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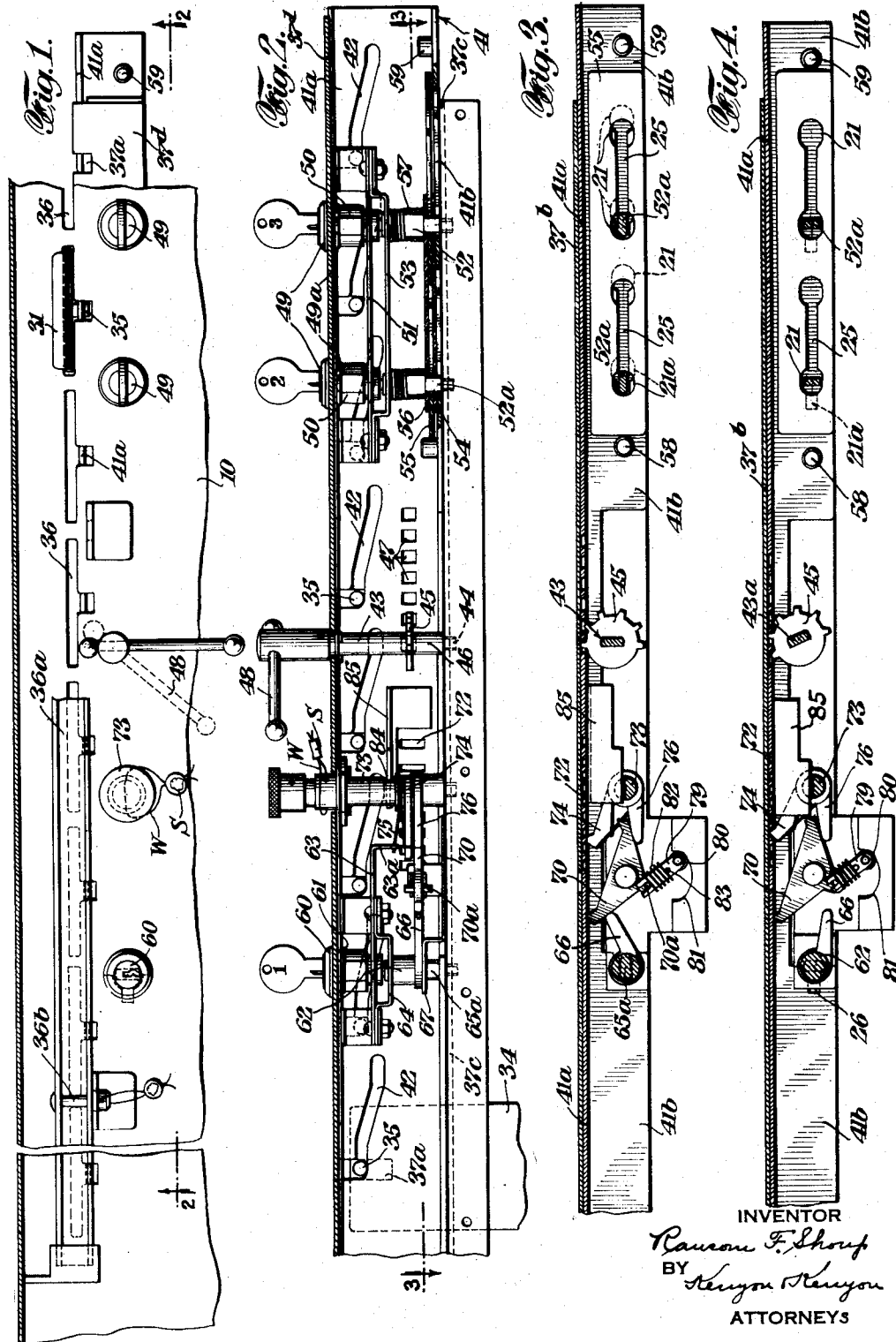
R. F. SHOUP

2,216,458

VOTING MACHINE

Filed Feb. 11, 1939

3 Sheets-Sheet 1



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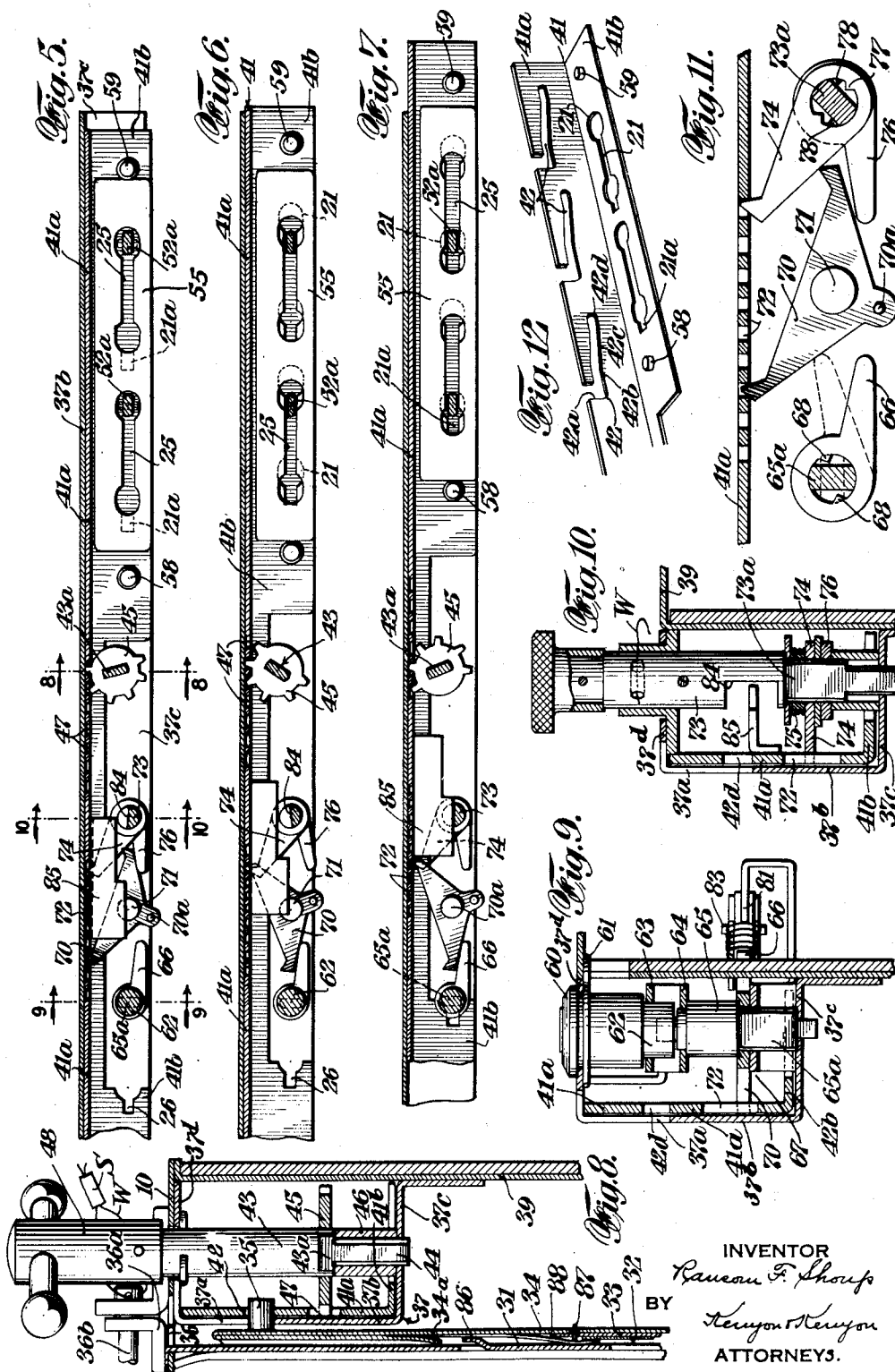
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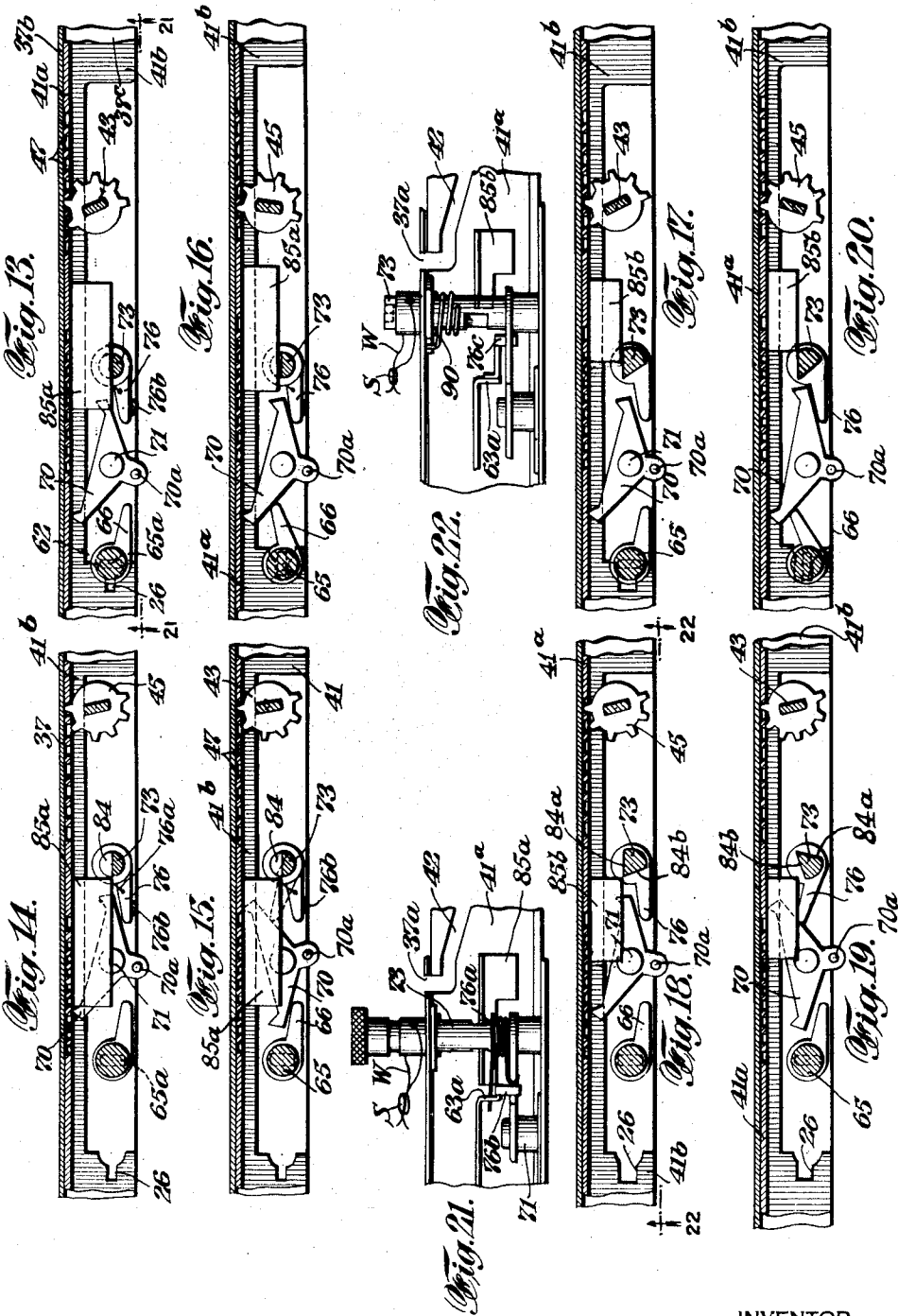
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3 Sheets-Sheet 3



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2,216,458

VOTING MACHINE

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Application February 11, 1939, Serial No. 255,937

45 Claims. (Cl. 235—55)

This invention relates to voting machines of the type disclosed in the patent to Shoup et al. No. 2,054,102. In such type voting machine, there is provided a series of columns of counters and a ballot-supporting shutter is arranged in front of each counter column. The shutters are vertically movable between two positions and are provided with apertures through which in one position the counter totals can be viewed, while in the other position, the counter totals are concealed by the shutters. In preparing a machine for an election, shutters with similarly apertured ballots attached are slid in front of the counter columns, with the apertures so arranged that the counter totals are visible, in which position of the shutters the machine is locked against operation. In order to place the machine in voting condition, the shutters are moved to conceal the counter totals and such movement of the shutters is accompanied by the release of the voting mechanism. At the close of the election, the shutters are again moved to expose the counter totals, with concomitant locking of the voting mechanism. The counter totals may then be tabulated by the proper authorities. It is important that it should be impossible for anyone to operate the shutters between the time that the ballot assemblies are inserted during preparation of the machine for an election and the start of the election and then only by the proper authorities, that it should be impossible for the shutters to be moved between counter-concealing and counter-exposing positions during the election period and that it should be impossible to move the shutters from counter-exposing to counter-concealing position after the election has closed except by the proper authorities for the purpose of preparing the machine for another election.

An object of this invention is to provide in said type voting machine, shutter-locking mechanism which is effective after preparation of the machine for election, to prevent movement of the shutters into counter-concealing position except by the proper authority and to prevent movement of the shutters back to counter-concealing position after movement from such position to counter-exposing position.

Other objects, novel features and advantages of this invention will become apparent from the following specification and accompanying drawings, wherein:

Fig. 1 is a fragmentary plan view partially broken away of said type of voting machine

equipped with shutter-locking mechanism embodying the invention;

Fig. 2 is a section on the line 2—2 of Fig. 1; Figs. 3 and 4 are sections on the line 3—3 of Fig. 2 with the parts shown in different stages of operation.

Figs. 5 to 7 inclusive are similar sections except that double-acting pawl snap-over mechanism is omitted for simplicity.

Fig. 8 is a section on the line 8—8 of Fig. 5; 10

Fig. 9 is a section on the line 9—9 of Fig. 5;

Fig. 10 is a section on the line 10—10 of Fig. 5;

Fig. 11 is an enlarged fragmentary section on the line 3—3 of Fig. 2;

Fig. 12 is a fragmentary perspective view of 16 one member of the locking mechanism;

Figs. 13 to 16 inclusive are views generally similar to Figs. 3 to 7 inclusive of a modification with the double-acting pawl snap-over mechanism omitted as in Figs. 5 to 7; 20

Figs. 17 to 20 inclusive are similar views of a further modification with the double-acting pawl snap-over mechanism omitted as in Figs. 5 to 7;

Fig. 21 is a section on the line 21—21 of Fig. 13, and 25

Fig. 22 is a section on the line 22—22 of Fig. 18.

In all of the figures except Figs. 1 and 8, illustration is limited to the shutter locking mechanism to the exclusion of the other parts of the machine, but in Figs. 1 and 8 a section of the enclosing casing of the machine is illustrated to show the location of and supporting arrangement for the shutter locking mechanism. Also in Figs. 3 to 10 and 13 to 23 illustration of the ballot assemblies is omitted. 35

In Fig. 8 is shown the upper part of a ballot assembly consisting of a metal shield 31, a transparent strip 32, a paper ballot 33 and a shutter 34 having a pin 35 which correspond to the similarly designated parts of the ballot assembly of the Shoup et al. Patent No. 2,054,102. The voting machine housing 10 is provided with a series of slots 36 through which the ballot assemblies are inserted and removed and a plate 37 supported by the partition 39 is suitably shaped to define a housing extending beneath the top of the casing 10 and having a vertical wall 37b, a bottom horizontal wall 37c, and a top horizontal wall 37d contacting the top wall of the casing 10. The wall 37b is provided with vertical slots 37a in which the pins 35 are received. A bar 36a is provided to overlie the slots 36 to prevent removal of the ballot assemblies. This bar is held in place by bolts 36b provided with suitable sealing means which must be broken before the bolt can be removed 55

and the bar 36a lifted. In the foregoing description, the same reference characters have been used as in said Patent No. 2,054,102 for the purpose of showing corresponding parts of the two machines and making it easier to coordinate the invention covered by the present application with respect to the previous shutter-locking mechanism.

A locking slide 41 (Figs. 2, 8 and 12) is provided within the housing formed by the plate 37 and is composed of a length of angle iron having a vertical wall 41a and a horizontal wall 41b resting on the bottom of the housing. In the wall 41a are provided slots 42 for receiving the pins 35. Each slot has a vertical portion 42a communicating with a horizontal portion 42b from which an oblique portion 42c leads to a second horizontal portion 42d at a different level. Each pin 35 is limited to vertical movement by a slot 37a and the shutters 34 may be lowered and raised by reciprocation of the slide 41.

A shaft 43 (Figs. 2 and 8) is journaled in the wall 37d and extends through the top of the casing 10. This shaft has its lower portion cut back to provide a substantially oblong cross-section part 43a of the same width but of less thickness than the shaft and is further cut back to provide a square cross-section part 44 journaled in the wall 37c. A pinion 45 is fitted onto the portion 43a and is held in place by a spacer 46. A series of apertures 47 extending longitudinally of the wall 41a provide teeth for engagement by the teeth of the pinion 45, whereby rotation of the shaft 43 effects linear movement of the slide 41. A handle 48 is attached to the shaft 43 exterior of the casing by means of which rotation of the shaft may be effected.

In the wall 37d are mounted two cylinder locks 49 of the type in which the operating key therefor is limited to movement through an arc of 90° and is held captive except in one position (Figs. 2 and 9). Each lock 49 extends through the top wall of the casing 10 and its keyhole is accessible from the exterior of the casing. The key-operated plug 50 of each lock 49 is journaled in one plate 51 of a bracket supported by the wall 37d and is connected to a stem 52 of oblong cross-section at 52a which has its upper end journaled in the plate 53 of said bracket with its lower end journaled in the wall 37c. Three superposed bars or plates 54, 55 and 56 rest upon the wall 41b and between the plate 53 and the bar 56 are interposed springs 57 which surround the stems 52. The bar 55 is of greater length than the bars 54 and 56 which serve merely as friction plates to grip the bar 55. The wall 41b and the bar 55 are provided respectively with slots 21 and 25 through which the stem oblong portions 52a extend (Fig. 3). Each of these slots constitutes a central section of slightly greater width than the thickness of a stem oblong portion 52a, terminating in circular apertures of slightly greater diameter than the width of the stem oblong portion 52a. The left circular aperture of each slot 21 has a short notch 21a of the same width as and in alinement with the central section of the slot (Fig. 4). On the wall 41b are provided pins 58 and 59 adapted to engage the ends of the bar 55 to cause movement of the bar 55, the distance between said pins being greater than the length of the bar 55 by the length of the notch 21a.

Except when the slots 21 and 25 are in register and are so arranged that the apertures are concentric with the rotational axis of the stem portions 52a, the lock plugs 50 cannot be rotated and are held in key-captive position. Likewise, when

the stem portions 52a are received in the notches 21a, the key plugs 50 are held in key-captive position. Also, when the plugs 50 are in key-releasing positions, the stem portions 52a lock the slide 41 against movement. The wall 41b is cut away over a portion of its length to permit the shaft 43 to extend through the wall 37c and also to permit other shafts later to be described to be journaled in the wall 37c.

A cylinder lock 60 (Figs. 2 and 9) is mounted in the wall 37d and is held in position by a snap lock ring 61. The lock 60 extends through the top wall of the casing 10 and its keyhole is accessible from the exterior of the casing. The plug 62 of the lock 60 is journaled in one plate 63 of a bracket supported by the wall 37d while in the other plate 64 of said bracket is journaled one end of a stem 65 of oblong cross-section at 65a, the lower end of said stem being journaled in the plate 37c. A finger 66 has an aperture through which the portion 65a extends and is held in position on said portion by a spacer 67 (Figs. 3 and 11). The aperture in the finger 66 is generally circular, but is provided with diametrically opposite right-angle projections 68 which provide for 90° lost motion between the stem portion 65a and the arm 66. A double-acting pawl 70 is supported by a shaft 71 extending from the wall 37c and the wall 41a is provided with a series of apertures 72 forming ratchet teeth for co-operation with said pawl to control the permissible direction of movement of said slide (Figs. 3 and 11). A shaft 73 is journaled at its upper end in a bushing in the wall 37d and at its lower end in the wall 37c and is of oblong cross-section at 73a. The shaft 73 extends through the top wall of the casing 10 and is provided at its outer end with a button by means of which it may be rotated. On the portion 73a are provided a single-acting pawl 74 held by a spring 75 in position to co-operate with the teeth 72 and a finger 76, both the pawl and finger having circular apertures, the aperture of the pawl 74 being provided with diametrically opposed right-angle projections 77 and the aperture of the finger 76 being provided with diametrically opposed right-angle projections 78, so that the shaft 73 has 90° lost motion with respect to both the pawl and the finger (Figs. 10 and 11). The spring 75 surrounds the shaft 73 with one end attached to the pawl 74 and has its other end attached to a tab 63a at one end of the plate 63, (Fig. 2).

The fingers 66 and 76 lie in the same plane with the double-acting pawl 70 and constitute means for moving it between its two operating positions. Snap-acting spring means resiliently maintain the double-acting pawl 70 in either position while permitting its movement from one position to the other by proper operation of the fingers 66 and 76. The pawl 70 has a pin 79a fitting into a slot in the shank 79 of a roller carrier 80, the roller of which contacts an actuating guide 81. A helical spring 82 surrounds the shank and fits between the pin 79a and a pin 83 on the shank 79. Rotation of the pawl 70 from one of its two positions first compresses spring 82 until dead center is passed when the spring acts to snap the pawl through the remainder of its path into the other of its two positions (Fig. 3).

The left end of the cut-out portion of the wall 41b is provided with a notch 26 to receive the stem oblong portion 65a and hold the same against rotation with the lock plug 62 in key-captive position. The shaft 73 is cut away to provide a flat bottom transverse slot 84 and a bar 85 at-

tached to the wall 41a of the slide 41 extends horizontally therefrom at the proper level to fit into the slot 84. The bar 85a is wider over the left portion thereof than the remainder and the edge of the wider portion is engageable with the bottom of the slot 84 to prevent rotation of the shaft 73. The wider portion of the bar is of proper length and arrangement that the shaft 73 is locked against rotation when the slide is in the position shown in Fig. 4 and while moving between such position and the position shown in Fig. 5. In other positions of the slide 41, the wider portion of the bar 85 is out of the slot 84 and has no effect upon the operation of the shaft 73.

For convenience in describing the operation of the locking mechanism, the key for the lock 60 will be designated as key #1, while the keys for the locks 49 will be designated keys #2 and #3. Figs. 2 and 3 illustrate the arrangement of the slide 41 and the various co-operating parts when it is in condition for the insertion of the first set of ballot assemblies or when a set of old ballot assemblies is to be replaced by a set of new ballot assemblies.

The slide 41 is at the extreme right end of its stroke, the pin 58 contacts the left end of the bar 55 with the slots 21 and 25 out of register and the left hand apertures of the slots 25 overlying the notches 21a. The stem oblong portions 52a are received in the notches 21a and keys #2 and #3 are captive. The stem oblong portion 65a is received in the notch 26 and key #1 is held captive. All three stems, together with the associated key plugs are held against rotation. The vertical portions 42a of the slots 42 are in alinement with the slots 37a. The double-acting pawl 70 is in its maximum position of clockwise movement and the single acting pawl 74 is in position to engage the teeth to permit only leftward movement of the slide 41. The stem oblong portion 65a is in such position relative to the finger 66 that it must turn approximately 60° counter-clockwise to engage the projections 68 (Fig. 11). The stem oblong portion 73a contacts the projections 78 and is 45° from engagement with the projections 77. In this position, the ballot assemblies are inserted with the pins 35 passing along the vertical portions 42a and the grooves 37a.

After insertion of the ballot assemblies, the bar 36a is bolted in place and the bolt properly sealed and a wire W is passed through passages in the shaft 73 and its bushing and its ends sealed. Next the shaft 43 is turned counterclockwise from the position shown in Fig. 3 to the position shown in Fig. 4, thereby bringing the slots 21 into register with the slots 25, the bar 55 being held against movement by the pressure plates 54 and 56 and bringing the pin 59 against the right end of bar 55. Also, the stem oblong portion 65a is free of the notch 26. The pawls 70 and 74 are in proper position to permit only leftward movement of the slide 41. The keys #1, #2 and #3 are then turned through arcs of 90° into the positions shown in Fig. 4 and are withdrawn from the locks. Key #1 is retained by the board of elections or similar authority while keys #2 and #3 are furnished to two election officials, each of which represents a major political party, for example, Republican and Democrat. In this condition, the machine is delivered to the polling place and is kept in the condition described until the start of the election period. The pins 35 are in the slot sections 42b and the shutters are in counter-exposing condition while the vote regis-

tering mechanism is in locked condition and the shaft 73 is locked against rotation by engagement of the edge of the wider portion of the bar 85 with the bottom of the slot 84.

At the beginning of the election period, the Republican and Democrat election officials insert keys #2 and #3 in the locks 49 and rotate the plugs 50 and stems 52 through an arc of 90° from the position shown in Fig. 4 into the position shown in Fig. 5, after which the shaft 43 is rotated counter-clockwise from the position shown in Fig. 4 to the position shown in Fig. 5, thus bringing the slide 41 into the position shown in Fig. 5. During such movement of the slide, the slots 25 are kept in alinement with the slots 21 due to engagement of the pin 59 with the right end of the bar 55. The pawls 70 and 74 lock the slide 41 in its extreme left position. The Democrat and Republican officials turn keys #2 and #3 back to the position shown in Fig. 4 and remove them, the stem oblong portions 52a now also serving to prevent rightward movement of the slide 41. During the leftward movement of the slide 41, the pins 35 have traveled through the slanting slot portions 42c into the horizontal slot portions 42d with the result that the ballot assemblies have been lowered into counter-concealing position and the vote registering mechanism has been unlocked by means such as shown in Shoup et al. Patent No. 2,054,102, but not here illustrated.

The slide 41 remains in the position shown in Fig. 5 until the end of the voting period. At the end of the voting period, the Republican and Democrat election officers insert keys #2 and #3 in the locks 49, and again turn the stems 52 to the position shown in Fig. 5. Next the seal S on the shaft 73 is broken and the shaft is turned clockwise to move the finger 76 against the double-acting pawl 71 to turn it into the position shown in Fig. 6, thereby as far as this pawl is concerned, permitting rightward movement of the slide 41. Such operation of the shaft 73 is permitted due to the fact that in the position shown in Fig. 5, the edge of the wider portion of the bar 85 is disengaged from the bottom of the slot 84 after having kept the double-acting pawl reversing means inoperative until the ballots have been lowered and the machine has been put into operating condition. The shaft 73 is next turned counterclockwise sufficient to disengage the pawl 74 from the teeth 72, thus completely freeing the slide 41 for rightward movement. The shaft 43 is now turned clockwise to the position shown in Fig. 6, thus moving the slots 21 out of register with the slots 25 and bringing the pin 59 against the left end of the bar 55.

Continued clockwise rotation of the shaft 43 to the position shown in Fig. 7 brings the left-hand end of the cut-out portion of the slide 41 into engagement with the stem oblong portion 65a, thereby stopping rightward movement of the slide. This movement of the slide 41 is sufficient to raise the ballots into counter-exposing position but is insufficient to bring the vertical slot portions 42a into register with the pins 35, thus locking the ballot assemblies in elevated position. The keys #2 and #3 are held captive by the locks 49 inasmuch as the stem oblong sections 52a are still in the narrow portions of the slots 25. The slide 41 is locked against leftward movement by the double-acting pawl 70. The counter totals may now be read and tabulated, but no operation of the machine can be effected.

After the expiration of the period required by law, the ballots are removed and the counters 76

reset to zero. In order to remove the ballot assemblies, key #1 is inserted in lock 60 and rotated to bring the stem oblong portion 65a into alignment with the notch 26, after which the shaft 43 is rotated clockwise to move the parts into the position shown in Fig. 3. The slide 41 now again is in such position that vertical slot portions 42a are in register with the pins 35 and slots 37a. After removal of the locking bar 36a, the ballot assemblies are drawn out from the machine.

Each shutter 34 is composed of a strip of metal having at its upper end a return bend, the bottom edge of which is bowed out slightly at 34a to provide a shoulder engageable by a tab 86 struck inwardly from the shield 31. The shield 31 at its upper end is bent outwardly to form a flange resting on the top of the casing 10 and by use of this flange the shield can be lifted, thus bringing the tab 86 into contact with the shoulder 34a and elevating the ballot assembly. The upper end of the ballot 33 is held between the return bend portion and main portion of the shutter 34 and is definitely located on the shutter by means of a pin 87 at the end of leaf spring 88 carried by the shutter 34, the pin 87 passing through the ballot and into an aperture in the shutter.

In the modification illustrated in Figs. 13 to 16 inclusive and in Fig. 21, the pawl 74 and its operating spring 75 are omitted and the finger 76 is provided with a spring 76a surrounding the stem 73 and having one end engaging the tab 63a tending to rotate said finger counter-clockwise into engagement with a lug 76b carried by the tab 63a (Figs. 14 and 21). A bar 85a is carried by the wall 41a of the slide 41 in alignment with the slot 84 in the shaft 73 and is of proper length and arrangement that the edge thereof engages the bottom of the slot to lock the shaft 73 against rotation when the slide is in the positions shown in Figs. 13 and 16 and while moving between such positions and the positions shown in Figs. 14 and 15.

Fig. 13 illustrates the arrangement of the various parts after the machine has been set up for an election, the ballots being in raised position and the stems 52 being in the position shown in Fig. 4 with keys #2 and #3 removed while the shaft 73 is locked against operation by engagement of the edge of the bar 85a with the bottom of the slot 84. Fig. 14 illustrates the arrangement of the parts after the slide 41 has been moved to its extreme left position to lower the ballots, the slide being locked in its extreme left position by the double-acting pawl 70 and the edge of the bar 85a being disengaged from the bottom of the slot 84 in the shaft 73. At the close of the election the seal S is broken and the wire W is withdrawn from the passageway through the shaft 73 and its bushing. The shaft 73 is next manually rotated clockwise to swing the finger 76 clockwise against the action of the spring 76a, from the full line to the dotted line position of Fig. 15 to engage and swing the double-acting pawl into the position shown in Fig. 15, thus releasing the slide 41 for rightward movement to the position shown in Fig. 7 in which the ballots are in raised but locked position. Upon release of the shaft 73, the spring 76a turns the finger and shaft counter-clockwise to bring the finger into contact with the lug 76b and returning the slot 84 into position to receive the bar 85a.

When it is desired to remove the old ballots and insert new ballots, the stem 65 is rotated by means of key #1 to permit rightward movement

of the slide 41 to its extreme right position. Such rotation of the stem 65 swings the finger 66 into contact with the double-acting pawl to move it into the position shown in Fig. 16.

In the modification illustrated in Figs. 17 to 20 and 22, the shaft 73 is cut away to form a V-shaped segment, thus providing two angularly related horizontal slots 84a and 84b. A bar 85b is carried by the slide 41a in horizontal alignment with the slots 84a and 84b and is receivable in said slots in different angular positions of the shaft 73. A spring 90 tends to rotate the shaft 73 clockwise. A wire W serves normally to hold the shaft 73 against rotation and a seal S is provided connecting the ends of the wire.

In Fig. 17, the various parts are shown in the position assumed by them with the ballots inserted and locked in upper position. The bar 85 is received in the slot 84a to lock the shaft 73 against rotation and is of proper length to maintain such relationship until the slide 41 is moved to the position shown in Fig. 18. The stem portion 65a is in position to oppose rightward movement of the slide 41. As previously described, the slide 41 is moved to the left to the position shown in Fig. 18 to lower the ballots and condition the machine for voting. In such position, the right end of the plate 85 just clears the apex of segment 73. At the end of the voting period, the seal S is broken and the wire W withdrawn, whereupon the spring 90 automatically rotates the shaft 73 clockwise to bring the finger 76 into engagement with the pawl 70, thereby swinging the pawl into the position shown in Fig. 19. The slide 41 is then moved rightward until it is stopped by engagement with the stem portion 65a in which position the ballots are lifted and locked in. When it is desired to renew the ballots, the stem 65 is rotated to locate its portion 65a in alignment with the slot 26 and the slide 41 is moved into the position shown in Fig. 20, thereby locking the stem against rotation. Such operation of the stem 65 brings the finger 66 into engagement with the double-acting pawl 70 to move it into the position shown in Fig. 20. During this movement, the pawl 70 also returns the finger 76 against the action of its spring 90 to the position shown in Fig. 20. A wire 12 is now inserted through the shaft 73 to retain it in the position of Fig. 20. After renewal of the ballots, the slide 41 is returned to the position shown in Fig. 17 in which the shaft 73 is locked against rotation by the bar 85b.

In Figs. 5 to 7, 11 and 13 to 21, illustration of the snap-over mechanism for the double-acting pawl 70 is omitted for the sake of simplifying the drawings. It is, however, to be understood that in all embodiments of the apparatus, the double-acting pawl 70 is equipped with the snap-over mechanism shown in Figs. 3 and 4.

I claim:

1. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, and manually operable means for effecting reverse movement of said additional locking means.

2. In a voting machine, a plurality of movable

shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, manually operable means for effecting reverse movement of said additional locking means, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

3. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, and manually operable means for effecting reverse movement of said additional locking means.

4. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, manually operable means for effecting reverse movement of said additional locking means, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

5. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting, and manually operable means for effecting reverse movement of said double-acting pawl.

6. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said

double-acting pawl from its first setting to its second setting, manually operable means for effecting reverse movement of said double-acting pawl, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

7. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting and effective to control movement of said slide into its third position, and manually operable means for effecting reverse movement of said double-acting pawl.

8. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting and effective to control movement of said slide into its third position, manually operable means for effecting reverse movement of said double-acting pawl, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

9. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters and having ratchet teeth, a bar slidably supported by said slide, said bar and slide being provided with registrable slots each having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of each slot but being incapable of rotation in the central portion thereof, a double-acting pawl cooperating in either of two settings with said ratchet teeth to control permissible direction of movement of said slide, a second key-operated stem of oblong cross-section, said slide having an open end slot to receive said second stem and prevent rotation thereof, means actuated by said second stem to swing said double-acting pawl into one of its operating settings, a manually rotatable member, and an arm rotatable thereby for engagement with said double-acting pawl into its remaining setting.

10. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters and having an open end slot, a key-operated stem of oblong cross-section in alignment with said slot, said stem being of greater width but of less thickness than said slot, a bar slidably supported by said slide, said bar and slide being provided with registrable slots having end portions of greater width than the central portion and one of said slots having an extension

from one end portion of the same width as the central portion, and a key-operated stem of oblong cross-section, extending through said slots, said stem being rotatable in the end portions of said slot but being incapable of rotation in the central portion thereof.

11. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters and having an open end slot, a key-operated stem of oblong cross-section in alignment with said slot, said stem being of greater width but of less thickness than said slot, a bar slidably supported by said slide, means for applying friction to said bar tending to hold it against movement, said bar and slide being provided with registrable slots having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of said slots but being incapable of rotation in the central portion thereof, and studs on said slide engageable with the ends of said bar to effect unitary movement of said bar and slide.

12. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters and having an open end slot and having ratchet teeth, a key-operated stem of oblong cross-section in alignment with said slot, said stem being of greater width but of less thickness than said slot, a bar slidably supported by said slide, said bar and slide being provided with registrable slots having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of said slot but being incapable of rotation in the central portion thereof, a double-acting pawl adapted for cooperation in either of two settings with said ratchet teeth, key-operated means for swinging said double-acting pawl from its first to its second setting, and means for effecting reverse movement of said double-acting pawl.

13. In a voting machine, a slide movable between a first and a second position and into a third position beyond said first position, a bar slidably supported by said slide, means for applying friction to said bar tending to prevent movement thereof, said bar and slide being provided with registrable slots having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots and being rotatable in the end portions but being incapable of rotation in the central portion, additional means for locking said slide in its first and second positions comprising a double-acting pawl, means including a key-operated member for preventing movement of said slide into its third position, means actuated by said key-operated member for swinging said double-acting pawl from its first to its second position, means for effecting reverse movement of said double-acting pawl, and means for preventing operation of said last-named means in the first position of the slide and during movement of the slide from its first to its second position.

14. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters,

key-operated means for locking said slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, means for effecting reverse movement of said additional locking means, and releasable means normally preventing operation of said reversing means.

15. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operable means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, means for effecting reverse movement of said additional locking means, and releasable means normally preventing operation of said reversing means.

16. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide either in first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting, means for effecting reverse movement of said double-acting pawl, and releasable means normally preventing operation of said reversing means.

17. A voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting and effective to control movement of said slide into its third position, means for effecting reverse movement of said double-acting pawl, and releasable means normally preventing operation of said reversing means.

18. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, spring-actuated means for effecting reverse movement of said additional locking means, and manu-

ally releasable means normally preventing operation of said spring-actuated means.

19. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operable means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, spring-actuated means for effecting reverse movement of said additional locking means, and manually releasable means normally preventing operation of said spring-actuated means.

20. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting, spring-actuated means for effecting reverse movement of said double-acting pawl, and manually releasable means normally preventing operation of said spring-actuated means.

21. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting and effective to control movement of said slide into its third position, spring-actuated means for effecting reverse movement of said double-acting pawl, and manually releasable means normally preventing operation of said spring-actuated means.

22. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting, spring-actuated means for effecting reverse movement of said double-acting pawl, manually releasable means normally preventing operation of said spring-actuated means, and means for preventing operation of said spring-actuated means in the first position of said slide and during movement of the slide from its first to its second position.

23. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide in either

its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide toward its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, means for effecting reverse movement of said additional locking means and having a flat portion, and a bar carried by said slide for engagement with said flat portion in the first position of the slide and during movement of the slide from its first to its second position to prevent operation of said reversing means.

24. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, and means for effecting reverse movement of said additional locking means.

25. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operable means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, and means for effecting reverse movement of said additional locking means.

26. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting, and means for effecting reverse movement of said double-acting pawl.

27. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to co-operate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting and effective to control movement of said slide into its third position, and means for effecting reverse movement of said double acting pawl.

28. In a voting machine, a plurality of movable shutters, a slide movable between a first movable position and a second position for actuating said shutters, key-operated means for locking said

slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, manually operable means rotatable in one direction to effect reverse movement of said additional locking means, and resilient means tending to oppose such movement of said manually operable means.

29. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, manually operable means rotatable in one direction to effect reverse movement of said additional locking means, resilient means tending to oppose such movement of said manually operable means, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

30. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operable means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, manually operable means rotatable in one direction to effect reverse movement of said additional locking means, and resilient means tending to oppose such movement of said manually operable means.

31. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operable means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, manually operable means rotatable in one direction to effect reverse movement of said additional locking means, resilient means tending to oppose such movement of said manually operable means, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

32. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide either

in first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting, manually operable means rotatable in one direction to effect reverse movement of said double-acting pawl, and resilient means tending to oppose such movement of said manually operable means.

33. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for said shutters, key-operated means for locking said slide either in first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting, manually operable means rotatable in one direction to effect reverse movement of said double-acting pawl, resilient means tending to oppose such movement of said manually operable means, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

34. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting and effective in one position to prevent movement of said slide into its third position, manually operable means rotatable in one direction to effect reverse movement of said double acting pawl, and resilient means tending to oppose such movement of said manually operable means.

35. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first position to its second position and effective to control movement of said slide into its third position, manually operable means rotatable in one direction to effect reverse movement of said double-acting pawl, resilient means tending to oppose such movement of said manually operable means, and means for preventing operation of said manually operable means in the first position of the slide and during movement of the slide from its first to its second position.

36. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters, a bar slidably supported by said slide, 15

said bar and slide being provided with registrable slots each having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of each slot but incapable of rotation in the central portion thereof, additional locking means effective in either of two settings to control permissible direction of movement of said slide, a second key-operated stem of oblong cross-section, said slide having an open end slot to receive said second stem and prevent rotation thereof, means actuated by said second stem to move said additional locking means into one of its operating settings, a manually rotatable member, and an arm rotatable thereby for engagement with said additional locking means to move it into its remaining setting.

37. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters, a bar slidably supported by said slide, said bar and slide being provided with registrable slots, each having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of each slot but incapable of rotation in the central portion thereof, additional locking means effective in either of two settings to control permissible direction of movement of said slide, a second key-operated stem of oblong cross-section, said slide having an open end slot to receive said second stem and prevent rotation thereof, means actuated by said second stem to move said additional locking means into one of its operating settings, a manually rotatable member, an arm rotatable thereby for engagement with said additional locking means to move it into its remaining setting, and releasable means normally preventing operation of said manually rotatable member.

38. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters, a bar slidably supported by said slide, said bar and slide being provided with registrable slots, each having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of each slot but incapable of rotation in the central portion thereof, additional locking means effective in either of two settings to control permissible direction of movement of said slide, a second key-operated stem of oblong cross-section, said slide having an open end slot to receive said second stem and prevent rotation thereof, means actuated by said second stem to move said additional locking means into one of its operating settings, a manually rotatable member, an arm rotatable thereby for engagement with said additional locking means to move it into its remaining setting, and means for preventing operation of said manually rotatable member in the first position of the slide and during movement of the slide from its first to its second position.

39. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters and having ratchet teeth, a bar slidably supported by said slide, said bar and

slide being provided with registrable slots each having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of each slot but being incapable of rotation in the central portion thereof, a double-acting pawl co-operating in either of two settings with said ratchet teeth to control permissible direction of movement of said slide, a second key-operated stem of oblong cross-section, said slide having an open end slot to receive said second stem and prevent rotation thereof, means actuated by said second stem to swing said double-acting pawl into one of its operating settings, a manually rotatable member, an arm rotatable thereby for engagement with said double-acting pawl to move it into its remaining setting, and releasable means normally preventing operation of said manually rotatable member.

40. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters and having ratchet teeth, a bar slidably supported by said slide, said bar and slide being provided with registrable slots each having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of each slot but being incapable of rotation in the central portion thereof, a double-acting pawl co-operating in either of two settings with said ratchet teeth to control permissible direction of movement of said slide, a second key-operated stem of oblong cross-section, said slide having an open end slot to receive said second stem and prevent rotation thereof, means actuated by said second stem to swing said double-acting pawl into one of its operating settings, a manually rotatable member, an arm rotatable thereby for engagement with said double-acting pawl to move it into its remaining setting, and means for preventing operation of said manually rotatable member in the first position of the slide and during movement of the slide from its first to its second position.

41. In a voting machine, a plurality of movable shutters, a slide operatively connected to said shutters and having an open end slot and having ratchet teeth, a key-operated stem of oblong cross-section in alignment with said slot, said stem being of greater width but of less thickness than said slot, a bar slidably supported by said slide, said bar and slide being provided with registrable slots having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots, said stem being rotatable in the end portions of said slot but being incapable of rotation in the central portion thereof, additional locking means effective in either of two settings to control permissible direction of movement of said slide, key-operated means for moving said additional locking means from its first to its second setting, and manually operable means for effecting reverse movement of said additional locking means.

42. In a voting machine, a slide movable be-

between a first and a second position and into a third position beyond said first position, a bar slidably supported by said slide, means for applying friction to said bar tending to prevent movement thereof, said bar and slide being provided with registrable slots having end portions of greater width than the central portion and one of said slots having an extension from one end portion of the same width as the central portion, a key-operated stem of oblong cross-section extending through said slots and being rotatable in the end portions but being incapable of rotation in the central portion, additional locking means effective in either of two settings for locking said slide in its first and its second positions, means including a key-operated member for preventing movement of said slide into its third position, means actuatable by said key-operated member for moving said additional locking means into one of its settings, means for effecting reverse movement of said additional locking means, and means for preventing operation of said reversing means in the first position of the slide and during movement of the slide from its first to its second position.

43. In a voting machine, a plurality of movable shutters, a slide movable between a first position and a second position for actuating said shutters, key-operated means for locking said slide in either its first position or its second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operated means for moving said additional locking means from its first to its second setting, spring-actuated means for effecting reverse movement of said additional locking means, manually releasable means normally preventing operation of said spring-actuated means, and means for preventing actuation of said spring-actuated means in the first position of the slide and during movement of the slide from its first to its second position.

44. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide in either the first or the second position, additional locking means effective in a first setting to prevent movement of said slide towards its second position and in a second setting to prevent movement of said slide towards its first position, key-operable means for moving said additional locking means from its first to its second setting and effective to control movement of said slide into its third position, spring-actuated means for effecting reverse movement of said additional locking means, manually releasable means normally preventing operation of said spring-actuated means, and means for preventing actuation of said spring-actuated means in the first position of the slide and during movement of the slide from its first to its second position.

45. In a voting machine, a plurality of movable shutters, an actuating slide for said shutters movable between a first and a second position and into a third position beyond said first position, key-operated means for locking said slide either in its first or second position, ratchet teeth on said slide, a double-acting pawl adapted to cooperate in a first and a second setting with said teeth in the first and second positions respectively of the slide to control its permissible direction of movement, key-operated means for moving said double-acting pawl from its first setting to its second setting and effective to control movement of said slide into its third position, spring-actuated means for effecting reverse movement of said double-acting pawl, manually releasable means normally preventing operation of said spring-actuated means, and means for preventing actuation of said spring-actuated means in the first position of the slide and during movement of the slide from its first position to its second position.

RANSOM F. SHOUP.

CERTIFICATE OF CORRECTION.

Patent No. 2,216,458.

October 1, 1940.

RANSOM F. SHOUP.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 10, for "cylinder" read --cylinder--; page 4, first column, line 64, for "actnig" read --acting--; page 5, first column, line 54, and second column, line 20, claims 5 and 7 respectively, for "secnod" read --second--; and second column, line 65, claim 9, after the word "pawl" insert --to move it--; page 7, second column, line 73, claim 28, strike out "movable" second occurrence; page 8, second column, line 15, claim 33, after "for" insert --actuating--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of November, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.

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