

A. G. SAFFORD.

ELECTRO-MAGNETIC VOTING-APPARATUS.

No. 173,673.

Patented Feb. 15, 1876.

Fig. 1.

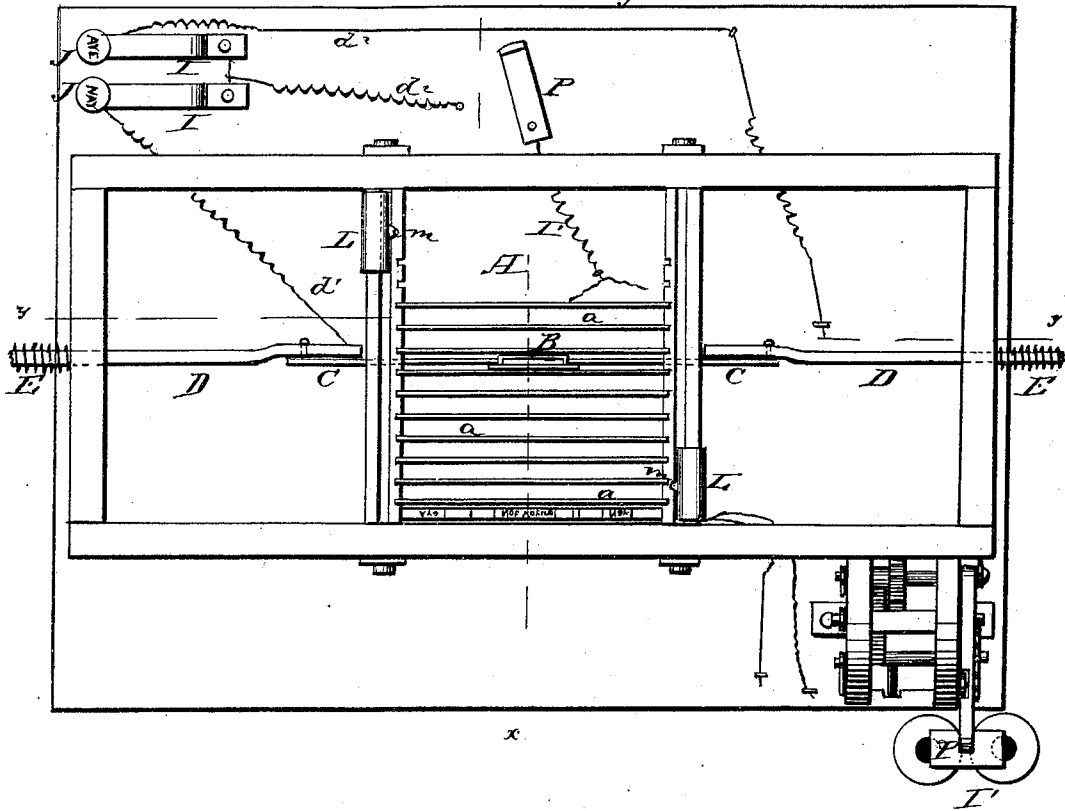
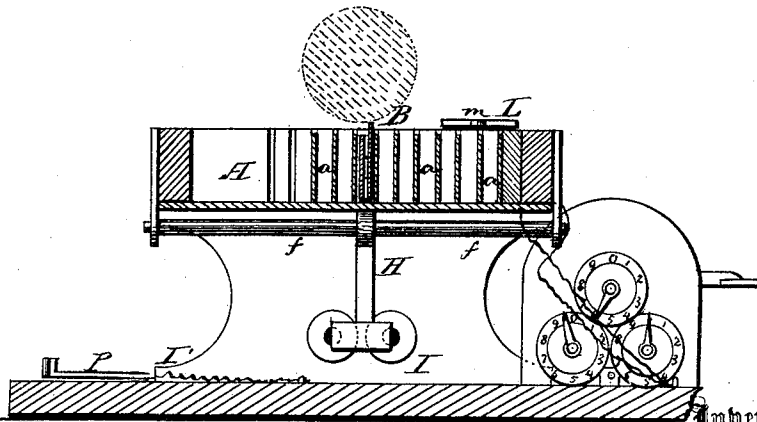


Fig. 2.



Witnesses:

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F. H. Duffey

Inventor:

Alfred G. Safford

Per: C. H. Watson & Co Attorneys.

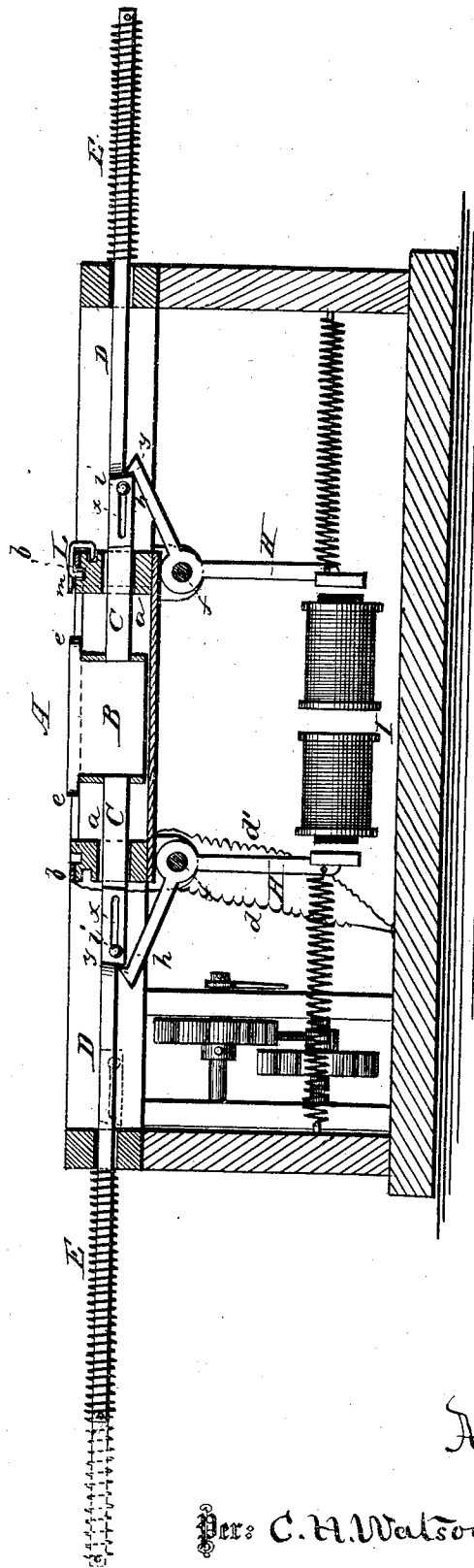
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Fig. 3.



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UNITED STATES PATENT OFFICE.

ALFRED G. SAFFORD, OF ST. ALBANS, VERMONT.

IMPROVEMENT IN ELECTRO-MAGNETIC VOTING APPARATUS.

Specification forming part of Letters Patent No. **173,673**, dated February 15, 1876; application filed February 8, 1876.

To all whom it may concern:

Be it known that I, ALFRED G. SAFFORD, of St. Albans, in the county of Franklin and State of Vermont, have invented certain new and useful Improvements in Recording, Printing, and Counting Ayes and Nays; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to machines for recording, printing, and counting the ayes and nays in legislative and other assemblies; and it consists in providing each desk in such assembly with two separate sets of electric wires acting independently of each other upon an electric battery, so that by the aid of intervening machinery each member instantaneously, and all the members simultaneously, can control the location upon a stationary galley of type bearing his name, so as to indicate whether he votes aye or nay, and impressions then taken from said type give the entire list of all the members voting aye or nay, or not voting; and also a mechanism for counting said votes upon a registering apparatus, as will be hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a plan view. Fig. 2 is a cross-section on line *x x*, Fig. 1; and Fig. 3 is a central vertical section on *y y* of Fig. 1.

A represents a stationary galley, of the form ordinarily used by printers, which is divided by metallic strips *a* into lateral sections of suitable width. These strips do not come quite up to the top of the side rails of the galley, and they are embedded sufficiently deep into said side rails to be perfectly firm. The bottom of the galley is made of sheet-brass or equivalent material; and at the top or head of the galley are placed stationary type containing the words "aye," "not voting," "nay." Each side rail of the galley is provided with a metallic strip, *b*, connected by an electric wire, *d*, with one pole of an electric battery, the other pole of said battery being, by a wire, *d'*,

connected with the bottom of the galley, and by contact with the type, as hereinafter described.

Within the sections of the galley are placed movable type representing the names of each member of the assembly—one name to each section—and each name held in a movable carriage, B, fitted to and moving from one side to the other of the galley within its respective section, and also capable of being held in a line with either of the three stationary type combinations at the head of the galley.

It is, of course, understood that in speaking of type they are arranged as ordinary type for printing, so that impressions may be taken from the same.

Each carriage B is provided with two arms, C C, extending horizontally in opposite directions through slots made in the side rails of the galley. The carriage is also at the top on each side provided with a short projecting arm, *e*, which, when the carriage is at the side of the galley, is a little higher than the side rail, and extends over the same. In the end of each arm C is a pin, *i*, which passes through a slot, *x*, in the inner end of a bolt, D, placed in suitable standards, and provided with a spring, E, the action of which is to draw the bolt outward from the galley. In the under side of the spring-bolt D is a notch, *y*, into which takes a hook, *h*, formed upon the upper end of an L-shaped armature-lever, H, pivoted upon a rod, *f*. All the armature-levers on one side of the galley are pivoted upon one rod; and all the spring-bolts on either side are passed through the same standards. The construction of such parts is, however, immaterial, and may be varied according to circumstances.

When both the spring-bolts connected by the arms C to one carriage are held by their armature-levers, the carriage remains stationary in the center of its section on a line with the stationary type "not voting." When either spring-bolt is released from its armature-lever, the bolt moves outward from the galley a certain distance without moving the carriage, or until the inner end of the slot *x* comes against the pin *i*, when it pulls the carriage over to that side of the galley, the slot

in the bolt in the opposite side permitting such movement. Opposite the lower ends of the armature-levers H are placed ordinary electro-magnets, I I, connected by wires d^2 with two knobs, J J, on the desk of the member whose name is on the carriage B, said knobs being marked, respectively, "aye" and "no," so that the member by pressing down either of said knobs—according to the way he wants to vote—will close the proper circuit, influence the magnet, release the spring-bolt, and move the carriage bearing his name to the proper side of the galley under the head-types "aye" or "nay," as the case may be.

It is, of course, understood that suitable lines are arranged to form connection with a battery.

The armature-levers H are provided with ordinary resistance-springs to throw them away from the magnets when the current is broken.

In grooves, upon each side rail of the galley, is placed a slide, L, which is provided on its inner side with a projection, m , said arm, when moved along the side rail of the galley, coming in contact with the short arm e of each and every carriage B that has been moved to that side of the galley. The slide, when thus in contact, closes the electric circuit. The circuit takes in a magnet, I', placed under an armature-lever, P, which constitutes the operating-lever of an ordinary indicating apparatus, having suitable dials and hands. Whenever the circuit is closed by the slide L, the lever P is moved by the impulse of electricity transmitted, so as to turn the first hand of the indicator one space; and this lever is operated once for every impulse of electricity thus transmitted by the moving of the slide or circuit-closer L from one end of the galley to the other, and, hence, the indicator will show how many carriages have been moved to that side of the galley—or, in other words, how many members have voted "aye" or "nay," as the case may be.

There is to be one indicator and one circuit-closer for each side of the galley.

The battery to be used by the members in voting can very readily be placed under control of the presiding officer, so that only when a vote is to be taken will the knobs on the desks of the members be connected therewith.

When a vote is to be taken the presiding officer connects the battery by means of a

knob or switch, and each member presses the knob on his desk corresponding with the way he wants to vote. This can all be done at one time, or all the members vote simultaneously, and the carriages containing the names are moved, as above described, to the proper sides of the galley. An inking-roller is then passed over the entire galley, and an impression taken, when there will be a complete list, in three columns, showing those voting "aye," those voting "no," and those not voting. The circuit-closers L are then moved from one end of the galley to the other, for counting the votes on the indicators.

The circuit-closers may be moved by hand, or they may be arranged to go with the inking-roller, if so desired.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a voting apparatus, I claim a carriage, or its equivalent, containing type, representing the name of the member voting; located in a stationary frame, and moved from the center thereof, to either side by mechanism controlled by an electro-magnet, the circuit to which is closed by the pressure of a knob, or its equivalent, on the desk of the member voting, substantially as herein set forth.

2. A stationary frame or galley, divided into a series of sections containing separate and independent type-carriages, in combination with a mechanism, connected to each carriage, for moving the same, released by means of an electro-magnet at the will of the members voting, substantially as set forth.

3. The combination of the type-carriage B, arm C, with pin i , slotted spring-bolt D, with notch y , armature-lever H, with hook h , and an electro-magnet and wires connecting with the knob on the desk, as and for the purposes herein set forth.

4. The combination of the galley A, movable type-carriages B, with arms e , circuit-closers L, with projections m , electric connecting-wires, magnets, and indicators, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALFRED G. SAFFORD.

Witnesses:

WM. B. UPPERMAN,
F. H. DUFFY.