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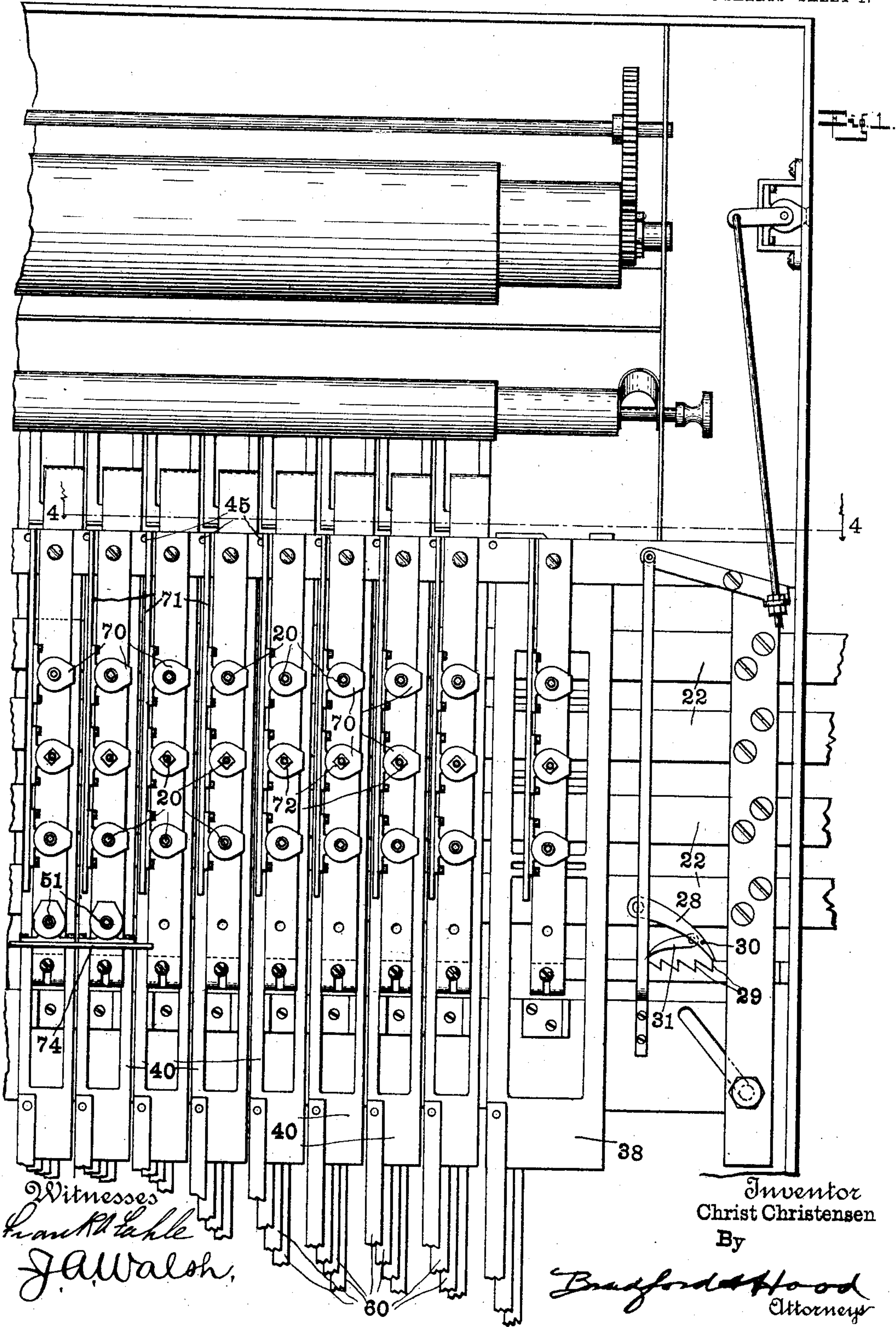
PATENTED DEC. 20, 1904.

C. CHRISTENSEN.  
VOTING MACHINE.

APPLICATION FILED AUG. 22, 1902.

NO MODEL.

5 SHEETS—SHEET 1.



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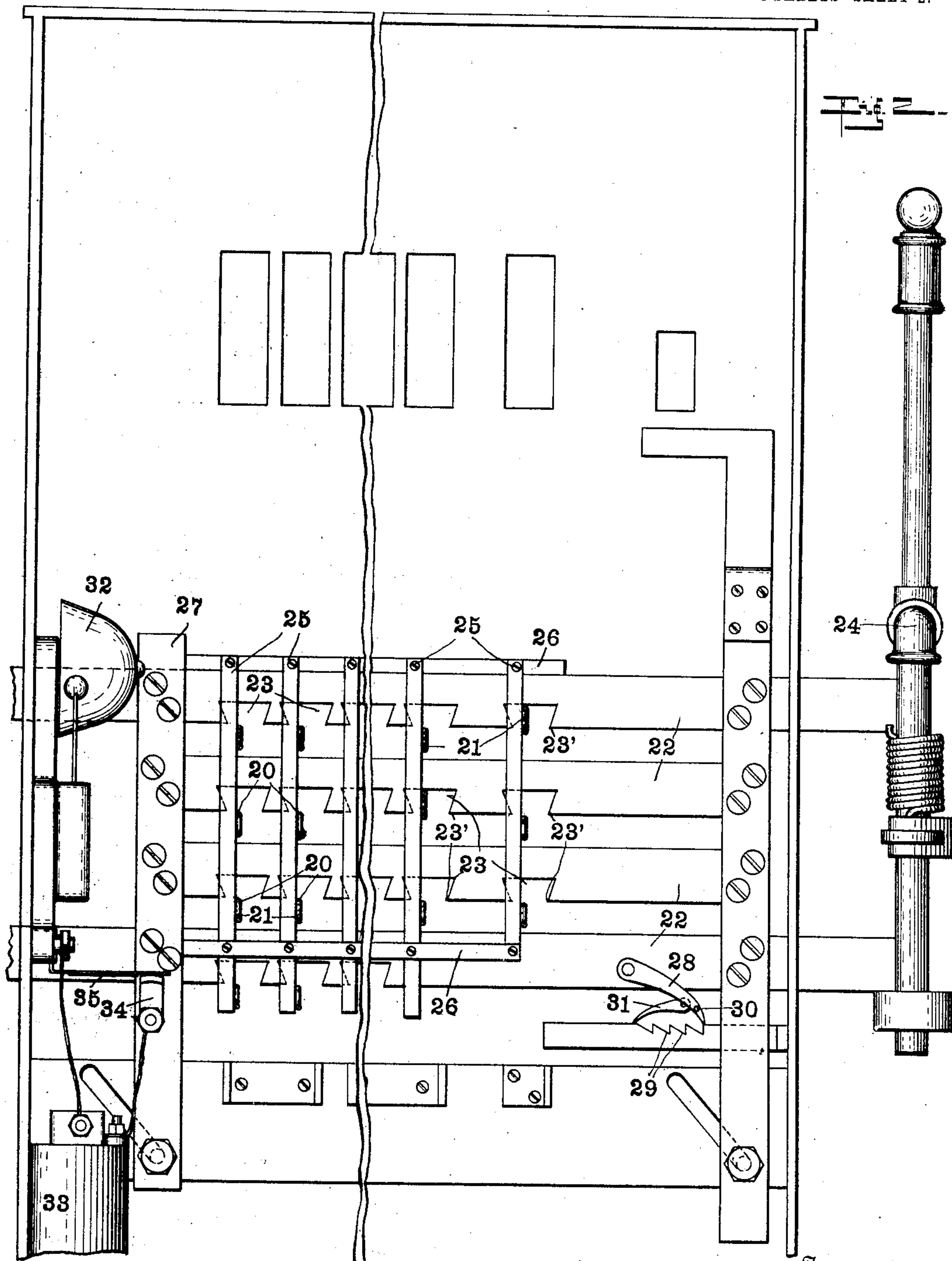
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5 SHEETS—SHEET 2.



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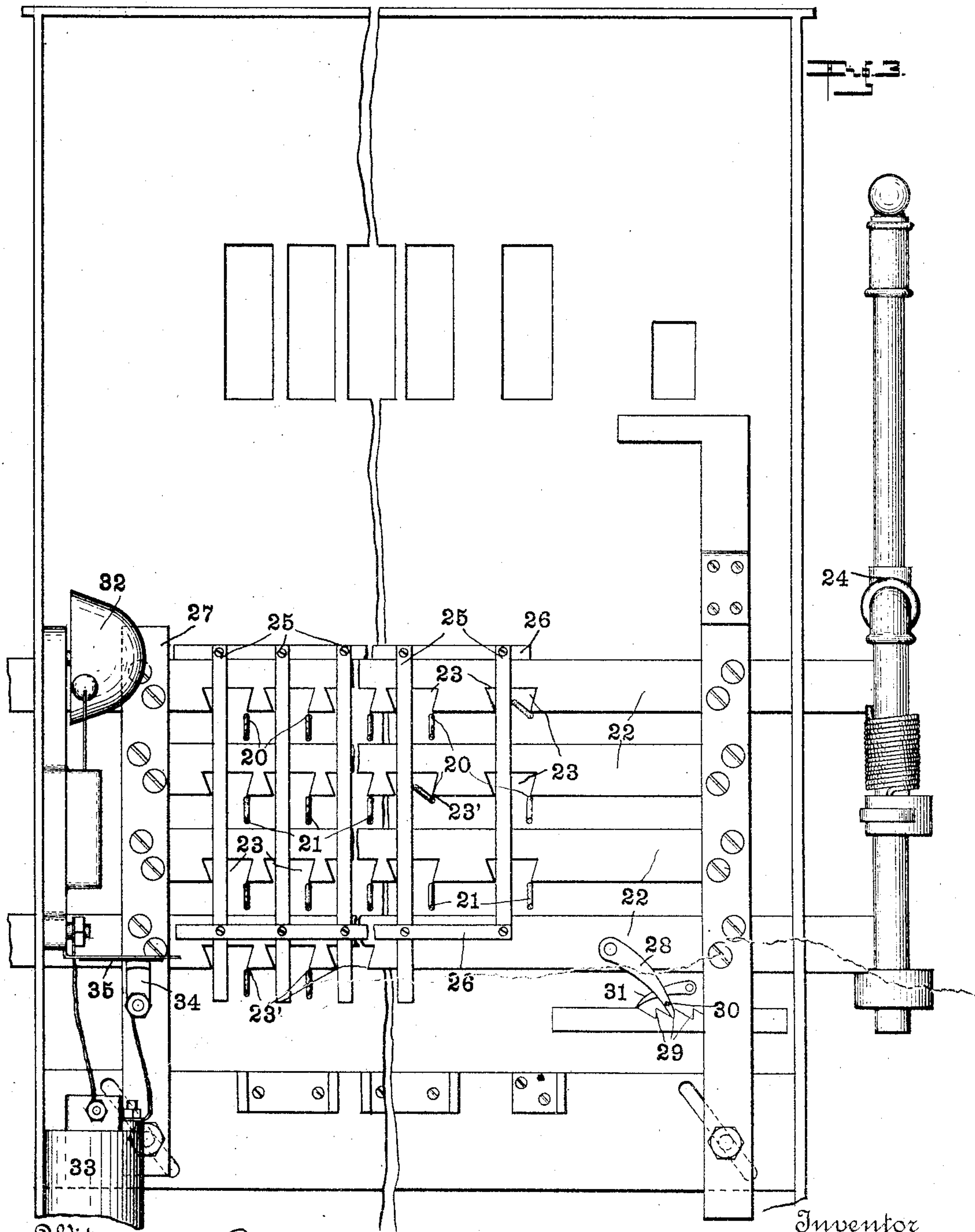
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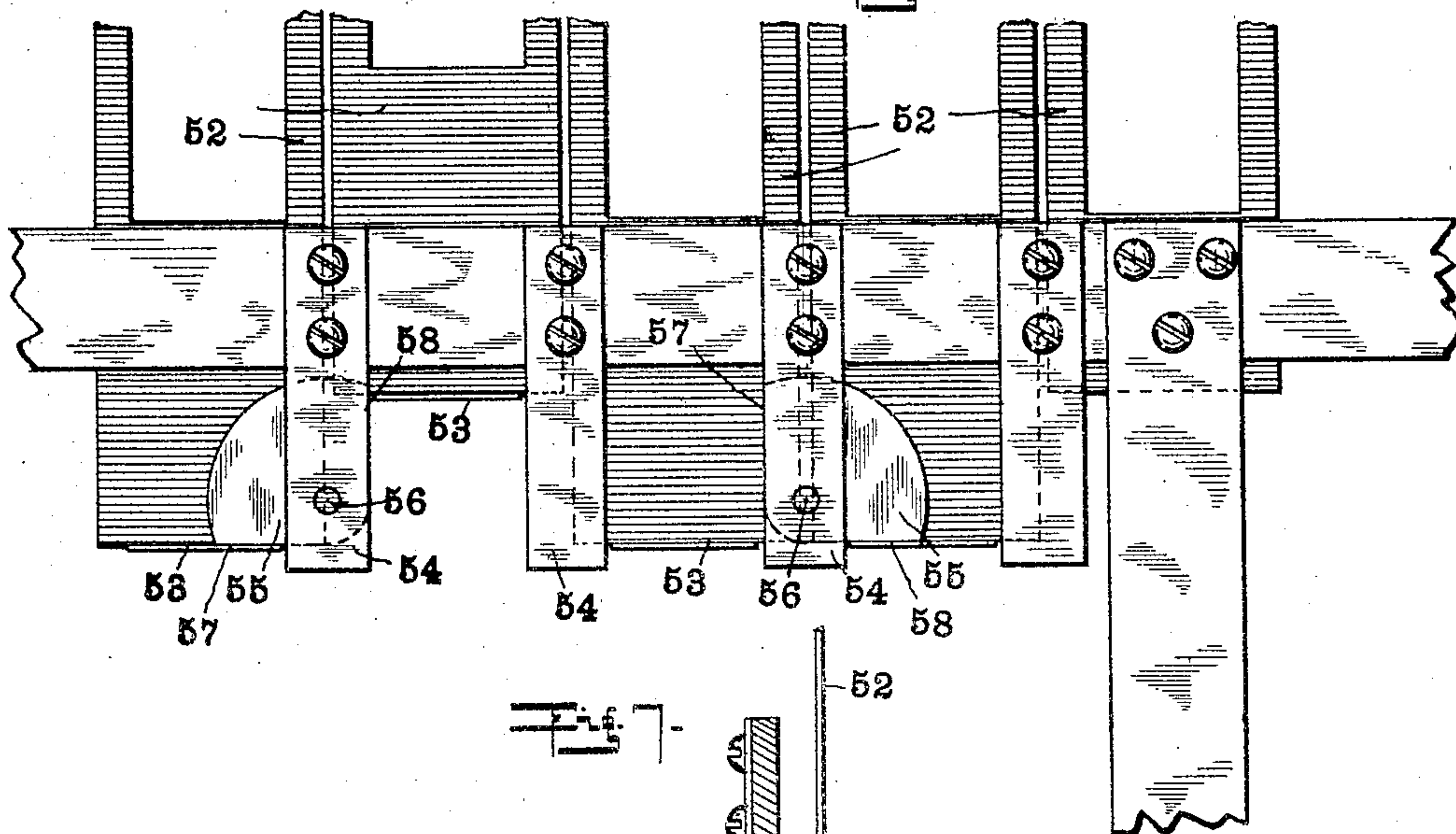
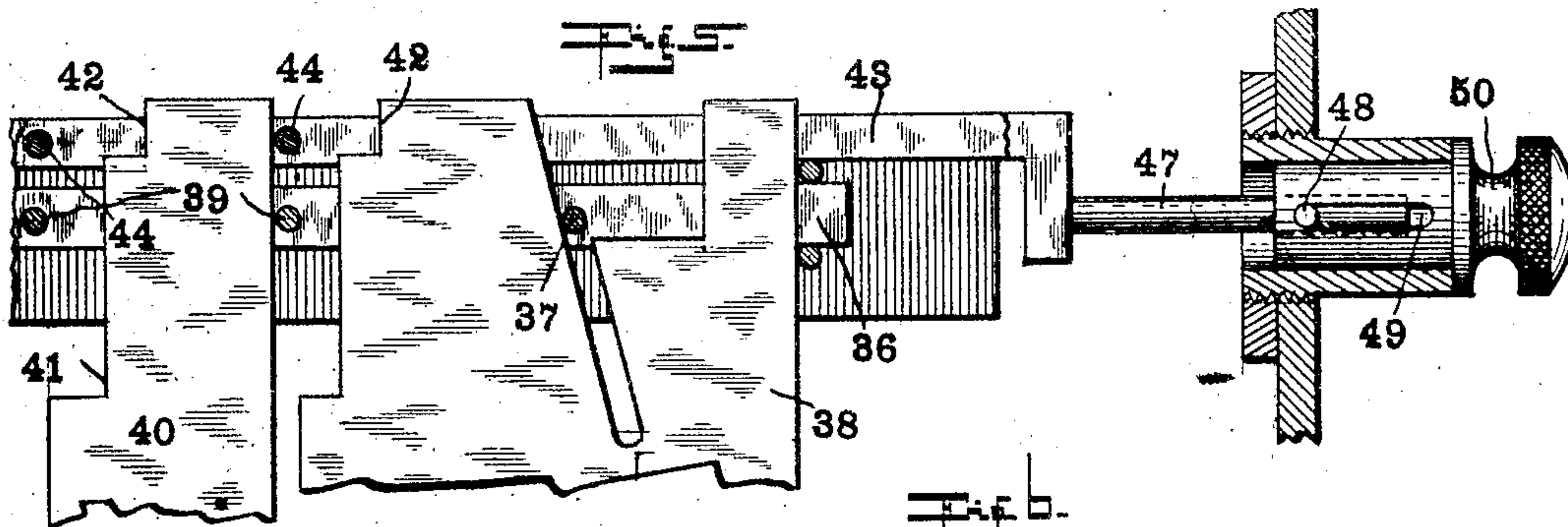
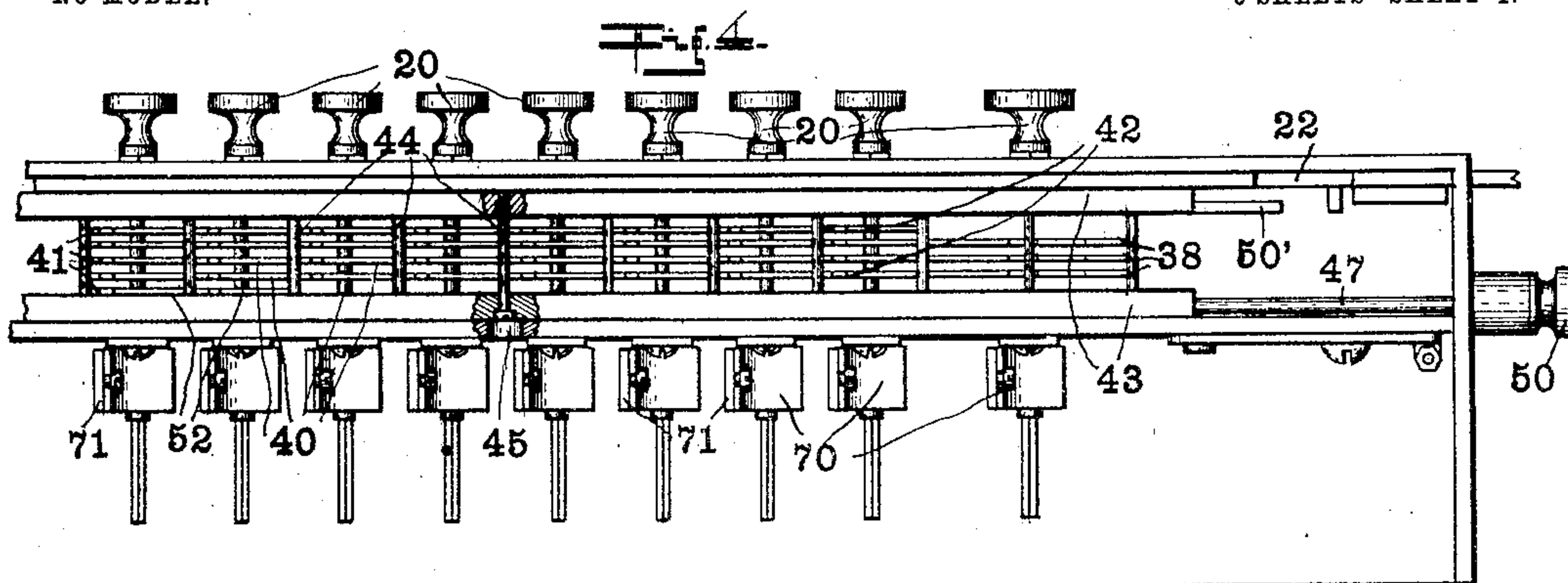
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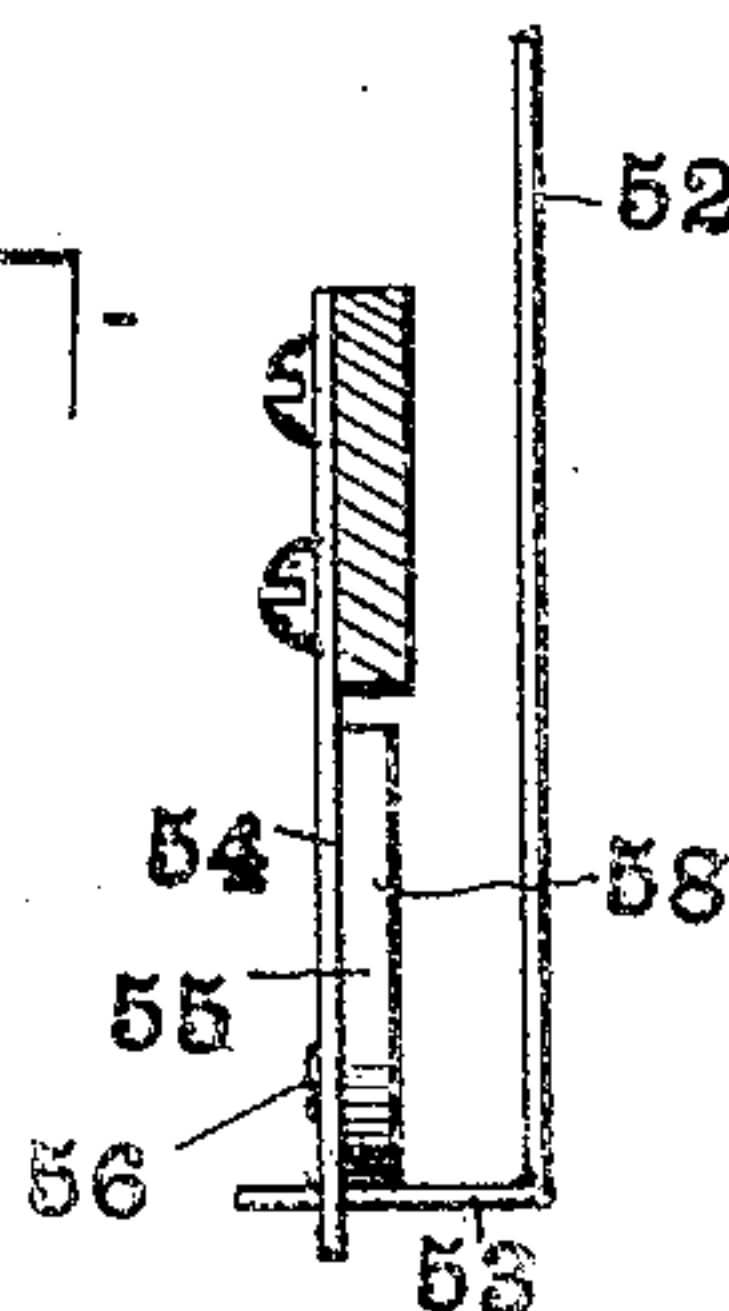
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5 SHEETS—SHEET 4.



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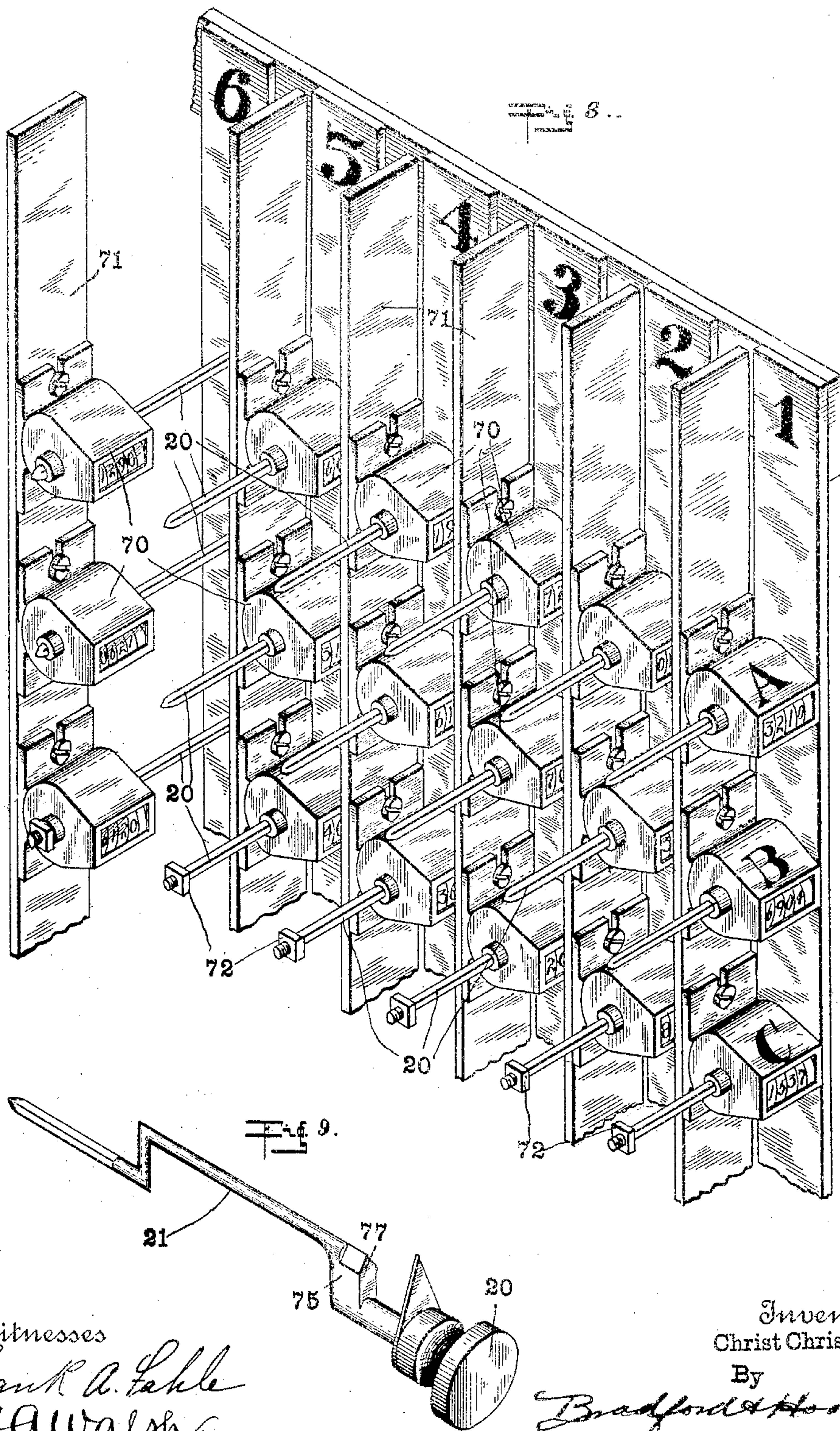
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NO MODEL.

5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

CHRIST CHRISTENSEN, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO  
COLUMBIA VOTING MACHINE COMPANY, OF INDIANAPOLIS,  
INDIANA, A CORPORATION OF INDIANA.

## VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 778,111, dated December 20, 1904.

Application filed August 22, 1902. Serial No. 120,628.

*To all whom it may concern:*

Be it known that I, CHRIST CHRISTENSEN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Voting - Machines, of which the following is a specification.

The object of my invention is to provide improvements in the details of construction in voting-machines, especially of that type described and claimed in my Patent No. 658,204, issued September 18, 1900, by means of which the voter may be absolutely prevented from casting an improper vote and from improperly manipulating the mechanism, to provide an improved means for supporting the counters whereby any counter or group of counters may be drawn from its normal position to reading position, so as to separate this group of counters from the general arrangement to facilitate the easy reading of the same, and to provide such improvements in details of construction, as shall be hereinafter pointed out.

In the accompanying drawings, which illustrate my invention, Figure 1 is a rear elevation of the entrance end of my improved machine, the interlocking mechanism between the office rows being omitted. Fig. 2 is a rear elevation of the two ends of my machine, the intermediate portion being broken away and the counting mechanism being omitted in order to show the locking-grid. Fig. 3 is a view similar to Fig. 2 with the parts moved from voting position toward the voted or locked position. Fig. 4 is a horizontal section on line 4-4 of Fig. 1, showing the mechanism for locking the slides. Fig. 5 is an elevation of a part of Fig. 4 and a detail of the operating end of the limited vote-lock. Fig. 6 is a rear elevation of the interlocking means between the "yes" and "no" keys. Fig. 7 is a side elevation thereof. Fig. 8 is a perspective detail of the counter-mounting, and Fig. 9 is a perspective view of an improved key.

In the drawings I have illustrated my improvements as applied to that type of voting-machine which is particularly described and claimed in the patent already mentioned and

in my pending application, Serial No. 68,098, the fundamental features of this machine consisting of a plurality of completely rotatable voting-keys 20, each of which is provided with a cranked portion 21, the said keys being arranged in office and party rows in the ordinary manner. Arranged adjacent these keys is a locking-grid composed of longitudinal bars 22, each of which is provided with a plurality of notches 23, into which the cranked portions of the voting-keys may be turned when the grid has been shifted to voting position by means of the entrance-gate 24, the bars 22, however, preventing any voting operation of any of the keys when the grid is not in the extreme position produced by a proper and complete movement of the entrance-gate and the shoulders or sides of the notches serving to complete the rotation of those voting-keys which have been turned to voting position upon the return movement of the grid produced by the proper movement of the exit-gate, (not shown,) as clearly described in the pending application before mentioned.

In order to prevent absolutely any improper movement of the voting-keys and in order to bring them uniformly to normal position after they have been turned to voted position and to provide a stop determining exactly the position to which any key may be turned by a voter, I have provided a supplemental grid, which is composed of a plurality of vertical bars 25, one of which is arranged immediately adjacent each vertical or office row of keys, and these vertical bars are connected by horizontal bars 26, which serve to maintain the relative position of the vertical bars, and the grid thus formed is suspended adjacent the main grid, the exit end of the supplemental grid being extended so as to be engaged by the vertical bar 27 of the main grid when said main grid is moved to the voting position by the entrance-gate. When the main grid has been shifted by the entrance-gate to voting position, the vertical bars of the supplemental grid have been moved until one of said bars has been brought immediately adjacent the



stems of an office row of keys, as shown in Fig. 2. The normal position of each key is when the cranked portion thereof is depending, and the position of the supplemental grid described prevents any reverse movement of any key, any key being free (the interlocking mechanism permitting) to be turned until its cranked portion has passed into the adjacent notch 23 of the main grid and come again to a stop against the supplemental grid. The supplemental grid therefore serves the double purpose of a stop for the keys to prevent any reverse movement and too great a forward movement. It will be noticed in this connection that the initial movement of the voting-key, which is permissible by the voter in direct manipulation of the key, is a prerequisite of the operation of the corresponding registering mechanism, although this particular movement of the key under direct control of the voter does not move the registering mechanism at all. After the voter has moved the desired keys so as to throw their cranked portions into the adjacent notches 23 of the main grid and against the vertical bars of the supplemental grid he passes out through the exit-gate (as in the machine described in my application already mentioned) and shifts the main grid to the left, Fig. 2, thus bringing the point 23' of the notch 23 beyond the path of movement of the cranked portion of the voting-key, thus imprisoning said cranked portion between the rear wall of the notch and the adjacent vertical bar of the supplemental grid. The supplemental grid does not move until the corner 23' of the main grid is brought into engagement with the upturned crank of the voted key, when the pressure upon the key serves to force the supplemental grid to the left simultaneously with the further movement of the main grid until the crank of the key has been forced to a horizontal position, whereupon the key is continued in its revolution by the downward pull upon the interlocking slides, as in the pending application. After a voter has operated those keys which he is entitled to operate the voted keys are moved onward by a return movement of the main grid, as described, and a dishonest voter might attempt to manipulate the exit-gate enough to throw the keys which he has operated and then attempt to reopen the machine by a movement of the entrance-gate, and in order to prevent such operation absolutely and compel a complete reciprocation of the main grid immediately upon any movement of the exit-gate, which must be moved before any of the operated keys can be caused to proceed on their way to a completion of the registration of the vote, I pivot upon the main grid a locking-pawl 28, the free end of which is adapted to engage any one of a series of ratchet-teeth 29, formed on a stationary bracket in a direction which will prevent the return of the grid to voting position from any intermediate position.

Pawl 28 carries a pin 30, which when the grid is moving from voting to locked position will pass beneath a pivoted switch 31, arranged above the ratchet-teeth 29, the said switch serving upon the movement of the grid from its locking position to voting position as a guide for the pin 31, so as to raise the pawl above the ratchet-teeth.

I also provide a signal-bell, preferably electric, 32, which is connected in circuit with a battery or other suitable supply 33. Bar 27 of the main grid carries a terminal 34, which forms part of the bell-circuit, and this terminal is adapted to be brought into engagement with a plate 35, which is also a part of the bell-circuit, said plate being preferably insulated at each end and of such length that immediately upon any movement of the grid the terminal 34 will be brought into engagement with the plate 35, and thus complete the circuit, so as to sound the bell and to continue to sound the bell until the grid has been moved to the extreme opposite position.

It is necessary in many States to provide means by which persons possessing a limited franchise may exercise their right, but may not operate any portion of the machine relating to candidates for whom they are not entitled to vote. In my prior application I described a locking-ladder 36, which is provided with a rung 37, operated by the straight-ticket interlocking slides 38, and a plurality of rungs 39, each of which lies adjacent one group of candidate interlocking slides 40, said rungs being adapted upon the operation of a straight-ticket key to be drawn over a shoulder 41, formed on each candidate interlocking slide. For the purpose of locking certain of the slides without locking others in order to provide for a voter possessing a limited franchise each candidate-slide is provided with a second shoulder 42, and I arrange on top of the interlocking ladder 36 a second interlocking ladder 43, provided with a plurality of rungs 44, each one of which is preferably individually removable, preferably from that side of the ladder which lies adjacent the back of the machine, and as many rungs being provided as there are office rows of keys and one additional for the straight-ticket keys. In the drawings I have shown each of these rungs as consisting of a screw provided at its rear end with a slotted head, which in normal position will come opposite an opening 45 in the supporting-framework, the arrangement being such that the rungs may be easily removed or replaced individually. The limited-voting interlocking ladder may be operated from the outside of the machine by an election inspector, so as to throw the machine into the limited-voting condition, and for this purpose said ladder is provided with a stem 47, which extends through the side of the machine-casing and is provided with a pin 48, which projects into a slot 49, formed in an operating-



head 50, the arrangement being such that an outward pull upon the head 50 will serve to draw the interlocking ladder into locking position, whereupon the head 50 may be returned to original position without affecting the position of the interlocking ladder. This ladder will be returned to normal position by a finger 50', arranged to be engaged by a portion of the main grid.

In order to provide a simple yet efficient locking mechanism between the "yes" and "no" keys, I have provided the following mechanism: Each of the "yes" and "no" keys 51 is similar in construction to the candidate-keys and passes through the cross-slot of an interlocking slide 52, which at its lower end is provided with an outturned lip 53. Lying between each pair of lips 53 is a guide-bar 54, and between each pair of "yes" and "no" keys in the guide-bar 54 I pivot a segmental locking-block 55, said block being pivoted at its lower end at 56 and preferably approximately a quadrant of a circle, thus forming a pair of shoulders 57 and 58. The interlocking segment 55 will rest normally to one side or the other of its center with, say, its face 58 resting upon the lip 53 of one slide, while its face 57 will stand vertically and substantially flush with the adjacent edge of the guard 54, the lip 53 of the adjacent slide 52 being thus free to move upward between two guards 54 and operating as soon as it does move upward to prevent any movement of the segment 55 about its center, and thus lock the other slide 52 of the pair against operation. If, however, the slide 52, which has been operated, be returned to its initial position with its lip 53 below the pivotal point of the segment 55, the other slide of the pair may be moved upward, its lip 53 engaging the face 58 of the segment 55 and operating to turn said segment about its center until its face 57 drops upon the lip 53 of the opposite slide of the pair.

In my machine I use an inclosed counter 70, (of the Veeder type,) the stem of the voting-key passing through the casing, and in order to facilitate the reading of the counters I prefer to arrange them in groups, preferably by office rows, (but by party rows, if desired,) and to use a counter in which the reading-face lies parallel with the axis of the voting-stem. For this purpose I have shown in Figs. 1 and 8 a plurality of vertical bars 71, one of which is arranged alongside each office row of keys at the back of the machine, inside of the casing, of course, and this bar forms a connector between all of the counters 70 of the corresponding office row, the weight of the bar being suspended upon the stems of the voting-keys. In order to facilitate the reading of the counters, I extend the voting-key stems at the rear, as shown in Fig. 8, considerably through and beyond the counter, and then upon one or more of each group of these stems I mount

a detachable head 72—a nut, for instance. Under normal circumstances and during the election the counters will all lie close to the supporting-framework, as shown in the right of Fig. 8, and in this position the reading-face of each set of counters is practically hidden by the connecting-bar 71 of the adjacent set of counters. After the close of the election the reading of the counters is very greatly facilitated by reason of the fact that an entire group of counters may be bodily withdrawn from the plane of the other counters, as shown at the left of Fig. 8, thus separating one group of counters from all of the rest, so that the counters of this group may be very readily read without any possibility of confusion with the remaining counters. In the lower left-hand corner of Fig. 1 I have shown two "yes" and "no" counters connected by horizontal connecting-bar 74.

In order to prevent the corners 23' of the grid-notches from catching on the crank portions of keys, I have produced the form of key shown in Fig. 9, in which the arm 75 of the crank 21 is provided with a wedge-shaped end 77.

I claim as my invention—

1. In a voting-machine, the combination, with a plurality of completely rotatable voting-keys each having a cranked portion, of a main locking-grid movable with relation to the said keys and arranged to obstruct movement of the keys when in one position and to allow movement of the keys when in another position, and a supplemental grid movable with relation to the main grid and arranged to limit movement of the voting-keys when the main grid is in position to permit movement of said keys, and intermediate connections between the main grid and supplemental grid for moving the supplemental grid to obstructing position when the main grid is in unobstructed position.

2. In a voting-machine, the combination with a plurality of completely rotatable voting-keys, of a main locking-grid cooperating with said voting-keys, and pawl-and-ratchet mechanism between said grid and the stationary part whereby upon the initial movement of the locking-grid from voting to voted position the pawl-and-ratchet mechanism will cooperate to prevent a return of the locking-grid to voting position from any point intermediate voting and voted positions.

3. In a voting-machine, the combination with a plurality of registering mechanisms, a plurality of operating mechanisms for determining the operation of the registering mechanisms, an audible signal, means for completing the registering operation, and means operated by said completing means for operating the signal during the entire operation of the completing means.

4. In a voting-machine, the combination of a plurality of registering mechanisms ar-



ranged in groups, and means permitting the withdrawal of any group from the plane of the other groups without detachment from the machine.

5 5. In a voting-machine, a plurality of registering mechanisms, a plurality of operating mechanisms adapted to control the operation of said registering mechanisms, and a support  
10 for each of said registering mechanisms whereby by one or more may be withdrawn from the normal plane to "reading" position.

6. In a voting-machine, the combination of a plurality of voting-keys, a plurality of registering mechanisms one movably connected  
15 to each key whereby said registering mechanisms may be shifted upon their keys and withdrawn from the general plane of said mechanisms.

20 7. In a voting-machine, the combination of a plurality of voting-keys each provided with an extended stem, a plurality of counters one mounted on each stem and movable thereon

whereby it may be withdrawn from the general counter plane.

8. In a voting-machine, the combination of 25 a plurality of voting-keys each provided with an extended stem, a plurality of counters one mounted on each stem and movable thereon whereby it may be withdrawn from the general counter plane, and a plurality of con- 30 necting-bars connecting said counters in groups, for the purpose set forth.

9. In a voting-machine, a key therefor having an axial stem, a crank portion, and a wedge-pointed arm forming one arm of the 35 crank, for the purpose set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 18th day of August, A. D. 1902.

CHRIST CHRISTENSEN. [L. s.]

Witnesses:

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