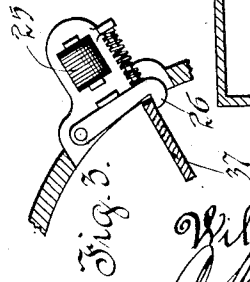
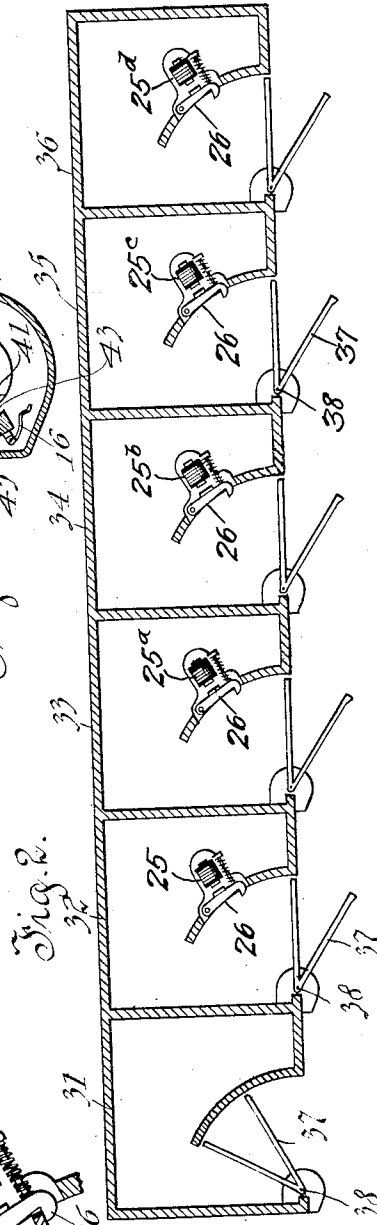
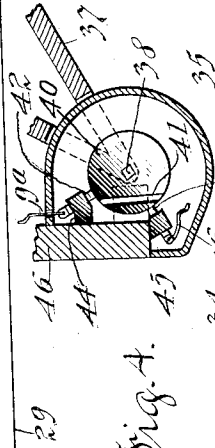
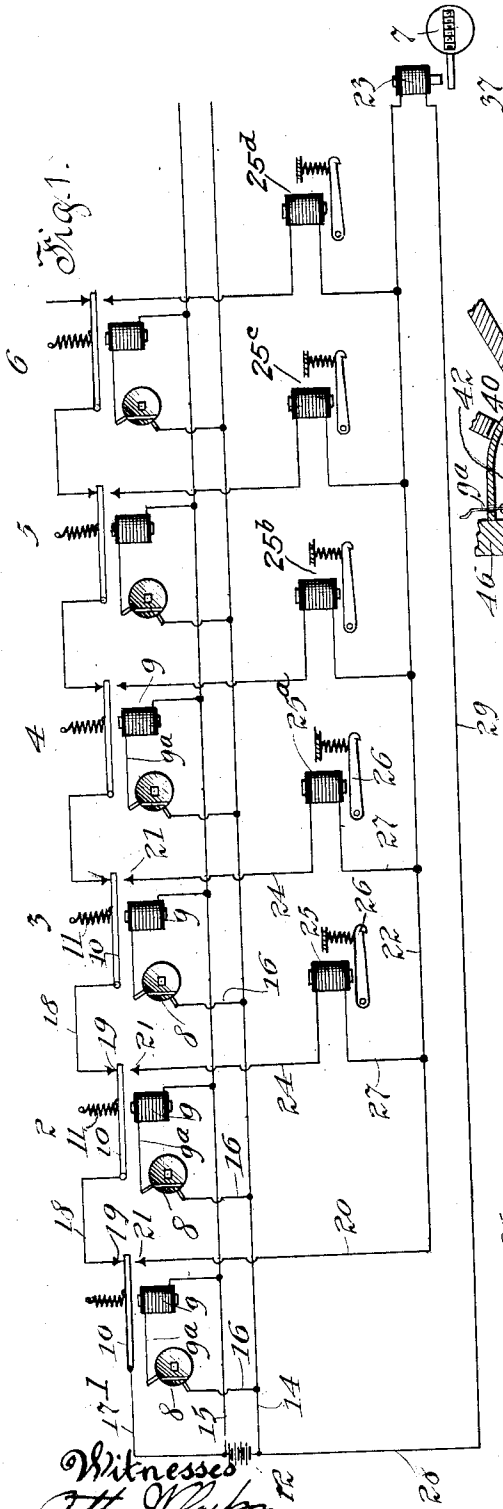


W. J. BOHAN.
 REGISTERING MECHANISM.
 APPLICATION FILED MAY 4, 1914.

Patented Nov. 6, 1917.

1,245,665.



Witnessed
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REGISTERING MECHANISM.

1,245,665.

Specification of Letters Patent.

Patented Nov. 6, 1917.

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To all whom it may concern:

Be it known that I, WILLIAM JAMES BOHAN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a certain new and useful Improvement in Registering Mechanism, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to registering mechanism, and especially to mechanism which by its registration will effect a counting or totaling action.

The principal object of the invention is to provide a registering mechanism which can be operated by any one of a series of operating mechanisms or devices. Other objects of the invention are to secure such operation automatically by simple and effective mechanism; to prevent interference between the different devices or mechanisms which are to operate the registering or counting device; to secure simplicity and compactness, and to secure the foregoing and other desirable results in a simple and expeditious manner.

In the accompanying drawings Figure 1 is a view largely diagrammatic of a registering or counting mechanism embodying my invention;

Fig. 2 is a view of a series of voting booths shown as an illustration of one type of mechanism for carrying out the invention;

Figs. 3 and 4 are views of details of construction.

Referring to the drawings, I show a series of actuating instrumentalities 1, 2, 3, 4, 5 and 6, each of which it is intended shall be able individually and automatically to actuate the same registering mechanism, as for example a counting device 7. Each of the mechanisms 1, 2, 3 and so on, conveniently comprises a switch member 8 and an electro-magnet 9 having an armature 10 controlled by a spring 11 so as to normally hold said armature away from the magnet 9. A battery 12 is shown and leads 14 and 15 are extended from the battery 12 with branches 16 running off from lead 14 to the several switches 8. The other terminal of the battery 12 is connected by a conductor 17 with the armature 10 of the magnet of the first actuating mechanism 1. Other conductors 18, 18 connect the other armatures 10, 10

with contacts 19, 19, arranged to make connection with armatures 10 when said armatures are retracted from their respective magnets. A conductor 20 extends from a contact 21 adapted to make connection with the first armature 10 when said armature is attracted by its magnet 9. Said conductor 20 is connected with a conductor 22 which extends to an electro-magnet 23 controlling the counting device 7. Other conductors 24, 24, extend from other contacts 21, 21 to electromagnets 25, 25^a, 25^b, 25^c, and 25^d which control locking and releasing devices such for example as the locking parts 26, 26. Conductors 27, 27 connect the magnets 25, 25^a, 25^b, 25^c, and 25^d with the lead conductor 22. The side of the battery connected with the conductor 14 is also connected by conductors 28 and 29 with the electromagnet 23.

In operation the closure of the first switch 8 will obviously energize the corresponding magnet 9, attracting its armature 10 and closing a circuit from the battery through conductor 17, armature 10, contact 21, conductors 20 and 22, counting device magnet 23, and thence back by conductors 29 and 28 to the battery. This will obviously actuate the counting device 7. Should the second set of operating instrumentalities be actuated and the first be not actuated, the second switch 8 will close the circuit through its magnet 9 and thereby close the circuit from the battery through conductor 17, first armature 10, contact 19, conductor 18, second armature 10, contact 21 therefore, conductor 24, magnet 25, conductors 27 and 22 to counting device magnet 23, and thence back by conductors 29 and 28 to battery. In the same way should any switch 8 be actuated, and no other switch nearer the battery be actuated, the operation will be the simple one just described. Should, however, the first switch 8 be operated and while in the position of operation the second switch be actuated, the circuit would be closed from battery 12 through conductor 15, second magnet 9, switch 8, conductor 16 and back to battery 12. This would draw the second armature 10 down and close the circuit from the battery 12, through conductor 17, first armature 10, conductor 18, second armature 10, conductor 24, first magnet 25, conductors 27 and 22, magnet 23 and conductors 29 and 28, except that said circuit would be opened at contact 19 of the first armature 10, which said armature

would still be attracted to its magnet 9. The locking device 25, 26, however, here comes into play, to prevent a completion of the operation of the second switch 8, while said locking device is in locked condition, in which condition it is shown diagrammatically in Fig. 1. This locked condition remains until the completion of the operation of the first switch 8, at which time the first armature 10 is released, permitting said armature to assume its retracted position and thereby close connection with its contact 19. This closes the previously described circuit through the first locking magnet 25 and counting magnet 23, and thereby energizes said magnet 25 and causes the locking member 26 to unlock the second switch 8 and permit the completion of the operation of said switch, the locking member 26 being actuated just before the swinging turnstile 37 reaches said locking member. When the magnet 23 is operated the counter 7 is of course operated. In case the third switch 8 was operated at a time when the first and second switches were also in operating condition, the circuit would be closed through the second locking magnet 25^a and the counter 23, except that said circuit would be open at both contacts 19 of the first and second armatures 10. When both of said armatures are retracted to make connection with their contacts 19 the circuit is completely closed through said second magnet 25^a, thereby actuating the counting magnet 23 and permitting the completion of the operation of the switch 8. In the same way the other switches 8 will produce an operation of the registering or counting magnet 23 when one or more of the switches nearer the battery is in operating condition, said farthest switch remaining locked in process of operation until the other switch or switches shall have completed their operations. Thus a successful actuation of the registering or counting mechanism may be secured by the operation of any one of a series of operating devices, irrespective of the order in which said devices are operated, and also irrespective of whether or not two or more of said devices are simultaneously actuated.

As a concrete illustration of the application of the invention I have shown a series of voting booths 31, 32, 33, 34, 35 and 36, having V shaped swinging doors or turnstiles 37 pivoted at 38. The doors or turnstiles 37 are provided with switches corresponding to the switches 8 of the previously described mechanism. Said switches are shown as conveniently comprising cylindrical members 40 of insulating material mounted upon the pivotal members 38 upon which the door swings. The members 40 are provided with metallic contact strips 41 adapted to make connection with con-

tacts 42 and 43 mounted on supports 44 and 45, respectively, supported by the door frame-work 46. Thus a swinging movement of any door will cause its switch contact strip 47 to make and break connection with the contacts 42 and 43 which are understood to be connected with conductors 9^a and 16 of Fig. 1. Magnets 25, 25^a, 25^b, 25^c, and 25^d are shown mounted in the voting booths so as to lock the doors or turnstiles 37 in position with the contact strips 41 of the switch mechanisms making connection with the contacts 42 and 43. Thus when effort is made to operate the second or any subsequent switch while the first or any prior switch is in operating position, the turnstile 37 of said second or subsequent switch will be engaged or locked in the position in which the first turnstile 37 in booth 31 is shown at 31 in Fig. 2 until the prior switch or switches have operated and then said turn-stile will be released and the counting mechanism actuated. Thus a voter in leaving the booth will automatically operate the switching device of that booth and actuate the counting mechanism. If none of the other switches nearer the battery than said voter are in operative condition, the movement of the voter's turn-stile will be continuous from the inner to the outer position and he may walk right out of the voting booth. If, however, a previous voter is operating his switch, the voter in question will be momentarily delayed in leaving his booth by his turn-stile being locked in the position shown in booth 31 of Fig. 2, but this delay will be very brief, only necessary to allow another voter or voters to leave their booths, upon which being done the voter in question has his turn-stile unlocked so that he also may leave.

It will be understood that changes and modifications may be made without departing from the invention.

What I claim is:

1. In an apparatus of the class specified, in combination, a plurality of independently operated switches, a locking mechanism and a registering mechanism controlled by said switches, and electromagnetic means whereby one of the plurality of switches automatically arrests the operation of said locking device.

2. Apparatus of the class specified comprising a registering mechanism, a plurality of operating devices, and electro-magnetic means whereby any one of said operating devices may automatically operate said registering device, said means comprising mechanism for automatically delaying the actuation of said registering mechanism of one device when another device is actuating the same.

3. In combination, a plurality of independently operated switches, certain of said

switches having separate locking devices connected thereto, a single registering device operably connected to all of said switches, and one of the plurality of switches being
 5 operable to render the remaining switches inoperative upon the operation of said switch.

4. The combination of an electrically operable registering mechanism, a series of switches, a series of electro-magnets corresponding to said switches, circuit connections whereby said switches may individually actuate said registering mechanism, and means for preventing the operation of any one of said switches while another is being
 10 operated.
 15 operated.

5. The combination of an electrically operable registering mechanism, a series of switches, a series of electro-magnets corresponding to said switches, circuit connections whereby said switches may individually actuate said registering mechanism, and means for preventing the operation of any one of said switches while another is operated, said mechanism comprising locking
 20 means for automatically locking a switch in partially operated position until another switch has completed its operation.
 25 means for automatically locking a switch in partially operated position until another switch has completed its operation.

6. The combination of an electrically operated registering mechanism, a series of electrical switches, electro-magnets with circuit connections whereby said magnets are short circuited by said switches, armatures for said magnets, circuit connections from battery through said armatures, locking
 30 magnets with locking mechanism for locking any one of said switches in partially operated condition, and circuit connections to said locking magnets and registering device through said armatures.
 35 magnets with locking mechanism for locking any one of said switches in partially operated condition, and circuit connections to said locking magnets and registering device through said armatures.

7. In combination, a plurality of independently operated switches, locking mechanisms operably connected to certain of said switches, a registering mechanism, operable upon each operation of each switch, said locking mechanism having an armature
 40 which is retracted upon operation of one of the switches, and operating to automatically render the remaining locking devices inoperative.
 45 which is retracted upon operation of one of the switches, and operating to automatically render the remaining locking devices inoperative.

8. In combination, a plurality of independently operated switches, a registering mechanism, electromagnetic means connecting certain of said switches and the registering mechanism, means whereby said registering mechanism is operated upon operation
 50 of one of the switches, and means preventing the operation of said registering mechanism upon the simultaneous operation with said operated switch of any of the other switches.
 55 of one of the switches, and means preventing the operation of said registering mechanism upon the simultaneous operation with said operated switch of any of the other switches.

9. In an apparatus of the class specified in combination, a plurality of independently operated switches, a locking mechanism connected to certain of said switches, a registering mechanism, electro-magnetic means connecting certain of said mechanisms, means
 60 for actuating said registering mechanism upon operation of one of the switches, and means preventing the operation of said registering mechanism upon the simultaneous operation with said operated switch of any one of the other switches.
 65 for actuating said registering mechanism upon operation of one of the switches, and means preventing the operation of said registering mechanism upon the simultaneous operation with said operated switch of any one of the other switches.

In witness whereof, I hereunto subscribe my name this 24th day of April, A. D. 1914.

WILLIAM JAMES BOHAN.

Witnesses:

A. LYDA JONES,
 HAZEL ANN JONES.