

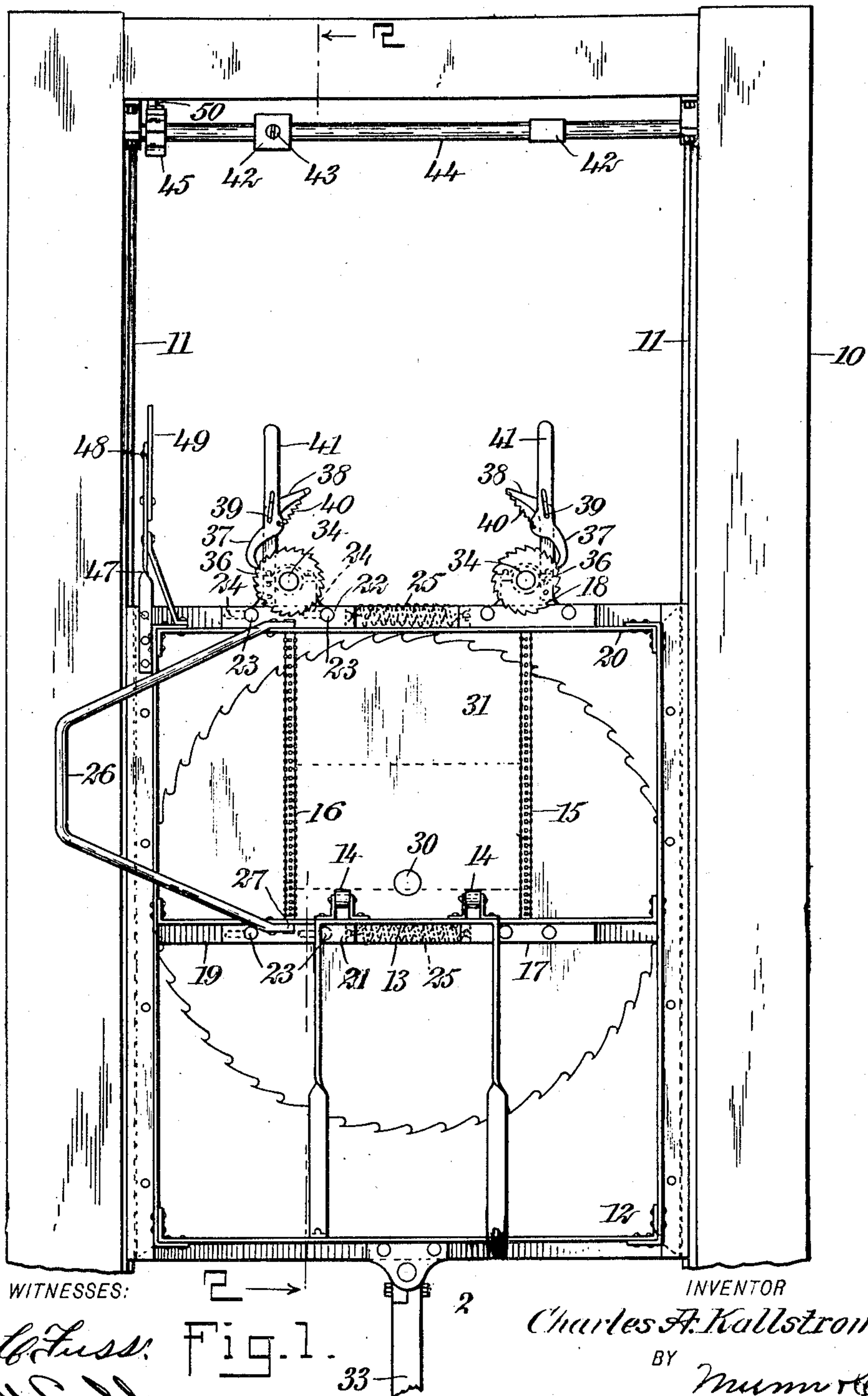
No. 860,387.

PATENTED JULY 16, 1907.

C. A. KALLSTROM.
SAWING MACHINE.

APPLICATION FILED JAN. 13, 1906.

3 SHEETS--SHEET 1.



C. C. Fess.
S. H. C. L.

Fig. 1.

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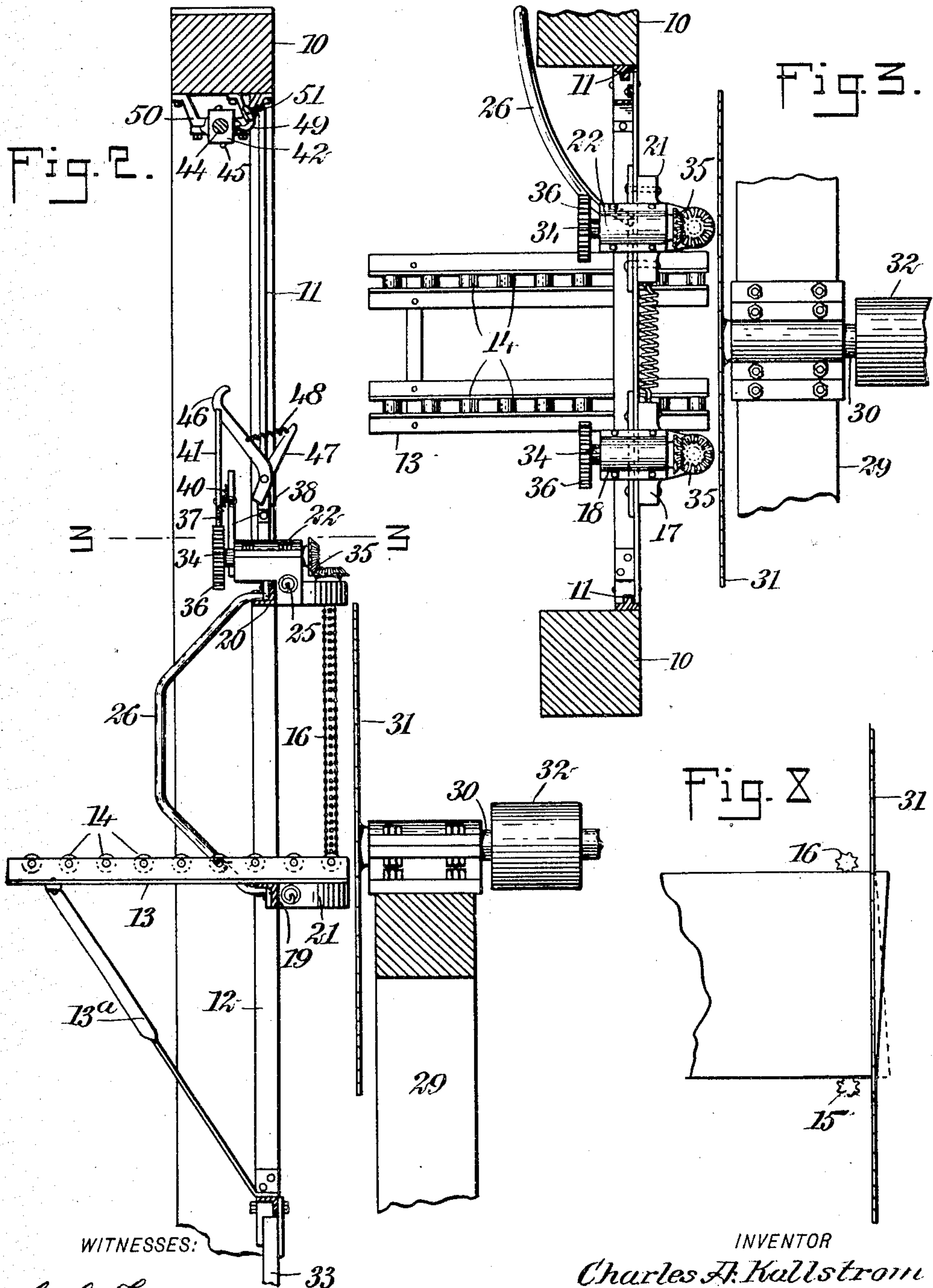
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3 SHEETS—SHEET 2.



WITNESSES:

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3 SHEETS—SHEET 3.

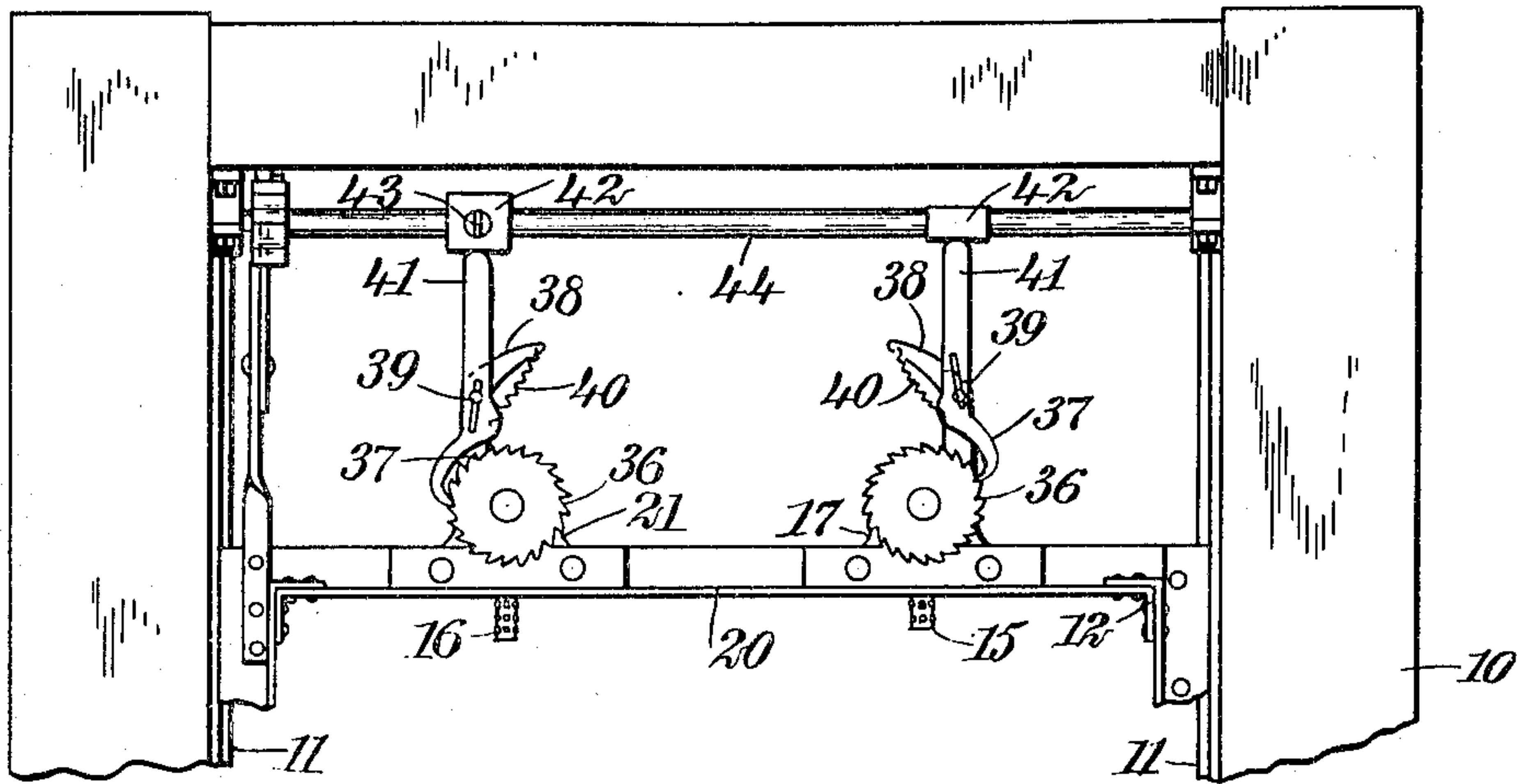
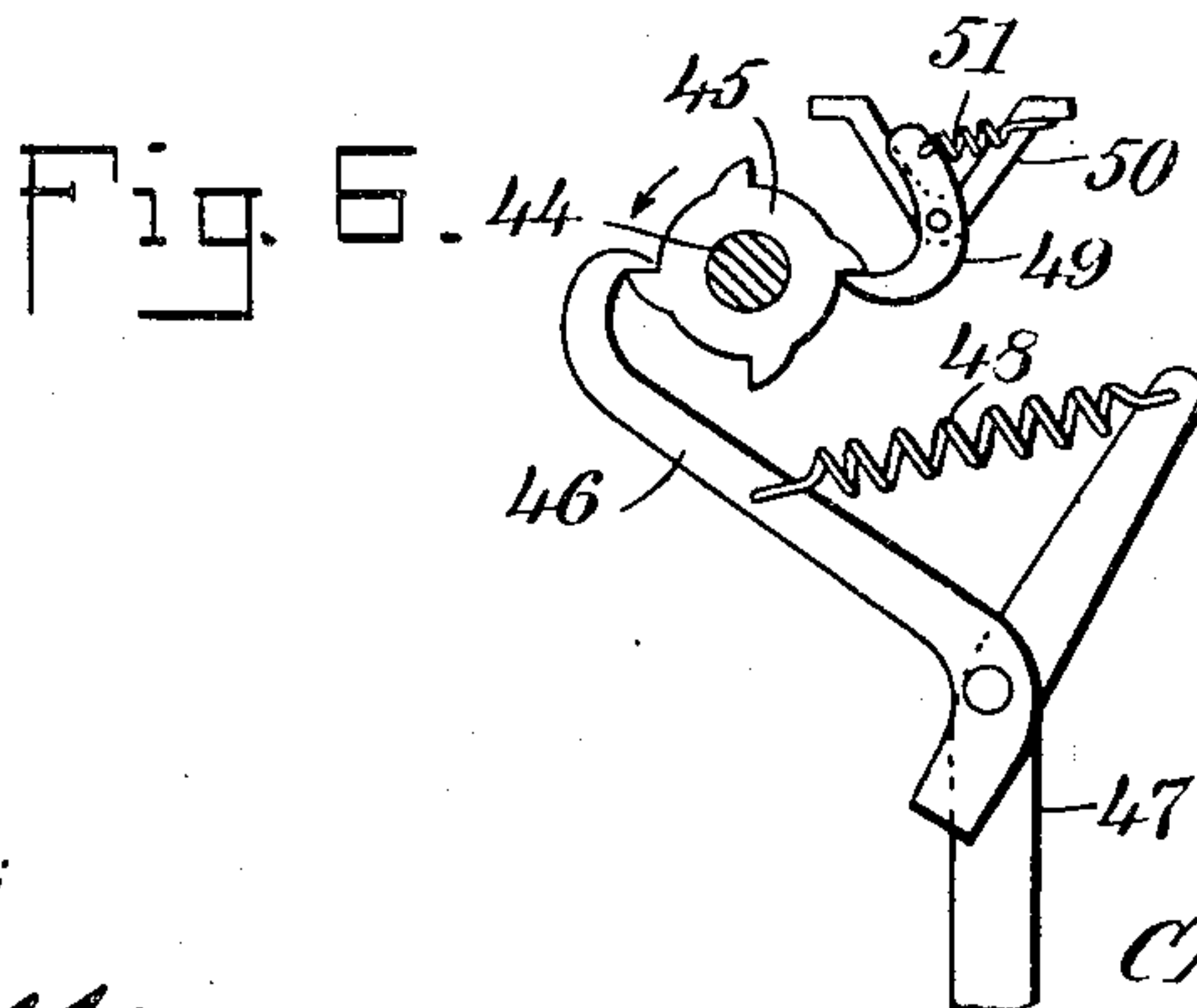
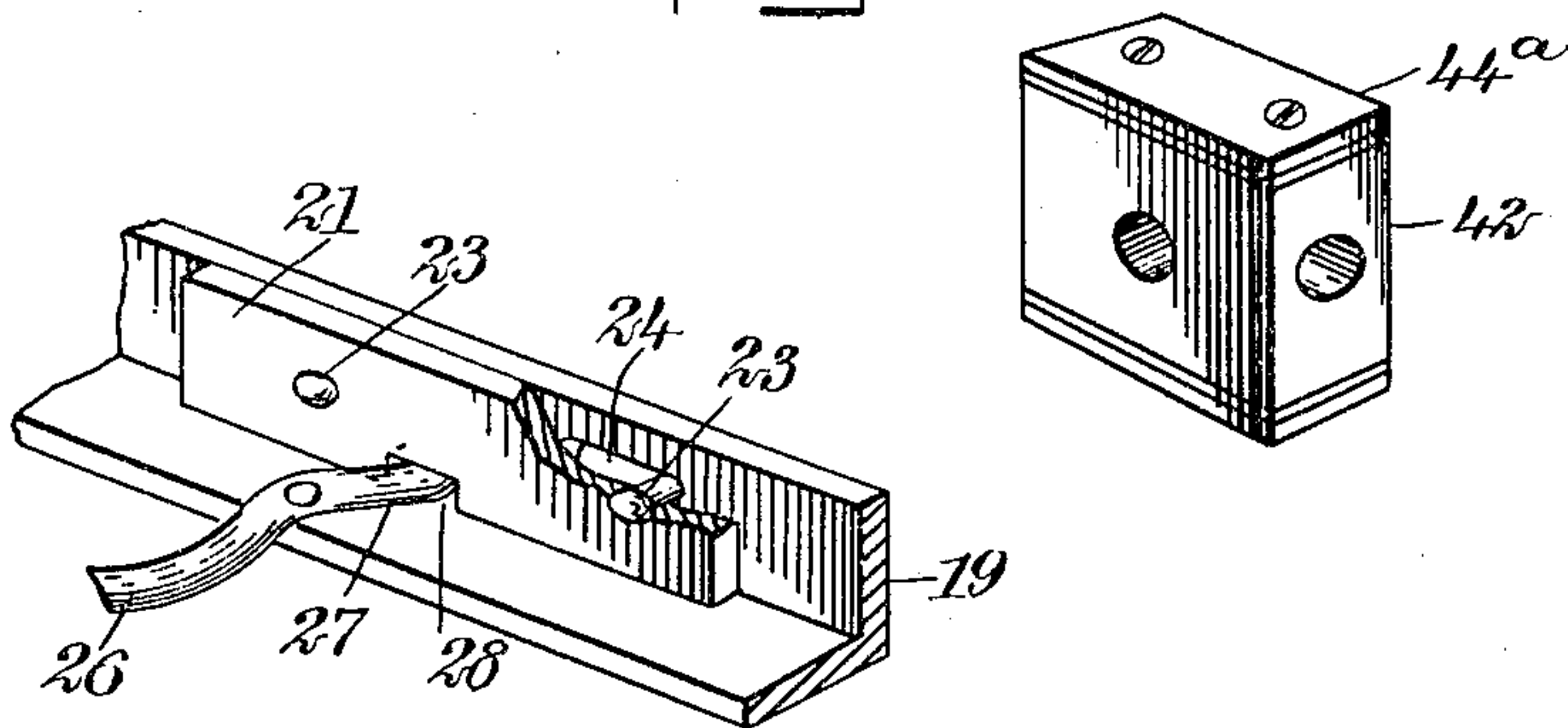


Fig. 4.

Fig. 7.

Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES AUGUST KALLSTROM, OF LUFFENHOLTZ, CALIFORNIA.

SAWING-MACHINE.

No. 860,387.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed January 13, 1906. Serial No. 295,875.

To all whom it may concern:

Be it known that I, CHARLES AUGUST KALLSTROM, a citizen of the United States, and a resident of Luffenholtz, in the county of Humboldt and State of California, have invented a new and Improved Sawing-Machine, of which the following is a full, clear, and exact description.

My invention relates to apparatus for sawing lumber and more particularly to shingle machines.

Its principal objects are to provide an effective apparatus which may be conveniently adjusted and which will guard the operator against accident.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the principal portion of my improved machine. Fig. 2 is a vertical section therethrough on the lines 2—2 of Fig. 1. Fig. 3 is a horizontal section on the line 3—3 of Fig. 2. Fig. 4 shows the upper portion of the machine in front elevation with the elements in another position. Fig. 5 is a perspective detail of the means for manually moving one of the feed-rolls. Fig. 6 is a detail in side elevation of the ratchet mechanism upon the actuating-shaft. Fig. 7 is a perspective view of one of the actuating members, and Fig. 8 illustrates diagrammatically the relation of the work to the saw.

I have here shown a narrow, vertical main-frame 10 from the inside of which extend opposite projections 11—11, furnishing vertical guides for a frame 12 of the work-carriage, this frame being preferably formed of angle-iron. Mounted near the center of the carriage-frame is a table 13 extending farther at one side of the main-frame than at the other and having its outer extremity supported by brackets 13^a. Journaled in the table with their peripheries extending above it are a series of work-supporting rolls 14. At the inner side of the frame, or that opposite its extension, are separated feed-rolls 15 and 16, the former of which is rotatably mounted in normally-fixed lower and upper bearing-blocks 17 and 18, respectively, attached to intermediate and upper horizontal members 19 and 20 of the frame 12. Movable upon the members 19 and 20 and toward and from these bearing-blocks are similar blocks 21 and 22 in which are journaled the roll 16. Extending from the blocks 21 and 22 are pins or projections 23 entering the slots 24 in the members 19 and 20, these permitting the movement of the blocks along the members while holding them against displacement. Connecting the blocks 17 and 21 and 18 and 22 are springs 25—25 which tend to draw the movable blocks toward their companions, thus holding the feed-rolls in their most closely adjacent relation. To permit the operator to vary the space between the feed-rolls, a lever 26 is fulcrumed upon the frame members 19 and 20, it having a

looped portion projecting at one side of the table and outwardly from the main-frame. The inner ends 27 of this looped lever enter openings 28 in the blocks 21 and 22, their engagement permitting the blocks, and consequently the feed-roll carried thereby, to be moved outwardly when the lever is swung toward the table. Although the blocks 17 and 18 have been referred to as normally fixed it will be evident that they may be attached to the frame at different points, thus allowing the introduction of blocks of quite different widths.

Adjacent to the frame 10 is a standard 29 carrying the bearings of a shaft 30, this shaft having fixed upon it a saw 31. The saw may be driven at the desired speed from any suitable source of power by a pulley 32 fast upon the shaft. The inner face of the saw is adjacent and parallel to the axes of the feed-rolls.

The carriage-frame has pivotally connected to it a rod or driving member 33 which may extend to some mechanism suitably counterweighted to compensate for the movable parts of the machine, and which will cause the reciprocation of the table along the guides preferably with a slow downward movement and a quick return.

In the bearing-blocks 18 and 22 are journaled horizontal shafts 34 which are connected by bevel gearing 35 to the feed-rolls. At the opposite ends of the shafts 34 from the gearing are attached ratchet-wheels 36 with which coöperate pawls 37 movably mounted upon standards 38 rising from the member 19 and having a slot and pin connection 39 therewith. Springs 40 connect the standards and pawls and serve to draw the latter to their highest positions. The pawls are provided with upwardly projecting contact arms 41, which contact-arms coöperate with actuating-blocks 42—42 fixed by screws 43 to a shaft 44 journaled near the top of the main-frame. The sides of the block project at different distances from the shaft, so that when the arms 41 contact with them they will cause the pawls to move through different distances. The direction of maximum extension of each of the actuating-blocks is substantially at right angles to that of its companion, thus causing a minimum movement of one pawl and therefore a similar rotation of the associated feed-roll when the other pawl and feed-roll are actuated to their maximum extent. To vary amount of movement thus secured, plates 44^a may be screwed to the sides of the blocks.

To present one or another of the faces of the blocks to the contact-arms of the pawls, the shaft 44 is intermittently rotated through a quarter-turn; this I have shown as accomplished by a ratchet-wheel 45 fixed to the shaft and engaged by a pawl 46 pivoted upon an arm 47 projecting from the carriage-frame. A spring 48 draws the operating end of the pawl into engagement with the ratchet-wheel. A detent 49 pivoted

upon a bracket 50 attached to the main-frame is held against the ratchet-wheel 45 by a spring 51, this detent being placed oppositely to the pawl 46 and serving to prevent reverse rotation of the actuating-shaft.

- 5 In using the machine, the operator places one or more blocks upon the supporting-rolls, if two are applied, they being situated one above the other. Then, by swinging the lever 26 inwardly, the feed-roll 16 is separated from its companion, permitting the introduction of the blocks between the rolls. The lever being released, the springs draw the feed-rolls toward one another thus firmly holding the block in its proper relation to the saw. As the driving mechanism operates the carriage is rapidly raised, bringing the contact-arms 41 against the faces of the actuating-blocks. As these, as has been stated, project at different distances while the ends of the arms lie in the same horizontal plane, the feed-rolls will be rotated through different angles, thus causing one side of the block to be fed farther than the other (Fig. 8). As the carriage slowly descends the block will be brought down upon the upper edge of the saw and the shingle will be cut at the proper inclination. This operation is then automatically repeated; but as the carriage descended the pawl 46 will have rotated the actuating-shaft through 90 degrees, thus reversing the faces of the blocks. A reversal of the feed-rolls will result so that the next shingle will be cut at an opposite incline. If the operator notices a defect in either end of the block he may throw out the pawl 46, thus causing the saw to cut two or more butts at the same end. The same course may be followed if one end of the block is wider than the other. If one desires to saw box-lumber or other short stock rather than shingles, the actuating-blocks may be turned so that similar faces project in the same direction, thus causing the work to be advanced in right lines. At the same time the pawl 46 is thrown out.

It will be noted that the operator stands upon the side of the frame at which the carriage projects, and this is at the opposite side from the saw. It will, therefore, be practically impossible for him to be in-

jured. As the carriage moves vertically there is substantially no friction on the track and no lost motion; and, as the cutting takes place at the sides of the saw, the dust will leave it in a vertical direction, rendering it easier to dispose of. With my improved machine it is possible to use thinner saws, thus saving lumber, and said saws may be used longer.

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

1. A sawing machine comprising a support, a frame slidable vertically upon the support, feed rolls journaled vertically in the frame and spaced apart from each other, one of said rolls being mounted to yield with respect to the other roll, a saw behind the rolls, the axes of the rolls being in a plane parallel to the plane of the saw, a ratchet wheel secured to each of the feed rolls, a pawl arm on the frame adjacent to each of the ratchet wheels, pawls slidably mounted on the respective arms for engaging the ratchet wheels whereby to rotate the rolls, a shaft journaled transversely of the support near the upper end thereof, blocks on the shaft for engaging the pawls whereby to move them into contact with the ratchet wheels, said blocks being rectangular in cross section and with one dimension greater than the other, and slidable on the shaft whereby to permit their arrangement with the greater dimension of one at an angle to the greater dimension of the other, means for fixing the blocks with respect to the shaft, a ratchet wheel secured to the shaft, and a pawl on the frame for engaging the ratchet wheel on each upward movement of the frame, whereby to partially rotate the shaft to bring the blocks into a new position with respect to the pawls.

2. A sawing machine comprising a reciprocable frame, spaced feed rolls journaled in the frame, ratchet wheels on the rolls, pawls for operating said ratchet wheels, a shaft at one end of the travel of the frame, blocks on the shaft for operating the pawls, said blocks being rectangular in cross section and having one dimension greater than the other, means for adjusting the blocks on the shaft, whereby to place the greater dimension of one at an angle with respect to the greater dimension of the other, and means for rotating the shaft a quarter turn during each complete reciprocation of the frame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES AUGUST KALLSTROM.

Witnesses:

HENRY S. SEELY.

J. R. BROWN.