

No. 822,290

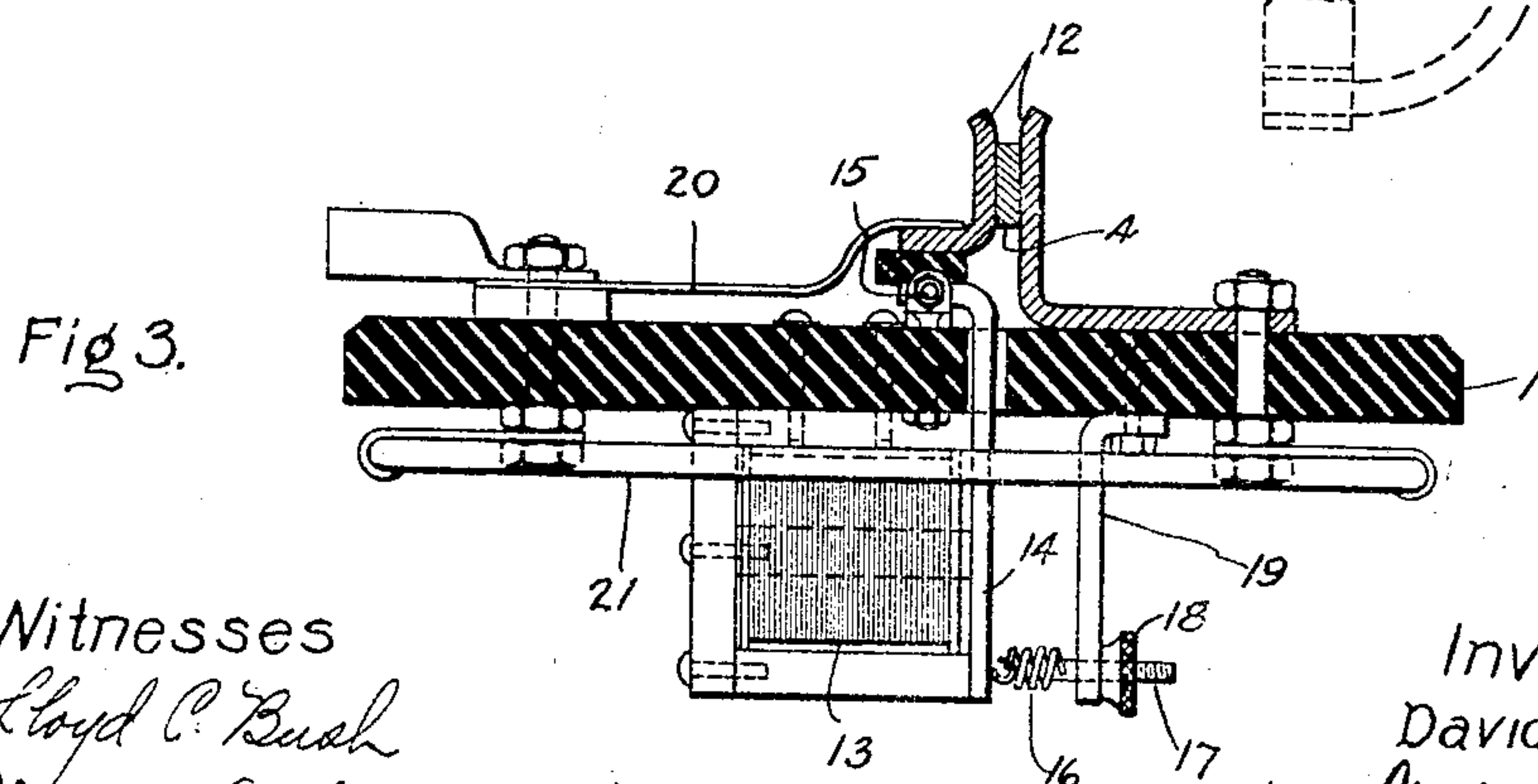
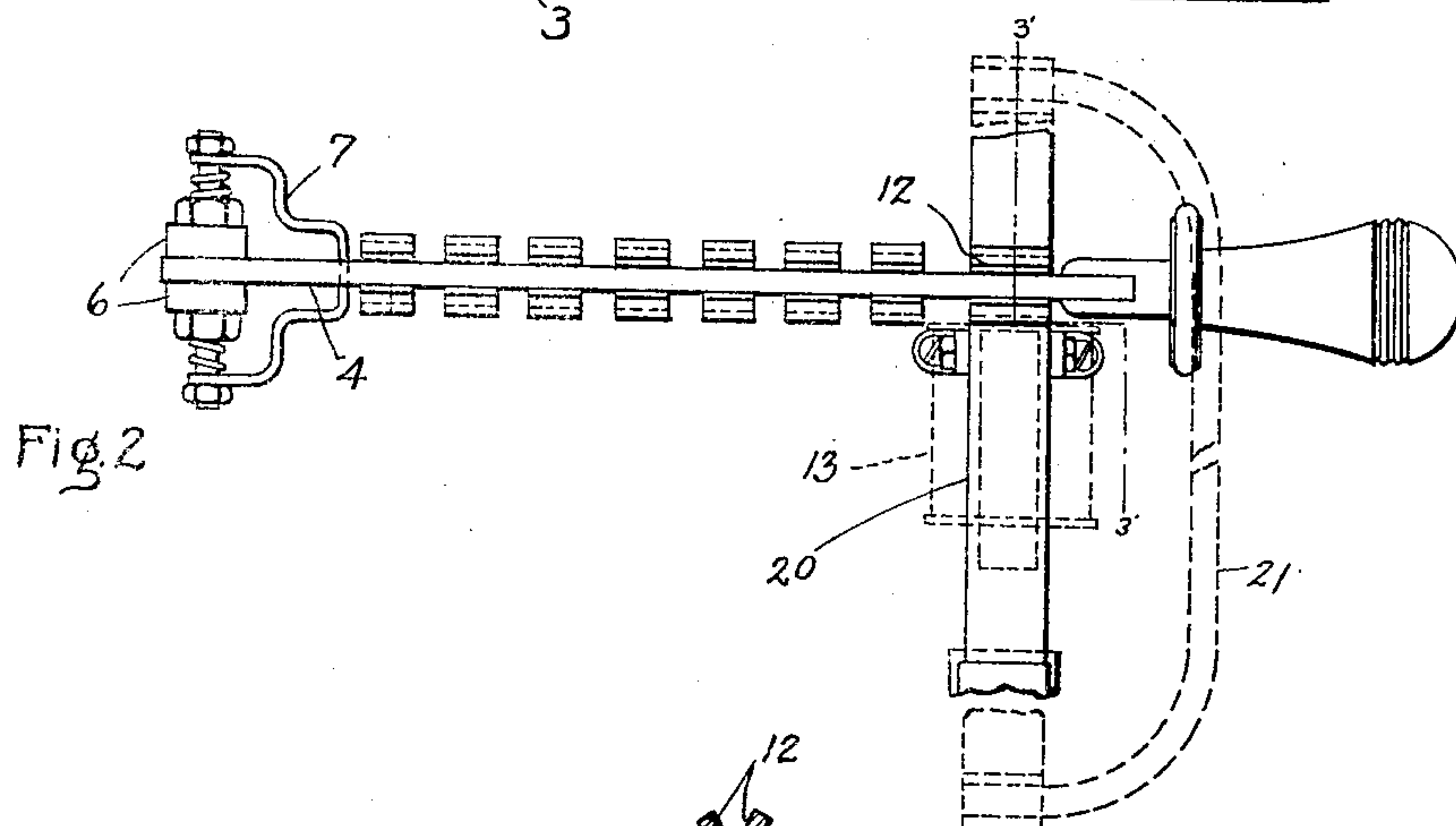
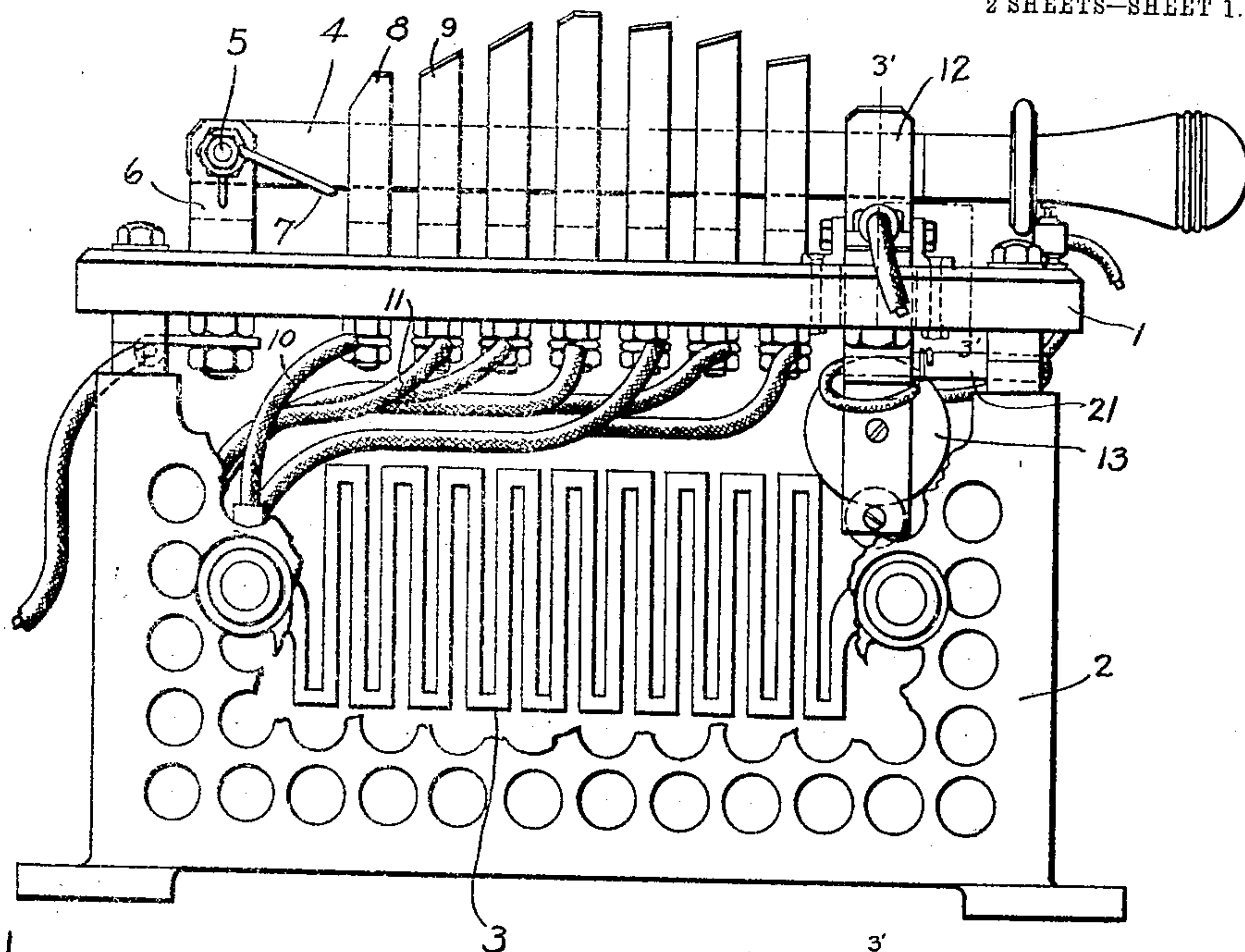
PATENTED JUNE 5, 1906.

D. MILLER.

STARTING RHEOSTAT.

APPLICATION FILED NOV. 29. 1904.

2 SHEETS—SHEET 1.



Witnesses
Lloyd C. Bush
Helen Crawford

Inventor
David Miller
by *Albert H. Davis*
Att'y.

No. 822,290.

PATENTED JUNE 5, 1906.

D. MILLER:
STARTING RHEOSTAT.
APPLICATION FILED NOV. 29, 1904.

2 SHEETS—SHEET 2.

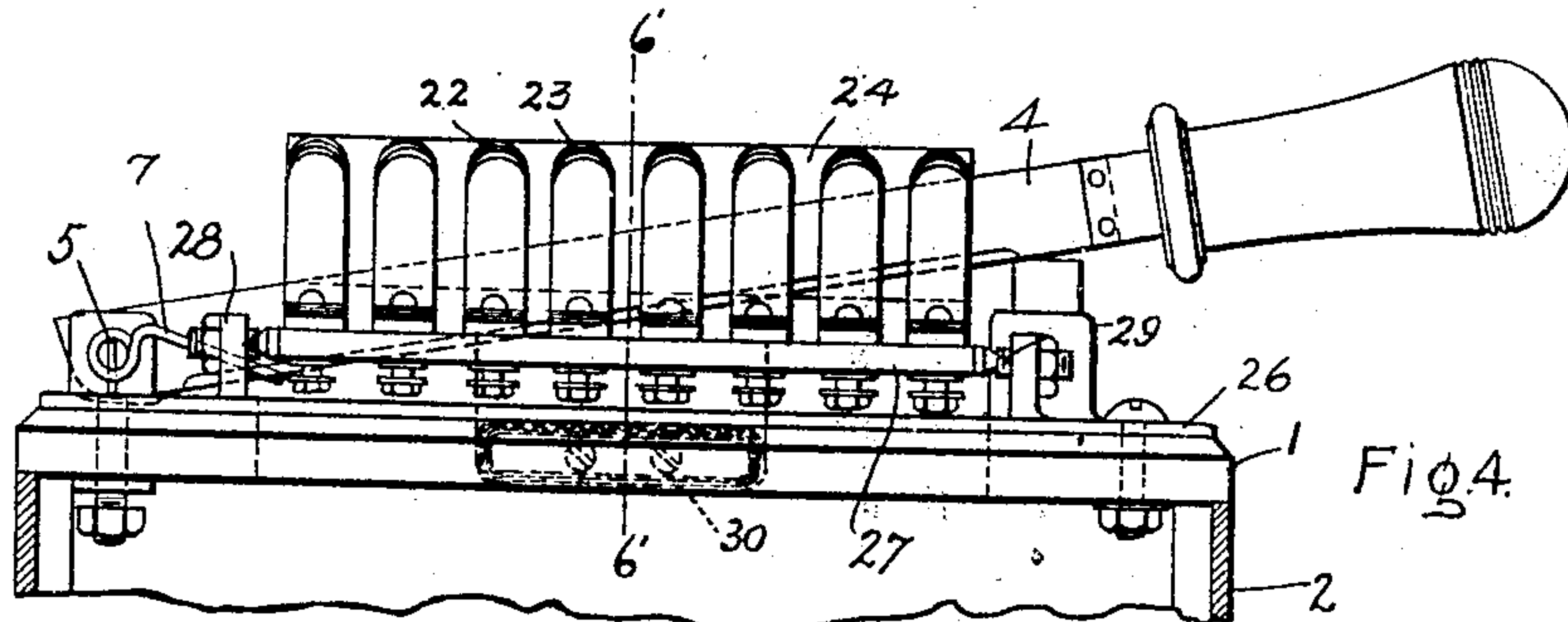


Fig. 4.

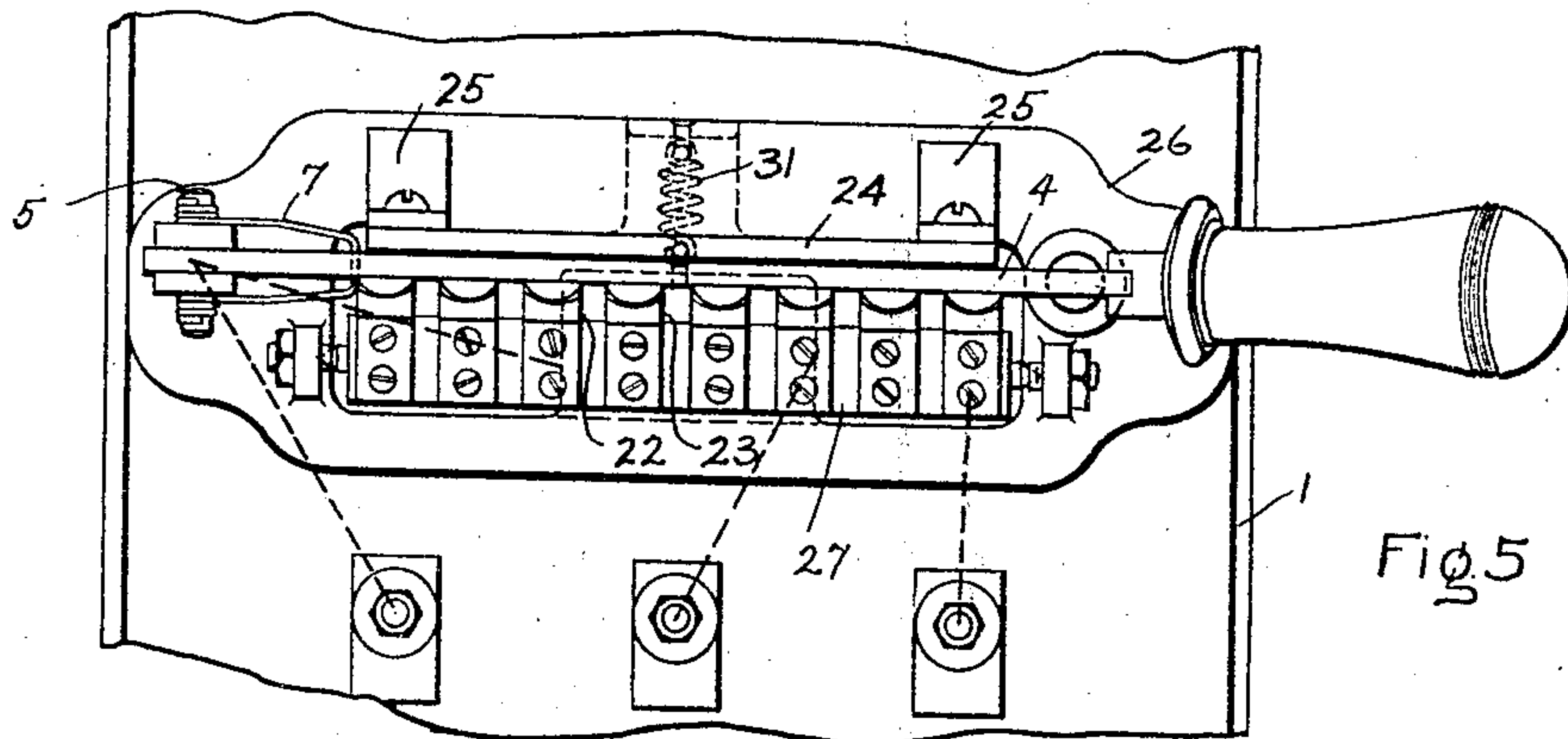


Fig. 5.

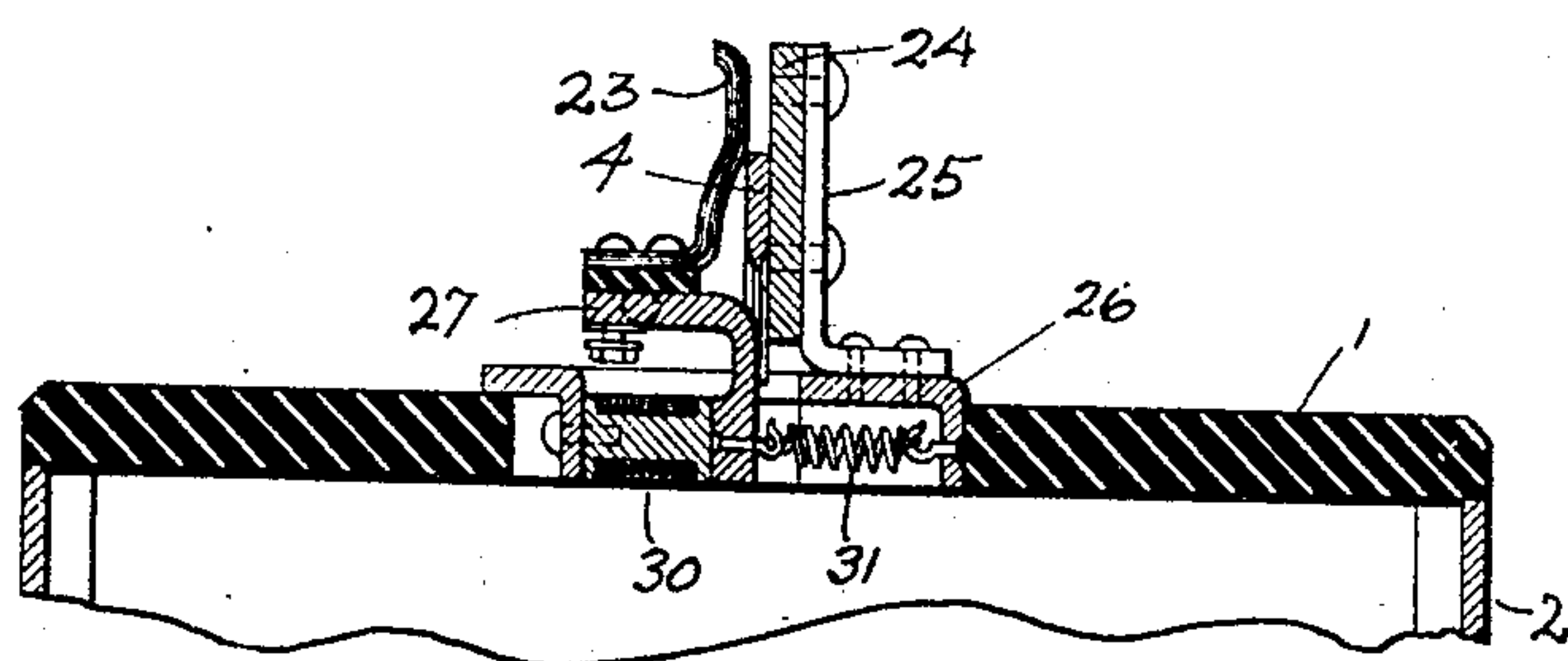


Fig. 6.

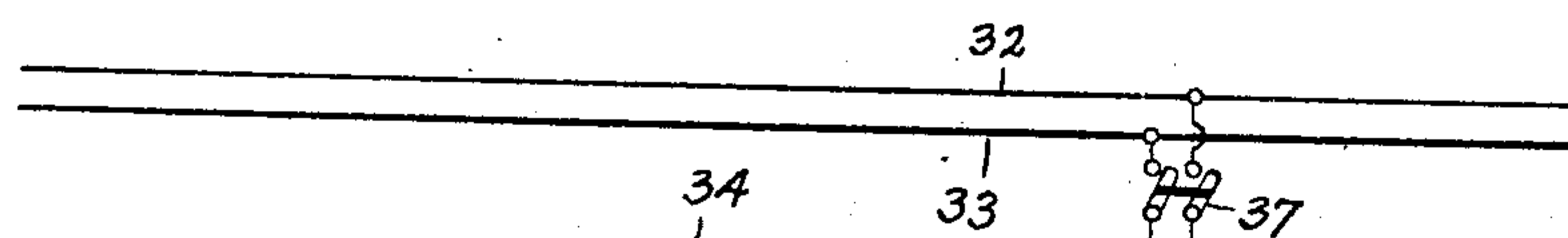


Fig. 7.

Witnesses
Lloyd C. Bush
Allen Orford

Inventor
David Miller
by *Albert H. Davis*
Att'y.

UNITED STATES PATENT OFFICE.

DAVID MILLER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

STARTING-RHEOSTAT.

No. 822,290.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed November 29, 1904. Serial No. 234,760.

To all whom it may concern:

Be it known that I, DAVID MILLER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Starting-Rheostats, of which the following is a specification.

This invention relates to starting-rheostats for controlling electric motors, and has for its object the improvement of the switch mechanism, by which a better contact may be effected and with greater ease of manipulation.

Referring to the drawings, Figure 1 is a side elevation of a starter embodying my improvements. Fig. 2 is a plan view thereof. Fig. 3 is a section taken approximately on the line 3 3, Fig. 1. Fig. 4 is a side elevation, partly in section, of a modified form. Fig. 5 is a plan view thereof. Fig. 6 is a section taken approximately on the line 6 6, Fig. 4; and Fig. 7 is a diagram of the circuits.

Referring to the drawings, 1 is a slate base mounted upon resistance-box 2, inclosing resistance 3 and having its sides perforated, as shown, to permit a circulation of air there-through. A switch-lever 4 is pivotally mounted at 5 in the bracket 6, bolted to the base, and a spring 7 tends to force the lever away from the base. Clips 8 9, &c., are secured to the base by a threaded portion and by nuts which serve as binding-screws for the terminals 10 11, &c., of resistance 3. The particular method of connecting up this resistance is no part of my invention. Therefore let it suffice to say that when lever 4 is in engagement with clip 8 the entire resistance is in circuit and that as the lever contacts with the successive clips sections of resistance are cut out until contact is finally made with short-circuiting clip 12, when all resistance is cut out.

Secured to the opposite side of the base from the lever is an electromagnet 13, which acts upon an armature 14, having a portion which passes through the slate base, is bent at right angles, and pivoted at 15 in brackets mounted on the base. Mounted upon the bent portion of the arm, but insulated therefrom, is a bent strip forming one side of clip 12, which thereby constitutes this bent strip, and armature 14 a lever fulcrumed at 15. A spring 16, adjustable by means of thumb-nut 18 and rod 17, mounted in brackets 19, tends to withdraw the armature from the magnet

when the latter is demagnetized, and thereby spread the jaws of clip 12. Connection is made between the line and clip 12 through a flexible strip 20 and also through fixed connecting-bar 21.

In Figs. 4, 5, and 6, I have shown a modification whereby the switch-lever may be locked and released in any position thereof. In this form the contact-clips consist of the laminated contacts 22 23, &c., forming one side of the clip, and a metallic contact-bar 24, secured, by means of brackets 25, to contact-base 26, forming the other. The laminated contacts are mounted on and insulated from rocking bar 27, pivoted in an adjustable bearing in brackets 28 and 29. Bar 27 is bent at right angles to form the armature for electromagnet 30, mounted in contact-base 26. A spring 31 between said base and the armature end of bar 27 tends to rock the bar to release the switch-blade upon the demagnetization of the magnet.

In Fig. 7 is shown a diagram of the circuits. Armature A of the motor is connected across leads 32 33, through wires 34 and 35, through the rheostat R and line 36, while the field F is shunted across from wire 34 to terminal of line 36. The magnet-coil C is connected in series with the field, as shown. 37 is a switch for making and breaking the circuit.

The operation of my device is very clear from the above description. The electromagnet locks the switch-lever in position, and upon the failure of voltage in the circuit the lever is released and the spring 7 forces the lever to an open position.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a starting-rheostat, the combination with a pivoted spring-pressed controlling-lever and a contact-clip mounted to receive said lever, of electromagnetic means operating upon said clip to maintain said lever within its jaws.

2. In a starting-rheostat, the combination with a pivoted spring-pressed controlling-lever of a series of contact-clips mounted to successively receive said lever, and electromagnetic means operating upon one of said clips for holding said lever within the clips.

3. In a starting-rheostat, the combination of a resistance and a pivoted controlling-lever therefor, of a series of contact-clips mounted

to successively receive said lever to vary the resistance, and electromagnetic means operating upon said contacts to detain said lever within the clips.

5 4. In a starting-rheostat, the combination with a resistance and a contact means for varying the same comprising a fixed portion, a spring-pressed controlling-lever mounted for sliding engagement therewith and a movable portion, of electromagnetic means operating upon said movable portion to retain
10 said lever in any position of said engagement.

5. In a starting-rheostat, the combination with a resistance and folding contact means
15 for varying the same, said means comprising a fixed contact portion, a spring-pressed controlling-lever mounted for sliding engagement therewith and a pivoted portion yieldingly mounted for engagement with said
20 lever, of electromagnetic means for detaining

the lever in any position between the contact portions.

6. In a starting-rheostat, the combination with a resistance and folding contact means for varying the same, said means comprising
25 a fixed contact portion, a spring-pressed pivoted controlling-lever mounted for sliding engagement therewith, and a series of spring-pressed contact-strips pivotally mounted for engagement with said lever, of electromag-
30 netic means for detaining and releasing the lever in any position between the contact portions.

In witness whereof I have hereunto set my hand this 26th day of November, 1904.

DAVID MILLER.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.