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G. WRIGHT.
MEANS FOR CONTROLLING GOVERNOR MOTORS.

APPLICATION FILED SEPT. 24, 1903.

NO MODEL.

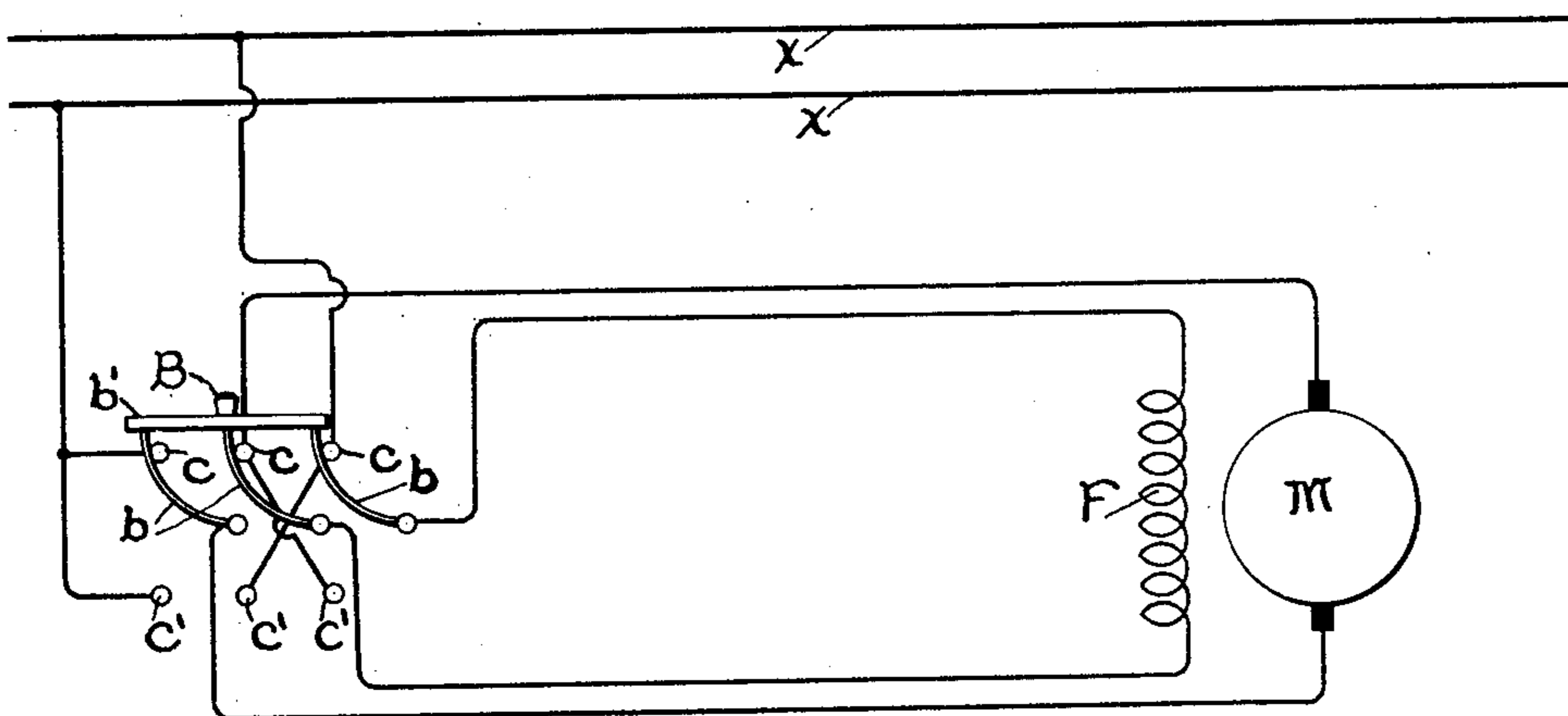
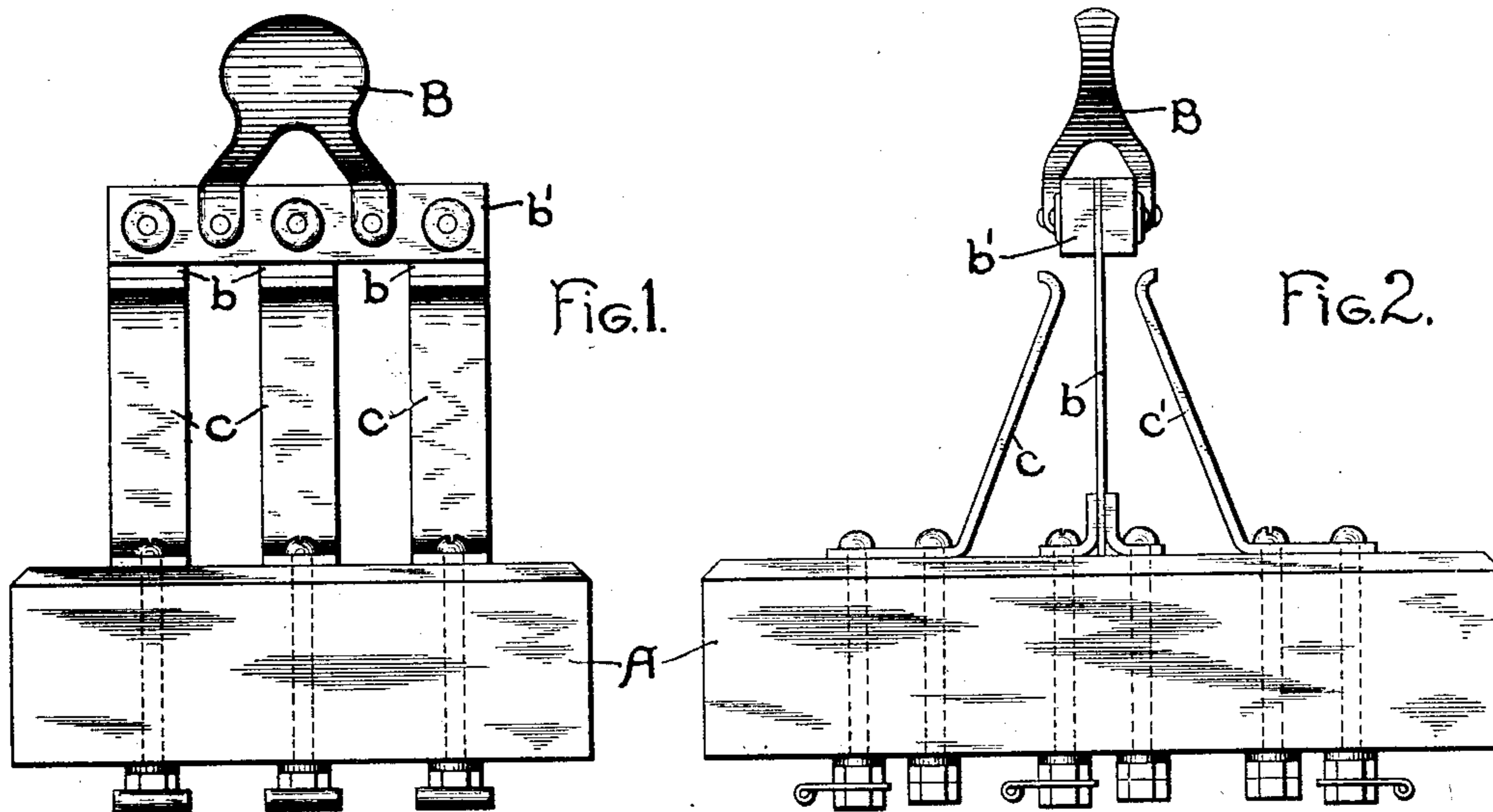


FIG. 3.

WITNESSES:

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MEANS FOR CONTROLLING GOVERNOR-MOTORS.

SPECIFICATION forming part of Letters Patent No. 751,598, dated February 9, 1904.

Application filed September 24, 1903. Serial No. 174,451. (No model.)

To all whom it may concern:

Be it known that I, GILBERT WRIGHT, a citizen of the United States, and a resident of Pittsfield, Massachusetts, have invented certain new and useful Improvements in Means for Controlling Governor-Motors, of which the following is a specification.

My invention relates to electric switches, and particularly to switches adapted to the control of small motors which must be given impulses of long or short duration in either direction.

In the synchronizing of alternating-current machines which are driven by prime movers, either steam or water, it has been customary to bring the incoming machine to the proper speed for connecting to the bus-bars by means of the manipulation of the governor of the prime mover. Various methods of so manipulating the governor are in extensive use, one of the most satisfactory of these methods being the use of a small electric motor to vary the relation of the parts of the governor. When such a motor is used, it is necessary in order to secure proper control of the governor to be able to give the motor impulses of longer or shorter duration in either direction. Furthermore, since the operator must be watching the lamps or synchronizers in order that he may know when the proper speed of the incoming machine has been reached it is essential that the governing mechanism for the motor shall be simple and shall require no attention while it is being operated.

The object of my invention is to provide a switch for the control of such motors which shall be extremely simple and economical in construction, which shall be very efficient in giving either a long or short impulse to the motor in either direction, and which shall require no attention from the operator, and thus shall enable him to devote his attention entirely to the synchronism-indicator.

In the accompanying drawings, Figure 1 shows a side elevation of a switch constructed in accordance with my invention. Fig. 2 shows an end elevation of the same. Fig. 3

shows a diagram of connections adapted to my invention.

In the drawings, *b b b* represent three flat springs, which are firmly screwed to base A at right angles thereto. *b'* is a strip of insulating material connecting the three flat springs *b b b*.

B is a handle carried by strip *b'*, by means of which the springs *b b b* may be bent in either direction. The flat springs *b b b* are so proportioned that they may be bent easily in either direction, but have sufficient rigidity to return quickly to the middle position when the handle B is released.

c c c and *c' c' c'* are two sets of contacts screwed to base A and placed at such a distance from springs *b b b* that said springs will make contact with them only when they are bent to either side.

In Fig. 3 the diagram of connections is shown. *x x* represent the line-wires from the source of supply for the small motor M with field F, which varies the relation of the governor parts. The governor mechanism is not shown, since there are numberless devices of this kind on the market and well known to the art, and the particular arrangement of the motor varies in each case with the type of governor.

With the switch in engagement with contacts *c c c*, as shown in the diagram, both the armature and field of the motor are connected to the source of supply *x x*, and the motor will accordingly run in a certain direction. If now the switch is moved over into engagement with the contacts *c' c' c'*, the connection with the motor-armature is not changed and the connection of the field is reversed. Thus the direction of rotation of the motor is reversed.

It is evident that with this construction of switch and arrangement of circuits the operator by giving a slight movement to the handle B in either direction may start the motor in one direction or the other, as desired. Moreover, since springs *b b b* return to their central position out of engagement with both

sets of contacts when released the operator can readily give impulses of either long or short duration to the motor at will and can stop the motor instantly by merely releasing the handle. It is further obvious that no attention is required to the controlling apparatus, since the motor is stopped by merely releasing the switch, and consequently the entire attention of the operator may be devoted to the synchronism-indicator.

I do not desire to limit myself to the particular construction and arrangement of parts here shown, since changes therein which do not depart from the spirit of my invention and which are within the scope of the appended claims will be obvious to those skilled in the art.

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

1. In combination, an electric motor, and a starting and reversing switch therefor comprising a plurality of flat springs mechanically connected and tending to return to a given position, and two sets of contacts arranged one on each side of said springs and adapted to be engaged by said springs when said springs are moved from said given position.

2. In combination, an electric motor, and a starting and reversing switch therefor comprising two sets of stationary contacts and a set of springs mechanically connected and rigidly supported at one end between said sets, said springs being adapted to engage said contacts when moved in either direction from their central position.

3. In combination, an electric motor, a source of supply therefor, two sets of switch-contacts of three contacts each, two contacts of each set being connected to the said source of current and the third contact to one terminal of the motor-armature, and three springs mechanically connected and tending to return to a given position, said springs being arranged to engage one of said sets of stationary contacts when moved in either direction from said given position, one of said springs being connected to a terminal of said motor-armature and the other two springs being connected to each of two terminals of the motor-field.

Signed at Pittsfield, Massachusetts, this 18th day of September, 1903.

GILBERT WRIGHT.

Witnesses:

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