

No. 619,249.

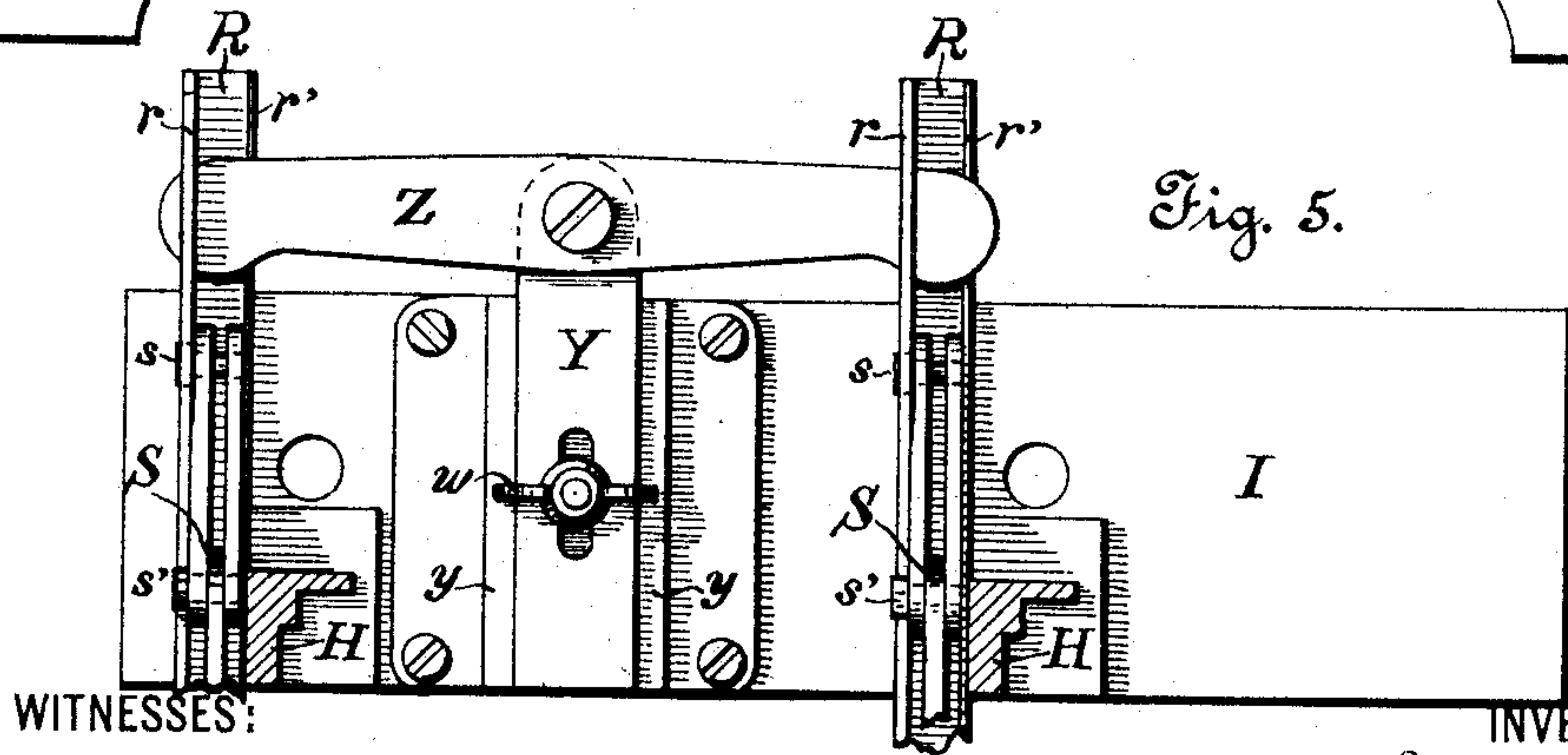
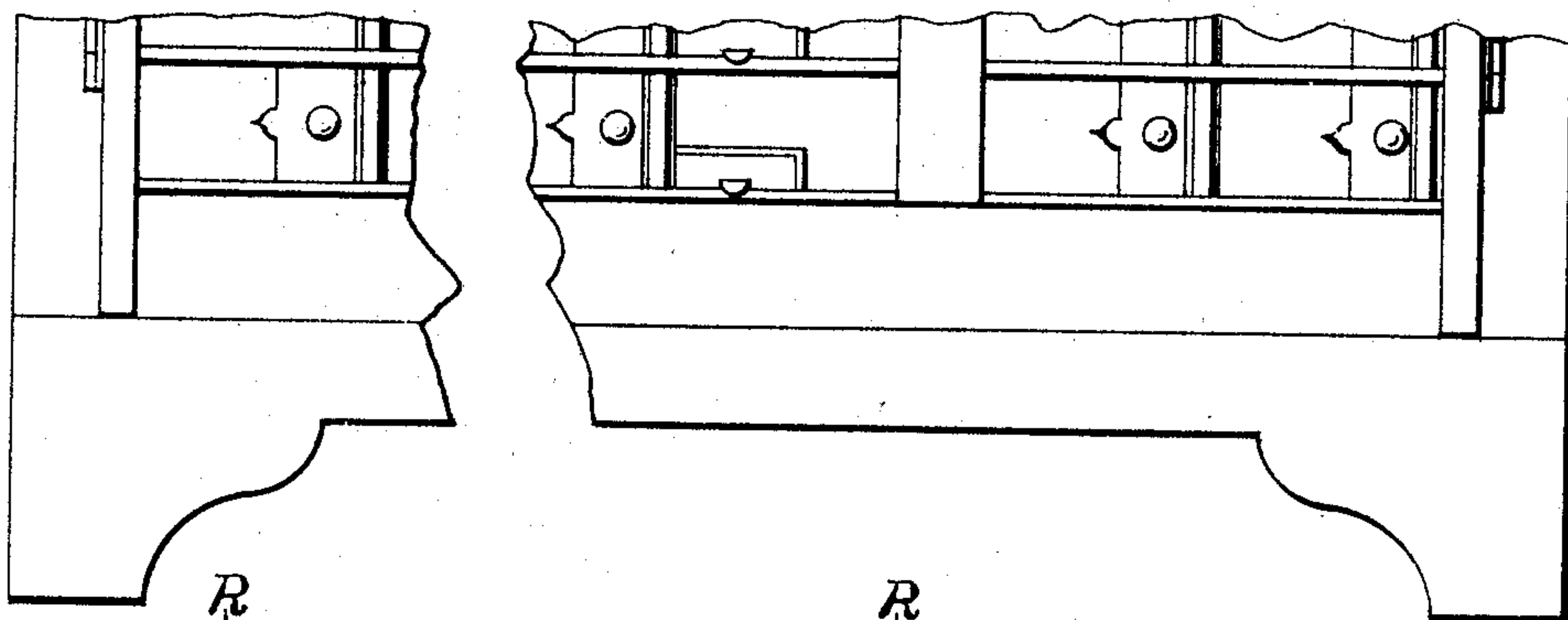
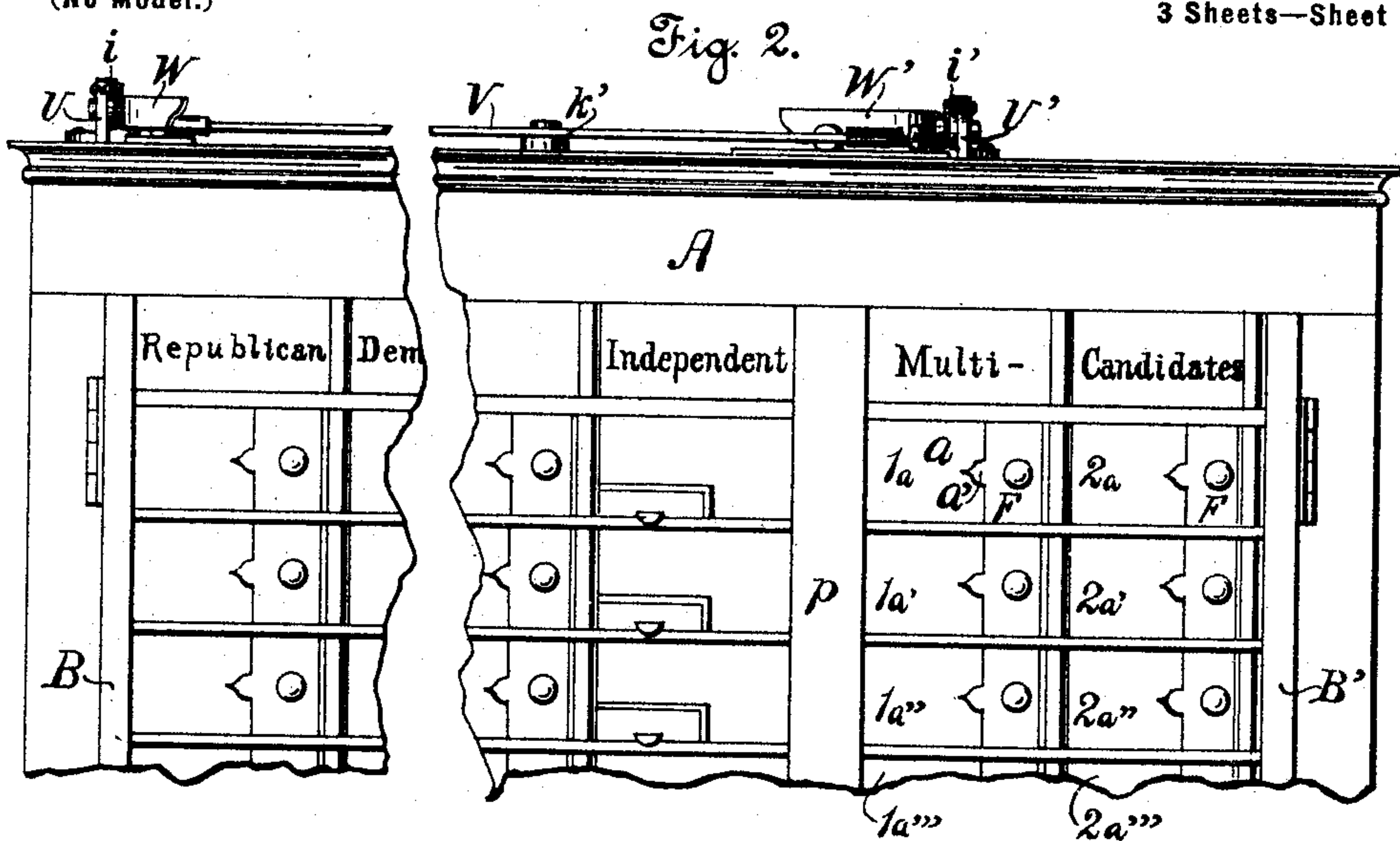
Patented Feb. 7, 1899.

D. & E. H. DAVIS.
VOTING MACHINE.

(Application filed Sept. 2, 1897.)

(No Model.)

3 Sheets—Sheet 2.



WITNESSES:

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Fig. 3.

3 Sheets—Sheet 3.

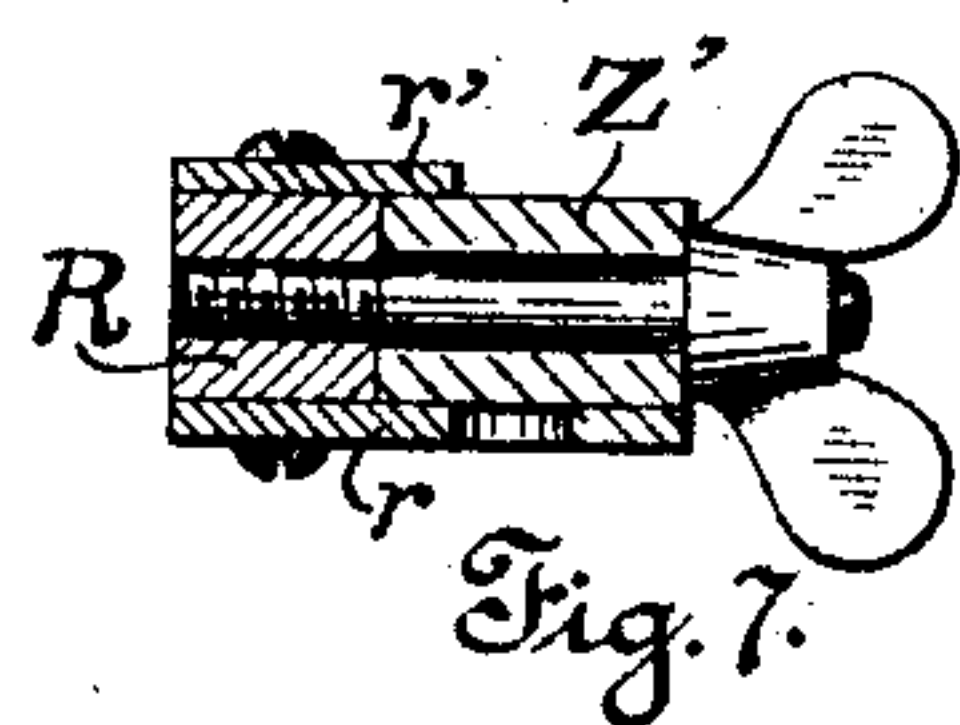
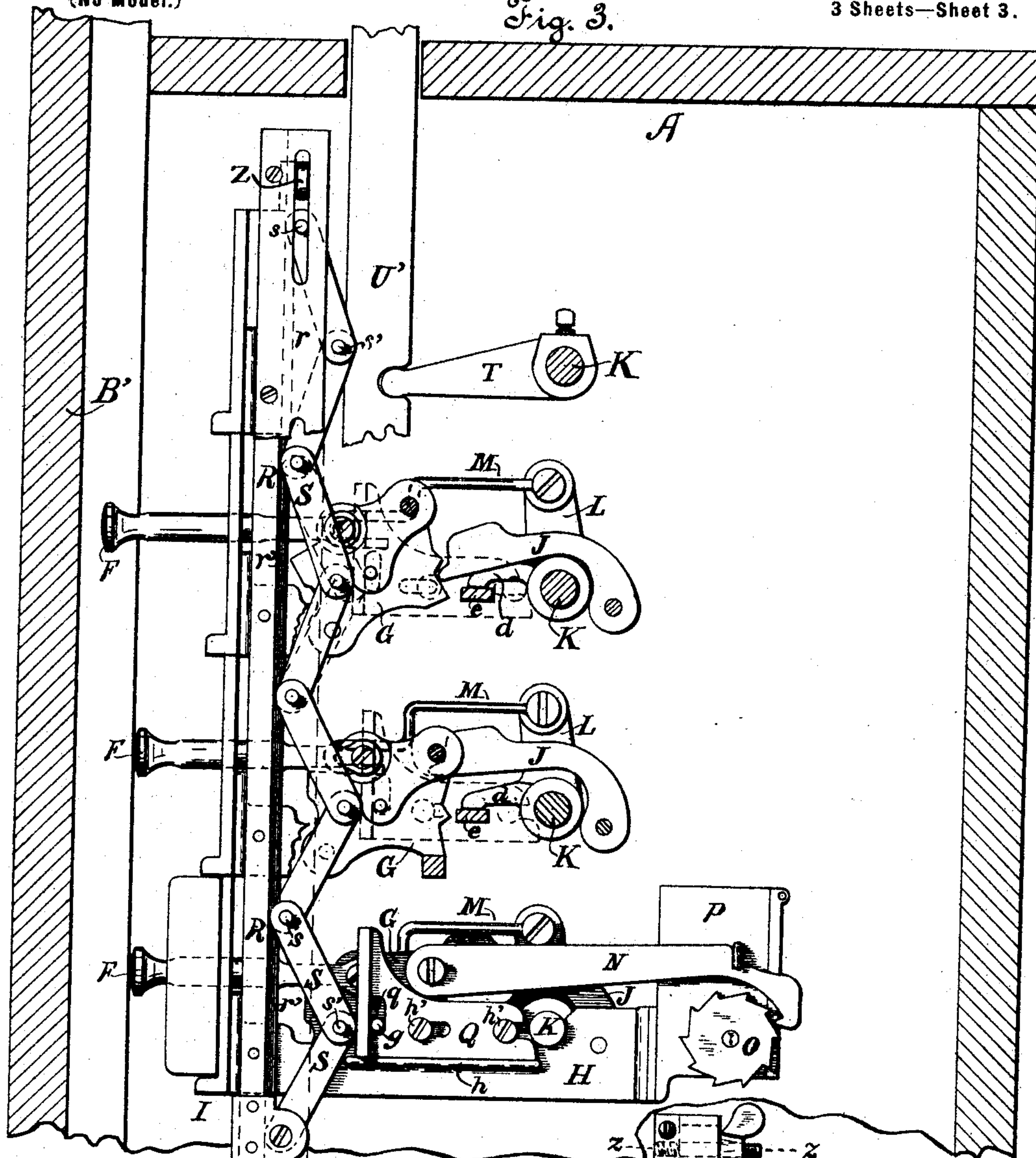


Fig. 7.

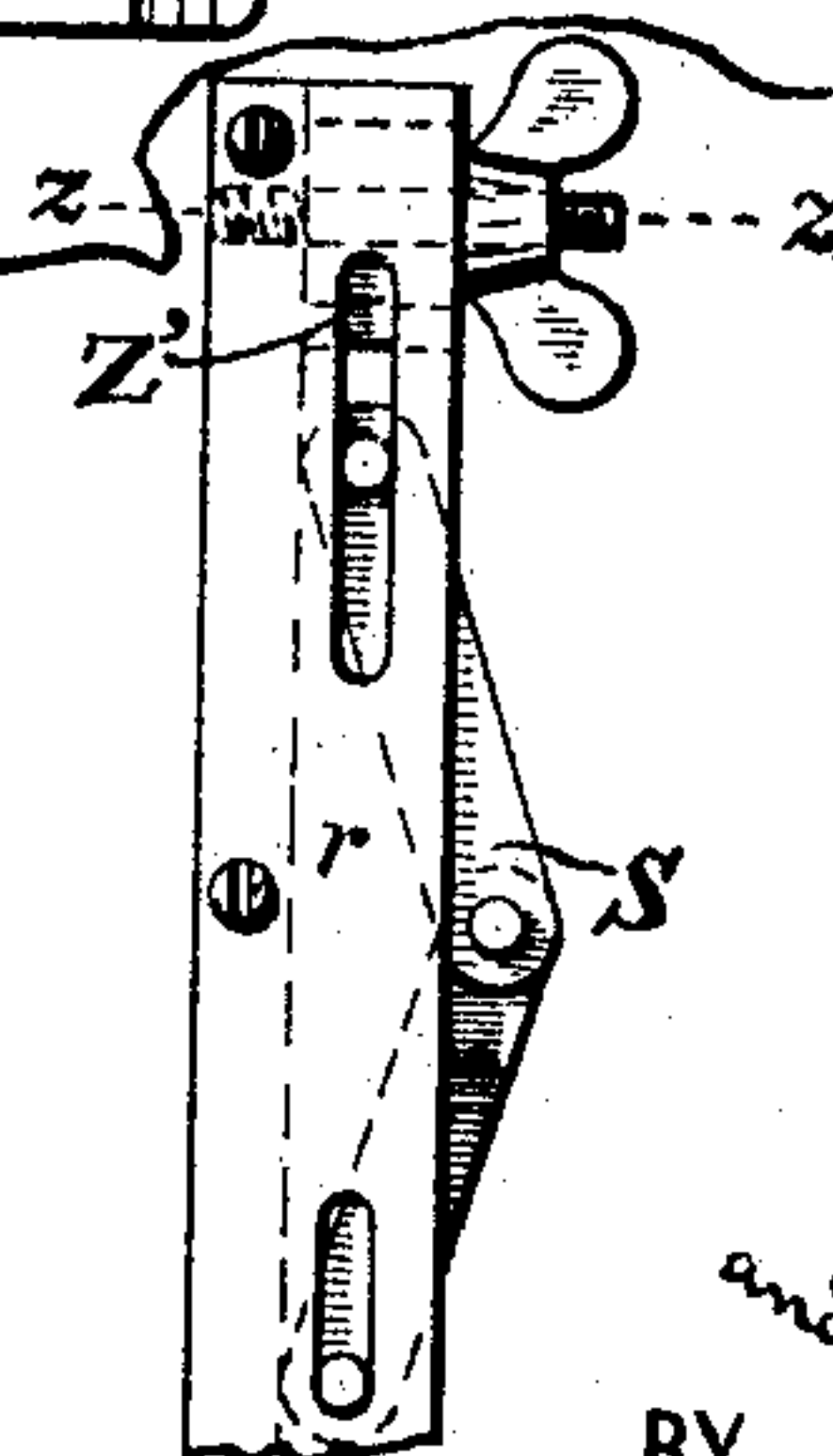


Fig. 6.

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UNITED STATES PATENT OFFICE.

DANIEL DAVIS AND ETNA H. DAVIS, OF ELMIRA, NEW YORK, ASSIGNORS
TO THE DAVIS VOTING MACHINE COMPANY, OF SAME PLACE.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 619,249, dated February 7, 1899.

Application filed September 2, 1897. Serial No. 650,335. (No model.)

To all whom it may concern:

Be it known that we, DANIEL DAVIS and ETNA H. DAVIS, citizens of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Voting-Machines, of which the following is a specification.

Our present invention relates more particularly to improvements in the voting-machine described in Letters Patent of the United States No. 563,141, granted to us on June 30, 1896; and the objects of these improvements are, first, to provide additional mechanisms whereby votes may be cast and registered for multicandidates—that is to say, where there are two or more officers of the same class to be elected—as, for instance, two or more constables, coroners, &c.—and each political party has placed in nomination candidates for such offices; second, to so arrange the mechanism that any of the candidates may be voted for irrespective of party; third, to provide means for locking each individual mechanism after a candidate has been voted, and, fourth, to provide means for locking all the remaining mechanisms in a set after the proper number have been voted. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a top plan view of the cabinet containing the voting mechanism and the vote-registering devices, the voting-booth, and the mechanism connecting the entrance-door with the mechanism by which the vote is cast; Fig. 2, a front elevation of the cabinet; Fig. 3, a side elevation of the voting mechanisms, parts being shown in section on different vertical planes, also the cabinet in section; Fig. 4, a top plan view of the voting mechanism, partly in section and showing only such parts as are involved in our present improvements; Fig. 5, a rear view of the same, showing the manner of adjusting the swing-ing lock-arm; and Figs. 6 and 7, details showing a modification in the manner of adjusting the locking mechanism where there are a less number of offices to be filled and the candidates for such offices can be accommodated in a single vertical row of the voting mechanisms.

Similar letters and figures refer to similar parts throughout the several views.

A represents the cabinet for containing the voting mechanisms and registering devices. In the major portion of this cabinet and at the left-hand side as it is shown in Figs. 1 and 2 are located the voting mechanisms for general candidates, this portion of the device being the same in all particulars as that described in the Letters Patent aforesaid. The cabinet is lengthened out to the right, and in this extension are located the mechanisms more particularly involved in our present invention. The front of the cabinet is provided with two doors B and B', which when opened are utilized to form portions of the sides of the voting-booth C, as indicated in Fig. 1. When the machine is not in use, these doors are closed and locked to secure the mechanism from being tampered with.

The front of the booth is provided with two doors D and E, the first opening inward to admit the voter to the booth and the second opening outward for his exit. These doors are provided with springs and latches so arranged that after the voter has passed through them on his way into or out of the booth they become closed and locked against him should he attempt to open either from the reverse side.

The bar X connects the door D with the swing-arm V, which is pivoted at *k'* to the top of the cabinet. At each extremity of the arm V are lifting devices W and W'. These lifting devices are provided with rollers *l m l' m'*, which travel on the curved tracks *n n'*. As the door D is opened the lifting devices are thrown backward and forward, respectively, and the wedge-shaped ends with which they are provided pass under the rollers *j j'* and lift the fulcrum-bars *i i'*, from which these rollers project. During the period while the door is being fully opened and until just before it is closed again the rollers *j j'* ride on the level tops of the parts W W' and the fulcrum-bars are held in their elevated position. The forward ends of these fulcrum-bars are coupled to the vertical rack-bars U U', which operate as soon as the door is opened to return the several voting mechanisms to voting position

and to lock them all in such position until the door is fully closed, when the bars are allowed to drop and release the mechanisms ready for the next voter who is then closeted within the booth.

The above-described mechanism is the same as described in our before-mentioned Letters Patent and needs no fuller explanation here.

The operation of the rack-bar U' upon what may be termed our "supplemental" voting mechanism, which forms the subject-matter of the present invention, will appear farther on. This supplemental voting mechanism is located to the right of the panel *p* in the cabinet, (see Fig. 2,) and consists in the present instance of two vertical rows of keys or knobs F, which are to be pulled out when voting, said keys being set at the right of the tablets indicated by *a*, which display the name of the candidate and indicate in proper manner the party and office for which he is running, pointers *a'* being located in line with each key to designate the candidate to whom that key belongs. We will assume that there are four constables to be elected and that two parties have candidates in nomination. Then $1^a, 1^{a'}, 1^{a''},$ and $1^{a'''}$ will represent tablets marked with the names of the candidates for one party, and $2^a, 2^{a'}, 2^{a''},$ and $2^{a'''}$ those marked with the names for the other party. The voting mechanisms must be so arranged that a voter can vote either a straight ticket—that is, pull the keys straight down the lines 1^a , &c., or 2^a , &c.—or split his ticket—for instance, by pulling $1^a, 1^{a'}, 2^a, 2^{a''}$ or any other combination of four of the eight candidates—and when he has voted the four of his choice not only must the keys he has pulled be locked, so that he cannot repeat his vote, but also the remaining keys must be locked in, so that he cannot vote for more than the four constables which are to be elected. The mechanism for accomplishing these objects will now be explained.

The individual voting mechanisms and the manner of locking them after their keys have been pulled out are the same as already described at large in our Letters Patent aforesaid, their operation being briefly as follows: When a key is pulled out, it pulls forward a notched segment G, which is pivoted to swing at the side of the cross-bar H of a suitable frame I, which extends across at the front of the cabinet and supports the tablets and operating mechanisms for each horizontal pair of keys. Coupled to the segment G is a dog N, which operates the ratchet-wheel O to actuate the registering mechanism within the case P. A gravity-pawl J, pivotally connected to the side of cross-bar H, drops into engagement with a tooth on segment G when this segment is pulled forward and prevents its key F from being pushed in until the pawl is raised by the lifting of the rack-bar U' when the door D is opened. When the rack-bar is raised, the toothed arms T, which are keyed to each of the horizontal shafts K, are all simultaneously lifted, giving these shafts

a partial rotation from left to right as the mechanisms are viewed in Fig. 3. This rotation of the shafts imparts a backward motion to the brackets L, said brackets being provided with lifting-cams *d*, which extend beneath the pawls J and which operate to raise the pawls out of engagement with segments G. A connection is made between the segment G and the bracket L through the medium of a slotted link M, which is pivoted at one end to the bracket and at the other end is provided with an elongated slot, as indicated by broken lines in Fig. 3. The slot in link M allows the segment to be pulled forward by the key; but when the bracket L is turned backward the end of the slot engages the pin and turns the segment back into its normal position—that is, after cam *d* has lifted pawl J out of engagement with the segment. As long as rack-bar U' remains in its lifted position—that is, while door D is open—the links M prevent the keys from being pulled out. When the door is closed and the rack-bar is dropped, links M move forward and release the segments, leaving the several mechanisms in position to be manipulated by the voter who has just entered the booth. After any four of the keys in the set have been pulled out the remaining four must now be locked so that any of them cannot be pulled out. This locking mechanism comprises the following instrumentalities: An upright bar R is attached to the sides of the cross-bars H in each vertical row of voting mechanisms and has attached to its sides and projecting from it two guide-strips *r, r'*, which form a channel within which are held alternate knees of a toggle-chain S by reason of extensions *s* from their pivot-pins engaging suitable slots cut in the strip *r*. The lower link of the toggle-chain is pivotally connected to the lower extremity of the bar R, and the uppermost link has its end left free to travel up and down in the channel at the upper end of R, a projecting pin *s* being also provided here to engage a slot in the upper end of strip *r* to keep the end of the link in place. The outwardly-projecting knees of the toggle-chain are also provided with projecting pivot-pins *s'*, which will strike the edge of the strip *r* and prevent the knees from being thrown into the channel so far as to allow any two of the links to straighten out. These outwardly-projecting knees of the toggle-chain abut against the faces of a series of slides Q, held against the sides of the cross-bars H by ledges *h* and screw-heads *h'* or other suitable means. These slides are provided with vertical slots at *g*, which engage pins *g*, projecting laterally from segments G.

At the rear of the uppermost frame-piece I and midway between the two uprights R is a sliding bar Y, to the top of which is pivoted the swinging lock-arm Z, the extremities of which pass through the slots in the upper ends of the strips *r* and across the channels

formed by the guide-strips, so that the upper ends of the toggle-chains will rise against them. The bar Y is held between the guiding-strips *y y* and fastened in proper vertical adjustment by means of the thumb-nut *w*.

In operation when one of the keys F is pulled out (see Fig. 3) the pin *g* on segment G will push forward the slide Q, and this in turn will push the abutting knee of the toggle-chain a certain distance toward upright R, causing all links above this knee to travel upward. Each key that is pulled out will cause a corresponding upward motion in the toggle-chain above it, and when four have been pulled out the free ends of the two toggle-chains will have been brought up against the extremities of the swinging lock-arm Z and no more keys can be pulled out. The arm Z will be tilted upward more or less at either extremity, according to the number of keys pulled in either of the vertical rows. Thus if two keys are pulled on one side and two on the other the arm will remain horizontal, while if four keys are pulled out on one side the arm will be tilted to its extreme position on that side, while the other extremity of the arm will be brought down on the top of the toggle-chain which has not been moved. When the keys are drawn in by the uplifting of rack-bar U', the slides Q will be pushed back by the pins on segments G, releasing the knees and allowing the toggle-chains to drop into their normal positions, which they will do by reason of their own weight.

While we have taken by way of illustration two political parties with four candidates, there might be three or four parties with their four candidates each, in which case there would be additional voting mechanisms provided and the toggle-chain correspondingly lengthened out; but it will be readily seen that no matter whether there be twelve or sixteen candidates in all as soon as four of the keys have been pulled out the end of the toggle-chains will have been brought up against the lock-arm Z and no more of the keys can be pulled.

If instead of four offices of the same nature to be filled there are but two or three, the slide Y will be lowered so that the motion of the toggle-chains will be stopped by the lock-arm Z as soon as two or three of the keys have been pulled. This adjustment can be readily made by pulling out the desired number of keys and setting the slide so that the lock-arm will bear down on the ends of both toggle-chains. Again, one vertical row of voting mechanisms may accommodate the given number of candidates—as, for instance, where

there are eight of these mechanisms in a row and there are but two offices to be filled, there being given eight candidates from four different parties. In this case we would remove the locking-arm Z and substitute sliding blocks Z' at the head of the uprights R, which would be held in proper adjustment by a stud and thumb-nut, as shown in Figs. 6 and 7, the latter figure representing a section on the line *z z* in the former. This would leave the remaining vertical row of mechanisms free to be used for another set of candidates.

Each voting-machine will be provided with supplemental voting mechanisms sufficient to answer all demands and it will be at once apparent how readily these mechanisms can be divided up into sets comprising any desired number of keys either in double or single rows, according to the requirements of each succeeding election.

Various changes and modifications in the details of construction of the devices herein set forth and in the manner of applying the toggle-chain may be made without departing from the spirit of our invention—as, for instance, the voting mechanism and toggle-chains may be arranged in horizontal instead of vertical alinement—and we do not, therefore, wish to be considered as limiting ourselves in any way to the specific construction herein described.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a voting-machine, the combination, with a plurality of voting mechanisms, of a toggle-chain in alinement therewith, a guiding-channel therefor, slides operated by the voting mechanisms and adapted to operate upon the bent-out knees of the toggle-chain, and a stop to limit the travel of the chain, substantially as described.

2. In a voting-machine, the combination, with a plurality of voting mechanisms arranged in two rows or columns, of two toggle-chains in alinement therewith, guiding-channels therefor, slides operated by the voting mechanisms and adapted to operate upon the bent-out knees of the toggle-chains, and a swinging lock-arm hung between the toggle-chains and adapted to limit their motion, substantially as described.

In testimony whereof we have affixed our signatures in presence of two witnesses.

DANIEL DAVIS.
ETNA H. DAVIS.

Witnesses:

WILLIAM STAPLETON,
MAME L. DOBBS.