, secured at opposite ends of a transverse shaft 15 which is journalled upon the upper member of the side frames 2. The transverse shaft is squared at one or both ends as at 16 to receive a suitable crank or tool, not shown, by which said shaft can be turned to raise or lower the slides 11 through the medium of the worm 14, the gears 13 and the screws 12.

Extending between the slides and connected therewith is a transverse member or beam 17 which serves as a support for one or more die carriers generally indicated by the numeral 18, see details in Figure 4. The die carriers consists of an L-shaped member 19 provided with a rectangular opening 20 to fit the beam 17, which opening is closed by a removable front plate 21 to facilitate the removal or addition of die carriers to the beam. The base 22 of the member 18 is slotted as at 23 and pivotally mounted under the base upon a pin 24 is a shoe 25 having a bottom wall 26 and side walls 27 between the front end of which a fixed pin 28 is fitted. The rear end of the bottom wall 26 is fitted with an upstanding bolt 29 which projects through the slot 23 and is fitted with a fly nut 30. A leaf spring 31 is provided between the bottom wall 26 and the base 22 of the member 18 to act against the bolt 29 and maintain the forward end of the shoe 25 and its pin 28 raised to the extent permitted by the bolt 29 and its nut 30.

Guides 33 are mounted upon the side frames 2 between the feed roll 5 and the live roll 6 and slidably mounted upon each of these guides is a bearing block 34 which is adjustable endwise by means of a screw 35 extending through a slotted plate 36 mounted on the side frame and secured in adjusted position by lock nuts 37. Journalled in the bearing blocks 34 below the level of the table 1 is a saw arbor 38 having one or more keyways 39 and on the arbor a pair of saw collars 40 each having an edge trimming saw 41 is fitted. The collars and their saws may obviously be set to any desired spacing along the arbor 38 and by adjusting the lock nuts 37 the saws may be raised to project to any desired height above the table. It will be understood

that the saw arbor is driven by any suitable means from a source of power.

The die generally indicated by the numeral **45** includes one or more annular members **46** and **46A**, which serve to indent or incise the material passed over the table. The size of these members is of great importance insofar as when they exceed three inches in diameter very extensive pressure is required to force their cutting edges into the wood, which pressure being multiplied by the number of the members used becomes so great as to cause deflection on any shaft on which they may be mounted when said shaft is of sufficient length to extend across the standard panel of four feet in width. With incising members of three inches or less, the chord of the segment forced into the wood is so short as to reduce the downward thrust required to practical proportions. The annular member **46** is secured upon a sleeve **47** which is preferably fitted internally with roller bearings **48** and is mounted upon the pin **28** of the die carrier **18**. The sleeve **47** is provided with a right and a left hand thread **49** and **50** respectively, on opposite sides of the annular member **46** and any desired number of internally threaded incising members **46A** and spacers **51** are secured onto the sleeve. The right and left hand threads **49** and **50** are obviously for the purpose of causing the annular members **46A** to tighten towards the fixed member **46** as the material passes under them.

In the modification of the die carrier shown in Figure 5, the shoe **25** is provided with side walls **52**, which are spread apart adjacent their forward end so that by reversing the position of each alternate die carrier **18** upon the beam **17** sufficient annular incising members **46** and **46A** may be used to incise material of the full width of the table.

In operating the device, the die carriers and their incising members are spaced according to a desired pattern. The trim saws are spaced to the desired width of panel and the machine set in motion and panels are run along the table. If it is found that the impression made by one die is slightly deeper than the others, the adjusting nut **29** is turned until the die is raised to the proper position, when the work is resumed. If a change in the thickness of material is to be made, the beam **17** and its assembled parts are raised or lowered accordingly by rotating the transverse shaft **15**.

What I claim as my invention is:

1. In a wood working machine having a table, a feed roll journalled beneath said table, a beam transversely carried above the table and a die carried by said beam, said die consisting of a freely rotating sleeve having an annular indenting member intermediate its length and having a threaded extension beyond said annular member, said threaded extension being adapted to receive other annular members in alignment with the first named annular member.

2. In a wood working machine having a table, a feed roll journalled beneath said table, a transversely mounted beam carried above the table and a die carried by said beam, said die consisting of a freely rotatable sleeve having an annular indenting member intermediate its length and having a threaded extension on one side of said annular member, and an internally threaded annular indenting member carried by the threaded extension.

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