H. T. TAYLOR.

WOODWORKING MACHINE.

APPLICATION FILED MAY 7, 1915.

1,204,829.

Patented Nov. 14, 1916.

2 SHEETS—SHEET 1.

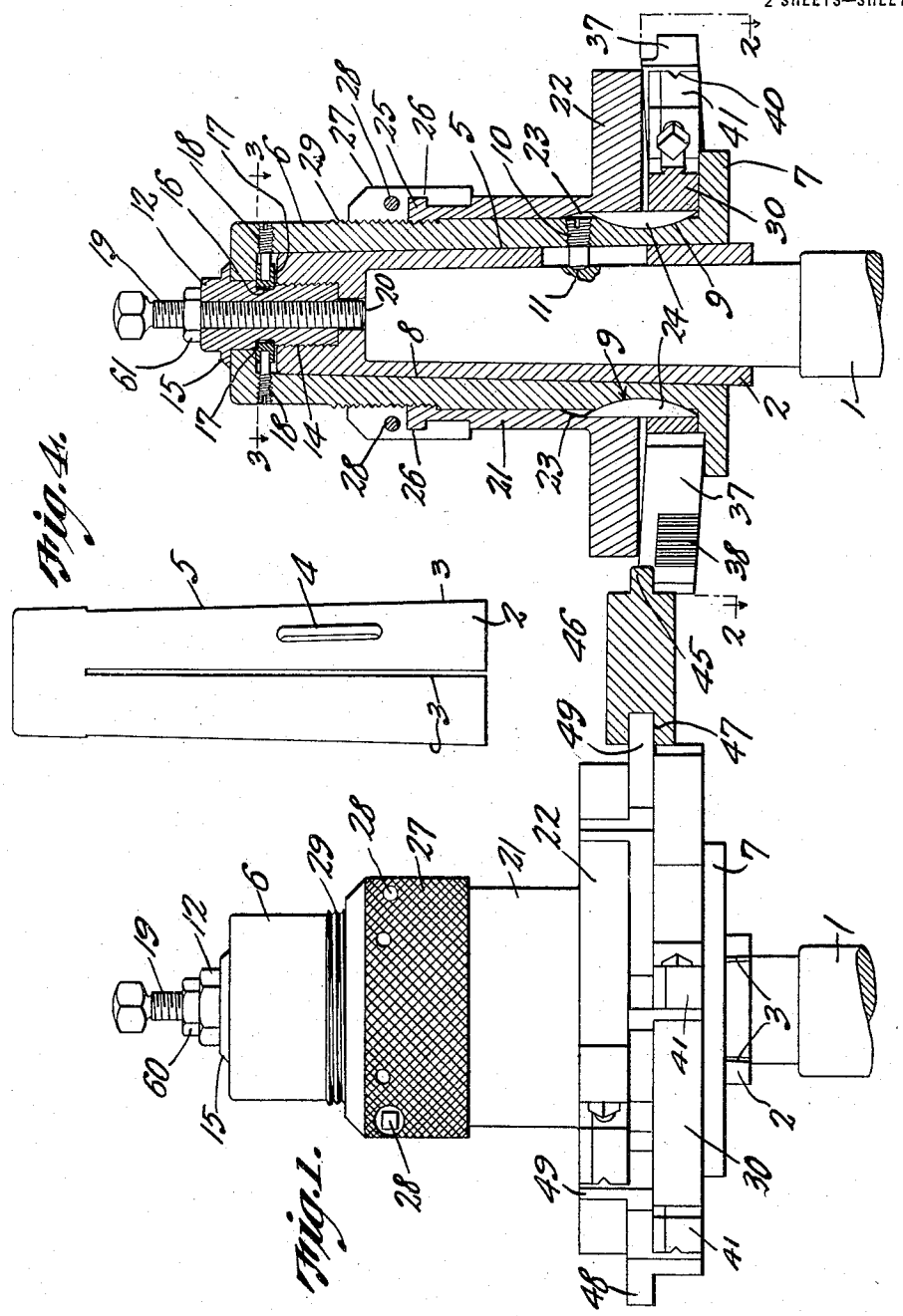


Fig. 4.



Fig. 1.

Witnesses

J. P. Timmins

R. L. Parker.

Harry T. Taylor Inventor

by C. A. Snow & Co.

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

H. T. TAYLOR.

WOODWORKING MACHINE.

APPLICATION FILED MAY 7, 1915.

1,204,829.

Patented Nov. 14, 1916.

2 SHEETS—SHEET 2.

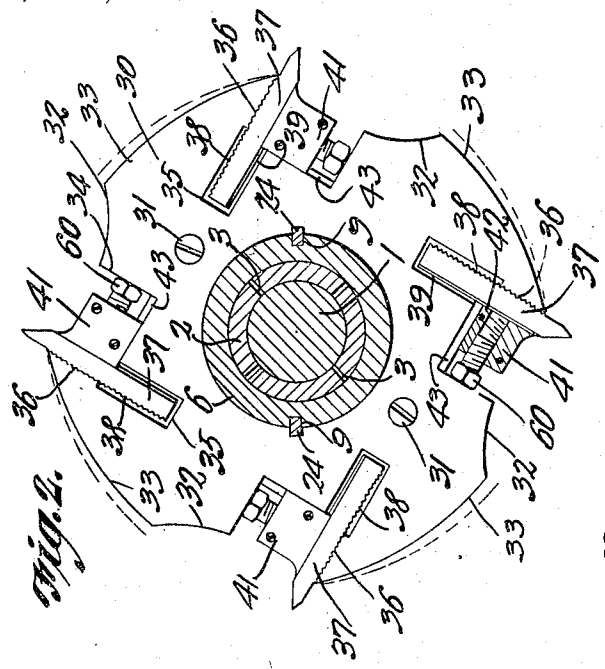


Fig. 2.

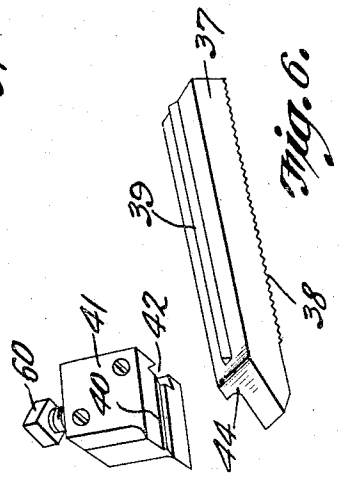


Fig. 6.



Fig. 5.

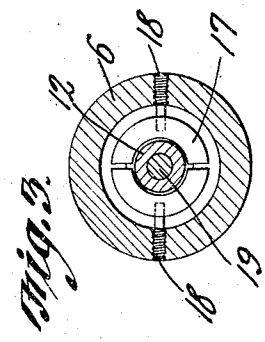


Fig. 3.

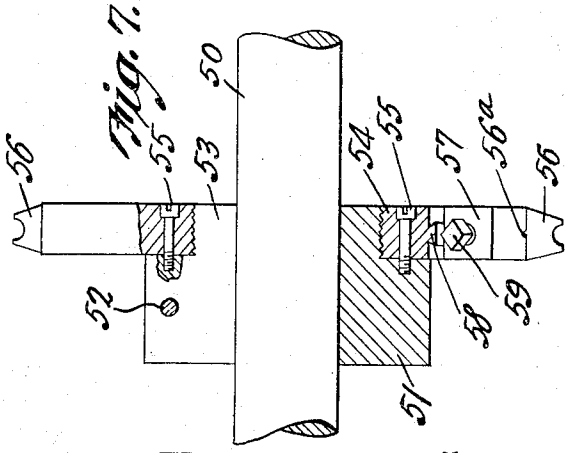


Fig. 7.

Witnesses

J. P. Bowen

R. L. Parker.

Harry T. Taylor Inventor

by C. A. Snow & Co.

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

HARRY T. TAYLOR, OF HATTIESBURG, MISSISSIPPI.

## WOODWORKING-MACHINE.

1,204,829. Specification of Letters Patent. Patented Nov. 14, 1916.

Application filed May 7, 1915. Serial No. 26,563.

*To all whom it may concern:*

Be it known that I, HARRY T. TAYLOR, a citizen of the United States, residing at Hattiesburg, in the county of Forrest and State of Mississippi, have invented a new and useful Woodworking-Machine, of which the following is a specification.

The device forming the subject matter of this application is a wood working machine of that general type in which opposed, rotating, horizontally disposed cutters coact with the opposite edge of a board or stick of timber, to tongue and groove the same, or to perform other cutting operations thereon.

The invention aims to provide, in a device of this type, novel means whereby the cutting mechanism is clamped to the driving spindle; to provide novel means for raising and lowering the entire cutting mechanism; to provide means whereby one set of cutters at the will of an operator, may be moved with respect to a coacting set of cutters, thereby to vary the size of the tongue and groove in a board, or for other purposes; and to provide novel means for holding the cutters assembled with the carrying elements whereon the cutters are mounted.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:—Figure 1 shows the invention in side elevation, parts appearing in section; Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1; Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1; Fig. 4 is an elevation showing the inner sleeve; Fig. 5 is a perspective of the clamp block; Fig. 6 is a perspective showing one type of cutter; Fig. 7 is a sectional view showing a modified form of the invention.

In the accompanying drawings, the numeral 1 indicates the upright spindles of a wood working machine and upon the spindles 1 are mounted structures which for the most part are duplicates. The description, therefore, will proceed in the singular number, proper indication being made when differences exist. Mounted upon each spindle 1 is an inner sleeve 2 provided with longitudinal slits 3, giving resiliency to the sleeve, the sleeve having a longitudinal guide slot 4 and being tapered as shown at 5. Surrounding the inner sleeve 2 is an intermediate sleeve 6 provided with a base flange 7 and having a tapered bore 8 in which the inner sleeve 2 is received. Upon its outer surface and adjacent the base flange 7, the intermediate sleeve 6 is provided with key seats 9. A guiding element preferably in the form of a screw 10 is mounted in the sleeve 6 and is received in the guide slot 4 of the inner sleeve 2, one end of the screw 10 being received in a recess 11 in the spindle 1.

Rotatably mounted in the end of the intermediate sleeve 6 is a primary adjusting element in the form of a tubular screw 12 externally threaded into the end of the inner sleeve 2 as shown at 14. The screw 12 is provided with a flange 15 coacting with the outer end face of the intermediate sleeve 6, the screw 12 being circumscribed by a recess 16 in which is received an abutment in the form of a split ring 17 held in place by screws 18 threaded into the intermediate sleeve 6.

A secondary adjusting element in the form of a screw 19 is threaded into the tubular screw 12 and bears as shown at 20 against the end of the spindle 1.

Surrounding the intermediate sleeve 6 is an outer sleeve 21 including a flange 22, the outer sleeve having key seats 23 receiving keys 24 mounted in the key seats 9 of the intermediate sleeve 6. The outer sleeve 21 is provided with a circumscribing rib 25 received in a groove 26 formed in a two-part nut 27, the constituent members of which are held together by securing elements 28, the nut 27 being threaded as shown at 29 onto the intermediate sleeve 6.

Located between the base flange 7 and the flange 22 is a disk 30 united by means of securing elements 31 with the flange 7. In the periphery of the disk 30 are formed arcuate recesses 32, the circumference of the disk 30 being slightly eccentric adjacent the recesses 32, as shown at 33, to provide ade-

quate clearance for the chips of shavings produced by the cutters to be described hereinafter. The disk 30 is provided with openings 34 having extensions 35. Adjacent the outer edge of the disk 30 teeth 36 are formed at one end of the opening 34. Mounted for adjustment in the openings 34 and in their extensions 35 are cutters 37 having teeth 38 which coact with the teeth 36 on the disk 30. Each cutter 37 is equipped with a longitudinal rib 39 mounted to slide in a groove 40 formed in a clamp block 41 having a dove-tailed guideway 42 adapted to receive a dove-tailed rib 43 formed in the disk 30 at the base of the opening 34. A screw 60 is threaded into the block 41 and abuts against the disk 30 at one end of the opening 34. It will now be understood that by releasing the screws 30, the clamp blocks 41 may slide on the ribs 43 away from the cutters 37, whereupon the teeth 38 on the cutters may be disengaged from the teeth 36 on the disk 30, thereby permitting a longitudinal adjustment of the cutters. Owing to the fact that the cutters 37 and the disks 30 are provided with the intergaging teeth 38 and 36, and owing to the fact that the blocks 41 are interengaged with the disks 30 by means of the dove-tailed ribs 43, neither the blocks nor the cutters will become loosened due to centrifugal action, it being recalled that the disks in a machine of this type are rotated at a high speed. The ribs 39 on the cutters, being closely received in the grooves 40 of the blocks 41 serve to maintain all of the cutters in alinement.

Referring to the cutters on the disk of the right hand spindle in Fig. 1, and noting the point at which the reference character 44 is applied in Fig. 6, it will be observed that the cutters are properly shaped to form a part of a tongue 45 in a board 46 and to cut away one edge of the board, to one side of the tongue. The cutters 48 on the disk of the left hand spindle in Fig. 1 are shaped properly to form a groove 47 in the board 46. Cutters 49 are mounted on the flange 22 of the sleeve 21 of the left hand spindle in Fig. 1, the cutters 49 being adapted to finish off the other edge of the board 46 and to aid in forming the groove 47. The cutters 49 are mounted in the flange 22 by means of a mechanism such as that shown in Fig. 2 and hereinbefore described in detail. It will be understood that the flange 22 of the sleeve 21 on the right hand spindle 1 in Fig. 1 carries cutters which coact with the cutters 37 in finishing off the tongue 45 and one edge of the board 46 adjacent the tongue.

By manipulating the screw 19 which bears against the spindle 1, the entire cutting mechanism may be raised and lowered, the screw 19 being held in adjusted positions by means of a lock nut 61 threaded onto the screw and coacting with the end of the screw 12.

By rotating the screw 12, the same being threaded into the inner sleeve 2, the sleeve may be raised and as the inner sleeve is raised within the tapered bore of the intermediate sleeve 6, the sleeve 2 will be clamped around the spindle 1 in the bore of the sleeve 6. The sleeve 21, its flange 22 and the cutters carried thereby may be raised and lowered by manipulating the nut 27 which is threaded at 29 onto the intermediate sleeve 6. Especial attention is directed to this feature of the invention, since thereby the cutters on the flanges 22 may be spaced from the cutters on the base flange 7, it being therefore possible by a simple adjustment, to widen the tongue 45 on the board 46 and to widen the groove 47 in the board.

Although a specific form of cutter, adapted to form a tongue and a groove, has been shown, it will be understood, of course, that any desired kind of a cutter may be employed, depending upon the nature of the work in hand.

In Fig. 7 of the drawings, a portion of the structure shown in Fig. 2 has been applied to a profile disk machine, the shaft of which is shown at 50. Surrounding the shaft 50 is a split collar 51 held in place by a screw or other clamping element 52. The collar 51 includes a reduced neck 53 onto which is threaded a disk 54 held in place by screws 55 or the like, the cutters appearing at 56, the cutters being ribbed as shown at $56^a$ to coöperate with the clamp blocks 57, the latter being connected by means of a dove-tailed rib 58, like the rib 43, with the disk 54, the latter being held to the collar 51 by means of the screws 55. A clamping screw which coacts with the block 57 appears at 59 and corresponds to the screw 60 of Fig. 2.

The V-shaped rib 39 on the face of the cutter is received in the V-shaped slot 40 in the block 41 to keep the cutter from slipping sidewise, and to hold all of the cutting elements in perfect alinement.

Having thus described the invention, what is claimed is:—

1. In a wood working machine, an intermediate sleeve provided at one end with a top and equipped at its other end with a flange, the sleeve having a tapered bore; a cutter disk supported on the flange; an outer cutter sleeve threaded onto the intermediate sleeve for adjustment therealong; a split nut threaded onto the intermediate sleeve and rotatably assembled with the outer sleeve; means for connecting the parts of the nut; a key connecting the disk and the outer sleeve with the intermediate sleeve; a clamping sleeve in the bore of the intermediate sleeve; a tubular screw rotatable in the top

of the intermediate sleeve and threaded into the clamping sleeve; a split ring coacting with the top of the intermediate sleeve and with the screw to hold the screw against endwise movement; retaining devices carried by the intermediate sleeve and engaging the parts of the ring; and a second screw threaded into the tubular screw and adapted to project within the clamping sleeve.

2. In a wood working machine, a disk provided in its edge with an opening having an extension; a cutter adjusted longitudinally in the extension, the cutter and the disk having transverse interengaging teeth which prevent the cutter from moving longitudinally after adjustment; a clamping block slidable in the opening and coacting with the cutter to hold the teeth in engagement, the block and the cutter having matching longitudinal tongue and groove elements which prevent the cutter from moving transversely; and movable means coacting with the block and with the disk at one end of the opening to hold the block engaged with the cutter; the inner edge of the block having a dove-tailed slot, and the base of the opening having a rib shaped to conform to the slot and constituting a slidable mounting for the block.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

HARRY T. TAYLOR.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**