

No. 620,699.

Patented Mar. 7, 1899.

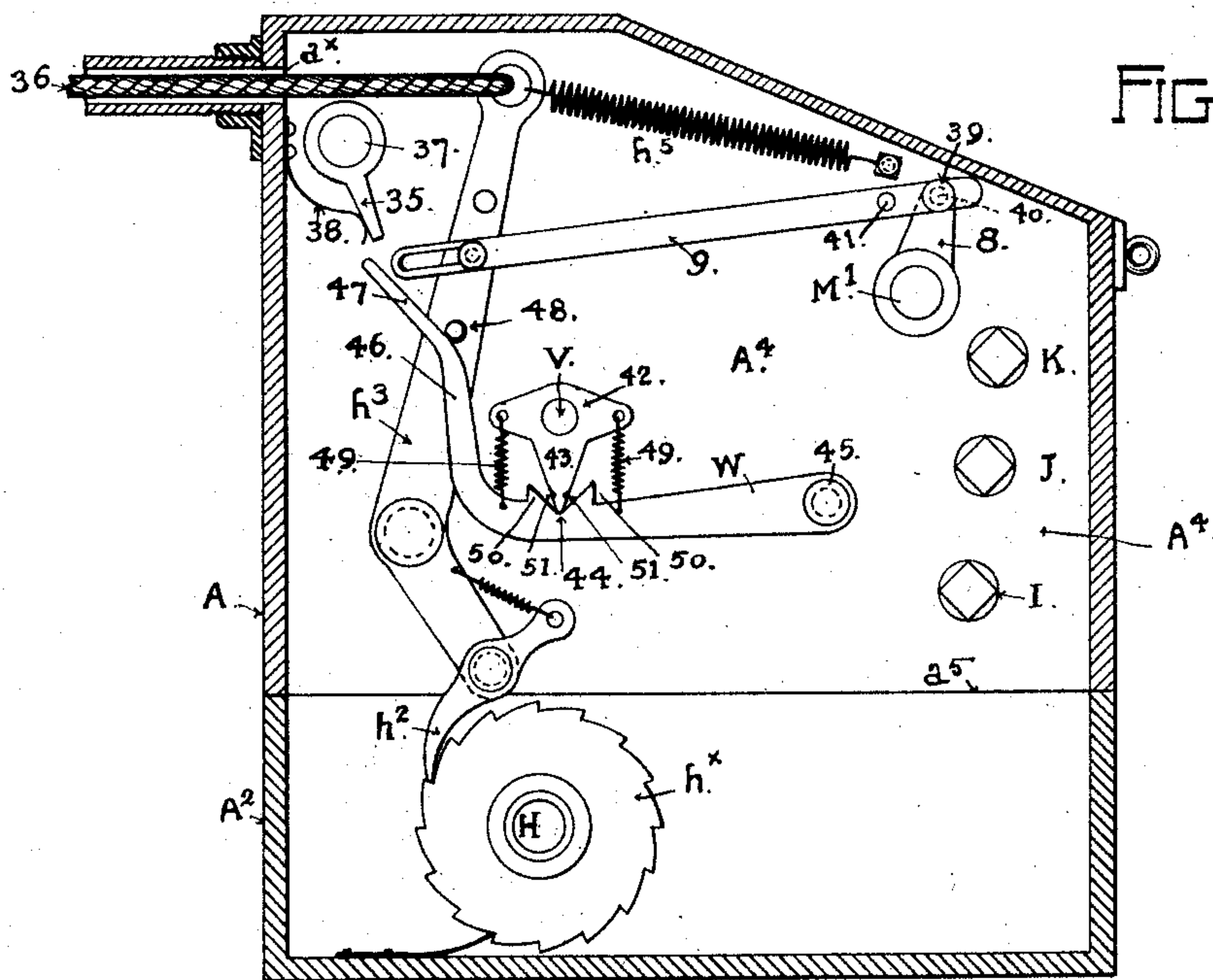
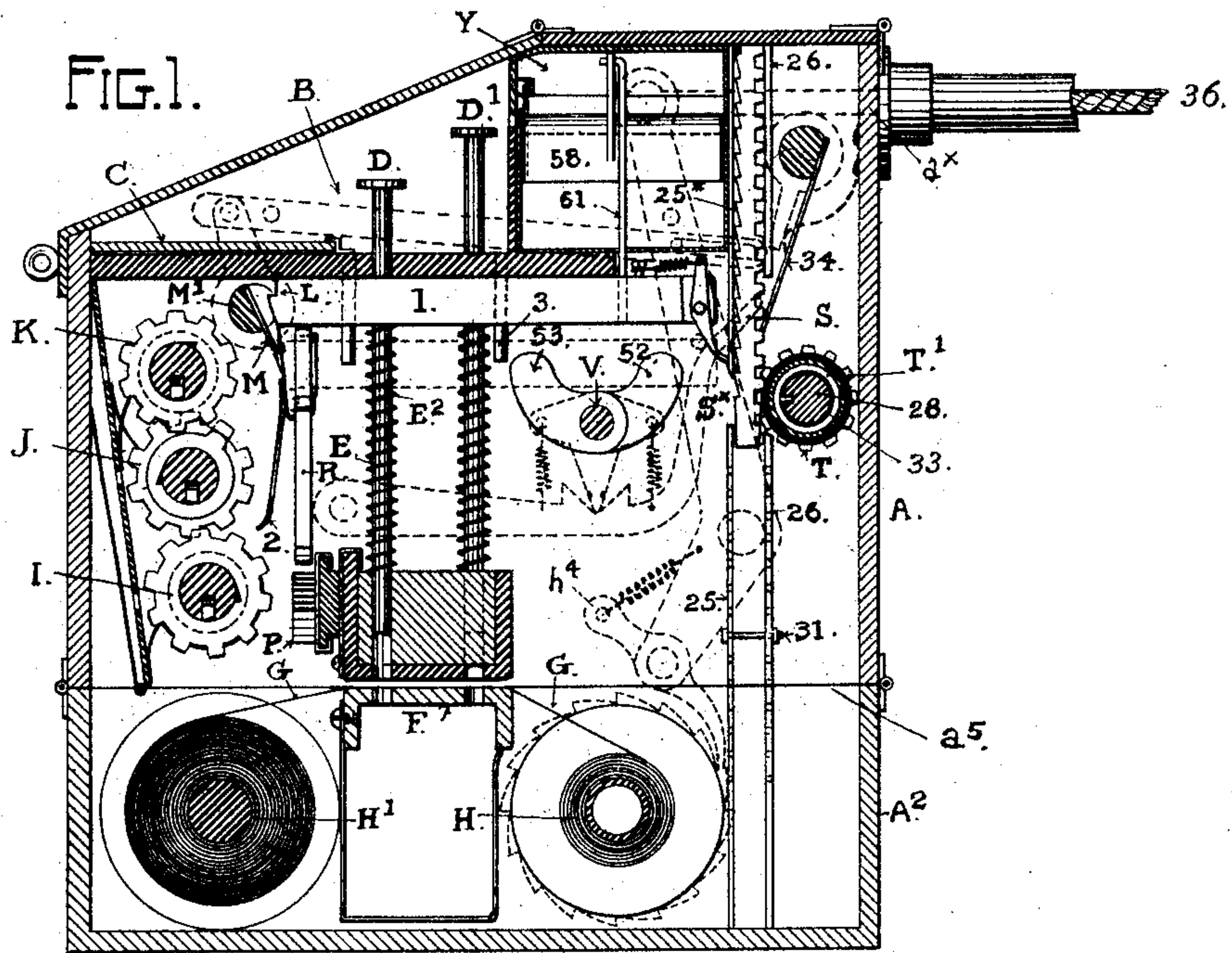
H. A. CLIFFORD.

VOTING MACHINE.

(Application filed Oct. 22, 1895.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES

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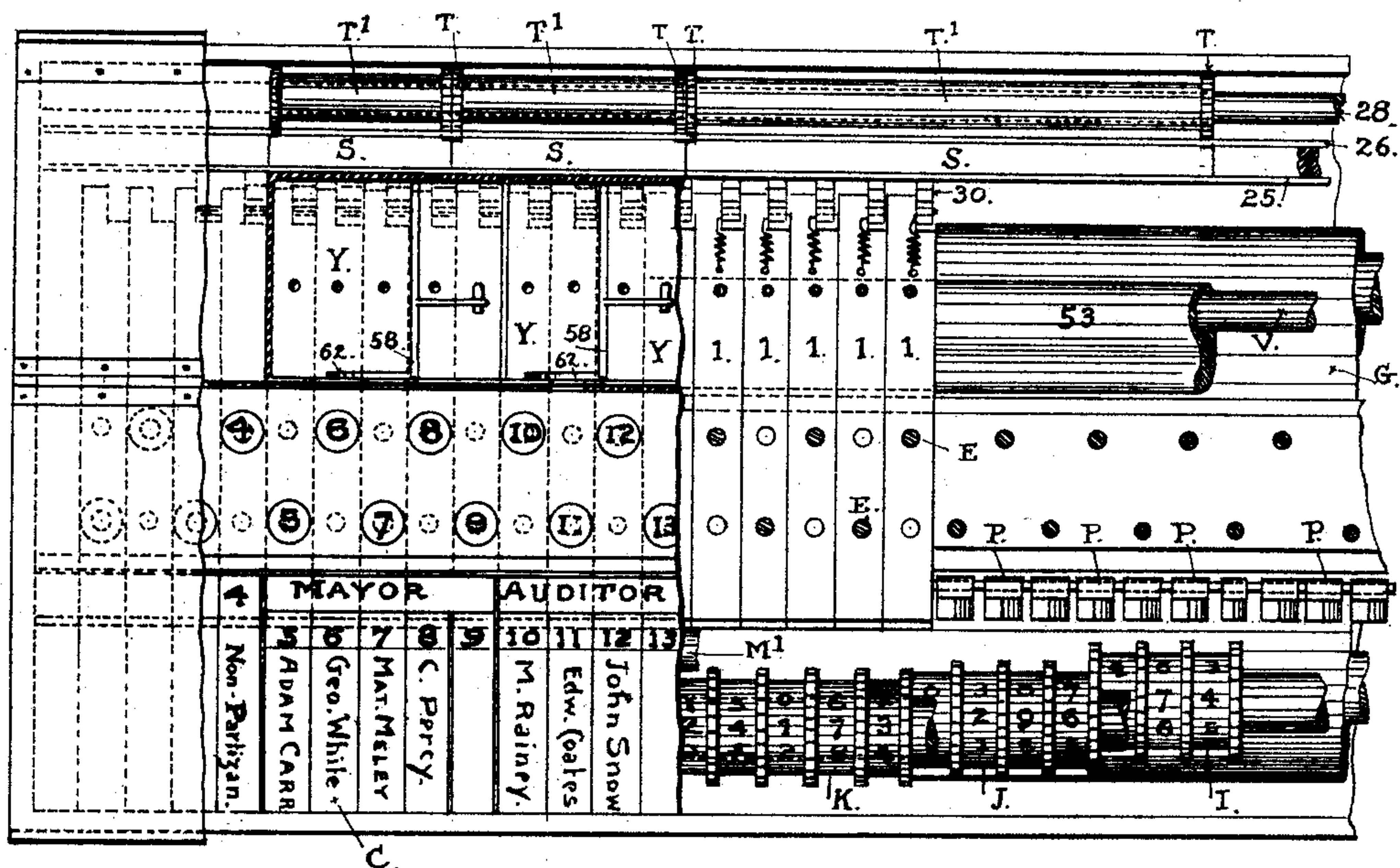
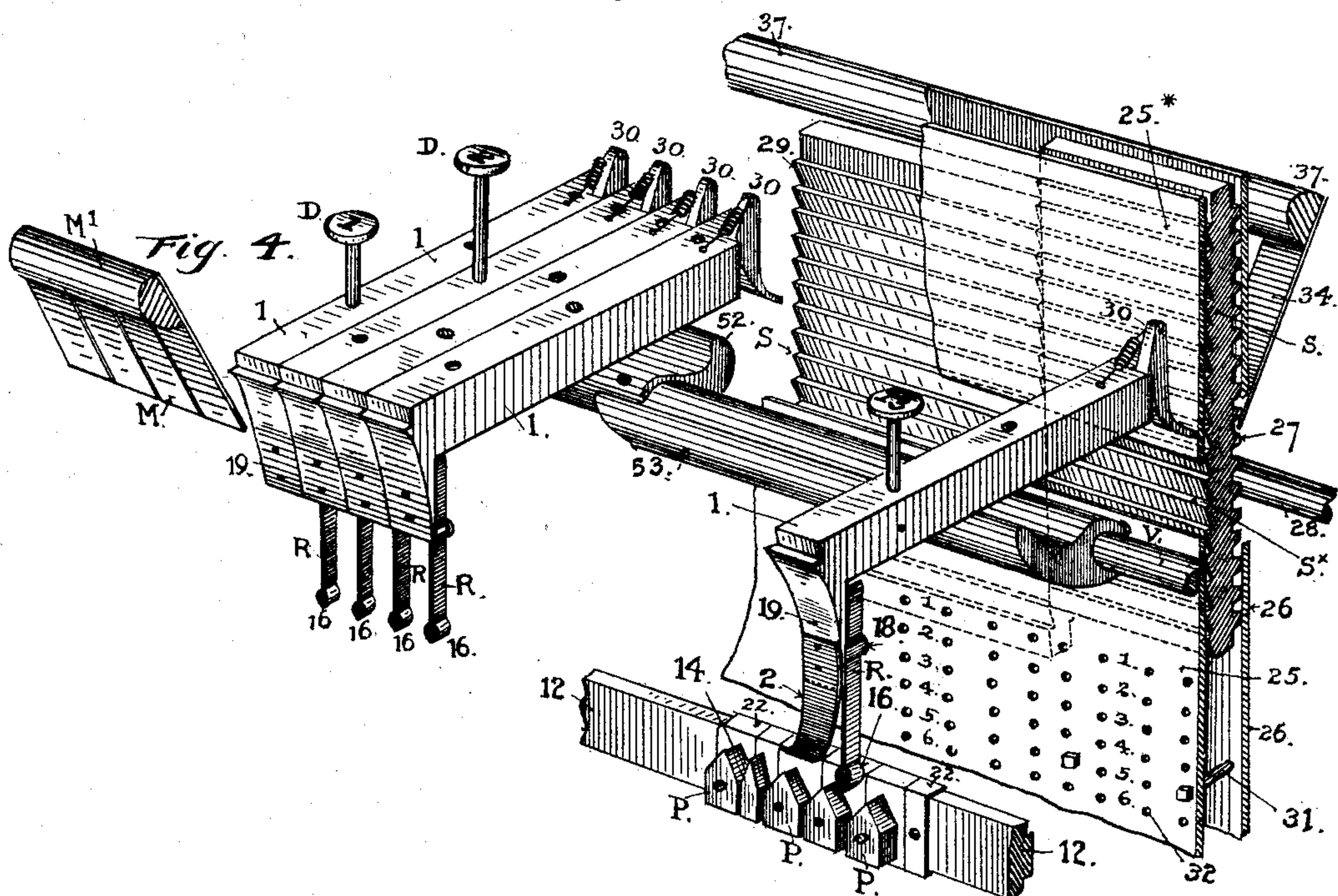


Fig. 3.



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4 Sheets—Sheet 3.

Fig. 5.

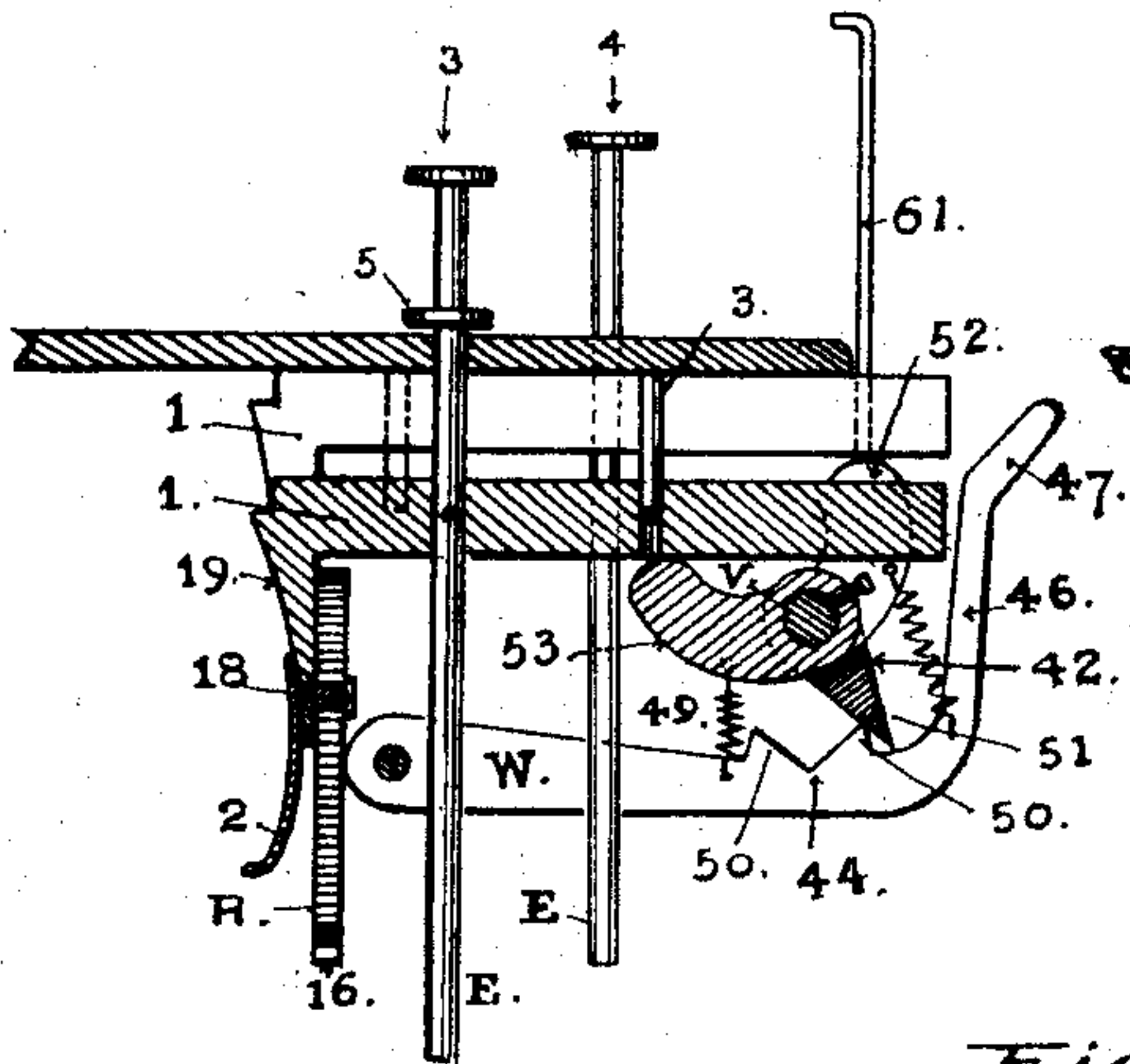


Fig. 6.

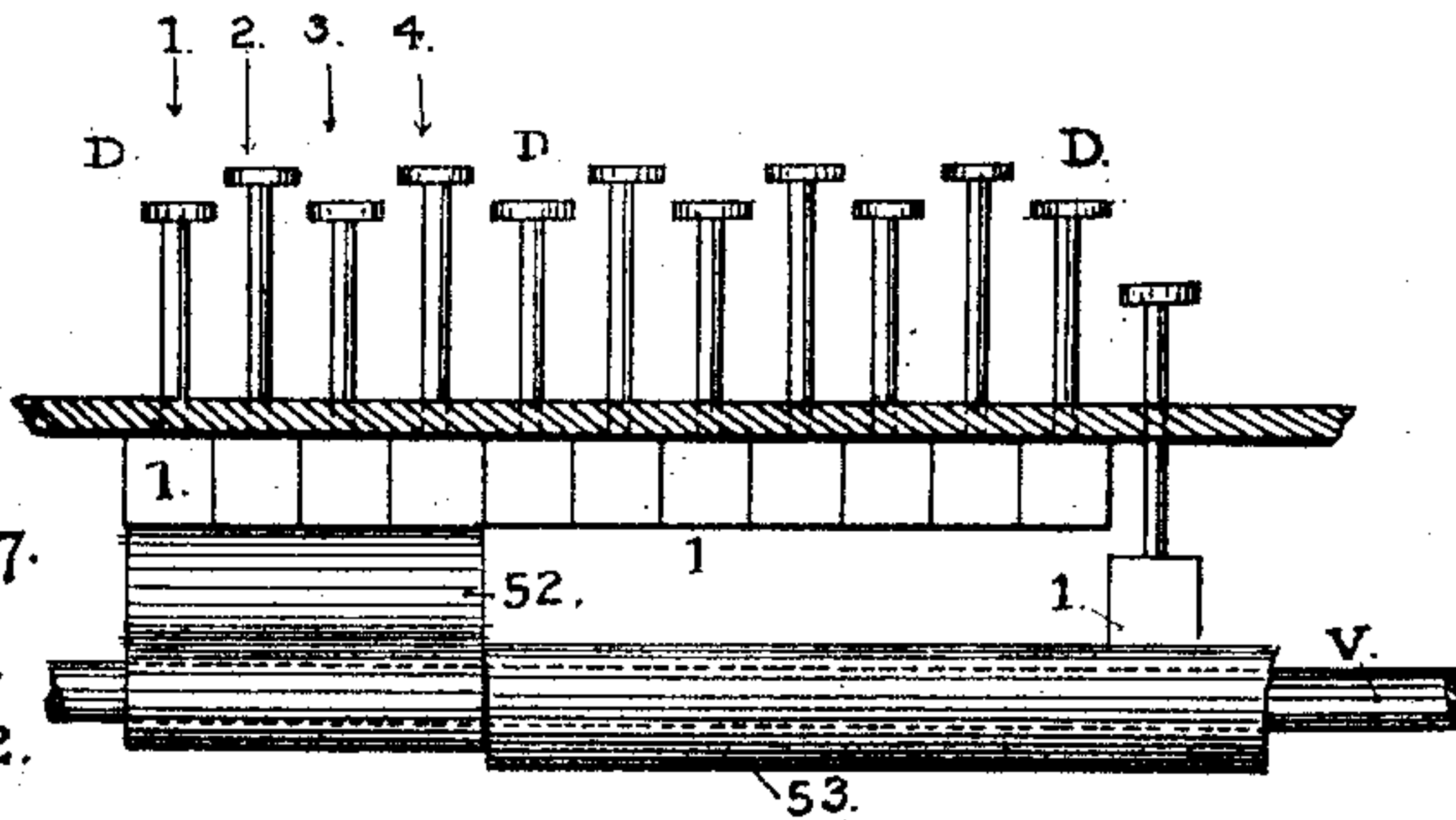


Fig. 7.

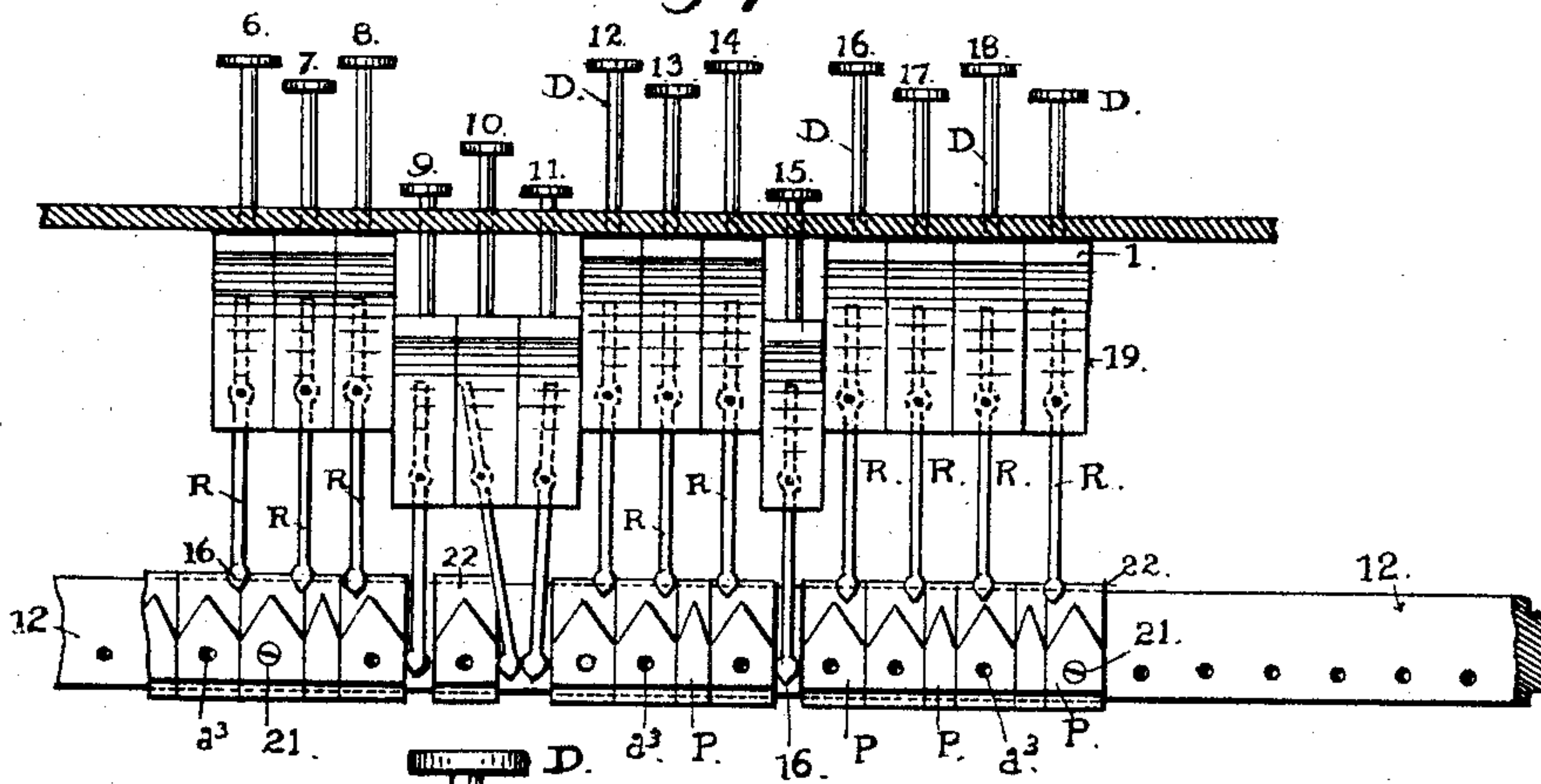


Fig. 8.

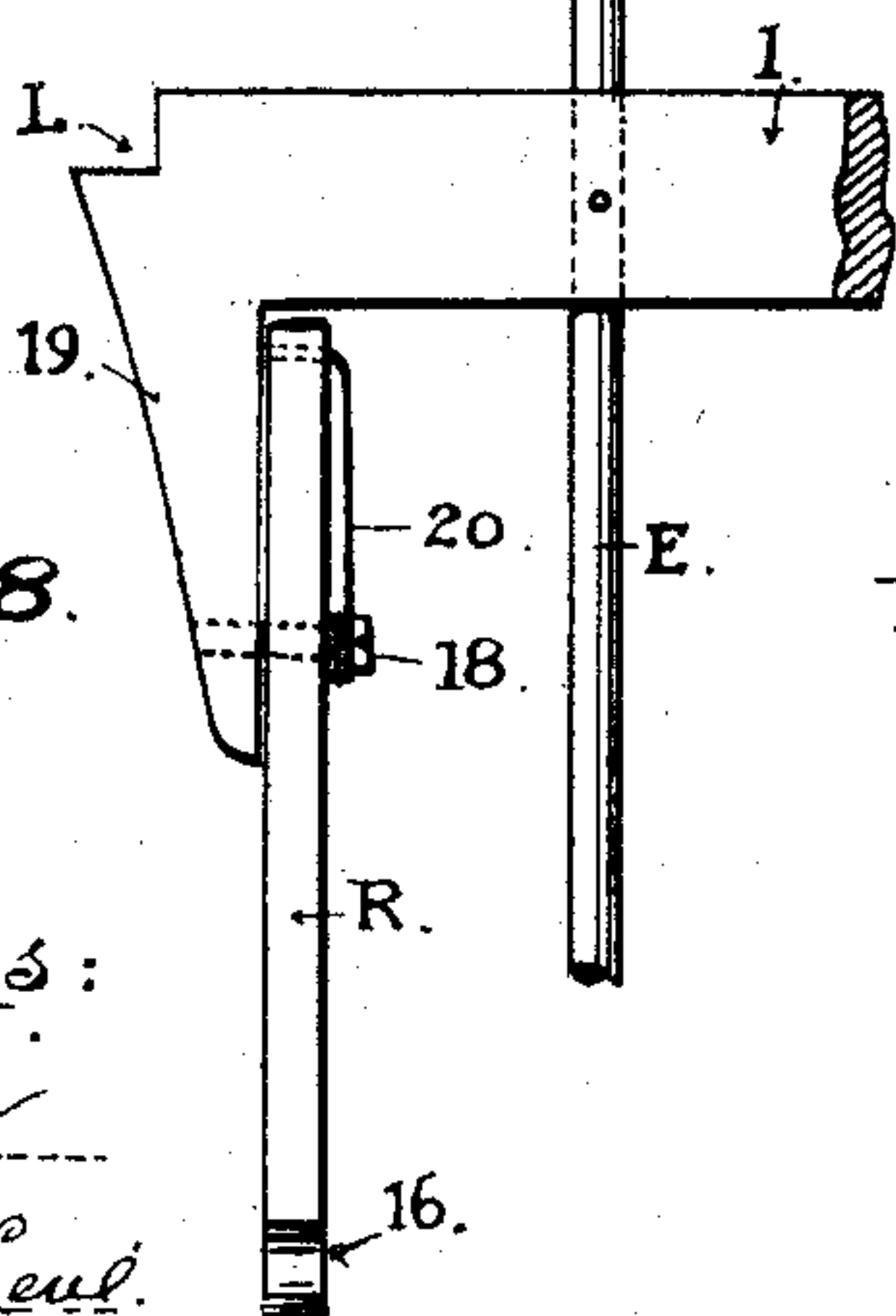


Fig. 9.

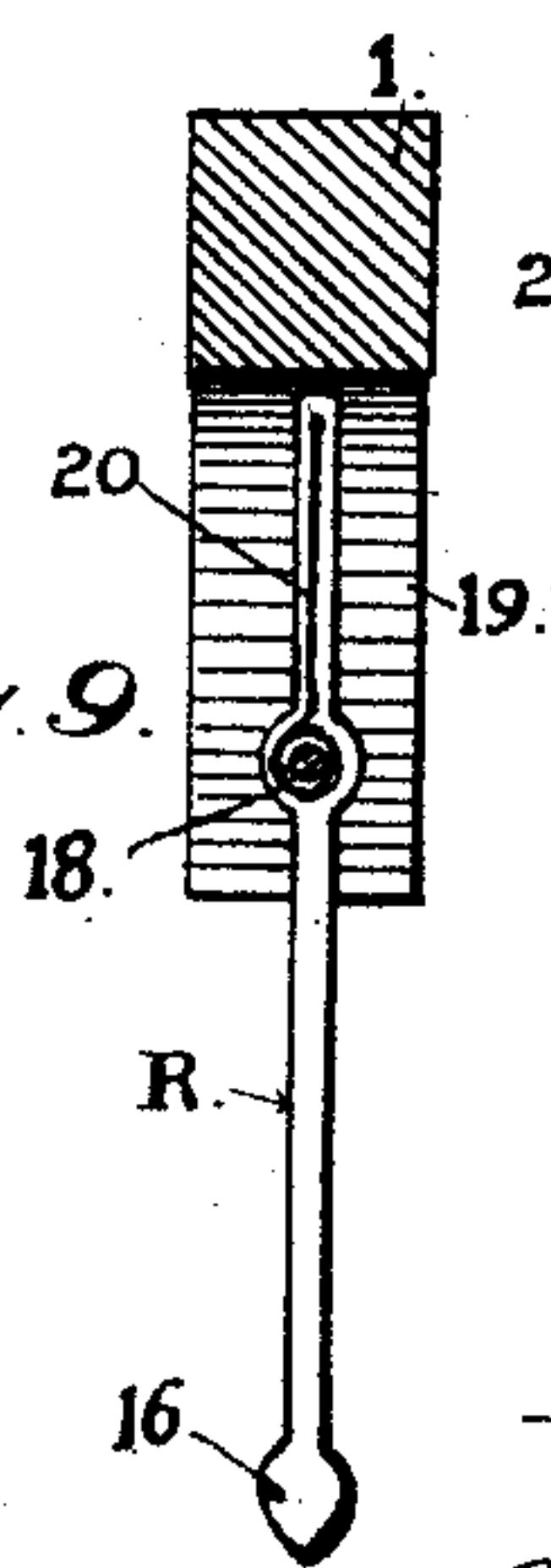
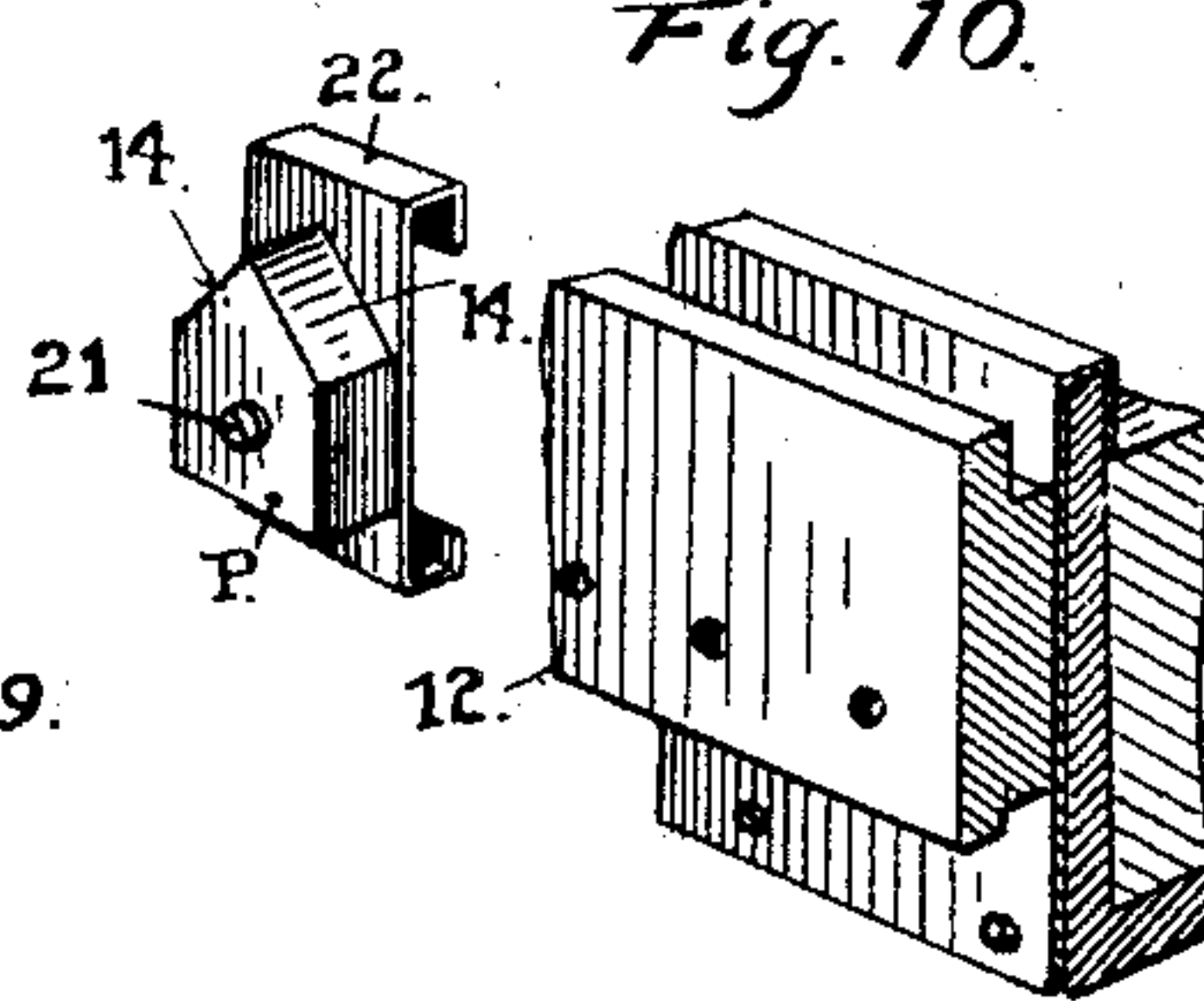


Fig. 10.



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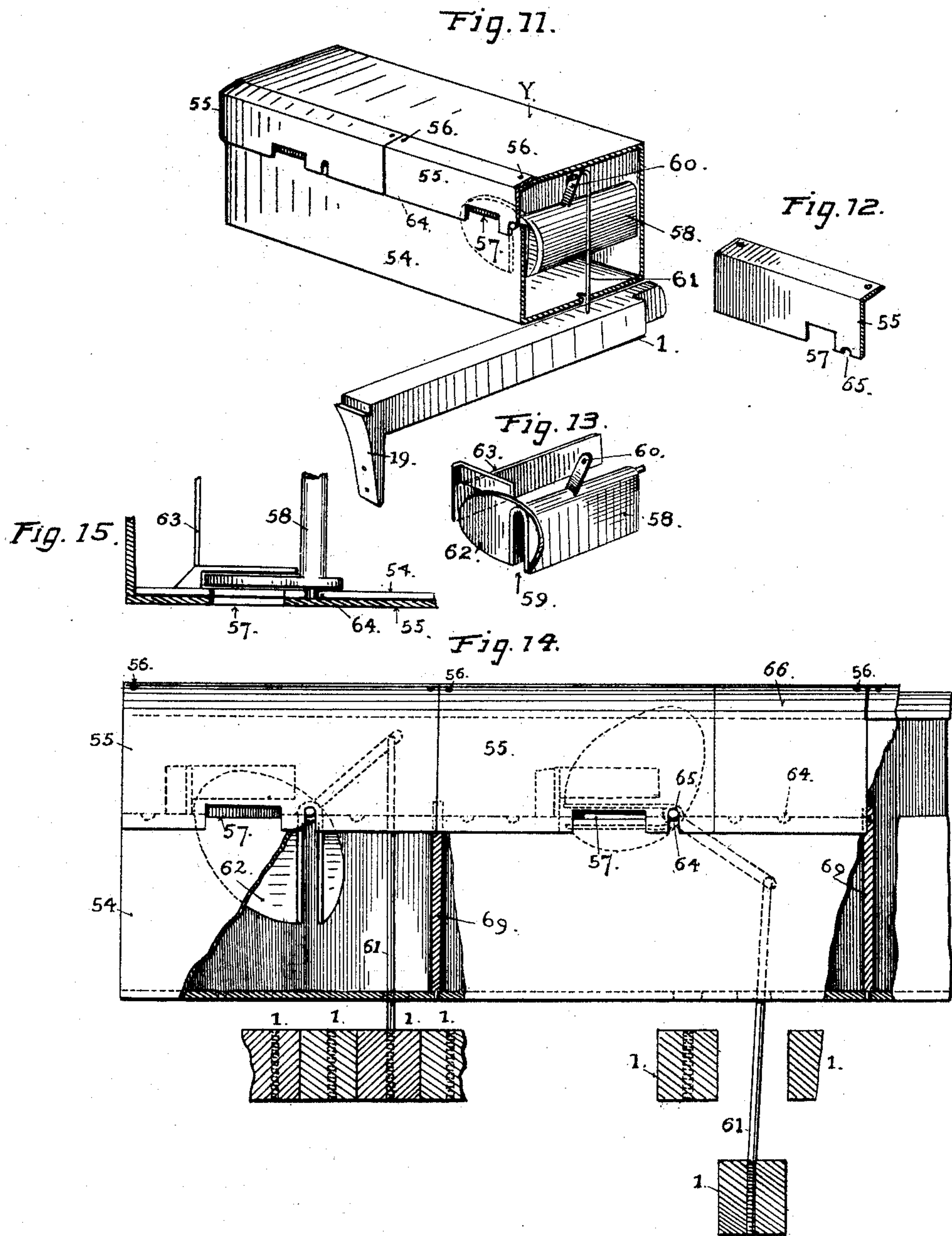
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

HERSEY A. CLIFFORD, OF SAN FRANCISCO, CALIFORNIA.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 620,699, dated March 7, 1899.

Application filed October 22, 1895. Serial No. 566,552. (No model.)

To all whom it may concern:

Be it known that I, HERSEY A. CLIFFORD, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Voting-Machines, of which the following is a specification.

This invention relates to improvements made in the voting machine or apparatus for which Letters Patent were granted and issued to me on October 9, 1894, No. 527,138, and on the 3d day of September, 1895, No. 545,848; and my present invention has for its object, among other improvements, to enlarge the scope of that machine, whereby the voter can vote a straight ticket of any one of the political parties by depressing a single key or he can make up a special ticket and vote for separate candidates from several parties by depressing their individual keys.

It has for its object also to provide means that allow the voter to vote for a special candidate not on the list by means of a paper ballot, also to provide means whereby the voter can select and vote for any given number of candidates for one office, as fixed by law, from among the entire number on the list of all the political parties represented in the machine for that office, and for preventing any excess of the proper number being voted by each voter.

The nature of the said improvements and the manner in which I proceed to construct and apply the same in the production of my improved machine will be fully understood from the following description, in which the accompanying drawings, forming part of this specification, are referred to by figures and letters.

In the said drawings, Figure 1 is a vertical section taken transversely through the center of the machine containing these new features. Fig. 2 is a vertical section taken transversely through the case of the machine near one end. Fig. 3 is a top view showing the left-hand end and adjacent portion of the machine with the top plate and uppermost portions of the mechanism broken away to expose underlying parts. Fig. 4 is a perspective view of the key-controlling mechanism. Fig. 5 is a side view of the mechanism controlling the straight-ticket keys. Fig. 6 is a rear view of the mechanism

shown in Fig. 5. Fig. 7 is a front view of the key-controlling mechanism by which the movements of a given number of keys are controlled and all in excess of such number are thrown out of action. Figs. 8, 9, and 10 are details of the parts in Fig. 7. Figs. 11 to 15, inclusive, are details of the ballot-receptacles and the ballot-controlling mechanism; of which views Fig. 11 is a perspective view of a portion of the row of the receptacle, looking toward the front, Fig. 12 is a perspective view of the slotted front plate through which the ballot is inserted, Fig. 13 is a perspective view of the slotted oscillating pocket or receiver, Fig. 14 is a front view of two receptacles on an enlarged scale and the connected mechanism by which the oscillating pockets are operated by the voting-keys, and Fig. 15 is a horizontal section taken longitudinally through the receptacle just above the oscillating pocket.

A A' A² indicate the principal parts of the case, that contain and protect the mechanism. B is the keyboard.

C is a tablet fixed on the keyboard directly in front of the keys and containing the names of the political parties, the offices or positions to be filled, the candidate to be voted, and such other information and instructions as may be necessary to assist the voter in selecting and working the proper keys.

D D' are voting-keys, and E E are rods or spindles that form a part of such keys or are so attached to the keys that each rod by the downward movement of its key is pressed down through a stationary die-plate F and caused to record the stroke of the key upon a record-sheet G. A spring E² on each rod throws up the voting-key after it has been depressed and released.

The record-sheet G is a roll of paper carried by two spools or rollers H H', to one of which connection is made of feed mechanism actuated at each release and return of the voting-key to position to turn one of the rollers, and thereby draw the sheet forward under the ends of the rods E a step in advance after each movement of the voting-key. The marks, cuts, or impressions made by the voting-keys on the sheet are also properly spaced by such feeding movements. This feeding mechanism is shown in Figs. 1 and 2. After each

voter has depressed the desired number of keys and has left the voting-booth this mechanism causes the roller H to advance the record-sheet before the next voter operates the machine, and the same consists of a ratchet-wheel h^x on the axle of the roller H, a pawl h^2 on a vibrating lever h^3 , and the cord 36, attached to the upper end of that lever and running through an opening a^x in the back of the case. By pulling on this cord the lever h^3 is moved from the outside of the machine. A spring h^5 acts to bring the lever back to position when the end is released.

The before-described recording mechanism in the general arrangement of the record-sheet and its feeding mechanism are parts of my former construction of voting-machine and are already described in my said patents. They are now described and shown in connection with my present improvements only so far as it may be necessary to a clear description of the function and operations of new parts and mechanism constituting my present invention.

Each voting-key when depressed actuates a mechanical register composed of the wheels I J K, located in the front of the case, bearing numerals on their faces and geared together to indicate units, tens, and hundreds after the usual manner of mechanical counting or registering devices. The lowermost wheels I indicate units, the second wheels J tens, and the top wheels K hundreds. The wheel I of each set is moved the space of one digit at every stroke of the individual key that acts upon it through the medium of the bar 1 and the downwardly-projecting finger 2, the end of which engages the teeth of the register-wheel I at or near the end of the downward movement of the bar 1, and that last-mentioned piece is connected to the voting-key by being made fast on the rod E and is maintained in horizontal position by that rod, which is held in guides in the case, and also by a fixed guide-pin 3, which works smoothly through a hole in the bar.

The notch L on the front end of the bar 1 engages the locking pawl or detent M at the end of the downstroke, and the bar is held down by that piece, so that the key cannot be depressed again until the bar 1 is released.

The detents M of all the keys are secured to a single shaft M', one end of which, extending through the end of the case, is connected to the lever h^3 through the medium of the rocker-arm 8 on the end of the shaft and the connecting-rod 9. The cord 36 is attached to the eye at the end of the lever, and both the rock-shaft M' and the ratchet-lever h^3 , that moves the paper-roll, are operated by a single pull of that cord. In addition to such function of holding down the keys and working the register-wheels the bar 1 forms part of the mechanism controlling and limiting the number of keys that the voter is allowed to select from among those on the keyboard in voting for a specified number of persons for an office.

Such mechanism is capable of adjustment to allow a certain number of keys to be operated in any set or series on the keyboard and to prevent more than such given number from being depressed and is composed of the following parts: The dovetailed rail 12 is fixed lengthwise of the case and horizontally under the front ends of the bars 1. The space-blocks P, supported by such rail, are formed with acutely-pointed tops 14 of equal angle and with perpendicular sides. Some of these blocks correspond in breadth to the width of the bar 1 or the distance between the said bars 1 from center to center, and some are made of one-half that width or of such breadth that a narrow block and the oval-shaped head of the depending tongue 16 on the bar 1 are together in width equal to one wide block.

The tongue R on each bar 1 is pivoted at 18 on the rear face of the downwardly-extending front member 19 of the bar 1, and on that screw it is movable in a vertical plane from side to side above and in line with the space-blocks in a limited arc having such screw for its center. A spring 20 on this pivot holds the tongue in a perpendicular position above the space-blocks, and while allowing the lower end of the tongue to move to one side or the other of the points of the blocks in the downward movement of the bar 1 it acts to bring the tongue R back to the perpendicular position when the key rises and to hold it in that position ready for the next downward stroke of the key.

In adjusting the space-blocks to control a given number of voting-keys in any set or series on the keyboard as many wide blocks are removed from the rail as there are keys to be operated in the set, and a corresponding number of half-blocks or narrow blocks are placed on the rail from one end and the outer blocks at the end of the row or group to select are then fixed by screws 21 to the dovetailed rail. Thus if from the thirteen keys, Nos. 6 to 18, inclusive, in the detail Fig. 7 the voter is allowed to select and operate any four keys, the row of space-blocks must contain four half-blocks, and the end blocks are then secured by the screws 21 to the stationary rail; but the intermediate blocks are left loose and free to slide on the rail as they are pushed sidewise by the descending tongue of the operated keys. Any four keys selected from the number comprising the set may be pressed down by the voter as sufficient space is allowed between the space-blocks for the heads of that number of tongues to enter; but when the fourth key is operated the tongue that is attached to the bar 1 between the blocks will fill up the loose space between the blocks P and the whole set of blocks between the fixed outside blocks at the ends of the set will be set up closely together, so that no room for the head of another tongue to enter between the points of the blocks is left, and if an additional key is depressed the end of its tongue R will come to a stop against

the inclined faces of the row of closely-set blocks under it. After the proper adjustment is made the row of space-blocks on the stationary rail will be closely set together, and all loose movement will be taken up when the tongues R of four keys are pressed down between the blocks and another tongue cannot enter, so that no additional key or keys in the set can be worked. The blocks between the different sets or groups of candidates are fastened by screws, as between mayor and auditor. The operation of any number of keys out of a set can be controlled, and by this means and where there are several sets of keys in the whole keyboard the stationary rail 12 will contain the required number of wide and narrow space-blocks to properly control the keys in all the sets. The blocks P are mounted on slides 22, that are fitted to slip on and move smoothly along the rail, and each whole space-block P is provided with a hole a^3 to take the screws 21, by which any block can be secured to the stationary rail to form a stop for the sliding blocks. The rail is drilled and tapped at regular intervals along the front face, as shown in Figs. 7 and 10.

The tongues R are attached to the bars by pivots 18, and the lower end of each tongue is free to move a short distance to either side of the vertical line when in the downward movement the head 16 strikes the inclined top face of the space-block directly beneath, for as all the space-blocks between the fixed blocks at the ends of the set are free to slide on the rail as the tongues enter between them it will be evident that the tongue first pushed down by the keys will shift all the blocks, and thus move them into various positions under the heads of the remaining elevated tongues, and the points of some of the blocks will come directly under the ends of those tongues that have not been pushed down.

In Figs. 1, 3, and 4 is shown the mechanism by which the number of keys to be operated in what is known as "cumulative voting" or "proportional representation" is determined and so controlled that a voter being allowed a given number of votes may distribute the same among any number of candidates selected by him from among those standing for the office, or he may give the whole number of his votes to any one candidate, as he may select. Such key-controlling mechanism consists of the vertically-movable plate S, fitted to slide smoothly between the vertical guide-plates 25 26 in the back part of the case behind the ends of the bars 1 of the voting-keys and having on its perpendicular back face a row of teeth 27 along each end from top to bottom of the plate to engage the teeth of two spur-gears T, carried by a horizontal shaft 28 behind the plate and one at each edge of the plate. On the front face of the plate, extending from top to bottom, is a row of ratchet-like teeth or notches 29, extending horizontally across the plate for the whole width of

the face. With such ratchet-teeth a pawl or dog 30 on the rear end of each bar 1 engages on the downstroke of the key, and the plate S is made of the proper width to take the dogs 30 of the required number of keys to be controlled. The principal part of this ratchet portion on the face of such plate is covered by the upper fixed guard-plate 25^x and the lower fixed plate 25, as shown in Fig. 3, between which only a few of the ratchet-teeth are exposed, so that the working contact of the dogs 30 with the face of the plate is limited to the teeth exposed below the edge of the plate 25^x. The dog on each bar 1 rests on this plate 25^x and is held out of the teeth 29 both while the key is at rest in elevated position and during nearly the whole length of stroke of the key until the end of the downward movement of the bar 1 is reached. At such time the point of the dog slips from the lower edge of the plate into the highest tooth on the plate S that is exposed in the openings S^x, and the plate is moved down in its guides the distance of one tooth by the stroke of the voting-key. These parts are so adjusted that in every full stroke of a key the plate S is moved downward a distance equal to the space between one ratchet-tooth and another, and thus by limiting such downward movement of the plate to any given number of teeth or notches 29 it will be seen that the whole number of keys will be limited to an equal number of strokes and that such number of strokes may be given by any one key alone or the number may be divided among selected keys in the set. Such downward movement of the plate S is controlled by the adjustable stops, consisting of the bolts or pins 31, inserted through holes in the stationary guide-plates 25 26 beneath the lower end of the movable ratchet-plate S and at such points below it that the plate is arrested and brought to rest by striking the bolts 31. Rows of spaced holes are provided in the plates 25 26 to change the position of such stops both in a vertical direction, to change the length of the perpendicular throw of the plate and also in a lateral direction, to set the stops closer together or farther apart, according to the width of the notched plate S that is employed. It should be noticed that ratchet-plates of different widths are to be provided for each machine where it is necessary to provide in a machine different adjustments to include a greater or a less number of voting-keys in a group or series to be used in cumulative voting, as before mentioned, for the width of the plate S to be used is determined by the number of keys in the group or set, as will be understood from Fig. 3 of the drawings, where the plate S is of proper width to control the bars 1 of eleven keys. The spur-gears T, that engage the gear-teeth on the back of the plate, connect the plate with the spring-barrel T', on the ends of which the gear-wheels are secured, and the spring within the barrel is wound and attached to the barrel and to a stationary shaft or rod 28

inside, that the force of the spring shall act to raise the plate in its guides and hold it up toward the top of the case. Against this action of the spring-barrel, however, there is a
 5 pawl or detent 34, arranged to lock into the teeth on the back of the plate above the barrel and hold the plate whenever it is moved by the downward strokes of the bars 1 1; but such detent is movable and is so connected to
 10 the key-releasing mechanism that when the cord 36 is pulled it not only operates the levers that move the releasing-shaft and the setting-levers, Figs. 1 and 2, before described, but it turns the shaft to which is fixed the end of
 15 the locking-pawl. Such movement is effected by the arm or short lever 35, secured on the outer end of the shaft 37, Figs. 1 and 2, in line with the lever h^3 , the contact of which with the end of that arm in the backward move-
 20 ment of the lever acts to throw back the pawl 34 from the plate S, whereby the recoil of the spring-barrel T' restores the plate to position. Ordinarily there are two of such pawls to each plate, but all attached to the single rock-shaft,
 25 so that all the plates S are released and reset at the same time. To each plate there is a separate spring-barrel, into which it is geared by a spur-gear on each end of the barrel; but the whole set of barrels are generally
 30 placed upon and supported by the one stationary shaft 28, the ends of which are fixed in the ends of the case. The inner ends of the coil-springs are secured to this shaft, while the outer end of each spring is attached
 35 to its own barrel. After every pull of the cord, when the spring h^5 brings back the lever h^3 to its normal position of rest, the rock-shaft is set back to bring the pawls into action by means of the spring 38 behind the
 40 arm 35. Thus by a single movement of the lever h^3 all the parts are reset or restored to working position after a voter has operated the machine. When cumulative voting is
 45 used, the slide-blocks must be set for one key to be voted and the locking-bar M' must be thrown out of use by changing the connecting screw-pin 39 from one hole 40 to the other hole 41 in the rod 9, as shown in Fig. 2.

Provision is made in this machine for vot-
 50 ing a straight party ticket by the stroke of one key, and for that purpose the leading keys at the left-hand end of the keyboard, Fig. 3, corresponding in number to the number of parties in the field, are arranged for
 55 single operation and are so controlled by special mechanism that while any one key selected from the set can be operated by a voter all the remaining keys, both those in the straight set and the principal keys in the
 60 keyboard, are locked or rendered inoperative. Such mechanism also is brought into play to hold the straight-ticket keys out of action when the first key in the principal set is operated by the voter.

65 Figs. 1, 4, 5, and 6 show the arrangement of the controlling mechanism and illustrate its operation. V indicates a rock-shaft ex-

tending under all the bars 1 of the voting-
 keys and provided with bearings in the ends
 of the case, the shaft at one end being brought
 70 through the partition at the left-hand end of the case, against and on the outside of which the levers of the releasing mechanism are situated. On that end of the rock-shaft is
 75 secured a head 42, having two horizontal arms projecting to front and rear and also a pointed tooth 43, extending downward perpendicularly on a line with the rock-shaft and midway between the horizontal arms or parts
 80 42^a. The point of the tooth in such position is held in a notch 44, with angular sides, that is formed on the top edge of a lever W, pivoted
 85 at 45 to the partition A¹ at a point in front of the line of the rock-shaft and extending thence rearwardly and terminating in an upwardly-bent arm 46, having a rearwardly-set
 90 angular bend 47. Such part of the lever rests against the side of the releasing-lever h^3 and immediately under a stop-pin 48 on that lever, against which it is held by spiral springs 49,
 95 attached to the arms on the shaft-head 42 and to points directly beneath such arms on the lever W. These springs likewise hold up the lever W against the end of the depending point and hold that piece to a close seat in the notch
 100 44, so that the shaft will not turn without a force exceeding one of the springs 49 is applied to it. The notch before mentioned is formed by the inclined teeth or projections
 105 50 on the edge of the locking-lever W, one facing to the front and the other to the rear, and finished with acutely-pointed ends to take into depressions 51 in the angular edges
 110 of the projecting arm 53. On these points 50 the notches or depressions 51 in the tooth 43 are caught when the rock-shaft is turned either toward the front or toward the rear of the case, so that being moved out of the notch the point of that part 43 catches on one or the
 115 other of the points 50, according to the direction of such movement, and the rock-shaft is held in that position until the outer end of the lever W is depressed. On that portion
 120 of the rock-shaft which is directly under the bars 1 of the straight-ticket keys is secured the tappet-plate 52, with an upwardly-curved edge, corresponding in width to the number
 125 of key-bars 1 in the set of keys to be controlled. The remaining portion of the rock-shaft V carries a plate 53 of similar form, excepting that its upwardly-curved edge is situated on the opposite side of the rock-shaft. By virtue of such arrangement it will be noticed that when
 130 a key of the straight-ticket set is pushed down it will press down the tappet-plate 52, and consequently elevate the tappet-plate 53 on the opposite side of the shaft, by which movement the piece 43 on the head of the shaft will be raised out of the notches on the lever W and be caught on one of the points 50. In such position the tappet-plate 53 is thrown up against the key-bars 1 of the principal set on the keyboard, thus rendering all of them inoperative while the rock-shaft is locked in such

tilted position. On the other hand, when the parts are in position for action the front tap-pet-plate 53 will be pressed down by the first-moved key in voting for separate candidates 5 on the principal keyboard, and the opposite plate 52, being elevated by that movement, will lock or hold the straight-ticket keys out of action.

At the end of each voting operation the 10 rock-shaft is returned to position by depressing the free end of the lever W until the point of the piece 43 is freed from the point 50 and the springs thereupon bring the tooth 43 into the center notch between the points 15 50. Such releasing movement is produced by the backward movement of the releasing-lever 7³ when the cord is pulled. In this manner the first-operated key in one set or series composing the keyboard is caused to lock or 20 throw out of action for the time the keys of all the remaining sets or series, and all the keys are restored to operative condition again at the time the keys which have been used by one voter are released and reset for the next 25 voter.

Figs. 11 to 15, inclusive, give details of the construction of a ballot-receptacle and mechanism by which the opening in such receptacle to receive the ballot is opened and closed 30 by the key mechanism. Any desired number of these ballot-receptacles are arranged in a row at the back of the machine behind and above the level of the keyboard. The front of each receptacle is formed of a permanent lower section 54 and a removable upper section 55, overlapping at its lower edge 35 the top edge of the lower section and bent backward at the top edge to rest on the top of the receptacle, to which it is fastened by screws 56. A narrow opening 57, of rectangular form, is cut in the lower edge of such removable front section to produce an aperture 40 behind which a swinging pocket 58 is set on pivots to turn in an arc from a perpendicular position with its mouth or discharge-opening 45 pointing downward up to a horizontal position in which its receiving-aperture 59 in the front end is brought into line with the slit in the front of the receptacle. 60 is an arm on 50 the back of the pocket 58, and 61 is a rod connecting such arm with the bar 1 of one of the voting-keys. 62 is a curved plate on the front end of the pocket, properly shaped to cover the slit 57 when the pocket is turned down, and 63 is a stationary guide-plate on the inside 55 of the receptacle in such close relation to the pocket that the mouth of that pocket is covered by the guard-plate as long as the pocket is held up in horizontal position within 60 the receptacle. It will be seen, therefore, that the function of the plate 62 is to prevent a ballot being introduced except through the medium of the pocket, while the function of the guard-plate 63 is to prevent more than 65 one ballot being introduced while the pocket occupies the horizontal position, for in the absence of such guard-plate or equivalent

means a person could insert one ballot and then force it out of the pocket into the receptacle by introducing a second ballot. These 70 ballot-receptacles are formed by dividing a long box of rectangular shape into separate compartments Y by means of the transverse partitions, as shown in Figs. 3 and 14, and in each receptacle is set for operation a 75 swinging pocket 58, which is connected by the rod 61 with one of the keys of levers 1 of the keyboard directly beneath. In this construction provision is made for changing the position of any receptacle and its swing- 80 ing pocket with relation to any particular key of the sets or groups of keys, by means whereof these ballot-receptacles can be increased or reduced in number and can be changed as to position according to the num- 85 ber of candidates or officers to be voted for, thereby greatly enlarging the scope of the machine. This construction will be understood by referring to Figs. 11 to 14, inclusive, of the drawings. The partitions 69 divide 90 the long compartment in the upper part of the machine-case behind the keyboard into the separate ballot boxes or receptacles Y Y, Figs. 1 and 14, and such partitions are held in position by dowels on the back and bot- 95 tom edges and holes in the back and bottom of the compartment, Fig. 14, being secured thereby in such manner that each partition can be shifted or changed from one position to another for the purpose of changing the 100 position of one or of several boxes or receptacles with relation to the groups or sets of voting-keys. The fronts of these boxes are formed of the stationary lower plate 54 and the removable upper sections or plates 55, in 105 the lower edges of which are cut the slits 57 for inserting the ballots. The said upper sections are secured in place by screws 56, inserted through the backwardly-bent upper part of the plate into the stationary top of 110 the compartment, and the lower edges of the sections overlap the front plate 54, excepting at the cut-away portion, where the top edge of the front plate is exposed and forms the lower edge of the aperture 57 for the bal- 115 lot. Notches 64 are cut in the top edge of the stationary front plate to form bearings for the front pintles of the swinging pockets 58, and the overlapping bottom edges of the removable plate likewise are slotted to fit 120 over such pintles and hold the same in place when the front plate is screwed on. Holes in the back of the compartment are also provided to receive the rear pintles of the pocket, these latter being of course in line with the 125 front bearings, before described. These bearings for the rear pintles are not shown in the detail figures of the drawings; but their proper location will be understood from Figs. 3, 11, and 14. A number of these bearings, 130 both at front and rear of the long compartment, are provided, so that the pockets 58 can be changed from one voting-key to another, or additional pockets can be placed in the

compartment and additional receptacles can be produced by inserting extra partitions. At such time of adjustment the removable front plates 55 are shifted to bring a ballot-
 5 aperture 57 in line with the pocket behind it, any space that may be left between one plate 55 and another being closed by blank sections or plates 66 without the slits 57 being provided for that purpose. One of such
 10 plates 66 is shown at the right-hand side of Fig. 14. A row of holes in the bottom of the receptacles Y, spaced to agree with the number of voting-keys in the groups or sets below the compartment, is provided for the
 15 purpose of shifting the connecting-rods 61 from one key-lever to another, according to the adjustment of or arrangement made in the pocket.

It will be noticed that the case is divided
 20 horizontally on the line a^5 , Figs. 1 and 2, into two separate compartments, the upper one containing the principal mechanism and the lower one holding the record-sheet. Access is readily had to the record-sheet by unlock-
 25 ing the top compartment and turning it back, while the front and top of the upper compartment are so hinged to its stationary sides that all the working parts can be reached and inspected without difficulty.

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

1. In a voting-machine, the combination with voting-keys, each adapted to record its
 35 movement on a record-sheet by a cut, mark or impression; of means for throwing one group or set of keys out of action at and by the movement of the first-operated key in another group or set, consisting of the bars 1 1, the
 40 rock-shaft, a tappet-plate on said shaft extending across all the bars of one set or group of keys, a second tappet-plate fixed on the same shaft in the opposite direction to the first tappet-plate and beneath the bars of the
 45 other group or set of keys, and means connected to the outer end of the rock-shaft for holding the shaft on the center and for locking the shaft when it is tilted either forward or backward, for operation as set forth.

50 2. In a voting-machine, the combination with voting-keys, each adapted to operate a registering mechanism at every stroke or movement; of the movable bars, the rock-shaft beneath said bars, the oppositely-turned
 55 tappet-plates fixed on said rock-shaft, each tappet-plate being of proper length to extend across the bars of the keys contained in the group or set to be controlled, and means connected to said rock-shaft to lock such shaft
 60 when it is tilted either forward or backward with the tappet-plates and to release the same at will.

3. In a voting-machine, the combination, with a group of voting-keys arranged in close
 65 order for operation; of controlling mechanism adapted to limit said keys in their operation to any predetermined number as selected

at will by the voter from among the group, and capable by adjustment of increasing or
 diminishing said number of operative keys; 70 consisting of the fixed rail beneath the keys, the longitudinally-slidable blocks mounted thereon with acutely-pointed ends and each having a hole for a fastening-screw, the slid-
 75 able half-space blocks, the fixed blocks at the ends of the group of whole blocks and half-blocks, and the laterally-swinging tongue attached to the under side of each key by a
 80 swinging joint to have lateral movement at the lower end in the same plane in which the spacing-blocks are set, and a spring applied to each joint to return the tongue to vertical position, when the key is raised; whereby
 85 two or more tongues may pass into the same groove and are controlled by the same spacing-blocks, substantially as described to operate as set forth.

4. In a voting-machine, the combination, with the voting-keys; of the bars 1; fingers 2; register-wheels I I; locking-pawls M to lock
 90 the keys when they are pressed in, and springs to throw them out when released; the pivoted dogs 30; sliding ratchet-plates S; fixed guides 25, 26, guard-plate 25^x and the adjustable stops 31 for controlling the extent of move-
 95 ment of the ratchet-plate; a spring adapted to move said ratchet-plate in the direction contrary to that produced by the dogs 30; the detent 34 and the means for throwing said detent and the locking-pawls out of action with
 100 the bars 1 when the ratchet-plate is set for operation with the keys, substantially as described.

5. In a voting-machine, the combination, with the voting-key, of the bar 1, finger 2, a
 105 set of register-wheels with the units-wheel of which the said finger is arranged to engage at each movement of the voting-key, the pivoted dog 30, movable ratchet-plate S, stationary
 110 guides 25 26, guide-plate 25^x, stops 31, a spring acting against said ratchet-plate to move it upward and a detent engaging the ratchet-plate, arranged for operation as described.

6. In a voting-machine, the combination, with a group or set of voting-keys, of the bars
 115 1, the dogs 2, movable ratchet-plate S, stationary guides 25 26, guard-plate 25^x, detent 34, means for throwing said detent out of action to release the ratchet-plate, and the spring-barrel T' geared into the ratchet-plate, for
 120 operation as described.

7. In a voting-machine, the combination with the stationary ballot-receptacle behind the keys of a group or set of voting-keys hav-
 125 ing a ballot-receiving aperture, the swinging ballot-receiving pocket in said receptacle having an opening in the end arranged for operation behind the aperture in said receptacle to receive the ballot when the pocket is turned
 130 into one position and an opening in the side to discharge the ballot into the receptacle by the movement of the pocket, and the guard-plates on the said pocket and in the receptacle; of the lever 1, voting-key E connecting-

rod 61, finger 2 and the registering mechanism arranged with relation to the said finger to be operated by every stroke or movement of the key, whereby the ballot-receiving pocket
5 is operated to deposit the ballot into its receptacle and the registering mechanism is actuated to record the number of said ballots by the one stroke of the voting-key, substantially as described.

10 8. In a voting-machine, the ballot-receptacles composed of the stationary compartment inclosed in the machine-case, the movable cross-partitions the stationary, lower front plate 54, the removable upper front plates 55
15 having cut-away portions on the lower edges forming apertures to admit the ballots, the

pivoted pocket provided with bearings in the front and back sides of the receptacles and each having a ballot-receiving aperture in the front end and a ballot-discharging opening in
20 the side, the guard-plates on the front end of the pocket and the stationary guard-plate in the receptacle; in combination with the key-lever 1, arm 60, and connecting-rod 61, constructed for operation as set forth. 25

In testimony that I claim the foregoing I have hereunto set my hand and seal.

HERSEY A. CLIFFORD. [L. S.]

Witnesses:

CHAS. E. KELLY,
C. W. M. SMITH.