

(No Model.)

A. LE BLANC.  
SELECTING DEVICE.

No. 566,916.

Patented Sept. 1, 1896.

Fig. 1.

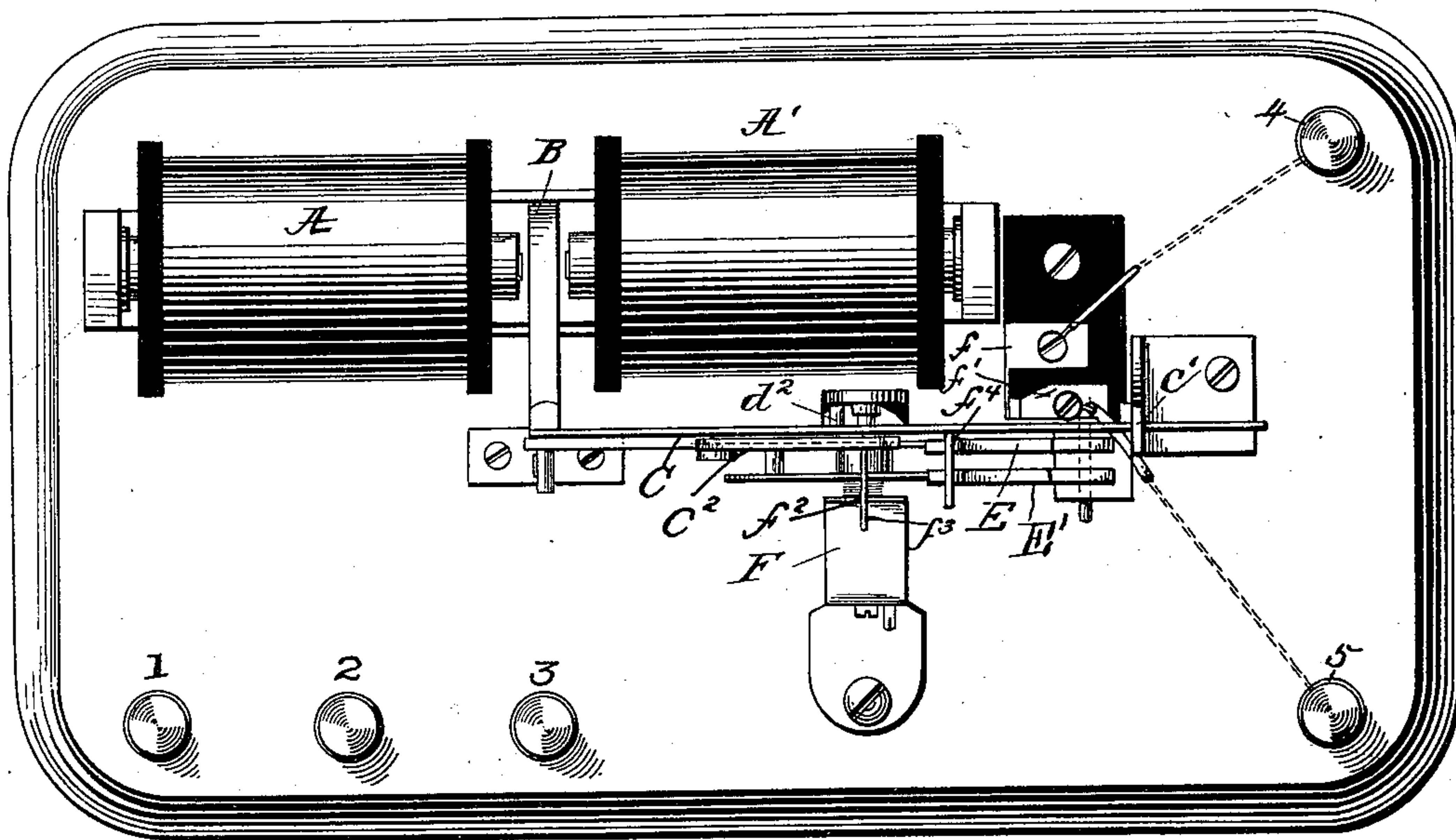


Fig. 2.

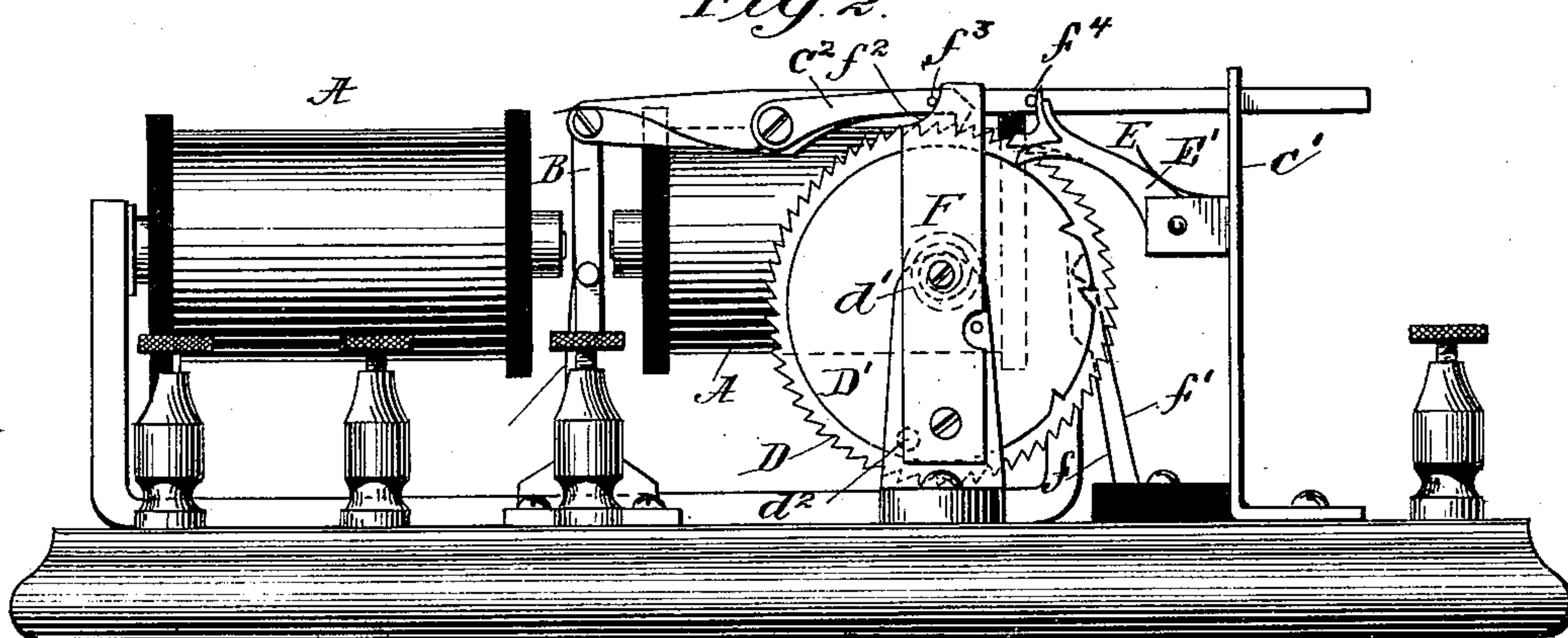
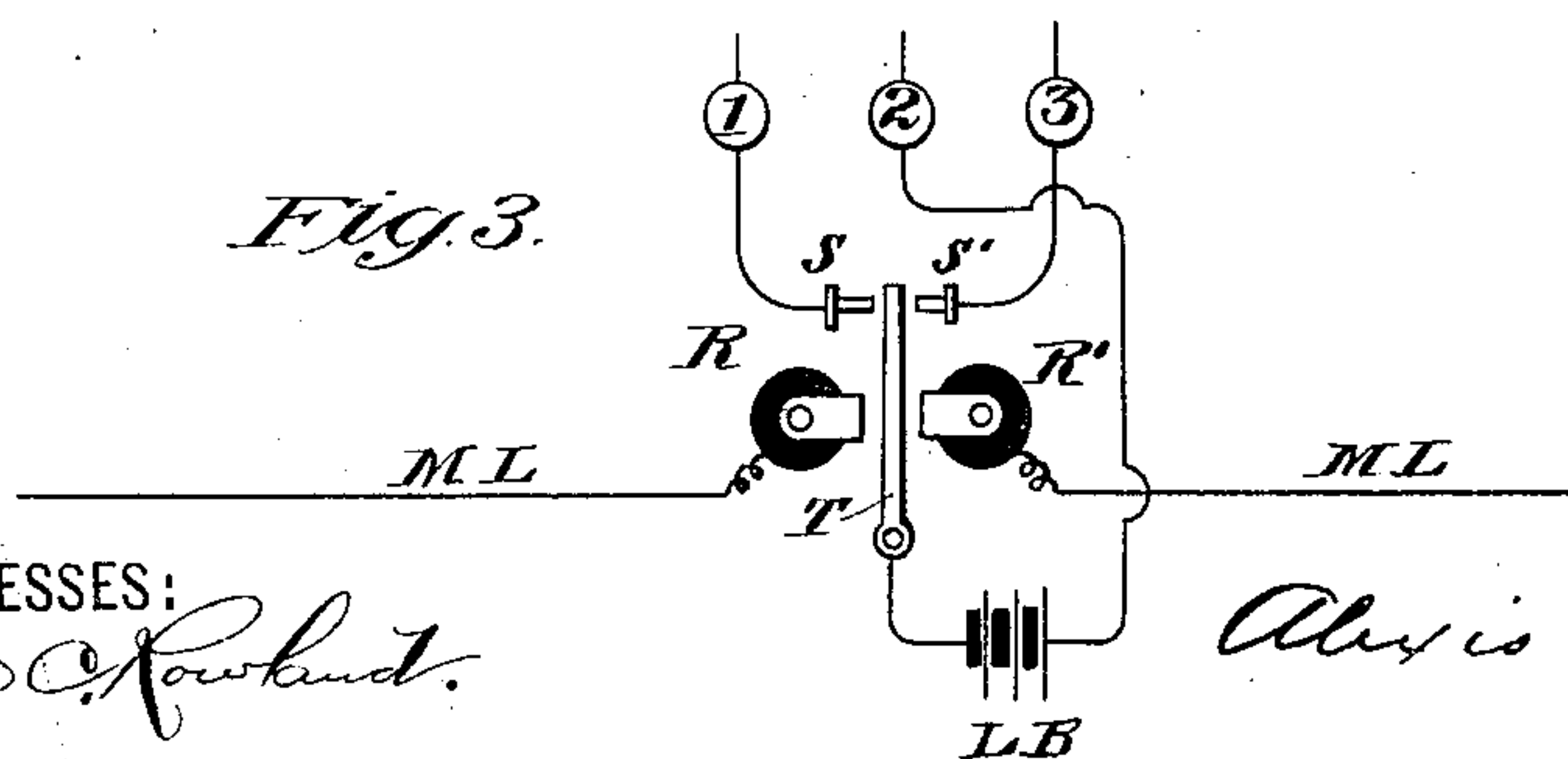


Fig. 3.



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# UNITED STATES PATENT OFFICE.

ALEXIS LE BLANC, OF NEW YORK, N. Y., ASSIGNOR TO THE ELECTRIC  
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## SELECTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 566,916, dated September 1, 1896.

Application filed January 16, 1894. Renewed March 31, 1896. Serial No. 585,662. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXIS LE BLANC, of the city, county, and State of New York, have invented certain new and useful Improvements in Selecting Devices Actuated by Electrical Impulses, of which the following is a specification.

Figure 1 represents a top or plan view; Fig. 2, a side upright view of the same; Fig. 3, a view of a polarized relay and local battery, showing the connections with the binding-posts 1 2 3.

Upon a suitable base are mounted two electromagnets A and A', and between the two is placed a vibrating armature B, which is suitably pivoted to a part of the frame. Extending from the top of the armature is the lever or bar C, pivotally connected with a part of the armature, and has a reciprocating movement corresponding with the vibration of the armature. A post or standard, as C', is slotted at the top, and through this slot is passed the end of the lever C, which gives the lever a steady reciprocal movement. Pivoted to this lever is a pawl c<sup>2</sup>, which operates the wheel or sector intended to work out the combination of impulses. Suitably mounted upon a shaft are two wheels D and D', which turn together on the shaft. One of these wheels has a series of notches into which the pawl c<sup>2</sup> drops to operate the wheels or sectors to the end of their course. The other wheel or sector has its notches cut with intervening spaces between them and coöperates with the first wheel in working out the combination of the instrument. Two retaining-pawls, as E and E', serve to hold the wheels and check them from returning backward. These wheels when operated in one direction work against the tension of a spring d' and are thrown back to starting-point by this spring when the wheels are released.

It will be seen by the above arrangement that a current through magnet A will draw the armature B in one direction, and when the current is changed to the magnet A' the armature moves in the opposite direction, and so long as impulses are given with the current through the magnet A the wheels are impelled by the pawl c<sup>2</sup> and are released by changing the current to the magnet A'. Each

of the selecting instruments is set to a special combination, that is to say, starting from any point on the wheel D, the wheel D' is provided with notches at intervals, and when the pawl E' drops into one of these notches and an impulse is given through the magnet A' the pin f<sup>4</sup> on the bar C lifts the pawl out of the ratchet and passes over the top of E'. The pawl E, which rests in its notch, holds the wheels and prevents them returning to their starting-point pending the operation of working out the combination. At the same time all the sectors upon the different instruments not specially selected to be worked out have their pawls E resting upon a raised surface between the notches, and when this occurs both pawls, being in line of engagement, are lifted and their wheels are released.

When a combination has been entirely worked out and the wheels have gone to the end of their phase movement, a pin d<sup>2</sup> upon wheel D' closes the brushes ff' and completes circuit leading to binding-posts 4 and 5 to make a call, ring a bell, or perform any other service for which they are intended, and when this operation is finished the wheels of the selecting instrument thus worked out are restored to zero by an impulse of a polarity which will raise both pawls. Thus an impulse of a polarity to impel the wheels, followed by one of opposite polarity, will find the pawl E resting on one of the raised spaces, so that both pawls will be lifted and the instrument returned to starting-point. The standard or bar F is cut out at the top at f<sup>2</sup> and coöperates with a pin f<sup>3</sup> on the pawl c<sup>2</sup>, so that when the bar C moves toward the magnet A' the pin f<sup>3</sup> slides upon the cut-out portion f<sup>2</sup> and lifts the pawl c<sup>2</sup> to clear the teeth on the wheel.

The current passing through main line M L and through the polarized relay-magnets R R', as shown in Fig. 3, actuates the polarized armature T to one side or the other according to the polarity of the impulse transmitted. On either side of this armature are the contacts S and S', which are connected with the binding-posts 1 and 3, respectively, while the binding-post 2 is connected with one side of local battery L B and the other side of the battery with the armature T. It



will be seen from this arrangement that when the armature T contacts with S the current is through magnet A, and when it contacts with S' the current is through magnet A', then actuating the armature B and the mechanism connected therewith according to the polarity of the current transmitted. The device may be connected up in other ways to effect the same result.

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

1. In an electric selecting instrument adapted to respond to impulses from a local battery to work out its phase the combination with two electromagnets in the local circuit and an armature-lever common to both magnets, of a transmitting instrument adapted to transmit impulses of opposite polarities to thereby direct the current of the local battery to either magnet according to the polarity of the impulse transmitted, and means operated mechanically by the armature-lever in response to the attraction of one of the magnets to thereby actuate the selecting instrument to the end of its phase, and means actuated by the same armature in responding to the attraction of the other magnet to thereby restore the selecting instrument to starting-point.

2. In an electric selecting instrument adapted to respond to impulses from a local battery to work out its phase the combination with two electromagnets in the local circuit and an armature-lever common to both magnets, of a transmitting instrument adapted to transmit impulses of opposite polarities to thereby direct the current of the local battery to either magnet according to the polarity of the impulse transmitted, and means operated mechanically by the armature-lever in response to the attraction of one of the mag-

nets to thereby actuate the selecting instrument to the end of its phase, and means actuated by the same armature in responding to the attraction of the other magnet to thereby restore all other selecting instruments on the line to starting-point without affecting the one selected.

3. In an electric selecting instrument two wheels or sectors, upon one of which is cut a series of notches in succession and on the other a set of notches separated by a raised space between them both working together on a single shaft, and two retaining-pawls one for each wheel in combination with two electromagnets and an armature-lever operated thereby, mechanism connecting the armature-lever with the wheels to work out the phase of the instruments, means for transmitting electrical impulses of different polarities, and means actuated by the impulses for bringing into circuit one magnet or the other according to the polarity of the impulse transmitted.

4. In an electric selecting instrument an armature pivoted between two magnets adapted to respond to impulses of different polarities, in combination with two wheels or sectors actuated thereby to work out the phase of the instrument or release the wheels, an arm or bar pivoted to the armature and arranged to reciprocate therewith, and suitably guided in its movement, and a pawl for actuating the wheels pivoted to the bar, substantially as described.

Signed at New York, in the county of New York and State of New York, this 11th day of January, A. D. 1894.

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Witnesses:

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