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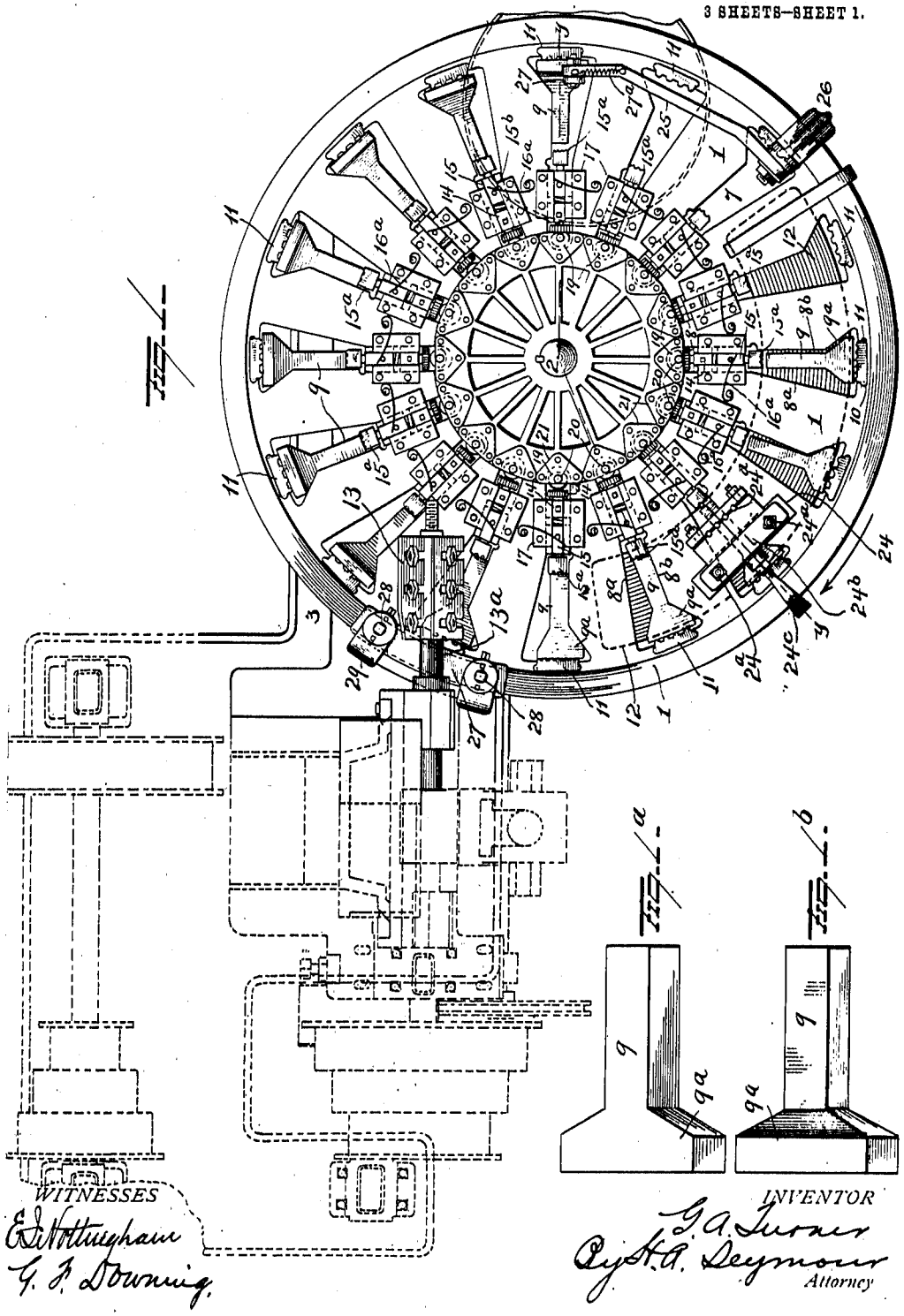
WOODWORKING MACHINE.

APPLICATION FILED APR. 1, 1912.

1,066,684.

Patented July 8, 1913.

3 SHEETS—SHEET 1.



WITNESSES

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WOODWORKING MACHINE.

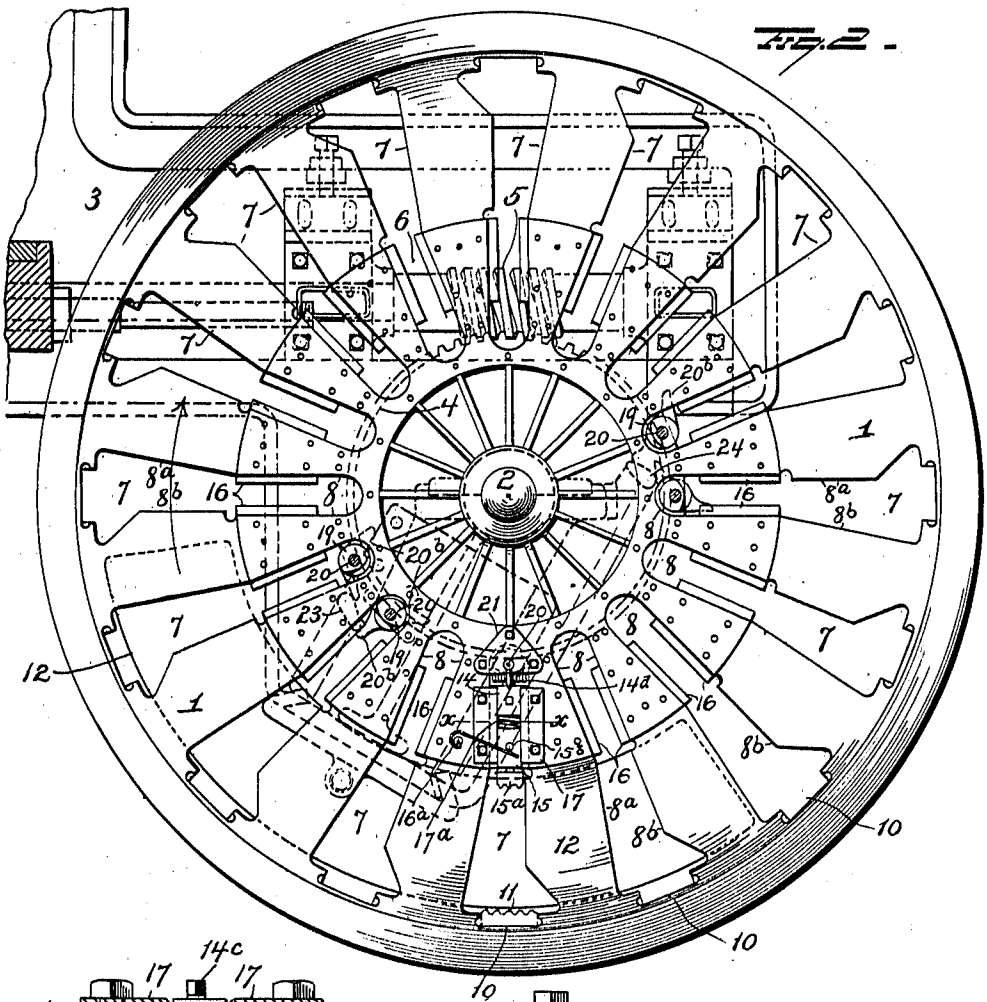
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Fig. 2.



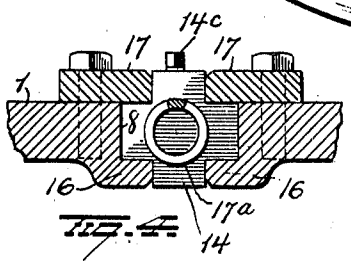
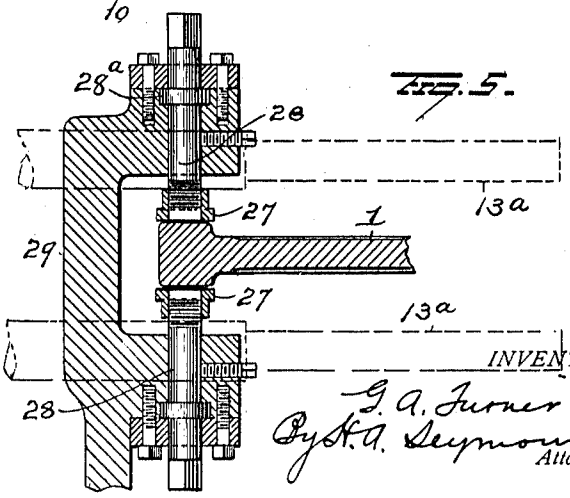


Fig. 4.

Fig. 5.



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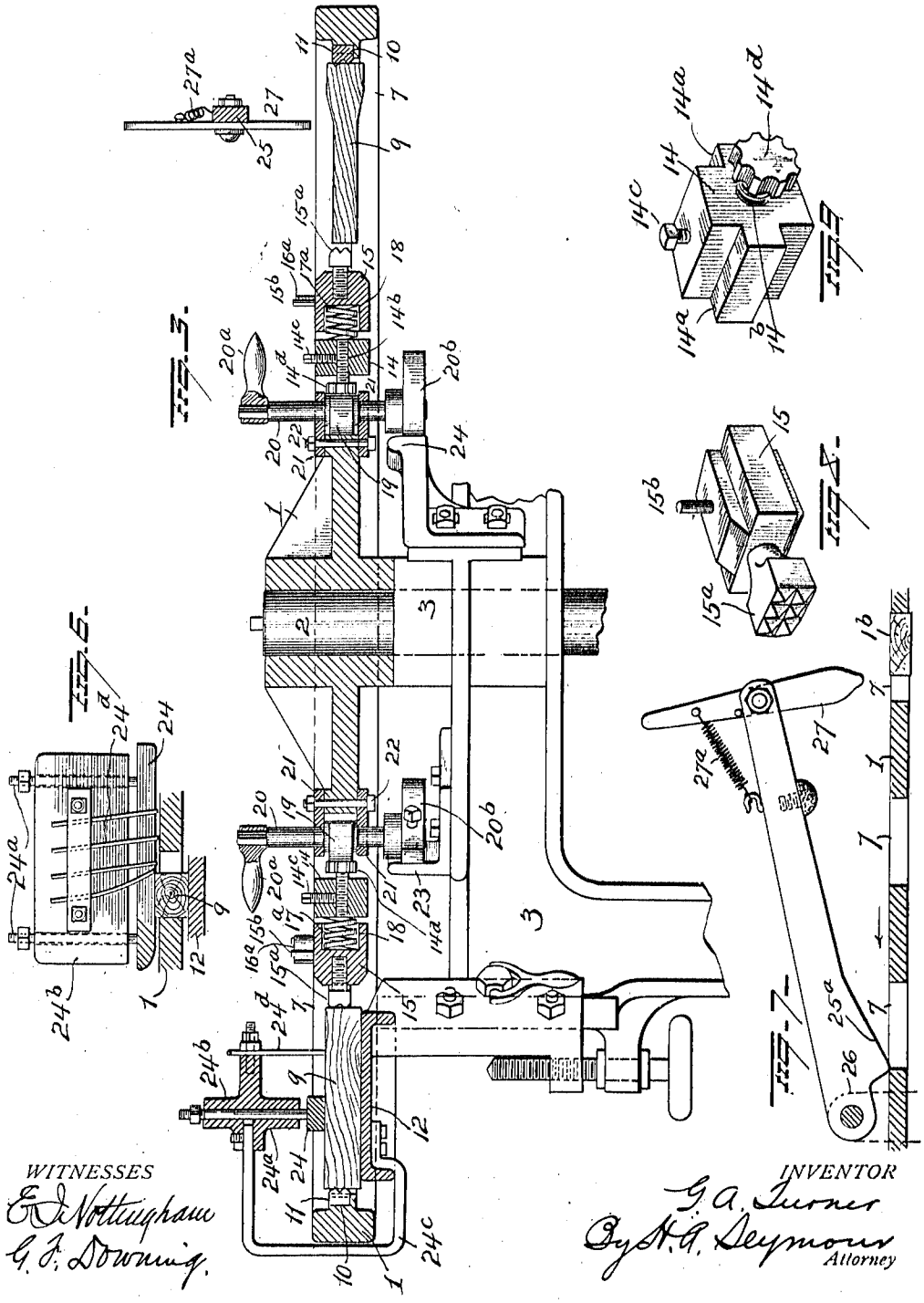
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3 SHEETS—SHEET 3.



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WOODWORKING-MACHINE.

1,066,684. Specification of Letters Patent. Patented July 8, 1913.

Application filed April 1, 1912. Serial No. 687,686.

To all whom it may concern:

Be it known that I, GEORGE A. TURNER, a citizen of the United States, residing at Kane, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Woodworking-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to machines for roaching brush handle blanks, the object being to provide means whereby the entire operation of setting, clamping, cutting and releasing the blanks will be automatic, and it consists in means for automatically moving the blanks into position against a solid support moving toward the cutters, means for clamping them against said supports, cutters for roaching or reducing the thickness of the shank and part of the head of the handle and means for releasing the blanks.

My invention further consists in the parts and combinations of parts and in the details of construction as will be more fully explained and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in plan of the improvement; Fig. 1^a is a view of the blank before it has been operated upon, and Fig. 1^b is a view showing the blank after it has passed through the machine; Fig. 2 is a plan view of the revolving table with some of the parts removed, showing the fixed table and some other parts in dotted lines. Fig. 3 is a section on line *y—y* of Fig. 1; Fig. 4 is a view on the line *x—x* of Fig. 2; Fig. 5 a view in detail showing the means for holding the table against any vibration while the blank is being acted upon; Fig. 6 is a view of the mechanism for shifting the blank to position to be clamped; Fig. 7 is a view of the mechanism for automatically dislodging the blanks after they have been operated upon; Figs. 8 and 9 are views in perspective of parts of the clamping mechanism.

1 represents a circular table, centrally secured to the upper end of a vertical shaft 2, which has bearings in the supporting frame 3. This shaft is provided near its lower end with the worm wheel 4, meshing with the worm 5, on shaft 6, the latter being driven by a motor, or by any other suitable means. The table is flat on top, and is provided with a series of radially disposed oblong openings 7, the shape of which is clearly shown in Figs. 1 and 2. These openings are preferably spaced equal distances apart, and each has two straight parallel sides 8, extending from a point adjacent the hub or center of the table, outwardly toward its periphery, and two straight outwardly divergent sides 8^a and 8^b which are continuations of the sides 8, the sides 8^b, each being cut away at its outer end to receive one end of the head 9^a of the handle blank 9. This cut away portion of the side wall 8^b of the openings 7 conforms to the angle of one end 9^a of the head of handle blank 9, and supports the latter in the movement of the blank toward the cutters, the handle or stem 9^b of the blank being supported against the straight wall 8^b, as clearly shown to the left of the center in Fig. 1.

Secured within recessed seats 10 at the outer ends of the openings 7, are the clamping blocks 11, which latter are secured in place by any suitable means, and which have roughened or toothed faces to engage the head end of the blank as clearly shown in Fig. 3.

Adjustably secured to frame 3, and located under the rotating table 1, is the fixed table 12 which latter is arc-shaped as shown, and extends less than half way around the rotating table. This table is located immediately under the openings 7, and well up to the rotating table 1, and forms a bottom or closure for a series of openings 7 just in advance of the rotating cutting tools 13.

Mounted at the inner ends of openings 7 and between the parallel sides 8 thereof are the clamping members 14 and 15, shown detached in Figs. 8 and 9. These members rest on the flanges 16 integral with table 1, and are held in place by the removable plates 17, secured to the top of the table, and overlapping the guide flanges of said clamping members. Clamping member 14 is simply a block with two guide flanges 14^a, and is provided at its inner end with an adjustment screw 14^b, which may be locked against movement by set screw 14^c. Clamping member 15 is similarly shaped in cross section and is provided at its outer end with a clamping jaw 15^a and on top with a pin 15^b against which the spring 16^a bears and tends to push clamping member 15 inwardly

toward clamping member 14, the two members being normally held separated by the spring 17^a, which latter is seated within a recess 18 in the inner end of member 15, and bears at its rear end against the adjacent end of member 14.

Adjustment screw 14^b is provided at its inner end with a head 14^d, which latter rests against cam 19 on shaft 20, mounted in bearings in two plates 21 secured by bolts 22 to table 1. These plates are arranged in pairs, one pair for each shaft 20, and on opposite sides of the cam, and hold the shafts vertically and also laterally. Each shaft 20 is provided at its upper end with a handle 20^a, and at its lower end with a double armed lever 20^b, one arm of which is adapted to engage the stop 23 and turn shaft 20 in a direction to force its cam 19 against the head of screw 14^b, and thus force both clamping members 14 and 15 toward the blank 9, for clamping the latter in its proper position.

Each opening 7 is provided with clamping mechanism as above described, and each clamping mechanism is adapted to receive and hold a blank while the latter passes between the cutters.

The blanks are placed on table 12, one within each opening in table 1. As table 1 revolves and table 12 is stationary, the tendency is, of course, to carry the blanks against the rear walls of the opening 7. As they move toward the cutters 13, they pass under the presser bar 24, shown in detail in Fig. 6. This bar is provided with a rounded nose, on the end toward which the blanks are approaching and is considerably longer than the width of the blank. It is carried by two rods 24^a which latter pass loosely through the frame 24^b, which, as shown in Fig. 3 is adjustably secured to table 12, by bracket 24^c, and is of course vertically adjusted with said table 12. Frame 24^b also carries a series of wires or equivalent devices 24^d, the lower ends of which are so located as to engage the sides of the handle blank, and force it solidly over against the rear wall of opening 7, while the presser bar 24, forces the handle blank onto the table 12, in the event it should happen to be misplaced.

Just before the blanks pass over, or from, the end of table 12 adjacent the cutters, and after they have been acted upon by the presser bar 24 and wires 24^d, shaft 20 is partly turned by the engagement of one arm of lever 20^b with stop 23. This part rotation of the shaft carries the clamp members 14—15 toward the end of the shank of the blank and firmly clamps same between jaws 11 and 15^a. The blank is slightly thicker than the thickness of table 1, and table 12 is so located with reference to table 1, that the blank will project equally above and below table 1. The blank thus placed and clamped, is then carried between the cutters 13, one of which is above and the other below the table, so as to operate on both sides of the handle simultaneously. These cutters 13 are mounted on shafts 13^a (see Fig. 5) which latter are driven by suitable mechanism shown in dotted lines in Fig. 1. The cutters simply reduce the thickness of the shank of the handle blank, and the portion of the head of the blank adjacent the shank, as clearly illustrated in Figs. 1^a and 1^b. After passing the cutters, the blanks are carried around until the other arm of lever 20^b strikes stop 24^e which partly rotates shaft 20 and turns cam 19 in a direction to release the clamping jaws, and permit the partly finished blank to fall into a receptacle placed under table 1.

In the event the blanks should stick to one or both of the jaws, after the pressure against the clamping jaw has been removed, I have provided an ejector which consists of an arm 25, pivoted to a support 26 and provided at its free end with a finger 27, adapted as the table 1 is rotated, to drop and dislodge any blanks that may be caught. Arm 25 is provided with a shoulder 25^a which engages table 1 as the latter rotates and which drops into the openings 7, thus permitting the arm 25 to fall and carry its finger 27 into contact with the blank. In order to prevent injury to the finger due to contact with the side walls of openings 7, it is pivoted to arm 25 and is yieldingly held in position by spring 27^a. With this machine it is simply necessary for an attendant to feed the blanks 9 onto table 12, through the opening 7 in table 1, after which the entire operation is automatic.

In order to prevent the table from vibrating or wabbling, I support the same, above and below, adjacent the cutters, by the guides 27^b. These guides are curved, as shown in Fig. 1 to conform to the table and each is supported adjacent its ends by the rods 28 mounted in bearings in bracket 29. These rods 28 are provided with collars 28^a which hold them against vertical movement and each has a threaded connection with one end of a guide, so as to permit the latter to be accurately adjusted up or down to compensate for wear and also to be adjusted for tables of different thicknesses.

By means of the handles 20^a on shafts 20, the latter can be turned by hand at any time to cause the movable clamping jaw to disengage or engage a blank.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In a wood working machine, the combination of a rotating table having a series of openings therein to receive the blanks, a stationary table under a portion of said rotating table, for supporting the blanks during a portion of the movement of the rotary table, yielding means having a support fixed with relation to the stationary table, and adapted to engage the blanks before they are clamped and force them into position against the rear side walls of the openings in the rotary table, means for clamping the blanks while supported by the stationary table, cutters, and means for releasing the clamps.

2. In a wood working machine, the combination of a horizontally rotating table having a series of radial openings to receive the blanks, fixed clamping jaw at one end of each opening, a movable clamping jaw at the other end of each opening, a stationary table under the portion of the rotating table in advance of the cutters for supporting the blanks during a portion of the movement of the rotary table, yielding means having a support fixed with relation to the stationary table and adapted to engage the blanks as the latter are moved by the rotary table, and before they are clamped, and move them into contact with the rear side walls of the openings in the rotating table, means for actuating the movable clamping jaws to clamp the blanks while the latter are supported on the stationary table, cutters, and means for moving the movable clamps out of contact with its end of the blank.

3. In a wood working machine, the combination of a rotating table having a series of radial openings therein, a stationary table below the rotating table for supporting the blanks, clamping jaws for locking the blanks within said openings, cutters, and yielding means having a support fixed with relation to the stationary table and operating in advance of the clamps for moving the blanks against the rear side walls of the openings in the rotating table.

4. In a wood working machine, the combination of a rotating table having a series of openings therein, a stationary table adjustably secured below the rotating table in advance of the cutters, clamping jaws for locking the blanks within said opening, a presser bar under which the blanks move, yielding device engaging the blanks for moving them into contact with the rear side walls of the radial openings, and cutters acting on the upper and lower faces of the clamped blank.

5. In a wood working machine, the combination of a revolving table having a series of radial openings, cutters, a stationary table adjustably secured below the rotating table in advance of the cutters, clamping jaws for locking the blanks within said openings, and a series of flexible rods adapted to engage the blanks and move them into contact with the rear walls of the radial openings, in advance of the clamping action.

6. In a wood working machine, the combination of a revolving table having a series of radial openings, cutters, means adjustably mounted above and below the table and adapted to engage same adjacent the cutters for preventing the table from vibrating, a stationary table below the revolving table in advance of the cutters and clamping jaws at the opposite ends of the radial openings in the revolving table.

7. In a wood working machine, the combination of a revolving table having a series of radially disposed openings therein, a stationary table adjustably mounted below the openings in the revolving table; yielding means having a support fixed with relation to the stationary table and adapted to engage the blanks as the latter are moved on the stationary table by the rotating table and move them against the rear walls of said radial openings, means at the two ends of said openings for clamping the blanks, cutters, and means adjacent the cutters, and engaging the table above and below for preventing the same from vibrating.

8. In a wood working machine, the combination with a revolving table having a series of radially disposed openings, and cutters located above and below said table, of a fixed clamping jaw and a movable clamping jaw in each opening, a shaft carrying a cam for actuating the movable clamping jaw, a handle on each shaft whereby it may be manually turned, and automatic means for actuating each shaft.

9. In a wood working machine, the combination with a revolving table having a series of radial openings therein and cutters located to engage the upper and lower faces of blanks located within said openings, of a fixed clamping jaw at one end of each opening, a movable jaw at the other end of each opening, a vertical shaft having a cam for moving the movable jaw toward the fixed jaw, a double armed lever on said shafts, and stops, one to engage one arm of said lever for shifting the cam thereon into engagement with the movable jaw on the clamp and the other for moving said cam away from said movable jaw.

10. In a wood working machine, the combination with a revolving table having a series of radial openings and two cutters located respectively above and below said table, of a fixed clamping jaw at the outer end of each opening, a movable jaw at the inner end of each opening, a vertical shaft

for each movable jaw, a cam for actuating each of the latter, a double armed lever on the lower end of said shaft and stops each adapted to engage an arm for shifting said cam first toward and then away from the movable jaw.

11. In a wood working machine, the combination with a revolving table having an opening therein, and a cutter, of a fixed clamping jaw at one end of said opening, a two part clamping jaw mounted to slide adjacent the other end of said opening, a spring interposed between the two parts of said movable jaw, a shaft and a cam thereon for actuating said jaw.

12. In a wood working machine, the combination with a revolving table having an opening thereon, and a cutter, of a fixed clamping jaw at the outer end of said opening, a two part movable clamping jaw at the inner end of said opening, a spring interposed between the two parts of said jaw, an adjustable screw mounted in the inner part of said jaw, and a shaft having a cam thereon to engage the end of the adjustable screw.

13. In a wood working machine, the combination with a rotating table having a series of openings therein to receive the blanks, a stationary table under a portion of said rotating table, yielding means fixed with relation to the stationary table, and adapted to engage the blanks as they are moved by the rotating table and hold them until they are properly positioned against the rear side walls of the openings in the rotating table, clamps for locking the blanks to the rotating table, and cutters for cutting the blanks, of an ejector actuated by the rotating table, for dislodging any blanks that may not be disengaged from the clamps after the latter have been opened to release the blanks.

14. In a wood working machine, the combination with a revolving table having a series of openings therein, and means for locating, clamping, and cutting blanks clamped within said openings, of an arm pivoted above the table and having a shoulder to enter said openings and be elevated by engagement with the portions of the table intermediate the openings, and a finger on the end of the arm adapted as the latter drops to engage and dislodge any blanks that may not be disengaged from the clamps.

15. In a wood working machine, the combination with a revolving table having a series of openings therein, and means for locating, clamping and cutting blanks clamped within said openings of an arm pivoted above the table and having a shoulder to enter said openings and be elevated by engagement with the portions of the table intermediate the openings, and a yielding finger on the end of the arm, and adapted, as the latter drops, to engage and dislodge any blanks that may not be disengaged from the clamps.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

GEORGE A. TURNER.

Witnesses:
W. R. DAVIS,
DENNIE DAVIS.