

May 22, 1928.

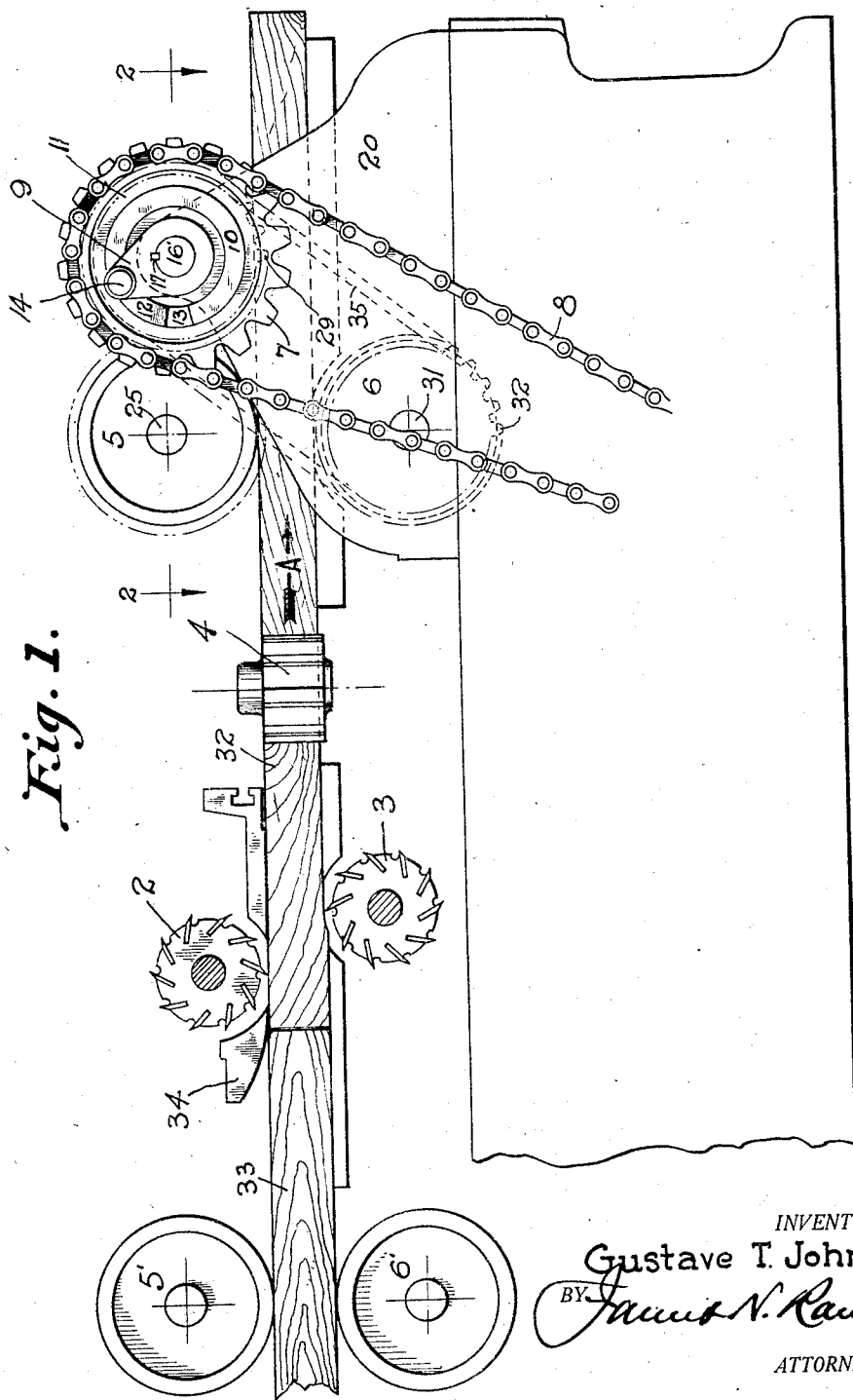
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G. T. JOHNSON
WOODWORKING MACHINERY

Filed Feb. 26, 1926

3 Sheets-Sheet 1

Fig. 1.



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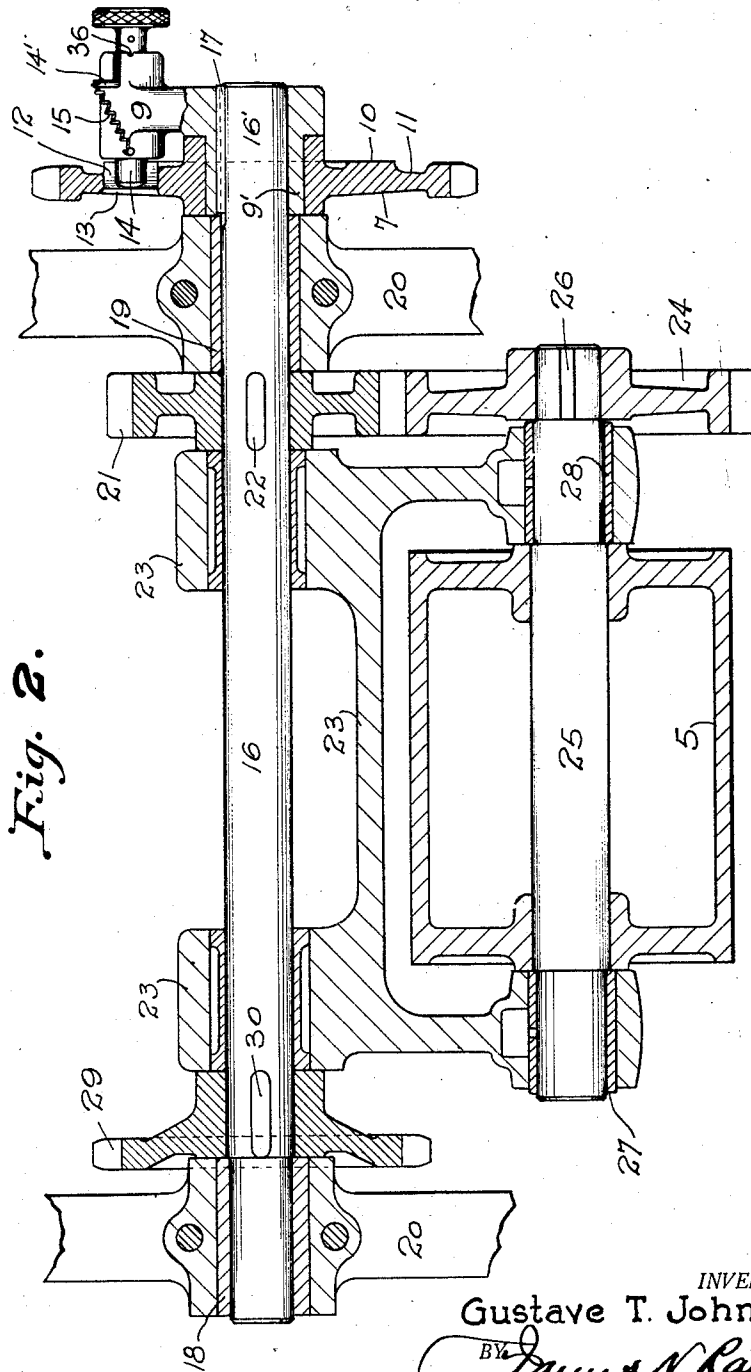


Fig. 2.

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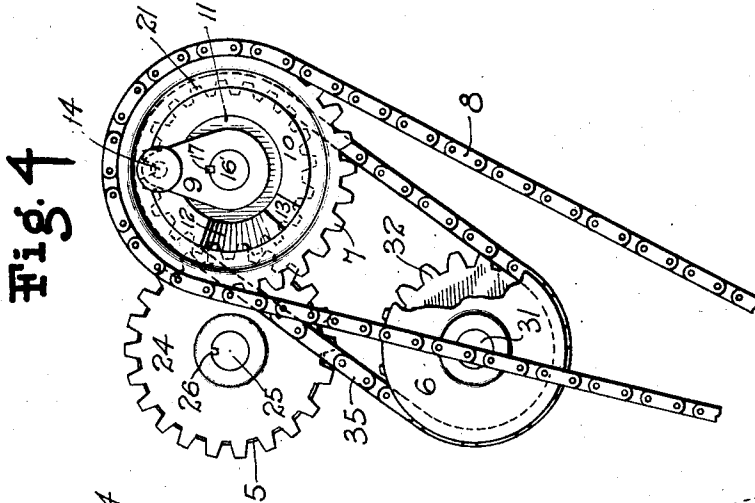


Fig. 6.

Fig. 3.

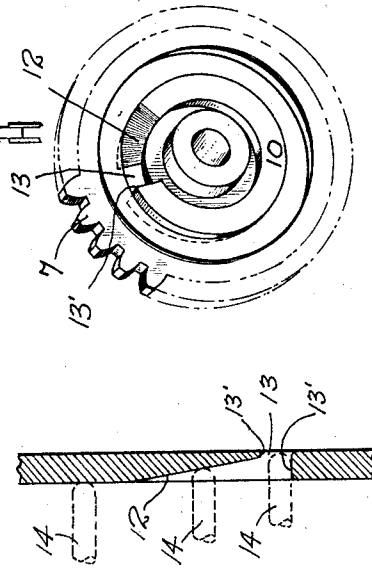
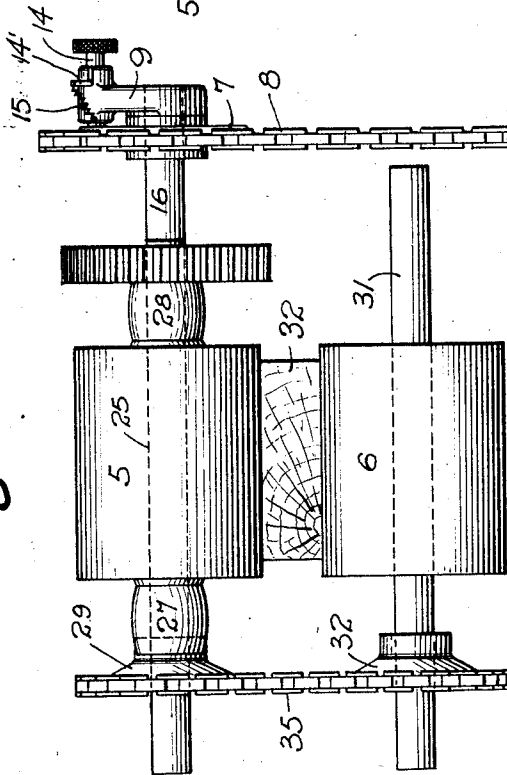


Fig. 5.

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UNITED STATES PATENT OFFICE.

GUSTAVE T. JOHNSON, OF CINCINNATI, OHIO, ASSIGNOR TO THE J. A. FAY & EGAN COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF WEST VIRGINIA.

WOODWORKING MACHINERY.

Application filed February 26, 1926. Serial No. 90,877.

My invention relates to planers and matchers and more particularly to that part of the machine known as the out-feed rolls.

In woodworking machinery the lumber to be dressed is fed into the machine between cutter heads which dress and plane it in separate pieces, one following immediately after the other in such a manner that the second piece is drawn between the infeed rolls; while the first piece is being drawn between the outfeed rolls and dressed, and occasionally, due to some irregularity in size or shape of the lumber and particularly of the second piece, it becomes clogged so that it is necessary to reverse the operation of the machine to withdraw the second piece.

The object of my invention is to provide simple, efficient, economical and advantageous means whereby the second piece may be withdrawn without withdrawing or disturbing the first or partly dressed piece or its relation to the cutter heads in order that the dressed portion of such partly dressed first piece will not be marred in the withdrawing operation of the second piece.

My invention consists in novel mechanism for automatically retaining the out-feed rolls in stationary position whenever it is necessary to reverse the direction of the planing elements of the machine from that of forward or planing direction.

My invention also consists in the construction, combination, arrangement and location of parts and in the operation, as herein set forth and claimed.

In the drawings:

Fig. 1 is a side elevation of a woodworking machine, partly broken away to show the necessary parts for descriptive purposes and having my novel device applied thereto;

Fig. 2 is a transverse horizontal section taken on a plane corresponding to line 2—2 in Fig. 1, the drive-chain being omitted;

Fig. 3 is an end elevation of the invention looking in the direction of arrow A in Fig. 1;

Fig. 4 is a side elevation of the invention the machine-frame being omitted;

Fig. 5 is a detailed sectional view of the idler sprocket showing the cored hole, incline and machined track and the pin in dotted lines; and

Fig. 6 is an isometric view of the idler sprocket.

In the embodiment of my invention, as illustrated, and which shows a preferred con-

struction, I provide woodworking machine 1 provided with usual cutter-heads 2, 3 and 4, in-feed rolls 5' and 6' and out-feed rolls 5 and 6, respectively. Idler sprocket 7 is driven by chain 8 and revolves freely on shank 9' integral with fulcrum-arm 9. Said sprocket 7 has machined track 10 on its outer face 11 leading over an incline 12 to cored hole 13. Fulcrum-arm 9 carries slidable pin 14 which is held against track 10 by spring 15, said arm 9 being fixed to end 16' of shaft 16 by key 17. Said shaft 16 is journaled in bushings 18 and 19, respectively, within main frame 20 of woodworking machine 1. Gear 21 is fixed to shaft 16 by key 22 and is positioned thereon between bushing 19 and one end of rocker-arm 23. Said gear 21 is in meshing relation with gear 24 which is fixed on shaft 25 by key 26. Said shaft 25 carries out-feed roll 5 and is journaled in bushings 27 and 28, respectively, of rocker-arm 23. Gear 29 is fixed to shaft 16 by key 30 and is located thereon between bushing 18 in main frame 20 and the other end of rocker-arm 23, as shown in Fig. 2. Shaft 31 (Fig. 3) is journaled in bearings within main frame 20 and carries out-feed roll 6 and gear 32, the latter being of the same pitch diameter as gear 29. Gears 29 and 32 are connected together by chain 35 thereby driving gear 32 and roll 6 at exactly the same speed as out-feed roll 5.

The operation of the invention is as follows:

We will assume that the idler sprocket 7 is being driven in a clockwise direction by chain 8 and the sliding pin 14 is stationary and held against machined track 10 of said idler sprocket 7 by spring 15, as shown in Fig. 1. As the sprocket revolves in a clockwise direction the sliding pin 14 will follow incline 12 until its drops into cored hole 13. After the pin 14 is forced into hole 13 the fulcrum-arm 9 commences to revolve in the same direction as the sprocket 7 thereby revolving shaft 16, gear 21, gear 24, shaft 25 and out-feed roll 5 and this roll in turn presses on top of the stock 32 and moves it forward in the direction of arrow A.

Sprocket 29, driven by shaft 16 and connected to sprocket 32, in turn, drives out-feed roll 6 which facilitates the forward movement of stock 32. The rolls 5 and 6 revolving in the manner just described is the normal operation of the machine, but at

one time or another, it is required that the in-feeding board or stock 33, immediately following the partly dressed stock 32, should be reversed or backed out of the chip-breaker 34 because too thick to feed through, or for various other reasons. As the rough board 33 follows the board 32, which is being dressed, it will be readily seen that any such board which had practically passed cutter heads 2, 3 and 4, respectively, is a partly finished board and the board that is following it is usually the one that is causing the jam or trouble. It is, therefore, logical to back out the rough board 33 only and leave the partly finished board 32 in the machine. The prevention of the partly finished board 32 from backing out when the machine is reversed is accomplished by sprocket 7, and pin 14, as follows:

When the machine is reversed chain 8 drives sprocket 7 in an anti-clockwise direction. This causes incline 12 to force slidable pin 14 out of engagement with cored hole 13 and shoulder 13' (Fig. 5) whereupon said pin rides on machined track 10 until it is forced into cored hole 13 by spring 15 only to be forced out again by incline 12. It will thus be seen that with the sprocket 7 revolving in said anti-clockwise direction no motion will be transmitted to fulcrum-arm 9, or parts driven thereby, as when the sprocket revolves, pin 14 is simply forced into cored hole 13 by spring 15 and is forced out of said hole at each revolution of the sprocket by incline 12.

A desirable feature and advantage is that pin 14 can be withdrawn from cored hole 13 and locked in this position by pin 14' engaging notch 36 in fulcrum-arm 9 in which case there will be no motion imparted to rolls 5 and 6 in either direction. This condition is desirable with certain types of wood boards as the shavings will be drawn under the rolls thereby leaving marks on the finished boards. In such case, roll 5 is simply lifted up out of engagement with the board 32 and locked in this position.

It is understood that my invention is capable of modification without departing from the scope or spirit thereof as defined in the claims.

What I claim as new and desire to secure by Letters Patent is:

1. In woodworking machinery, the combination of a plurality of infeed and outfeed rolls, means for driving said outfeed rolls in a forward direction, or a direction suitable

for advancing lumber through the machine when planing and means for preventing the reversing of said outfeed rolls when said infeed rolls are reversed, substantially as set forth and for the purposes specified.

2. In woodworking machinery, the combination of an idler sprocket, means for driving said sprocket, a shaft, an arm fixed to said shaft, a slidable pin mounted in said arm and adapted to engage said sprocket, a stock feed-roll, and means on said shaft for driving said out-feed roll in one direction only.

3. In woodworking machinery, the combination of an idler sprocket having an opening therein, means for driving said sprocket, a shaft, a fulcrum-arm having a shank and keyed to said shaft, said sprocket being rotatably mounted on said shank, a pin slidably mounted in said arm, and adapted to engage said opening, feed rolls, and means connected with said shaft for driving said feed rolls from said shaft.

4. In woodworking machinery, the combination of an idler sprocket having a machined track on one face thereof and having an opening in the path of said track which is inclined adjacent said opening on one side thereof, a fulcrum-arm, a shaft, an out-feed roll, a supporting frame mounted on said shaft and supporting said out-feed roll, a gear keyed to said shaft, and a second gear fixed to said out-feed roll and in engagement with said first-mentioned gear.

5. In woodworking machinery, the combination of an idler sprocket having a machine track upon one face thereof and having an opening in the path of said track, an incline adjacent said opening on one side and a shoulder on the opposite side thereof, a shaft, a fulcrum-arm keyed to said shaft, a pin slidably mounted in said arm and adapted to engage said shoulder for the purpose of driving said arm with said idler sprocket in one direction only.

6. In woodworking machinery, the combination of an idler sprocket having an opening therein, a shaft, a fulcrum-arm, a pin slidably mounted in said arm, means for engaging and disengaging said pin in said opening, and means whereby said pin may be withdrawn manually from said opening and locked in said withdrawn position, whereby no motion will be imparted to said arm in any direction.

GUSTAVE T. JOHNSON.