Dec. 5, 1944. G. D. RATHBUN 2,364,097

VOTING MACHINE

Filed Feb. 18, 1941 4 Sheets-Sheet 1

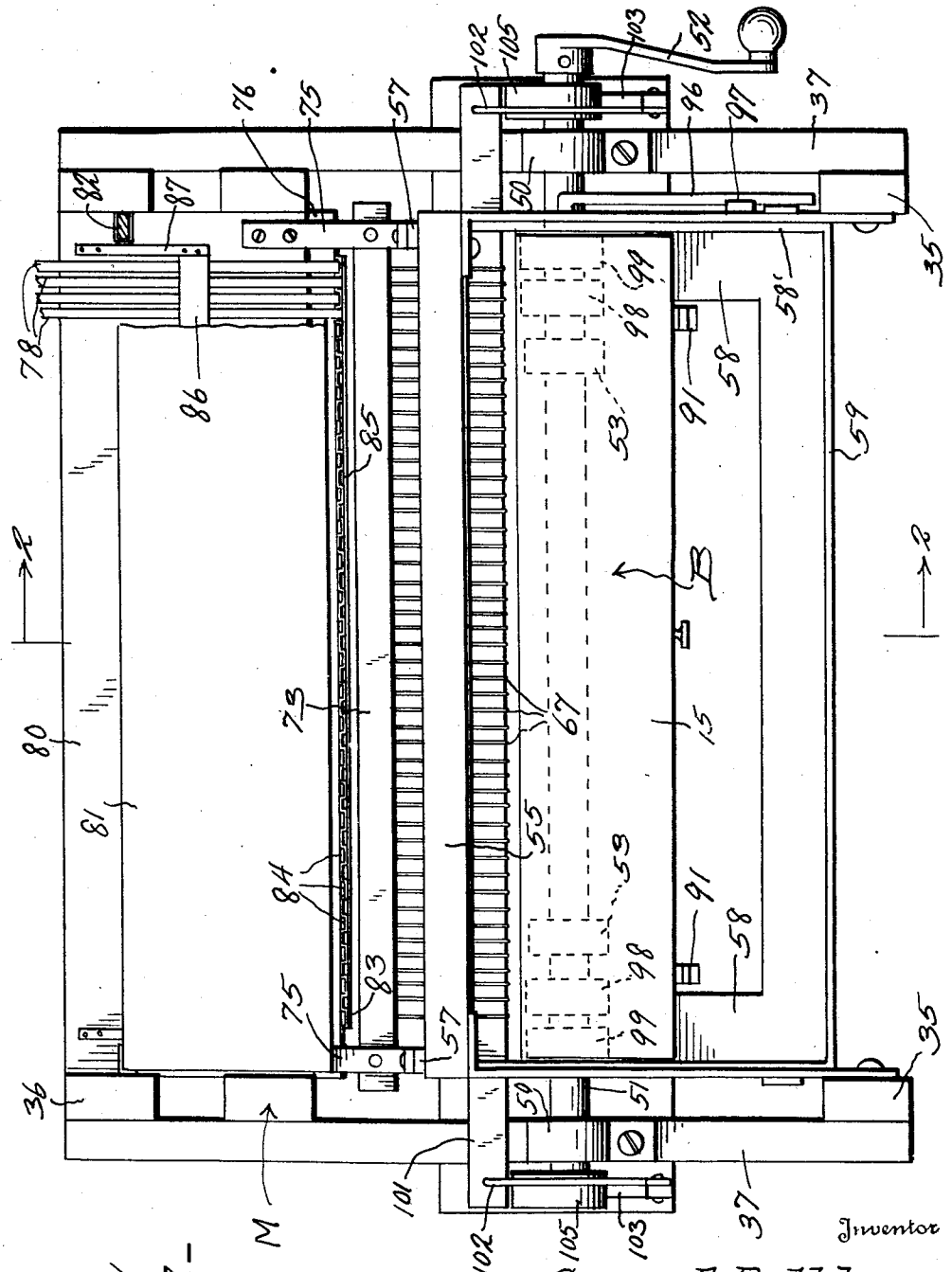


FIG. 1

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VOTING MACHINE

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Fig. 2

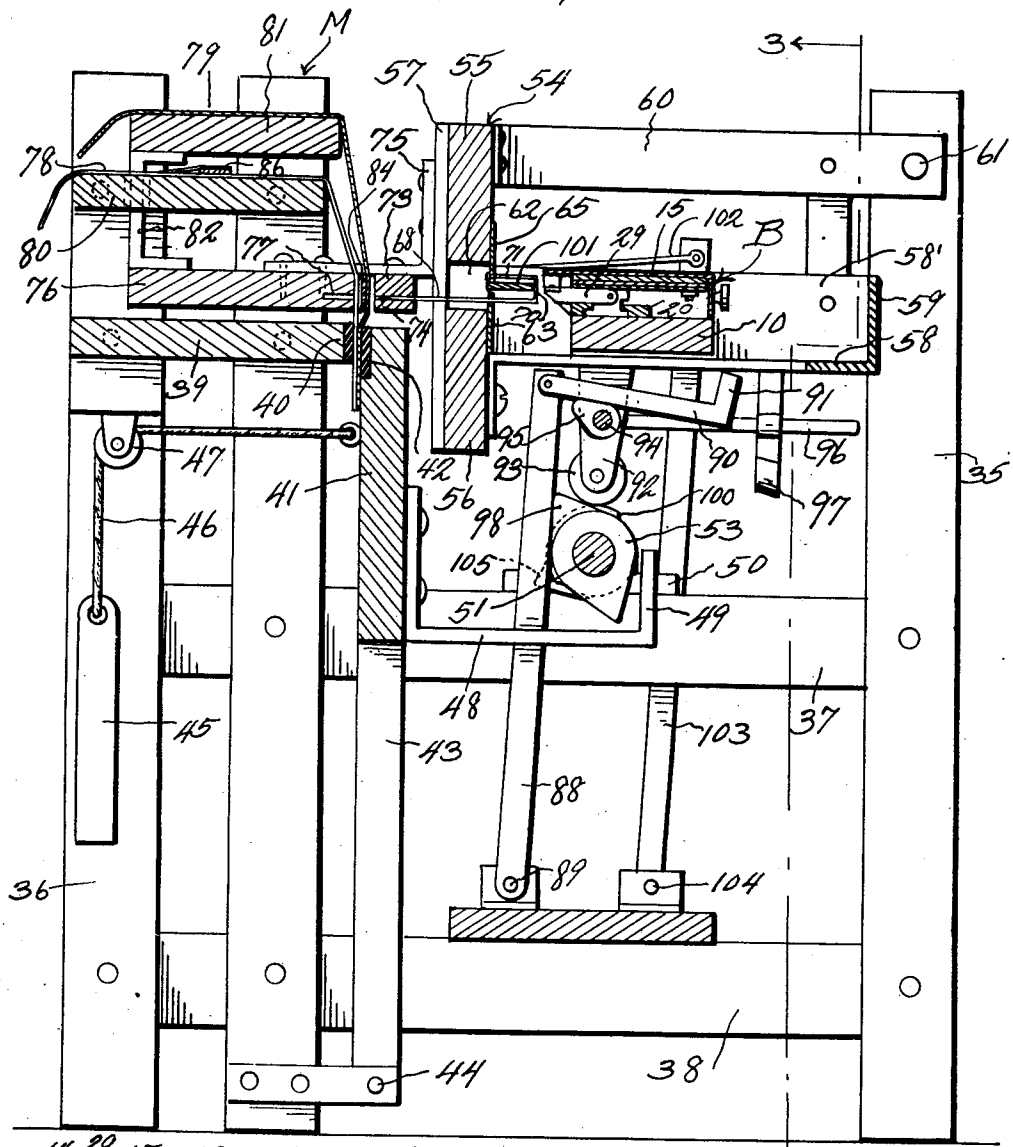
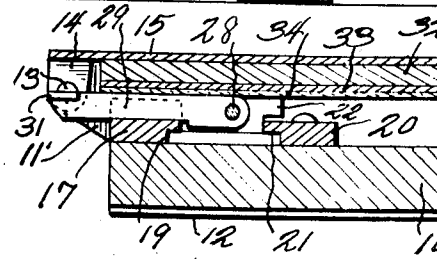


Fig. 14



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VOTING MACHINE

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Fig. 3

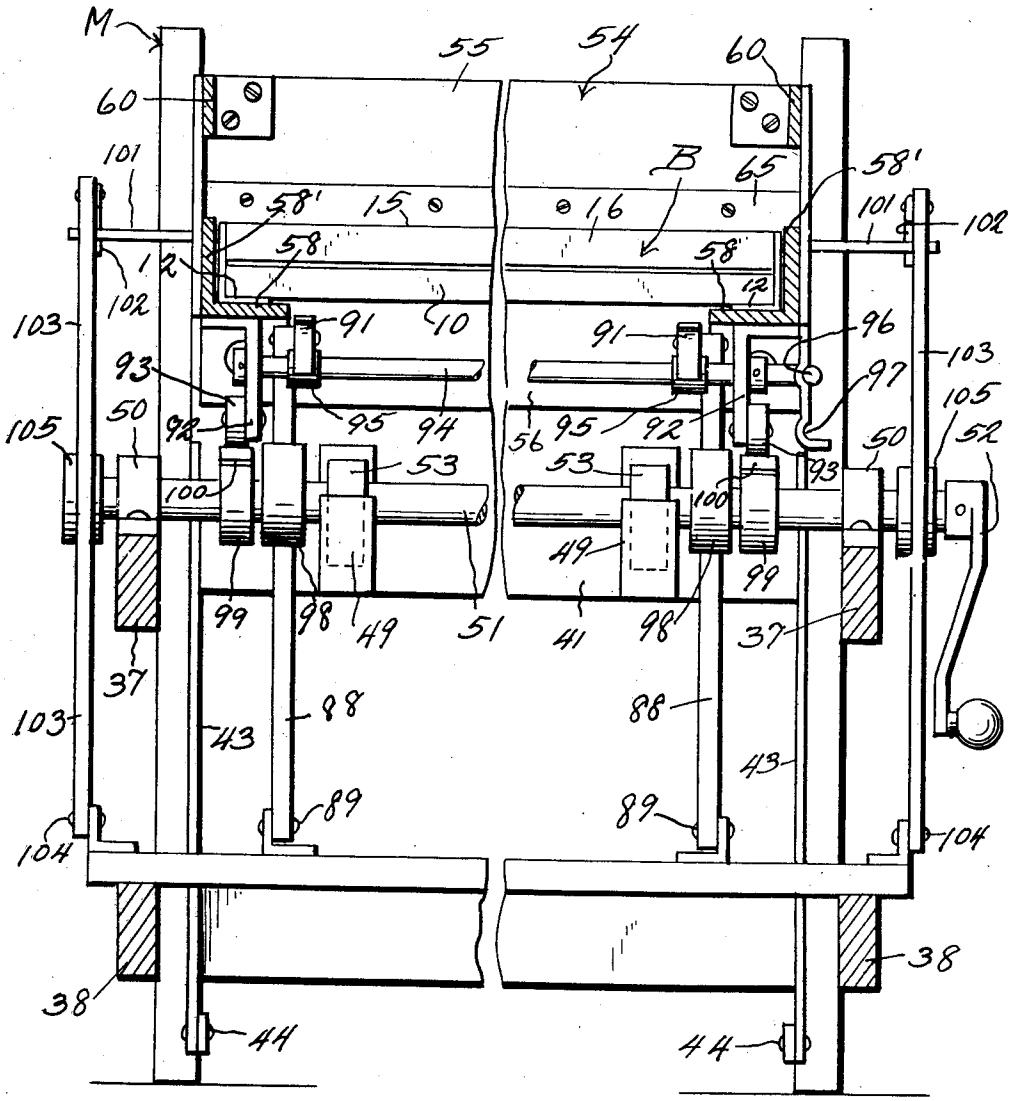
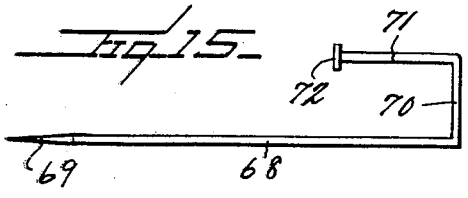


Fig. 15



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Fig. 4.

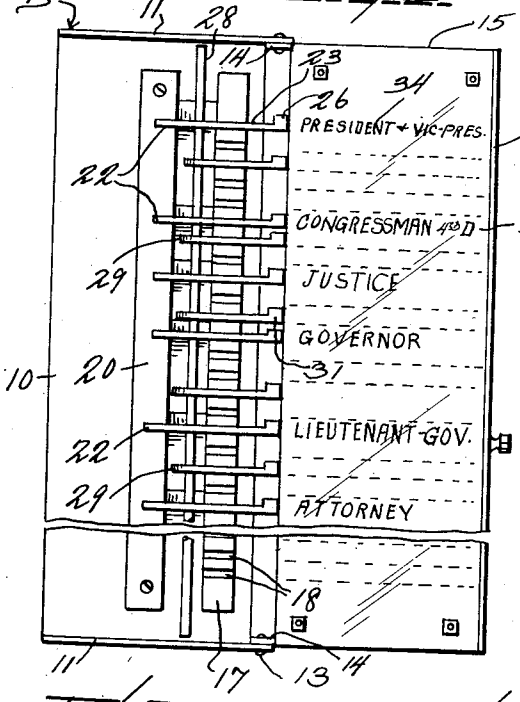


Fig. 5.

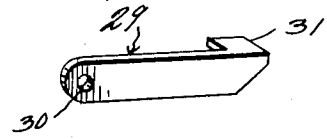


Fig. 6.

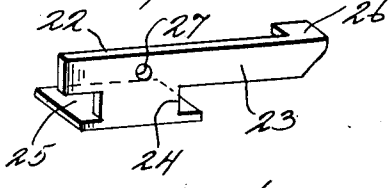


Fig. 7.

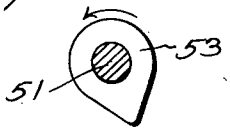


Fig. 8.

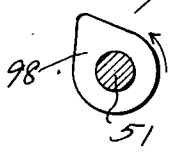


Fig. 9.

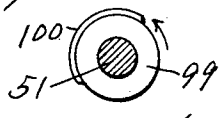


Fig. 10.

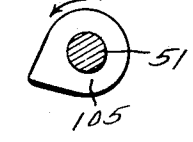
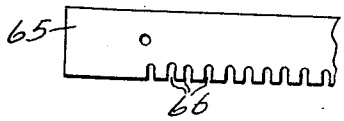


Fig. 11.



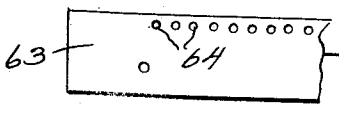
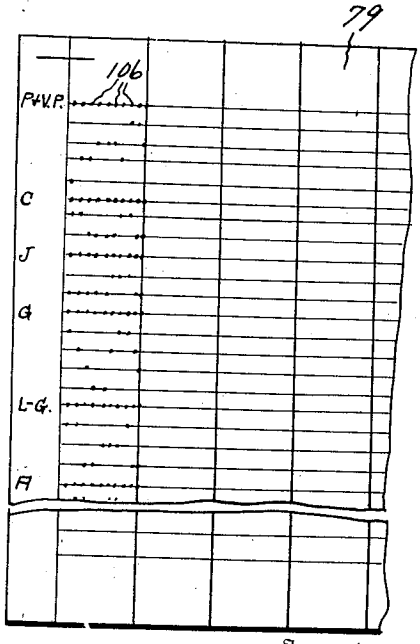


Fig. 12.

Fig. 13.



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UNITED STATES PATENT OFFICE

2,364,097

VOTING MACHINE

George D. Rathbun, Manhattan, Kans.

Application February 18, 1941, Serial No. 379,524

18 Claims. (Cl. 235—50)

This invention relates generally to the class of recording machines and pertains particularly to improvements in voting machines and ballot parts therefor.

The primary object of the present invention is to provide an improved voting machine for use both in general and primary elections, which is of extreme simplicity both as to construction and operation, whereby its universal use is made economically feasible and possible.

A further and important feature of the present invention is the provision in a voting machine, of like ballot parts which may be taken by voters into the voting booths to be prepared for voting and may then be placed in and operated in conjunction with the main machine to effect the recording and counting of the ballot, the ballot part then being made reusable upon its removal from the machine by another voter, as a result of which it is possible to suit the machine to precincts of varying population by the use of different numbers of voting parts in accordance with the voting population.

Still another object of the invention is to provide a voting machine employing separate ballot parts, in which by a single revolution of a crank, the entire vote of the ballot may be registered or recorded on a permanent record.

Still another object of the invention is to provide a voting machine wherein a permanent and intelligible record and count of all votes cast during an election will be made on two record units, one of which constitutes one or more sheets of paper while the other constitutes a plurality of strips, each receiving the vote record of a candidate for office, the record of votes being made upon the strips of one unit and upon the sheet of the other unit simultaneously and preferably by perforating such units.

A still further object of the invention is to provide a voting machine employing a ballot part of novel character designed for cooperative action with perforating elements in the voting machine whereby when such ballot part has had candidate indicating or selector fingers set by the voter in accordance with his voting desires, such fingers are made to cooperate with punching elements in the machine for simultaneous recording by punches or perforations in a record strip or record strips and/or sheets of paper, all votes of the voter.

Still another object of the invention is to provide in a machine of the above described character, a novel means for effecting the advancement of the record or impression receiving strip through the controlled shifting of a portion of the machine carrying the ballot part, before the retraction of the record sheet punching elements whereby such punching elements function as pulling fingers for moving the record receiving sheet or strip into position to receive new punches under the action of a ballot part placed in the machine by a subsequent voter.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings, it being understood, however, that the invention is not to be considered as limited by the specific illustration or description but that such illustration and description constitutes a preferred embodiment of the invention.

In the drawings:

Fig. 1 is a view in top plan of a machine constructed in accordance with the present invention, showing a ballot part placed in position and ready to be advanced for the performance of the sheet or strip perforating and recording operation.

Fig. 2 is a vertical transverse section through the machine and the ballot part taken substantially on the line 2—2 of Fig. 1.

Fig. 3 is a vertical transverse section taken substantially on the line 3—3 of Fig. 2 with the central portion of the machine broken away.

Fig. 4 is a view in plan of a ballot piece showing the same opened to illustrate the positioning or arrangement of the candidate selector fingers and the office divider fingers.

Fig. 5 is a view in perspective of a candidate indicator or finger.

Fig. 6 is a view in perspective of an office divider finger.

Figs. 7, 8, 9 and 10 illustrate various operating cams showing the same in relative positions which they maintain with respect to one another upon a common supporting shaft.

Figs. 11 and 12 illustrate respectively the upper and lower pin supports and guides in their working relation.

Fig. 13 illustrates in plan a portion of a permanent record sheet in which perforations are made for recording ballots.

Fig. 14 is a view in transverse section of the ballot part when closed.

Fig. 15 is a view in side elevation of a marking pin or marking element.

Referring now more particularly to the drawings, it will be seen that the present voting machine comprises two separate or independent units which function cooperatively for the mak-

ing of a ballot record, such units comprising broadly that portion referred to generally as the balloting piece and indicated as a whole by the character B, and the main body portion or machine proper with which the ballot piece co-acts, which is generally designated M.

For the purpose of clarity, a description will first be given of the ballot piece B, after which the machine body M will be described followed by a description of the operation of the two parts together.

The ballot piece B, of which there may be one or a number for use in association with a machine body, comprises, as is clearly shown in Figs. 2 and 4, a body portion **10**, which is here illustrated as being in the form of a board of desired length, width and thickness, at each end of which is an upstanding wall **11** of metal or other suitable material, a portion of which is turned under the end of the base body **10** to form a track engaging shoe **12**.

Each of the end walls projects slightly beyond the rear edge of the base **10**, as indicated at **11'**, and adjacent the top edge of each end wall there is mounted in the extended portion, a pivot pin **13** on which is rockably mounted a hinge ear **14**, which forms an integral part of a lid or cover **15**. At its front edge, the cover **15** has the downturned flange **16** which, when the cover is closed, is in close proximity to the top of the base.

Extending along the rear edge, the base **10** has secured thereto a bar **17** which is provided with a plurality or transverse notches **18** which are equi-distantly spaced one from the other. The forward edge of this bar **17** is undercut or provided with the shoulder **19** and paralleling this shouldered forward edge of the notched bar and spaced therefrom, is a clamp bar **20** which is provided at its rear edge with the undercut shoulder **21**, which is in opposed relation with the shoulder **19** and cooperates therewith to maintain in position a series of office indicating or office divider fingers **22**, one of which is shown in detail in Fig. 6. Each of these office divider fingers comprises a straight finger portion **23** connected by a neck **24** which extends from one edge adjacent one end thereof, with a foot **25**. At the opposite end, the portion **23** of the office divider is broadened to form a relatively wide contact edge **26** for engagement with a punch pin which forms a part of the machine body structure as hereinafter described. The finger portion **23** is also provided with an aperture **27** at the top of the neck **24** to facilitate maintaining the candidate indicator in a selected position in the ballot piece, as hereinafter described.

Extending lengthwise of the ballot piece and supported by the dividers **22** is a finger carrying rod **28**. This rod is located in a vertical plane which passes midway between the bars **17** and **20**, and it will be readily seen upon reference to Figs. 4 and 14, this rod passes through the apertures of the office dividers **22**, of which there are any desired number, and when the office dividers are in set position, each will be engaged in a notch **18** and will have opposite edges of its foot piece **25** engaged by and secured down on the base **10** by the shoulders of the bars.

Supported upon the rod **28** between each pair of office dividers **22** is a candidate indicator finger or selector which is indicated generally by the numeral **29** and one of which is shown in detail in Fig. 5. This finger or indicator is, like each of the office dividers, formed of a strip of metal or other suitable material and is provided at one end with an aperture **30** to receive the rod **28**, while at its opposite end it is provided with a laterally, extending piece to provide a wide edge **31** for contact with a punching or marking element hereinafter more particularly described.

The under or inner side of the cover **15** of the ballot piece has secured thereto a pad strip **32** against the face of which there is placed a sheet bearing the titles of various offices for which candidates are running. Following the names of the offices, the names of the candidates running for such offices are placed. This sheet is indicated by the numeral **33** and, as shown in Fig. 4, the titles of the number of offices are shown and indicated at **34**, and opposite each of these office titles, an office divider or office indicator element **22** is located when the cover of the ballot piece is thrown back or opened. For example, the space between the office title "President and Vice-President" and the office title "Congressman 4th D." is marked off by two office dividers **22** and there are located along the notched bar **17** four notches **18** for the names of candidates for the offices of president and vice-president. Also between these two office dividers there is a single candidate indicator or selector **29** which may be moved on the bar **28** for engagement in any one of the notches in the space referred to. It will, of course, be understood that the name of the nominated president and vice-president for any one party will appear on the same line so that four parties may be reported in this group.

When the cover **15** of the ballot piece is raised, the candidate indicators or selectors **29** may all be swung over on the rod **28** so as to have the operating ends **31** thereof directed away from the various candidates for office and the ballot piece is handed to the voter with the candidate indicators in this position. The candidate then takes the ballot piece to his booth and selects and indicates his choice by swinging the indicator fingers **29** over toward the list of offices and candidates and moving it on the rod **28** until it is positioned in a notch opposite the name of his selection. After all of the pieces have been turned into voting position, the edges **31** of the candidate indicators will all be alined with the edges **26** of the office dividers and the voter then closes the cover **15** so that the face of the sheet, which may be covered with a sheet **34'** of Celluloid or other transparent material, rests on the candidate indicator fingers and the office divider fingers. All of the fingers will be effectively covered and the ballot piece may then be handed to the person attending the ballot machine, to be placed in the machine and used for registering the ballot.

The body of the ballot machine in association with which the ballot piece is used is here shown as having an open frame which includes vertical front corner posts **35** and rear posts **36**, which are connected by upper horizontal beams **37** and lower beams **38** as well as suitable transverse connecting elements, but it is to be understood that in the actual construction of the machine, these posts may be dispensed with or differently formed and the machine will be enclosed in a suitable housing so that various working parts will be shielded from view, the present illustration of an open frame-work having been made use of to more clearly show the essential working parts of the machine.

At the rear of the machine there is disposed the transversely extending plate **39**, the front edge of which supports or has secured thereto a

padding of suitable material, which is indicated by the numeral 40 across which paper ribbons or record sheets are drawn. This padded forward edge of the plate 39 constitutes a fixed element of a gripper for maintaining in position the sheets which receive punches or other marking means recording the ballot.

Disposed in front of the plate 39 and extending lengthwise of the padded edge thereof is a shiftable gripper element 41 which constitutes the other part of the gripper device and which also has a friction strip 42 which coacts with the pad or strip 40. This movable gripper element 41 is supported upon suitable arms 43 or in any other suitable manner, the arms being here shown as pivotally connected at their lower ends, as at 44, with the lower part of the machine so that element 41 may oscillate forwardly and rearwardly as desired. Means is provided whereby the element 41 will be constantly urged toward its associate element 39, such means being here shown as in the form of a weight 45 connected with the element 41 by a cord 46 which passes over a suitable pulley 47 so that a constant rearward pull is exerted upon the element 41 in the manner illustrated.

Upon the forward side of the oscillatable gripper element 41 are forwardly extending arms 48, each of which has an upstanding cam finger 49 to be acted upon by an actuating cam, hereinafter described, which effects the oscillation of the element 41 in timed relation with other parts of the machine and in opposition to the pull exerted upon this element by the control element or weight 45.

At opposite sides of the machine there are located the crank shaft bearings 50, which bearings support the operating shaft 51 through the medium of which the several operations or actuation of the several parts may be effected in the recording of a ballot. Any suitable means may be provided for imparting rotary motion to this shaft, such means being here shown as being in the form of a crank 52.

The shiftable element 41 of the record holding unit is preferably provided with two cam arms 49 which are adjacent the ends of the element and as is shown in Fig. 2, the shaft 51 extends across the machine between the cam arm 49 and the element 41, and it has secured to it the two cams 53 which, when rotated, engage the adjacent upstanding arm 49 to oscillate the gripper element 41 forwardly. The timed operation of these cams in association with the other movable parts of the machine will be hereinafter described in more detail.

Disposed forwardly of the record strip gripper and above the shaft 51 is the vertically oscillatable unit indicated generally by the numeral 54 which may be referred to as the marker element carrying unit or pin carrying unit. This latter unit comprises the upper and lower vertically spaced bodies 55 and 56, respectively, which extend transversely of the machine in close proximity to the movable gripper element 41, and are joined together at their ends in a suitable manner, as for example, by means of the straps 57. Upon the forward side of the bodies 55 and 56 there are arranged the spaced parallel track rails 58 which are joined together at their forward ends by the transverse coupling rail 59. These track rails are designed for the support transversely of the machine and forwardly of the body 56 of the ballot part B, as shown in Fig. 2, and the shoes 12 carried by the ends of the base 10 slide on these rails in the movement of the ballot part rearwardly for the performance of the recording of the ballot.

At each end of the pin carrying unit 54 there is provided a supporting arm 60 which is coupled with the joined bodies 55 and 56 and extends forwardly for pivotal connection, as indicated at 61, with an adjacent part of the machine here shown as the adjacent front corner post 35. By means of this pivotal connection of the arms 60 with the frame of the machine and additional supporting means hereinafter described, the vertical oscillation of the pin or marker carrier 54 is facilitated.

The bodies 55 and 56 as previously stated are vertically spaced so that there is thus provided a window 62 between them. At the lower front side of the window 62 there is secured to the lower body 56 a pin guide plate 63 which is provided with a plurality of guide apertures 64. Secured directly above the plate 63 to the forward face of the upper member 55 is a corresponding plate 65, the lower edge of which extends partway across the window opening 62 and is provided with guide notches 66 corresponding in number with and in vertical alinement with the apertures 64 of the underlying plate.

The numeral 67 generally designates one of the marking elements of the present machine, which element is here illustrated as being in the form of a pointed punch pin. While a pin form of element is shown and will be hereinafter described, it is understood that any number of different types of markers or impression forming elements may be employed if desired, and that in referring in the claims to a marker or similar form of device, any one of the different marking elements adaptable to the present machine is intended to be covered or included. The pin or punch form of marking element here illustrated, Fig. 15, comprises an elongated shank portion 68 having a point 69 at one end while at its other end is formed an upstanding extension 70 which joins a short rearwardly directed arm 71 terminating in a head 72. The shank portion of each pin extends through an aperture 64 of the plate 63 while the arm 71 of the pin which is parallel with the shank, is disposed above this shank and slidably engages in a guide notch 66. As shown in Fig. 2, the head 72 of each marker pin limits the forward movement of the pin.

Extending transversely of the pin carrier unit 54 in back of the window 62, is a pin guide bar 73 which is provided with a plurality of guides in the form of bores 74 which pass entirely through the bar from the front to the rear, each of which is alined with an aperture 64 of the pin supporting plate 63. This bar 73 is connected in any suitable manner with the bodies 55—56, such connecting means being here shown as brackets 75 located at the ends of the pin carrying unit.

Directly rearwardly of the pin guide bar 73 is a platen bar or plate 76 which is arranged with one edge face in spaced parallel relation with the rear side of the bar 73, as shown in Fig. 2, and this face is provided with a number of recesses or indentations 77 which are alined with the guide bores 74. Thus when a marker pin is shifted rearwardly, the normally covered or protected point of the pin will extend across the space between the platen 76 and the bar 73 to pass through or make an impression on or in a record sheet extending across the platen and, if the marker extends through the record sheet,

it will enter the receiving recess 77 alined therewith.

The present ballot machine is designed to form a double record of each ballot cast, one record being in the form of a unit consisting of a plurality of record ribbons which are here indicated by the numeral 78 while the other unit is in the form of one or more sheets of material in which a permanent record is made by the markers, which sheet is here indicated generally by the numeral 79.

The various record ribbons 78 extend across the impression receiving edge of the platen 76 from a carrier 80 which is in the form of a relatively wide table which extends across the width of the machine at the rear thereof and is disposed above the platen 76 as shown in Fig. 2. The other record unit in the form of the permanent record sheet 79 extends across and is supported by a carrier table 81 which also extends the width of the machine and lies over the individual strip supporting table 80, the forward edge of the table 81 being slightly in advance of the forward edge of the table 80. Thus the record receiving strips and sheet may pass downwardly across the forward edge of the platen 76 between the latter and the pin or marker guide bar 73 and between the opposing faces of the gripper means which lies directly beneath the platen and pin guide bar.

The record strip supporting table 80 has a fixed position in the machine and lies between the platen 76 and the table 81. The table 81 is coupled with the platen 76 in a suitable manner, as by means of brackets 82 so that the platen and the upper or permanent record sheet table may be raised and lowered with the pin carrying unit or marker carrying unit 54 of which they form a part.

It is desirable that the several record strips or ribbons 78 be guided along fixed paths and in spaced parallel relation across the edge of the platen 76, and while it may be readily obvious that various means may be made use of for accomplishing this object, it is preferred that the edge of the platen have secured thereto the single metal strip 83 which has been pressed to provide alternate offset portions whereby there are obtained the alternate oppositely directed recesses 84, as shown in Fig. 1. When the strip is placed along the edge of the platen 76, it will be seen that all of the recesses 84 which open toward the rear of the machine will be closed by the platen strip and there may then be secured along the opposite side of the metal strip, a cover or shield strip 85 which will close the oppositely directed recesses, thereby providing the desired closed guides for the individual record strips on which the ballots are recorded. The individual ballot strips or ribbons and the single ballot sheet pass downwardly below the fixed element 39 of the gripper, and since by reason of the fact that these ribbons and the sheet are given a very slight degree of movement across the platen in the recording of the successive ballots so that a large number of ballots may be recorded on a relatively short length of ribbon or sheet, no take-up or receiving means for the ribbons and sheet is provided or considered necessary and, therefore, no such means is shown.

In order to maintain the ballot strips or ribbons taut between the gripper unit and the table 80 over which they pass, a light friction element may be disposed longitudinally of the table over the ribbons, as indicated at 86, and maintained in frictional contact with the strips by suitable lightly tensioned spring arms 87.

Disposed beneath the marker or pin carrier unit is a mechanism for effecting the rearward movement of the ballot piece for effecting the actuation of the markers and the recording of the ballot. This mover comprises a pair of vertical levers 88 preferably disposed adjacent the two sides of the machine and pivotally supported at their lower ends, as indicated at 89, and terminating at their upper ends in a plane just below the tracks 58. Pivotally connected with the upper end of each lever 88 is a forwardly extending arm 90 which terminates at its free end in an upstanding finger 91. At each side of the machine the marker carrying unit 54 has connected therewith the downwardly extending legs 92 and upon the lower end of each leg is rotatably supported a roller 93, the axis of which extends transversely of the machine.

Above the rollers 93, the legs are connected by and support a rock shaft 94, and this shaft which extends below the arms 90 carries, beneath each arm, a lifting cam 95 on which the overlying arm rests and by which the arm may be raised to a position to bring its finger 91 across the edge of the base of a ballot part which has been placed in the machine on the tracks 58. The oscillation of the shaft 94 to effect the movement of the arms 90 upwardly is under the control of a lever 96 or may be effected in any other suitable manner, and this lever is here shown as being in operative connection with a notched bracket 97 whereby, when the lever is depressed, it will be held in lowered position to maintain the arms raised and connected with a ballot part.

The shaft 51 carries adjacent each lever 88 an actuating cam 98 which, as shown in Fig. 2, engages the forward side of the lever so that when the shaft 51 is turned, the cam will exert a rearward thrust against the lever.

Directly beneath each of the rollers 93 which are carried by the legs 92 attached to the under side of the pin or marker supporting unit, is a cam wheel 99, which has through substantially half its circumferential extent, a raised portion 100 upon which a roller 93 bears to maintain the pin carrying unit 54 in normal or raised position. The operation of this cam will be more clearly brought out in the description of the operation of the machine.

After certain of the marking members or pins have been projected by the candidate designating fingers of a ballot part, it is necessary for subsequent operation of the machine to retract such pins. This pin retracting means comprises a retractor bar 101 which extends across the machine between the shanks of the pins and the arms thereof, as shown in Fig. 2, the forward edge of the bar being in contact with the vertical portions 70 of the pins. The bar is supported at its ends in a suitable manner as, for example, it may be mounted in slots in the vertical sides 58' of the tracks 58, and each end of the pin retractor bar is connected by a link 102 with the upper end of a rock lever 103, the lower end of which lever is pivotally supported in a suitable manner as indicated at 104, Fig. 2. On the rearward movement of those marker elements or pins which might be engaged by the fingers of the ballot part, the retractor bar will also be shifted rearwardly so as to rearwardly rock the levers 103. In the path of motion of these levers 103, the control shaft 51 carries cams 105 and these cams, when rotated upon the turning of the shaft 51, will effect the

reverse movement of the levers **103** to return the marking elements or pins to their retracted positions.

In the operation of the present ballot machine, the individual ballot strips or tapes are placed in proper position and threaded through the guides therefor which maintain them in position across the platen board and the single sheet **79** upon which the permanent ballot record is made is also placed in position across its supporting table **81** and run down across the outer side of the guides for the individual ribbons, between such guides and the guide bar **73**, as shown in Fig. 2. The lower ends of the strips or ribbons and the sheet extend between the elements **39** and **41**, and are held against movement by these elements.

The normal position of the marker or pin carrier unit **54** is as shown in Fig. 2, that is, raised to its maximum position by the portion **100** of the cam wheel **99** and, of course, the marker elements or pins are retracted by the bar **101**, so that the points of the pins are entirely within the guide bores **74** and, therefore, are protected.

As previously described, a voter when given the ballot part B, takes this part to the voting booth and arranges the various candidate indicator or selector fingers **29** in position across the notched bar **17** to designate the candidate for whom he wishes to vote. The cover of the ballot part is then closed so that the fingers are held in place and the ballot part is then placed in position in the machine with the ends of the base portion resting upon the tracks **58** and with the broadened tips of the fingers directed rearwardly and toward the marker elements or pins. The ballot part is then shifted rearwardly on the tracks to the position in which it is shown in Fig. 2, after which the person attending the machine imparts a single rotary movement to the shaft **51** after having first rocked the lever **96** to effect the raising of the ballot piece shifter fingers **91** into position across the forward edge of the base of the ballot part. Upon turning the shaft **51** after the fingers **91** are raised to extend across the base **10** of the ballot part, the cams **98** first function to oscillate the levers **88** rearwardly and force the fingers of the ballot parts into contact with those pins or marker elements with which they are alined. This causes a projection of those pins engaged by the candidate indicator fingers and it also causes the office divider fingers, which are fixed in their position in the ballot part, to engage and project rearwardly the pins alined therewith. Thus all of the pins engaged by fingers will be forced into contact with and through the record sheet or sheets and the strips with which they are alined. It will also be understood from this that with each use of the ballot part, the same pins will be engaged and made to punch the permanent record sheet or sheets **79** by the office divider fingers as a result of which the permanent record sheets will be divided lengthwise into a number of rows of punches or other marks, according to the character of the marker pins employed into lengthwise extending spaces in which will be made a record of the votes cast for the different candidates for the different offices to be filled. Such rows of perforations are shown in the portion of the permanent record sheet **79** which is shown in Fig. 13, the perforations being indicated by the numeral **106**.

Following the rearward projection of the ballot part under the action of the cam **98** and the marking or punching of the ribbons and the sheet, continued turning of the shaft **51** brings the cams **53** into play to effect the forward oscillation of the movable element **41** and the release of the strips and record sheet **78**, **79**, respectively. Immediately following this releasing of the strips and sheet, the high side **100** of the cam **99** passes from beneath the rollers **93**, thus allowing the pin carrying unit to be lowered a distance equal to the difference between the radius of the cam **99** on its high side and on its low side. In actual practice, this distance will be about $\frac{1}{16}$ in. and consequently, the rear part of the pin carrier will be lowered approximately this much, and since the marking pins are still extended through the ballot strips and the permanent record sheet or sheets, it will be seen that these record receiving units will be drawn down the distance stated.

After the shifting of the record sheet or sheets and strips, the gripper mechanism again secures the strips and sheet since the cam **53** will have released the arms with which they are in engagement to permit the movable element **41** to again shift into gripping relation with the fixed element **39**.

Following the re-securing of the strips and sheet or sheets, the pin retractor cams **105** will have their high sides brought into engagement with the adjacent levers **103**, so as to effect shifting of the levers and the retractor bar **101** in a direction to withdraw or retract the marker elements or pins from the record strips and sheet or sheets, and immediately after this action is completed, the high side **100** of the pin unit control cams **99** will again move to position beneath their respective rollers **93** so as to raise the unit to its normal or starting position, and since the strips and the record sheet or sheets are being held when this return movement of the unit **54** takes place, it will be seen that the marker elements or pins will again be brought into position for action upon the strips and sheet at new points when a new or reformed ballot part is placed in the machine and actuated in the manner stated.

All of the movements described, with the single exception of the movement of the rock shaft **94** for the raising of the ballot part engaging arms **90**, takes place upon a single revolution of the shaft **51**, so that it will be readily seen that a complete ballot can be recorded with each turning of the shaft and, consequently, it will also be readily apparent that by connecting a suitable counter mechanism, not shown, with the shaft **51**, the number of voters using the machine can be kept count of without difficulty.

After the recording of one ballot has been completed, the arms **90** are released from engagement with the ballot part so that the ballot may be removed for use by another voter and in removing the ballot, the same may be handled by the handle of the cover **15**, so that the ballot part will drop open and the candidate selector fingers will drop back away from the notched bar **17** and rest upon the clamp bar **20**, so that the ballot is cleared and ready for use by the next voter.

While in the present machine, a single ballot part has been shown in the machine, it will be readily apparent that if it is so desired, two sets of tracks may be provided so that two ballot parts may be pressed in the machine and a recording of two ballots made with one turn of the crank.

It will also be readily apparent that with this

machine it is possible for a precinct with a few voters to use only one or two ballot parts for recording all of the votes of the precinct while a larger precinct having a correspondingly larger number of voters may increase the number of ballot parts used, to any number which may be necessary for expeditiously handling the voting. As a consequence, it will be seen that with this arrangement, the expense of providing the machine will be less for small precincts and thus any voting precinct will be able to provide voting by this machine and make the use of the machine possible in an entire territory or state.

While in describing the use of the ballot part, it has been stated that all of the candidate selector fingers are turned by the voter to extend across the notched bar 17 for engagement in the notches thereof, it will, of course, be readily evident that if the voter does not desire to register a vote, he may leave any one or more of the candidate pointers in non-voting position. It will also be understood that a provision might be made in the construction of the ballot part for preventing this so as to force each voter to cast a vote for a candidate for each office listed on the ballot.

While the ribbon and permanent record sheet markers have been disclosed as pins for penetrating the ribbons and sheet, these markers may be in the form of punches for punching out a portion of the sheet and each ribbon in any desired design, if such a construction is desired.

After using the machine, that is, after the election is over, the various ribbons may be removed and a summary of the total vote for each candidate taken from the respective ribbons corresponding to the candidates. The record sheet may be left in the machine until the day for canvassing the vote by the commissioners or canvassing board, when this sheet may then be used to verify any question which may arise since a complete record of each ballot will appear upon the record sheet 79 in a row across the sheet, as is shown clearly in Fig. 13. By the provision of the full line of perforations 106 between the offices from the first ballot recorded to the last ballot, the votes for the various offices may be effectively separated so that no difficulty will be encountered in checking the votes in the event that the record sheet becomes torn or otherwise damaged.

While it has been previously stated that the office divider fingers are arranged to engage and project the marker pins simultaneously with the action of the candidate indicator fingers, and this arrangement has been shown in the illustration of the ballot part, it will, of course, be understood that this feature may be dispensed with if so desired, so that the only marker pins which will be engaged when the ballot part is shifted rearwardly in the machine would be those in line with the selected candidate indicators.

What is claimed is:

1. In a voting machine, means providing a support for a record strip of sufficient proportions to receive a record of all votes cast, a movable strip marker spaced from the strip and supported for movement into recording connection with the record strip, a ballot element having a candidate indicating finger movable into and out of candidate indicating position, said finger having a portion designed for cooperative connection with said marker, means for facilitating the movement of said element along a prescribed path relative to said marker to effect the connection of the finger with the marker to move the marker into marking and driving connection with the strip, means for moving the marker while in connection with the strip to advance the strip by said connection to a new position, and means for withdrawing the marker from connection with the record strip.

2. In a voting machine, means providing a support for a plurality of candidate record strips, a plurality of markers, each marker being movable into and out of marking connection with a strip, a ballot element carrying a list of names formed into groups of candidates to be voted upon, a candidate selector finger for each group and forming a part of said element and movable into a selected position with respect to one of the candidate names, said finger being formed for cooperative connection with any one of said markers, means facilitating movement of said element along a prescribed path relative to said markers to effect connection of the said name indicating finger with the marker associated with the strip of the selected candidate and movement of that marker into marking and driving contact with the associated strip, and means for shifting the markers while in contact with the strip to effect the advancement of the strip through such connection to a new position.

3. In a voting machine, means providing a support for a record receiving sheet, a plurality of markers designed to connect with the sheet to make a record of a ballot, means for supporting the markers for selective movement into connection with the sheet, a platen against which said sheet is supported and across the face of which the sheet is moved, gripping means for holding the sheet, means for selectively advancing certain of the markers according to the selection of the voter to marking and driving connection with the sheet, means for releasing the gripping means after the markers have connection with the sheet, means for shifting the markers after the same have connected with the sheet to effect movement of the sheet by the connection of the markers therewith, means for regripping the sheet after it has been moved and before the markers are withdrawn from the sheet, means for withdrawing the markers from the sheet, and means for restoring the markers to their initial positions.

4. In a voting machine, a recording unit, comprising means for movably supporting a length of perforatable material, a plurality of perforators movable relative to the material, a guide leading toward said perforators, a ballot piece carrying candidate fingers movable into and out of voting position, the ballot piece being designed to be placed on said guide with those fingers in voting position directed toward the perforators, means for moving the ballot piece on the guide to bring the fingers having voting position into engagement with the perforators in alignment therewith and to move the engaged perforators through said material, and means for moving the ballot piece and perforators while the material is engaged by the perforators to effect the advancement of the material in even steps.

5. In a voting machine, a recording unit, comprising means for movably supporting a length of perforatable material, a plurality of perforators movable relative to the material, a guide leading toward said perforators, a ballot piece carrying a candidate list, selector fingers movable on said ballot piece, means for securing said fingers each adjacent a selected candidate and

all pointing in one direction, the ballot piece being designed to be placed on said guide with the fingers directed toward the perforators, said ballot piece being movable on the guide to bring said fingers into engagement with the perforators in alinement therewith and to move the engaged perforators through said material, means for retracting said perforators from the material, and means for shifting the recording unit and ballot piece while the perforators engage the material for advancing the material by the perforator to a new position to be engaged by the perforators after their retraction.

6. In a voting machine, a recording unit, comprising means for movably supporting a length of perforatable material, a plurality of perforators movable relative to the material, a guide leading toward said perforators, a ballot piece carrying a candidate list, selector fingers movable on said ballot piece, means for securing said fingers each adjacent a selected candidate and all pointing in one direction, the ballot piece being designed to be placed on said guide with the fingers directed toward the perforators, said ballot piece being movable on the guide to bring said fingers into engagement with the perforators in alinement therewith and to move the engaged perforators through said material, means for shifting the recording unit while the perforators are in connection with the material to effect movement of the material to a new position by the perforators, and means for retracting the perforators and reversely shifting the unit.

7. In a voting machine, a plurality of pins supported movably in a carrier, means providing a support for a plurality of counting strips each in alinement with the point of a corresponding pin, a voting unit designed to be set selectively by a voter means for supporting and moving the unit relatively to the pins to actuate the pins in correspondence to the selection of the voter and effect penetration of the points of the selected pins into the corresponding strips, means for shifting the pin carrier while the pins are in the strips to effect a desired movement of the strips, means for withdrawing the pins from the strips, and means for restoring the pin carrier to normal position.

8. In a voting machine, a plurality of pins supported movably in a common carrier, means providing a support for a plurality of ribbons, each representing a different candidate, the ribbons being held by said support each in position opposite the point of a corresponding pin, a ballot unit completely separable from the machine and adapted to be movably supported in the machine, said unit having elements for coaction with said pins, said elements being selectively movable into position for coaction with the pins when the unit is in the machine for the selective advance of certain pins to pierce the corresponding ribbons, means by which the common carrier may be shifted from a normal position while the certain pins have penetrated the corresponding ribbons to effect advancement of the ribbons, means for withdrawing the pins from the ribbons, and means for reshifting the common carrier to its normal position.

9. In a voting machine, means providing a support for a plurality of record receiving ribbons, a guide means for said ribbons, a frame mounted for movement in a direction to feed said ribbons over said guide means, said frame including a ballot part guide, a plurality of punch markers reciprocably supported on the frame and directed toward said ribbon guide and the ribbons passing thereover, means for releasably gripping and holding said ribbons, a ballot part adapted to be placed upon the ballot guide for movement relative to said markers, said ballot part including a plurality of changeable candidate indicators and said indicators when in candidate indicating position being alined with corresponding candidate ribbon punching markers when the ballot part is on the ballot guide, and mechanism constructed and arranged for effecting in timed sequence, after the selected markers have been projected through the ribbons by the candidate indicators, release of said ribbon gripping means, the movement of said frame while the markers are in engagement with the ribbons to effect the shifting of the ribbons by the markers, the re-gripping of the ribbons, the retraction of the markers from the ribbons and the reverse movement of the frame to its initial position.

10. In a voting machine, means for supporting in side by side relation a plurality of candidate record ribbons, a guide over which said ribbons pass, means adjacent one side of the guide for gripping and holding the ribbons, a frame structure oscillatably supported adjacent the guide for movement transversely thereof, the frame structure having a pin guide movable across the ribbon guide, a plurality of marker pins carried by the frame structure and supported in the pin guide for movement into marking engagement with the ribbons, a ballot piece, track means for supporting the ballot piece for movement toward said markers to effect projection of the markers toward and through the ribbons, said ballot piece including a plurality of selective candidate indicators, said indicators when in candidate indicating position engaging a marker when the ballot piece is moved toward the markers, for shifting the engaged marker into engagement with a candidate ribbon, a single control shaft rotatably supported in the machine and means coupled with and operated by said shaft upon the turning of the same through a single revolution for effecting in timed sequence the successive operations of moving the ballot piece for the projection of the marker pins into the ribbons, releasing the ribbons from said gripping means, oscillating said frame to effect the shifting of the ribbons by the markers, re-gripping the ribbons, retracting the markers from connection with the ribbons, and reversely operating the frame to its former position.

11. In a voting machine, a plurality of pins supported movably in a common carrier, means providing a support for a plurality of record ribbons, each representing a different candidate, the ribbons being held in position each opposite the point of a corresponding pin, a ballot unit completely separable from the machine and adapted to be movably supported in the machine, said unit having elements for coaction with said pins, said elements being selectively movable into position for coaction with the pins when the unit is in the machine for the selective advance of certain pins to pierce the corresponding ribbons, means by which the common carrier may be shifted from a normal position while the certain pins have penetrated the corresponding ribbons to effect advancement of the ribbons, means, moved by the pins when the same are advanced by the ballot piece, for retracting all of the ribbon penetrating pins as a unit from the ribbons,

and means for reshifting the common carrier to its normal position.

12. In a voting machine, means providing a support for a record strip of sufficient proportions to receive a record of all votes cast, a movable strip marker spaced from the strip and supported for movement into recording connection therewith, a ballot element having a candidate indicating finger movable into and out of candidate indicating position, said finger having a portion designed for co-operative connection with said marker, means facilitating the movement of said element along a prescribed path relative to said marker to effect the connection of the finger with and the movement of the marker into driving connection with said strip, means for advancing said strip in steps across the path of reciprocatory movement of the marker while the marker is connected with the strip, a single operating lever, and mechanism controlled by said lever for effecting the movement of said element and advancing said strip upon a prescribed single movement of the lever.

13. In a recording machine, means providing a support for a record receiving sheet, a body against which said sheet lies to receive a record, the sheet being movable across said body, releasable means for securing the sheet adjacent to said body, means movably supported adjacent to said body for movement relative thereto and to the sheet for forming a record on the sheet, means for moving the record forming means into marking and driving connection with the sheet, means for shifting the record forming means while it is connected with the sheet to effect the movement of the sheet by such connection, means for effecting release of the sheet by the securing means in advance of the movement of the sheet by the marking means and the resecuring of the sheet after it has been moved a predetermined distance, and means for disconnecting the marking means from the sheet and reversely moving the marking means to its former position preparatory to again moving it into contact with the sheet.

14. A recording machine of the character stated, comprising a platen member having a face across which a record receiving sheet extends, said platen being supported for a limited up and down movement, said sheet being supported for movement in the direction of movement of the platen, a releasable gripping means for the sheet disposed at one side of the platen, a marker element supported to be carried with the platen upon the movement of the latter and also supported to be shifted toward said face for contact with the sheet, means for effecting the movement of the marker toward and into driving contact with the sheet, means for retracting the marker from the sheet, means for moving the marker and platen together toward the sheet gripping means when the marker is in driving contact with the sheet whereby the sheet will be shifted with the marker and platen, means for releasing the sheet gripping means when the marker, platen and sheet are moved together, and for regripping the sheet when the platen has moved to a predetermined extent, and means for releasing the marker from engagement with the sheet and moving the platen reversely to its former position while the sheet is being gripped.

15. A vote recording machine of the character stated comprising means providing a support for a record receiving sheet, a platen having a face across which the sheet moves, a plurality of marker pins, means supporting said pins for movement toward the platen face to have contact with the sheet, each of said pins having a substantially J shaped rear end portion forming an open loop, a bar member extending through said loops and supported for movement back and forth in the direction of movement of the pins, means for shifting the pins forwardly into contact with the sheet, said bar being shifted simultaneously with the shifting of the pins, and means for reversely shifting the bar to effect the retraction of the pins from the sheet.

16. In a voting machine, a recording mechanism employing a record sheet for receiving the record, means providing a support for a record sheet a plurality of markers, a carrier common to and supporting the markers, a gripping means for holding the sheet while receiving the record of a vote, a ballot unit having elements adapted for movement to selected positions, said elements when in selected positions being adapted to have cooperative action with the recording mechanism to make the record, a track integral with said common carrier for guiding the ballot unit when operated in conjunction with the recording mechanism, a shaft, cams carried by the shaft, and mechanism coacting with the cams and so constructed and arranged as to effect, upon rotation of the shaft, in the following sequence, the actions of advancing the ballot unit to cause the engagement of the ballot unit with the selected markers and the marking and driving connection of the selected markers with the record sheet, release of the gripping means, shifting of the common carrier while the markers are connected with the sheet to effect movement of the record sheet by reason of such connection, regripping by the gripping means of the record sheet, withdrawal of the markers from the sheet, and restoring of the common carrier to its initial position.

17. In a voting machine, means providing a support for a record receiving sheet of sufficient proportions to receive a complete record of all the votes cast, a platen over which the sheet is moved, a frame mounted for movement in a direction to feed said sheet over said platen, said frame including a guide, a plurality of punch markers reciprocably supported on the frame and directed toward the record sheet and the platen, means for releasably gripping and holding said record sheet, said guide being adapted to support a ballot part for movement relative to said markers for effecting movement of certain of said punch markers into the sheet, an actuator movable into operative connection with a ballot part on the guide, and mechanism constructed and arranged for effecting in timed sequence movement of the actuator to effect the movement of the ballot part in a direction to effect the projection of the selected markers into the record sheet, the release of the gripping means, the movement of the frame while the markers are in engagement with the record sheet to effect the shifting of the record sheet by the markers, the regripping of the record sheet, the retraction of the markers from the record sheet, and reverse movement of the frame to its original position.

18. In a voting machine, means providing a support for a plurality of record receiving ribbons, each for a different candidate, means providing a support for a record receiving sheet in a position to have the ribbons disposed across

one side and of sufficient proportions to receive a record of all votes cast and recorded upon the ribbons, a platen over the face of which the ribbons and the sheet pass, individual guide means for the ribbons, a frame mounted for movement in a direction to feed said record ribbons and record sheet over the platen, said frame including a ballot guide, a plurality of punch markers reciprocably supported on the frame and directed toward the record ribbons and record sheet, means for releasably gripping and holding said record ribbons and record sheet, a ballot part adapted to be placed upon the ballot guide for movement relative to said markers, said ballot part including a plurality of changeable candidate indicators and said indicators when in candidate indicating position being alined with corresponding markers when the ballot part is on the ballot guide an activator movable into operative connection with the ballot part, and mechanism constructed and arranged for effecting in timed sequence movement of the actuator to effect movement of the ballot part in a direction to effect the projection of the selected markers through the record ribbons and the record sheet by the candidate indicators, release of the gripping means, movement of the frame while the markers are engaging the record ribbons and the record sheet to effect a movement of the ribbons and sheet by the markers, the regripping of the record ribbons and record sheet, and reverse movement of the frame to its initial position.

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