

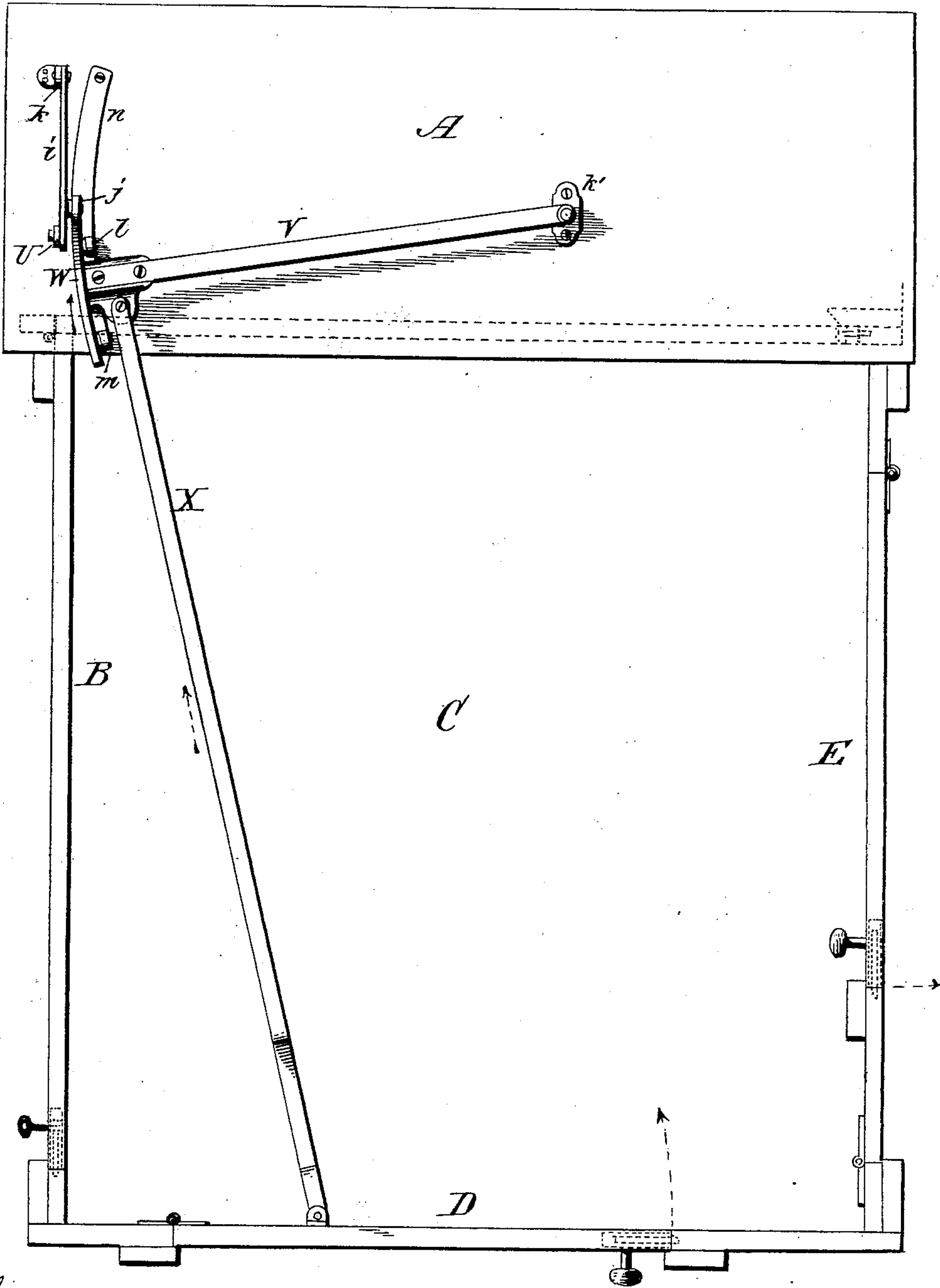
(No Model.)

4 Sheets—Sheet 1.

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

No. 563,141.

Patented June 30, 1896.



Witnesses

Fig. 1.

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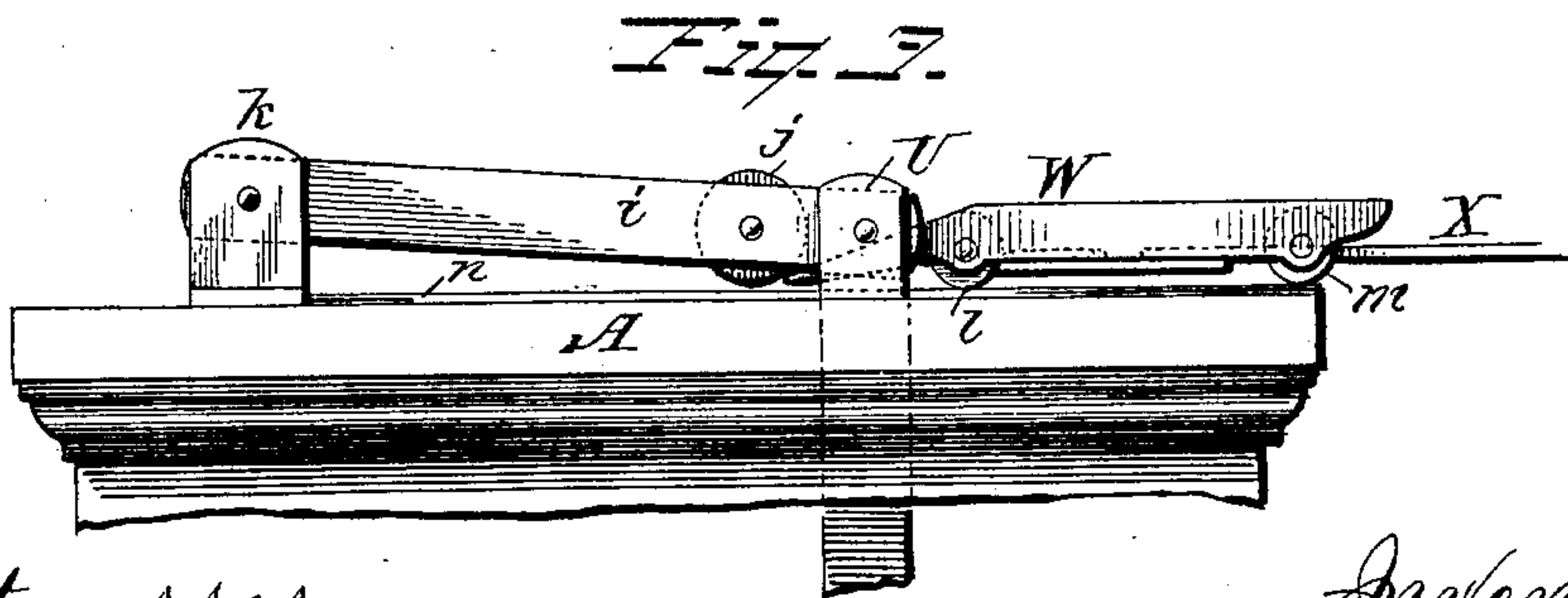
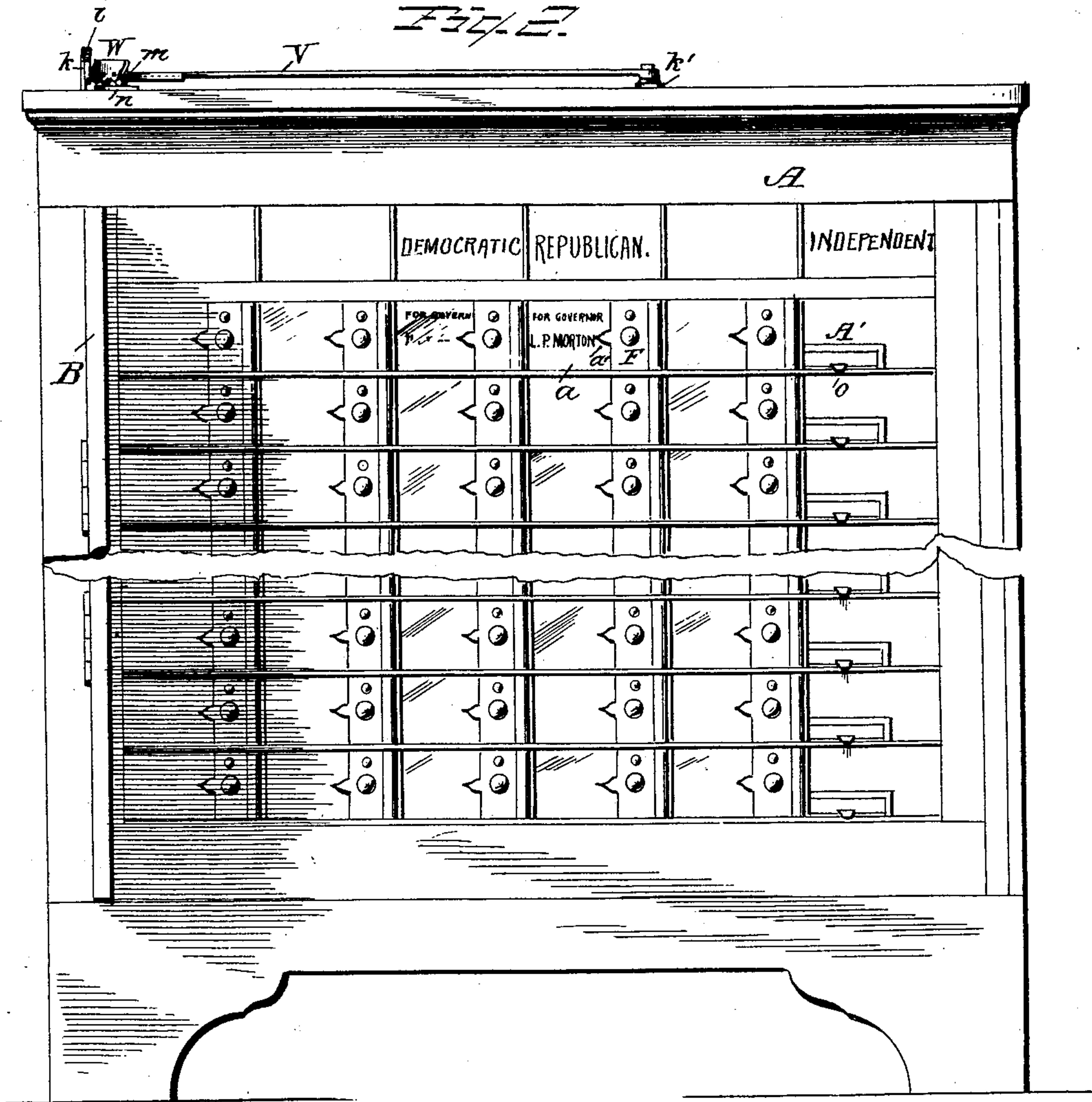
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4 Sheets—Sheet 2.

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Fig. 4.

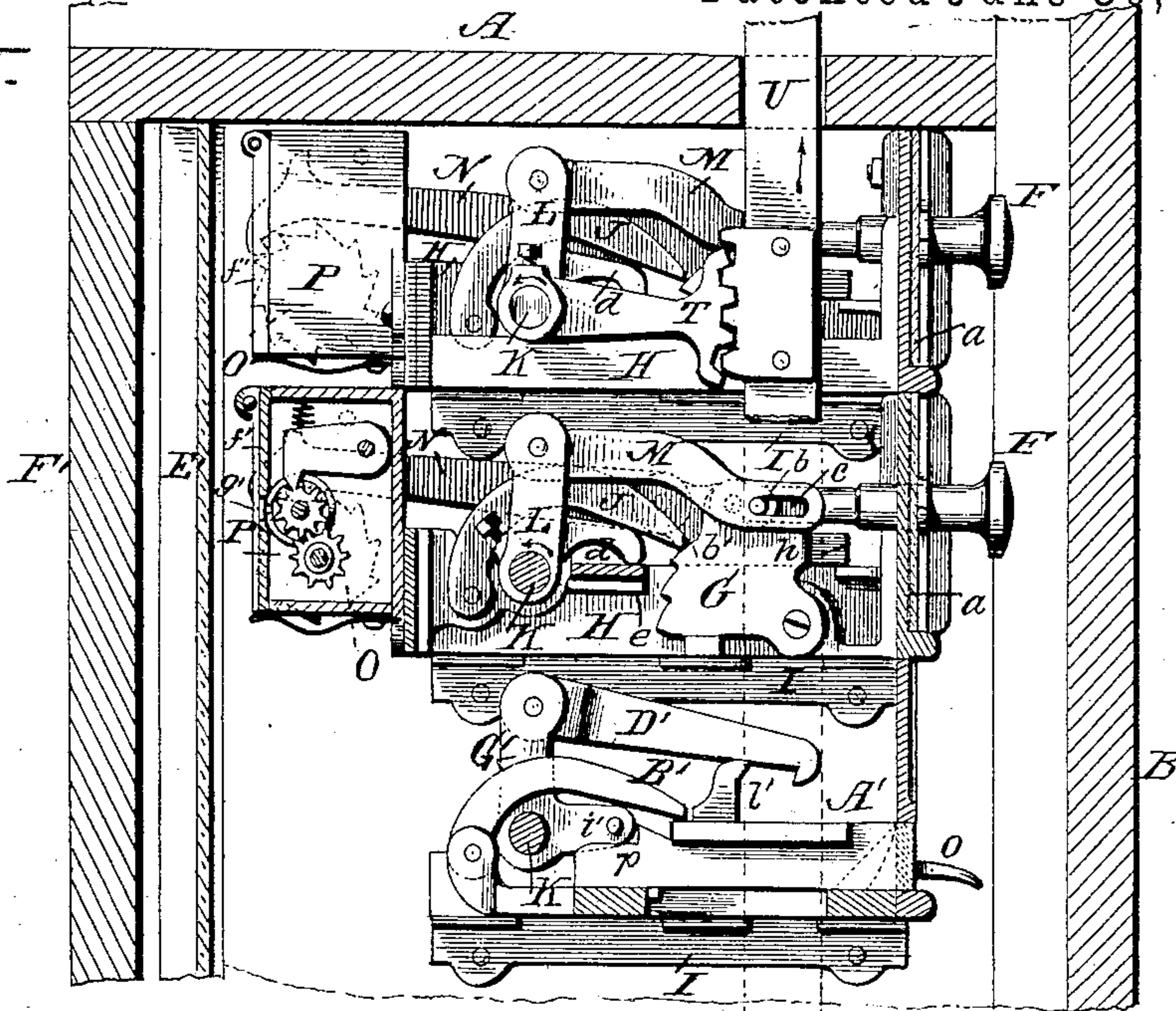
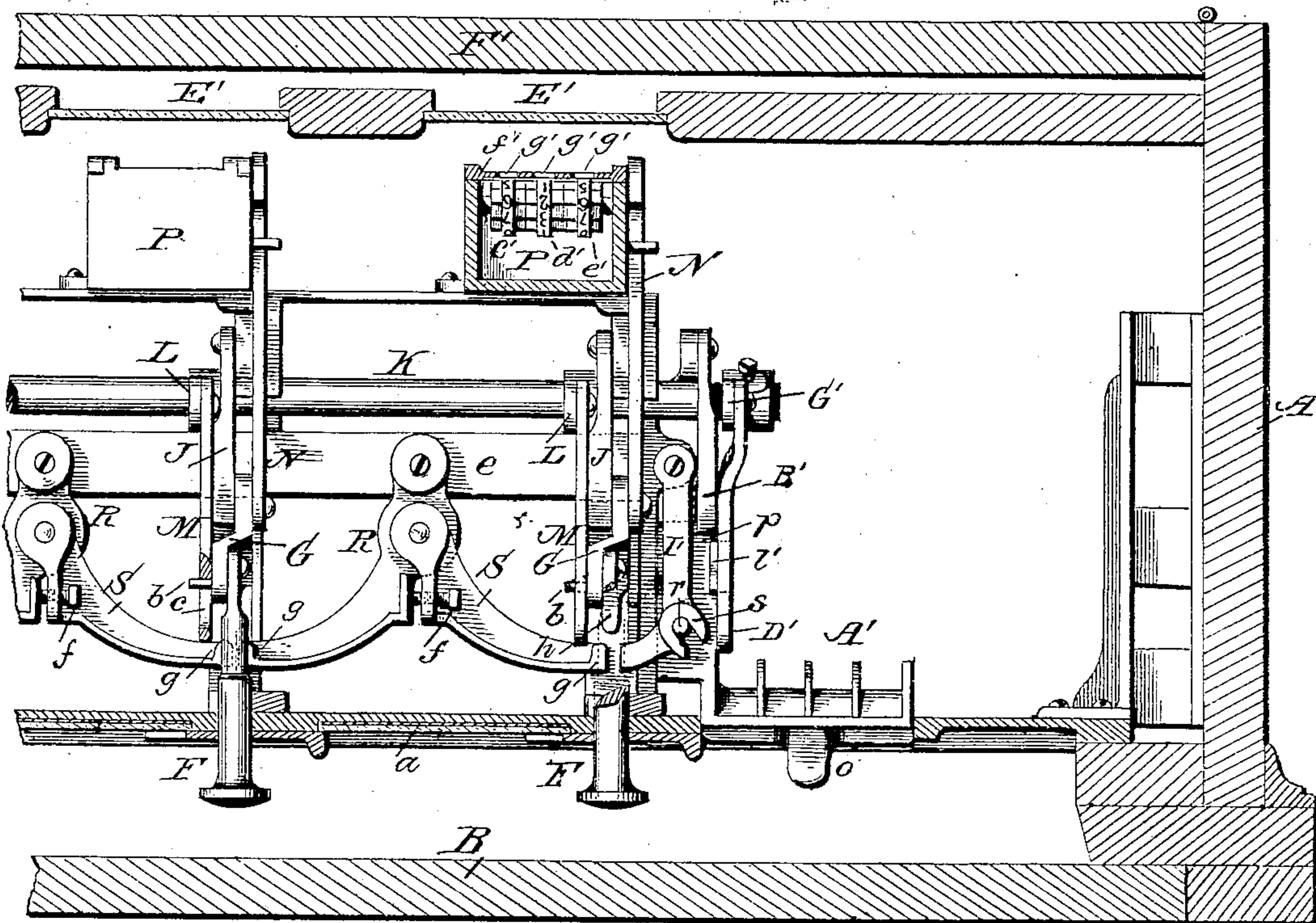


Fig. 5.



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Fig. 6.

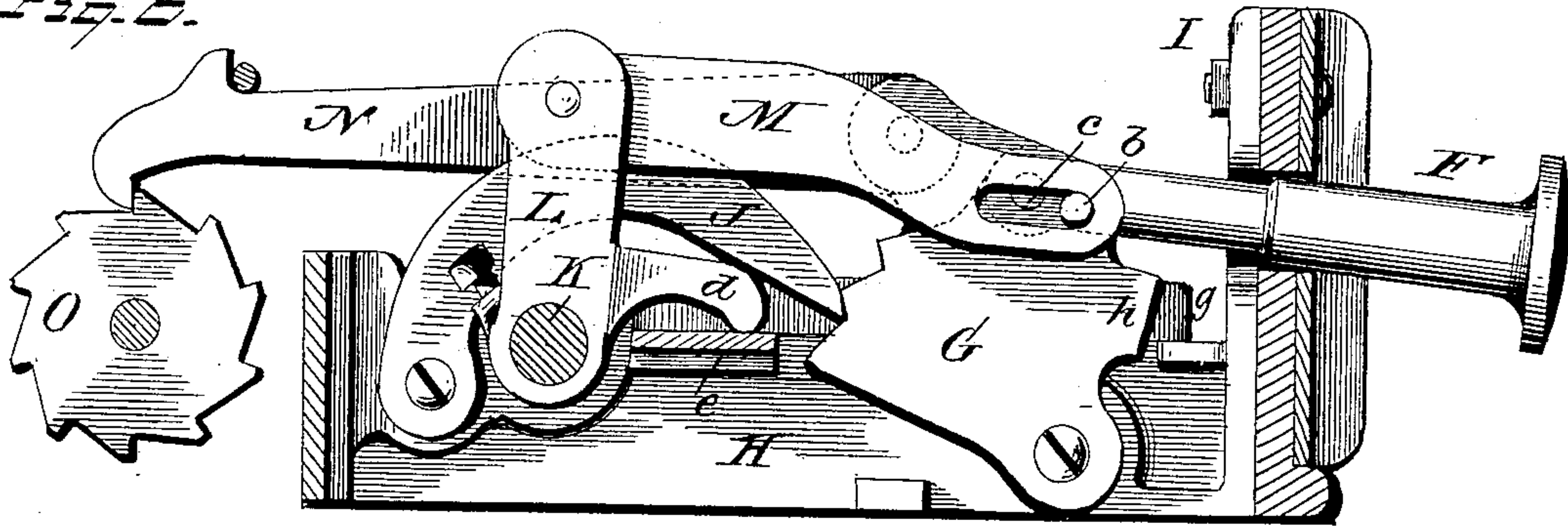
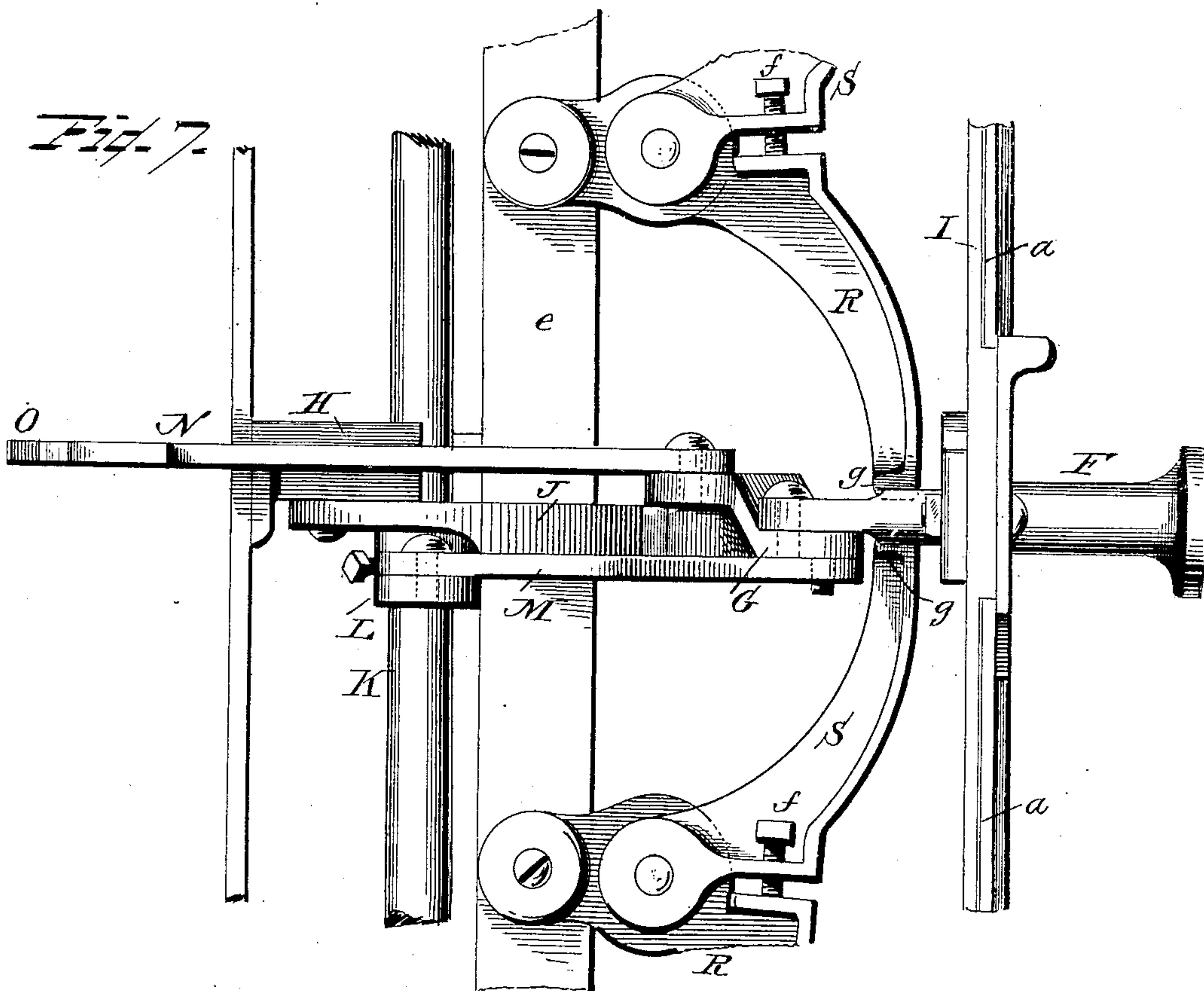


Fig. 7.



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UNITED STATES PATENT OFFICE.

DANIEL DAVIS AND ETNA H. DAVIS, OF ELMIRA, NEW YORK.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 563,141, dated June 30, 1896.

Application filed March 19, 1896. Serial No. 583,923. (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; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has reference to that class of voting-machines in which is provided a mechanism adapted to be operated by the voter in casting his vote and a vote-registering device connecting therewith to insure an accurate and proper registering of the vote cast, also in connection with the vote-registering device and the voting mechanism of a suitable booth to protect the voter against interference and enable him to vote in secrecy.

It is the purpose of the invention to improve the construction of the voting mechanism and provide a specially-constructed booth, whereby the vote may be cast with accuracy and rapidity and also in secrecy, thus securing purity and privacy in the casting of the vote and enable the voter with ordinary intelligence to have his vote registered without the possibility of failure of the operating mechanism, thereby guarding against accidental and fraudulent elections, as will be hereinafter described, and subsequently set forth in the claims.

Figure 1 of the drawings 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 detail view of the mechanism connecting with the entrance-door; Fig. 4, a side elevation, partly in section, showing the voting mechanism, also the cabinet, in section; Fig. 5, a horizontal sectional view through the cabinet; Fig. 6, a side elevation on an enlarged scale showing the mechanism in a locked position after the vote has been cast; Fig. 7, a top plan view thereof.

In the accompanying drawings, A repre-

sents the cabinet for containing the voting mechanism and the vote-registering devices, which cabinet may be of any suitable size and shape and of any preferred construction found best adapted to the purpose. This cabinet is provided upon its front side with a hinged door B, which may be provided with a suitable lock and key to secure it closed against the front of the cabinet when the voting-machine is not in use, as shown in dotted lines of Fig. 1 of the drawings, or when extended, as shown in full lines, to form one of the sides of the booth C to securely fasten it in such position. It will therefore be seen that the door B serves the double function to close the front of the cabinet to secure the voting mechanism from being tampered with when the machine is not in use, or one of the side walls of the voting-booth C when the machine is being utilized for voting purposes.

The cabinet at its front has a suitably-hinged entrance-door D, which is provided with a suitable knob upon its outer side which connects with an ordinary spring-latch. This door can only be opened from the outside and swings inwardly on its hinges, as indicated by the arrow, while the exit-door E at the side of the booth can be opened only from the inside thereof and swings outward in a direction indicated by the arrow. This door E, like the door D, is provided with a suitable knob, but upon the inside thereof, and also connects with a suitable spring-latch.

The booth may be constructed in any suitable manner that will admit of its being taken apart when not required for use for convenience in packing for storage or transportation.

In the present instance the booth is shown as hinged, and by means of the hinges at the front corners the sections thereof may be folded together after disconnecting it from the cabinet, which may be accomplished by the removal of four bolts or other fastenings used for securing the booth to the cabinet, thereby enabling the booth when folded to be conveniently moved around from place to place.

The voting mechanism under control of the voter when entering the booth consists in part of a series of horizontal and vertical rows of keys or knobs F. These keys or knobs have a sliding movement, one key or knob

being set apart for each candidate of the various political parties, the front of the cabinet having a like series of tablets bearing the names of the different candidates, each vertical row of such tablets designating the "ticket" of each party. The tablets, as shown at *a*, are held in place by any suitable means, and may be protected by a glass plate, if so desired, the front of the cabinet having a pointer *a'* directly on line with each key or knob *F*, which points to the name of the candidate upon the tablet to which the key or knob is to be used in casting the vote therefor, thus preventing error in pulling the wrong key or knob. Each tablet bearing the name of the candidate to be voted for has its own voting mechanism and also vote-registering device operated by a key, hereinbefore referred to, which is pulled out when the vote is cast. In connection with this key there is provided a notched segment *G*, which segment is pivotally connected to the cross-bar *H* of a suitable frame *I*, extending the entire width of the cabinet and supports the operating mechanism for each horizontal set of keys. The rear end of the key *F* is pivotally connected to this segment *G*, and engaging with the notched segment is a gravity-pawl *J*, which pawl is pivotally connected to the cross-bar *H*. When the key is in and previous to its being pulled out, the pawl *J* is supported above the notches in the segment *G*, but when pulled out the pawl will fall by gravity and engage the notches in the segment and lock the voting mechanism after the vote has been cast. This pivoted toothed segment may be of any preferred construction, as may also the gravity-pawl which is to engage therewith, and if preferred the segment may have a concave support, as shown at *b'*, for the end of the gravity-pawl to rest on when the mechanism is not locked.

Each horizontal series of voting mechanisms has a rock-shaft *K*, which extends across the frame *I*, which acts to unlock and release the mechanism after the vote has been cast by mechanism connecting with the shaft and with the entrance-door, as will be hereinafter described. Each of the keys *F* of the horizontal series is connected with its respective rock-shaft by certain mechanism, which will be now described as applied to a single key. Connected to and moving with the rock-shaft *K* is a bracket *L*, said bracket being cast with or otherwise provided with a lifting-cam *d* to raise the pivoted pawl *J* out of engagement with the teeth of the segment *G* to release the locking mechanism.

A connection is made between the notched segment *G* and the bracket *L* through the medium of a slotted link *M*, which link is pivoted at one end to the bracket and the opposite end connected to the segment by means of a pin *b*, projecting from the side thereof, which enters or engages an elongated slot *c* in the end of the link, as shown in Fig. 4 of the drawings. To the side of the toothed segment

G is pivotally connected a dog *N*, its free end adapted to engage with a ratchet-wheel *O*, by which the same is turned the distance equal to the space between two of the teeth. The dog and ratchet-wheel form a connection between the voting mechanism and the vote-registering device by which the vote cast is correctly registered. This registering device may be of any of the usual forms, as no claim is laid to the construction shown, it being one of many forms of registering devices that may be successfully applied in connection with the voting mechanism.

In the present instance there is shown three counting-wheels having numerals from "1" to "10," inclusive, said wheels being represented at *c' d' e'* and inclosed in a suitable box or case *P*, the wheels operating in connection with each other in the usual manner, a complete revolution of the wheels registering tens, hundreds, and thousands, respectively.

Any suitable and well-known gearing may be employed for connecting the counting-wheels with each other and with the ratchet-wheel, and as the registering device shown is of the ordinary construction and may be substituted by any of the ordinary forms, further description thereof is deemed unnecessary.

The box or case *P* has a front *f'* with openings *g'* on line with the periphery of the counting-wheels, so that the number of votes cast may be seen through the windows *E'* at the rear side of the cabinet, a hinged door *F'* closing the back of the cabinet when not in use.

When the key *F* is pulled out by the voter in casting his vote, it will raise the toothed segment *G* sufficiently to allow the gravity-pawl *J* to engage therewith, and through the medium of the dog *N* and ratchet-wheel *O*, the vote will be registered by means of the wheel *e'* moving the distance of one of the numerals on the periphery thereof. The notched segment *G* by its movement and the gravity-pawl *J* engaging therewith in connection with the locking-arms *R S* and mechanism hereinafter described will lock all the keys in the horizontal row. Thus when a vote is cast it would be impossible to repeat the vote or vote a second time for the same candidate or a candidate representing a different political party from that already voted for.

The means employed for releasing the horizontal series of keys after one of them has been operated in casting the vote and the mechanism locked connects with the entrance-door of the booth and will be hereinafter described. The curved locking-arms *R S* have bearing-flanges *g* at their free ends, each pair of arms acting in conjunction with the mechanism of each key to lock the keys after one of the horizontal series has been pulled out to cast the vote. The series of curved arms *R* is suitably pivoted to a horizontal support *e*, which together with the cross-bars *H* form a part of the frame *I*. The arms *S* are pivoted to the arms *R* and are provided with a set-screw *f* or other suitable and

well-known means by which their position may be adjusted in relation to the arms R so the distance between the free ends of the arms R S of each pair may be increased or diminished. This adjustment of the locking-arms S enables the arm to be moved laterally to compensate for wear upon the bearing-flanges *g* and insure the entire series of locking-arms moving the required distance to lock the mechanism.

A wedge-shaped forcing device *h* projects from each of the toothed segments G, and when the key F is pulled out and the segment moved upon its pivotal connection the device *h* will be forced between the bearing-flanges *g* of the arms R S. The above action of the device *h* occurs when a vote is being cast and locks the entire number of arms R S in the horizontal series by moving the arms so that the bearing-flanges *g* thereon will come in contact with each other, thus locking the mechanism until released.

The locking mechanism is released ready for the next voter by means of a rack-bar U, which connects with the entrance-door of the booth and the rock-shaft K. The rack-bar U connects with the rock-shaft by a segmental toothed arm T, rigidly connected to one end of the shaft and engaging the teeth on the rack-bar. Each rock-shaft is provided at its end with one of these toothed arms T, which engages with the rack-bar U. The rack-bar U is of sufficient length to engage with the toothed arms T on the vertical line of rock-shafts K and project up through the top of the cabinet, as shown in Fig. 4 of the drawings. To the projecting end of the rack-bar U is pivoted a fulcrum-bar *i*, the opposite end of the bar being pivoted to a short standard *k*, projecting from the top of the cabinet. The fulcrum-bar *i* is provided with a bearing-roller *j*, with which engages a wedge-shaped lifting device W, provided with rollers *l m*, said device, with its rollers, moving on a curved track *n*, secured to the top of the cabinet. This lifting device W connects with a swinging arm V, one end of said arm being pivoted to a bracket *k'*, secured to the top of the cabinet, as shown in Fig. 3 of the drawings. A lever-rod X connects the swinging arm V with the entrance-door D of the cabinet, the ends being pivoted thereto, respectively, thus operating the lever-arm by the opening of the door, and through the mechanism described or arrangement of devices at the top of the cabinet the rock-shaft is elevated, which motion will release the locked voting mechanism.

The person desiring to vote will enter the booth C through the door D, the spring-hinges or other spring device connecting with said door rendering the same self closing and latching after the person is within the booth. The person now in the booth and the door D securely latched in a closed position, as shown in Fig. 1 of the drawings, he will now proceed to vote by pulling out the proper key F op-

posite the candidate of his choice. As the key F is pulled out by the voter the toothed segment G will be moved upon its pivotal connection, when the gravity-pawl J will fall in the position to engage with the notches of said segment, and the projecting device *h* upon the segment will be forced between the bearing-flanges *g* of the locking-arms R S and move them out laterally. This lateral movement of the locking-bars will be uniform through the entire series, caused by the bearing-flanges coming in contact with each other when the first of the arms R S are acted upon by device *h*. When the toothed segment G is moved by the pulling out of the key F, the dog N, which is pivoted to the segment, will also be carried in the same direction, and its free end, engaging with the ratchet-wheel O, will turn the counting-wheel the distance of one number thereon. Now the voting mechanism, when operated as above described and the vote registered, will be securely locked against further voting by the gravity-pawl J engaging with the notched segment G and the mechanism connecting therewith. The voter now leaves the cabinet through the door E, which closes and is latched behind him by means of the spring-hinges or other spring devices connected with the door.

The next voter opens the door D and enters, casts his vote in the same manner as the previous voter, but for his choice of candidate, after which he passes out of the cabinet through the door E.

When the door is opened to enter the cabinet, the opening of the door will release the locking mechanism ready for the voter by means of the lever-rod X connecting therewith and with the rack-bar U.

When the door D is opened for the entrance of the voter, the lever-rod X will be forced forward and with it the lifting device W, as indicated by the arrows. The wedge-shaped end of the lifting device will pass forward under the bearing roller *j*, forming a track therefor and the incline thereon elevating the fulcrum-bar *i*. The pivoted fulcrum-bar *i* being pivoted at one end to the rack-bar U, as the fulcrum-bar is raised so also will the rack-bar, and through its connection with the rock-shaft K by the toothed bar T the shaft will be turned upon its bearings in a direction indicated by the arrows in Fig. 4 of the drawings. This rock motion of the shaft K carries with it the lifting-cam *d*, said cam when raised lifting the gravity-pawl J out of engagement with the notched segment G. As the gravity-pawl is released, the notched segment G will fall back to its normal position and carry with it the key F ready for the next voter. As the notched segment is released by the gravity-pawl and moves back to the position shown in Fig. 4 of the drawings, the several devices *h* upon the segment will be withdrawn from between the bearing-flanges *g* of the locking-arms R S, which

arms will be free to swing back to their former position, which will complete the unlocking of the voting mechanism.

The bearing-flanges *g* upon the ends of the locking-arms R S, when in contact with each other, prevent those keys F which have not been operated from being pulled out, as the space between the bearing-flanges are closed against the several devices *h* of the notched segments by the flanges being held against each other. The keys are locked against being pulled out by closing the bearings or bearing-flanges *g* against each other to close the space between them against the several devices *h*, and the key that has already been pulled out by the voter in casting his vote cannot be pushed back, but is held locked by the gravity-pawl J engaging with the notched segment G, and until the pawl is raised to release the notched segment by the action of the rock-shaft K, as hereinbefore described, the mechanism will remain locked. The notched segment G is brought back to its normal position by the slotted link M and pin *b* engaging with the slot when the rock-shaft is moved upon its bearing, as hereinbefore described.

For the accommodation of any who may wish to vote for candidates not nominated by any of the regular political parties, the voter may prepare his own ballots, either written or printed, and fold them, but before entering the booth they should be stamped or punched by the inspectors. To provide for this independent voting, there is employed a sliding chute A', which is provided with a suitable handle *o* for drawing it out to deposit the ballot through the exposed opening in the cabinet which was formerly closed by the chute. There may be any number of these chutes, which act to lock the voting-mechanism in the same manner as do the keys F, except that the registering device is not operated.

The chute A' has a toothed extension *p*, with which engages a pivoted gravity-pawl B' to hold the chute extended after it has been pulled out to deposit the ballot. The rear portion of the notched extension, or that part nearly adjacent to the chute A', has an upwardly-extending pin *r*, which engages the inclined slotted end *s* of a pivoted locking-arm I'. This locking-arm acts in the same capacity as the locking-arms R S, and is operated by the drawing out of the chute A'. When the chute is drawn out to deposit a ballot, the notched extension *p*, being integral with the chute, will move therewith and carry with it the pin *r*. This pin, acting in conjunction with the inclined slotted end *s* of the locking-arm I', will force said arm out laterally and the free end or extremity thereof against the bearing-flange *g* of the arm S that is opposite thereto. In the movement of the locking-arm I', caused by the pulling out of the chute A', the same simultaneous locking of the arms R S throughout the hori-

zontal series will be attained as would be in voting by pulling out one of the keys or knobs F. When the chute A' is pulled out and the locking-arm I' acted upon as above described, the pivoted gravity-pawl B' will fall to engage the notched extension *p*, thus securely holding the chute extended. The chute is released after being pulled out in substantially the same manner as are the keys or knobs F, and the rock-shaft K has rigidly connected thereto the bracket G'. This bracket moves with the rock-shaft and has a lifting-cam *i'*, which lifts the pawl B' out of engagement with the notched extension *p* to allow the chute A' to be brought back to its normal position to close the opening in the front of the cabinet. A suitable dog D' is pivoted at one end to the bracket G' and its opposite end adapted to engage with a suitable lug *l'*, projecting from the upper side of the toothed extension *p*.

As the shaft K is rocked by the closing of the entrance-door of the booth, which will release the voting mechanism, as hereinbefore described, the lifting-cam *i'* will release the pawl B' from engagement with the notched extension *p*, and the notched end of the dog D', which will engage the lug *l'*, will draw back to position the chute A'.

The mechanism connecting the entrance-door of the voting-booth with the locking and releasing mechanism prevents any one voting while said door is held open, thereby guarding against fraud in any manner.

Each horizontal frame I which supports the voting mechanism is independent of all the others and can be pulled out and removed and conveniently replaced when necessity requires.

There may be many changes or modifications made in the several details of construction without departing from the principle of the invention, as in the rack-bar, in place of separate toothed plates secured thereto at intervals, the teeth may be formed at intervals on the bar and the separate plates dispensed with.

Having now fully described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A voting-booth provided with an entrance-door and an exit-door opening in opposite directions, a voting mechanism and a registering mechanism, a rock-shaft connecting therewith, an upright rack-bar, a segmental toothed arm connecting the rock-shaft with the rack-bar, and a mechanism connecting the rack-bar with one of the doors whereby the voting mechanism is released by the action thereof, substantially as and for the purpose set forth.

2. A voting mechanism and a vote-registering mechanism, a cabinet for containing the same, a voting-booth connected with the cabinet and provided with an inwardly-opening entrance-door and an outwardly-opening exit-door, a hinged door for closing the front

of the cabinet, said door adapted to form one of the side walls of the cabinet when in an open and extended position, substantially as and for the purpose described.

5 3. A cabinet, a voting mechanism and a vote-registering mechanism contained therein, a booth provided with an inwardly-opening entrance-door and an outwardly-opening exit-door, and a releasing or unlocking mechanism connecting the entrance-door with the
10 voting mechanism, consisting in a pivoted fulcrum-bar provided with a bearing-roller, a rack-bar pivotally connected to the fulcrum-bar, a wedge-shaped lifting device supported
15 upon rollers adapted to extend under the bearing-roller, a pivoted swinging arm to which said device is connected, and a lever-rod pivotally connected to the swinging arm and entrance-door, substantially as and for
20 the purpose specified.

4. A voting mechanism consisting of a plurality or series of keys, pivoted notched segments to which the inner ends of the keys are pivoted, a rock-shaft, brackets thereon,
25 pivoted and slotted links connecting the brackets with the notched segments, pivoted gravity-pawls adapted to engage with the notched segments, and lifting-pawls upon the brackets to elevate the pawls out of engage-
30 ment with the notched segments, a vote-registering mechanism, and means for connecting the same with the voting mechanism, substantially as and for the purpose specified.

5. A voting mechanism, consisting of a
35 plurality or series of keys, pivoted notched segments connecting therewith, gravity-pawls adapted to engage with the segments, a rock-shaft connecting with the segments, lifting-cams for raising the pawls connected
40 to the rock-shaft, a toothed arm upon the end of the shaft, a rack-bar engaging therewith, and means connecting the entrance-door of the voting-booth with the rack-bar, substantially as and for the purpose described.

45 6. In a voting mechanism, a series of curved swinging arms for locking the mechanism, each pair of arms being pivotally and adjustably connected together, a plurality or series of keys, and means connecting there-
50 with for moving the arms laterally to close

the spaces between the free ends thereof, substantially as and for the purpose set forth.

7. In a voting mechanism, a plurality or series of keys, pivoted notched segments connecting therewith, a rock-shaft connecting
55 with the toothed segments, gravity-pawls adapted to engage therewith, lifting-cams upon the shaft for acting on the pawls, means for operating the shaft, swinging locking-bars, pivotally and adjustably connected to-
60 gether, and means connecting with the keys for operating the arms, substantially as and for the purpose described.

8. A voting-machine, consisting of a suitable cabinet, a vote-registering device and a
65 voting mechanism contained therein, said mechanism consisting of a plurality or series of keys, pivoted notched segments connecting therewith, gravity-pawls adapted to en-
70 gage with the segments, a rock-shaft connecting with the segments, lifting-cams upon the rock-shaft for acting on the pawls, curved locking-arms adapted to swing laterally, the arms of each pair pivotally and adjustably
75 connected to each other, means for moving the arms laterally, a toothed arm upon the end of the rock-shaft, a rack-bar engaging therewith, a booth provided with an entrance-
80 door, and means connecting it with the rack-bar, substantially as and for the purpose set forth.

9. In a voting-machine, the combination with a voting mechanism and a mechanism for locking the same, of a sliding chute provided with a notched extension, a pin and a
85 lug thereon, a pivoted locking bar or arm having a slotted portion to engage the pin, a pivoted weighted pawl to engage the notched extension, and a pivoted dog to engage the
90 lug, substantially as and for the purpose set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

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ETNA H. DAVIS.

Witnesses:

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CHARLES LEAVITT.