

(No Model.)

C. J. KLEIN.
ELECTRIC SWITCH.

No. 509,539.

Patented Nov. 28, 1893.

Fig. 1.

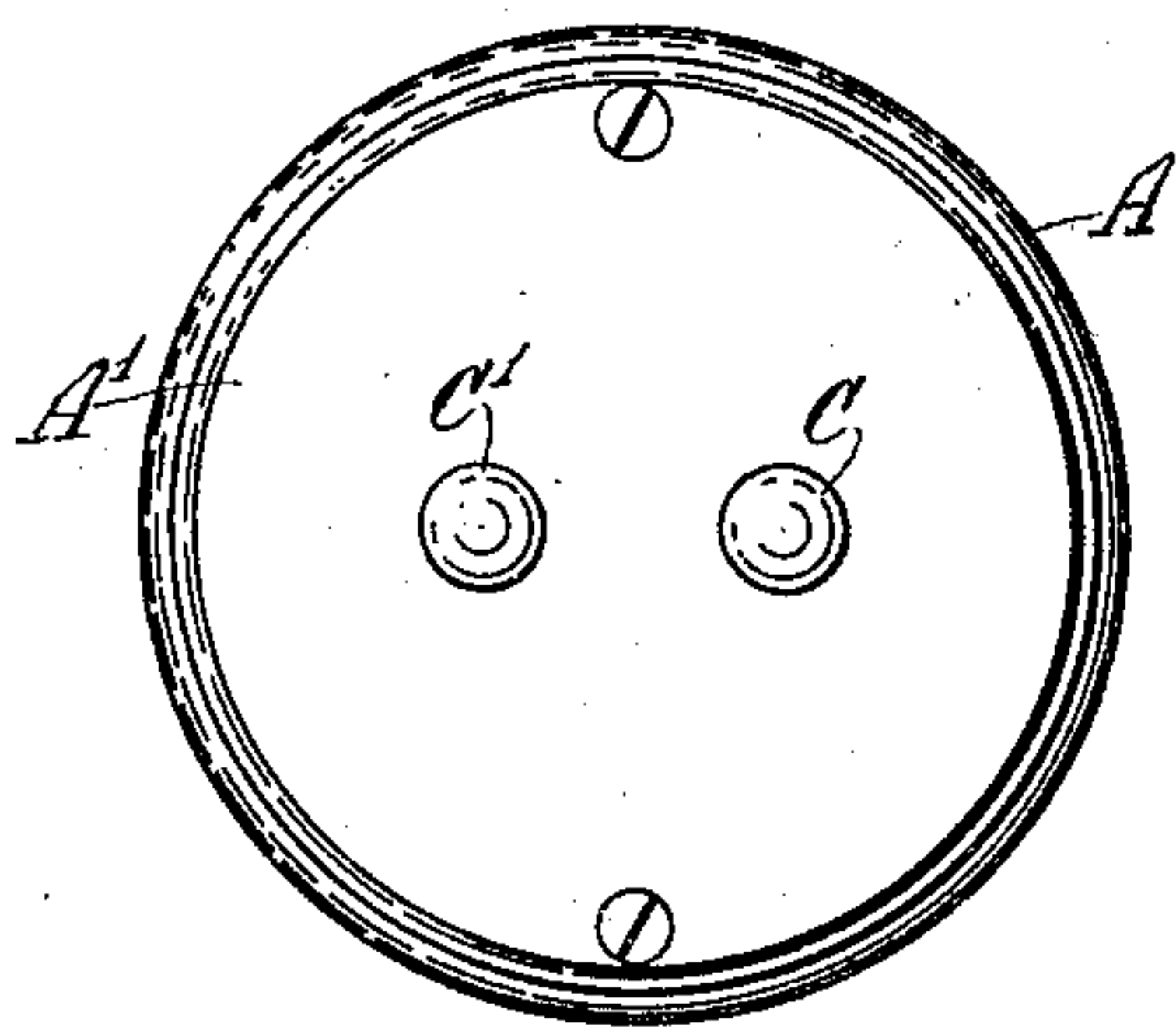


Fig. 4.

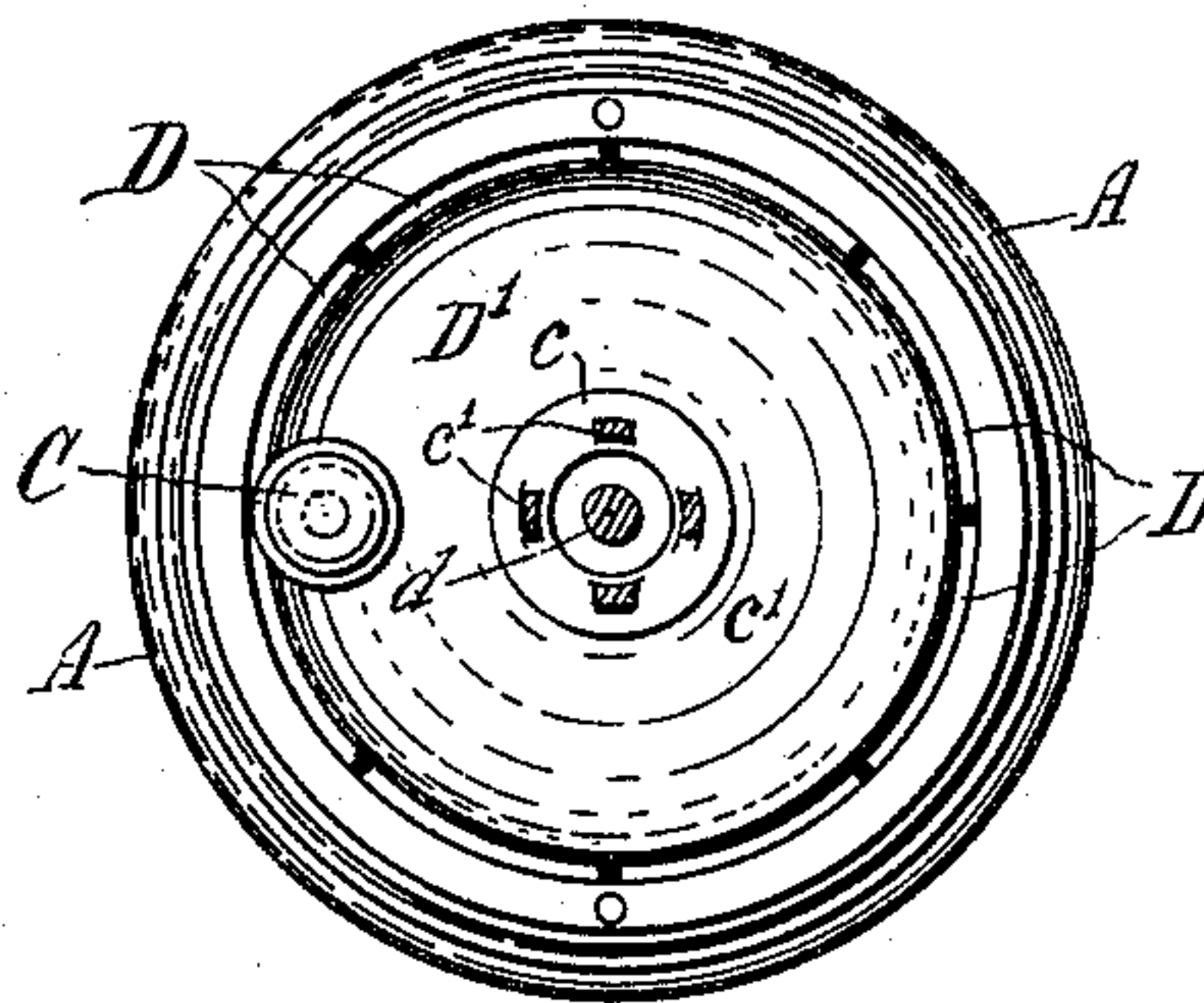


Fig. 2.

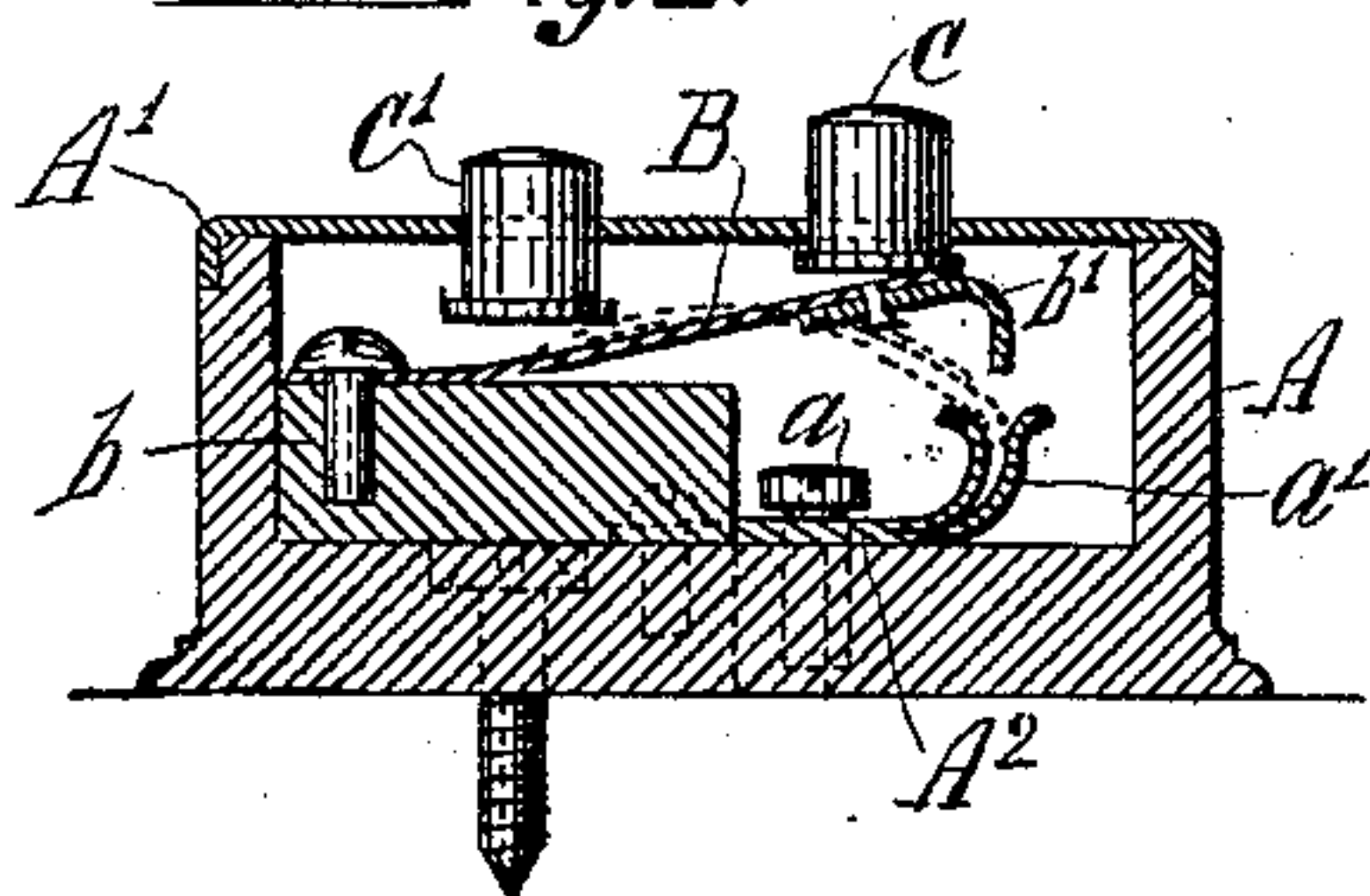


Fig. 5.

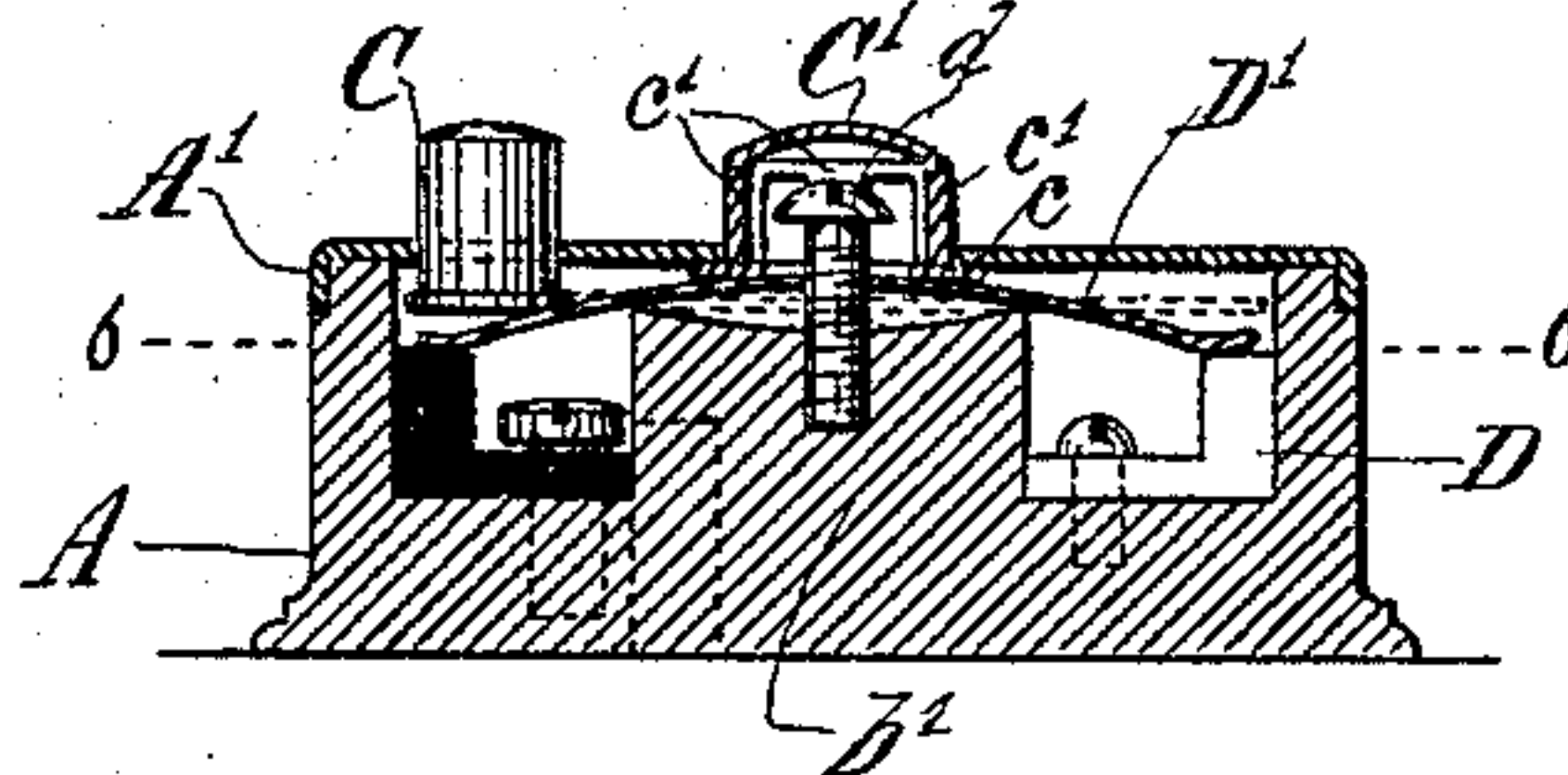


Fig. 3.

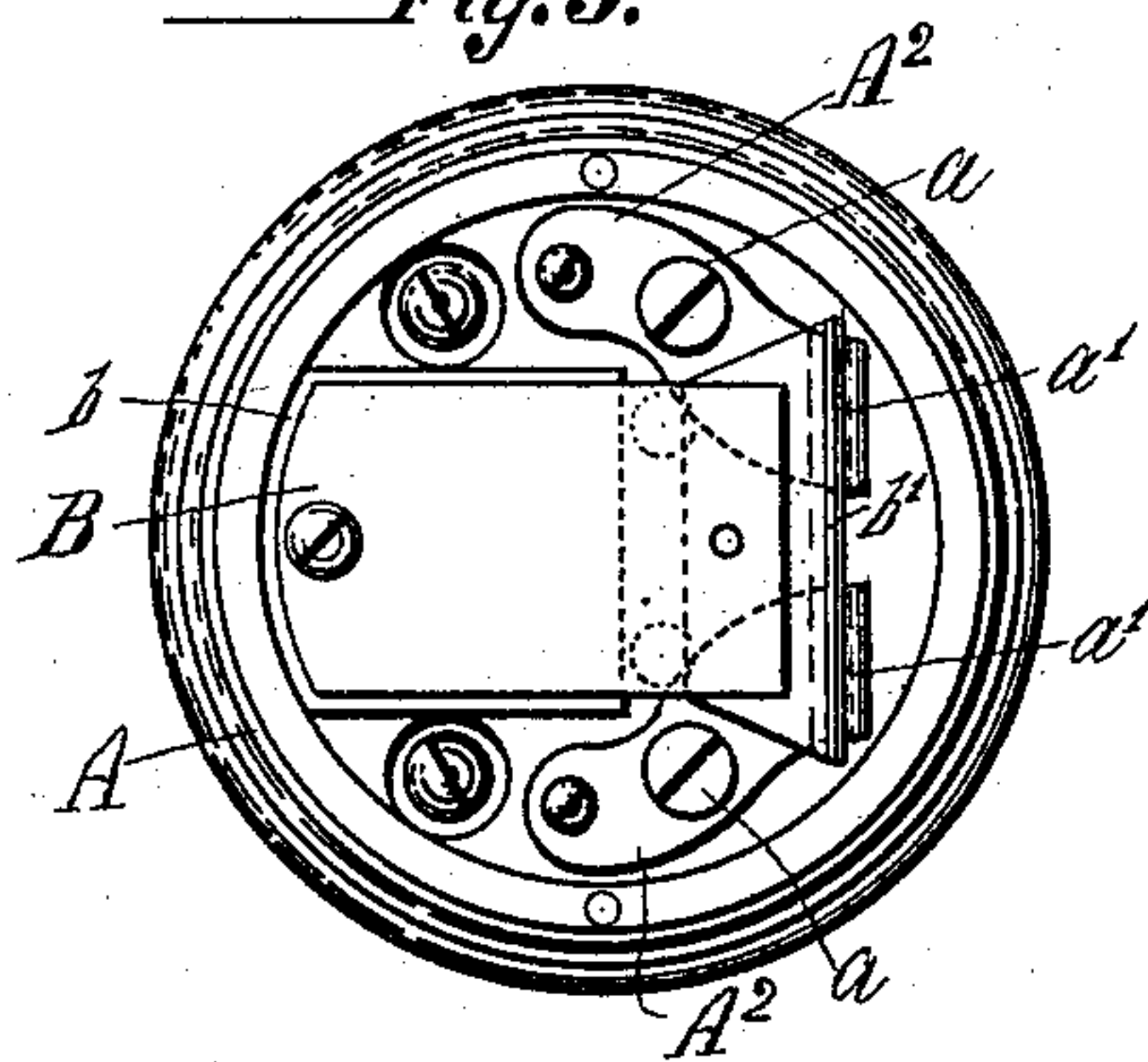
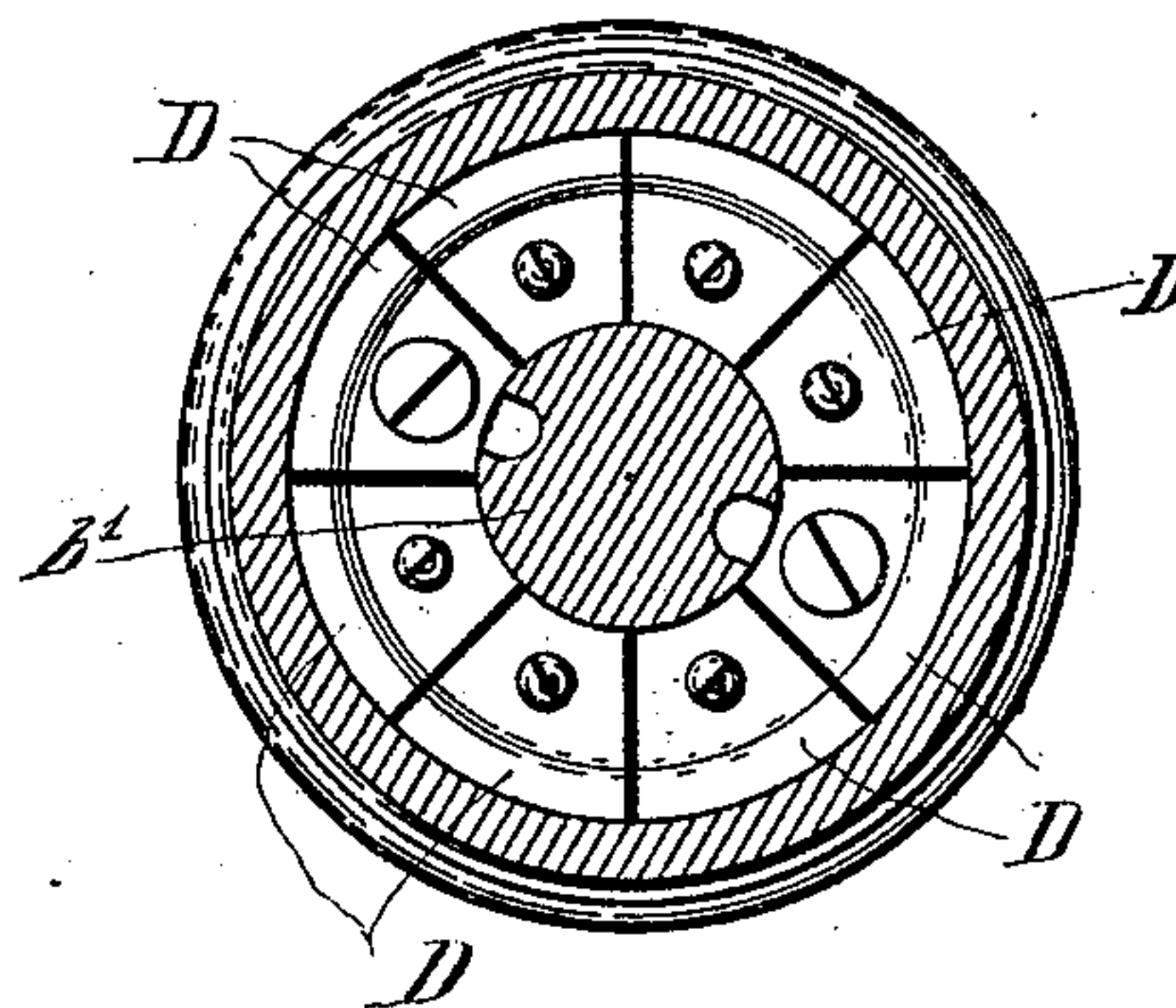


Fig. 6.



WITNESSES:

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CHARLES J. KLEIN, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 509,539, dated November 28, 1893.

Application filed December 2, 1892. Serial No. 453,807. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. KLEIN, of New York, county and State of New York, have invented a certain new and useful Improvement in Electric Switches, of which the following is a specification.

This invention relates to that class of electric switches in which a push button is operated to close a circuit, and it consists in a metal plate adapted to be buckled to close a circuit, a push piece for causing said buckling and a push piece for causing the plate to return to its normal position and break the circuit.

I will describe a switch embodying my improvement and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a top view of a switch, embodying my improvement. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a plan view with the cover or top of the casing, and the push pieces removed. Fig. 4 is a plan view with the top or cover and push pieces removed showing a switch of modified construction. Fig. 5 is a transverse vertical section with the top or cover and push pieces in place. Fig. 6 is a section through the line 6, 6 of Fig. 5.

Referring first to the improvement shown in Figs. 1, 2, 3, A designates a box like case of any suitable insulating material, such as rubber, porcelain or other fictile material. The case A has a cover A', which may be secured in place in any desired manner. A² designates terminals secured in the bottom of the case A and having binding screws *a* to which the wires may be attached. Each terminal has upwardly extending contacts *a'*, which in this case are shown as resilient jaws curved slightly outward at the upper end. B is a metal plate forming a circuit closer. This plate is of resilient material of such a nature that when its free portion or end is deflected to engage the terminals and close a circuit the plate will buckle between its ends, as shown in dotted line in Fig. 2, and retain its position to keep the circuit closed until it is desired to break the circuit. I find steel well adapted to the purpose, or brass may be used. The plate or circuit closer B is secured at one end (where it is preferably left or held flat,

as shown in Fig. 2) to a block *b* of insulating material within the case A. In this example of my improvement the plate or circuit closer B, at its free portion or end, is provided with a metal plate *b'* of low resistance, and this plate has a portion turned at substantially right angles to the plate B and adapted to engage between the jaws *a'* of the terminals. C is a push piece for deflecting or buckling the plate B and C' is a push piece for returning the plate to its normal position. The push piece C extends through a hole in the cover A so as to engage with the free portion or end of the plate B and the push piece C' extends through a hole in the cover A' in such position as to engage with the plate B intermediate of its ends, or about at the point where the buckled part commences. The operation of this example of my improvement is as follows: When it is desired to close the circuit the push piece C is pushed inward to deflect or buckle the circuit closer into engagement with the terminals, and owing to the buckling the plate will retain its position to close the circuit, until the push piece C' is pushed against the plate. This will cause the plate to instantaneously resume its normal position to break the circuit, and also thus avoid the possibility of an arc being formed between the points of contact, as is often the case when the movable contact is operated slowly.

Turning now to the example of my improvement shown in Figs. 4, 5 and 6, D designates an annular series of terminals arranged in the case A and insulated one from the other. I employ a series of terminals so that one switch may be used for a number of circuits, or should one pair of terminals be burned out the wires may be transferred to another pair. D' is the circuit closing plate shown in the form of a disk. It is secured in the case A by means of a screw *d* passing loosely through a central hole in the plate, and engaging in a hub *b'*. The free portion or edge of the disk D' extends over the terminals D and is adapted to engage therewith. A push piece C is provided for deflecting or buckling the plate and a push piece C' is provided for causing the plate to return to its normal position. The push piece C', in this example of my improve-

ment consists of a ring plate *c* loosely mounted on the screw *d*, and resting on the top of the plate *D'*. It has stem portions *c'* passing up through holes in the cover *A'* and joined together at the top. The upper end of the hub *b'* is shown as concaved and the plate *D'* rests on the top thereof. In operation, by pressing inward the push piece *C* the plate *D'* will be deflected or buckled as shown in Fig. 5 and it will remain in this position to close a circuit until the push piece *C'* is pushed inward which will cause the plate to resume its normal position.

Having described my invention, what I claim is—

1. In an electric switch, the combination with a suitable base and terminals,—of a plate of resilient material fastened at one end and free to make and break contact at the other end, and buckled in its intermediate portion,—

and means independent of or normally out of connection with said plate, but adapted to act thereupon momentarily for overcoming the mechanical resistance of the buckle in reverse directions, whereby contact is instantaneously made or broken at the free end of the plate,—substantially as set forth.

2. In an electric switch, the combination with terminals of a buckling plate for closing a circuit, a push piece for buckling the plate and a push piece for returning the plate to its normal position, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. KLEIN.

Witnesses:

HENRY P. KLEIN,
ALBERT MCMAHON.