

(No Model.)

2 Sheets—Sheet 1.

J. A. SPIKER.
ELECTRICAL SWITCH.

No. 582,149.

Patented May 4, 1897.

Fig. 1.

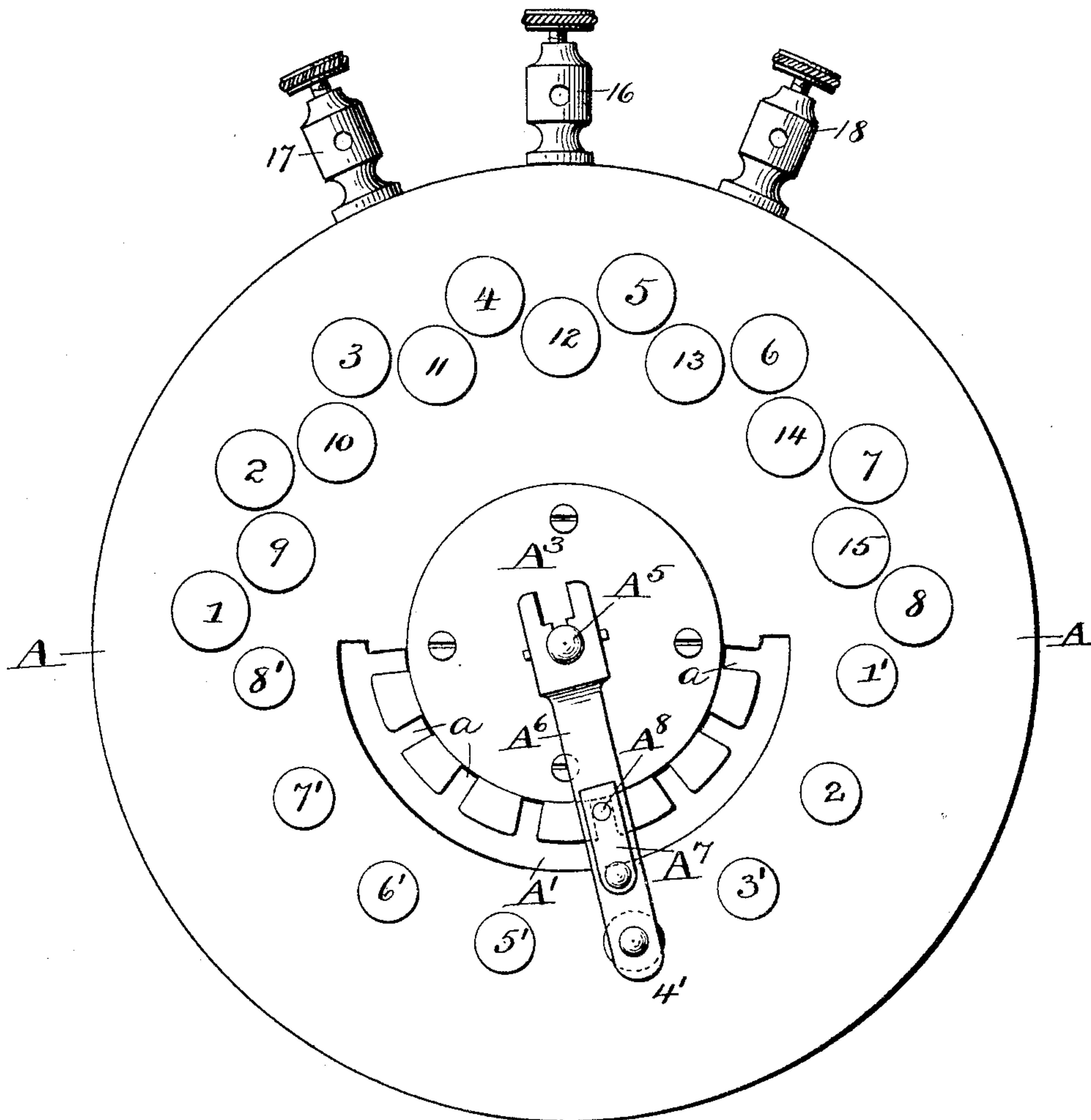
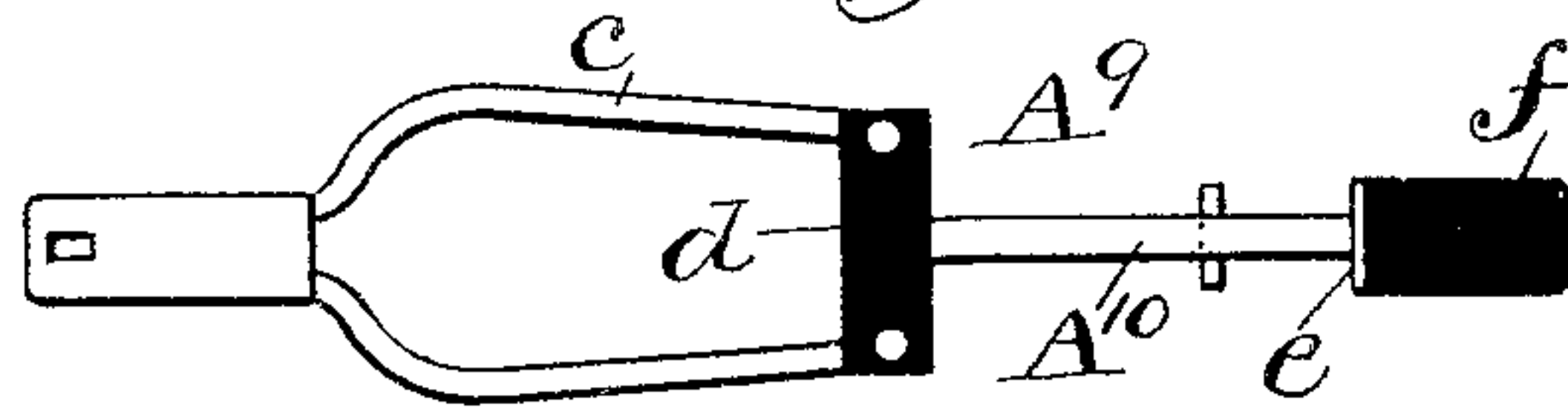


Fig. 4.



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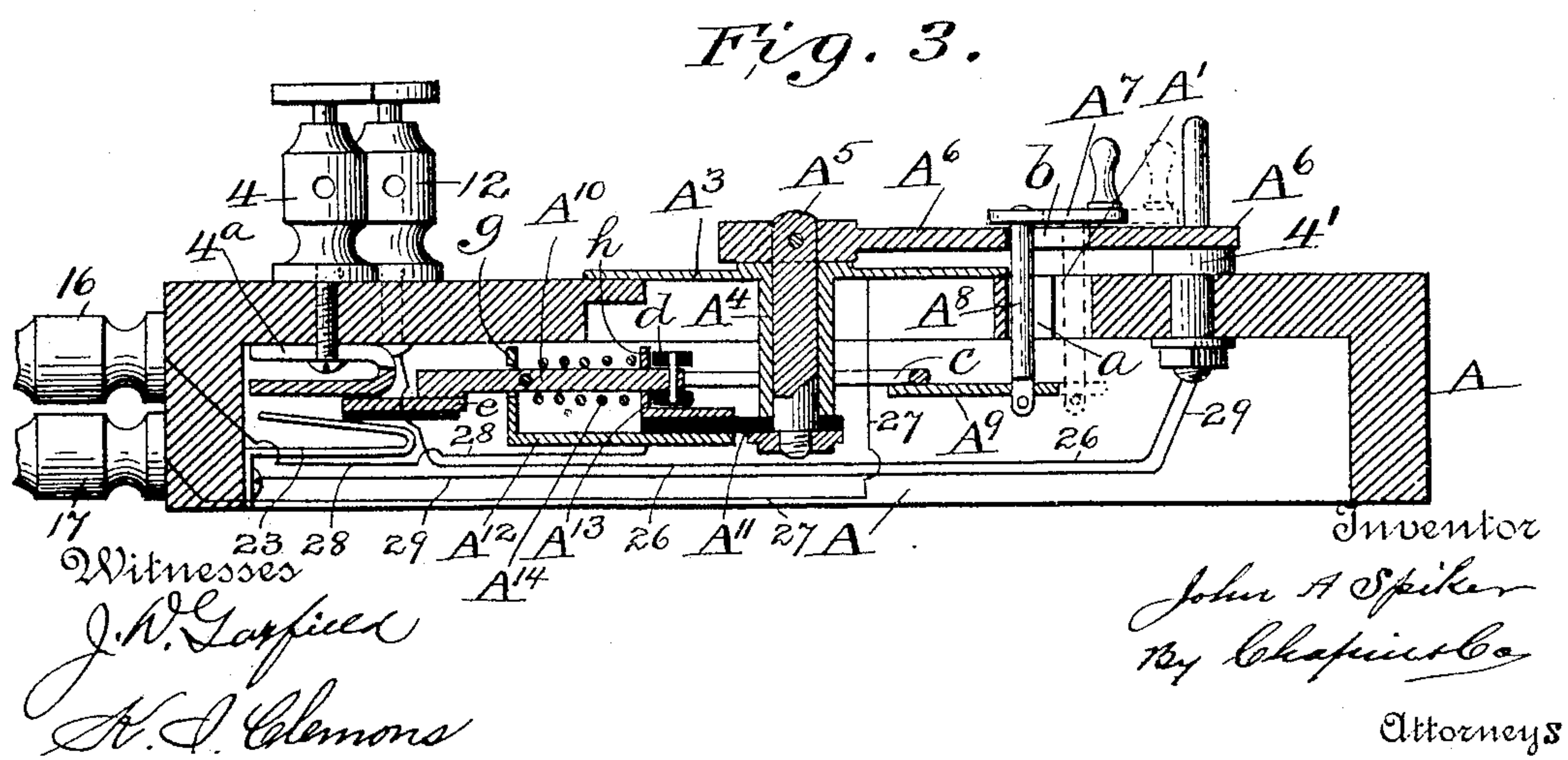
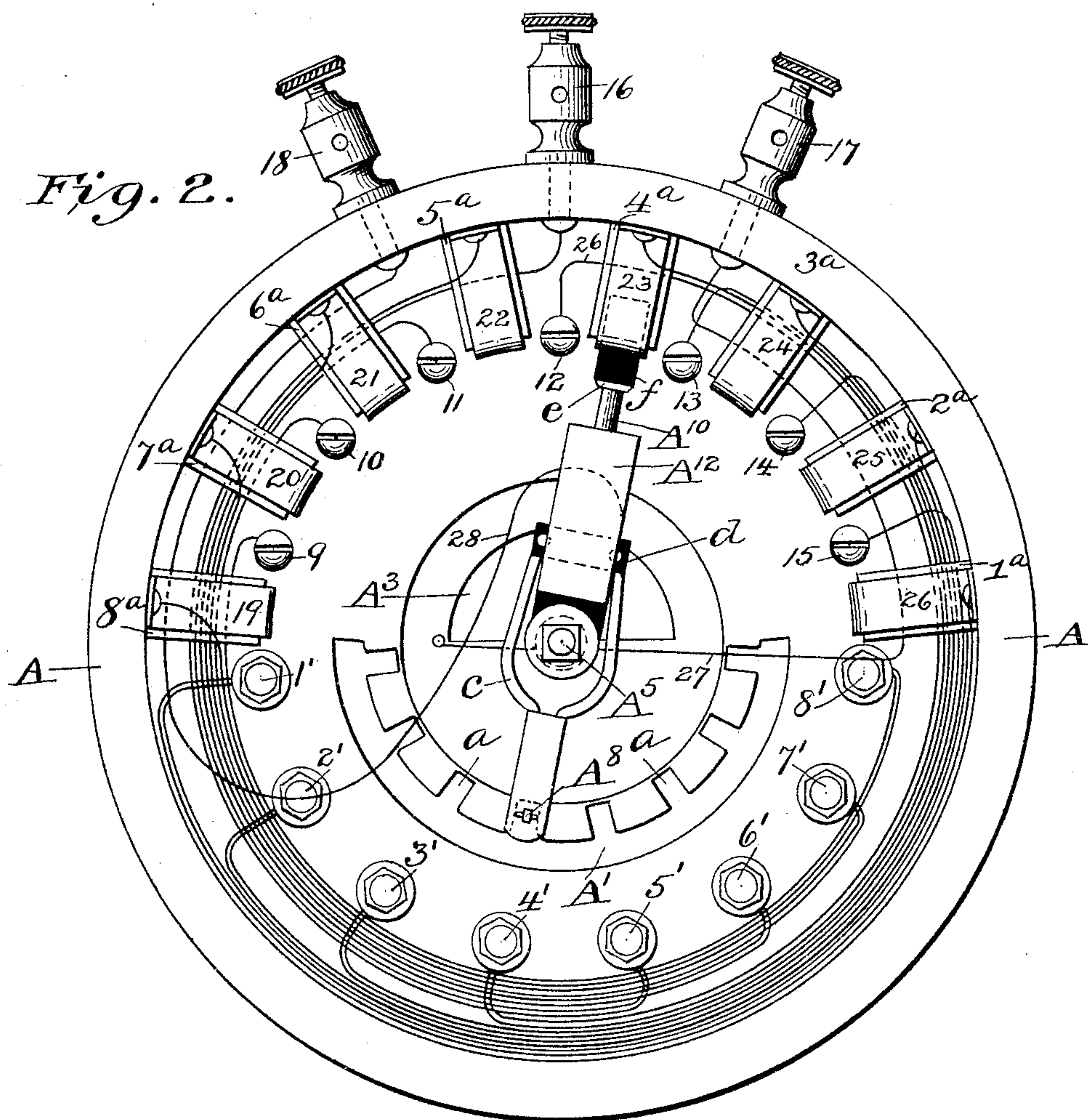
(No Model.)

2 Sheets—Sheet 2.

J. A. SPIKER.
ELECTRICAL SWITCH.

No. 582,149.

Patented May 4, 1897.



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UNITED STATES PATENT OFFICE.

JOHN ALBERT SPIKER, OF GRAND ISLAND, NEBRASKA, ASSIGNOR OF ONE-HALF TO GEORGE E. EVERETT, OF SAME PLACE.

ELECTRICAL SWITCH.

SPECIFICATION forming part of Letters Patent No. 582,149, dated May 4, 1897.

Application filed May 14, 1896. Serial No. 591,456. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALBERT SPIKER, a citizen of the United States of America, residing at Grand Island, in the county of Hall and State of Nebraska, have invented new and useful Improvements in Electrical Switches for Telegraph and other Systems, of which the following is a specification.

My invention relates to an improvement in electrical switches for telegraph and other systems; and it consists of the several features and combinations of features, as more fully hereinafter described, and specifically pointed out in the claims.

The object of my invention is to provide a switch for use in telegraph or other offices, by which an operator can receive or send messages with one set of instruments from any one of a number of telegraph or other lines by connecting with any one of a series of single sets of instruments at pleasure, and at the same time where a type-writer is used the operator will not be obliged to carry it from one table to another in order to write out the messages received from each of the several different instruments, but can do all the work from one table.

The further object of my invention is to provide a separate and independent circuit for each of the several instruments, so that when one set of instruments is being used the circuits of the other instruments will remain closed and undisturbed.

The above objects are accomplished by connecting the several lines to a series of contact-springs which are arranged on the base of the switch radially to the central shaft, which carries the rotating lever, with two contact-points which are adapted to be electrically connected at one time with the binding-posts of one of the sets of instruments, each wire of the several lines being connected to one of said contact-springs, and the contact-springs connected to the outgoing-wires of each circuit, arranged to come in contact with a metallic strip connected with the outgoing line-wire when not separated therefrom by the contact-point on the rear of the sliding rod of the arm of the rotating lever.

In the accompanying drawings, which illus-

trate my invention, Figure 1 is a top plan view. Fig. 2 is a bottom plan view; Fig. 3, a central vertical section taken on a line passing through the revolving lever; Fig. 4, a detail view of the arm of the lever.

Referring to the drawings, in which like letters and figures of reference denote like parts throughout the several views, A represents the base of the switch, made of wood or other suitable non-conducting material.

1 2 3 4 5 6 7 8 and 10 11 12 13 14 15 are two series of radially-disposed binding-posts on the upper portion of the face of the base. 1' 2' 3' 4' 5' 6' 7' 8' are a series of radially-disposed contact-points on the lower portion of the face of said base. 16, 17, and 18 are three binding-posts on the upper edge of the base.

A' is a semicircular slot formed in the base of the switch, provided with short radial slots *a* in its upper edge, the said slots being exactly opposite the contact-points; A³, a circular metal plate screwed or otherwise secured to the central portion of the top of the base; A⁴, a hub carried by said metal plate and projecting downward therefrom; A⁵, a vertical shaft extending through the center of the hub and plate A³; A⁶, a rotating lever fixed to the upper portion of the shaft A⁵; *b*, an oblong slot therein; A⁷, a sliding plate provided with a suitable handle; A⁸, a pin projecting downward from said sliding plate through the slot in the lever and its lower end connected to the inner end of the revolving arm A⁹. The arm A⁹ is provided with a forked projection *c*, which embraces but does not come in contact with the hub A⁴, and is provided with suitable cross-pieces *d* of insulating material at its ends.

A¹⁰ is a sliding rod the inner end of which is held between the cross-pieces *d* and the outer end provided with a plate *e*, the upper face of which serves as a contact-point, while the lower face is provided with insulation *f*; A¹¹, a strip of insulating material carried on the lower end of shaft A⁵.

A¹² A¹³ are metallic plates secured to the upper and lower faces of insulating material A¹¹ and which support and carry the sliding rod A¹⁰, and A¹⁴ a spiral spring surrounding said rod and situated between the upwardly-

extending ends *g h* of the said metallic plates for the purpose of keeping the sliding rod and its plate *e* in its extreme outward position and also retaining the pin *A^s* in its normal position in one of the several slots *a*.

1^a 2^a 3^a 4^a 5^a 6^a 7^a 8^a are a series of radially-disposed contact-plates screwed or otherwise secured to the lower end of the binding-posts 1 2 3 4 5 6 7 8, with which they are electrically connected; 19 20 21 22 23 24 25 26, a series of contact-springs made of some suitable thin spring metal located below said contact-plates and secured by means of screws to the inner circumference of the base *A*, and said springs are adapted to contact with one of the said contact-plates, except when the point *e* of the arm *A⁹* breaks the contact by being slid in between said spring and contact-plate.

The operation of my invention is as follows:
Should the operator, for instance, desire to connect the set of instruments connected to binding-post 12 with contact-point 4' he will first turn the lever around until the center of shaft *A⁵* and contact-point 4' are on a line.
The pin *A^s* will then enter the slot *a* opposite the point 4', and at the same time the point *e* of the arm *A⁹* will slide in between the contact-plate 4^a and spring 23, which will raise said spring away from the contact-plate, thus breaking the independent circuit. The course of the current will then be in from the before-mentioned set of instruments to binding-post 12, over wire 26 to contact 4', lever *A⁶*, plate *A³*, and thence over wire 27 to binding-post 17 to operator's instrument, after passing through same returning through binding-post 16, then over wire 28 to plate *A¹²*, sliding rod *A¹⁰*, point *e*, plate 4^a, and finally out through binding-post 4 and over the line-wire. In the meantime each and every one of the other electrical circuits or main lines are uninterrupted on account of each line having a separate and independent circuit, and the course of the current is as follows: The current comes in through binding-post 12 over wire 26 to contact-point 4', thence over wire 29 to spring 23, plate 4^a, and through binding-post 4 and out over line-wire. When it is desired to use another line, the lever is turned to the desired contact-point and the course of the current will be similar to the course above described. In case the operator desires to use his own instrument independently it is only necessary for him to place the lever midway between any two contact-points, which will also bring the contact-point on the end of the sliding rod midway between two of the contact-plates, when all the circuits will then be closed.

It will be seen that by my switch a single telegraphic or other instrument may be put in circuit at pleasure with either one of any number of lines, and thus save the expense of having separate instruments for each line.

The switch may be placed at any distance from the instruments in the operating-ronce

so that the operator will not be annoyed by the sound of the other instruments while receiving a message and writing it out on the type-writer.

Although I have shown the switch as built with eight wires, the number may be increased or diminished, as desired.

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

1. A base, provided with a curved slot which has a series of notches in one of its edges; a partially-revolving rod or shaft extending into the base, an operating-handle connected to the shaft, and a sliding plate carried by the handle to engage with the notches in the slot to lock the lever in place; combined with a spring-actuated arm, connected to and operated by the sliding plate, and provided at its free end with a contact-plate; radially-disposed contact-plates, binding-posts, contact-springs corresponding to contact-plates, and suitable connecting-wires, substantially as shown.

2. A base, provided with a curved notched slot; a partially-revolving rod or shaft, journaled in the base, an operating-handle connected to the shaft, and a sliding plate carried by the handle to engage with the notches in the slot; combined with an endwise-moving spring-actuated arm, that is connected at one end to and operated by the sliding plate, arms connected to the partially-revolving rod or shaft, and between which the spring on the arm catches; radially-arranged contact-plates and springs between which the plate on the end of the arm is forced, suitable binding-posts and connecting-wires, substantially as described.

3. A switch for telegraph or other instruments consisting of a slotted base, a series of radially-disposed contact-plates, binding-posts connected to the contact-plates, and a spring for each plate, combined with a revoluble lever, a sliding plate carried by the lever, a spring-actuated sliding arm, connected to the sliding plate at one end and adapted to make connection at its other with the springs; the lever being adapted to contact with the said radial contact-points, substantially as set forth.

4. A switch for telegraph and other instruments, consisting of a slotted base, a series of binding-posts electrically connected to a number of sets of different instruments; a series of contact-points, contact-plates, and a spring used in connection with the contact-plates, combined with a revoluble lever pivoted upon the base and provided with a contact-point which is adapted to make connection with the contact-points on the base, and with a contact-plate on its inner end which has both a reciprocating and a swinging or pivoted movement so as to make connection with any one of the contact-plates on the base, substantially as specified.

5. A switch for telegraph and other instruments comprising a base provided with a series of contact-plates, springs and points, a slot in said base having slots in one edge thereof, and a revoluble lever having a sliding plate thereon provided with means for engaging said slots, and a spring-controlled arm, one end of which is adapted to make contact with said contact-plates and also push the said contact-springs away from the con-

tact-plates thereby breaking the circuit, and directing the same through the operator's instrument which is connected with the switch, and the opposite end connected with the said operating-lever, substantially as described.

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Witnesses:

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