

March 23, 1965

R. T. SWANSON

3,174,685

VOTING MACHINE

Filed Oct. 17, 1962

2 Sheets-Sheet 1

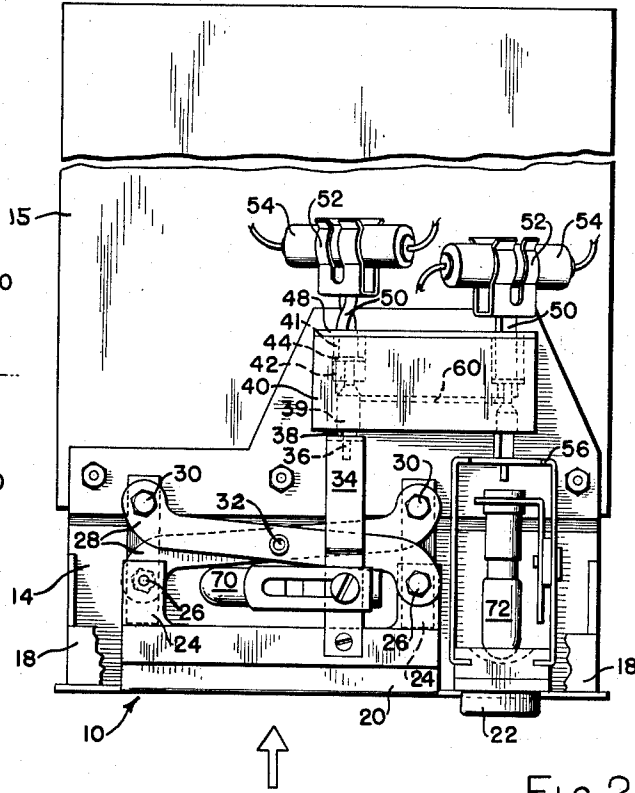
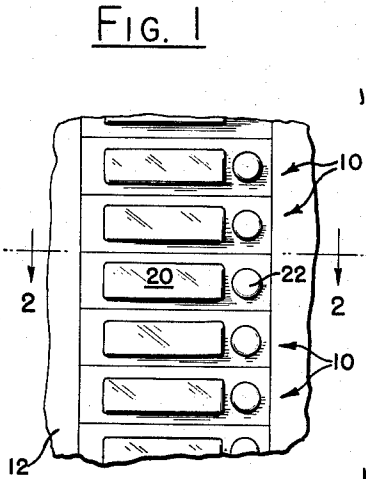


FIG. 2

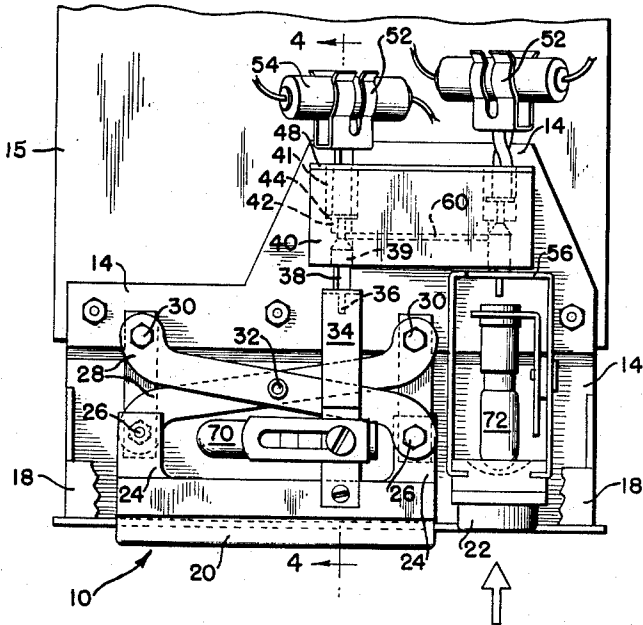


FIG. 3

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FIG. 5

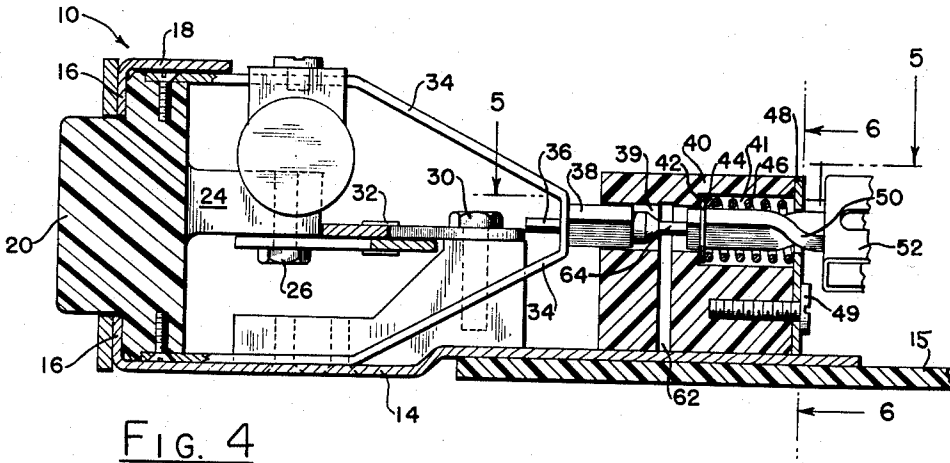
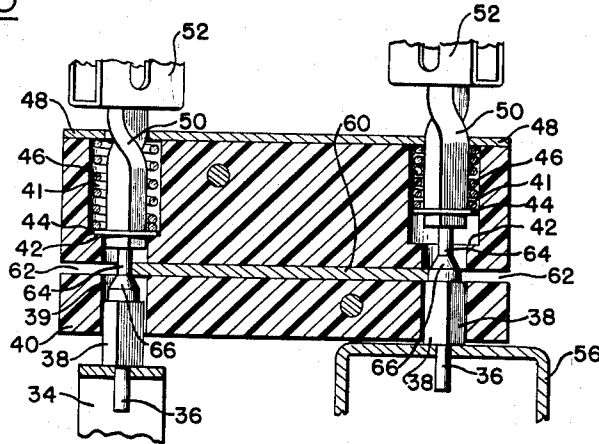


FIG. 4

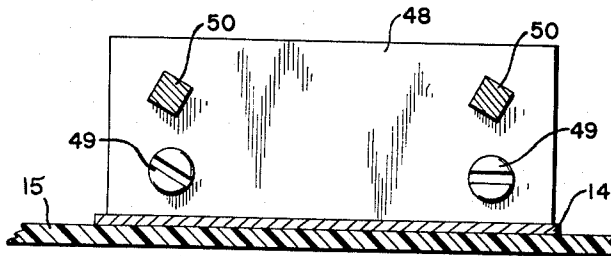


FIG. 6

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VOTING MACHINE

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4 Claims. (Cl. 235-54)

This invention relates to voting machines, and more particularly to improved vote selection and cancellation means, to be actuated by the voter.

One object of the invention is to provide an improved presentation of the voting facility.

Another object is to provide in a machine as aforesaid an improved "push-button" type vote selection device.

Another object is to provide in a device as aforesaid an improved switch arrangement employing means for converting lineally directed push or pull button movements into rotary output motions.

Other objects and advantages of the invention will appear from the specification and the accompanying drawings wherein:

FIG. 1 is a fragmentary front elevational view of a voting machine face embodying a group of vote selection and cancellation devices of the invention;

FIG. 2 is a plan view on enlarged scale of one of the devices of FIG. 1; taken for example along line 2-2 of FIG. 1 and showing the vote selection member in actuating position and the vote cancellation member in its normal or inactive position;

FIG. 3 corresponds to FIG. 2 but shows the vote selection member in inactive position and the vote cancellation member in actuating position;

FIG. 4 is an enlarged scale sectional view taken on line 4-4 of FIG. 3;

FIG. 5 is a fragmentary section taken on line 5-5 of FIG. 4; and

FIG. 6 is a sectional view taken on line 6-6 of FIG. 4.

As shown herein the mechanism of the invention is adapted to be fabricated into the form of a self-contained module such as indicated generally at 10, pluralities of which may be slip-fitted into appropriate cavities in the face of a voting machine as indicated at 12, whereby the modules are arranged in vertical columns and horizontal rows. Each module includes a base plate 14 bolted to an insulation plate 15 and having an upturned front framing panel 16 terminating in a reverse bent top flange 18 for stiffening purposes. The front panel 16 is apertured to accommodate in free sliding relation therethrough a vote selection bar 20 and a vote cancellation button 22. These members are carried by separate, movable frame devices so as to be reciprocable in and out of the apertures of the front panel. In turn, lineal motions of the frames are transmitted to devices converting these motions into rotary motions, as will now be explained in detail.

In the case of the vote selection bar 20, because of its lateral elongation it is preferably formed with a pair of pivot posts 24, 24 adjacent its opposite ends, and each post is pivotally connected as at 26 to one end of a scissors link 28 which is pivotally mounted at 30 upon the base plate 14. The links are centrally interconnected at 32 by a pivot pin whereby motion of the bar 20 will be at all times in squared relation to the front panel. A strut device 34 extends from the bar 20 and rearwardly therefrom to receive in journalled relation at 36 the stub shaft end of a thrust bar 38. The thrust bar 38 is of polygonal sectional form and extends into a bore 39 formed within a bearing block 40 which is contra-bored as indicated at 41 from its opposite end to provide an

internal shoulder 42. The thrust bar 38 is formed with an enlarged shoulder 44 against which a compression spring 46 is seated. A guide plate 48 is fixed to the rear end of the block 40 as by means of screws 49, and maintains the spring 46 under compression. Thus the spring constantly biases the thrust bar, strut, and selection bar assembly toward the left as viewed in FIG. 4, or to "normal" or inactive position.

In the region of the guide plate 48 the thrust bar is twisted as indicated at 50 and the aperture through the guide plate 48 is shaped to complement the sectional form of the thrust bar portion 50 while accommodating it in free sliding relation therethrough. As indicated at 52, the outer end of the bar portion 50 carries the output member which is to transmit the voter's action to the mechanism for entering his selection. For example, as shown in FIGS. 2, 3 the member 52 carries a mercury switch 54 so as to rotate it alternately between "open" and "closed" switch contact positions. Thus, voter depression of the bar 20 against the action of the spring 46 will cause the switch to either open or close, according to the switch arrangement, for appropriate control of the associated circuit for entering the voter's selection into the voting machine. Whereas in the drawing herewith the thrust bar is of rectangular sectional form, it will be appreciated that it may be of any other suitable key-shaped sectional form, and may be machined or cast or otherwise fabricated to provide the "twisted" configuration.

As stated above, when a "cancel" button is provided as at 22, a similar actuating mechanism may be employed to include a strut arrangement 56 connecting to a similar thrust bar and spring and guide plate arrangement, as in connection with the selection bar 20. The output member again may be of any preferred form, such as another mercury switch, or the like, to control a mechanism for cancelling the previously made selection.

To prevent simultaneous actuation of both the selection bar 20 and the cancel button 22, an interlock plate as shown at 60 is provided to slide within a slot 62 formed in the bearing block 40. The push bars 38, 38 are necked down as shown at 64, 64 in the region of the interlock plate and the latter is dimensioned to fit between one of the necked portions while resting against a full size rounded portion of the other bar. The bars are bevelled as shown at 66, 66 to facilitate shifting of the interlock plate to accommodate depression of either one of the selection bar and cancel button members, while preventing simultaneous actuation thereof. Indication lights may be provided as indicated at 70 and 72 behind the selection bar and the cancel button, respectively, to provide visual indication of the voter's use of either device; energization of the lamps being controlled by any suitable associated circuitry.

It will, of course, be appreciated that whereas only one specific form of the invention has been illustrated and described in detail hereinabove, various changes may be made without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A voter's choice registering device comprising a base slidably supporting a pair of members each to be manually displaceable in a straight line direction, said members each having a thrust device rotatably connected thereto and extending therefrom in the direction of manual displacement, said thrust devices being of key-shaped sectional forms and each having an intermediate portion thereof twisted about the long axis thereof, a slide bearing block mounted on said base and having openings therethrough complementing and embracing said twisted intermediate portions of said thrust members, an elec-

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trical switch device fixed to the extending end portion of each of said thrust members, whereby lineal manual displacements of said members will result in angular rotations of said thrust members and of said switch devices thereby actuating the latter, and a motion interlock device operably associated with said thrust members, said interlock device comprising a strut carried by said bearing block for free sliding movements of said strut in directions transversely between said thrust members, said thrust members being each formed with an indent and a cam surface at one end thereof, the parts being so dimensioned and arranged that when one of said thrust devices is manually displaced the indent portion thereof is out of registry with said interlock strut whereby said thrust device holds said interlock strut in locking position in the indent portion of the other thrust device.

2. A voter's choice registering device comprising a base slidably supporting a pair of members each to be manually displaceable in a straight line direction, said members each having a thrust device rotatably connected thereto and extending axially therefrom in the direction of manual displacement, said thrust devices being of key-shaped sectional forms and each having an intermediate portion thereof convoluted about the rotation axis thereof, spring means bearing upon said base and against said thrust members thereby biasing the latter towards "normal" positions, a bearing device mounted on said base and having openings therethrough complementing the sectional shape of and embracing said convoluted intermediate portions of said thrust members, a control device fixed to the extending end portion of each of said thrust members, whereby lineal manual displacements of said members against said spring means will result in angular rotations of said thrust members and of said control devices thereby actuating the latter, and a motion interlock device operably associated with said thrust members, said interlock device comprising a block member slidably carried by said bearing device for free sliding movements of said block in directions transverse to said thrust members, said thrust members being each formed with an indent and a cam surface, the parts being so dimensioned and arranged that when one of said thrust devices is manually displaced the indent portion thereof is out of registry with said interlock block whereby said thrust device holds said interlock block in locking position in the indent portion of the other thrust device and thereby prevents manual displacement thereof.

3. A voter's choice registering device comprising, in combination,

- a base plate having an upstanding panel,
- a bearing block mounted on said base in spaced relation from said panel,

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a thrust bar slidably received in said bearing block with its axis extending perpendicular to said panel, said thrust bar projecting completely through said bearing block to present an inner end on that side of the bearing block facing said panel and an outer end on the opposite side of the bearing block, said thrust bar having an intermediate portion twisted about its axis, a guide plate secured to said opposite side of the bearing block and having an opening receiving and complementing said intermediate portion of the thrust bar, said bearing block being recessed adjacent said guide plate, and spring means received in such recess and acting between said guide plate and said thrust bar to normally urge the inner end of the thrust bar toward said panel,

said panel having an opening opposite said thrust bar, a selector member slidably received in said panel opening, a strut device carried by said selector member and extending therefrom into engagement with said inner end of the thrust bar, and a switch device carried by said outer end of the thrust bar.

4. The device according to claim 3 including a second thrust bar projecting through said bearing block and said guide plate, and being formed similarly to the first mentioned thrust bar,

a second switch device carried by the outer end of the second thrust bar,

a second selector member slidably received in an opening in said panel opposite said second thrust bar,

a second strut device carried by said second selector member and extending therefrom into engagement with the inner end of said second thrust bar,

each of said thrust bars having a cam knob thereon, and a blocking plate slidably received in said bearing block between said thrust bars and being of a length to be shifted by axial movement of the cam knob of one thrust bar into blocking condition to the cam knob of the other thrust bar.

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