

No. 105,697.

PATENTED JULY 26, 1870.

J. KIDDER.  
COMPOUND SWITCH FOR ELECTRIC BATTERIES.

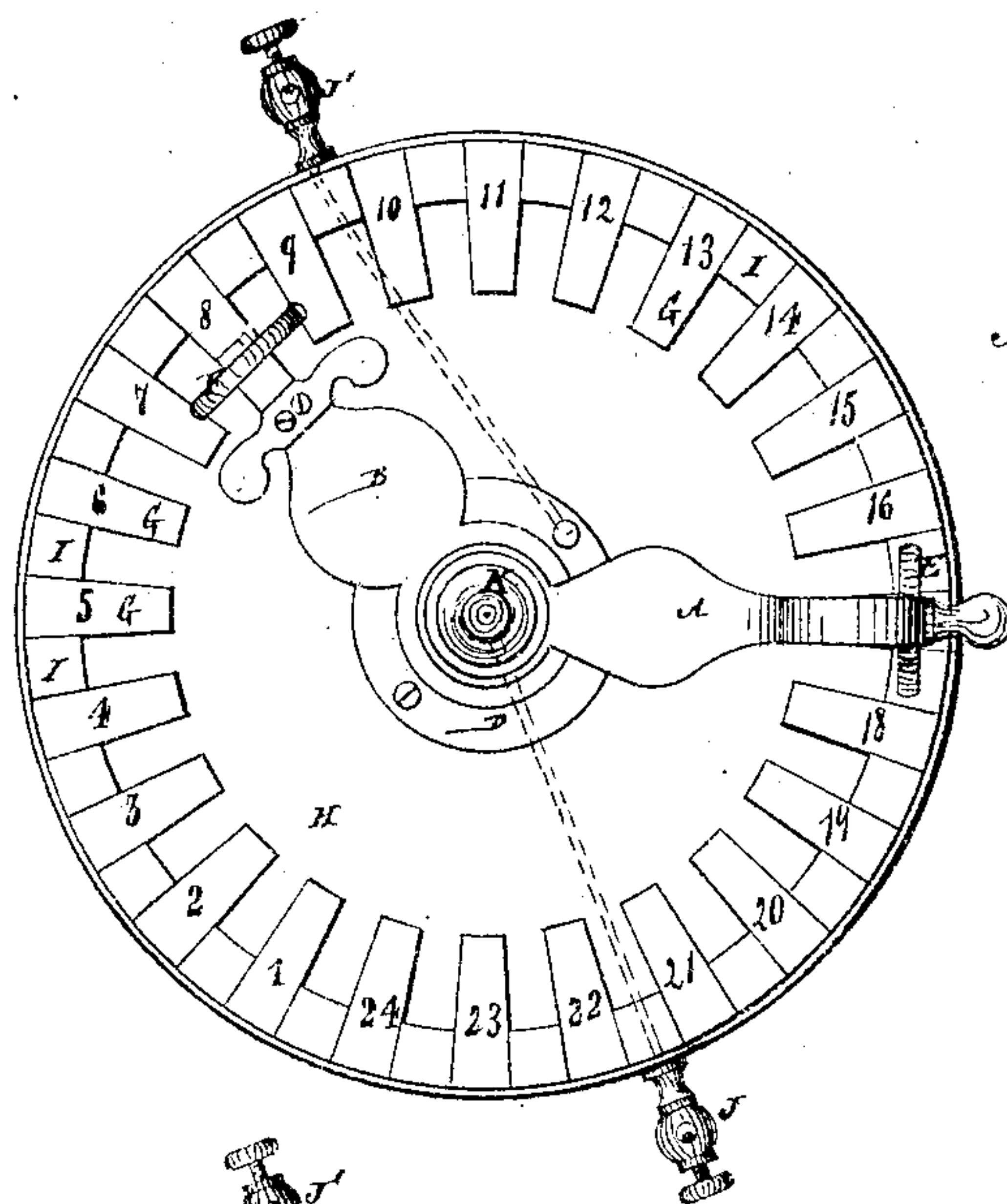


Fig. 1.

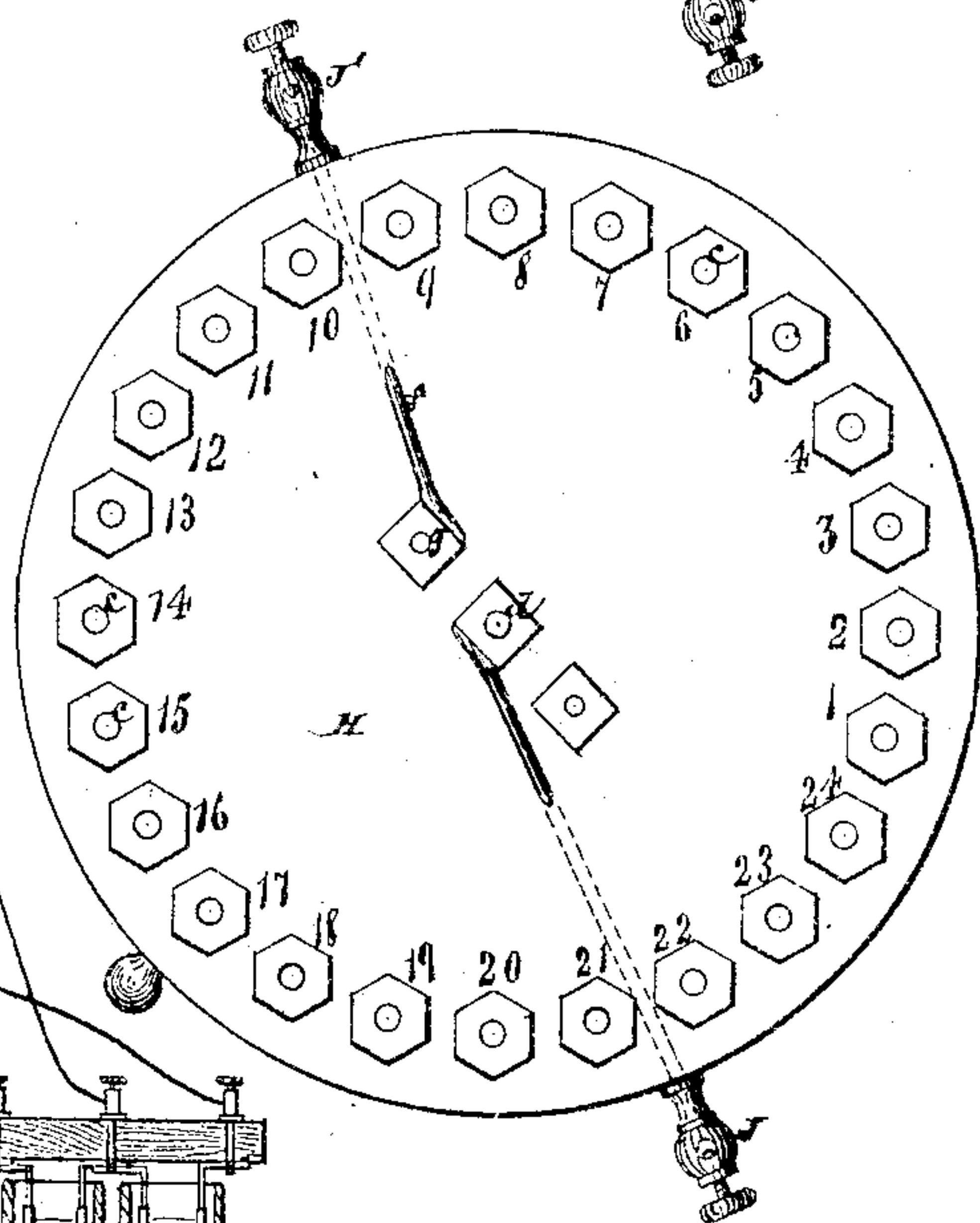


Fig. 2.

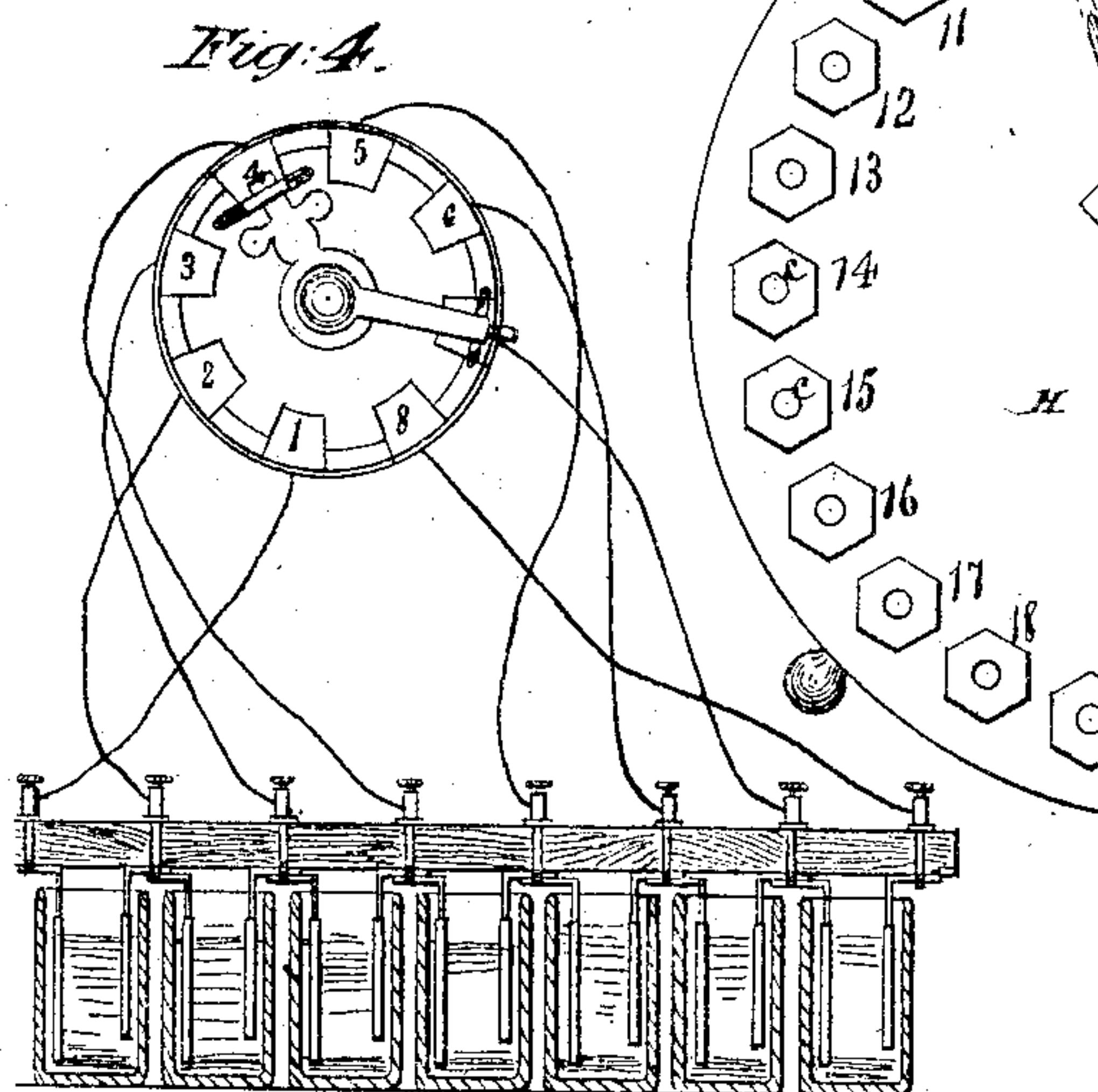


Fig. 3.

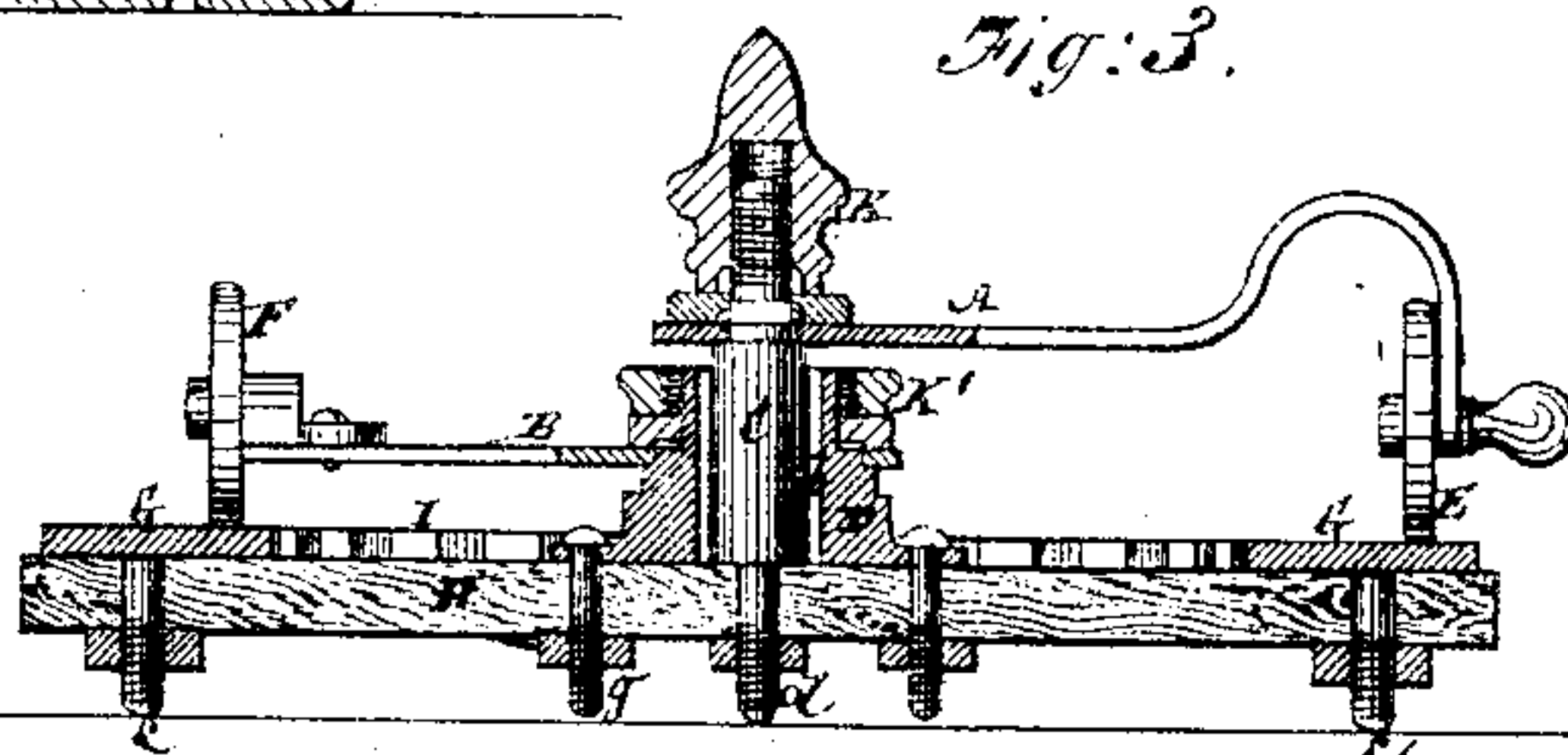


Fig. 4.

Witnesses.  
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JEROME KIDDER, OF NEW YORK, N. Y.

Letters Patent No. 103,697, dated July 26, 1870.

## IMPROVEMENT IN COMPOUND SWITCHES FOR ELECTRIC BATTERIES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JEROME KIDDER, M. D., of the city, county, and State of New York, have invented a new and useful Compound Switch for Batteries, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figures 1 and 2 represent opposite or upper and under face views of a compound battery-switch, constructed in accordance with my invention, and

Figure 3, a transverse section of the same.

Figure 4 is a diagram, in illustration of the connection of the switch with the cups of the battery.

Similar letters of reference indicate corresponding parts.

My invention, which may be applied to batteries for medical use, and for various other purposes, consists in a compound switch, or combination of two switches, insulated the one from the other, and made capable of independent rotation around one and the same center, said switches being independently connected with the wires or opposite ends of the wire by which the circuit is completed, and being arranged to travel over a circuit-breaker and closer formed of insulated conductors, that connect each with a separate cup or cups of the battery.

By the construction and operation of said compound switch, as hereinafter described, any number of cups may be brought into connection, or the polarity be reversed, at pleasure; also, by it, any greater or lesser number of cups may be brought into action either with or without breaking the circuit; likewise, all the cups in use may be changed (bringing new cups into use) without altering the number of cups in use.

Referring to the accompanying drawing—

A and B represent two switches, made capable of revolving around a center common to both, and constructed or arranged the one to pass or play within or through the other, as clearly illustrated in fig. 3.

These switches are insulated the one from the other, as by an insulator, *b*, arranged between the supports or bearings C and D, on or around which the switches are hung to rotate.

Said switches carry rollers E and F, through which the connection with the cups is established or broken, by means of insulated conductors, G, arranged to cross the paths of the rollers E and F, so that, on the switches being rotated, said rollers travel over and in contact with the conductors G.

These conductors G may be formed of radial plates, arranged, at equal distances apart, on or around a bed or table, H, and separated by insulators I in the path of the circle traveled by the roller E of the switch A, when swinging or turning the latter, but

said conductors G have the spaces between them, left open in the path traveled by the roller F of the switch B, and said conductors and rollers are so proportioned that, while the switch A may be turned or adjusted to bring its roller E in contact either with a conductor, G, or an intervening insulator, I, which establishes or breaks the connection of the switch A with the cups of the battery, the switch B, in being turned, has its roller F always in contact either with one or two of the conductors G, thus securing a constant connection of such last-named switch with the cups of the battery.

The object of this arrangement will be hereinafter explained.

The conductors G are severally connected, by pins or screws *c* and suitable wires or continuations, with the cups of the battery, and the switch A connected, through its support C, screw or pin *d*, and wire *e*, with the coupling J, that has attached to it the end of the wire by which the circuit is formed, while the other end of the circuit-wire is connected, through a coupling, J', wire *f*, and screw or pin *g*, with the switch B, through its support D.

K K' are locking-nuts, for securing the switches A and B at any particular position on the circuit-breaking and closing table.

By the construction and arrangement of parts as described, the switches A and B may be adjusted so that their rollers E and F establish connection, by both lying on a single conductor, G, with only one cup of the battery, or with any number of cups, according to the number of conductors intervening between different conductors with which the rollers E and F are adjusted, to establish contact, and, accordingly as the switches are turned, to work the one within or over the other, in opposite directions or to opposite sides of each other, is the polarity reversed.

By the compound switch, also, as herein described, any greater or lesser number of cups may be brought into action either with or without breaking the circuit, accordingly as the switches A or B are moved for the purpose, the roller E of the switch A, by its alternate contact with the conductors G and insulators I, breaking the circuit, while the roller F of the switch B, in never failing to keep up contact with the conductors G, being in contact with two conductors when passing from one to another, allows of the number of cups being changed, or of the polarity being reversed, without breaking the circuit.

By said compound switch, likewise, all the cups in use may be changed (bringing new cups into use) without changing the number of cups in use.

What is here claimed, and desired to be secured by Letters Patent, is—

1. A compound switch, composed of two switches,

A and B, arranged to work independently of and insulated the one from the other, from or around a common center, on or over a circuit-breaking and closing surface, substantially as specified.

2. The construction and arrangement, relatively to each other, of the independent switches A and B, whereby said switches, in working from or around a common center, are free to play the one within or through the other, essentially as described.

3. The combination and arrangement of the conductors G, which connect with the cups, the intervening insulators I, and the rollers E and F, of the contact-surfaces of the switches A and B, substantially as and for the purpose specified.

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Witnesses:

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