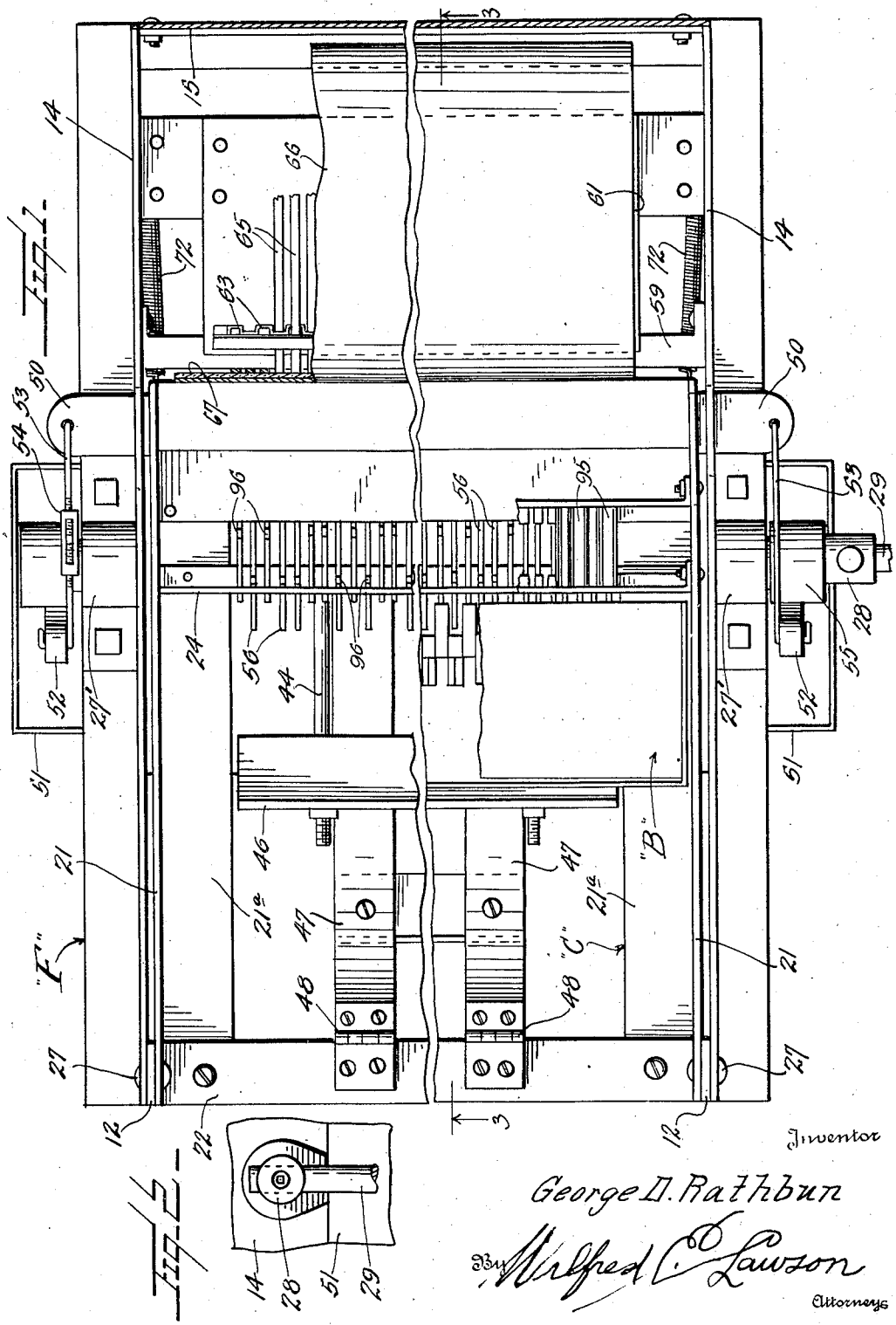
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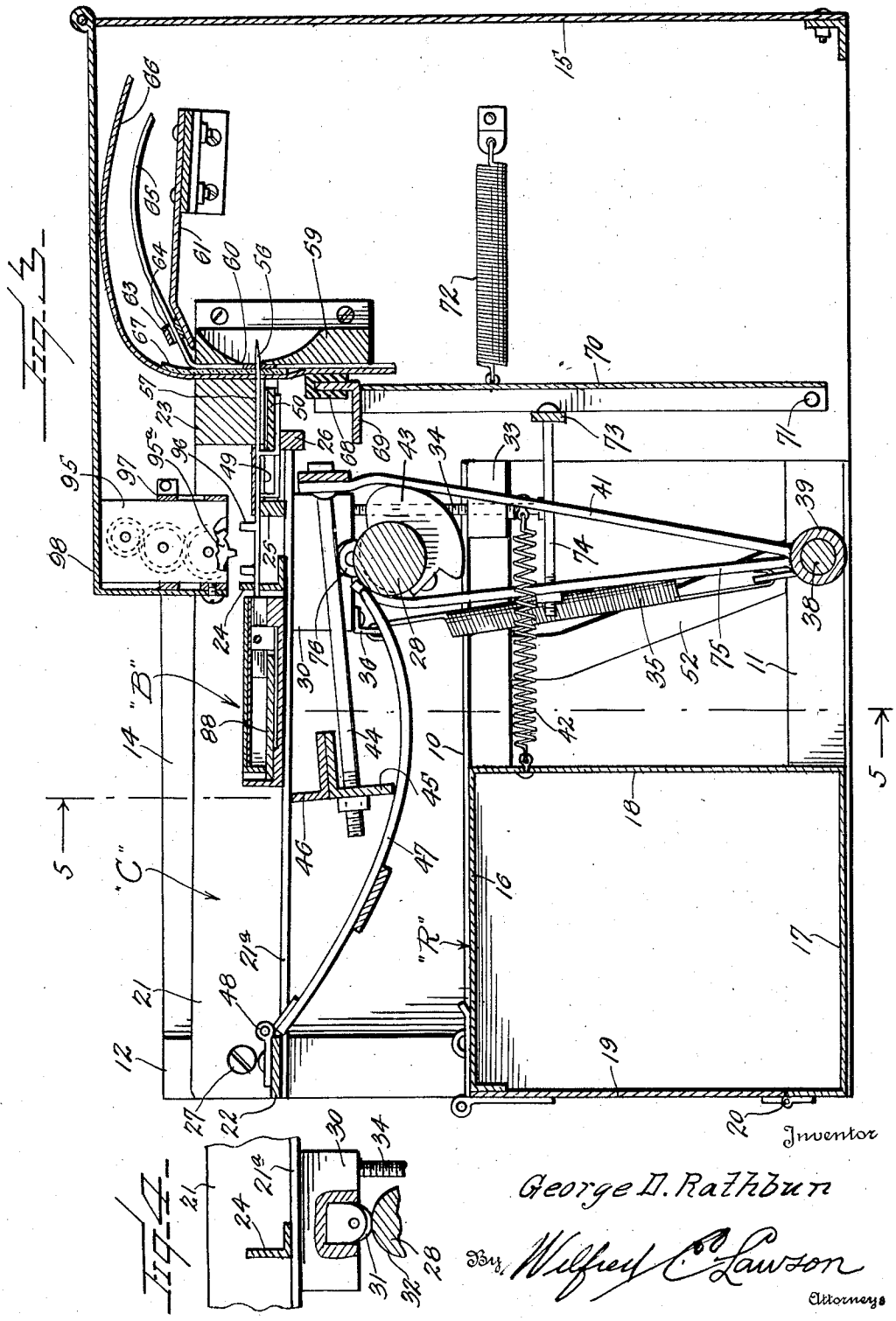
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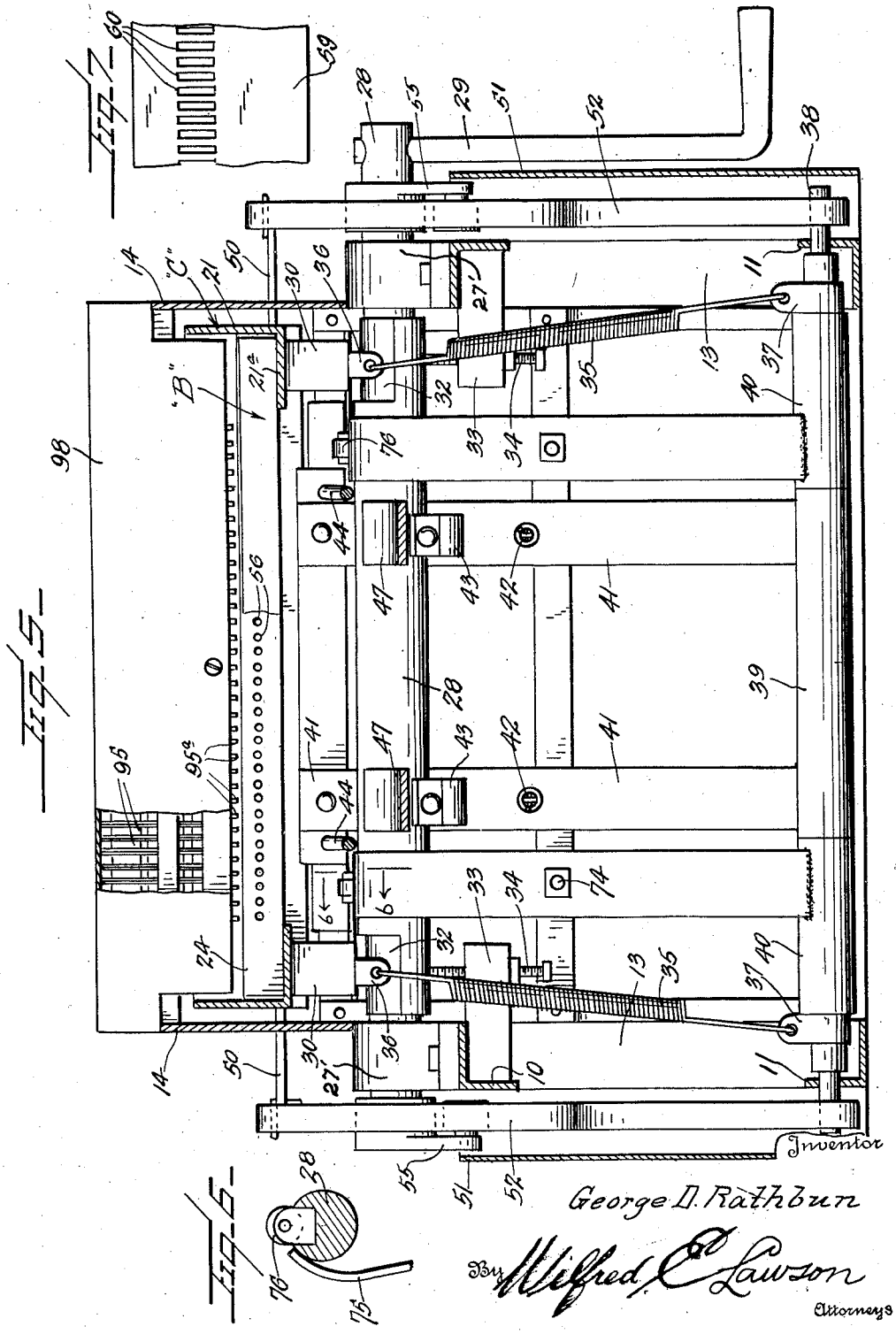
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Fig. 8.

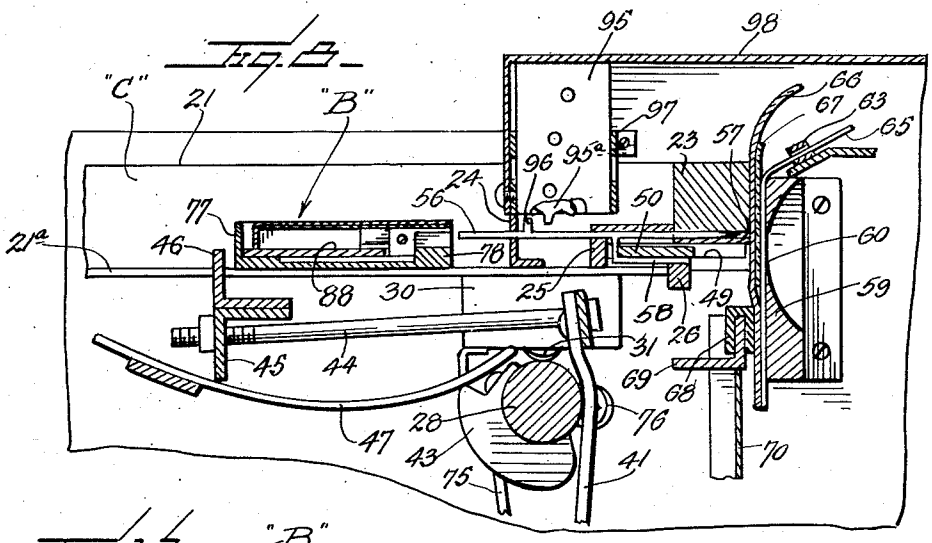


Fig. 13.

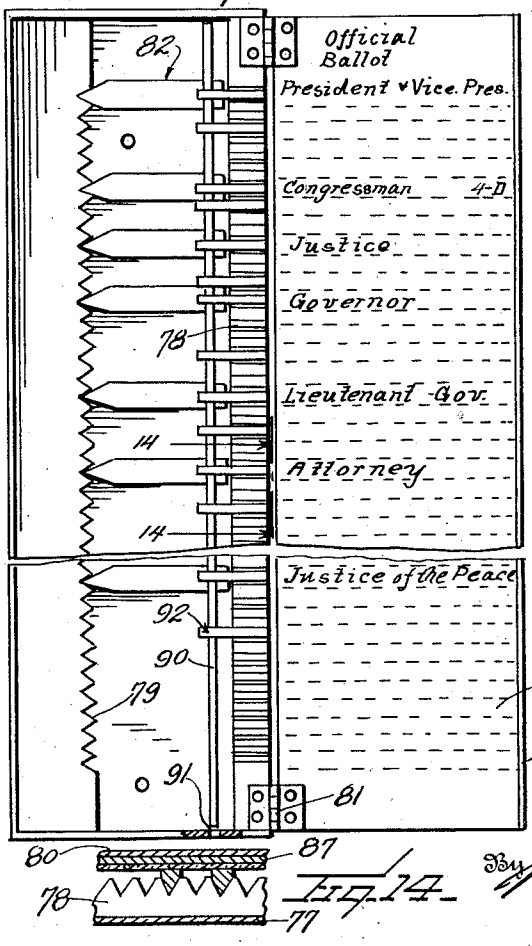


Fig. 14.

Fig. 9.

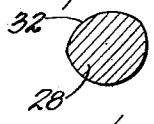


Fig. 10.

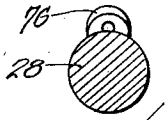


Fig. 11.

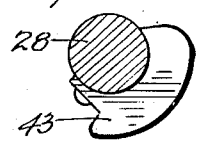


Fig. 12.

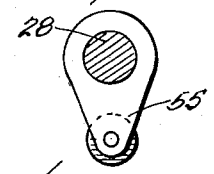


Fig. 15.

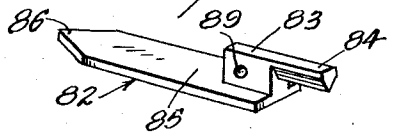
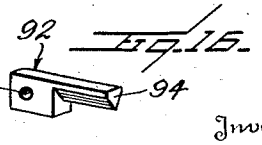


Fig. 16.



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UNITED STATES PATENT OFFICE

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George D. Rathbun, Manhattan, Kans., assignor to Rathbun Voting Machine Co., Inc., Manhattan, Kans., a corporation of Kansas

Application June 24, 1943, Serial No. 492,127

11 Claims. (Cl. 235—50)

1

This invention relates generally to the class of recorders and pertains particularly to improvements in voting machines, the machine of this application constituting particularly an improvement over the machine as disclosed in my prior application Serial No. 379,524, now Patent 2,364,097, dated Dec. 5, 1944.

The present machine is designed, like the machine disclosed in my application above identified, to provide an improved means of recording votes in general and primary elections, which is of extreme simplicity both as to its construction and operation so that its universal use is made feasible from an economical viewpoint.

An object of the present invention, in addition to the above, is to provide a voting machine using my improved ballot part, as particularly described and claimed in my application Serial No. 466,766, now Patent 2,364,098, wherein a new and novel mechanism is employed for shifting the ballot part after it has been placed in the machine upon the oscillating carriage; such mechanism including a ballot part actuator which is raised into operative relation with the ballot part and then moved forward to move the ballot part, upon a single rotation of a control shaft, whereby there is eliminated an extra movement, or movement of an additional part, by the machine operator, such as is required in my prior machine.

Another object of the invention is to provide in a voting machine employing a removable ballot part, together with record sheet puncturing pins actuated by selectively positioned elements of the ballot part, a novel counting means by which an accurate count is made of the number of votes cast for each candidate for office.

Still another object is to provide, in a mechanism of the character stated above, a plurality of counter units, each associated with a pin, with means by which each pin advances the total shown by the counter associated therewith, one digit each time the pin is shifted for the purpose of marking the record sheet.

Another object of the present invention is to provide a voting machine in which are used movable record sheets, with a vertically oscillatable ballot part carrier, and record sheet puncturing pins actuated by certain parts of the ballot part when the latter is moved rearwardly on the carrier, together with a novel cam train or system carried by and actuated upon the single turning of a shaft for effecting the sequential movement of all of the movable parts necessary to be moved for the accomplishment of the desired results.

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The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings, with the understanding that such description and drawings set forth merely one possible embodiment of the invention and that the invention may be changed and modified within the scope of the appended claims.

In the drawings:

Figure 1 is a view in top plan of the machine embodying the present invention, the central part being broken away and portions being in section.

Figure 2 is a detail of the cam-shaft and operating crank connection.

Figure 3 is a longitudinal section taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary section of the cam-shaft and cam follower carried by the oscillatable carriage.

Figure 5 is a vertical transverse section taken on the line 5—5 of Figure 3.

Figure 6 is a sectional detail taken on the line 6—6 of Figure 5.

Figure 7 is a face view of a portion of the platen.

Figure 8 is a longitudinal, vertical section through the center part of the machine, corresponding to Figure 3, but showing the ballot part actuator being raised preparatory to moving the ballot part forward.

Figures 9, 10, 11 and 12 illustrate the relative positions of the several cams carried by the cam-shaft, the shaft being in transverse section in each figure.

Figure 13 is a view in plan of the ballot part with the cover open.

Figure 14 is a fragmentary section on the line 14—14 of Figure 13.

Figure 15 is a view in perspective of an office divider used in the ballot part.

Figure 16 is a view in perspective of a candidate indicator.

Referring now more particularly to the drawings wherein like characters of reference designate like parts throughout the several views, the character F generally designates the machine frame which comprises the top longitudinal beams 10 and the underlying bottom or floor beams 11 which are connected front and rear by the vertical posts 12 and 13 respectively. The frame carries suitable side and back wall plates 14 and 15, respectively, which extend a substantial distance above the top beams 10, as shown in Figures 3 and 5. At the front of the machine

is a receptacle R which extends across the machine and comprises the top and bottom walls 16 and 17, the back wall 18, and the front 19, which is hinged at its bottom edge, as at 20, to form a door. This receptacle is provided to house the various articles used in connection with the operation and maintenance of the machine, such as record tapes, ballot parts, tools and the like.

In the top part of the machine and adjacent the front is a frame structure which will be referred to as the ballot part and pin carriage and which is generally designated C. This carriage is of substantially the same width as the machine between the side walls 14, as best seen in Figure 1, and comprises the side arms 21 which are here shown as being formed of angle bar material; the front cross bar 22, and the back pin carrier bar 23, while between the front and back bars 22 and 23 and parallel therewith are the transverse pin guide 24 and pin supports 25 and 26. These parts 24, 25 and 26 are all in relatively close proximity to one another and to the pin carrier 23, as is clearly shown in Figures 3 and 8.

One flange of each side arm 21 is directed in toward the other flange and these flanges, designated 21a, form track rails for slidably supporting the ballot part B, as shown in Figures 1, 3 and 8.

The front ends of the arms of the ballot carriage C are pivotally joined, as at 27, to the adjacent posts 12, so that the carriage may have vertical oscillatory movement.

Extending transversely of the machine frame and supported at its ends for rotation in bearing blocks 27', supported upon the side rails 10, is a cam-shaft 28, upon one end of which is carried a crank 29. This shaft underlies the rear of the carriage C, and the side rails 21 have secured to the under side thereof, above the shaft, the cam follower blocks 30, each of which carries the cam follower roller 31, Figure 4, which rests upon the shaft. The portion of the shaft engaged by the roller 31 is flattened through a part of its circular extent to form the ballot carriage cam 32, the flattened part of the cam causing lowering of the carriage for movement of the record strips or sheets, as hereinafter described, after the sheets or strips have been marked or have received the ballot record. The high part of the cam raises the carriage to ballot recording position.

Secured to the sides of the machine, below each block 30, is a support 33 which has threaded vertically therethrough a movement limiting screw 34, the upper end of which is engaged by the overlying block 30. These screws limit the downward movement of the carriage as will be readily seen. Such downward movement is made positive and more rapid than would be the case by depending upon gravity alone, by springs 35, each of which is attached at one end to a block 30, as best seen in Figure 5, at 36, while the lower end is attached to a collar 37 engaged about a non-rotating foot shaft 38 which extends across the lower part of the frame between the bottom rails 11, by which it is supported. See Figure 5.

The foot shaft 38 carries a central tubular shaft 39 and the two lateral tubular shafts 40.

The central tubular shaft 39 has secured thereto the upwardly extending rocker levers 41 which extend across and above the cam-shaft 28, as shown in Figure 3. Each of these levers has attached thereto one end of a spring 42 which extends forward and has its other end attached to some fixed part of the machine, such as the wall

18, as shown in this figure. These springs 42 constantly urge the levers to oscillate forwardly toward the cam-shaft.

In the rocking or swinging plane of each lever 41, the shaft 28 carries a cam 43 which, upon rotation of the cam-shaft, engages and forces the adjacent lever 41 to swing back against the tension of the attached spring 42. This cam may be called the actuator cam since it operates to move the hereinafter described ballot part actuator. The form of this cam is such as to move the levers quickly forward when the latter are engaged and let them return quickly under the action of the springs 42, when disengaged.

The cams 43 also have another function which is to lift the ballot part actuator at the proper moment, the movements of such actuator being accomplished in the following manner:

Each lever has connected with the upper end thereof, above shaft 28, a rod 44 which extends forward over the cam-shaft. These rods are connected together by a bar 45 which carries an upwardly projecting lip or flange 46 which forms the ballot part actuator. This flange is of such length that it may be raised between the tracks 21a which form a part of the carriage side arms 21, as shown in Figure 1.

The bar 45 and flange 46, forming the ballot part actuator, are supported upon the two downwardly bowed lifter arms 47 each of which is hingedly attached at one end, as at 48, to the cross bar 22 of the carriage and extends rearwardly to terminate over the cam-shaft 28 upon which the free terminal end rests during part of the period of turning of this shaft. Each lifter arm is in the plane of rotation of a cam 43, Figure 5, and thus it will be seen that these cams act to raise the arms and thus raise the ballot part actuator, as well as to shift the ballot part actuator rearwardly.

Each of the side arms 21 of the carriage has a longitudinal slot 49 therein adjacent its rear end, each slot extending under the pin carrier 23.

Extending across the machine, through suitable slots (not shown) in the side walls 14 and through the slots 49, is a flat pin retractor bar 50.

Upon the outer side of each wall 14 within a suitable housing 51, open at its top as shown in Figures 1 and 5, is a retractor bar rocker 52, oscillatably supported at its lower end upon the foot shaft 38. The upper end of each rocker 52 extends across the cam-shaft 28 in front of the same and upon the opposite side from the retractor bar, as shown in Figure 1.

Each rocker 52, is connected at its top end with the adjacent end of the retractor bar by a link 53, one of which links is adjustable for length, as indicated at 54.

Within the vertical oscillation plane for each rocker 52, the cam-shaft 28 carries a retractor cam 55, which upon rotation of the cam-shaft engages the adjacent rocker to force it forwardly and likewise move the pin retractor bar 50 in the guide slots 49 therefor.

The retractor bar 50 operates to return to starting position, record tape perforating pins 56 after the same have been forced rearwardly to record or register a ballot. Each pin has a pointed rear end and extends through a suitable guide 57 in the pin carrier 23, while adjacent its other or forward end it is supported in a guide aperture in the pin guide bar 24. Between the carrier 23 and bar 24 each pin rests upon the supporting bar 25.

The pins 56 are relatively long and each car-

ries a depending loop 58 in which engages the retractor bar 50, as shown in Figures 3 and 8. This bar, when moved toward the front of the machine, shifts all of the pins 56 to retract the points of the pins into the apertures in the carrier 23, as shown in Figure 8.

Immediately back of the pin carrier there is mounted in the machine to extend across the same the platen bar 59, the face of which is in closely spaced relation with the rear face of the pin carrier 23. This platen bar has formed therethrough the longitudinally arranged series of short vertical slots 60 which are equal in number to the pins 56 and each is alined with a pin to receive the pointed end thereof when projected rearwardly.

Above the platen lies a table 61 upon the top of the inclined forward portion 62 of which is supported a ballot strip guide unit 63 made up of a plurality of guide loops 64 through each of which a ballot strip 65 passes from across the top of the table downward between the platen face and the opposing face of the pin carrier. Each strip passes across a slot 60 and is thus in position to be punched by the point of a pin 56 when the pin is pushed rearwardly.

Also passing across the top of the table 61 and down between the opposing faces of the platen and pin carrier is a single ballot sheet 66 which receives a record of all votes cast, whereas each strip 65 receives only the record of votes cast for one candidate. Interposed between the series of strips 65 and the single record receiving sheet in a thin sheet of Celluloid or Cellophane which is maintained in position in a suitable manner (not shown) and which is provided with pin slots or apertures corresponding to the slots 60.

As shown in Figures 3 and 8, the face of the platen 59 extends down a substantial distance below the rear end of the ballot carriage. This extended portion provides one jaw of a gripping means for the ballot strips and sheets. The other or opposing jaw consists of an elongated strip formed preferably of rubber, extending across the machine in opposed relation with the fixed jaw or lower part of the platen face. This jaw strip 68 is supported upon a rail 69 which in turn is supported upon a gripper carriage plate 70 which is pivoted at each of its two sides to the side walls of the machine frame, as indicated at 71.

At each side of the machine, the gripper carriage plate 70 has attached to the back thereof an end of a spring 72 which pulls the plate rearwardly to bring the gripper jaws into gripping relation, as shown in Figure 3.

At the front side of the gripper carriage plate 70 there are attached to a bar 73, two forwardly extending link rods 74, each of which is coupled to a gripper rocker 75, which is secured at one end to a lateral tubular shaft 40 mounted on the foot shaft 38. The gripper rockers 75 extend upwardly across the front side of the cam-shaft 28, as shown in Figure 3.

The cam-shaft carries, for rotation in the plane of oscillation of each rocker 75, a cam 76 which may be called the gripper cam. This cam, as it is turned on the axis of the shaft 28, engages the adjacent gripper rocker 75 and oscillates it so as to pull forwardly on the gripper plate 70 and thus open the gripper jaws to release the ballot sheet and strips. At this stage the sheet and strips are moved down as hereinafter described.

The ballot piece which is set or fixed by the voter to register in the machine on the sheet 66 and strips 65, the votes which he wishes to cast for his selections for office is shown opened in Figure 13.

This ballot piece is particularly illustrated and claimed in my copending application Serial No. 466,766, now Patent 2,364,098, and, therefore, a very detailed description of the same in this application is not believed to be necessary. Only so much description as is necessary for an understanding of its use in the machine will be given.

The ballot piece comprises a box like base portion 77 which has its top and one longitudinal side open. Within the base there extends along the open side a transversely notched bar 78, while in spaced parallel relation with this bar is a toothed shoulder 79.

The cover or top for the ballot part is indicated at 80. This is hinged at 81, to the bar 78 so as to be swung into covering relation with the bar 81 and notched shoulder, as shown in Figures 3 and 8. Thus, as shown also in these figures the open side of the base remains open even when the cover is closed. The height of the notches of the notched bar 78 is such with respect to the bottom surface of the base that when the ballot part is placed in position on the tracks 21[a] of the carriage C, with the open side toward the back of the machine, and is then moved rearwardly on the tracks, the forward or front ends of the pins 56, will be received in the notches, and as the notches are empty, no rearward or registering movement of the pins will be made.

Actuation of certain of the pins 56, to register parallel spaced lines of perforations in the single record sheet, for the purpose of separating the votes for condidates into groups, corresponding to the offices for which they are running, is accomplished by means of "office divider" units 82, illustrated in detail in Figure 15. Each of these units consists of a body portion 83, having a blunt ended finger 84, V-shaped in cross section along its under edge to fit a notch across the bar 78. Extending oppositely from the body in a plane below the finger 84, is a flat wing 85 which rests upon the bottom of the base and is pointed upon its free end as at 86, to engage in a space between a pair of the teeth of the toothed shoulder 79. A number of these dividers is used as shown in Figure 13, each with its finger pointing toward the name of an office printed on the ballot sheet which is secured to the inner side of the cover 80. These several dividers are held against accidental displacement by a securing plate 88, shown in Figures 3 and 8, but removed from the ballot part in Figure 13, to show the way in which the dividers engage the toothed shoulder.

The bodies 83 of the dividers have a transverse aperture 89 and through the aligned apertures of the several dividers, is extended a pivot rod 90. A suitable opening 91 is made in an end wall of the base to facilitate insertion and removal of the rod without having to remove plate 88.

Pivotally supported on the pivot rod 90 between each two adjacent or pair of office dividers, are one or more candidate selectors 92, according to the number of persons to be elected in each group and shown in detail in Figure 16. Each such selector comprises a body 93 and a finger 94, which, like the divider finger, is shaped to fit into a notch of the bar 98 and has its free end squared or blunted to engage an end of a pin 56, when the finger is lying across and on the bar 78. Each of these selectors has an opening 95 through its body to receive the pivot rod 90, on which it turns. Thus when the cover 80 is

open a voter may arrange the selectors to designate a candiate for whom he wishes to vote by placing the finger in a notch across the bar 78, opposite the name of the selected candidate or he may turn the selector finger back into the space between the toothed shoulder and bar if he does not wish to vote for anyone in a particular office.

After the candidate selectors have been arranged in accord with the voter's wishes the cover is closed over the fingers by the voter. This holds the fingers in place and also conceals from the judges and others how the party is voting.

When the ballot part is placed in the machine with its ends resting on the tracks of the carriage C as illustrated, in part, in Figure 1, it is moved rearwardly toward the pins 56, by hand until the ends of the fingers of the office dividers contact the ends of the pins, or to approximately the position shown in Figure 8. At this time the shaft 28 will have the several cams carried thereby, approximately in the position shown in Figure 3, where they are at the end of a cycle or operating turn of the shaft.

The operator of the machine will then turn the cam shaft 28 by means of the crank 29, or in any other suitable manner which will bring about the following actions, note being made first of the fact that the high part of the ballot carriage cam, which takes in about half the circumference of the shaft, is up so as to maintain the carriage raised substantially to horizontal position so that the pins 56 are each directed toward the top of a platen slot 60, as shown in Figure 8. First, the actuator and carriage lifter cams 43 engage the under sides of the adjacent lifter arms 47, to raise them and raise the actuator up in front of the ballot part. The beginning of this movement is shown in Figure 8. Then, after the actuator has been lifted to position, the cams 43 swing over against the actuator levers 41, oscillating them rearwardly so as to pull the actuator and ballot part rearwardly. This brings the square ends of the fingers 84 and 94 against the aligned pins 56 and forces the pins through the ballot sheet and strips. At the same time the pins force the retractor bar 50 rearwardly also.

Next, the gripper cams swing around against the gripper rockers 75 and swing the same forward to oscillate the gripper carriage against the resistance of the springs 72, thus opening the jaws of the sheet and strip gripper. At the same time or immediately following, the low side of the ballot carriage cam comes around to allow the carriage C to swing down. This occurs while the pins are extended into the ballot sheet and strips and thus the downward movement of the carriage pulls the ballot sheet and strips down into position to receive the record of the next ballot. The cams 43 subsequently swing around away from the actuator rocker arms 41, having previously moved from beneath the lifter arms to allow these and the actuator 46, to drop, so that the springs 42 move the arms 41 and actuator 46 forward ready for the next ballot piece. Also at some time during the down swing of the cams 43 the retractor cams 55 swing around downwardly and forwardly to engage the retractor rockers 52, Figure 5, to shift the latter forwardly and effect retraction of the bar 50 and of the pins 56, returning the pins to fully retracted position as shown in Figure 3, at which time the carriage C will have been again raised to the position shown in this figure and the gripper carriage will have

been released and returned to the record sheet and strip gripping position shown in Figure 3.

Coacting with and operated by each of the punching pins 56 is a counting device by means of which the total number of votes cast is recorded and may be determined at a glance. Each of these counters is designated by the character 95. There is one counter 95, for each pin 56 and these counters are each disposed in the vertical plane of and above a pin as shown in Figure 5. The counters are here shown as being side by side in one series or row across the machine but if desired they may be staggered to form two rows, in which case the pins would have to be longer and the counter actuating lugs 96 carried thereby would also be staggered to form two rows across the machine.

The counters are supported in a group in a suitable frame 97, which is secured to the underside of and within the machine cover 98, which is hinged to the back of the machine as at 99, and extends forward a sufficient distance to cover the record sheets and tapes and the pins 56. With this mounting for the counters, it will be seen that by raising the cover 98, all of the counters will be raised as a unit for examination or for any other purpose.

No detailed illustration of the counters is made or considered necessary, since these simple wheel train counters are well known and each has a main toothed or sprocket wheel 95a, which is arranged to have its teeth in the path of movement of the lug 96, of the underlying pin. Thus it will be readily seen that each time a pin 56 is actuated by a ballot part pin the pin lug 96, as it moves back with the pin, will engage a tooth of the overlying counter wheel and turn the wheel enough to add one digit to the recorded number. On the return movement of the pin 56 and the lug 96, which it carries, the lug will not engage the counter sprocket wheel tooth for the reason that the carriage will be in its lowered postion as shown in Figure 3. Thus the pins move back to record votes and actuate the counters, while the carriage is up or raised to vote recording position, and are returned or moved toward the front of the machine by the retractor bar 50, while the carriage is down, so that reverse turning of the counters cannot occur.

The Celluloid insert 67 provides effective means to prevent any friction from a moving sheet to advance a ribbon which should not advance.

From the foregoing it will be readily seen that the present machine offers many improvements over the machine disclosed in my prior application, in simplicity of design, compactness and in the novel counting means associated with and actuated by the pins when they are shifted by the ballot piece.

I claim:

1. In a voting machine, means for supporting a record receiving piece, record forming members, means supporting the members for reciprocatory movement relative to a record receiving piece supported on said means, to penetrate the piece and form the record when the members are moved toward the piece, a counter unit supported adjacent to each member to record each movement of the member into engagement with the record receiving piece, the counter unit including a part adjacent to and free of connection with said members, means carried by the record forming member for connection with said counter unit part to effect actuation of the adjacent counter when the stated movement of the member is

made, said record forming member supporting means supporting the members for longitudinal motion, means to additionally support said members for limited movement transversely to their movement in forming the record, and means for effecting the movement of the supporting means for the members to an extent to permit retraction of the members from the record piece free of connection with the counter unit parts adjacent thereto.

2. A voting machine, comprising a substantially horizontal frame pivoted for vertical swinging, means at an edge of the frame remote from the pivot axis forming a carrier, a series of pointed pins reciprocably supported by the carrier for movement in a direction transverse to said axis, a fixed platen adjacent said means, means for positioning a movable record receiving sheet across the platen between the same and the pointed ends of the pins, said frame being formed to slidably support a ballot piece for movement toward and into engagement with the pins to effect penetration of the points into said sheet, means for maintaining the frame at one level while the pins are being made to penetrate the sheets and to lower the frame while the pins are in the sheet to effect a progression of the sheet across the platen to a new position, a counter supported over and independently of each pin, and means for effecting an operative coupling between the pins and the adjacent counters upon movement of the pins toward the sheet and for preventing any coupling of the pins with the counters when the pins are retracted.

3. A voting machine as set forth in claim 2, in which the down movement of the frame functions to effect the dual action of effecting the stated progression of the sheet and the removal of the pins to an elevation where connection of the pins with the counters is prevented upon retraction of the pins.

4. A voting machine as set forth in claim 2, in which each counter includes a toothed wheel, and an upstanding lug on each pin for engagement with a tooth of the wheel to turn the wheel upon movement of the pin into connection with the sheet, said wheel teeth and lugs being so relatively proportioned that the down movement of the frame and pins to move the sheet will permit the lugs to move reversely without engaging a tooth of the wheel.

5. A voting machine structure as set forth in claim 2, wherein the counters are supported as a unit above the pins, and means for raising the counters as a unit from the pins.

6. A voting machine, comprising a substantially horizontal frame having a member extending across one end edge and pivotally supported for vertical oscillation on an axis extending across its opposite end edge, said member having a series of transverse guides, a plurality of pins reciprocably supported in said guides for movement in a direction transversely to said axis, each of said pins having a depending loop, said frame being adapted to slidably support a pin actuating ballot piece for movement relative to the pins, a fixed platen extending across the frame parallel with and adjacent to said member between which and the platen a record sheet may be disposed for progression across the adjacent ends of the pins, a bar extending across the frame and passing through said pin loops, a rotary shaft below and extending transversely of said frame, a rock arm supported below the shaft and extending upwardly thereacross, a pair of vertically oscillatable arms beneath the frame upon the opposite side of the shaft from said rock arm and each having an end over the shaft, a ballot piece actuator disposed across and supported on the arms and coupled with the rock arm, and cam means carried by the shaft for performing in sequence the steps of: supporting the frame at one level; raising said arms to move the actuator into working position relative to a ballot part; oscillating the rock arm to cause the actuator to move the ballot part into engagement with the pins to cause the same to penetrate said sheet; lower the frame while the pins are in the sheet to shift the sheet; drop said arms and the actuator supported thereby, and shift the bar passing through said pin loops to retract the pins from the sheet.

7. In a machine of the character stated, a vertically oscillatable frame, punch pins carried by the frame for reciprocable movement relative to a record receiving sheet, a ballot part having a number of shiftable fingers movable into operative and inoperative positions, means for slidably supporting said part in the frame for movement toward the punch pins to engage those fingers which are in operative position with the pins, means for forcing the ballot part and pins toward the sheet to effect penetration of the sheet by the pins comprising a downwardly bowed lifter pivoted at one end adjacent the pivot of the frame for vertical swinging, an actuator bar disposed upon and across said lifter in the bowed part thereof and adapted to be raised by the lifter into the plane of the ballot part on the side thereof remote from the pins, an upwardly extending rock arm pivoted below the frame, a rotary shaft below and extending across the frame, a coupling between the rock arm and actuator bar, a cam unit on the shaft and arranged to raise the lifter and to then oscillate the rock arm in a direction to effect movement of the ballot part and pins upon rotation of the shaft, and a cam coupling between the shaft and frame constructed and arranged to maintain the frame in one position during recording movement of the pins and to lower the frame after the pins have penetrated the sheet.

8. A machine as set forth in claim 7, including counters each adjacent a pin and having a toothed actuating wheel, an actuator lug carried by each pin and positioned to engage a tooth of a counter wheel upon recording movement of the pins, means for retracting the pins, and said pins being lowered with the frame to a position for the lugs to clear the toothed wheels upon retraction of the pins.

9. In an apparatus of the character described including tracks adapted to support a body for back and forth movement, means for moving the body in one direction on the tracks, comprising a relatively long lifter pivoted at one end to swing vertically on an axis extending transversely of the tracks, the lifter lying for the major part in a plane below the tracks, the lifter being longitudinally bowed downwardly, an actuator member lying upon and extending across the top of the lifter, the actuator being raised by the lifter and being formed to position between the tracks when so lifted, and means having operative connection with the lifter and actuator for effecting in sequence the rearward and upward sliding movement of the actuator on the lifter to position the actuator behind the body on the tracks, the raising of the lifter, and the forward movement of the actuator on the lifter for engage-

ment with and movement of the body in the said one direction.

10. In an apparatus of the character described including tracks adapted to support a body for back and forth movement, means for moving the body in one direction on the tracks, comprising a relatively long lifter pivoted at one end to swing vertically on an axis extending across the tracks, the lifter lying for the main part in a plane below the tracks, the lifter being longitudinally bowed downwardly, an actuator member lying upon and extending across the top of the lifter, the actuator being raised by the lifter and formed to position between the tracks when so lifted, a vertically disposed rock arm positioned to extend upwardly across the free end of the lifter, a rigid coupling between the upper end of the rock arm and the actuator whereby oscillation of the rock arm will effect sliding movement of the actuator back and forth upon the downwardly curved top surface of the lifter, means constantly urging movement of the rock arm in one direction to effect the movement of the actuator rearwardly and upwardly on the lifter, a shaft extending transversely of the free end of the lifter between the latter and the rock arm, and cam means carried by the shaft for progressive engagement with the rock arm and with the lifter and functioning upon rotation to free the rock arm for actuation by said urging means; to lift the lifter, and to then actuate the rock arm in a direction opposing said urging means whereby to effect the movement of the actuator toward the free end of the lifter.

11. In a voting machine, means for supporting a record receiving piece, a record forming member supported for reciprocatory movement relative to a record piece on said means to penetrate the piece and form the record when moved into contact therewith, a counter unit adjacent to the member and including a toothed wheel, a lug carried by the member arranged to engage a tooth of the wheel and actuate the counter when the member is moved to engage said piece, and means for moving the forming member with respect to the counter to effect clearance of said lug from the toothed wheel when the member is retracted.

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