

J. C. CALHOUN.
AUTOMATICALLY OPERATED ELECTRIC SWITCH.
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919,535.

Patented Apr. 27, 1909.

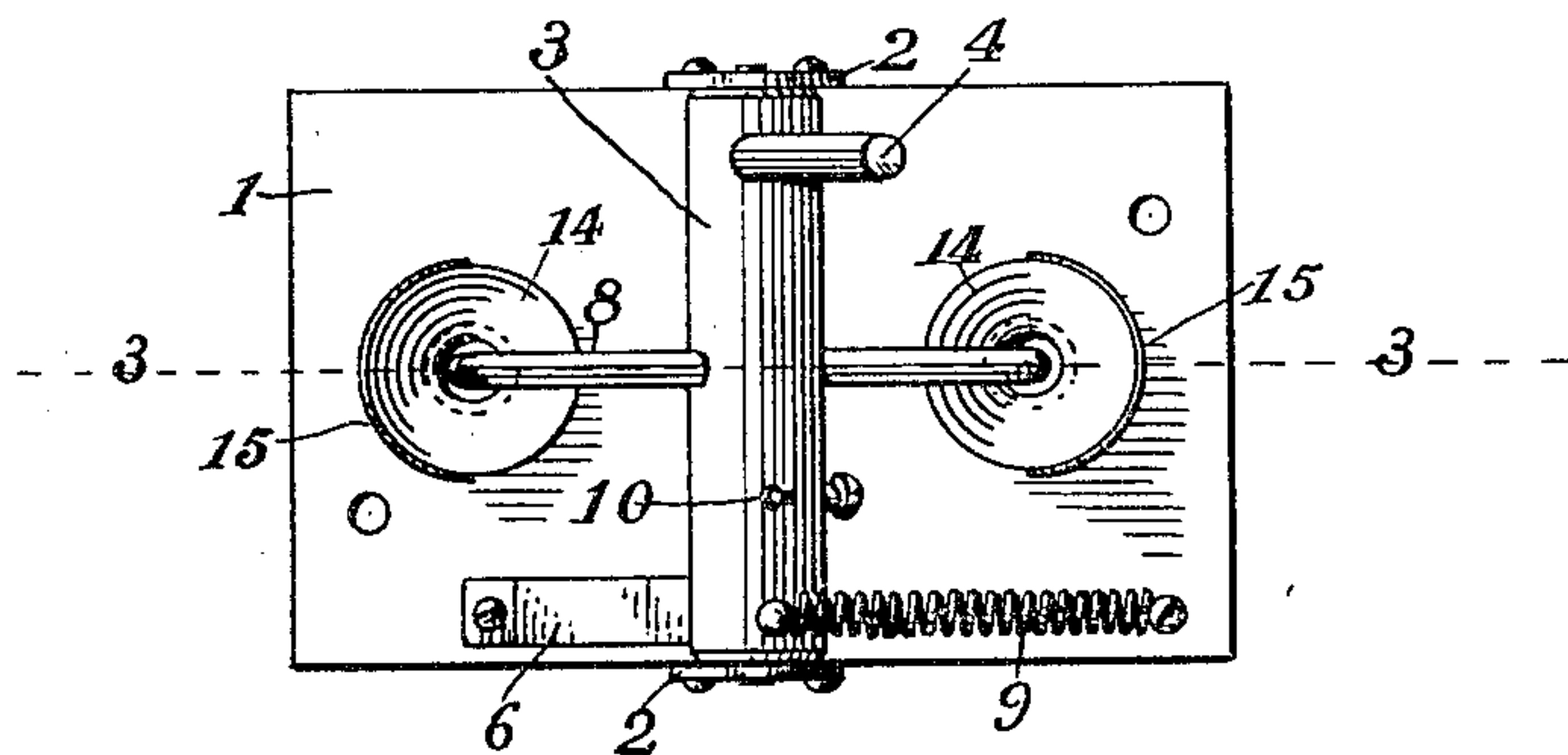


Fig. 1.

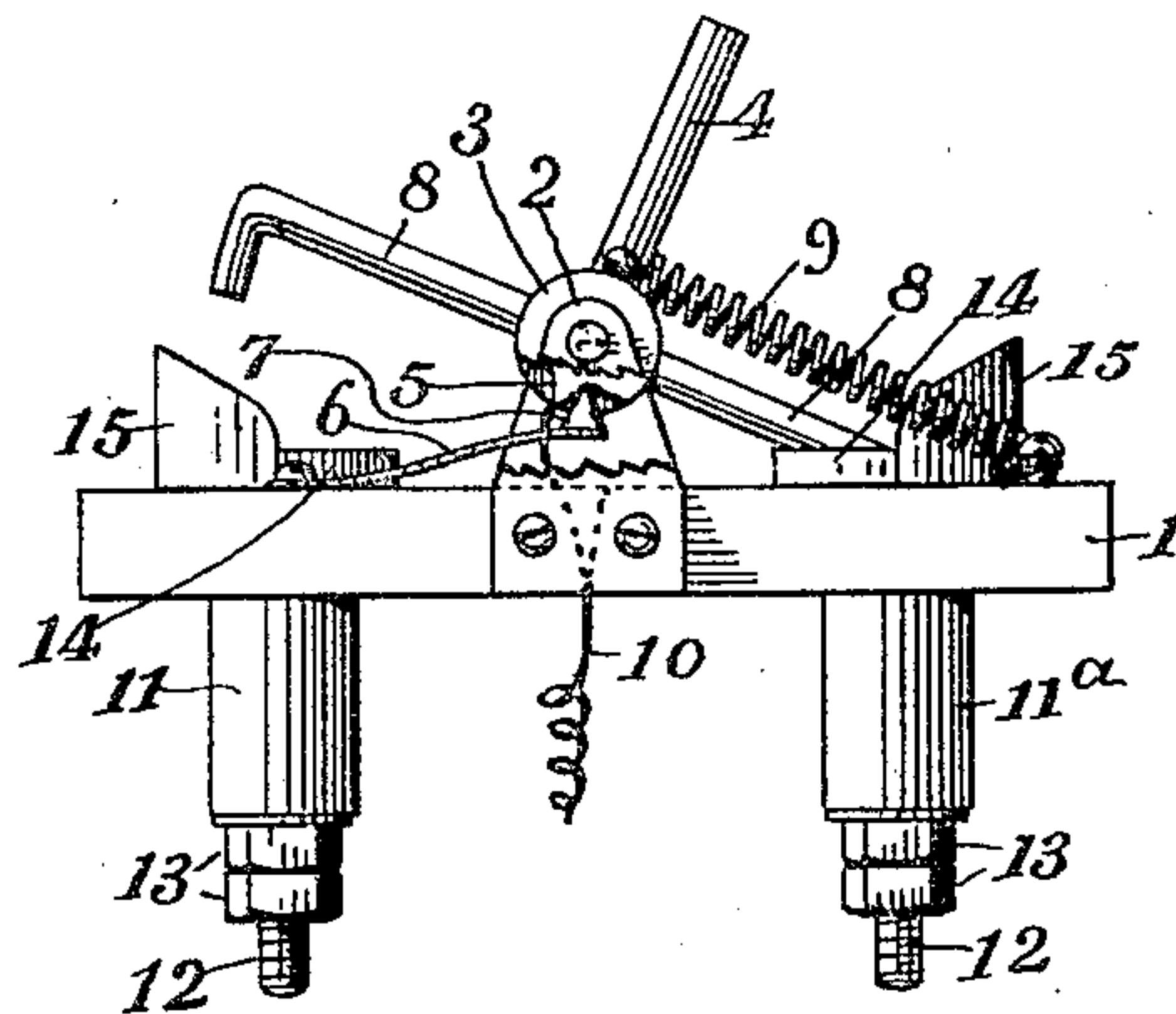


Fig. 2.

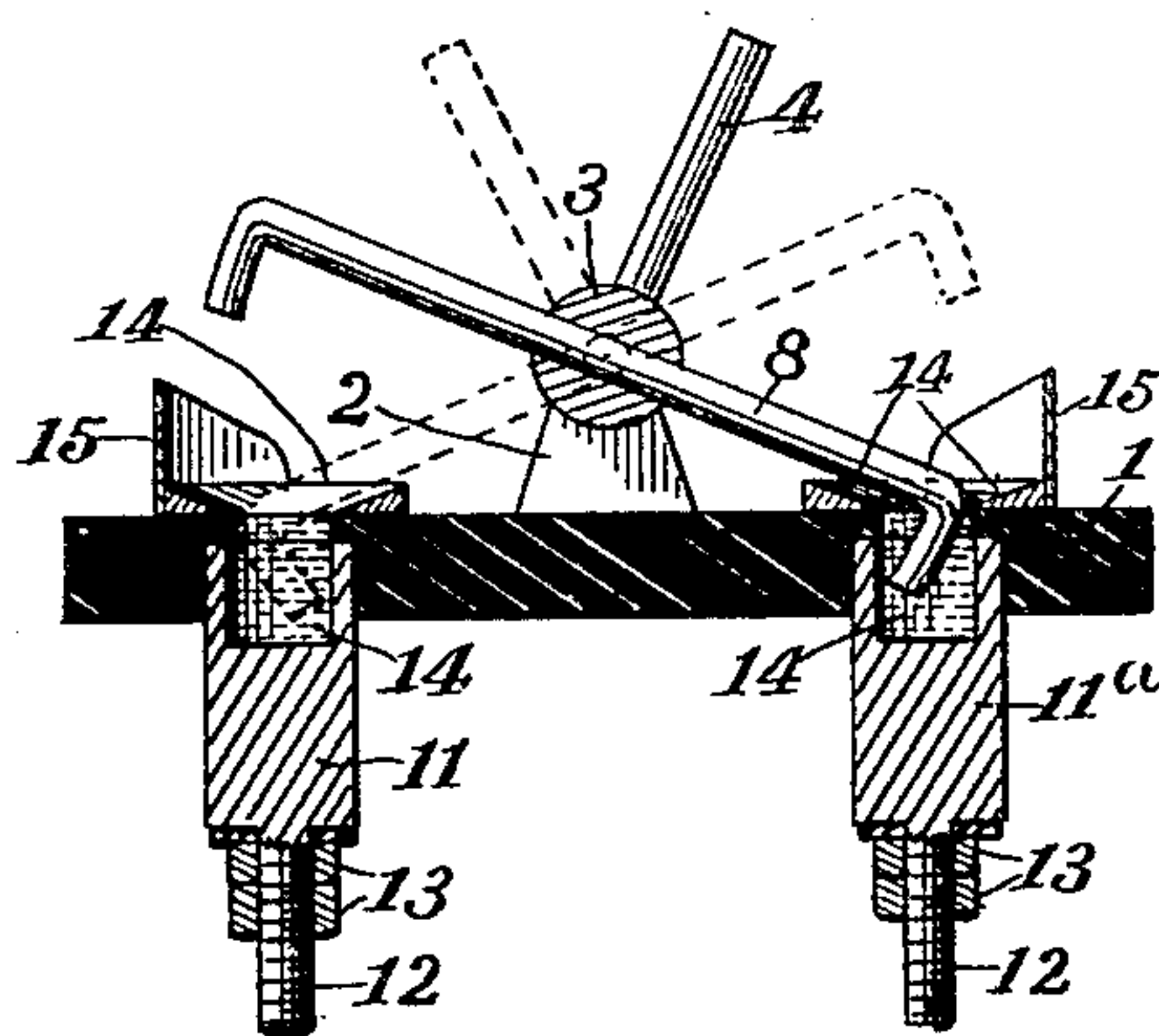


Fig. 3.

Witnesses
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JOSEPH C. CALHOUN, OF HOLLAND, MICHIGAN, ASSIGNOR OF ONE-HALF TO GEORGE P. HUMMER, OF HOLLAND, MICHIGAN.

AUTOMATICALLY-OPERATED ELECTRIC SWITCH.

No. 919,535.

Specification of Letters Patent.

Patented April 27, 1909.

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To all whom it may concern:

Be it known that I, JOSEPH C. CALHOUN, a citizen of the United States of America, residing at Holland, in the county of Ottawa and State of Michigan, have invented certain new and useful Improvements in Automatically-Operated Electric Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatically operated electric switches, adapted to be actuated by mechanical timing means, and more particularly when used in connection with electric light photograph printing machines, as shown in my Patent No. 854,076, issued May 21, 1907; and its object is to provide a device by which a signal light is lighted when the printing light is turned off and it consists essentially of a rock-shaft carrying two contacts, mercury cups into which the said contacts alternately dip, an arm attached to the rock-shaft and adapted to be engaged by the actuating arm of a timer (not shown,) and a spring adapted to hold either of the contacts in either of two positions; and of various other new and useful features hereinafter more fully described and particularly pointed out in the claim, reference being had to the accompanying drawings, in which:

Figure 1. is a plan view of my improved switch; Fig. 2. a side elevation with parts broken away; and, Fig. 3. a vertical section.

Like characters refer to like parts in all of the figures.

1 is a base of insulating material, 2 are brackets in which the rockshaft 3 is journaled, 4 is an arm by which the rockshaft is actuated. On the rockshaft 3 are fixed the contacts 8 which dip alternately into the mercury wells 14 formed in the top of the binding posts 11 and 11^a. These binding posts are supplied with threaded portions 12 and nuts 13 for attaching the respective circuit wires. On the rockshaft 3 is a projection 5 having oppositely inclined sides. The spring 6 which is fixed at one end on the base 1 carries a projection 7 also having oppositely inclined sides which alternately engage the respective inclined sides of the projection 5. When the rockshaft 3 is moved the inclined sides of the projections 5 and 7 alternately

engage and when the projection 5 passes the vertical line in either direction, the adjacent inclined sides of the projections 5 and 7 engage each other and the action of the spring 6 forces the projections 5 and 7 together and rotates the rockshaft until one of the contacts 8 dips into the respective mercury cup 14.

10 is a wire forming a part of both the printing and signal light circuits, and the binding posts 11 and 11^a are each connected in a separate light circuit.

9 is a spring that works to assist in giving a more rapid break of the circuit to prevent arcing when the circuit which operates the printing light 1 is broken. This spring 9 is connected at one end of the base 1 and at its opposite end it is connected to the periphery of the shaft 3, preferably at a point on the shaft opposite the projecting part of the shaft.

15 are guards of rubber or other suitable material to prevent the mercury from being thrown from the wells when the contacts 8 are snapped in or out of the same and the circuits closed or broken by the action of the springs.

The operation of my device is as follows: The printing light cluster would be connected to the wire 10 and binding post 11, the signal light being connected to the wire 10 and binding post 11^a. The wire 10 is flexibly connected to the rock-shaft 3, thus forming a metallic circuit through the shaft 3, contacts 8, the mercury in the cups 14 and binding posts 11 and 11^a to alternately close and open the circuits. When it is desired to make the exposure, the timing device (not shown) is set for the required number of seconds, and the contact 8 set as shown by the dotted lines Fig. 3. This operates the printing light. A sweep arm on the timer contacts the arm 4 carrying said arm from left to right. As soon as this arm has passed a vertical position the combined action of the springs 6 and 9 snap it to the position shown by the solid lines of Fig. 3. This action opens the printing circuit and closes a signal light circuit to notify the operator that the exposure is completed.

What I claim is:

In a switch of the class described, a base of insulating material, standards on the base, a rock shaft mounted in said standards, a contact member having its body passed trans-

versely through the body of said shaft and having its ends terminating in downwardly directed contacts, stationary contacts for cooperation alternately with the aforesaid contacts, said shaft having a tapering projecting part, a flat spring connected at one end to the base and having its opposite end directed upwardly and terminating beneath said shaft and provided with a tapering projection for engagement with opposite sides of the projecting part of the shaft, alternately, and a

second spring connected at one end to the base and at its opposite end connected to the periphery of said shaft at a point on the shaft directly opposite the projecting part of the shaft.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH C. CALHOUN.

Witnesses:

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