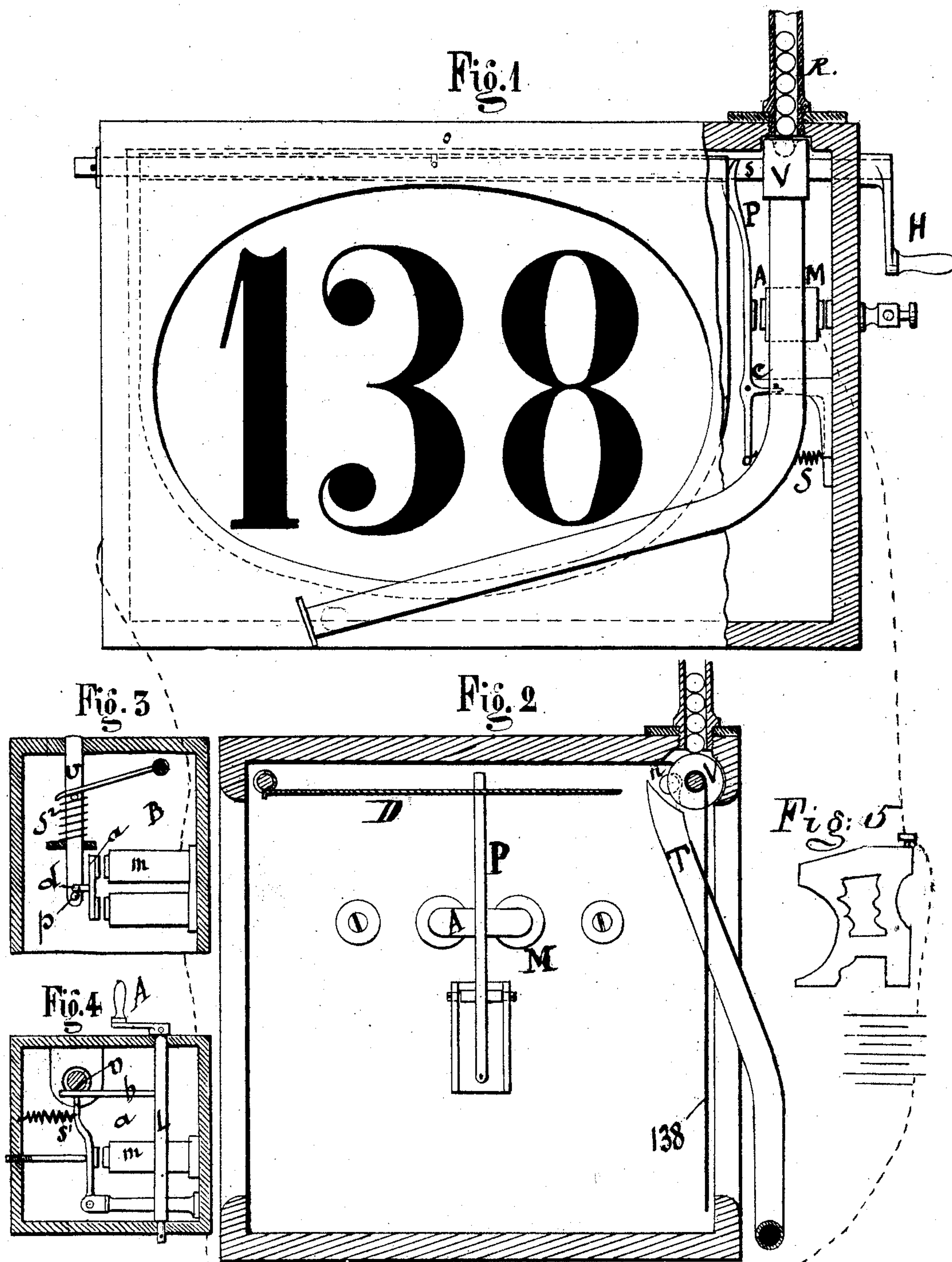


T. B. DOOLITTLE.
Electric Vote Annunciators.

No. 143,679.

Patented Oct. 14, 1873.



WITNESSES:

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IMPROVEMENT IN ELECTRIC VOTE-ANNUNCIATORS.

Specification forming part of Letters Patent No. **143,679**, dated October 14, 1873; application filed July 28, 1873.

To all whom it may concern:

Be it known that I, THOMAS B. DOOLITTLE, of Bridgeport, Connecticut, have invented certain new and useful Improvements in Apparatus for Voting, of which the following is a specification:

The object of my invention is to avoid the troublesome delay and expense usually experienced in ascertaining exactly the sense of a meeting in respect to any pending question. My invention relates to an apparatus by which each voter, enabled by means of electricity operating through properly-arranged circuits and magnets, can at pleasure, by merely pressing an ordinary circuit-closing key, cause his name or a number corresponding to the key which is pressed to be instantly indicated and exposed at the desk of the presiding officer of the assembly, or at any other place in electric connection with the said key; and, if desired, several places may be provided with indicators, which will simultaneously show the same name or number, so that the result of any vote so taken may be made to appear at each of the places with which electric connection may be made. Separate connections by electric wires are to be made from each desk, or from the location of each voter; and there must be as many keys and conducting-wires as there are voters or votes to be indicated at the same time.

An example of a room for, say, two hundred voters would fully illustrate the working of my system, and may be described as follows: At a convenient conspicuous place in front of the assembly should be placed a screen or case, perforated with openings, each of about thirty or forty square inches area. These openings are to be arranged in horizontal lines, say, of twenty in a line; and there may be ten lines of such openings, placed one over the other. Corresponding to each horizontal line of openings there is a small shaft running through each line of openings, just above the upper edge of the apparatus; and at the ends of these shafts they may be conveniently connected together in such a manner that by giving to one a partial revolution all the others move in like manner. Upon each of these shafts, and at each opening, is hung a thin plate or drop, which is of such size as to cover the openings

when allowed to hang in a vertical position by its own gravity; and each plate or drop corresponds to a desk or voter, who is identified with it by having his name or designating number marked conspicuously upon it.

Figure 1 of the drawing represents a front view of that part of the case containing one such opening, and mechanism belonging to the same.

Behind the drop 138 is a vertical prop or stud, P, hung upon a horizontal axis, c, at its foot, the upper end on a level with the shaft s, from which the drop is suspended; and the vertical prop is so placed as to permit the drop to be swung back till it arrives at a horizontal position, at which moment the prop, by force of a spring, S, is made to move under and support the drop at one of its edges. The vertical prop P is made to carry the armature A of an electro-magnet, M, and the magnet itself is placed in a suitable position to exert its force upon the armature, so as to draw the prop from the edge of the drop when required to release it from the horizontal position into which, in connection with all the other drops in the system, it is placed preliminary to taking a vote. The drops are fixed to sleeves so hung upon the horizontal shafts s that, by giving a partial turn to the latter, all the drops which happen to be in a vertical position are raised into the horizontal position, and there held upon the vertical props above described, while those drops which are already horizontally supported are allowed so to remain. This is effected by fixing a pin, o, in the shaft s, which works in a transverse slot in the sleeve attached to the drop, the slot being long enough to permit the drop to fall from the horizontal to the vertical position without resistance from the pin. The magnet belonging to each vertical prop and correspondingly-attached armature is connected with the battery, and the electrical connections belonging to the respective magnets are then terminated in their corresponding keys.

All now being in readiness for use, the presiding officer announces that he will take the vote of all those who wish to declare affirmatively upon the pending question. The voters now press upon their respective keys. The magnets of all the closed circuits act upon their

armatures, and withdraw the corresponding props, and instantly as many drops fall and expose their respective numbers or names as there have been votes cast. They can now be readily counted and recorded, if desired, by every one present, and then by turning a handle, H, acting upon the horizontal shafts, the drops are instantly thrown into their horizontal position, as before, whereupon the presiding officer can immediately proceed to take in a similar manner the votes negatively in respect to the question at issue.

In order to show to an observer in another room what the result of any vote is, I there arrange a similar set of drops, or preferably employ as many small indicators as there are drops in the apparatus previously described. One of these indicators is shown in Figs. 3 and 4, and consists of a vertical pin, *v*, guided through holes in the top of a cover to a box or case, B, containing a small magnet, *m*, and armature *a*, so arranged as to release a detent or stop, *d*, acting upon a small pin, *p*, secured to each of the indicator-pins *v*, which has a tendency to fly up and expose itself above the cover from the action of a spring, *s*², coiled around it, whenever the electric current is made to pass through the small magnet which is placed in the same circuit with the magnet which actuates the prop in the principal apparatus. This arrangement is illustrated by Fig. 5, which represents a desk with a circuit-breaking key, and connected, by a wire, with the battery and the primary and secondary apparatus, as illustrated by the dotted line.

The handle A is for the purpose of moving the shaft L, which carries the arm *b*, by which the vertical pin *v* is pressed down and held by the detent *d* before using the apparatus.

To facilitate counting the number of votes cast, I provide for each voter, at his drop, a supply of balls, which are kept in a tubular receptacle in such a manner that, whenever the drop is made to fall, one of the balls is released and allowed to roll down a tubular pathway into a common receptacle for all the balls released at any one voting. By making this receptacle of a glass tube, with graduations marked along its length, the number of balls in it at any time may be ascertained by simple inspection.

Fig. 1 of the drawing shows the inclosing-case in elevation and partly in vertical section, and the leaf or drop marked 138 as it appears after having been made to fall by the voter. This figure also shows the prop P upon an axis at the joint *e*, and carrying the armature A of the magnet M. This magnet is in the circuit leading from the battery, and to the voter's desk, at which point is an ordinary circuit-closing key.

Fig. 2 is a transverse section of the case containing drop 138, the prop P, armature A, and magnet M, and also shows the receptacle R for the balls.

Upon the shaft *s*, which carries the drop 138, is fixed a cylindrical valve, V, directly under the opening in the bottom of the receptacle R. A recess, *n*, is so formed in the top side of this valve that when the drop is horizontal and supported upon the prop P one ball falls into the recess; and when the prop is withdrawn and the drop falls the ball is delivered into the conducting-tube T, and guided away into a common gutter or tube, where the balls from all the drops may be readily counted, or their number ascertained, by merely inspecting the graduations on the gutter or tube.

Fig. 1 also shows a second drop, intended to fall against an opening in the rear of the case. The drop is shown supported upon its axis, and held up in a horizontal position by the prop P, which also serves for the other drop.

There are several other ways in which the drop may be constructed. For example, a rolling screen may be employed instead of a rigid sheet, as shown in the drawing; or a lever may be made to tilt and expose a number or name representing the voter; but I have explained the ways which I prefer, and consider most desirable for practical use.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, in a voting apparatus, of the number-disks and ball-tubes, controlled and operated simultaneously through the medium of electricity, substantially as and for the purpose set forth.

2. In combination with the drop D, the prop P, armature A, and its magnet M, operating substantially as described, and for the purpose set forth.

3. In combination with an electrical voting apparatus, secondary indicating apparatus, in the same circuit with the voting apparatus, to indicate the state of the vote at other points, substantially as described, and for the purpose set forth.

4. The combination, with the recessed shaft *s* and ball-receptacle R, of the conducting-tube T and graduated indicator-tube, substantially as and for the purpose set forth.

5. The indicator-pin *v*, in combination with the spring *s*² and detent *d*, operating substantially as and for the purpose described.

T. B. DOOLITTLE.

Witnesses:

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WM. H. HAYWARD.