No. 717,454. Patented Dec. 30, 1902.

J. N. ROSEN.

WOODWORKING MACHINE.

(Application filed Sept. 15, 1902.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

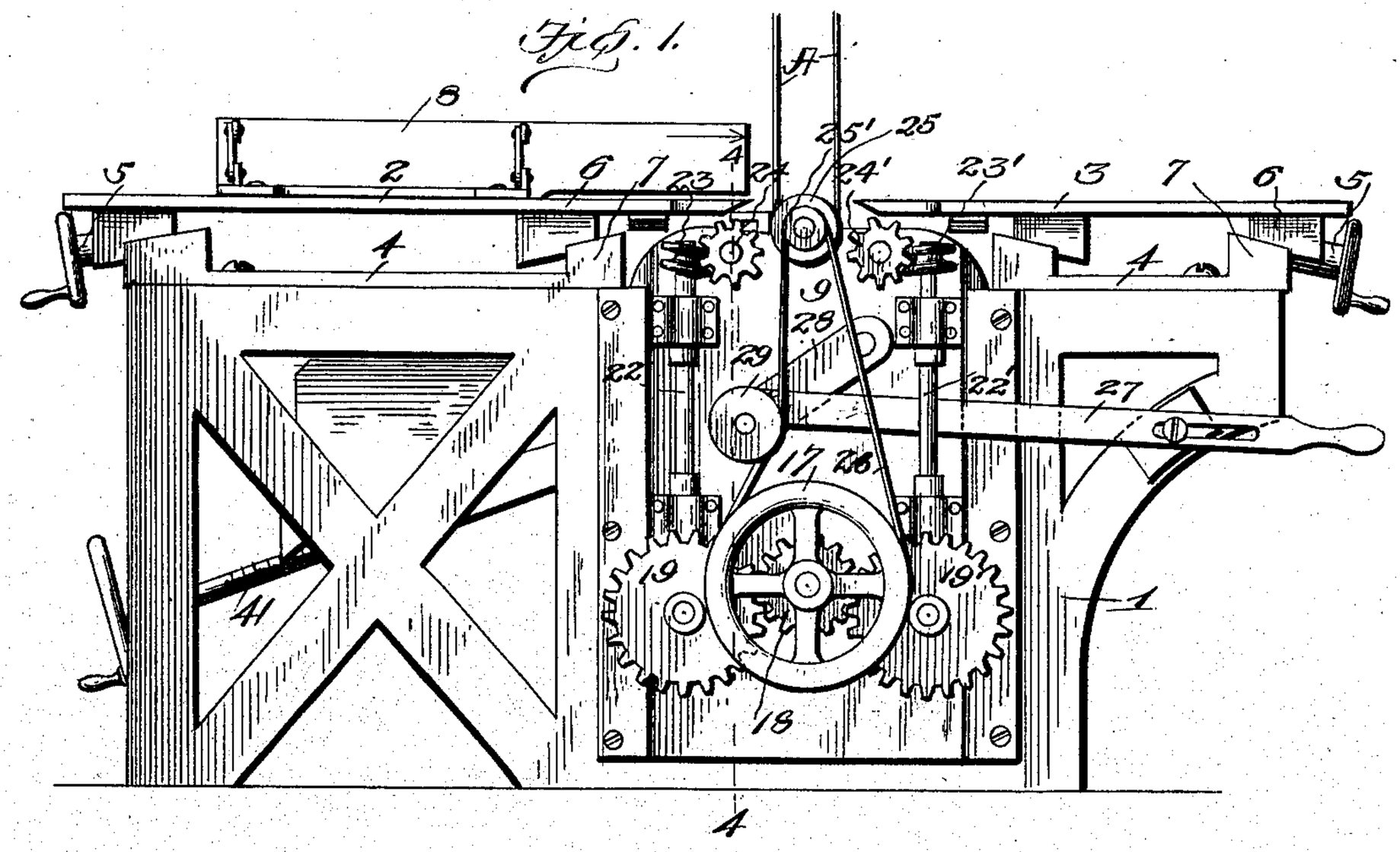

Fig. 2.

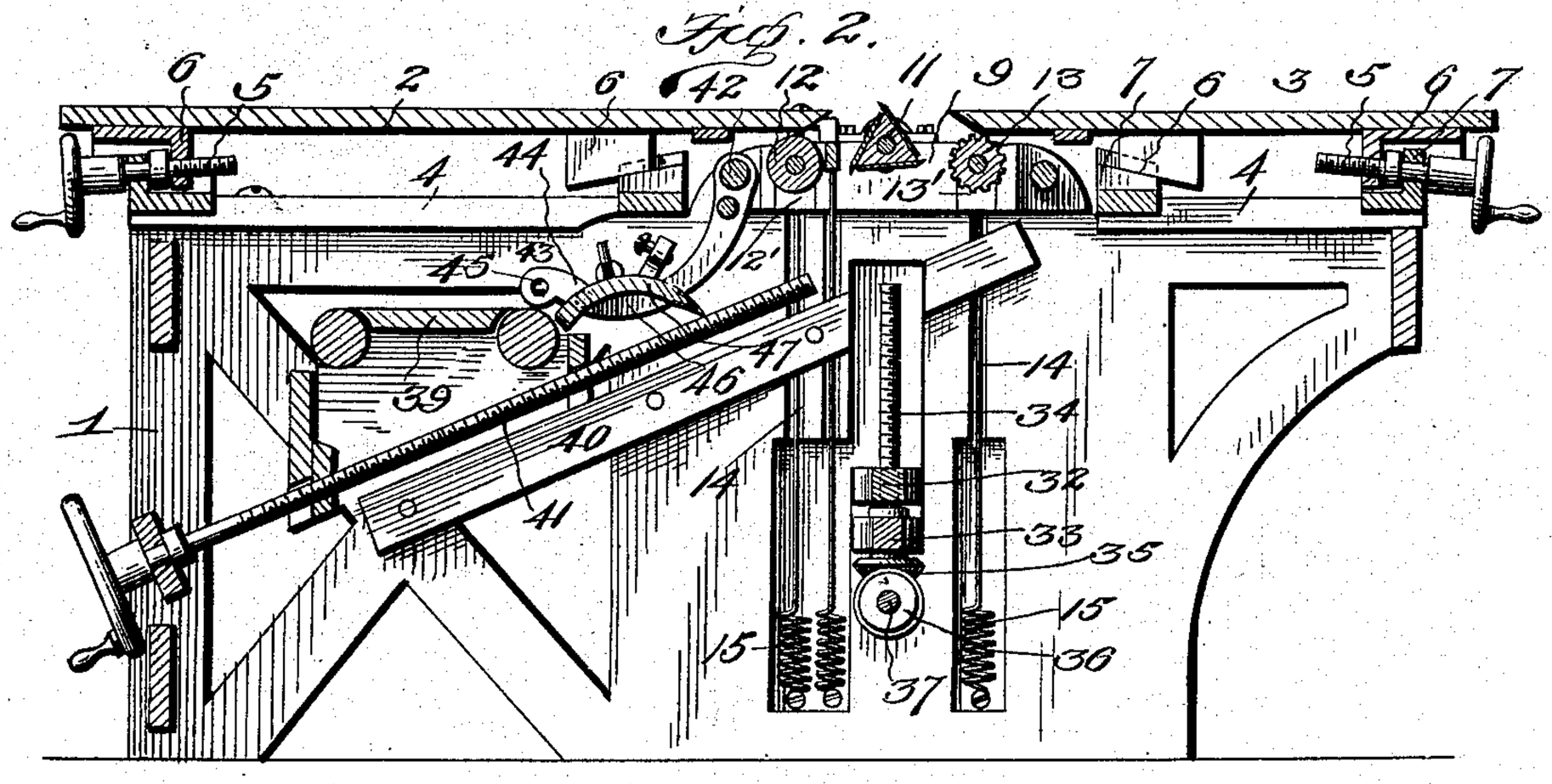

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Fig. 3.

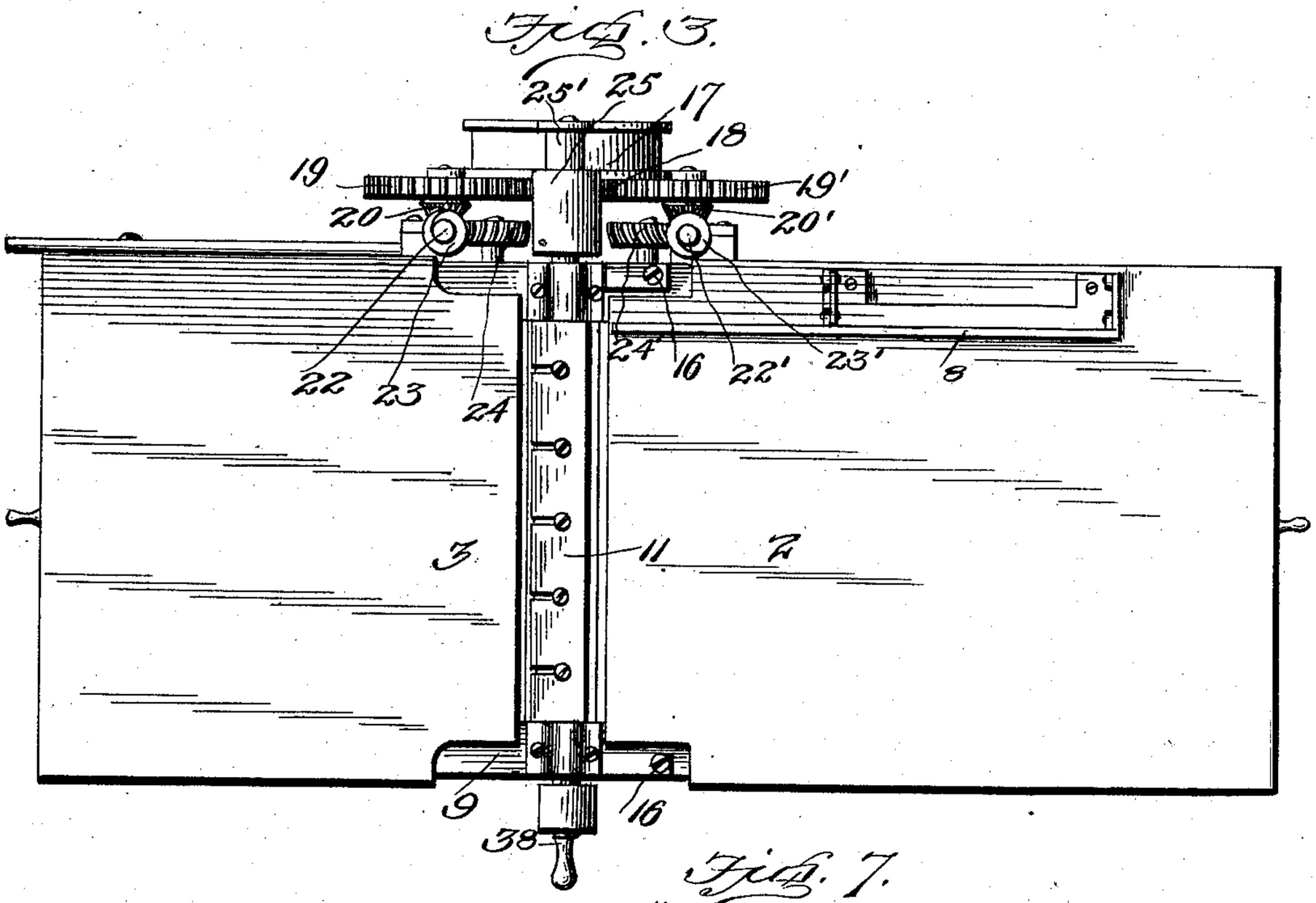

Fig. 7.

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Fig. 5.

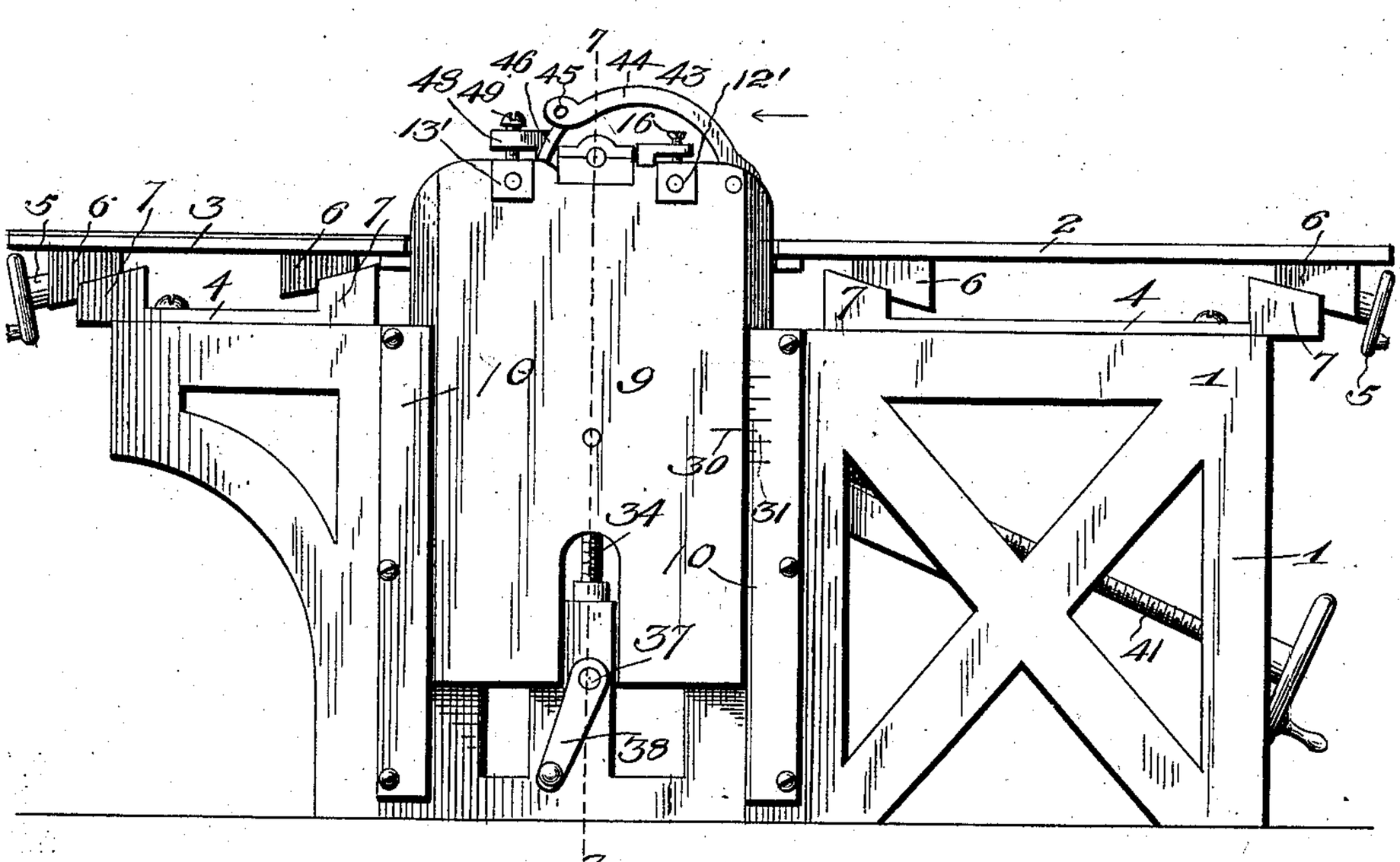
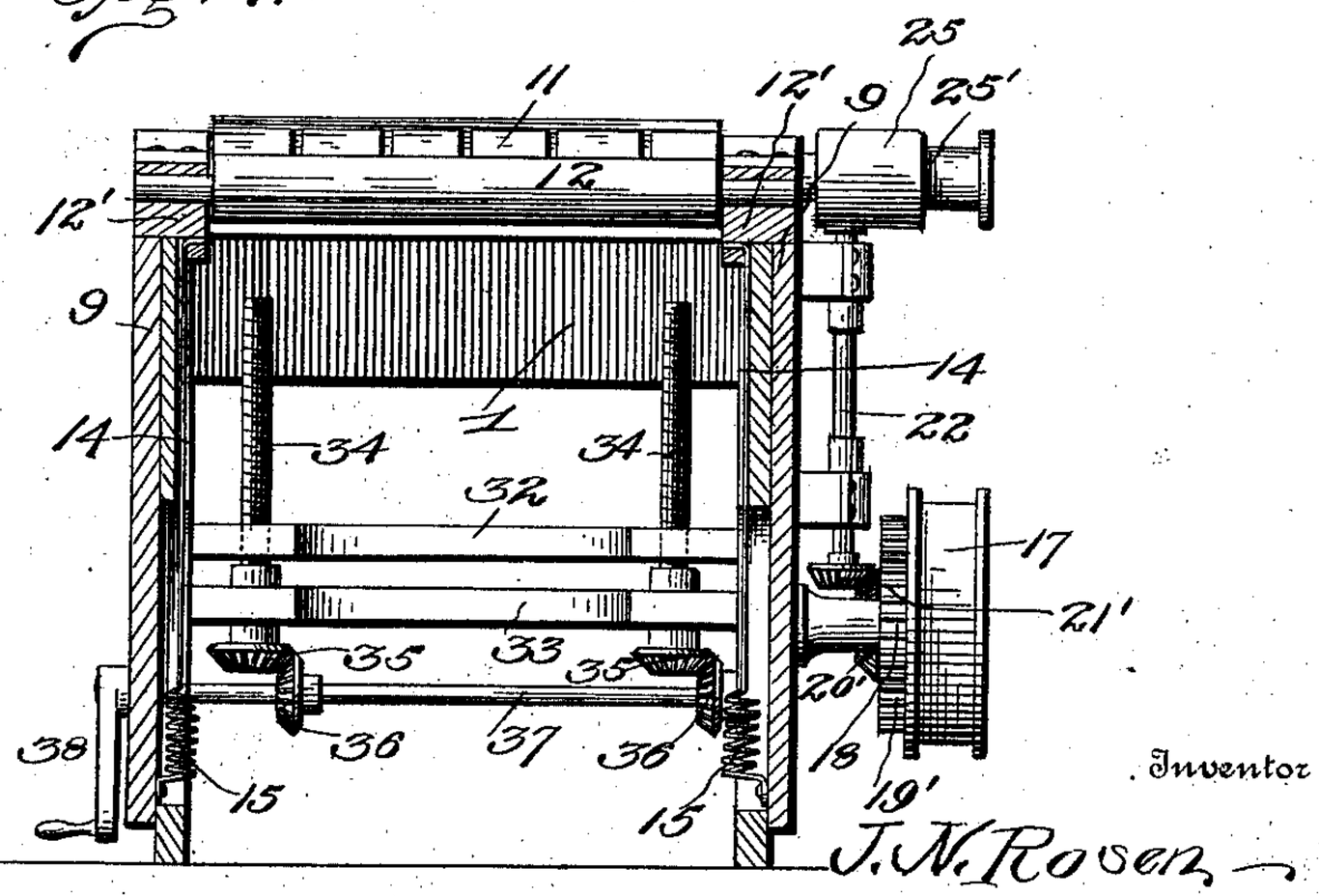


Fig. 4.



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(No Model.) 4 Sheets—Sheet 4.

Fig. 6.

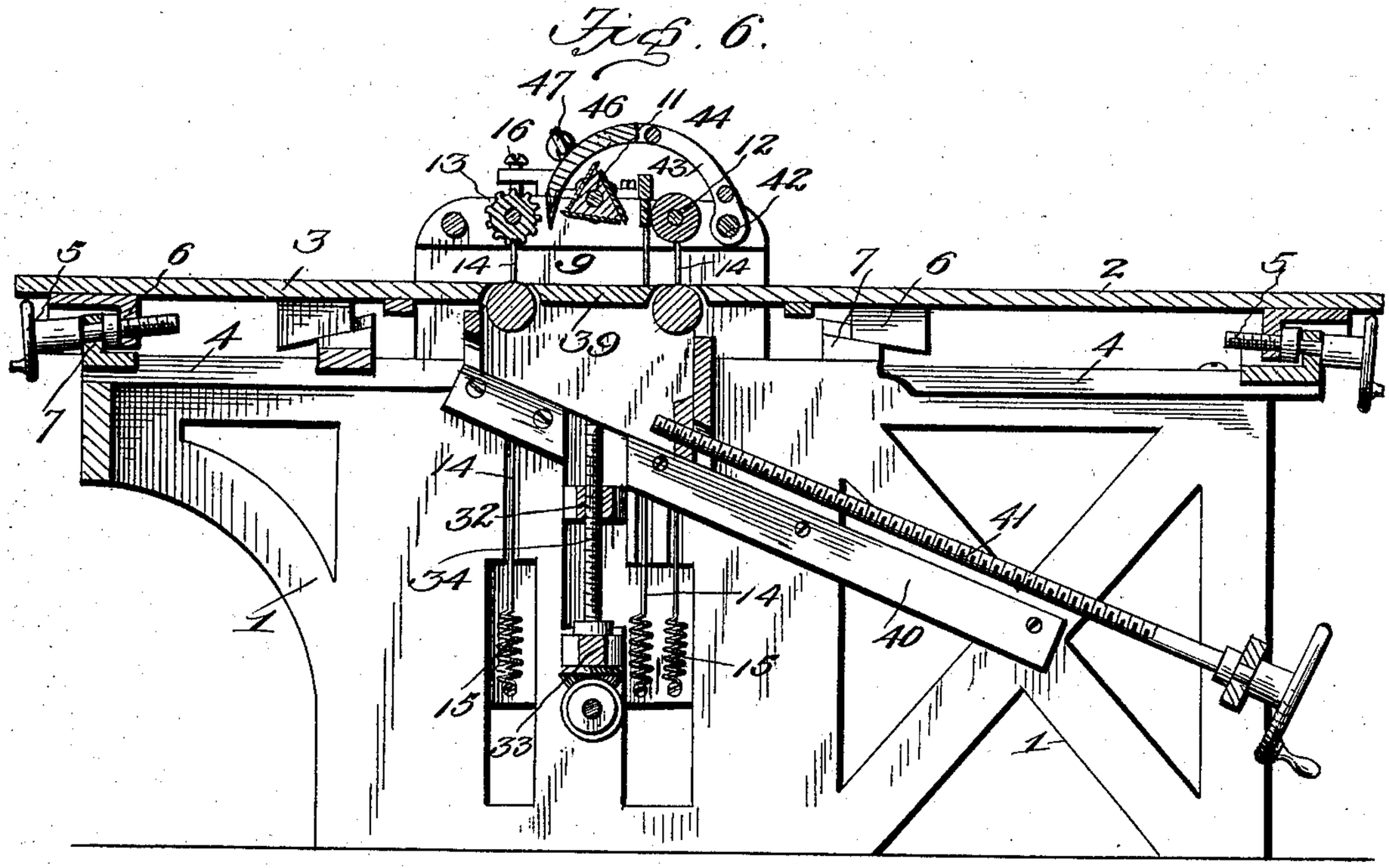
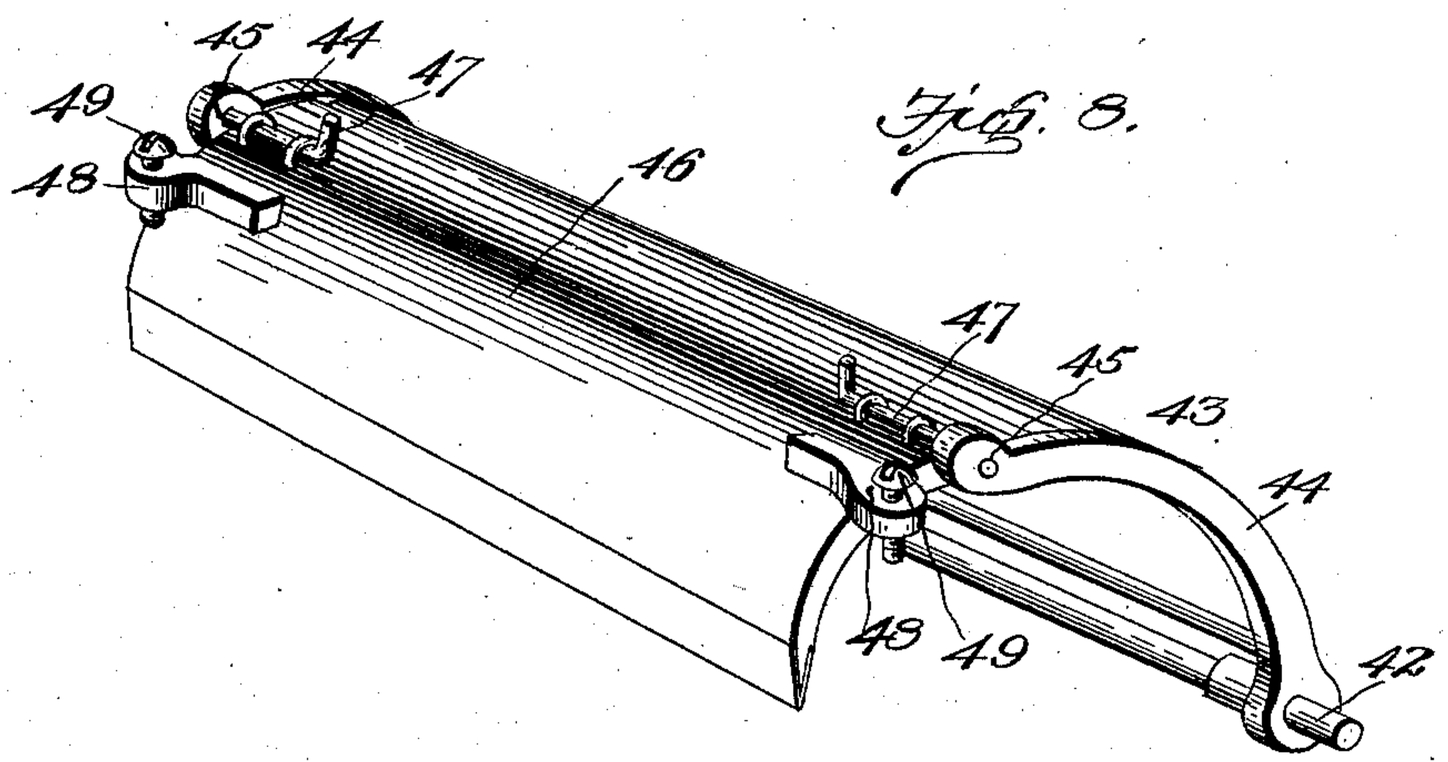


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN N. ROSEN, OF CHICAGO, ILLINOIS.

WOODWORKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 717,454, dated December 30, 1902.

Application filed September 15, 1902. Serial No. 123,513. (No model.)

To all whom it may concern:

Be it known that I, JOHN N. ROSEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Woodworking-Machines; and I do 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.

This invention relates to woodworking-machines; and its object is to provide a combination-machine adjustable at will to work as a joiner or planer.

With the above and other objects in view, which will readily appear as the nature of the invention is better understood, said invention consists in certain novel features of construction and combination and arrangement of parts, which will be hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the machine as adjusted to operate as a joiner. Fig. 2 is a longitudinal section of the same. Fig. 3 is a top plan view. Fig. 4 is a cross-section on the line 4 4 of Fig. 1. Fig. 5 is an elevation looking toward the opposite side of the machine from that shown in Fig. 1 and showing the parts adjusted to adapt the machine to operate as a planer. Fig. 6 is a longitudinal section of the same. Fig. 7 is a cross-section on line 7 7 of Fig. 5. Fig. 8 is a detail view of the chip-breaker.

Referring now more particularly to the drawings, 1 represents the frame of the machine, provided at top with work-tables 2 and 3, each of which is mounted upon a sliding carriage 4, which may be of any of the ordinary constructions, the two work-tables thus mounted being adjustable toward and from the center of the frame. Each work-table is independently adjusted upon its carriage through the medium of an adjusting-screw 5, and is provided with downwardly-extending inclined lugs 6, which engage inclined guides 7 on the carriage, whereby the table may be longitudinally adjusted on the carriage as occasion demands.

The table 2 is provided with the usual workgage 8.

The cutting, feeding, and operating mechanism of the machine is carried by a vertically-adjustable central frame consisting of side plates or supports 9, sliding in guides 10 on opposite sides of the frame 1. These plates or supports carry the bearings in which are mounted the rotary cutter-head 11 and the feed-rolls 12 and 13. As shown, the bearings 12′ and 13′ of the two feed-rolls 12 and 13 are removably mounted in slots in the side plates or supports and are held seated therein by rods 14, which are connected to coil-springs 15, which exert pressure on the rods to hold the bearings in place. In addition also either one or both of the bearings may be held in place by set-screws 16, mounted on the said adjustable central frame.

A band-pulley 17 is revolubly mounted upon one side of the adjustable central frame and carries a spur-pinion 18, meshing with a pair of spur-gears 19 19′, journaled adjacent thereto and having formed thereon bevel-gears 20 20′, which mesh with corresponding gears 21 21′ on the lower ends of two vertical shafts 22 22′, which shafts are provided at their upper ends with worm-gears 23 23′, which mesh with worm-wheels 24 24′ on the extended ends or shafts of the feed-rolls 12 and 13.

The shaft or extended end of the cutter 11 is provided with two pulleys 25 25′, the former having passing therearound a belt A, designed to lead from a drive-shaft, (not shown,) while the latter is connected to the band-wheel 17 by a belt 26. A shifting lever 27, adjustably mounted upon the adjacent side of the frame 1, is pivotally connected at one end to a bracket or arm 28, pivoted upon the contiguous side support of the vertically-adjustable central frame, and this arm carries a tightener-pulley 29, which bears upon the belt 26 and by means of which the belt may be maintained at the desired tautness or tension and adjusted to start or stop the wheel 17. The opposite side plate or support of the vertically-adjustable central frame is provided with a mark or indicator 30, coöperating with a scale 31 on one of the guides 10, whereby when the adjustable frame is moved up or down the position of the cutter and feed-rollers may be determined and the parts set

at the exact adjustment to suit the work to be done.

The two plates or side supports 9 of the central frame are connected by a cross-bar 32, below which is arranged a cross-bar 33, connected to the sides of the frame 1. Journaled in this cross-bar 33 are screw-shafts 34, which work in threaded openings in the bar 32 and are provided at their lower ends with gear-wheels 35, meshing with gear-wheels 36 on an operating-shaft 37, journaled in the sides of the frame 1 and provided at one end with a crank-handle 38.

One of the side supports 9 of the central frame is bifurcated or recessed to receive the shaft 37, thus allowing said support to be vertically adjusted without interference therewith.

By the operation of the shaft it will be seen that motion will be transferred to screw-shafts 34 to raise or lower the central frame and the cutting, feeding, and driving elements of the machine.

A central table 39 is mounted to slide on guides 40, fixed upon the inner surfaces of the sides of the frame 1 and is adjustable toward and from the center of the frame through the medium of a screw-shaft 41, the guides 40 being inclined so as to cause the central table to move upwardly when adjusted toward the center of the frame and moved downwardly below the work-table 2 when adjusted away from the center of the frame.

A rod or bar 42, fixed at its ends in the side supports 9, extends parallel with the feed-roll 12 and forms a support for a swinging frame 43, consisting of curved arms 44, journaled at their inner ends upon said rod and provided at their outer ends with sockets or openings 45. Pivoted between and to these arms is a segmental-shaped chip-breaker 46, which is provided upon its convex side with longitudinal sliding bolts 47 to engage said sockets or recesses 45. This chip-breaker is also provided at opposite sides with lugs 48, carrying set-screws 49, whereby the chip-breaker when adjusted to cover the cutter 11 may be adjusted with relation thereto, as hereinafter described.

Figs. 1 to 4, inclusive, show the parts adjusted to adapt the machine for use as a joiner, from which it will be seen that the central frame is depressed and the tables 2 and 3 adjusted inwardly, so as to cover the feed-rolls 12 and 13 and expose only the cutter-head 11, also that in this position of the parts the center table 39 is at the limit of its outward and downward movement, while the frame 43 is swung downward below the table 2 and the chip-breaker 46 is swung inwardly upon said frame 43, so as to occupy a folded position between said frame and the inner end of the table. The outer ends of the arms 44 rest upon the center table 39, whereby the frame 43 and chip-breaker are supported. It will be readily observed that this arrangement of the parts of the machine adapts the same for operation as a joiner.

In adjusting the parts to adapt the machine to serve as a planer the gage 8 is removed from the table 2, the tables 2 and 3 moved outwardly or away from each other to expose the upper portion of the central adjustable frame, and the latter is then elevated through the medium of the crank 38, shaft 37, and connecting-gearing to raise the cutter-head 11 and feed-rolls 12 and 13 above the level of the tables 2 and 3. When this has been done, the frame 43 is swung upwardly and over the feed-roll 12 and the chip-breaker 46 reversed or swung over, so as to cover the cutting-cylinder 11, and then locked in such adjusted position by forcing bolts 47 outwardly to engage the sockets or recesses 45 in the arms 44. The set-screws 49 will then rest upon the bearings of the feed-roll 13 and enable the chip-breaker to be adjusted properly with relation to the cutter-head 11. The center table 39 is then adjusted by means of the screw 41 to the limit of its inward movement to lie immediately beneath the roll 12, and then the work-tables 2 and 3 are slid inward to cover the space on opposite sides of the central frame, thus adjusting the feeding and cutting mechanism to enable the machine to be used as a planer.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, mode of operation, and advantages of my improved woodworking-machine will be readily apparent without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A combined joiner and planer comprising a main frame, a vertically-adjustable central frame consisting of side supports moving in guides on said main frame, feeding, driving and cutting mechanism carried by said central frame, work-tables on the main frame adjustable toward and from the central frame, means for raising and lowering said central frame, and a chip-cutter adjustably mounted upon the central frame to be swung above or below the plane of the work-table, and when in the former position to project over upon the feeding and cutting mechanism, substantially as and for the purpose set forth.

2. A combined joiner and planer comprising a main supporting-frame, a vertically-adjustable central frame, feeding, cutting and driving mechanism carried by said central frame, work-tables on the main frame adjustable toward and from the central frame, means for raising and lowering said central

frame, a swinging chip-breaker frame carried by the central frame, a chip-breaker pivoted to said frame, and means for locking the chip-breaker in adjusted position upon its frame, substantially as described.

3. A combined joiner and planer comprising a main frame, a vertically-adjustable central frame, feeding, cutting and driving mechanism mounted on the central frame, work-tables adjustable on the main frame toward and from said central frame, means for adjusting the central frame to bring the cutting and feeding mechanism above or below the plane of the tables, a center table arranged below one of the work-tables and adjustable toward and from the central frame, and a chip-breaker mounted to swing upon the central frame and adapted to be folded below the plane of the tables when the central frame is lowered and to be swung over upon the cutting and feeding mechanism when the central frame is elevated, substantially as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN N. ROSEN.

Witnesses:
CARL J. OSTERLIND,
WILHELM FORSTROM.