H. J. MITCHELL.

FEED ROLL ADJUSTMENT.

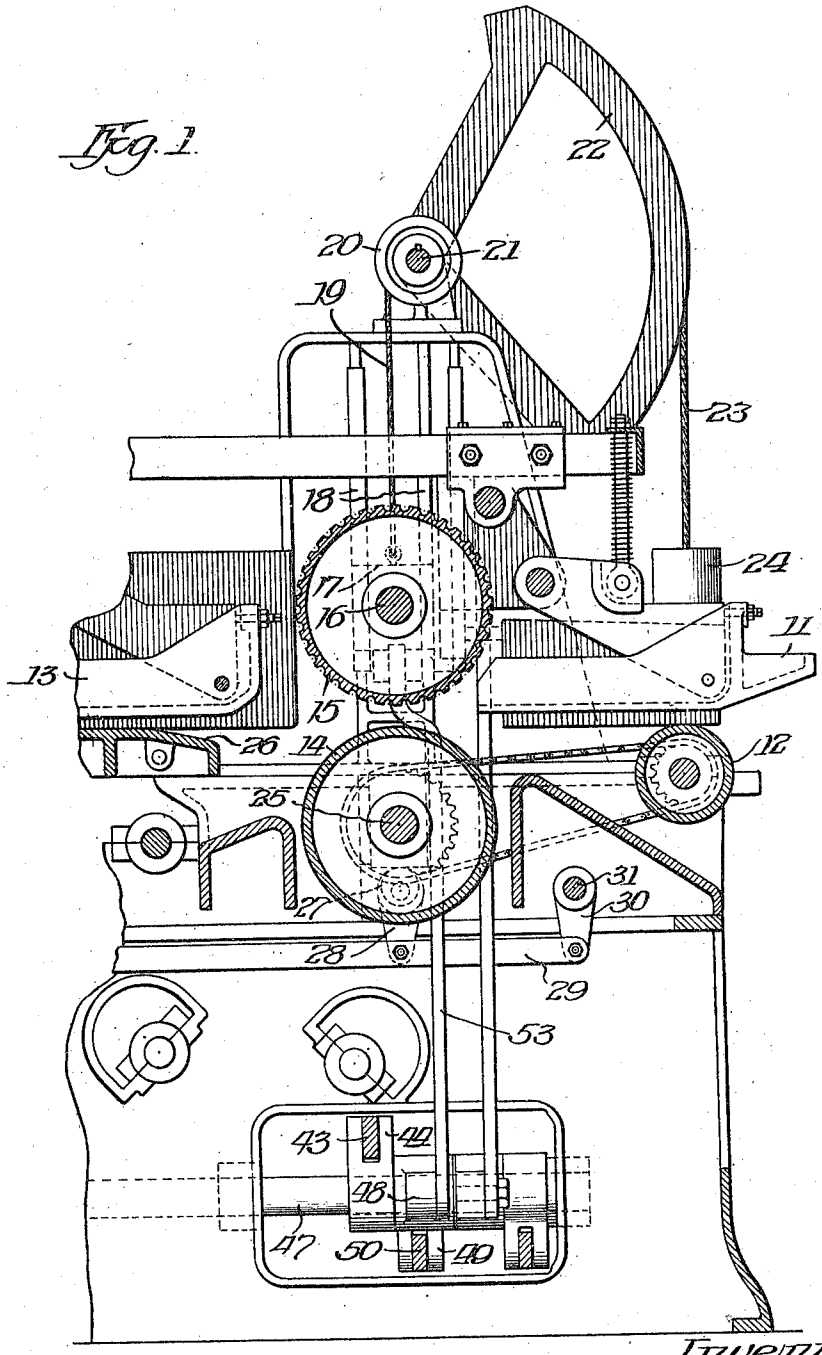
APPLICATION FILED SEPT. 25, 1915.

1,255,625.

Patented Feb. 5, 1918.

3 SHEETS—SHEET 1.

Fig. 1.



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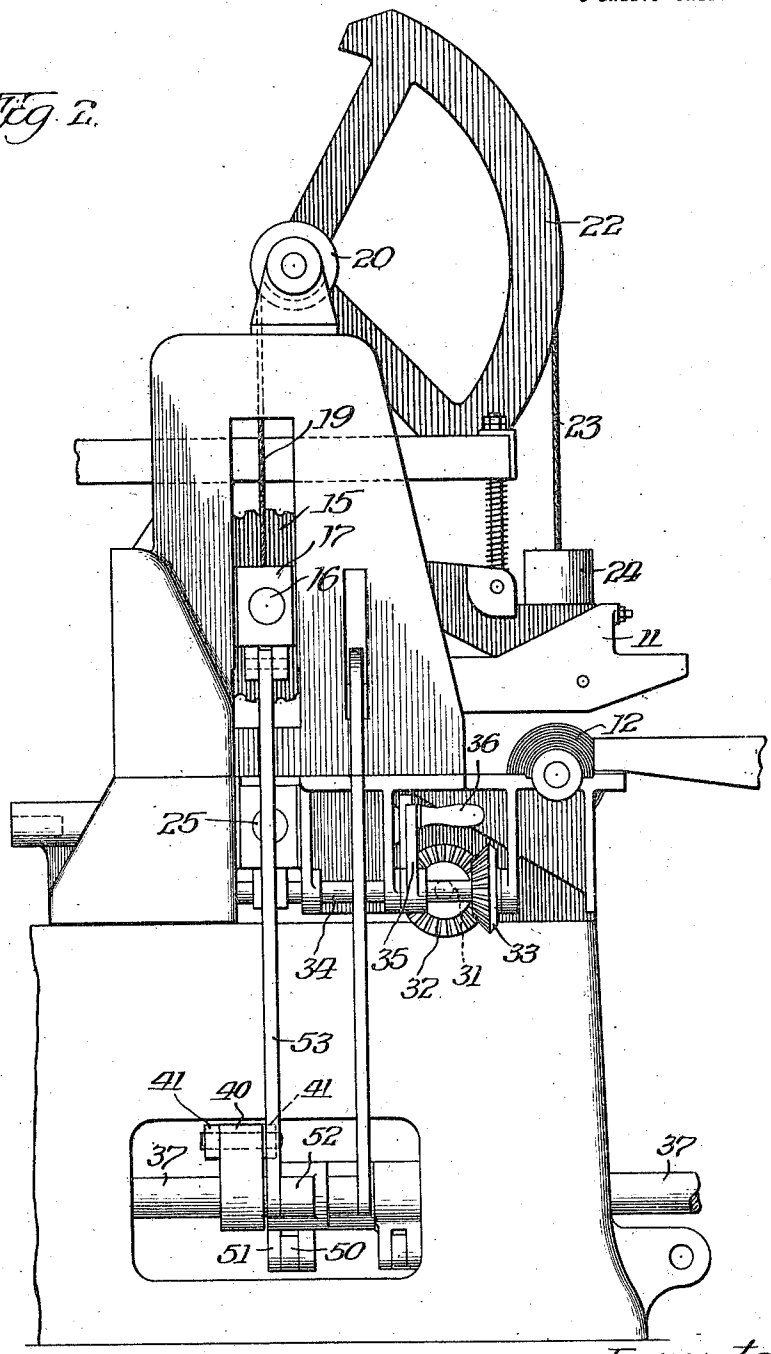
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 4.

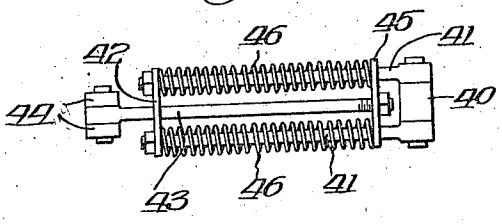
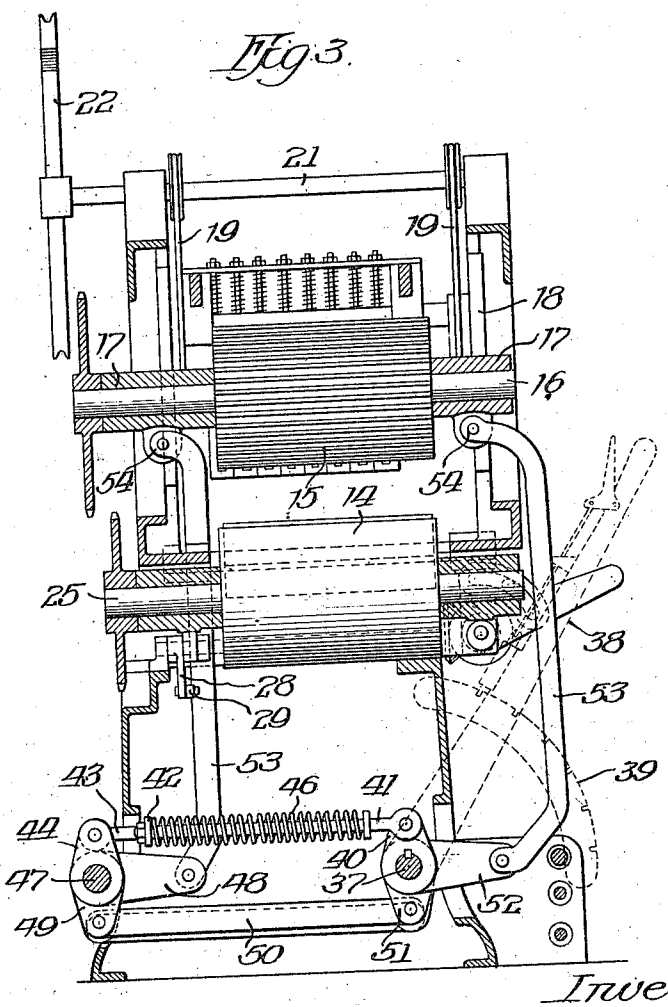


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FEED-ROLL ADJUSTMENT.

1,255,625. Specification of Letters Patent. Patented Feb. 5, 1918.

Original application filed June 25, 1915, Serial No. 36,167. Divided and this application filed September 25, 1915. Serial No. 52,583.

To all whom it may concern:

Be it known that I, HARRISON J. MITCHELL, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Feed-Roll Adjustments, of which the following is a specification.

This invention, a division of my co-pending application Serial No. 36,167, filed June 25, 1915, which matured into Patent No. 1,207,976, dated Dec. 12, 1916, has to do particularly with the means for vertically adjusting the upper and lower in-rolls of a wood-working machine, as distinguished from the wood-working machine in general which forms the subject matter of said parent application. A preferred embodiment of the invention is set forth in the accompanying drawings and in the detailed description based thereon, and in these drawings—

Figure 1 is a vertical longitudinal section through the end of the wood-working machine showing the feed rolls;

Fig. 2 is a side elevation of those parts of the machine shown in Fig. 1;

Fig. 3 is a transverse section immediately to the rear of the feed rolls; and

Fig. 4 is a detail plan view showing the cross connection between certain parts of the adjusting mechanism.

Immediately to the rear of the sectional gages 11 and the receiving roll 12 and in advance of the sectional gages 13, described in detail in my co-pending application referred to above, is arranged a pair of in-rolls comprising a smooth surface roll 14 and a ribbed surface roll 15, between which the board is adapted to be received and fed toward the rear to the first tool. The upper in-roll 15 is mounted upon a shaft 16 in a boxing 17 slidably mounted within guides 18, the said boxes being suspended by means of cords 19 extending around pulleys 20 on the shaft 21 to which is fixedly secured a sector sheave 22 upon the surface of which lies a cord 23 supporting a counterweight 24 by means of which the weight of the upper in-roll 15 is so far compensated as to facilitate the vertical adjustment of said roll.

The lower in-roll 14 mounted on the shaft 25 is normally fixed as to height but it is vertically adjustable by means of the eccentric 27 from the shafts of which eccentric arm 28 extends and is connected by means of a rod 29 to an arm 30 on the shaft 31, provided with a beveled gear 32 in mesh with a similar gear 33 on a shaft 34 provided with a crank arm 35 having a handle 36. The lower in-roll is adjusted vertically by actuating the handle 36 whereby the pinions 33 and 32 rock the shaft 31 with its arm 30 and thus angularly adjust the cam 27 by means of its arm 28. The eccentric 27 acts directly upon the journal boxing of the in-roll 14.

The vertical adjustment of the upper in-roll 15 is accomplished in the manner following, having reference to Figs. 3 and 4: A rock shaft 37 extends longitudinally of the machine and is adapted to be rocked by means of the lever 38 at the front of the machine adjacent the feed table, the position of said lever being determined by the notched sector 39. This shaft has keyed thereon an upwardly extending arm 40 connected by means of rods 41 with a cross head 42, which latter is guided upon rod 43 secured at one end to the arm 44 and at the other end connected by a cross head 45 guided upon the rods 41. Springs 46 are mounted upon the rods 41 between the cross heads 42 and 45, whereby the connection between the arms 40 and 44 is constituted a yielding one. At the rear of the machine a rocking shaft 47 extends parallel to the shaft 37 and upon this shaft is loosely mounted the arm 44 which forms one member of a T-lever having an arm 48 extending horizontally and an arm 49 extending vertically downward. The arm 49 is connected by means of the link 50 with an arm 51 mounted loosely upon the shaft 37 and having an integral horizontally extending arm 52. The arms 48 and 52 are both connected by means of lift rods 53, 53, to the journal boxes 17, 17 of the upper in-roll 15 at 54, 54. It will be observed that if the lever 38 is moved to the left, as shown in Fig. 3, the shaft 37 will be rocked and the arms 40 and 44 moved to the left thus lifting one of the rods 53 by means of the arm 48 and the companion rod 53 by means of the link 50 and the arm 52, the reverse movement of the lever 38 will lower the upper in-roll 15. The springs 46 interposed in the connection between the arms 40 and 44 provide for yielding support of the in-roll 15

so that the same may yield slightly without any resulting movement of the shaft 37 or the lever 38.

I claim:

1. The combination with a machine including tools for acting on material supplied thereto, of feed rolls arranged one above the other to feed the material therebetween, the journal boxes of the upper roll guided for vertical movement in the machine frame, a lever controlled rock shaft, and yielding link connections between the rock shaft and the upper roll whereby to vertically adjust said roll, and a counterweight connected with the upper roll to facilitate the vertical adjustment thereof.

2. The combination with a machine including tools for acting on material supplied thereto, of feed rolls arranged one above the other to feed the material therebetween, the journal boxes of the upper roll guided for vertical movement in the machine frame, and the journal boxes of the lower roll likewise guided for vertical adjustment, a rock shaft, a yielding link connection between the rock shaft and upper roll whereby to adjust the latter vertically, a cam shaft, cams on said shaft acting upon the lower roll, means for rocking both of said shafts independently whereby to vertically adjust the two rolls and means to fit the rock shaft in adjusted position.

3. The combination with a machine including tools for acting on material supplied thereto, of feed rolls arranged one above the other to feed the material therebetween, the journal boxes of the upper roll guided for vertical movement in the machine frame, and the journal boxes of the lower roll likewise guided for vertical adjustment, a rock shaft, a yielding link connection between the rock shaft and upper roll whereby to adjust the latter vertically, a resilient element incorporated in the link connection, a cam shaft, cams on said shaft acting upon the lower roll, means for rocking both of said shafts independently whereby to vertically adjust the two rolls, a counterweight connected with the upper roll to facilitate the vertical adjustment thereof and means to fix the rock shaft in adjusted position.

4. The combination with a machine including tools for acting on material supplied thereto, of feed rolls arranged one above the other to feed the material therebetween, the journal boxes of the upper roll guided for vertical movement in the machine frame, a pair of parallel shafts, T-levers mounted on each of the shafts and each comprising an upwardly extending, a horizontally extending, and a downwardly extending arm, links connecting the horizontally extending arms of the two levers with the journal boxes, a rigid link connecting a pair of the vertically extending arms of the two levers, a yielding spring connection between the other pair of vertically extending arms of the two levers, the arms of one of the T-levers having fixed relation to each other and one of the vertical arms of the other T-lever having angular movement independent of the other two arms of said lever, the movable arm of the second lever keyed upon one of the shafts, and means for rocking said shaft whereby to provide for manual vertical adjustment of the roll and also to provide for vertical yielding of the frame independently of the adjustment.

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