

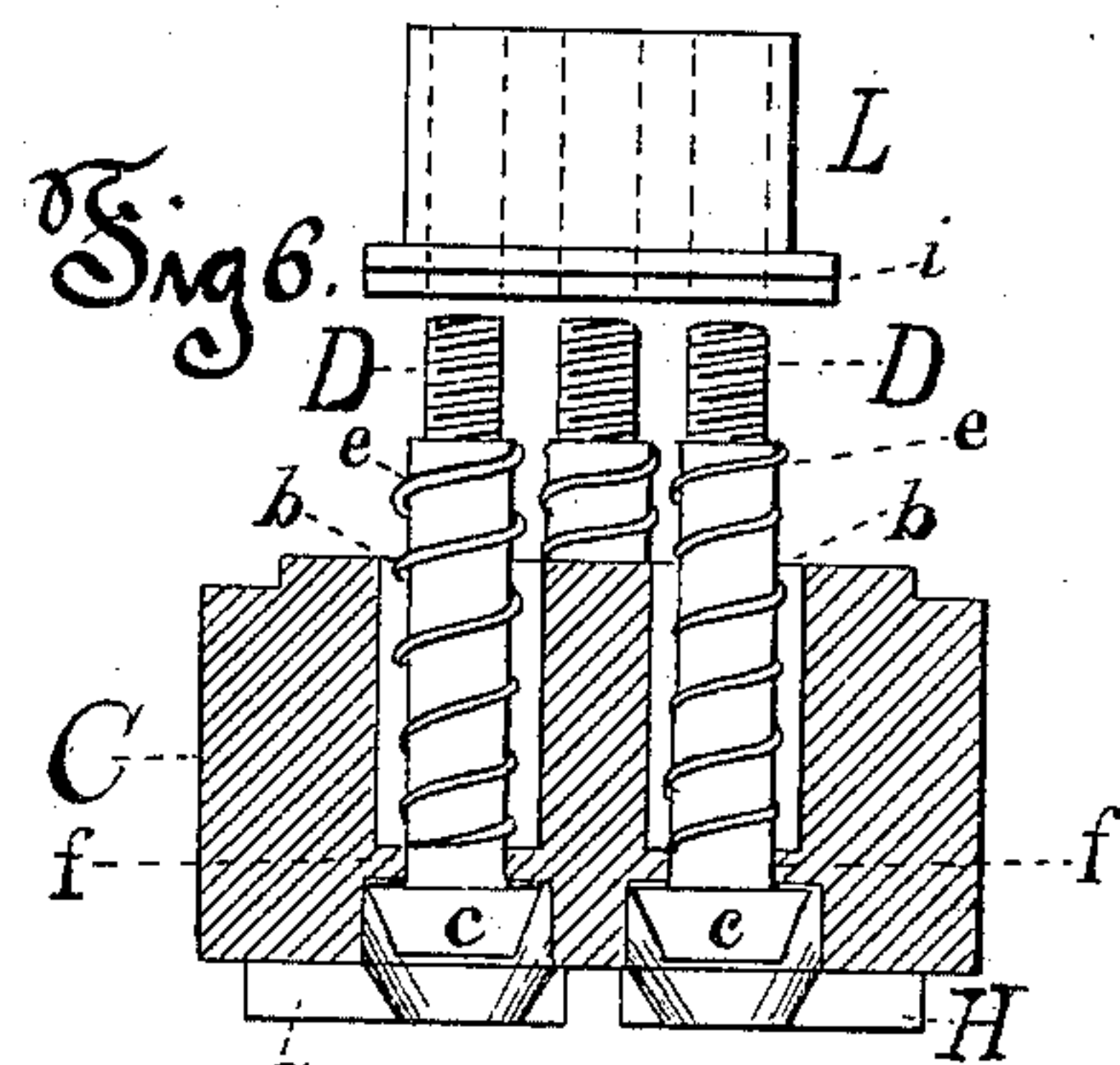
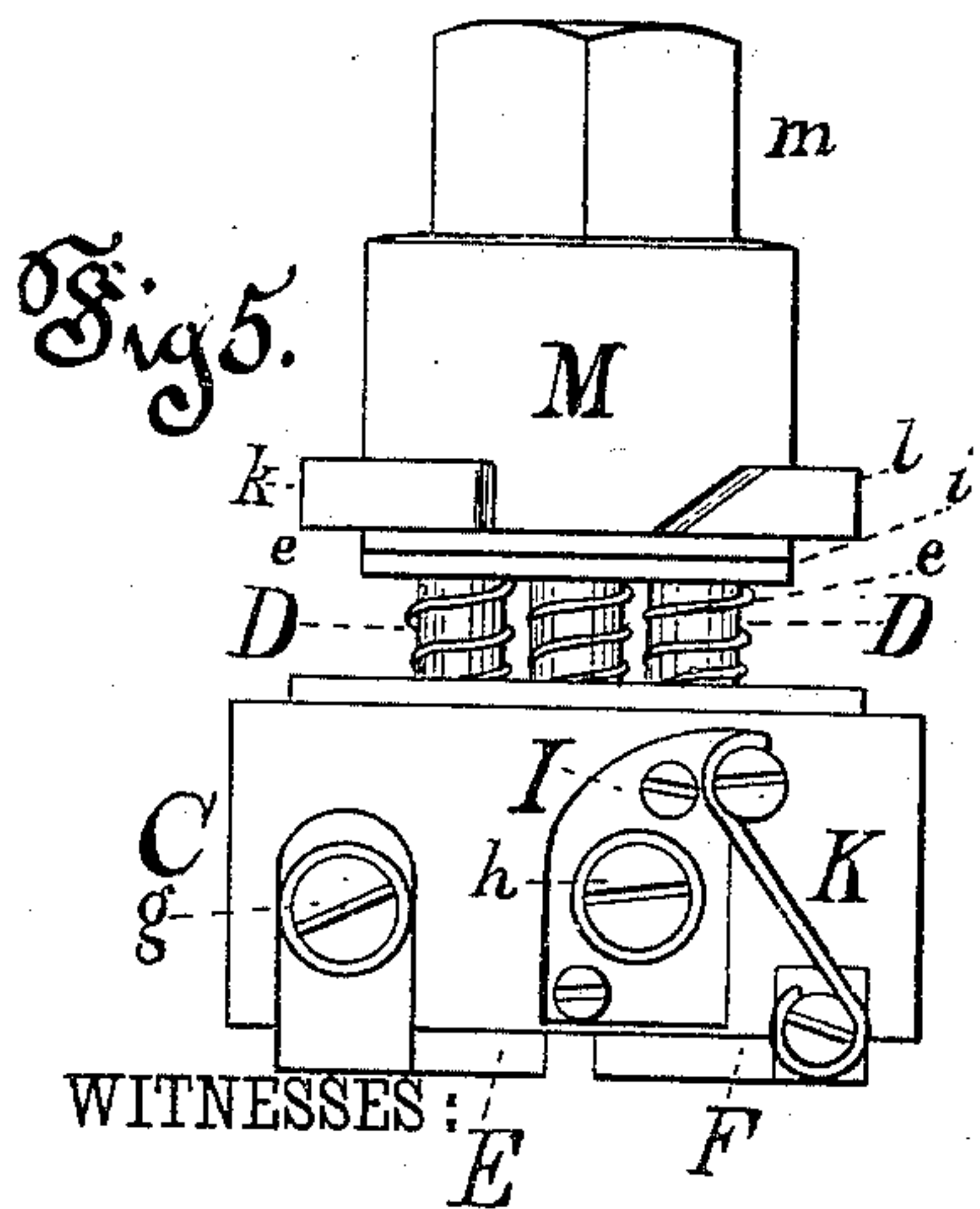
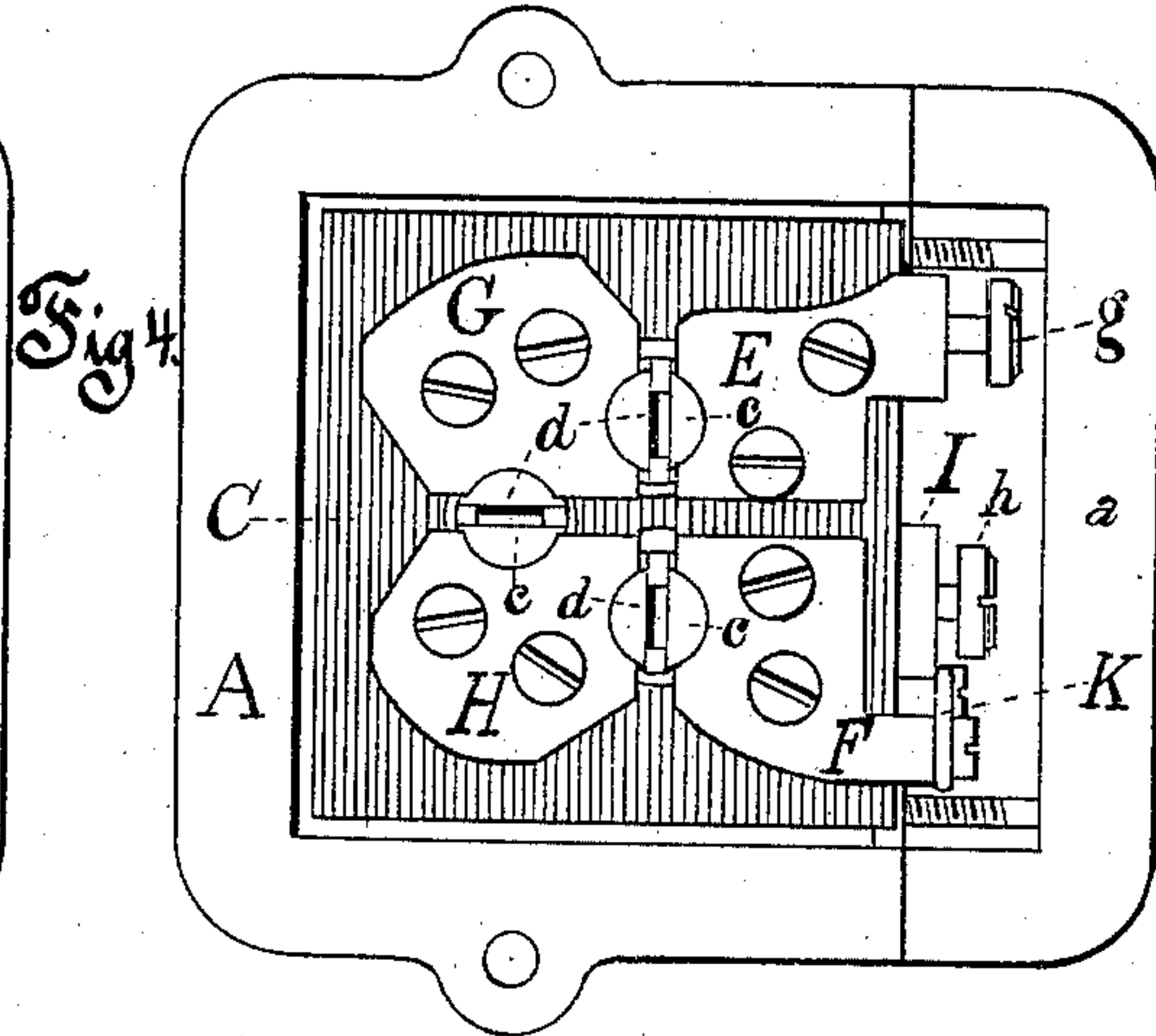
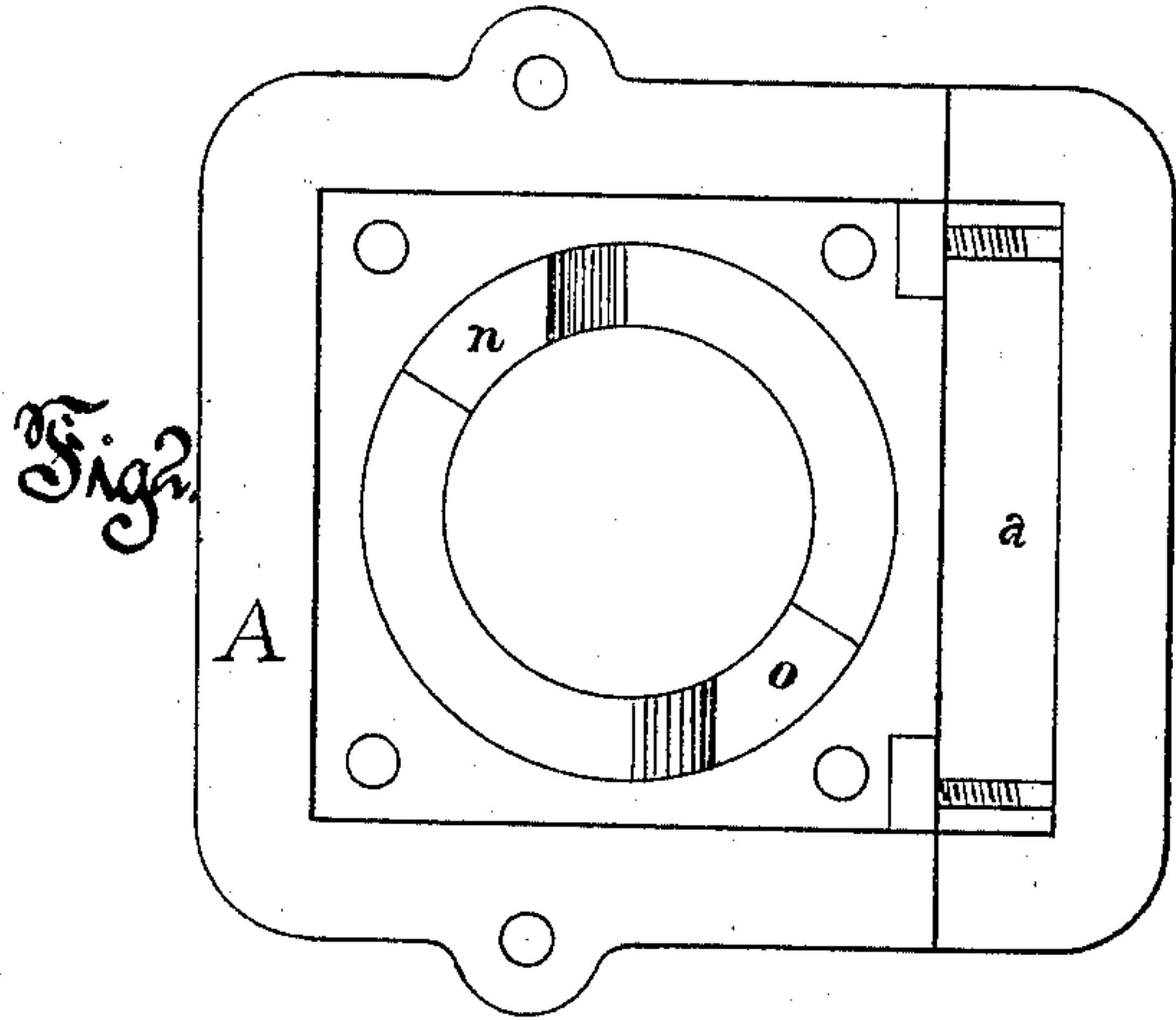
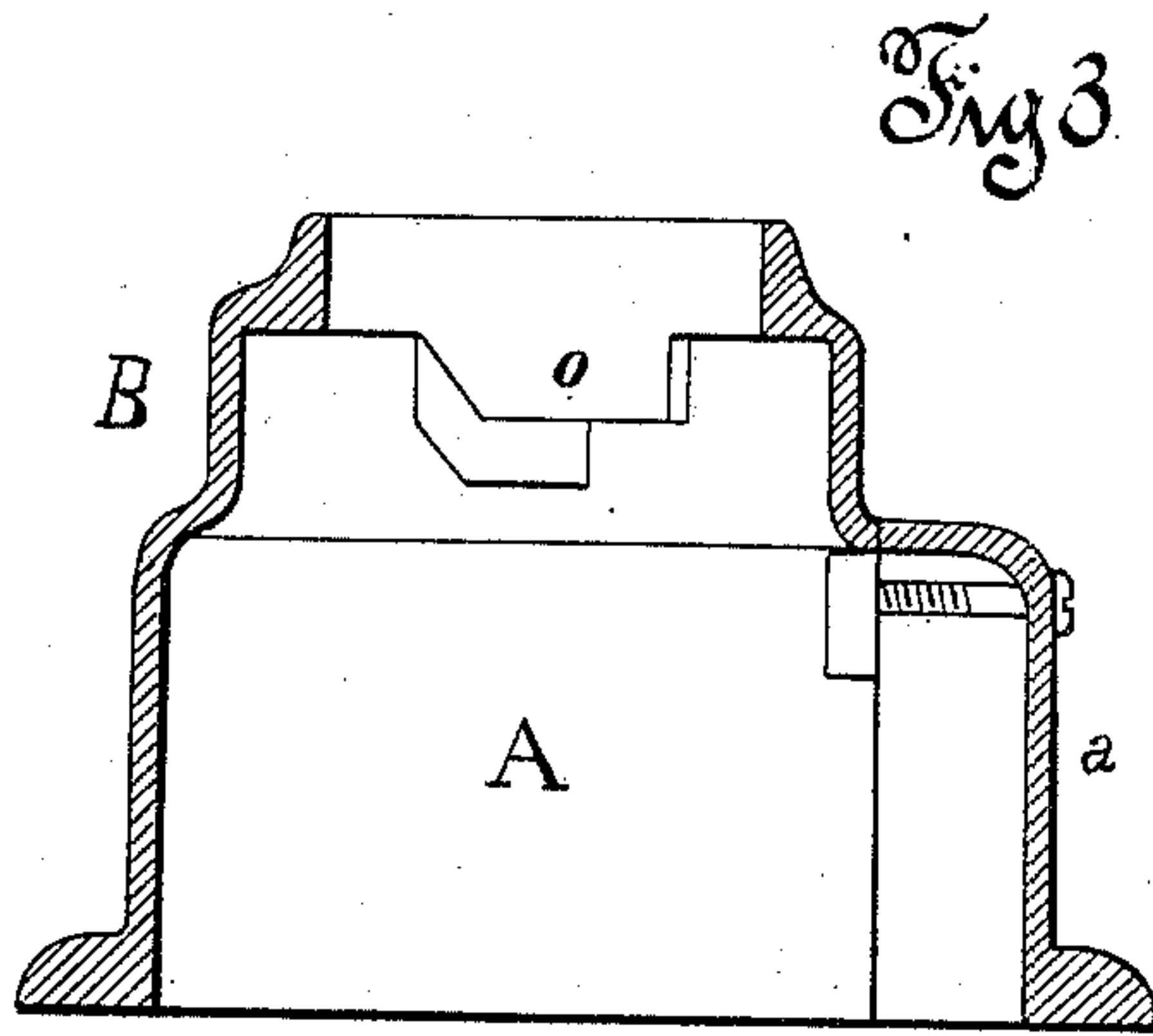
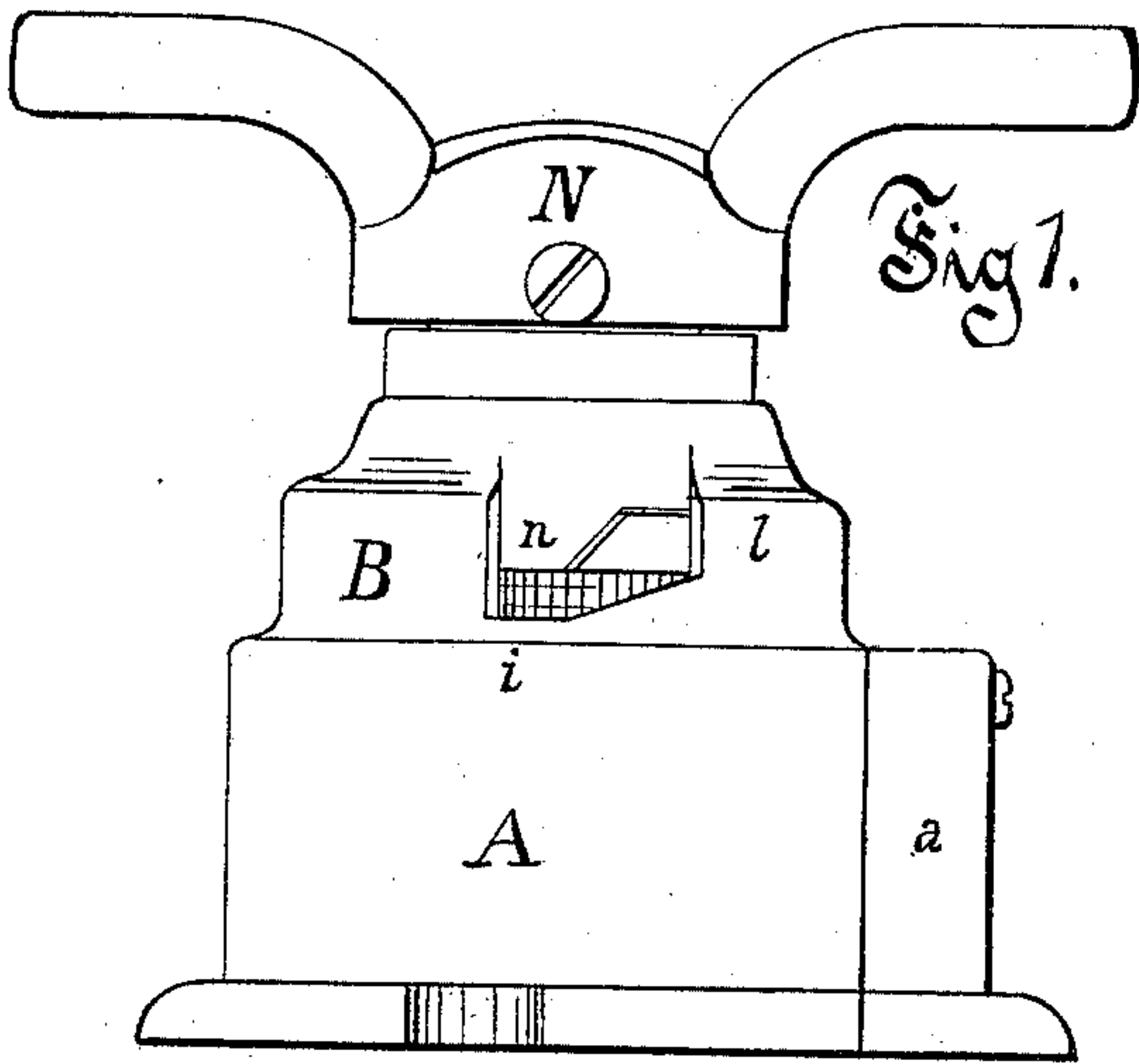
(No Model.)

S. BERGMANN.

SWITCH FOR ELECTRIC LIGHT CIRCUITS.

No. 257,276.

Patented May 2, 1882.



WITNESSES:

Newbury  
Edward C. Rowland

INVENTOR:

Sigmund Bergmann

BY Rich. A. Dyer

ATTORNEY.



# UNITED STATES PATENT OFFICE.

SIGMUND BERGMANN, OF NEW YORK, N. Y.

## SWITCH FOR ELECTRIC-LIGHT CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 257,276, dated May 2, 1882.

Application filed February 25, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, SIGMUND BERGMANN, of the city, county, and State of New York, have invented a certain new and useful Improvement in Switches for Electric-Light Circuits, of which the following is a specification.

The object I have in view is to produce a simple and efficient switching device or circuit-controller for electric-lights circuits which can be conveniently operated, will be free from the objection of arcing when the circuit is open, and in the larger sizes will reduce the spark so as to prevent injury to the parts. The invention also includes the use, in connection with such a switching device, of a "safety-catch" proportioned for the number of lights the circuit controlled by the switch is designed to carry. The same general features of construction, with some exceptions, are used in all sizes of the switching device, whether it is designed for a few lights, as a single chandelier, or for a room, floor, or house circuit.

The invention consists in the novel combinations and features of construction and arrangement, as fully hereinafter explained, and pointed out by the claims.

In the drawings, which represent one of the larger sizes of my switching device, Figure 1 is an exterior elevation of the complete device; Fig. 2, a view from the bottom of the case inclosing the operative parts; Fig. 3, a vertical section of that case; Fig. 4, a bottom view of the complete switching device; Fig. 5, an elevation of the inside parts removed; and Fig. 6, a vertical section of the insulating-block carrying the circuit-breaking bolts, and an elevation of the insulating connecting-cap.

Like letters denote corresponding parts in all the figures.

A is the metal case, of any suitable form, inclosing the operative parts of the switching device. It is secured in position with its open bottom held against a floor, wall, or elsewhere. In order to give access for making connections and renewing safety-catch without detaching the case, such case is provided with a removable side plate, *a*. This case is extended to form a barrel, B, in which works the key-block that gives the movement to the circuit-controlling device. The case contains a block, C, made of insulating material, preferably wood, and of a shape to conform to that of the case, a space

being left, however, between the block and the removable side plate for connections. The block C has three vertical holes, *b*, bored through it, in which are metal bolts D. These bolts have beveled heads *c*, and are split from the head toward the other end, as shown, each bolt having a steel spring, *d*, within its split to give elasticity. Each bolt D is surrounded by a spiral spring, *e*, which rests on a shoulder, *f*, and draws the head of the bolt into the lower side of the insulating-block and clearly within the surface of such block, so that there will be no danger of arcing between the bolts and contact-plates when the circuit is open, which is a defect met with when the bolts are pushed wholly through the contact-plates to break circuit, instead of being drawn away from them.

E F G H are contact-plates secured to the bottom of block C and separated from each other a short distance. They are rounded out on opposing faces to form seats for the heads of the bolts. The plates E and F are extended up on the side of block C. Plate E carries one binding-screw, *g*, for the line-wire. Plate F is connected with a separate plate, I, by the safety-catch wire K, and the plate I carries the other binding-screw, *h*. The insulating-block C is secured within the body of the inclosing-case by screws. The shanks of the bolts D project up into the barrel B of the case, and are screw-threaded. They are connected together by a cap, L, of insulating material, preferably vulcanized fiber, which cap is of cylindrical shape, and has a flange, *i*, at its lower edge. Upon this cap rests the round metal key-block M, carrying two projecting inclines, *k l*. This key-block M projects through the barrel B, and has an angular head, *m*, adapted to receive the key N, which may be secured permanently to said head. The inclines *k l* engage with inward inclines, *n o*, within the barrel B. By turning the key-block M upon the cap L the inclines *k l* and *n o* will engage and force the cap L inwardly and push the bolts D into contact with the contact-plates, in which position they will be retained until the key-block is turned to a farther point and the inclines pass each other and drop into the spaces between.

The key-block, it will be seen, is revolved continuously in one direction upon the insulating-cap, while the circuit-controlling bolts



have a simple reciprocating movement, the contact-surfaces being kept clean by the rubbing action produced by the split ends of the bolts.

5 The circuit-connections between the binding-posts are as follows: from *g*, through E, controlling-bolt to plate G, through another bolt to H, then through the third bolt to plate F, safety-catch K, and plate I to *h*. By the use  
10 of a number of circuit-controlling bolts the spark is greatly reduced, so that the parts are not injured thereby. For the smaller sizes of this switching device, one or two circuit-controlling bolts may be employed; but in other  
15 respects the construction shown will be used. It is also evident that for switches intended for circuits carrying very large numbers of lights more circuit-controlling bolts may be  
20 employed, so as to reduce the spark to the desired extent, and the shape of the block C and of the case may be modified to suit the most suitable arrangement and disposition of the bolts.

What I claim is—

25 1. In switches for electric-light circuits, the combination, with the reciprocating circuit-controlling device, of a key-block adapted to be revolved continuously in one direction, substantially as and for the purpose set forth.

30 2. In switches for electric-light circuits, the combination, with the reciprocating circuit-controlling device, of a key-block adapted to be revolved continuously for giving movement in one direction and a spring or springs for  
35 moving such device in the other direction, substantially as set forth.

40 3. In switches for electric-light circuits, the combination, with suitable contact-plates arranged in the same circuit, of two or more split bolts and means for moving such bolts into and out of contact with the plates simultaneously, substantially as set forth.

4. In switches for electric-light circuits, the combination, with one or more circuit-controlling bolts retracted by a spring or springs, of the  
45 cap of insulating material and the key-block turning on such cap, substantially as set forth.

5. In switches for electric-light circuits, the combination, with beveled contact-plates, of a split circuit-controlling bolt, having beveled  
50 head withdrawn wholly away from such plates in breaking circuit, substantially as set forth.

6. In switches for electric-light circuits, the combination, with the inclosing-case having inclines *n o*, of the key-block M, having inclines  
55 *k l*, the insulating-block C, carrying contact-plates and binding-screws, the split circuit-controlling bolts D, retracted by springs *e*, and the insulating-cap L, substantially as set forth.

7. In switches for electric-light circuits, the  
60 combination, with case A, containing circuit-controlling device, of the removable side plate, *a*, for giving access to the connections, substantially as set forth.

8. In switches for electric-light circuits, the  
65 combination, with the insulating-block C, of the binding-screws *g h*, the safety-catch and contact-plates arranged in circuit between such binding-screws, and the circuit-controlling device composed of two or more split bolts, sub-  
70 stantially as set forth.

9. In switches for electric-light circuits, the case A, having removable side plate, *a*, in combination with insulating-block C, carrying contact-plates and circuit-controlling bolts,  
75 and the binding-screws *g h* and safety-catch K, located on the side of such block next to the removable plate, substantially as set forth.

This specification signed and witnessed this 20th day of February, 1882.

SIGMUND BERGMANN.

Witnesses:

WM. H. MEADOWCROFT,  
H. W. SEELY.