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MACHINE TO SHAPE FLOORING BLOCKS

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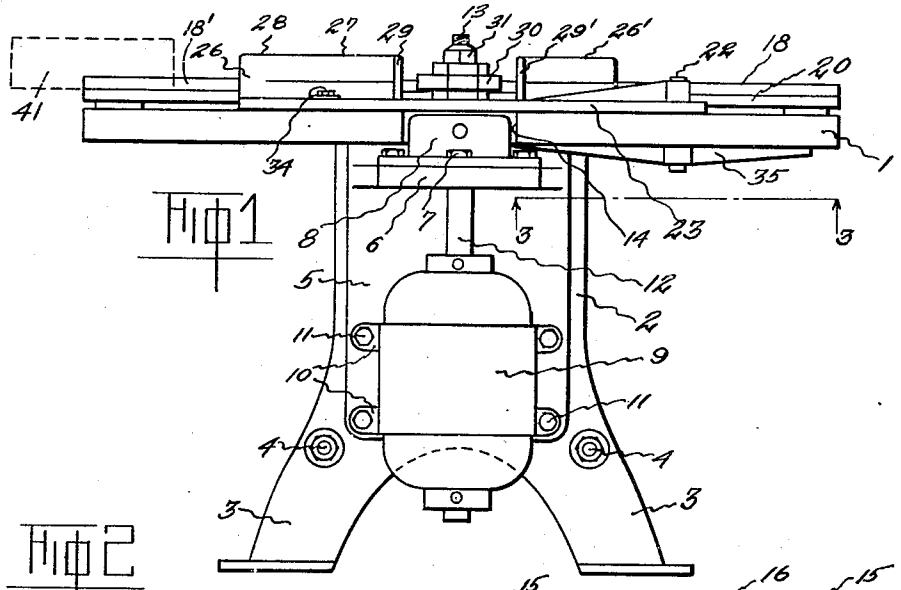


Fig 1

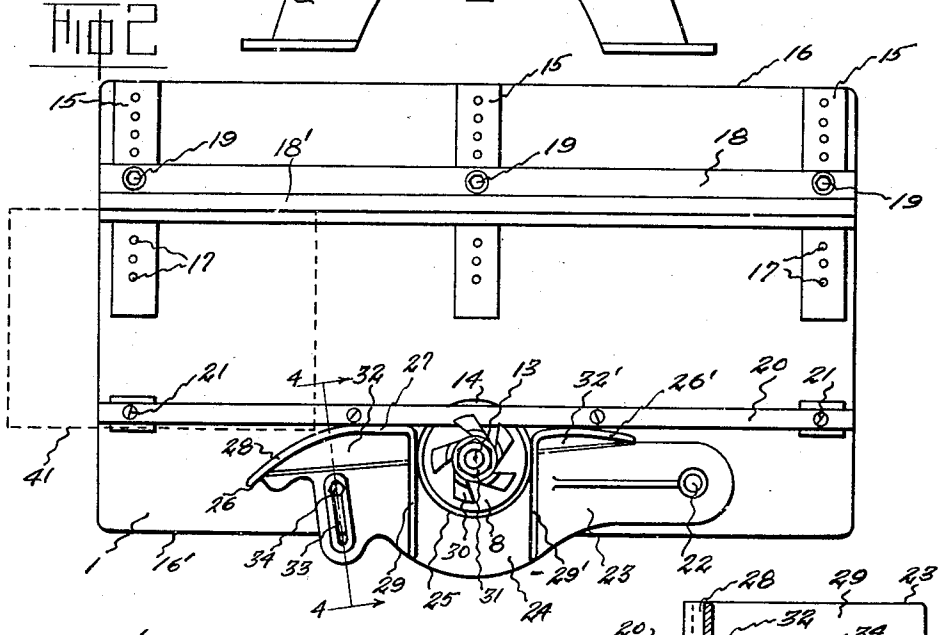


Fig 2

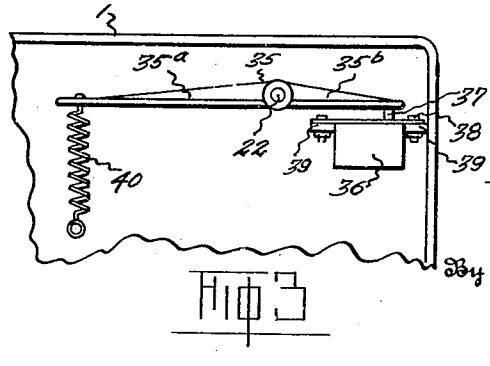


Fig 3

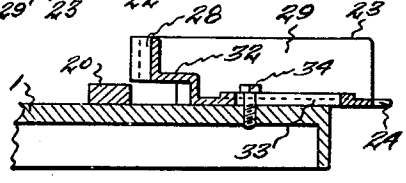


Fig 4

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UNITED STATES PATENT OFFICE

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MACHINE TO SHAPE FLOORING BLOCKS

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This invention relates to improvements in wood-working machines and particularly to that type of machine adapted for sizing flooring blocks as manufactured by lumber mills.

The object of this invention is to provide on the table of the machine a swinging arm pivotally attached thereto and adapted to hold the blocks tightly against the adjustable guides on said table to insure uniform width, to operate a switch beneath the table that turns the motor on when the block is pushed through the machine and off when the machine is idle, and lastly to serve as a guard for the rotating cutter.

Further objects, and objects relating to details and economies of structure and operations will definitely appear from the detailed description given below, reference being had to the accompanying drawing wherein:

Figure 1 is a side elevation of the machine.

Figure 2 is a plan view thereof.

Figure 3 is a detail view of the under surface of the table of the machine taken on line 3—3, of Figure 1, and looking in the direction of the arrows.

Figure 4 is a detail sectional view of the swinging arm taken on line 4—4, of Figure 2, and looking in the direction of the arrows.

A table 1 has rigidly secured thereto and centrally thereof, on its under surface, in any desired manner, two spaced supports 2 which terminate in legs 3, said supports 2 (only one of which is shown in Figure 1, the other being directly behind it) being permanently retained in spaced relation by the cross bars 4. Secured to the side of the support 2 is a bracket 5, having a forwardly extending portion 6 to which is rigidly secured by means of the bolts 7, an anti-friction bearing 8. A motor 9 having a pair of attaching lugs 10 on each side thereof is vertically mounted and fastened to the bracket 5 on the support 2 by means of the bolts 11. Connected to the armature shaft 12 of the motor 9, in any conventional manner, is a vertical spindle 13 mounted in the anti-friction bearing 8 and extending above the plane of the table 1, for a purpose to be hereinafter described.

The table 1 is provided with a U-shaped recess 14 substantially in alignment with the extension 6 of the bracket 5, and in which the anti-friction bearing 8 extends, the upper edge thereof terminating short of the upper surface of said table as clearly shown in Figure 1. A plurality of raised flat surfaces or bosses 15 are integrally formed with the table 1 and extend from the edge 16 to the longitudinal center thereof, said bosses 15 being equally spaced from each other as clearly shown in Figure 2. The bosses 15 are provided with a plurality of equally spaced tapped holes 17, the holes in one boss being in alignment with the holes in the other two. A guide member 18 engages the bosses 15 and is rigidly secured to the table 1 by means of the bolts 19, the position of said guide member 18 being readily adjustable. A similar guide member 20 is permanently secured to the table 1, by means of the counter-sunk bolts 21, said guide member 20 being positioned adjacent the inner edge of the recess 14, see Figure 2. The guide members 18 and 20 extend the full length of the table 1 and are parallel with each other at all times, the position of the guide member 18 relative to the guide member 20 being adjustable to accommodate various sizes of flooring blocks.

A stud shaft 22 is pivotally mounted on the table 1 adjacent the edge 16′, in any desired manner and extends above and below the plane thereof, see Figure 1. Rigidly mounted on said stud shaft 22 is a swinging arm 23, the intermediate portion of which is bowed as at 24 to define a recess 25 substantially identical in size but oppositely disposed to the recess 14 in the table 1, said said swinging arm 23 engaging the top of the table 1, as clearly shown in Figure 2. The inner edge of the swinging arm 23 has formed integrally therewith and to one side of the recess 25, an upstanding flange 26, the intermediate portion 27 of which, is substantially parallel with the longitudinal axis of the arm and terminates at one end in a cam or flared portion 28, the other end of the flange 26 terminating in a rib 29, arranged transverse to the longitudinal axis of the arm 23 and in alignment with one side of the recess 25. A similar flange 26′ has

formed integral therewith a rib 29′, oppositely disposed to the rib 29 and parallel therewith. It is apparent that the ribs 29 and 29′ serve as a guard for the cutter 30 which is rigidly secured to the upper end of the spindle 13 by means of the nut 31, as clearly shown in Figures 1 and 2. To the rear of the flanges 26 and 26′ are shoulders 32 and 32′, the plane of said shoulders being above the plane of the arm proper and adapted to clear the guide member 20, Figure 4, when the swinging arm 23 is moved towards the center of the table 1. An arcuate slot 33 is formed on the arm proper to the rear of the shoulder 32 and adjacent the free end of said arm. Within the slot 33 and secured to the table 1 is a bolt 34 adapted to serve as a guide for the slot 33 when the arm 23 is swung either towards the guide member 20 or away therefrom, said bolt 34 also serving as a stop for the inward movement of the arm 23, as is evident.

Beneath the table 1 and rigidly mounted on the lower extension of the stud shaft 22 is a lever 35, Figure 3. A switch housing 36 having a switch therein actuated by the pin 37, is rigidly connected to the under side of the table 1 by means af the bolts 38 which fit in the lugs 39 formed integrally with the table 1. A coil spring 40 is secured at one end to the table 1, the other end of said coil spring being connected to the arm 35^a of the lever 35, the end of the other arm 35^b being kept normally out of engagement with the pin 37, through the medium of the coil spring 40. When the pin 37 is in its outermost position shown in Figure 3, the switch is open, said pin 37 being normally maintained in said position by a spring within the housing 36. In view of the fact that the swinging arm 23 and lever 35 are secured to the same pivot or stud shaft 22, the swinging arm 23 is maintained against the work or in its maximum inward position under the action of the coil spring 40.

The machine operates as follows:—

When the work or flooring block indicated by the dotted lines 41, in Figure 2, of the drawing, is moved inwardly it will engage the flanged portion 26 of the swinging arm 23 moving the same outwardly, which movement is transmitted through the stud shaft 22 to the lever 35; the arm 35^b of said lever engaging the pin 37 and pushing it inwardly to close the switch, which in turn will cause the motor 9 to start and rotate the cutter 30. The block 41 is placed on the guide members 18 and 20 so that the left hand edge thereof abuts the raised portion 18′ of the guide member 18, and as said block is moved past the cutter 30, it will be trimmed to its true size. When the block clears the cutter 30, the spring 40 will pull the lever 35 and arm 23 back to their original positions whereby said lever will clear the pin 37, allowing the same to move outwardly under the action of a spring within the switch housing 36 to open the switch within and stop the motor.

It is to be distinctly understood that this invention is not to be limited to the specific embodiment described above, the same being adaptable to be modified and used in machines of a different nature as covered by the appended claims.

Having described and illustrated our invention, what we claim as new and desire to secure by Letters Patent is:—

1. A wood-working machine comprising an upright support, a horizontal table rigidly secured thereto and having an opening therein, cutting means arranged over said opening, a swinging arm having a similarly shaped opening oppositely disposed to said first mentioned opening, engaging said table top and pivotally secured thereto at a point to one side of said first mentioned opening, to enclose said cutting means, said swinging arm having a raised shoulder formed on one side thereof on each side of said opening and having an integral upwardly extending flange formed on its inner upper edge, the inner ends of said flanges being in alignment with the sides of said opening and arranged transverse to the longitudinal axis of said arm, that portion of the flange adjacent the free end of said arm being flared outwardly to form a cam surface, the flanges on the sides of said opening serving as a guard for said cutting means, and guide and stop means on said arm and table respectively adapted to guide and limit the movement of said arm.

2. In a wood-working machine, a horizontal table, a rotary cutter, a guard therefor comprising a swinging arm positioned above said table, a lever beneath said table, pivotal means on said table, said arm and lever being rigidly secured to said pivotal means and adapted to move in unison, a switch on the under surface of said table, a spring connected to one end of said lever to maintain the other end of said lever clear of said switch, so that movement of the swinging arm in a direction adapted to tension said spring will cause the lever to close the switch, said swinging arm being moved in such a direction by the work as it is pushed into engagement with the cutter.

3. In a wood-working machine, a horizontal table, guide members thereon, a rotary cutter adjacent one of said guide members and above the plane of the table, driving means for said cutter, a stud shaft pivotally mounted on said table and extending above and below the same, a swinging arm comprising a guard for the cutter secured to the upper extension of said stud shaft, a lever secured intermediate its ends to the lower extension of said stud shaft, a switch on the under surface of the table adapted to be en-

gaged by one of the arms of the lever and a coil spring connected to the free end of the other arm of the lever and to the table adapted to normally maintain the first mentioned arm clear of the switch and at the same time maintain the swinging arm in its maximum inward position.

In testimony whereof we affix our signatures.

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