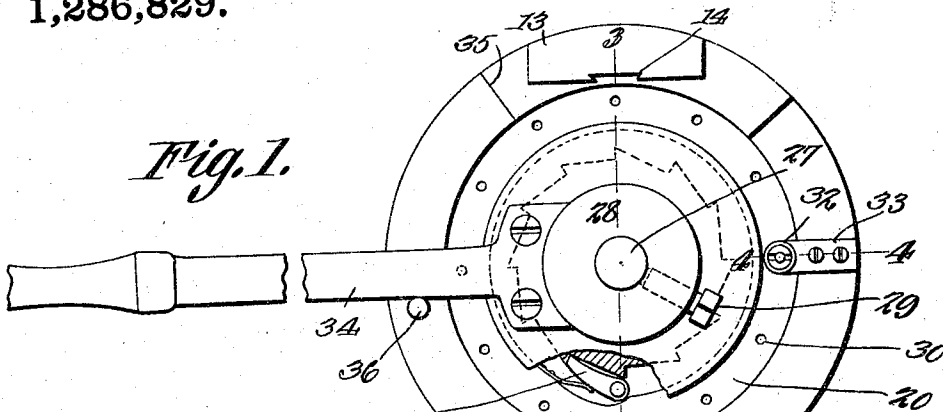
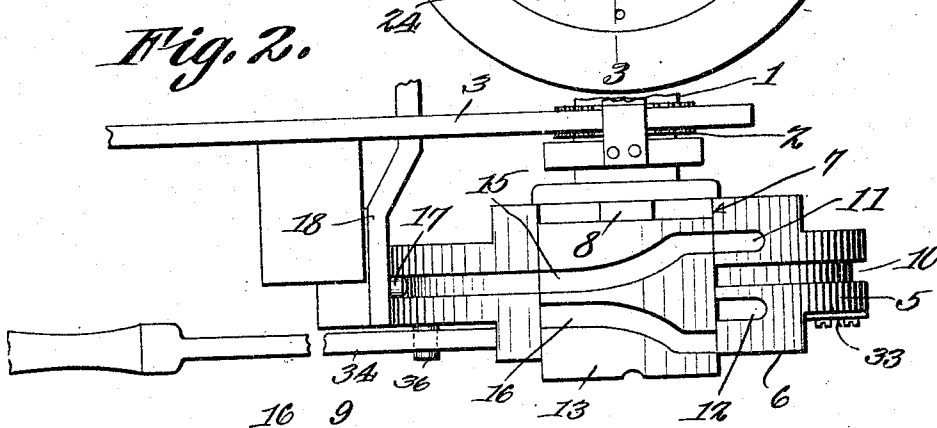
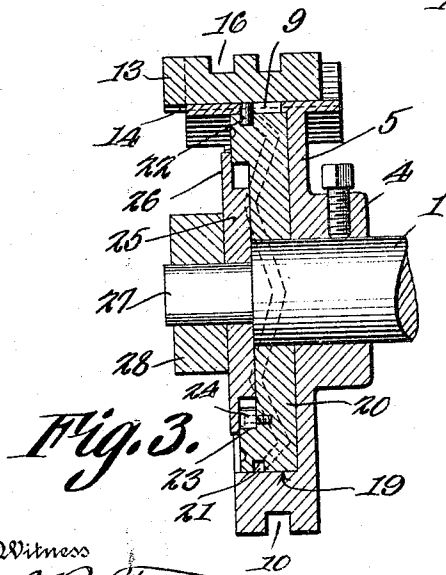
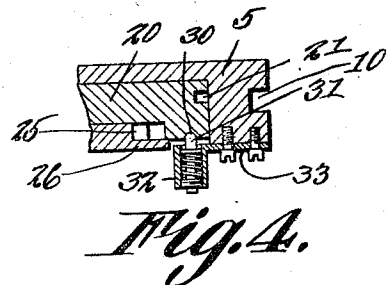


W. G. STROZIER.
MECHANICAL MOVEMENT.
APPLICATION FILED NOV. 27, 1917.

Patented Dec. 3, 1918.

1,286,829.



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UNITED STATES PATENT OFFICE.

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MECHANICAL MOVEMENT.

1,286,829.

Specification of Letters Patent.

Patented Dec. 3, 1918.

Application filed November 27, 1917. Serial No. 204,230.

To all whom it may concern:

Be it known that I, WEBSTER G. STROZIER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Mechanical Movements, of which the following is a specification.

This invention relates to mechanical movements particularly adapted for use in connection with wood working machines and is designed more especially as an improvement upon the structure disclosed in Patent No. 1197964 issued to me on September 12, 1916.

One of the objects of the invention is to provide improved means whereby the cutting tools and the feed table can be shifted to produce the desired cut in the stock, the shifting mechanism being simple, durable and compact and constructed of the minimum number of parts.

With the foregoing 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 scope of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—

Figure 1 is a side elevation of the shifting mechanism constituting the present invention, parts being broken away.

Fig. 2 is a plan view of the structure shown in Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a section on line 4—4 of Fig. 1.

Referring to the figures by characters of reference 1 designates a shaft having a gear 2 which meshes with a rack bar 3 movable with the feed table of the machine so that when the gear is rotated the rack bar 3 and the feed table to which it is connected will be moved forwardly or backwardly. Fitted on shaft 1 is the hub 4 of a wheel 5, the periphery of this wheel being broadened for a portion of the length thereof as shown at 6, there being a transverse groove 7 within this broad portion and which extends from one side to the other thereof, a dove-tailed guide rib 8 being arranged on the bottom of the groove 7 and extending longitudinally

of the groove. Formed longitudinally of this rib 8 at the center thereof is a slot 9.

An annular groove 10 is formed in the wheel 5, this groove extending into the broad portion 6 and being intersected by the groove 7. Short grooves 11 and 12 are formed at opposite sides of the groove 10 and within the broad portion 6 at one side of the transverse groove 7.

A switch block 13 is slidably mounted within the groove 7 and has a dove-tailed groove 14 in the bottom thereof for receiving the dove-tailed rib 8 as shown particularly in Fig. 1. In the outer or exposed face of this switch block are formed two end blocks 15 and 16 extending along diverging curved lines. The cam grooves are so positioned and proportioned that when the switch block 13 is at one end of its movement the groove 15 will establish communication between one end of the groove 10 and the short groove 11, and, when the switch block 13 is at its other extreme position, the groove 16 will establish communication between said end of the groove 10 and the short groove 12.

A pin 17 works within the groove 10 and extends from one end of a bar 18 which is extended laterally of the machine and is adapted to be connected to and to shift revoluble cutting elements not shown but which can be the same as those disclosed in my patent heretofore mentioned.

The outer side of the wheel 5 is formed with a circular recess 19 in which a disk 20 is mounted for rotation, this disk being mounted loosely on the shaft 1 and being provided, in its periphery, with a continuous zigzag groove 21. Into this groove projects a pin 22 which extends from the switch block 13 and through the slot 9 (see Fig. 3).

A circular recess 23 is formed in the outer face of the disk 20 and pivotally mounted in this recess close to the wall thereof is a spring pressed pawl 24. This pawl is designed normally to engage a ratchet wheel 25 adapted to rotate freely within the recess 23 and which ratchet wheel has an annular flange 26 which bears against the outer side of the disk 20 so as to close the recess 23. Ratchet wheel 25 is mounted on the reduced end 27 of the shaft 1 and is held in place thereon by a collar 28 having a set screw 29 which engages said reduced end.

Formed within the outer side of the disk 20 at regular intervals are recesses 30 adapt-

ed to be engaged successively by a spring pressed restraining pin 31 slidably mounted within a casing 32 forming part of a bracket 33 which is secured to the side of the wheel 5. This pin serves to hold the disk 20 against free rotation within the wheel 5 although it will be thrust laterally out of the recess in which it is seated when the disk 20 is subjected to excessive pressure.

The ratchet wheel 25 has a lever 34 attached to it and extending radially therefrom, this lever working between a stop shoulder 35 formed by one end of the widened portion 6 of the rim of wheel 5 and a stop lug 36 extending laterally from the wheel.

Assuming that the parts are in positions shown in Figs. 1 and 2 it will be apparent that when the lever 34 is pressed downwardly it will push, through pin 36, upon the wheel 5 and, through the ratchet wheel 25 and the pawl 24, against the disk 20 so that said wheel 5 and disk 20 will rotate together in one direction and will cause the cam groove 15 to receive the pin 17 and cause said pin ultimately to receive therein the groove 11. During this movement the gear 2 will be moving the feed rack 3 of the table connected thereto and the bar 18 will be shifted laterally by the walls of the cam groove 15 working against the pin 17. As soon as this movement has stopped as a result of the pin 17 arriving at the end of the groove 11, lever 34 can be swung upwardly. This will cause the ratchet wheel to slip past the pawl 24 until lever 34 comes against the shoulder 35 whereupon the continued upward movement of said lever will result in the wheel 5 being turned in a clockwise direction, thereby permitting the pin 17 to return to its position in the groove 10 as shown in Fig. 2. By then moving the lever 34 downwardly said lever will shift away from the shoulder 35 and toward the pin 36 and during this movement the engaged ratchet will push against the pawl 24 and cause the disk 20 to rotate within the wheel 5 in spite of the restraining influence of the spring pressed pin 31. The movement of the disk relative to the wheel during the shifting of lever 34 from shoulder 35 to pin 36 will be sufficient to cause the zigzag groove 21 to shift pin 22 to its other extreme position in slot 9 with the result that the switch block 13 will be shifted to bring the groove 16 into communication with the grooves 10 and 12. This shifting is effected just as the lever 34 engages the pin 36 and during the continued downward movement of said lever 34, the wheel 5 will be rotated therewith as before in a counter clockwise direction, thus causing the pin 17 to enter groove 16 and groove 12, resulting in the bar 18 being shifted in the opposite direction from that heretofore described, during the feeding of

the rack bar 3 and its feed table toward the left.

The foregoing operation can be repeated indefinitely and the bar 18 will be shifted in opposite directions successively.

What is claimed:—

1. An operating mechanism for wood working machines including a wheel having an annular groove, there being a transverse groove in the periphery of the wheel and intersecting said annular groove, a switch block slidably mounted in the transverse groove and having diverging cam grooves movable alternately into register with one end of the annular groove, a member adapted to travel within and to be shifted by the walls of said grooves, an actuating lever, and separate means operated by said lever for successively shifting the switch block from one extreme position to the other and for rotating the wheel.

2. Shifting mechanism for wood working machines including a wheel having an annular groove, intersected by a transverse groove, a switch block slidably mounted in the transverse groove and having diverging cam grooves adapted successively to register with one end of the annular groove, a member adapted to travel within and to be shifted laterally by the walls of the annular and cam grooves, means revoluble within the wheel for shifting the switch block in opposite directions successively, an actuating lever, and separate means operated thereby for successively shifting the switch block in either direction and rotating the wheel.

3. Shifting mechanism for wood working machines including a wheel an annular groove, intersected by a transverse groove, a switch block slidably mounted in the transverse groove and having diverging cam grooves adapted successively to register with one end of the annular groove, a member adapted to travel within and to be shifted laterally by the walls of the annular and cam grooves, means revoluble within the wheel for shifting the switch block in opposite directions successively, an actuating lever, and separate means operated thereby for successively shifting the switch block in either direction and rotating the wheel, and yieldable restraining means for retarding the independent movement of the wheel and the shifting means therein.

4. Shifting mechanism for wood working machines including a wheel having an annular groove intersected by a transverse groove, a switch block slidably mounted in the transverse groove and having diverging cam grooves adapted successively to register with one end of the annular groove, a disk mounted for rotation within the wheel and having a zig zag groove in its periphery, means extending from the switch block and projecting into said zig zag groove, a lever,

separate means operated by the lever for successively rotating the disk within the wheel to shift the switch block in either of two directions and for rotating the wheel, and means movable within the peripheral and cam grooves in the wheel and switch block for actuation by the walls of said grooves.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WEBSTER G. STROZIER.

Witnesses:

IVY E. SIMPSON,
AGNES ROCKELLI.

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