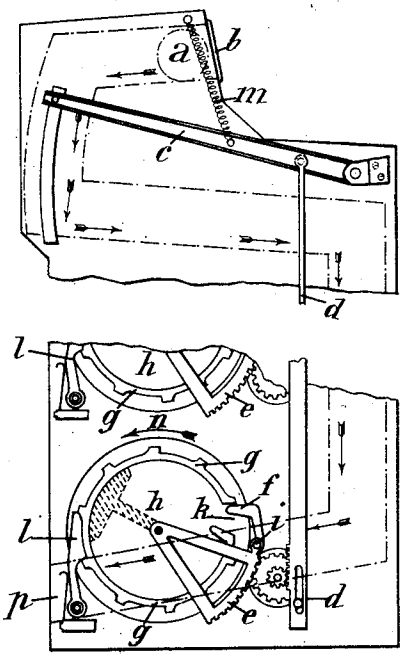
E. BOGGIANO.

AUTOMATIC VOTE REGISTERING MACHINE.

APPLICATION FILED JAN. 3, 1906.

943,378. Patented Dec. 14, 1909.

Fig. 1 *Fig. 2* 4 SHEETS—SHEET 1.



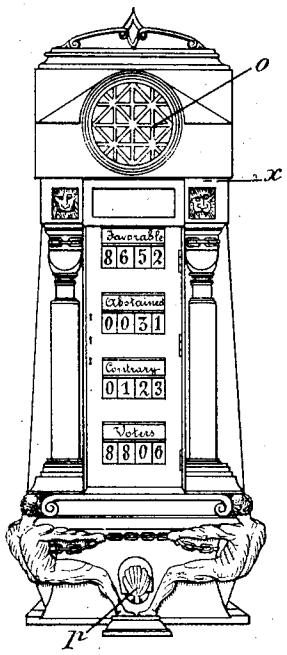
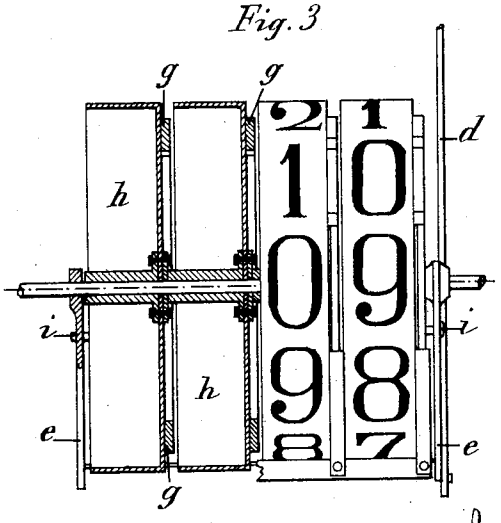


Fig. 3



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4 SHEETS—SHEET 2.

Fig. 4

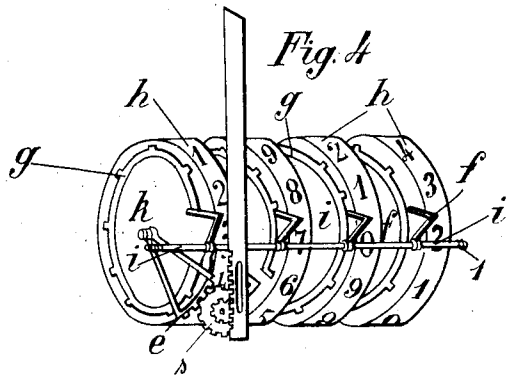
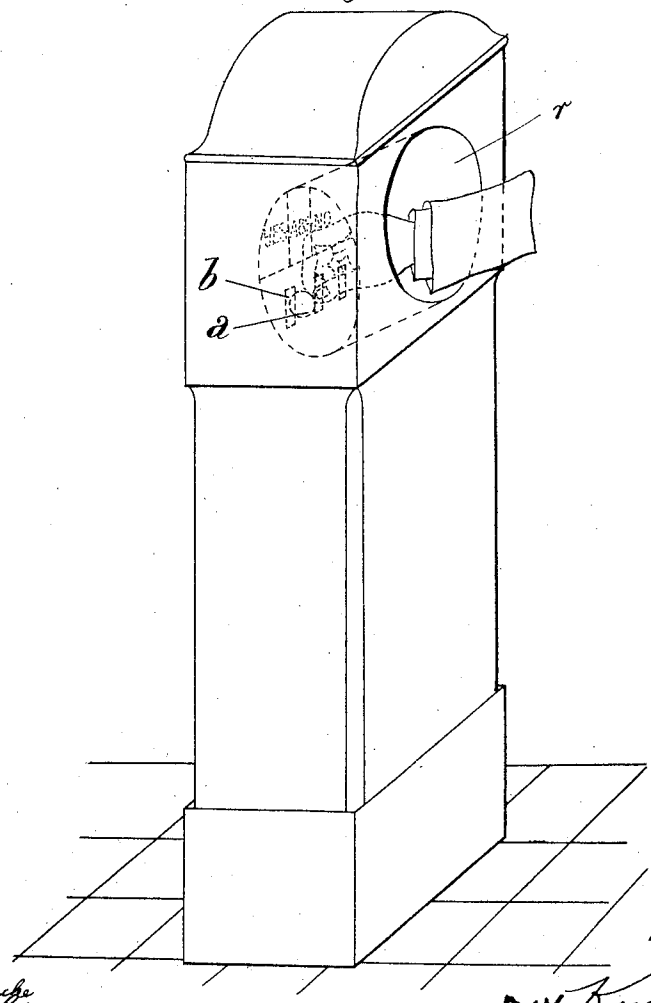


Fig. 5



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4 SHEETS—SHEET 3.

Fig. 6.

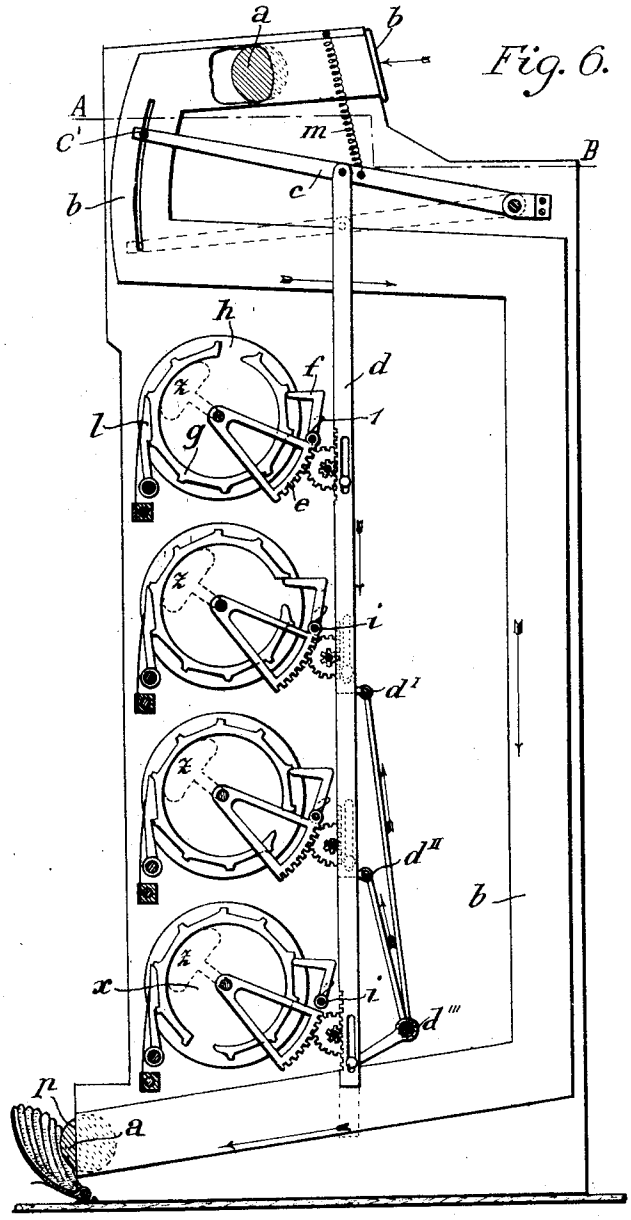
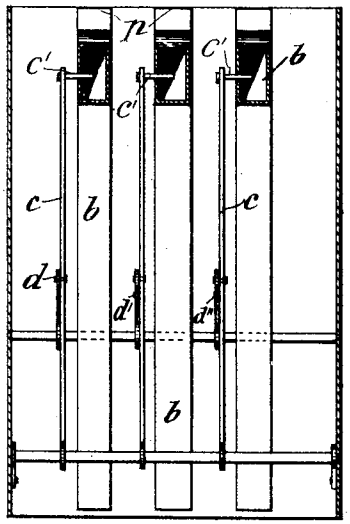


Fig. 7.



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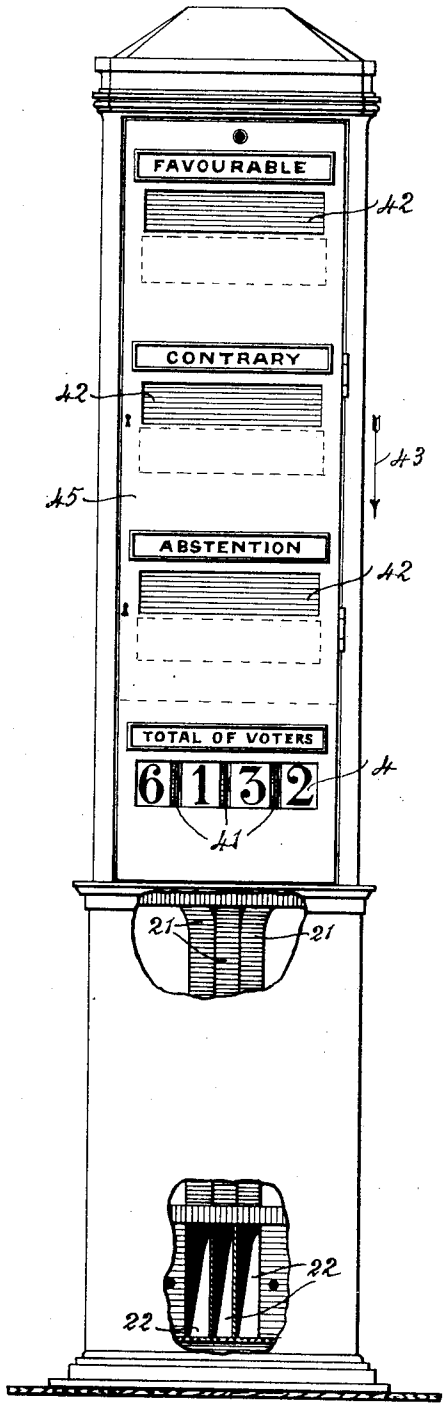
4 SHEETS—SHEET 4.

Fig. 8.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC VOTE-REGISTERING MACHINE.

943,378. Specification of Letters Patent. Patented Dec. 14, 1909.

Application filed January 3, 1906. Serial No. 294,438.

To all whom it may concern:

Be it known that I, EUGENIO BOGGIANO, a subject of the King of Italy, residing at Rome, Italy, have invented new and useful Improvements in Automatic Vote-Registering Machines, of which the following is a specification.

My invention relates to automatic vote registering machines and particularly to that kind of machine in which the introduction of metal disks actuates or releases the mechanism for operating a series of counting wheels or registering devices so that the votes given in favor of a particular candidate are registered.

An automatic vote registering machine in accordance with my invention is operated by a metal ticket or disk of a particular size and shape which when inserted into one of three or more slots provided on the machine, operates suitable mechanism, as will be hereinafter more particularly described, so as to register automatically the number of "favorable," "contrary" or "abstention" votes as well as the total number of voters, the ticket coming out of the apparatus at the opposite side as in the known machines referred to above in order to be delivered by the presiding officer to another voter for use in a similar manner.

My improved machine affords the greatest speed, liberty, secrecy and surety in voting, unity of poll and absolute control of the election by the presiding officer.

In the accompanying drawings, Figure 1 is a longitudinal section through a vote registering machine constructed in accordance with my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a view of one of the scrutineer or vote counting drums partly in section. Fig. 4 is a perspective view of the drum on which the total number of voters is registered, and Fig. 5 is a perspective view of the apparatus showing the mode of introducing the hand into the rear opening. Fig. 6 is a side elevation of the interior mechanism of the machine. Fig. 7 is a horizontal section through the upper portion of the machine, and Fig. 8 is a front elevation of the machine in a different casing.

My improved vote registering machine is provided with three or more slots b above which are placed cards, marked "Favorable", "Contrary" or "Abstention" and with the names of the candidates to be elected or with different colors representing the same or portraits of the candidates for illiterate voters. The form of the circular hole r into which the voter places his hand is such that he is able to place the ticket into any particular slot without his movement being seen. Each voter registers his vote by introducing into one of the slots b a metal ticket a of a particular size and shape delivered to each voter in turn. To each of said slots b corresponds a counting device which registers the number of times the ticket has passed through the same slot. The ticket a put into one of the slots b drops to the arm c^1 of lever c; this lever c which is kept in balance by the counterweight of the counting mechanism to which it is connected and also by the spring m is thus lowered by the weight of the ticket a, which dropping from the disk on the arm c^1 passes through the chute in the direction of the arrow and leaves the machine at the opposite side at p into a suitable hopper (not shown) into which discharge the chutes of all the slots which chutes run parallel with each other.

The rod d is attached to the lever c and the lower part of said rod d is formed as a toothed rack the teeth of which engage with a small pinion s which meshes with the segment e which is free on the shaft h of the counting drum g. The spindle i which is swung in links from the shaft h carries the pawls f which are adapted to engage with the teeth of the wheels g in a manner to be hereinafter explained.

It will be understood that there are three sets of counting devices or drums g corresponding to the number of slots provided and connected as described above to the levers c. Each of said drums g being so connected by rods and racks d with the lowest or totalizing drum that every movement of the "favorable", "contrary", or "abstention" drum as the case may be effects a corresponding movement in the totalizing drum. Thus my improved machine registers the total number of voters as well as the number of "favorable", "contrary" and "abstention" votes.

The wheels g are fast to the counting drums h which bear on their circumference the numbers 0 to 9 (Figs. 3 and 4) all of which are visible from the outside after the vote as shown in Fig. 2. The upper three counters, however, are concealed during the poll by a glass and a slide door locked with

three keys (not shown on the drawings). The numbers of the totalizing drum are always visible. Thus in Fig. 2 of the drawings, the counters are all exposed to view and the vote has all been taken. In Fig. 8, is shown the front elevation of a machine as it appears during the voting, in this view, the shutter 42 which is provided with the windows shown by dotted lines, is lowered, so that the windows do not register with the counters and the numbers thereon cannot be seen. The raising and lowering of this shutter is effected by means of a rack and pinion (not shown), controlled by a key in the possession of the presiding officer. Each of the wheels g has ten teeth (Figs. 1 and 4) with an interval k on them. At each descent of one of the racks d, when same is lowered by insertion of the ticket, the segment e and pawls f are actuated so that each wheel g is moved one tenth of a revolution. The pawls f press normally on the teeth of the wheels g and decrease in height from the units drum to the thousands drum, as clearly shown in Fig. 4.

When the units drum has made nine-tenths of its revolution, and its pawl f engages in the opening k, the pawl corresponding to the tens drum, being shorter, will bear on one of the teeth of the wheel g of the tens drum so that owing to the entire segment e rising, one-tenth of revolution of the tens drum with the unit drum will be obtained. In the same way the hundreds and thousands drum being respectively in relation with the two other pawls of decreasing length on the same shaft i, at each descent of segment e the hundreds drum and consequently the thousands drum will be shifted one-tenth when the respective pawls bear the one in slot k of the hundreds drum, and the other on the teeth of the thousands drum. Thus each counter is able to register from 1–9999 or 99,999 according to the number of drums. A pawl 1 renders the position of the wheels independent of each other. For every poll alinement of the drum of each counter to 0 is necessary, this being effected by shifting by hand each individual drum in the direction of the arrow n (Fig. 1) until 0 in each of them is reached.

The operation of the machine is as follows: The disk of given weight and form which the presiding officer has issued to the elector who is voting and which the voter has inserted in one of the slots corresponding to the vote which he desires to give, rolls down on the arm of the lever c which is balanced by a spring m (Fig. A) and by a counterweight z applied to the sector e. The lever in descending from the full line to the broken line depresses the rack d which in meshing with a pinion which in turn meshes with the sector e provided with a pawl f, which bears in succession upon the teeth of the wheel g solid with the counter produces a movement of rotation amounting to one-tenth of the circumference. The rod of the rack d of each counter is connected by means of the horizontal shafts d^1 or d^2 or d^3 to the counter for the total number, in such a manner that at each movement of rotation amounting to one-tenth produced by the depression of the lever c upon the respective counter by means of the racks d and of the horizontal shafts d^1 or d^2, or d^3, the total counter x will be given an equivalent displacement of one-tenth by means of its sector e, lifting its pawl by one-tenth; this pawl contrary to what is the case with the pawls of the other counters is independent of the sector e, being displaced indifferently by the three sectors e, each corresponding, by means of the respective segments d^1, d^2, d^3, to a rod of the rack d connected to each counter. Assuming therefore that the disk a which is the only one for all the voters has been inserted by a voter in the slot b corresponding to the affirmative vote that is to say "Yes", the rack d in its depression will raise the counter 1 by means of the pinion thus by means of the pawl f causing a displacement of the wheel y corresponding to one-tenth that is to say to a unit; simultaneously by means of the rack fitted to the total counter x (solid with that of the counter 1) the sector e of the total counter x will likewise experience an equivalent displacement and by lifting its pawl f will rotate the wheel g by one-tenth of a revolution corresponding to an increase of one unit, as in the first counter. The same thing will occur if the disk is inserted in the slot corresponding to the "No" votes, that is to say the lever c corresponding to this second slot will produce by means of the rack d^1 the lifting of the sector e which by means of the pawl f will rotate the wheel g by one-tenth of a revolution, that is to say the displacement will be one unit, and simultaneously the same rack d solid with the rack fitted to the fourth total counter x will lift the sector e of this fourth total counter x and consequently the lifting of the independent pawl will produce in a similar manner a tenth of a revolution of the wheel g that is to say an increase of another unit. The same thing takes place with the third counter and for any other counter which may be added to the total counter x.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An automatic vote registering machine comprising a casing having a rear opening for the insertion of the hand of the voter and a plurality of inclosed slots extending entirely through the machine and to which the opening gives access, a plurality of counters adapted to be operated by tickets inserted in

the slots, said tickets adapted to pass entirely through the slots and out of the machine whereby to be used again, a totalizing counter, and mechanism whereby the movement of each of the first named counters is partaken of by the totalizing counter.

2. An automatic vote registering machine comprising a casing having a rear opening for the insertion of the hand of the voter and a plurality of inclosed slots extending entirely through the machine and to which the opening gives access, a plurality of counters one for each slot and each consisting of a units drum, a tens drum, a hundreds drum and a thousands drum, mechanism whereby a ticket inserted in one of the slots causes the corresponding counter to be operated to register the vote, said ticket adapted to pass through said slot and out of the machine casing whereby to be used over again, a totalizing counter, and means whereby the votes registered on each of the first-named counters is simultaneously registered on the totalizing counter.

3. An automatic vote registering machine comprising a casing having a rear opening for the insertion of the hand of the voter, a plurality of tubular members forming closed channels within the casing, said channels communicating with said rear opening and the outside of the casing, registering mechanism for each of said channels and means for operating the same, said register operating mechanism comprising a swinging arm geared to the register mechanism and having a member projecting into the channel, said arm adapted to be moved by a ticket passing through the channel, whereby to actuate the register mechanism, said tickets adapted to pass entirely through the channels and out of the casing whereby to be used over again, and a totalizing register intergeared with and actuated by the said register actuating arms.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EUGENIO BOGGIANO.

Witnesses:
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A. RAGG.