

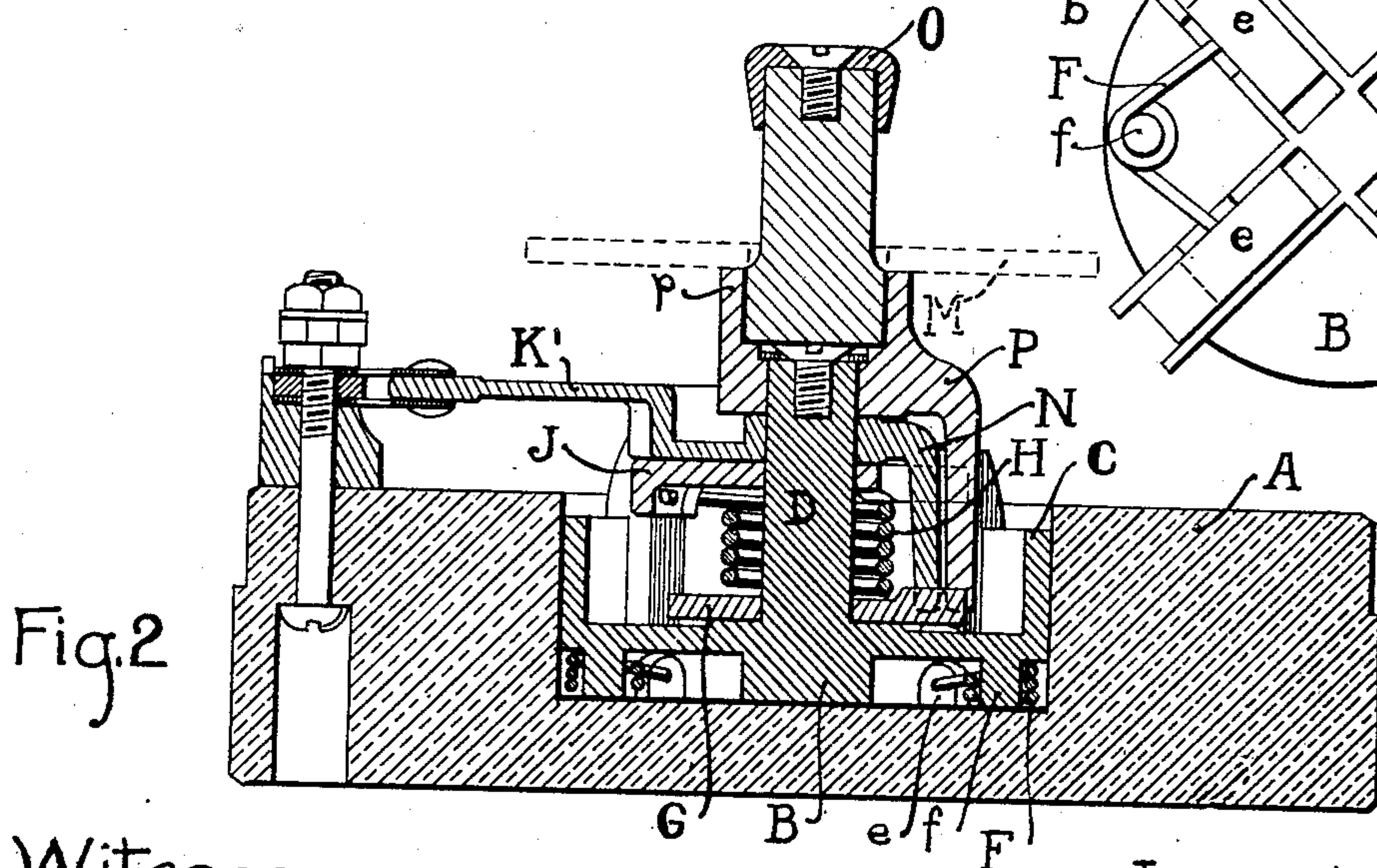
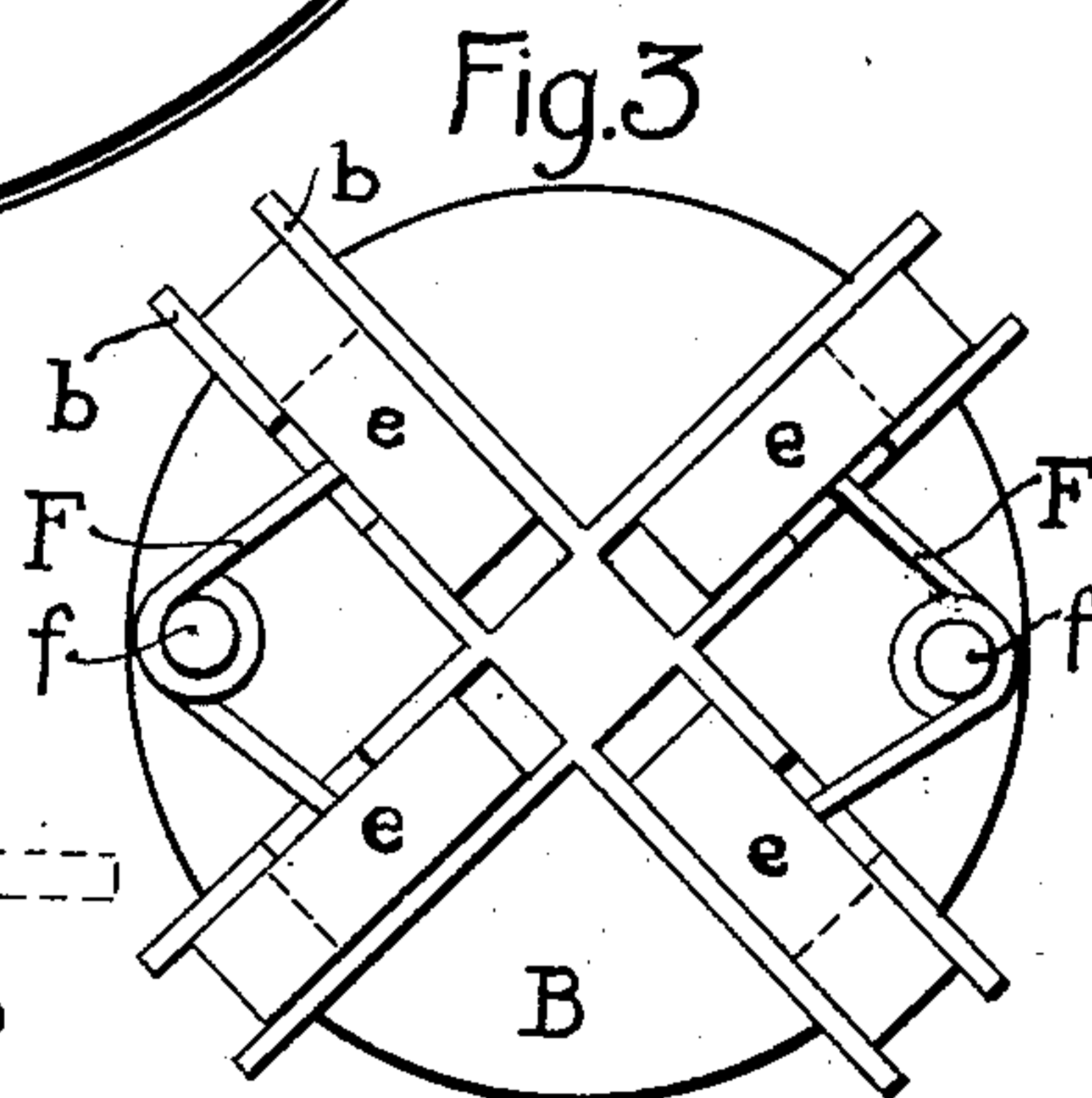
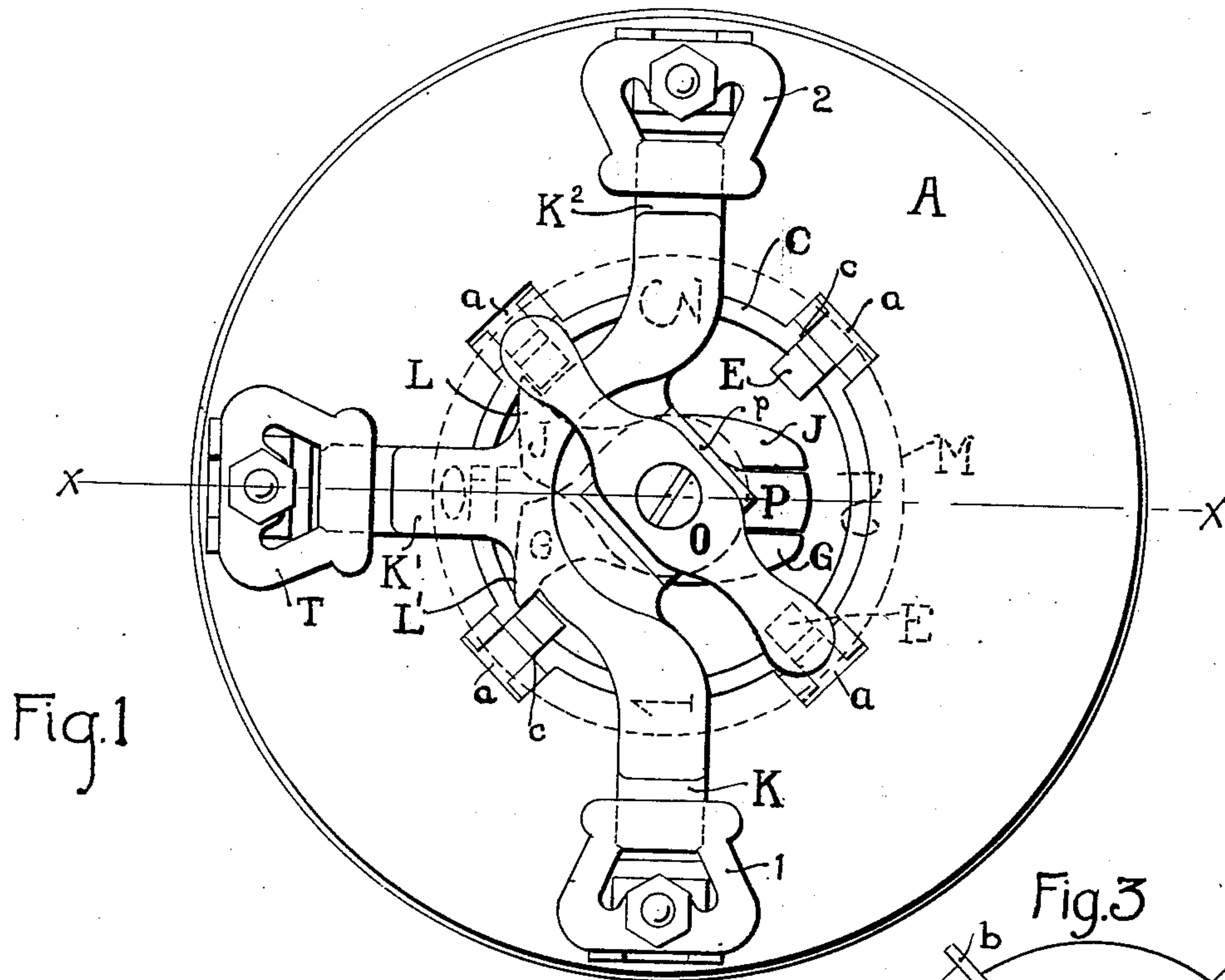
No. 717,451.

Patented Dec. 30, 1902.

J. REID, JR.
CURRENT DIRECTOR.

(Application filed Sept. 15, 1899.)

(No Model.)



Witnesses

W. E. Erwin
H. S. Morrison

Inventor

James Reid, Jr.
by *Ward & Cameron*

Attys.

UNITED STATES PATENT OFFICE.

JAMES REID, JR., OF WATERVLIET, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR-HEATING COMPANY, OF ALBANY, NEW YORK, A CORPORATION OF WEST VIRGINIA.

CURRENT-DIRECTOR.

SPECIFICATION forming part of Letters Patent No. 717,451, dated December 30, 1902.

Application filed September 15, 1899. Serial No. 730,562. (No model.)

To all whom it may concern:

Be it known that I, JAMES REID, Jr., a citizen of the United States of America, and a resident of Watervliet, in the county of Albany and State of New York, have invented certain new and useful Improvements in Current-Directors, of which the following is a specification.

My invention relates to improvements in current-directors; and the object of my invention is to provide an improved switch for the purpose of directing the current to either of two circuits or to both circuits when desired or cutting the current out of each circuit, and which shall be so constructed that the making and breaking of the circuit shall be done instantaneously and with little or no sparking. I attain this object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan. Fig. 2 is a cross-section along the line $x x$ on Fig. 1. Fig. 3 is an inverted plan of the casting B.

Similar letters refer to similar parts throughout the several views.

In the block A, which may be made of porcelain or any suitable material, I place a recess adapted to retain the casting or stud-plate B, which is provided with a rim C and preferably with a post D. I arrange in the rim C a series of openings c , within each of which I place a latch bar or stud E, which is preferably right-angled, having a lower projecting portion e , fitting between the ribs $b b$ on the lower surface of the casting or stud-plate B. (See Fig. 3.) Adjacent to each of the openings c in the rim C, I preferably arrange in the block A a corresponding opening a , which will allow the latch-bars E to be drawn into the block, if necessary. The horizontal portion of the latch bar or stud is preferably attached to a spring F, said spring being wound about the lug f , the tendency of the spring being to draw the latch-bar toward the center of the block. On the post D, I also place a cam-arm or cam-plate G, which is connected with one end of the spring H, the opposite end of said spring being connected with a similar cam-arm or cam-plate J, placed

above the spring H. The cam-arm or cam-plate G is arranged to engage with the latch bars or studs E when the switch is operated in one direction, and the cam-arm or cam-plate J to engage with the said latch bars or studs when the switch is operated in the opposite direction. Upon the post D, I also mount a metallic connecting-plate provided with the contact-fingers K, K', and K², adapted to engage with the brushes T, 1, and 2. On opposite edges of said connecting-plate I arrange stops L L', adapted to engage with and to take their position between two of the adjacent latch bars or studs E E in whichever position the switch may be turned. Depending from the metallic connecting-plate I arrange a bar N, which extends toward the bottom of the recess in the block and on one side engages with the cam-arm or cam-plate J, while on its opposite side it engages with the cam-arm or cam-plate G. On the post B I place the hub p , carrying the downwardly-projecting arm or plate P, which is placed between the end of the cam-arm or cam-plate J and the end of the cam-arm or cam-plate G in such a manner that one of the cam-arms or cam-plates is on one side of the arm or plate P and the other on the opposite side, occupying a similar position in reference to the cam-arms or cam-plates as the bar N. To the hub p I attach the handle O.

To operate the switch, the handle is turned in the direction desired, which will turn the arm P, and therefore move one of the cam-arms or cam-plates J or G, and thus place the spring under tension, while one of said cam-arms or cam-plates will press in the latch bar or stud engaging with one of the stops L L', depending upon the direction in which the handle O of the switch is turned, and the contact-fingers will be moved forcibly and instantaneously, making and breaking connections with the brushes, and the motion will be arrested by the engagement of the stops L L' with the next adjacent latch bars or studs E.

It will be noted that I arrange an indicating-plate M, upon which I place the figures "1," "2," and "3" and the word "Off," (other indicating characters may be substi-

tuted for these,) which will indicate the position of the switch to an inexperienced operator, these characters indicating that either one of the two circuits is being supplied with current, that both are being supplied, or that the current is flowing to neither.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. A current-director, consisting of a metallic connecting-plate provided with contact-fingers; a depending arm secured to said plate; two cam-plates suitably mounted and adapted to engage with said depending arm, one on one side and the other on the opposite side thereof; a spring adapted to be placed under tension by the movement of either of said cam-plates; a stud-plate; a series of studs placed in openings in the periphery of the stud-plate; stops on said connecting-plate adapted to be placed between and engage with adjacent studs; a handle provided with means for moving either of said cam-plates as desired, substantially as described.
2. In a current-director, a stud-plate provided with a series of openings in its periphery; a series of studs adapted to be placed in said openings; springs arranged to draw said studs toward the center of the stud-plate; a connecting-plate provided with fingers adapted to engage with suitable brushes stops on said connecting-plate; a spring; means for placing under tension said spring by the movement of the switch-handle; means for rotating the switch in either direction; means for forcing said studs out of contact with the stop on the connecting-plate when the switch is rotated in either direction, substantially as described.
3. A current-director provided with a connecting-plate carrying contact-fingers, brushes with which said fingers are adapted to engage; a spring; a handle arranged to place under tension said spring; a series of studs adapted to hold said connecting-plate in position until said spring is placed under tension and one of the studs forced out of

contact with the contact-plate by the rotation of said handle, said handle adapted to be rotated in either direction and thereby operate the switch, substantially as described.

4. In a current-director, a stud-plate provided with a series of openings in its side, with a series of ribs along its under side; a series of studs adapted to move in said openings and to extend beneath said stud-plate and between said ribs; springs adapted to draw said studs toward the center of the stud-plate; a post carried by said stud-plate; two cam-plates mounted on said post; a spring placed about said post and connecting with each of said cam-plates and a contact-plate provided with contact-fingers on said post, said contact-plate carrying a depending arm adapted to be placed between ends of said cam-plates and a handle carrying a depending plate also adapted to be placed between the ends of said cam-plates, substantially as described.

5. In a snap-switch in combination with a rotary handle and its spindle, a rotatable plate, a spring for throwing said plate made tense by the turning of handle, independent studs movable into and out of the path of said plate, guides for directing the movement of the studs, cams engaging the studs and adapted to be rotated by the turning of the handle, substantially as specified.

6. In a snap-switch in combination with the rotary handle and its spindle, a rotatable plate, a spring for throwing said plate made tense by the turning of the handle, independent studs movable radially into and out of the path of said plate, guides for directing the movement of the studs, cams engaging the studs and adapted to be rotated by the turning of the handle, substantially as specified.

Signed by me at Albany, New York, this 13th day of September, 1899.

JAMES REID, JR.

Witnesses:

JOHN M. ESTERLY,
CHAS. B. MITCHELL.