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[54] **MACHINE FOR COUNTING AND RECORDING VOTES**
7 Claims, 12 Drawing Figs.

[52] U.S. Cl..... **235/50 A,**
235/54 F

[51] Int. Cl..... **G07c 13/00**

[50] Field of Search..... **235/50, 50**
A, 50 B, 54 F, 54

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ABSTRACT: A voting apparatus for locally and remotely recording the results of voting. The vote is recorded locally by a machine having a plurality of selector tabs for operation by the voter, and a counting and recording device connected to each tab by a mechanical linkage. All the local machines are connected to a remote tabulation center. The center comprises a number of counters equal to the number of tabs with the tabs of each machine indicating the same voting proposition connected to the same counter. A switching mechanism in each counter consecutively connects the vote recorded by the tabs with the counting and recording register in the counter. A plurality of voters operating to record their vote at the same instant of time will have their votes recorded as separate votes because of the consecutive connection rather than having them recorded as a single vote.

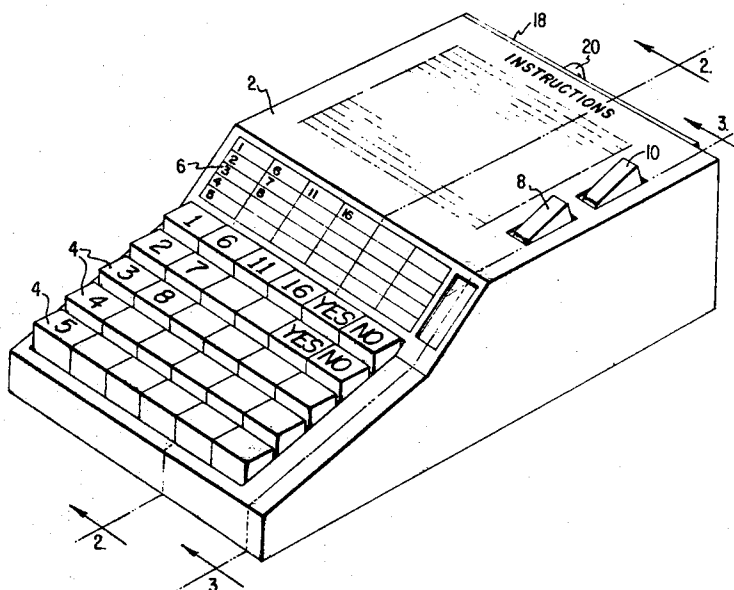


FIG. 1

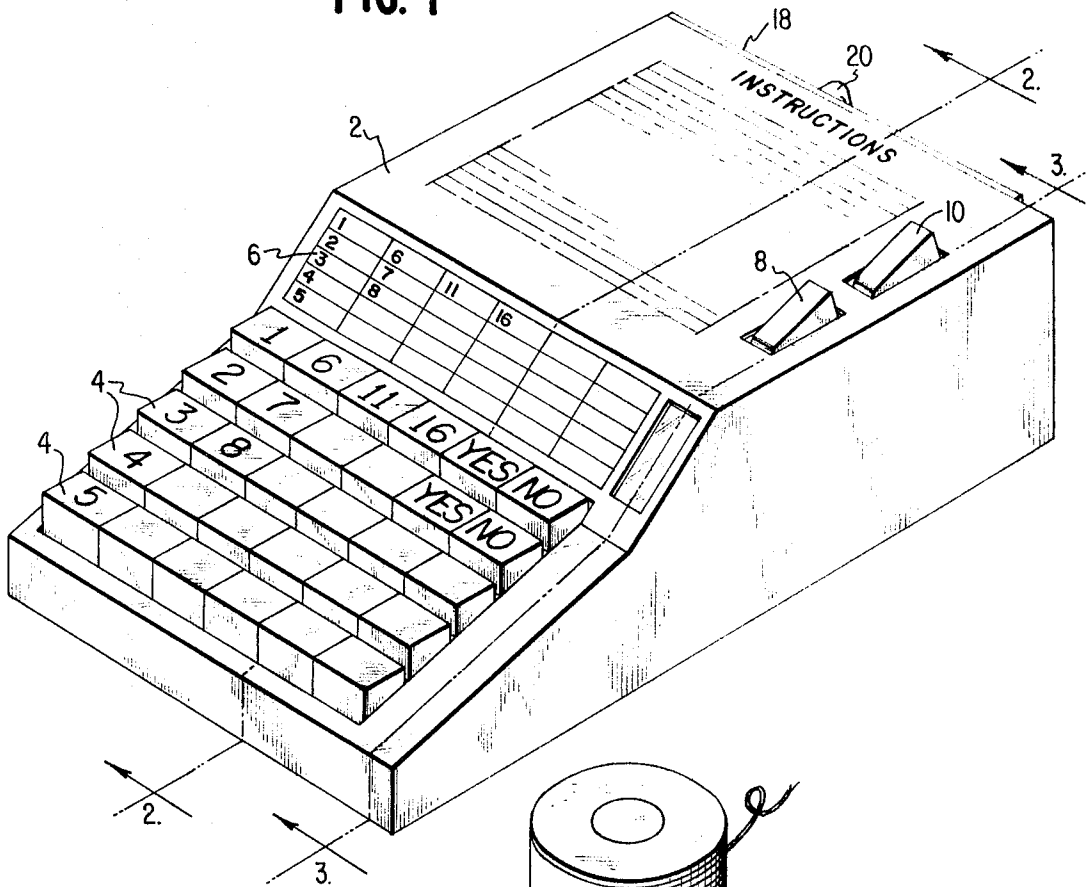
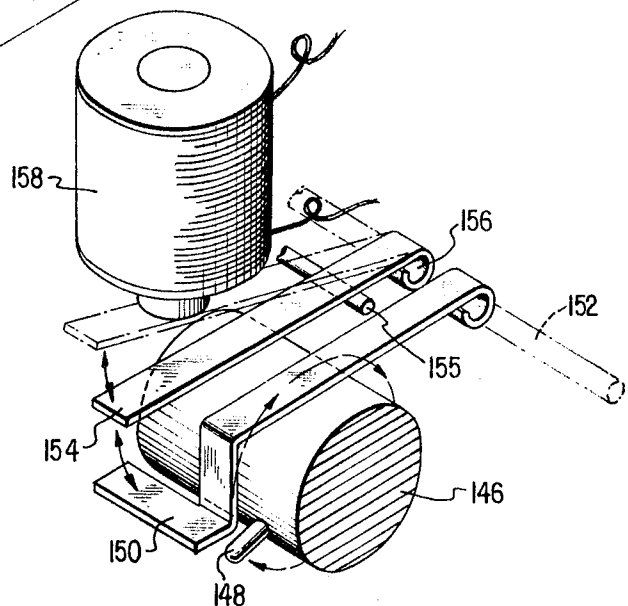


FIG. 12



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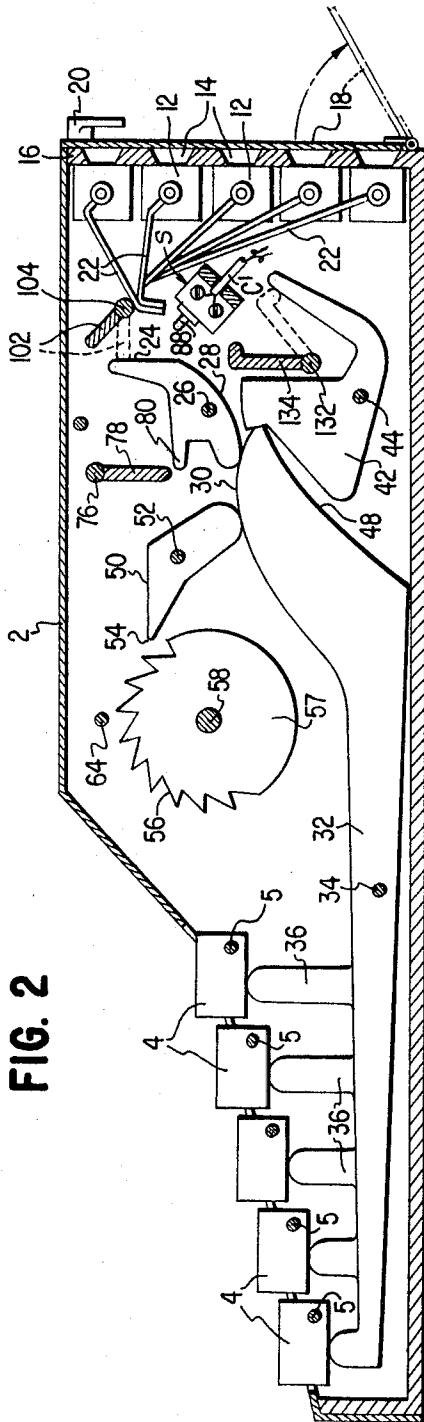


FIG. 2

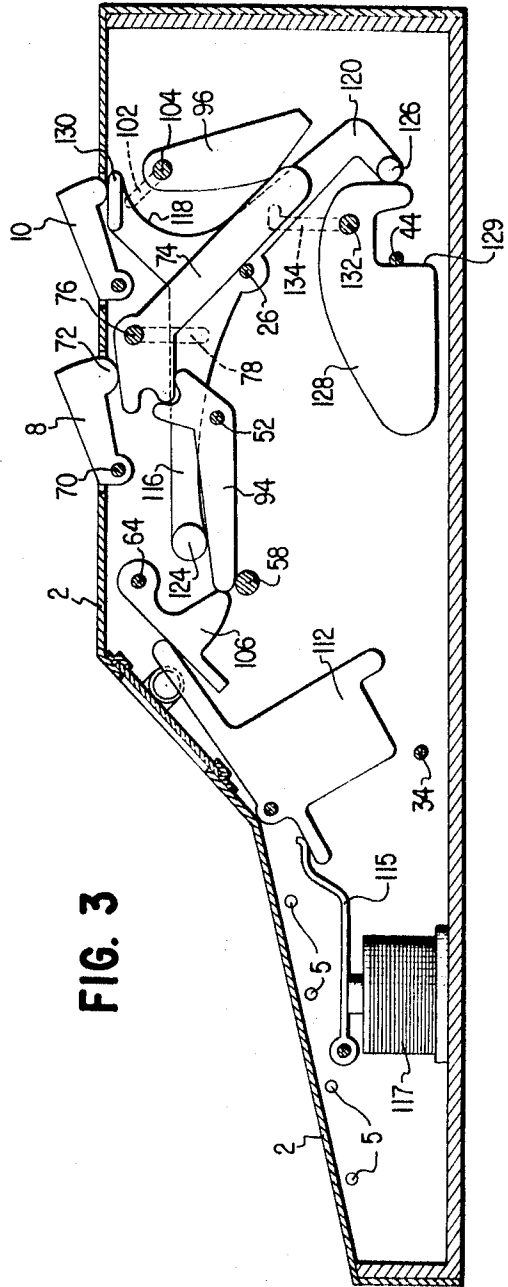


FIG. 3

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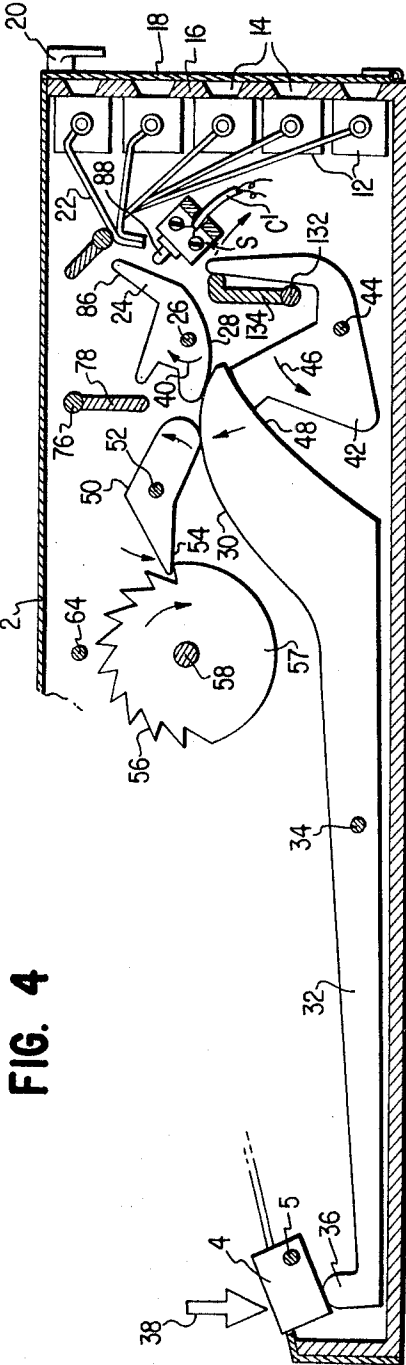


FIG. 4

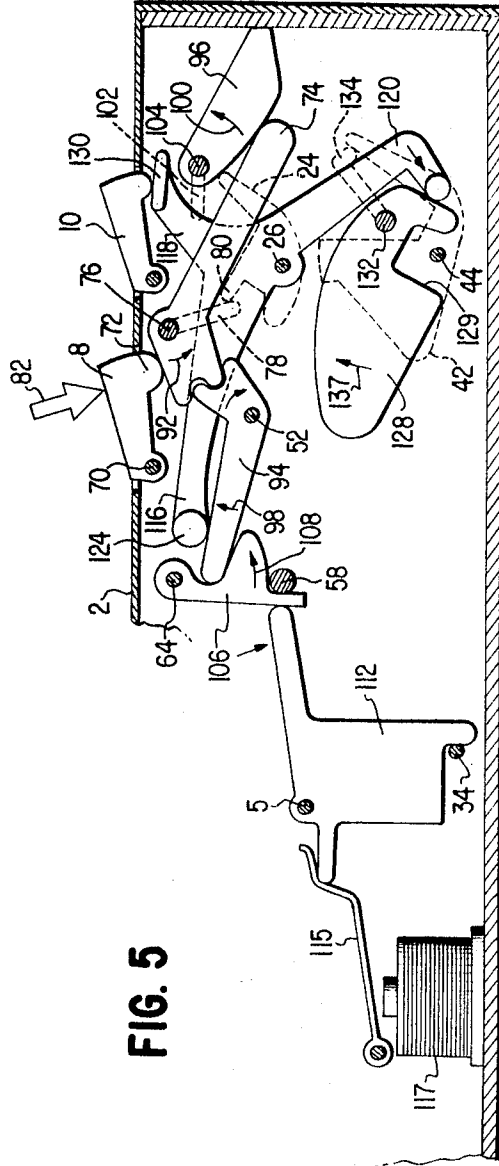


FIG. 5

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FIG. 6

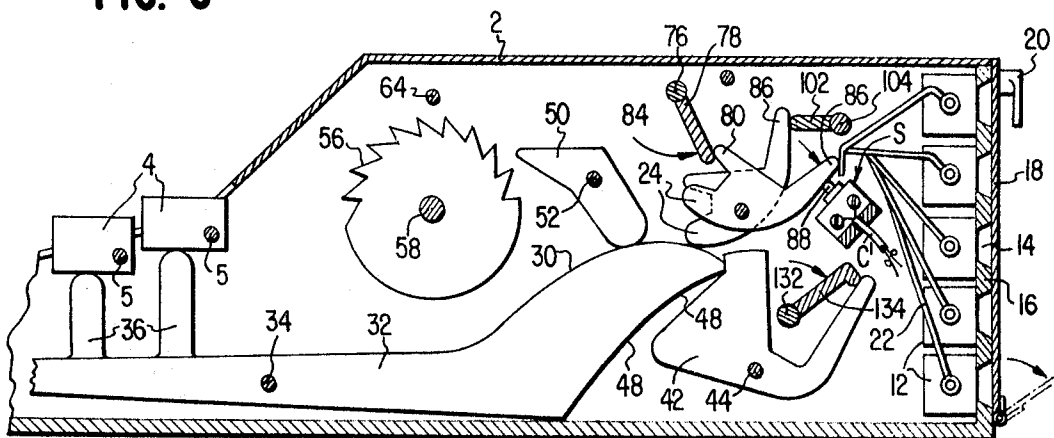


FIG. 7

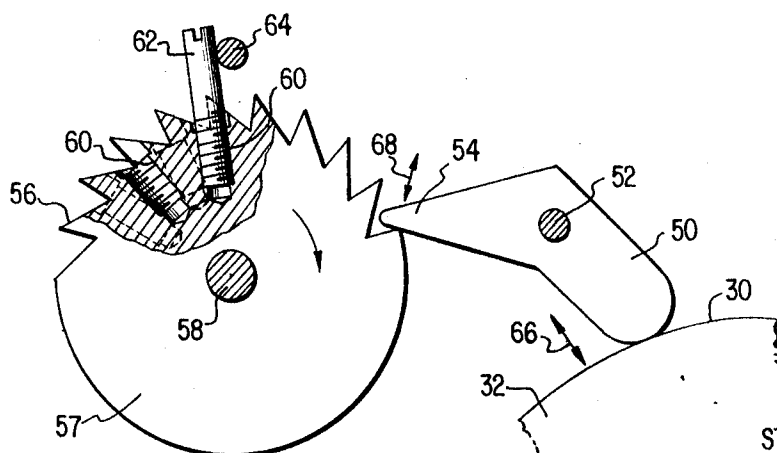
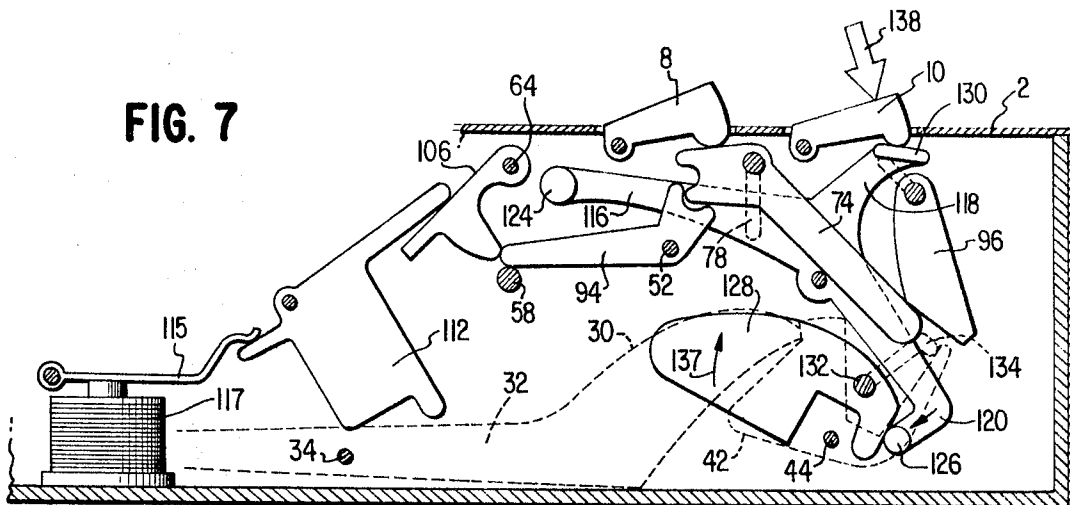


FIG. 8

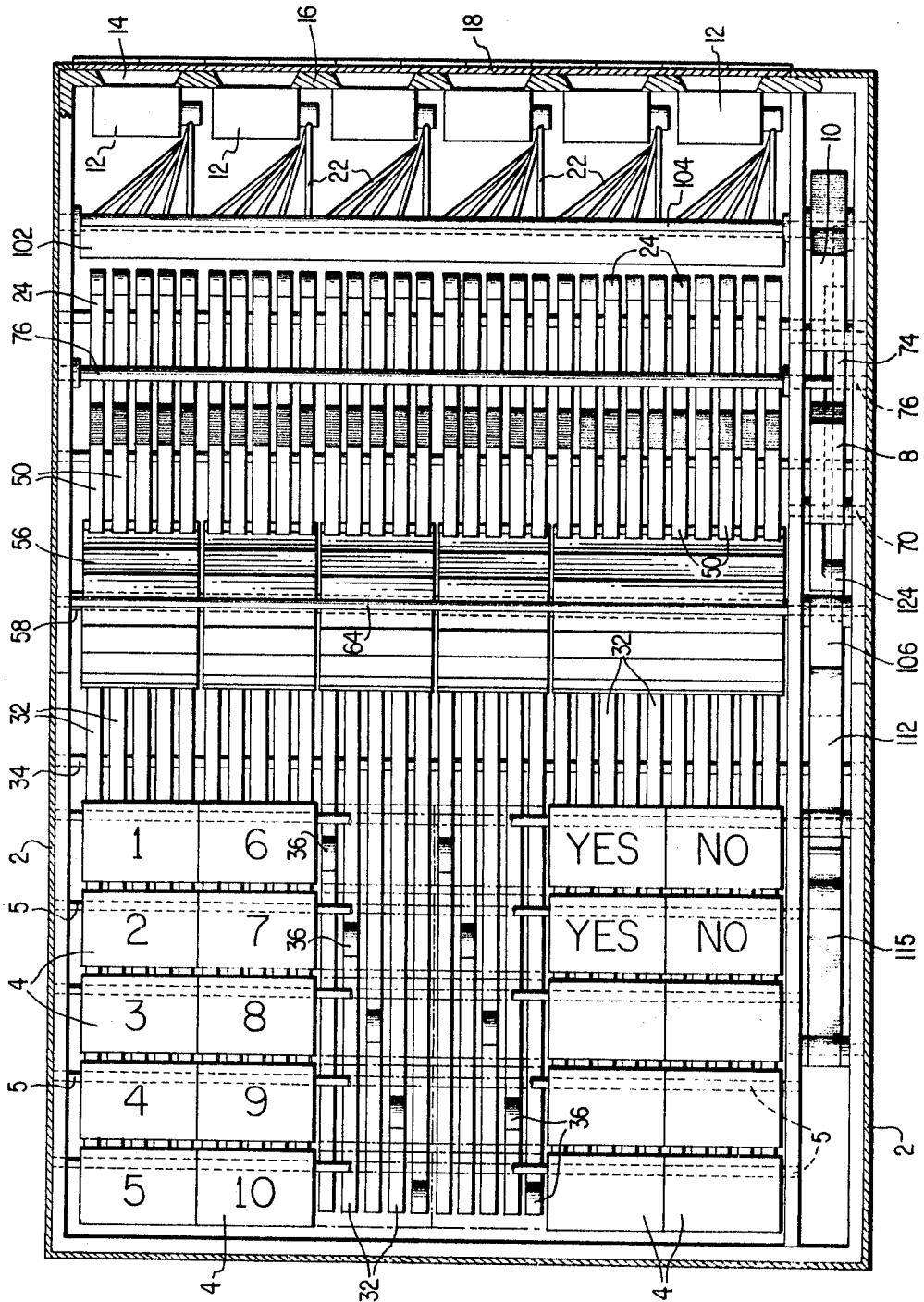
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FIG. 9



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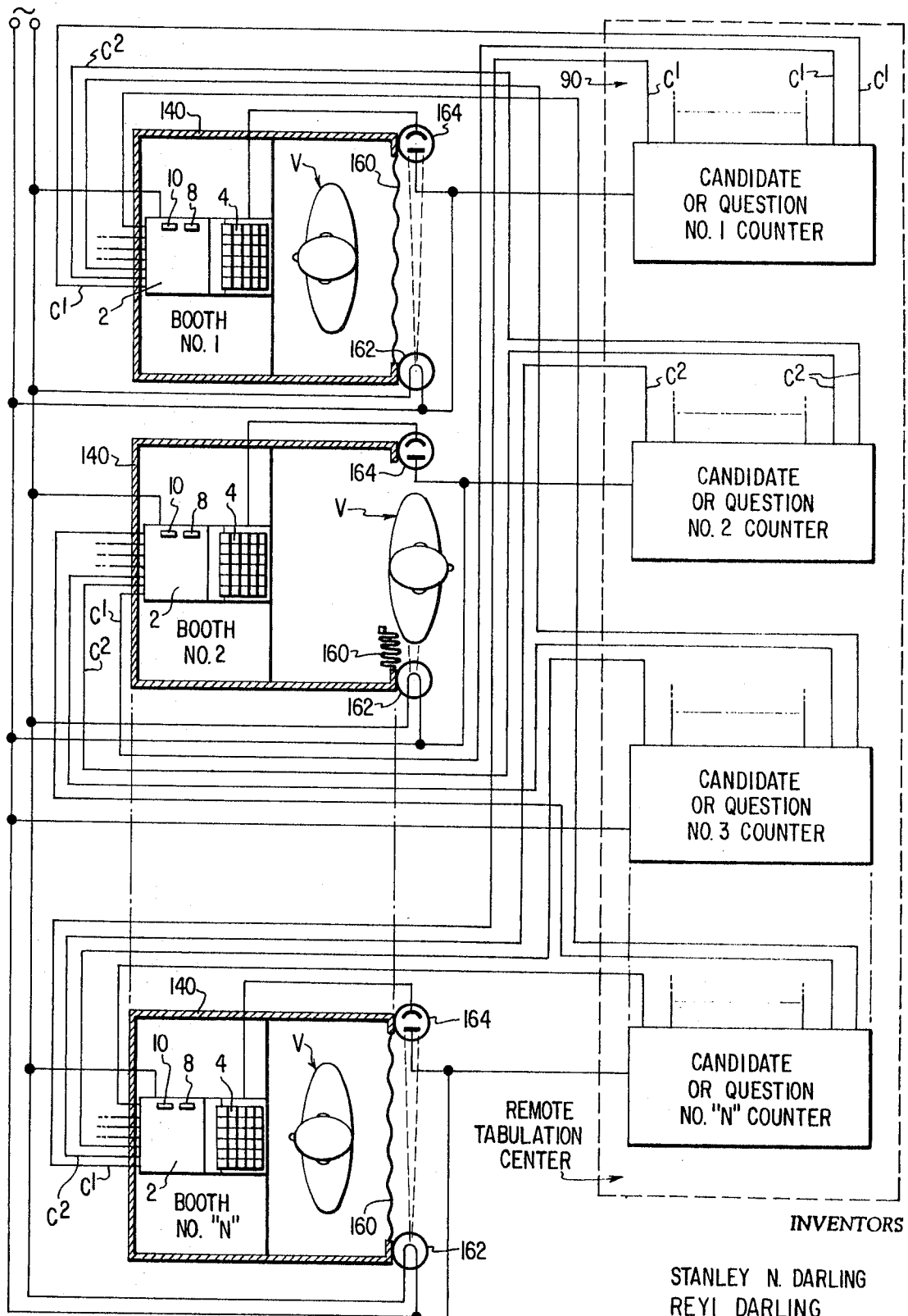


FIG. 10

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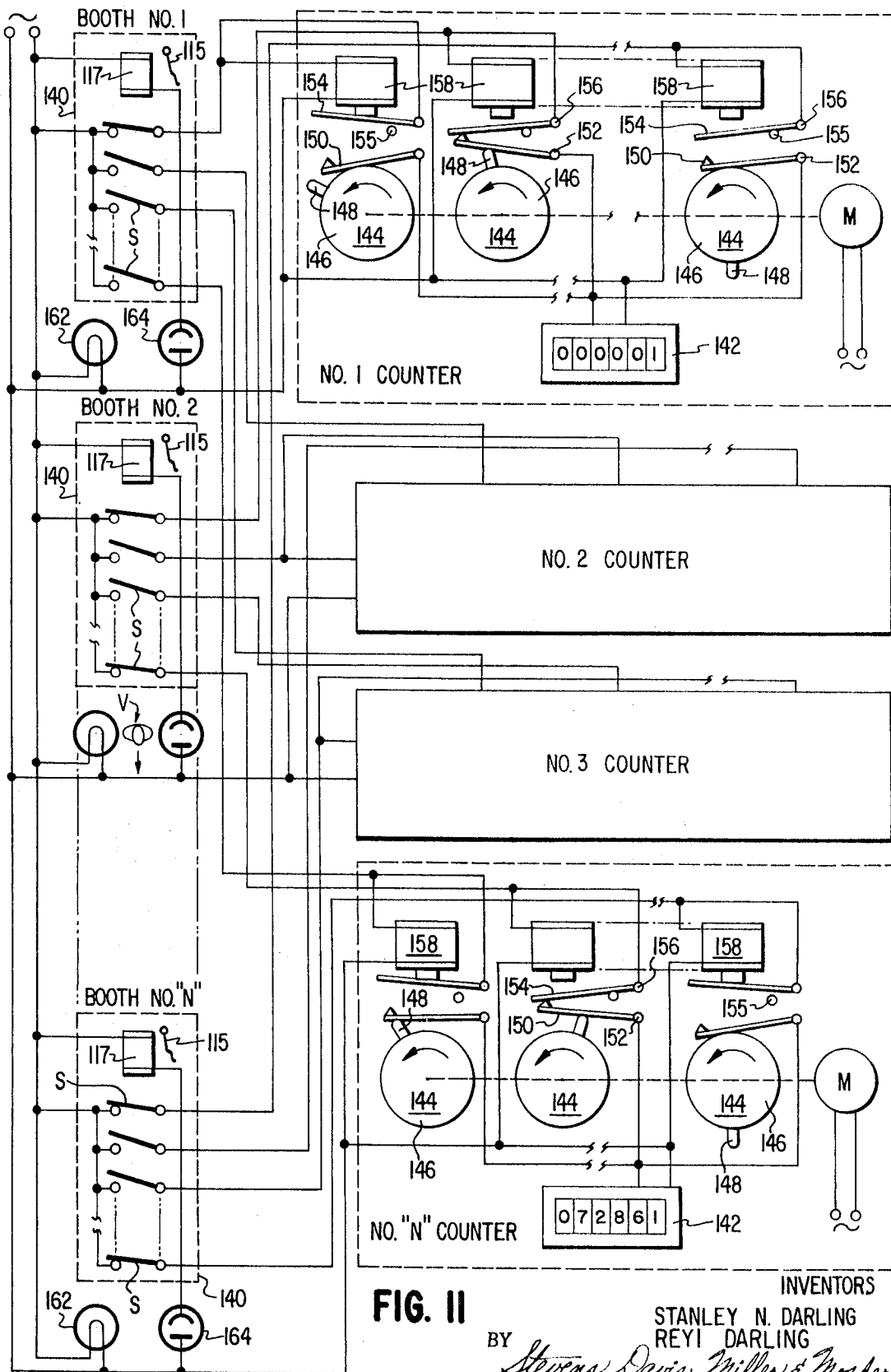


FIG. II

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MACHINE FOR COUNTING AND RECORDING VOTES

This invention relates to a voting machine and an assembly of machines for recording and counting votes.

Voting machines are used infrequently and thus provide problems of investment, storage, transportation, and preparation for use.

It is an object of this invention to provide a voting machine which is inexpensive to produce in order to avoid a large investment in machines that are seldom used.

It is a further object of this invention to produce a machine as aforesaid that is small, light, and requires no skilled personnel for preparing the machine for use.

It is a further object of this invention to produce a machine as aforesaid which can be easily programmed for various types of elections.

It is a further object of this invention to produce a machine as aforesaid which contains a mechanical counter in the machine and an electronic counter displaced from the machine which can be used to check the results of the mechanical counter.

It is a further object of this invention to produce a voting apparatus wherein an electronic counter can be used to total the counts of a plurality of machines.

These and other objects of the invention will become manifest upon reading the following description in conjunction with the accompany drawings wherein:

FIG. 1 is a perspective view of a single voting machine;

FIG. 2 is a section along the line 2-2 of FIG. 1;

FIG. 3 is a section along the line 3-3 of FIG. 1;

FIG. 4 is a section similar to FIG. 2 showing the position of the parts upon operation of a selector tab;

FIG. 5 is a view similar to FIG. 3 showing the operation of the register tab;

FIG. 6 is a view showing the register position of the tabulating linkage;

FIG. 7 is a view showing the operation of the cancellation tab;

FIG. 8 is a detail of the ratchet mechanism;

FIG. 9 is a plan view of the machine with the exterior casing shown in section;

FIG. 10 is a plan view of a voting station;

FIG. 11 shows the electric circuits and operating mechanism for the station; and

FIG. 12 is a detailed view of the switch mechanism.

A housing 2 carries, in stepped rows, a plurality of columns of selector tabs 4 pivotally mounted on rods 5 and a table 6 identifying the proposition related to each tab, such as the name of a candidate and/or matter relating to a constitutional amendment. The top of the housing is provided with instructions relating to the operation of the machine and/or matter relating to the vote. A register tab 8 and a cancellation tab 10 extend from the top. Pressing down on tab 8 will register the voter's selection. In the event the voter has a shift of choice, pressure on tab 10 will cancel all the selections and provide a new opportunity to make other selections. The rear of the housing carries a plurality of counters and registers 12 which can be viewed through windows 14 supplied in the rear wall 16. A cover 18 is pivotally mounted on the rear wall and is locked against the wall by a lock 20 to prevent the vote from being viewed by unauthorized persons.

The number of registers 12 is equal in number to the tabs 4, and they are arranged colinearly with the columns of the tabs. Each register is provided with an operating arm 22 for operation by a cam 24 pivotally mounted at 26. The cam is mounted for pivoting movement between an inoperative position as shown in FIG. 2 and a storage position as shown in FIG. 4. The cams are formed with a camming surface 28 for engagement by a cam surface 30 formed on one end of a lever 32 pivotally mounted on a rod 34. The lever is provided with an extension 36 for engagement by a tab 4. Each tab and corresponding aligned cam 24 in each column is provided with a lever 32 with the levers laterally spaced to lie in a zone between planes

defining the sides of the tabs. In the form of the invention illustrated, the width of each tab 4 is such as to cover five levers since this is the number of tabs in each column. Pressing on a tab 4, as indicated by the arrow 38 in FIG. 4, will raise cam surface 30 to pivot cam 24 in the direction of arrow 40 to the storage position. A lock 42 pivotally mounted on rod 44 will simultaneously be released from the position illustrated in FIG. 2 and will move in the direction of the arrow 46 to engage the surface 48 of lever 32 and lock the lever in the position shown in FIG. 4.

The cam surface 30 is also in contact with a ratchet lever 50 which is pivotally mounted on a rod 52 and is formed with a nose portion 54 for engagement with a ratchet 56 with a weighted portion 57 pivotally mounted on a rod 58. The ratchet is provided with a plurality of threaded bores 60 for reception of a pin 62. A limit stop in the form of a rod 64 is secured to the walls of the housing 2. Movement of the cam surface along the directions indicated by the double headed arrow 66 will move the nose portion along the direction of the double headed arrow 68 to rotate the ratchet and move pin 62 against stop 64. In the event that two or more selections are permissible the pin will be inserted in the following threaded bore thereby allowing two selections, or in successive ones of the following bores to allow added selections. In the event the proposition being voted on requires a YES or NO answer, a single ratchet of a width equal to two columns can be substituted for ratchets 56.

The register tab is pivoted on a rod 70 and is formed with an extension 72 for engagement with a scanning lever 74 secured to a rod 76. A lever 78 is secured to rod 76 and in the nonactive position of tab 8 and in the storage position of cam 24 (FIG. 4), the end of the lever is aligned with a projection 80 of the cam 24. Pressing on register tab 8 in the direction of arrow 82 will swing lever 78 in the direction of arrow 84 (FIG. 6) and into contact with all the projections 80 of the cams which have been set in the storage position to rotate the cams in the direction of arrow 84. Rotation of the cams forces projection 86 into actuating engagement with arm 22 and with switch operator 88 of switch S to operate counter and register 12 and to close a circuit to a master counter and register 90, which may be located in the same room as the voting machines or may be located in some remote city. The pivoting of tab 8 will also swing scanning lever 74 about pivot 76 in the direction of arrow 92 to pivot levers 94 and 96 in the directions of arrows 98 and 100. Pivoting of lever 96 from the neutral position shown in FIG. 3 to the lock position shown in FIG. 5 will rotate locking lever 102 from the neutral position shown in solid lines in FIGS. 2 and 4 to the lock position shown in dotted lines in FIGS. 2, 5 and 6. In the lock position the locking levers lock cams 24 in the inoperative position as shown in FIG. 6. The locking levers are fixed on shaft 104 rotatably mounted in housing 2. Pivoting of lever 94 from the neutral position shown in FIG. 3 to the locking position shown in FIG. 5 will release a lock lever 106 to swing in the direction of arrow 108 into contact with rod 58. In this position the lock lever 106 holds captive one arm of lever 94 to thereby lock levers 74 and 96 in the position shown in FIG. 5. The release of lock lever 106 frees the weighted master lock lever 112 to drop against stop 114 and secure lever 106 in the position shown in FIG. 5. The lever 112 pivots the armature 115 of an electromagnet away from the field 117 as it drops into the locking position.

A cancellation lever having arms 116, 118 and 120 is pivotally mounted on rod 26. Arm 116 is provided with an extension 124 for engagement by lever 94 and arm 120 is provided with an extension 126 for engagement with a lever 128. Arm 118 is provided with an extension 130 for engagement by cancellation tab 10. Lever 128 is secured to a rod 132 which rotates in suitable bearings in the sidewalls of the machine, and a trip gate 134 is secured to the said rod 132 for rotation with lever 128. The lever 128 is formed with a shoulder 129 to engage rod 44. Rotation of lever 94 during the register action will rotate the cancellation lever clockwise by the engagement

of lever 94 with the extension 124. Engagement of lever 128 by the extension 126 will move the lever in the direction of arrow 137 as shown in FIGS. 5 and 7 to thereby rotate lock 42 and return it to the position shown in FIG. 2. In this position lever 32 is allowed to return to the start position.

In the event the voter desires to change his choice he may do so before operating the register key by pressing on cancellation tab 10, as indicated by the arrow 138 in FIG. 7, to rotate the cancellation lever in the clockwise direction and reset all the selector tabs.

In FIG. 10 there is illustrated a voting station comprising a plurality of booths 140, each containing a voting machine connected to a master counter and register or a remote tabulation center 90. The center comprises a plurality of counters equal in number to the number of selector tabs 4. All the similar selector tabs of each machine such as indicated by numeral 4 in FIG. 1 are connected by cables C¹ to the same counter shown as No. 1 counter in FIGS. 10 and 11. All tabs 2 are connected to counter No. 2 by cables C², etc.

Each counter comprises a counting register 142 and a switching distributor for successively connecting the switches S with the register. Each switching distributor comprises a continuously rotating motor M connected to rotate a plurality of switch actuators 144. Each actuator comprises a disc 146 carrying an extension 148 with the extensions on adjacent discs being angularly displaced. A switch contact 150 is pivotally mounted at 152 to be engaged and reciprocated by the extension 148. A cooperating switch contact 154 is pivotally mounted at 156, and held adjacent the electromagnet by a stop 155, for engagement by contact 150. An electromagnet 158 is provided for each pair of contacts and is in a series circuit with a switch S. Closing of switch S as heretofore described will energize the corresponding electromagnet 158 and corresponding switch contact 154. In the event a plurality of voters simultaneously operate the register tabs and have selected to vote for the same proposition, the selected electromagnets 158 and contacts 154 of the common counter will become energized. Rotation of the discs by the motor M will carry extensions 148 into engagement with contact 150 and will pivot the contact into engagement with contact 154 to complete a circuit through counting registers 142 and record the vote. However, the extensions are angularly spaced so that only one set of contacts is closed at any one moment. The length of each extension 148 is such that the contact 154 will be carried into the flux field of the electromagnet and be attracted and held away from further contact with 152. The vote at each booth will therefore be recorded in sequence and the upper contacts 154 will remain attracted to the core of the electromagnet 158 so long as a switch S is closed.

Each booth is supplied with a curtain in order that the voter be given seclusion while voting. The entrances to each booth is guarded by a light 162 and a photocell 164 in series circuit with the field 117. As the light path between the light and cell is broken by a voter V entering and leaving the booth the field 117 is energized to attract armature 115. Movement of the armature will pivot weighted lock lever 112 from the locking position shown in FIG. 5 to the releasing position shown in

FIG. 3 whereby the linkage moves to the neutral position shown in FIG. 2 with cam 24 away from switch operator 88 whereby to open switches S and prepare the apparatus for the next voter.

5 What we claim is:

1. A voting machine for counting and recording the votes cast on a given proposition comprising a housing, a key board carried by the housing and containing a plurality of selector tabs, a plurality of counters and recorders carried by the housing, storage means for storing the selection of each tab, means connecting each tab with the storage means for storing each selection, means for simultaneously recording all the selections in the storage means on the appropriate counter and recorder, and switch means operable by the storage means for connecting the machine to a remote tabulation center for recording the votes cast in the machine, wherein the storage means comprises a storage cam pivotally mounted adjacent each counter for pivoting between an inoperative and a storage position, and means locking each cam in a storage position.

2. A device as defined in claim 1, further including means for withdrawing the selection stored in said storage means.

3. A device as defined claim 1, wherein the selector tabs are arranged in a plurality of columns, and the counters and recorders are arranged in a like plurality of columns and colinear with the columns of tabs.

4. A device as defined in claim 1, wherein the counters are mounted on an end wall of the housing, a window through said wall for observing the recorded tally on each counter, a closure wall pivoted for closing said windows and for uncovering said windows, and means locking said closure wall in window-closing position.

5. A device as defined in claim 1, wherein the means connecting each tab with a cam comprises a lever, means on one end of the lever for engaging a selector tab, cam means on the other end of the lever for engaging the storage cam, and means pivotally mounting the lever between the ends thereof.

6. A voting apparatus comprising a plurality of voting machines, each machine having a plurality of selector tabs for designating respective votes, a remote tabulation center having a number of vote counters equal in number to the number of selector tabs, each vote counter serving to count a given vote signal received from each of said voting machines, and means for consecutively recording and counting in said center the votes recorded in the plurality of voting machines, said means for consecutively recording and counting including a motorized switching distributor means for consecutively connecting each of said voting machines to said recording means, thus preventing the simultaneous recordation of more than one vote signal and the consequent loss of vote signals wherein said switching distributor means comprises a motor, a plurality of switch contacts, and cam means rotated by the motor for consecutively closing said switch contacts.

7. A device as defined in claim 6, further including means for locking one of said switch contacts out of contact with the other switch contact after a vote has been recorded.

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