

(No Model.)

S. F. ALDEN.
ELECTRIC SNAP SWITCH.

No. 483,316.

Patented Sept. 27, 1892.

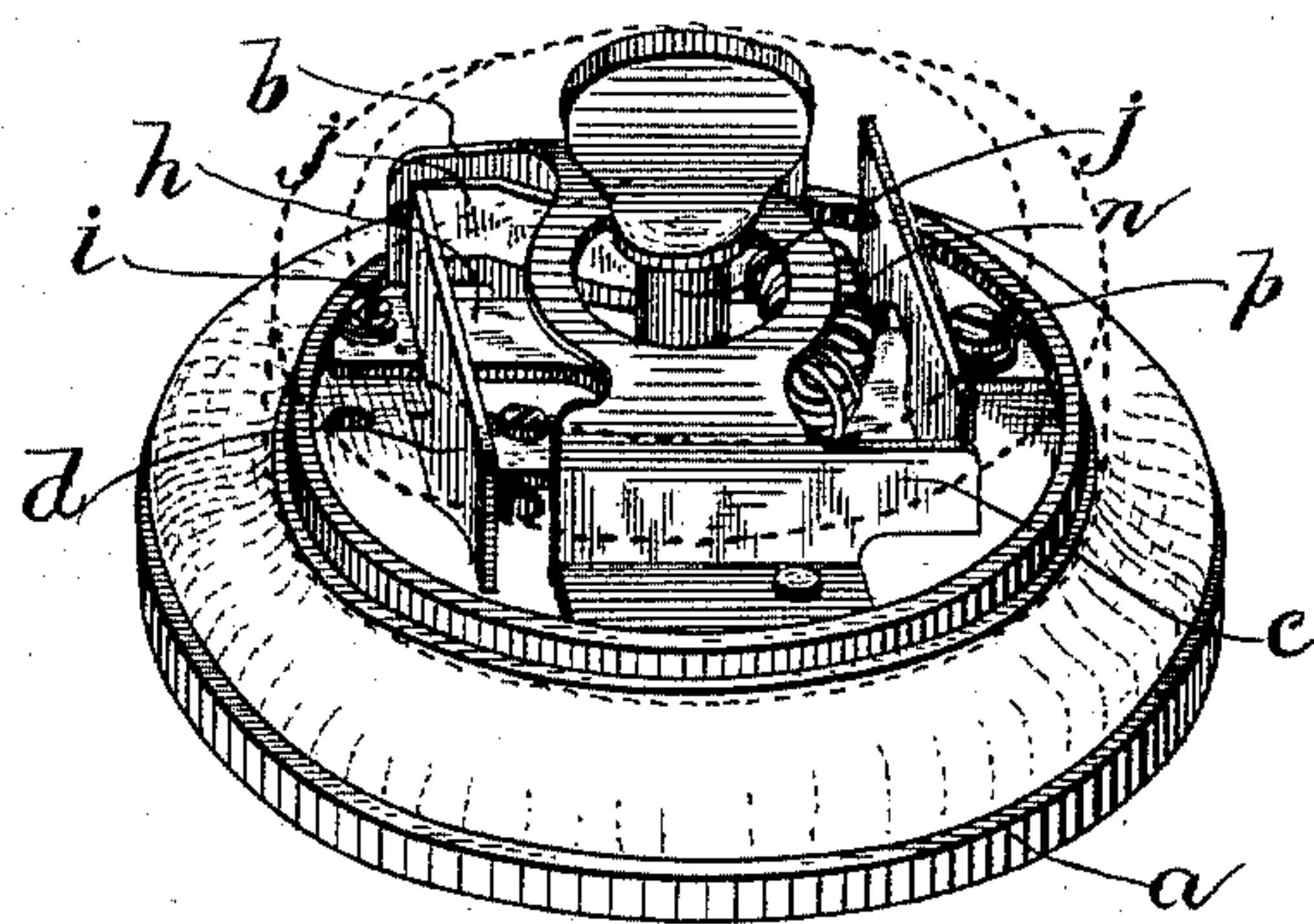


FIG. 1.

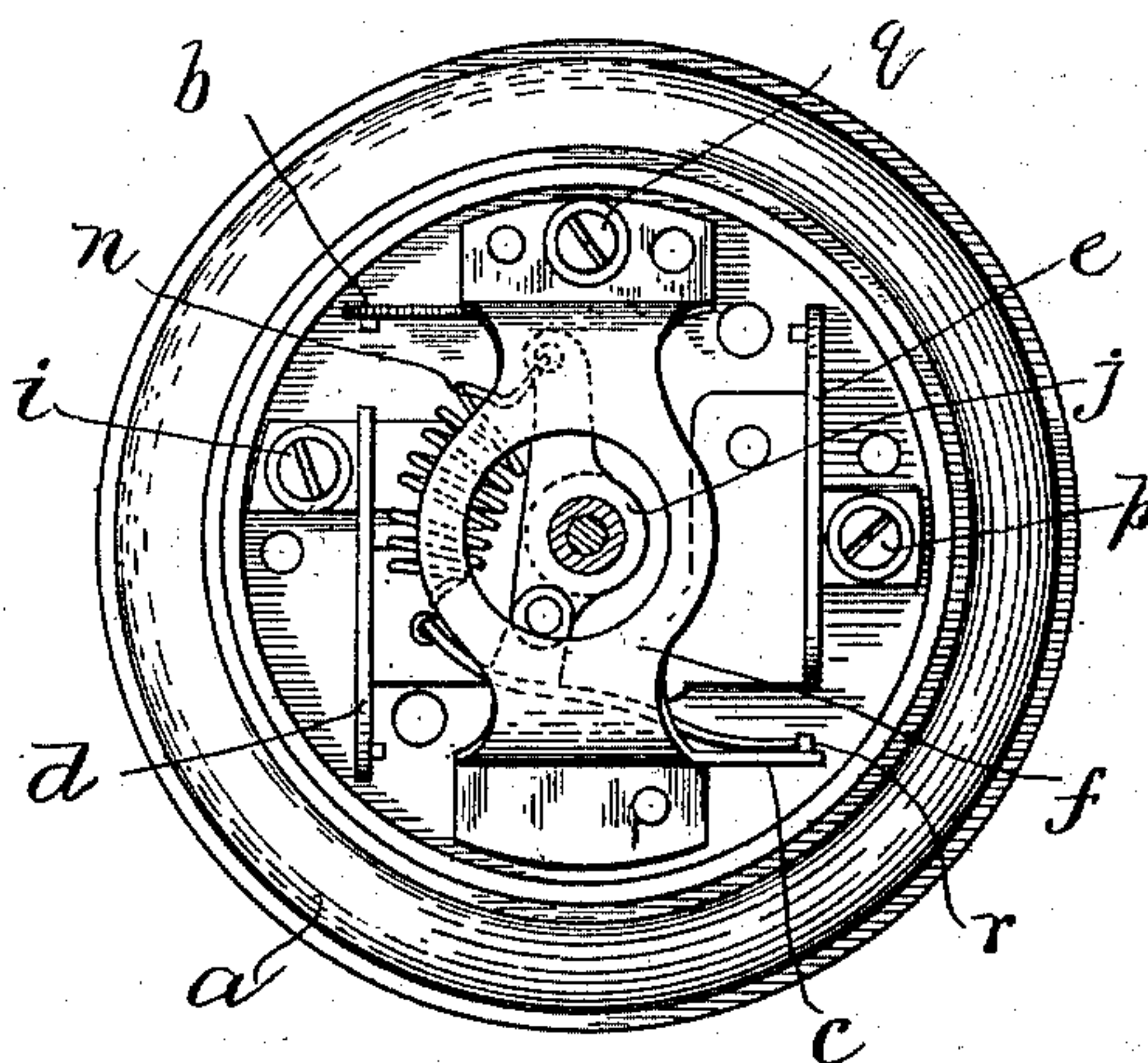


FIG. 2.

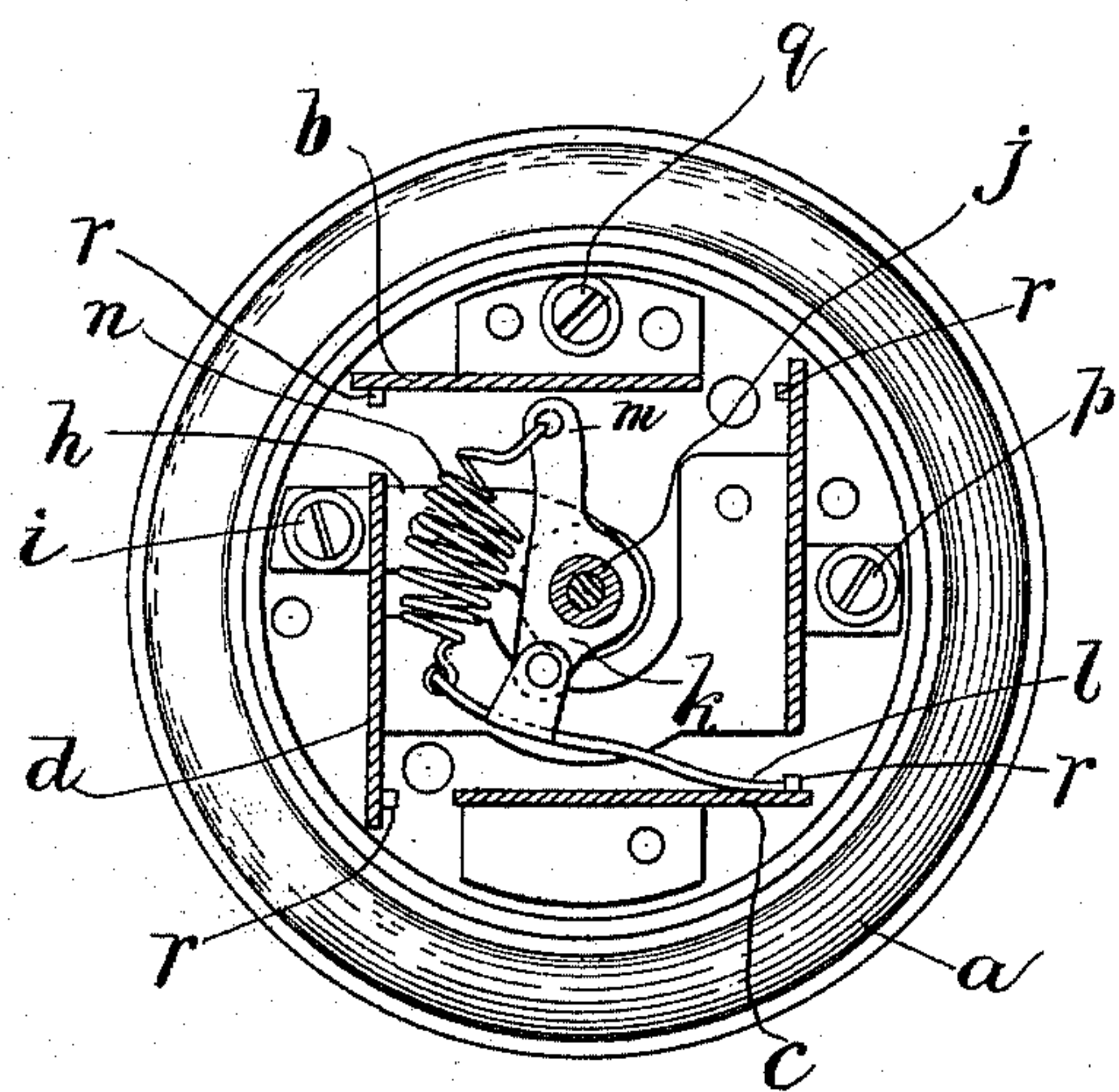


FIG. 3.

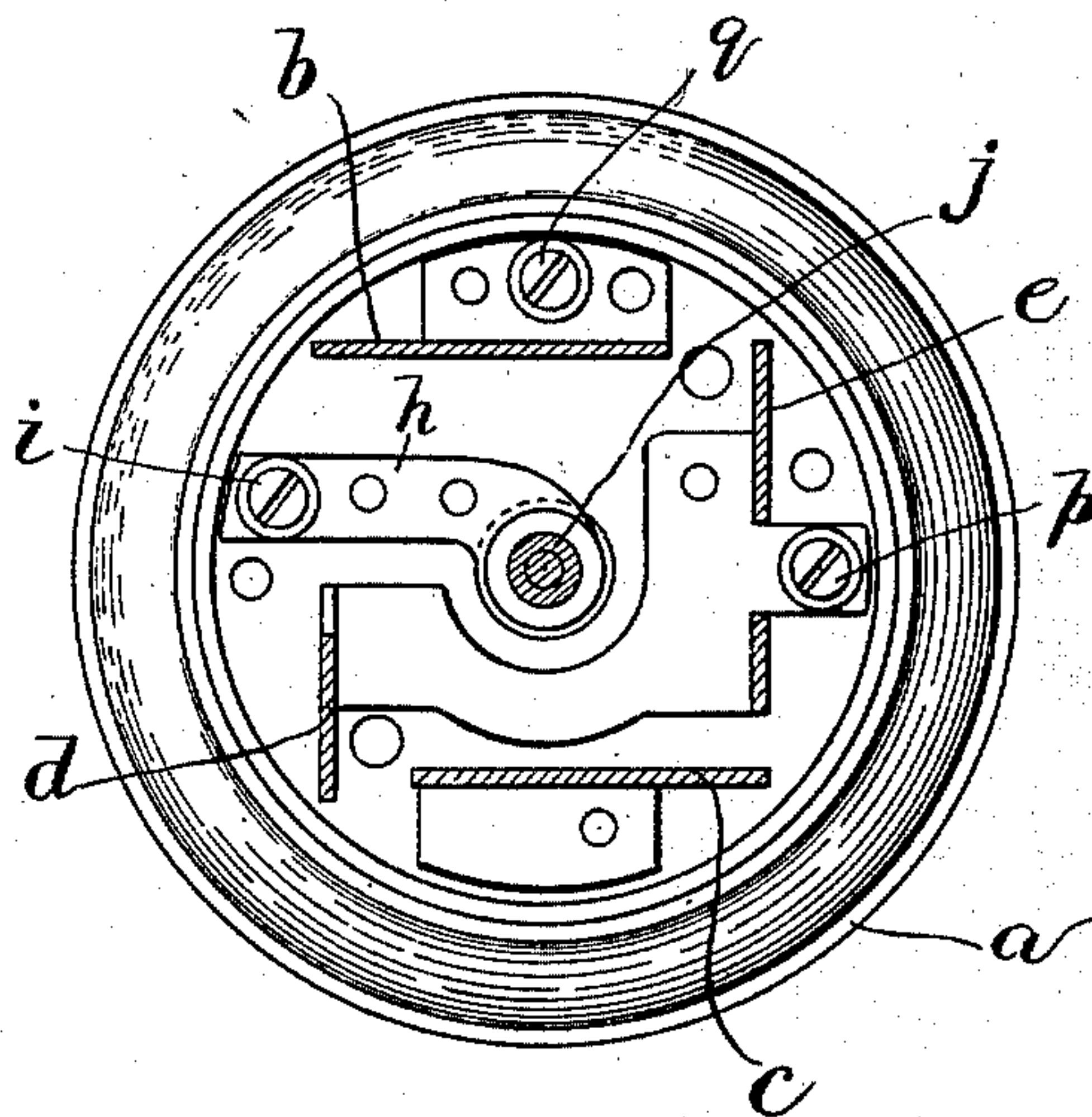


FIG. 4.

WITNESSES:
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UNITED STATES PATENT OFFICE.

SETH FRANK ALDEN, OF NEW BEDFORD, MASSACHUSETTS.

ELECTRIC SNAP-SWITCH.

SPECIFICATION forming part of Letters Patent No. 483,316, dated September 27, 1892.

Application filed February 1, 1892. Serial No. 419,855. (No model.)

To all whom it may concern:

Be it known that I, SETH FRANK ALDEN, of New Bedford, in the county of Bristol and State of Massachusetts, have invented certain
5 new and useful Improvements in Electric Snap-Switches, of which the following is a specification.

My invention relates to "snap-switches," so called, for lighting and extinguishing electric lamps and for similar electrical purposes.

It is the object of the invention to provide improvements in three-point and single-point switches which will render the same more efficient and certain of operation than heretofore.

The invention consists of a snap-switch, comprising in its construction four terminals composed of separate vertical plates arranged rectangularly, opposite plates being electrically tied or connected, and a rotary shaft provided with a spring-impelled brush adapted to be brought successively into contact with the terminals, certain of the latter of which and the rotary shaft being embraced
25 within an electric circuit.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

In the said drawings, Figure 1 is a perspective view of the invention, the outer case being represented in dotted lines. Fig. 2 is a top plan view of the invention, the case being removed and the central rotary shaft being represented in section. Fig. 3 is a horizontal sectional view taken on a line above the spring-actuated brush. Fig. 4 is also a horizontal sectional view taken on a line below the spring-actuating brush.

In the drawings, *a* designates the base, which may be of any suitable insulating material and which supports the various parts of the device.

b, *c*, *d*, and *e* are terminals, which consists of plates vertically arranged in rectangular order and secured to the base *a*. The terminals *b* and *c* are electrically tied or connected by means of a plate *f* or other suitable or convenient means secured to the base *a*, and the terminals *d* and *e* are likewise electrically

tied or connected, or by any other suitable or convenient means.

h designates a bar secured to the base *a*, and provided with a binding-screw *i*, with which a wire of an electric circuit may be connected. The said bar *h* extends to or nearly to the center of the base *a*, and at its inner end is constructed to form a bearing for the lower end of the rotary shaft *j*, which shaft is provided with an arm *k*, upon which a brush *l* is pivoted, as is most clearly shown in Fig. 3. The shaft *j* is also provided with an arm *m*, with which there is connected one end of a spring *n*, the other end of said spring being attached to a short arm extending from the base of the brush *l*, so as to normally impel the free end of the brush outward and make it bear against the terminals *b*, *c*, *d*, or *e*. Any other form of brush or means for causing it to bear on the terminal plates will answer the purpose of the invention. The entire arrangement of the rotary shaft and brush is such that when the brush is removed the terminals *b* and *c* will be insulated from the terminals *d* and *e*, and bar *h* will be insulated from all of the terminals.

p designates a binding-post in electrical connection with the terminals *d* and *e*, with which the wire of an electric circuit may be connected, and *q* represents a binding-post in electrical connection with the terminals *b* and *c*, with which a wire of a circuit may also be connected when it is desired to employ the device as a three-point switch.

r designates pins or projections connected with one end of each of the terminal plates *b*, *c*, *d*, *e*, so that when the spring-brush *l* is brought into contact therewith it cannot be returned directly to the contact-plate from which it snapped off, these pins being provided in order that the rotary shaft may not be turned backward. Supposing now that a direct wire is connected with the bar *h* and a return-wire with the binding-post *q* and that the spring-impelled brush *l* is in contact with either the terminals *d* or *e* and the circuit broken, as will be obvious, if the center shaft *j* should be rotated one-quarter of a revolution the spring-impelled brush *l* would be carried around and caused to snap off from the terminal plate *d* or *e* upon either the plate *b* or

5 *c*, and so close the circuit between the bar *h* and said terminal plates and light a lamp or group of lamps. By another one-quarter turn of the central shaft the spring-impelled brush would be caused to snap off from the plates *b* or *c* upon the terminal plates *d* or *e*, and so break the circuit and extinguish the lamps.

10 When the invention is used as a three-point switch, it must be used in connection with another three-point switch, the two electrically connected by means of wires extending between or tying corresponding terminals—that is, corresponding binding-posts *p* and *q* will be electrically connected by means
15 of wires, both of which switches may operate the same light or group of lights.

By the construction and arrangement of parts as shown it will be seen that it will be necessary only to move the key or rotary
20 shaft *j* one-quarter revolution in order to make and break the connection and that the device is entirely certain in its operation and not likely to burn out or otherwise get out of order or repair.

25 Having thus described my invention and explained a way of making and using the same, I declare that what I claim is—

1. A snap-switch for electrical purposes, comprising in its construction the terminals

b, *c*, *d*, and *e*, a base support, vertical plates 30 rectangularly arranged, opposite plates being electrically tied or connected, and a rotary shaft provided with a spring-impelled brush adapted to be brought successively into contact with the terminals, certain of the latter 35 of which and the rotary shaft being embraced within an electrical circuit, as set forth.

2. A snap-switch for electrical purposes, comprising in its construction the terminals *b*, *c*, *d*, and *e*, a base-support, vertical plates 40 rectangularly arranged, opposite plates being electrically tied or connected, each terminal plate being provided at or near one end with a locking pin or stud *r*, and a rotary shaft provided with a spring-impelled brush adapt- 45 ed to be brought successively into contact with the terminals, certain of the latter of which and the rotary shaft being embraced within an electrical circuit, as set forth.

In testimony whereof I have signed my 50 name to this specification, in the presence of two subscribing witnesses, this 16th day of December, A. D. 1891.

SETH FRANK ALDEN.

Witnesses:

JOSEPH I. DA TERRE,
JAMES C. MARA.