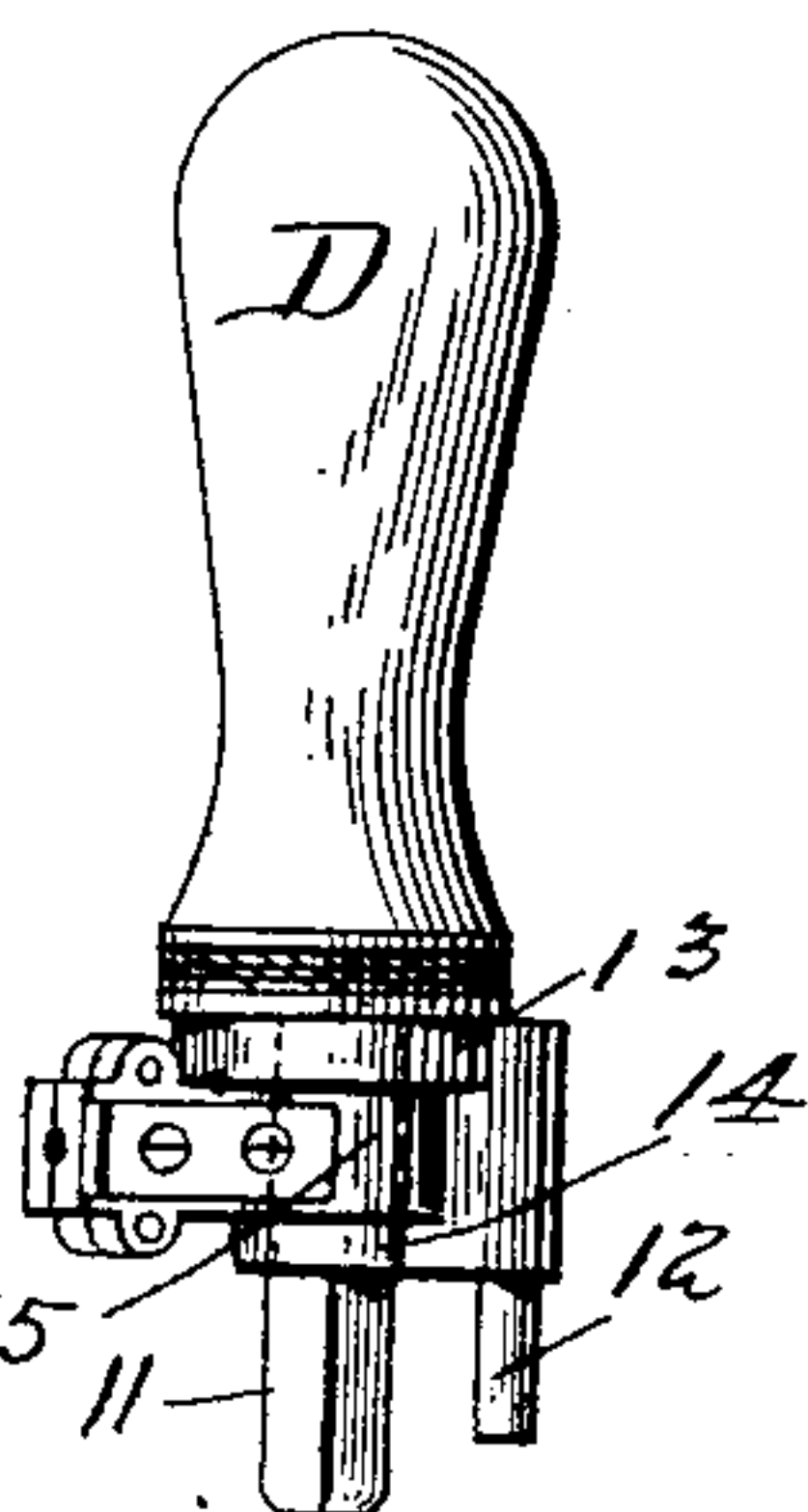
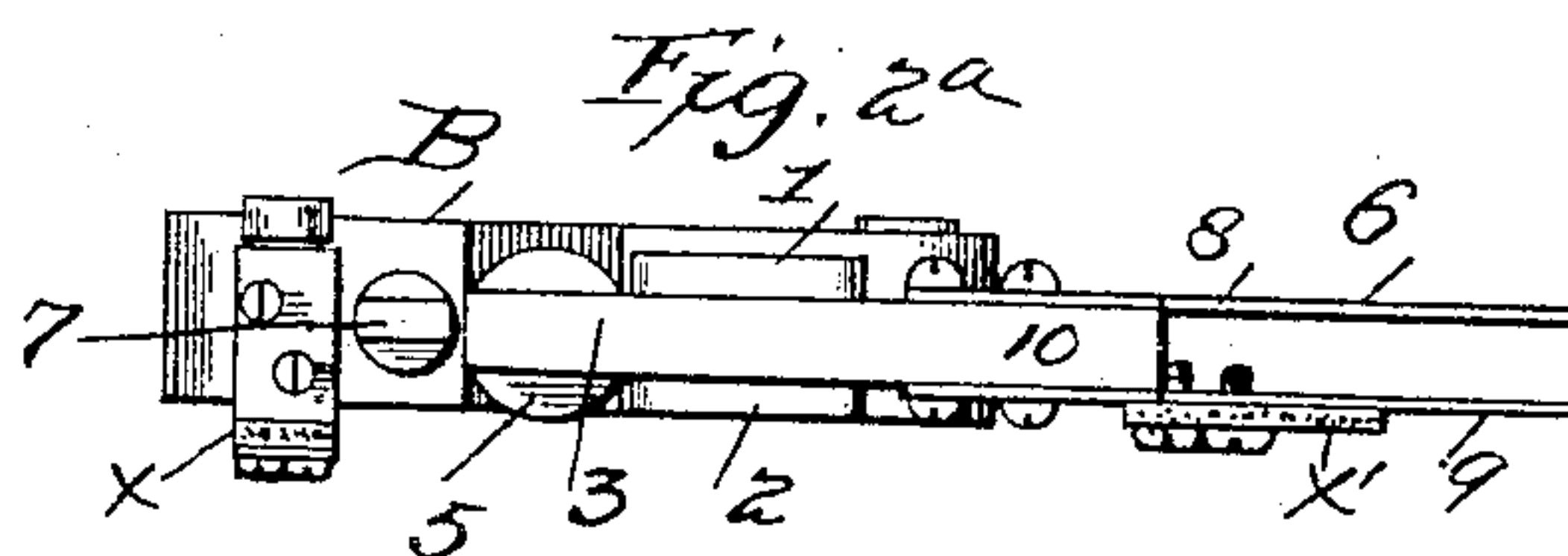
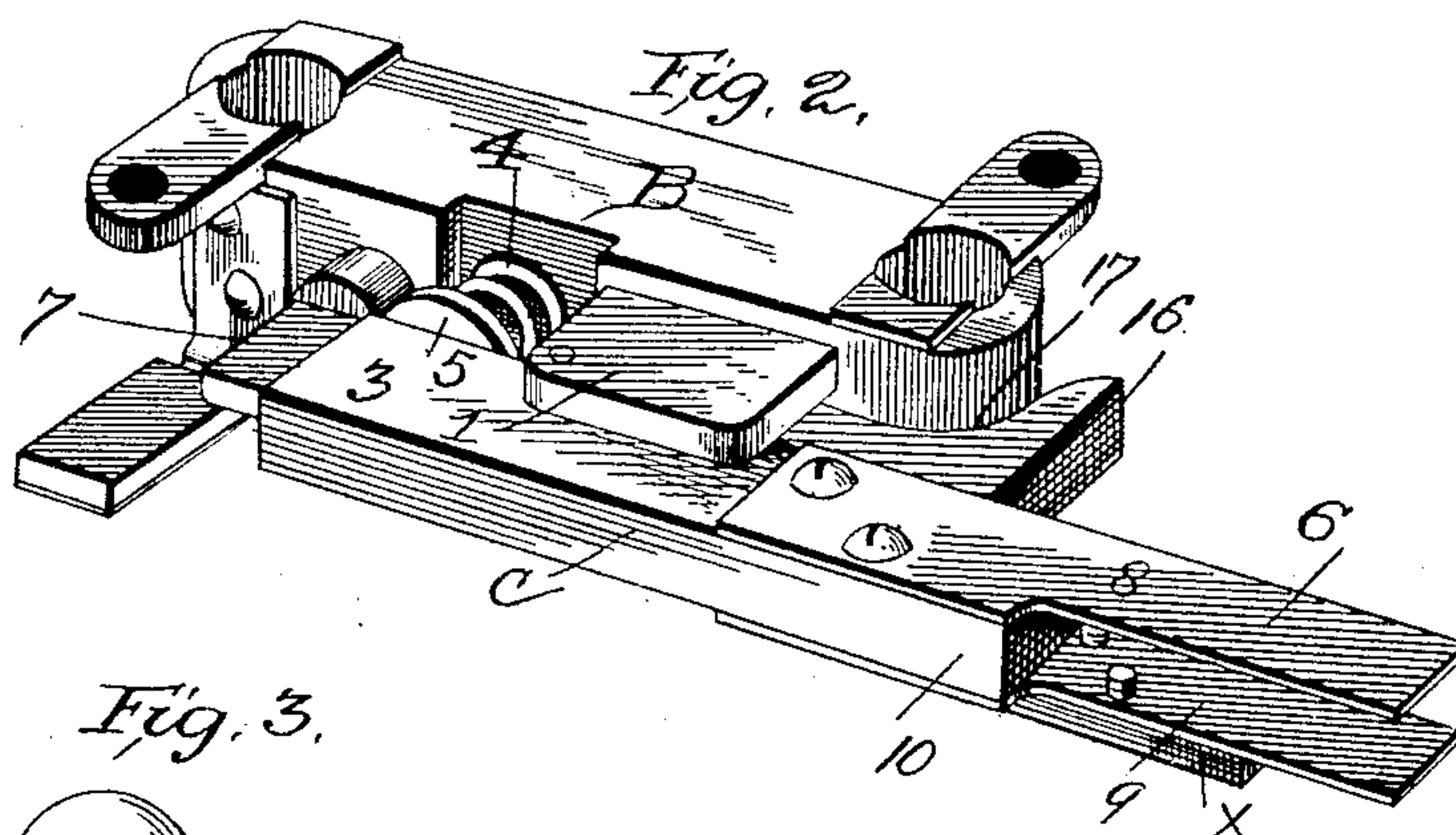
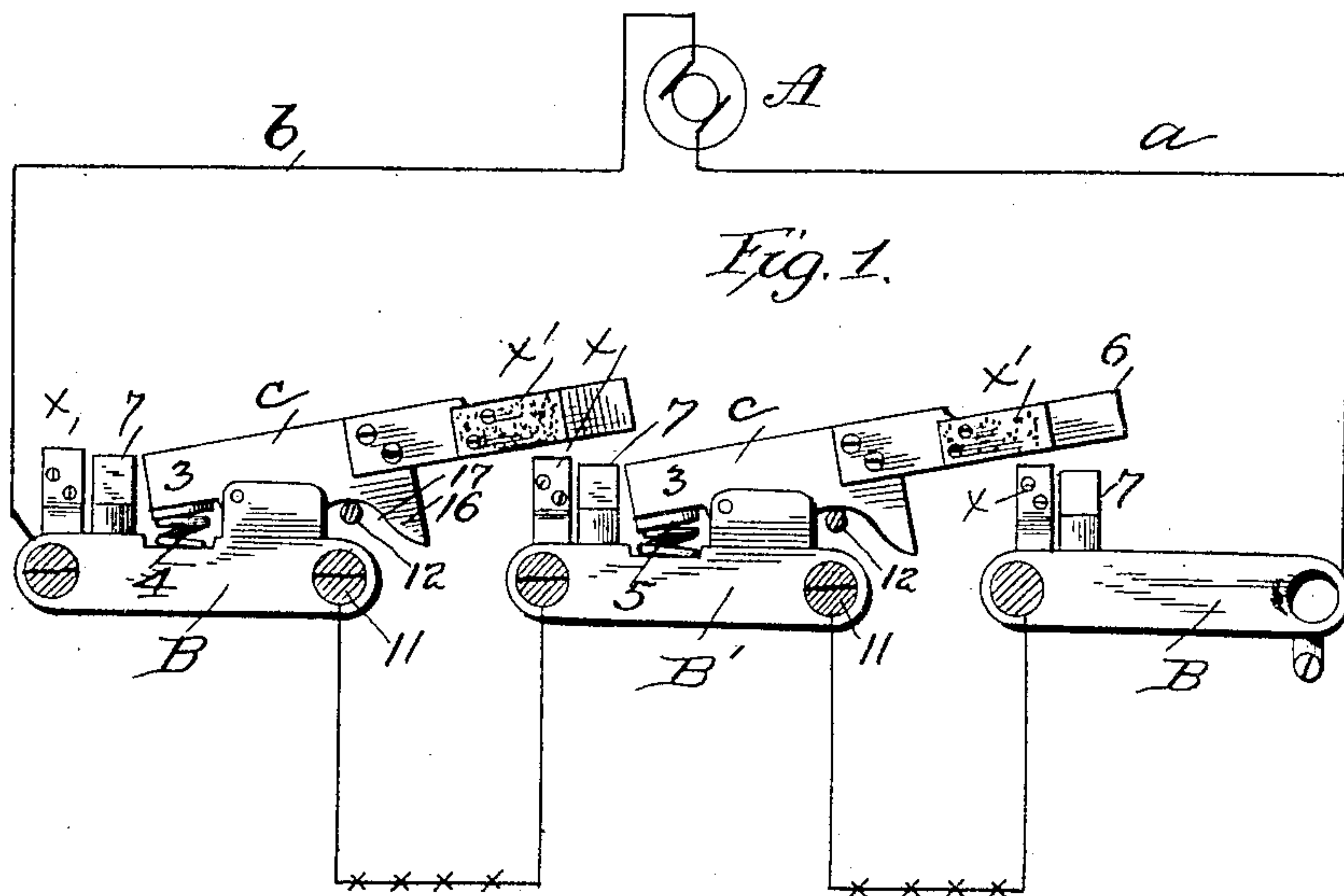



(No Model.)

D. B. KINCH.  
ELECTRIC CUT-OUT.

No. 578,643.

Patented Mar. 9, 1897.



Attest 15  
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# UNITED STATES PATENT OFFICE.

DAVID BLAIR KINCH, OF PITTSBURG, PENNSYLVANIA.

## ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 578,643, dated March 9, 1897.

Application filed September 26, 1896. Serial No. 607,076. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID BLAIR KINCH, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Electric Cut-Outs, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to electric cut-outs, and is especially designed for heavy work, such as in electric-lighting systems, it being designed to cut in or out of the main circuit a lamp or a group of lamps, as the case may be.

15 My invention includes among its features a socket-plate adapted to receive in electrical contact a plug carrying one end of the branch or loop connection, said plug being adapted to be turned in the socket and adapted also  
20 to operate the switch-lever to break the main circuit and cause the current to pass through the loop.

The invention resides in other features, which will be fully described, and particularly pointed out in the claims.

25 In the accompanying drawings I have illustrated my invention, in which—

Figure 1 is a diagram of a circuit, showing the relation of my improved cut-out to the  
30 other parts of the circuits with the loops in the circuit. Figs. 2 and 2<sup>a</sup> show views in detail of one of the socket-plates. Fig. 3 shows in detail the handle with its switch-plug for cutting in the loops.

35 In Fig. 1 the dynamo is indicated at A, and the circuit-wires leading therefrom at *a b*. A series of socket-plates B are in connection with the main circuit-wire *a b* through the end plates of the series, and the circuit is  
40 closed through the plates of the series by means of levers *c*, bridging the breaks between the plates or through a loop of lamps or instruments in a branch or loop circuit extending from one plate to the other, depending  
45 upon whether the said loop is cut in or out. The lever *c* for short-circuiting the current between adjacent socket-plates is shown in detail in Figs. 2 and 2<sup>a</sup> and is pivoted between  
50 ears 1 and 2 on the socket-plate B, and between the projecting end 3 and the plate is interposed a spring 4, fitting a recess in the plate and bearing against a disk 5, secured

to the face of the lever end. This tends to force the lever constantly outward, throwing in the opposite end, which is bifurcated at 6,  
55 and thus contacts with a stud 7, projecting from the plate B'. This bifurcated part is formed of two plates 8 9, secured to an extension 10 of the lever, and these being of  
60 spring metal make a positive contact with the stud 7. Normally, therefore, when the forked ends of the levers contact with the plugs the current is through the plate B, the lever *c*, the next plate B', and so on.

The lever *c* establishes the circuit between  
65 the plates B B', and in order to utilize the current on branch circuits or loops containing lamps or instruments I provide plugs in the shape of handles D, each having circuit connections to the loop and having a split end  
70 11, adapted to enter the socket in the plate B or B' and make electrical contact therewith.

The handle or plug D has secured to its spindle a projection 12, extending parallel to the spindle and extending over the end of the  
75 plate B, which is rounded to allow of its free movement. This projection is held in place by two plates 13 14, secured to the handle, and between these plates is movably held a  
80 collar 15, having a terminal connection for the wire of the loop. In a corresponding socket in the plate B' is placed the plug or handle similar to D, except that it is simply provided with a connection for the opposite  
85 end of the loop-wire. When it is desired to throw in a loop, the handles are inserted in the adjacent sockets, respectively, of the plates B B', and upon turning the handle D the projection 12 comes in contact with a projection  
90 16 of the switch-lever having a curved face 17, and in the continued movement of the projection 12 under the rotation of the handle D the lever C is forced back out of contact with the stud 7, and the circuit is thus  
95 broken through the plates and is closed through the loop thus cut in. It will be understood that as many loops may be used as may be found necessary or desirable. From this it will be seen that the rotary plug  
100 serves both as the electrical and mechanical connection between the branch or loop wire and the socket-plates and also as the means for operating the switch-lever.

Upon turning the rotary plug in the oppo-



site direction the switch-lever will close upon the stud 7, and the circuit made between the socket-plates and the current then seeking the shortest path will pass through the switch-lever and not through the loops. In order to minimize the sparking or flashing at the point-contact, I have added carbon points or plates  $x x'$  for this purpose.

I claim—

10 1. In an electric cut-out the combination of the switch piece or lever and the rotary plug for operating the same, said plug being adapted to a socket and freely removable and carrying the loop or branch wire to connect  
15 the same electrically in circuit, substantially as described.

20 2. In combination, the socket-plate, the plug adapted thereto and carrying the loop-wire electrically to connect the same with the socket-plate, and the switch-lever pivoted on the socket-plate, said lever being operated by turning the plug, substantially as described.

3. In combination, the socket-plate, the switch-lever and a contact therefor, and the

rotary plug adapted to the socket-plate, said plug having a pin to bear on the switch-lever and being adapted to connect with the loop-wire, substantially as described. 25

4. In combination, the socket-plate, the rotary plug having a pin 12 and a connection 30 15 for the loop-wire, the switch-lever pivoted to the socket-plate and having a projection to be operated by the pin on the plug.

5. In combination, a plate having sockets at its opposite ends, the contact on the plate, 35 the ears also thereon, the switch-lever pivoted in the ears and the removable plugs carrying the loop-wires adapted to the sockets, one of said plugs being adapted to operate the switch-lever when turned, substantially as 40 described.

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

DAVID BLAIR KINCH.

Witnesses:

J. C. KEMOHAN,  
JOHN A. WEBER.