

No. 825,859.

PATENTED JULY 10, 1906.

J. F. McELROY.  
CURRENT DIRECTOR.  
APPLICATION FILED SEPT. 15, 1899.

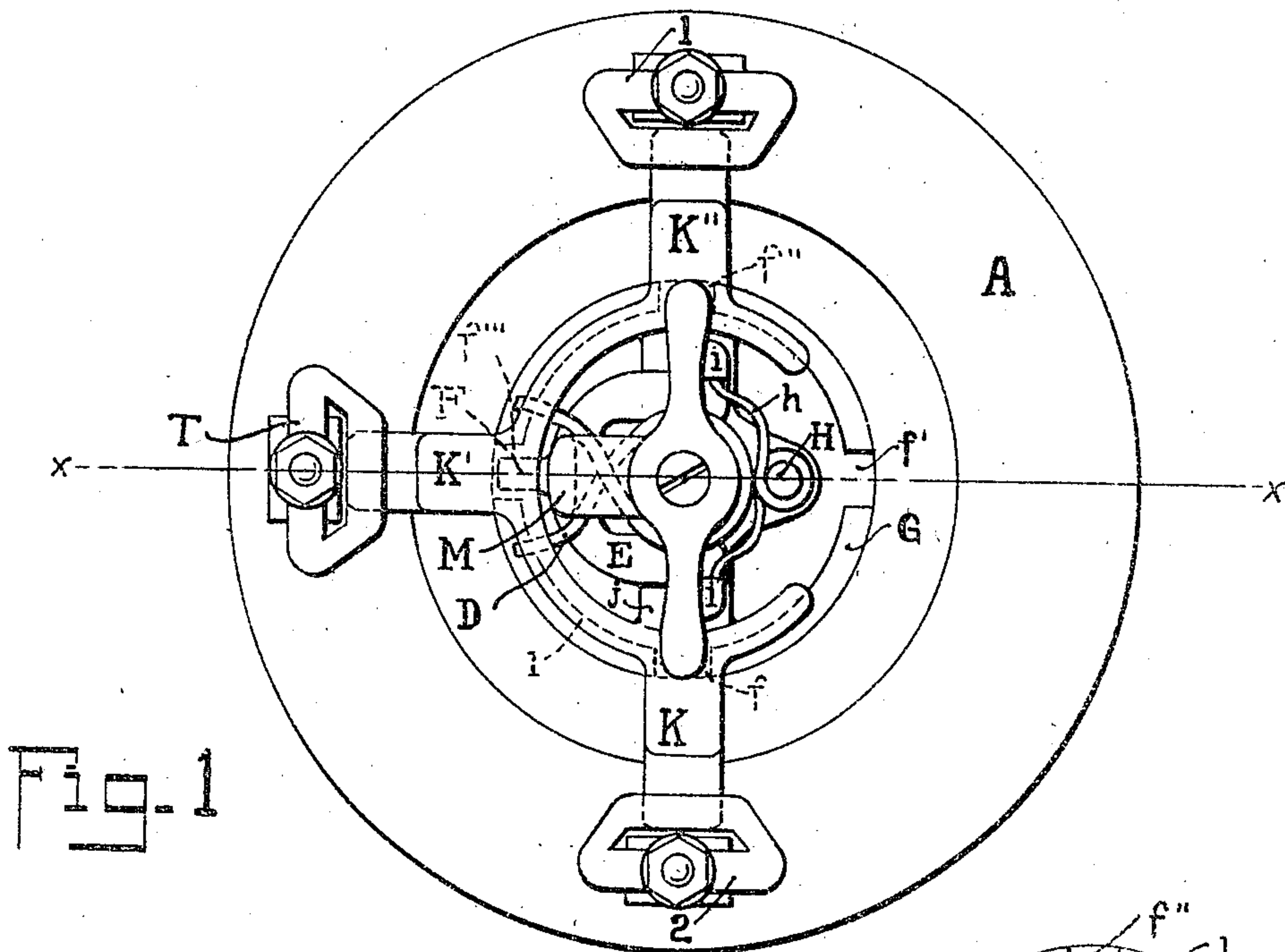


Fig. 1

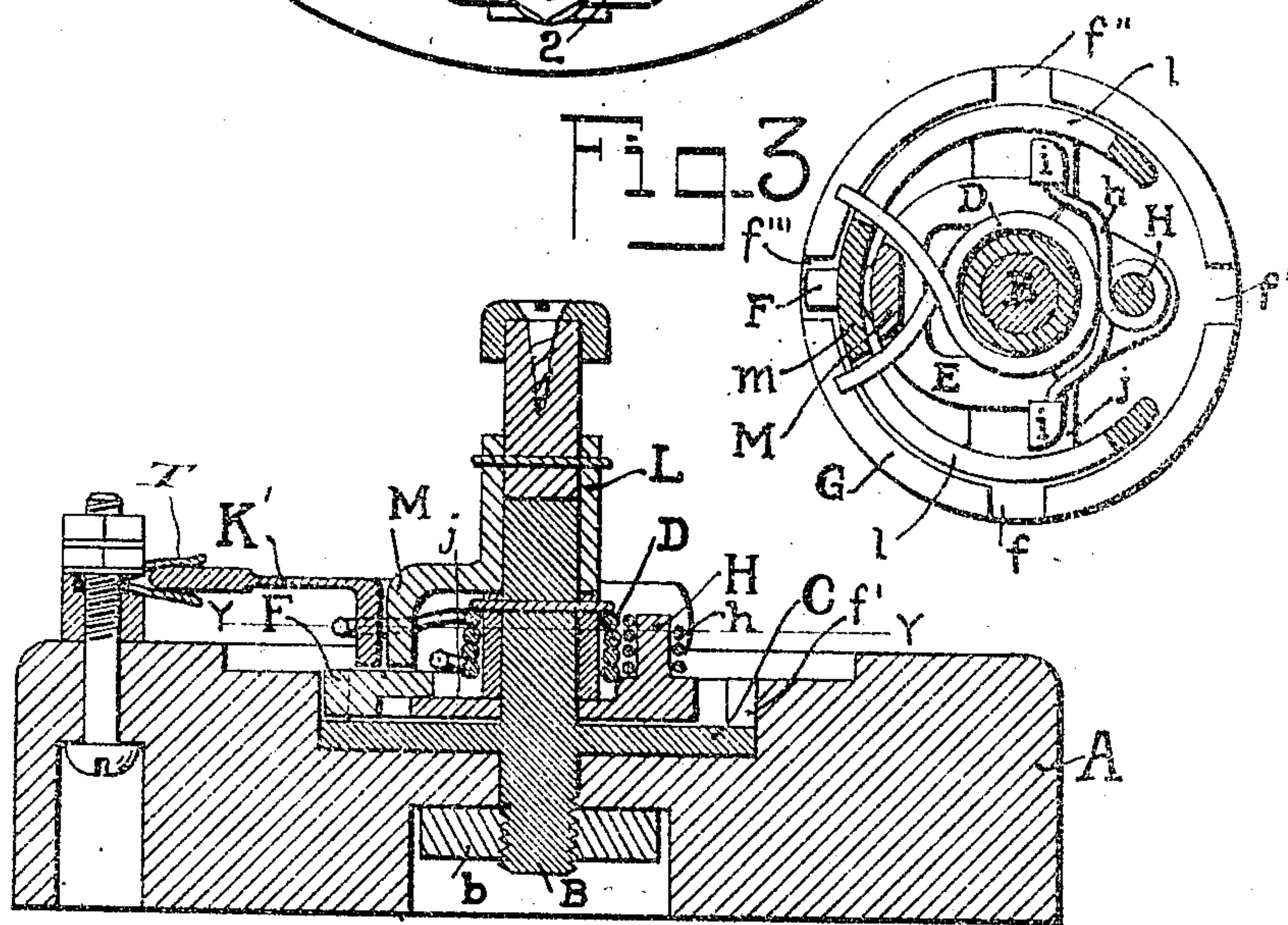
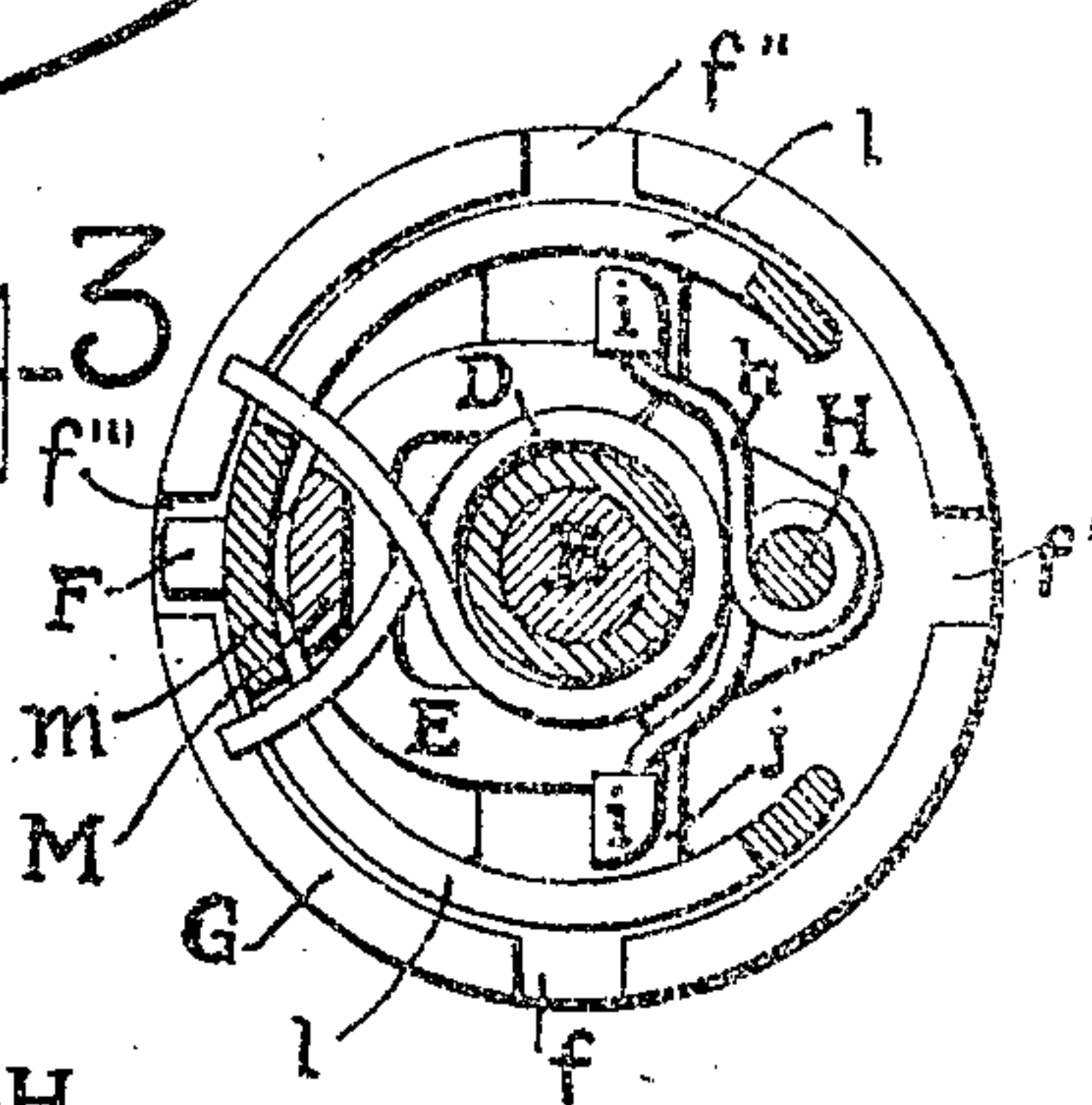


Fig. 2

Fig. 3



Witnesses  
W. H. Brown  
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# UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR-HEATING COMPANY, OF ALBANY, NEW YORK.

## CURRENT-DIRECTOR.

No. 825,859.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed September 15, 1899. Serial No. 730,564.

*To all whom it may concern:*

Be it known that I, JAMES F. McELROY, a citizen of the United States of America, and a resident of Albany, 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 current-directors; and the object of my invention is to provide an electric switch or current-director so arranged that a current may be taken from a source of supply to either one of two circuits or to the two circuits together, or the current-director may be so arranged that no current will be supplied to either of the circuits, and also to provide for the instantaneous change of the position of the current-director in such a manner that sparking may not occur. 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 on line  $xx$  of Fig. 1, and Fig. 3 is a section on the lines  $yy$  on Fig. 2.

In many electric systems, especially those used for heating electrically-propelled vehicles, it is desirable to provide for the transmission of electricity through one circuit connecting certain portions of the heating apparatus when the temperature is not too low. When the vehicle to be heated requires more heat than could be conveniently provided through one circuit, two circuits should be supplied with electric energy. It is advisable to have the current-director used in such a system so simple in its construction and operation that an unskilled operator may attend to it and so constructed that no sparking or other deleterious result may attend the movement of the switch.

I provide a block A, which may be placed in a convenient position at one end of the car, operated from the platform when the apparatus is used upon a car, and arrange upon the block posts provided with brushes T, 1, and 2 and preferably arranged in such a way that the space on the block opposite one of the brushes shall be unobstructed by any posts, brush, or other projection.

In the block, preferably about the center thereof, I arrange a post B, suitably secured by a nut  $b$  at one end or in any suitable manner, upon which post I preferably arrange a

plate C, recessed beneath the surface of the block, said plate being provided with a rim G, having openings  $f f' f^2 f^3$  therein. Upon the post B, I arrange a contact-plate carrying fingers K, K', and K<sup>2</sup>, constructed of metal and preferably connected with a hub provided with slots  $l$ . Within the recess in which the plate C is placed I place a bar  $j$ , extending across from one side to the other of said hub, upon which bar  $j$ , I arrange a post H. I also place within the recess occupied by the plate C a latch-plate E, provided with a latch F, adapted to engage with the slotted openings  $f f' f^2 f^3$ , respectively, in the rim G on the plate C, the opening in the latch-plate E through which the post B passes being an elongated one, allowing for the movement of the latch-plate E in reference to the post B. I also arrange upon the plate E lugs  $i i$ , to which I secure the ends of the spring  $h$ , wound about the post H, the tendency of the spring being to force the latch F into the openings  $f, f', f^2$ , and  $f^3$ . On the post B, I place a collar L, provided with a rim M, with which the ends of the spring D engage on opposite sides thereof, the ends of said spring D extending through the slots  $l$ . About midway between the ends of the slots  $l$  is arranged a stop  $m$ , against which the ends of the spring D engage. As thus arranged when the collar L is turned the rim M, attached thereto or formed integral therewith, moves one end of the spring D, and the other end being held in position against the stop  $m$  places the spring under tension. When the rim M is moved so that it presses against one of the lugs  $i i$ , the plate E is moved against the tension of the spring  $h$  and the latch F is withdrawn from the opening in the rim G of the plate C, which liberates the plate E, and therefore causes the plate  $j$  to be forced about, moving the fingers from the position that they occupy until the latch F is forced into the next opening in the rim G.

I preferably arrange on the collar L a plate with figures or letters to indicate the position of the switch. This plate is not shown in the drawings, but is an obvious means for designating the connections.

Each of the fingers K, K', and K<sup>2</sup> is adapted to engage with the brushes T, 1, and 2. The brush T may be the one to which the trolley is connected, and when the position of the switch is that shown in Fig. 1 the current is



taken from the brush T to the brush 1 and also to the brush 2 and both circuits in the system are provided with electricity. When the switch is turned so that the finger K' engages with the brush 2 and the finger K<sup>2</sup> engages with the brush T, the finger K will be disengaged and the current will pass from the trolley to the brush 2 and only one circuit will be supplied. A further turn of the switch in the same direction as last supposed will bring the finger K into engagement with brush 1, the finger K<sup>2</sup> will engage with brush 2, and K' will be disengaged and no current will be carried to the system.

I have referred to my switch as being used in connection with a heating system; but I do not limit myself to its use in this connection, since it is apparent that it could be used in connection with a lighting system or in any connection in which it is sometimes desirable to supply two or more circuits with electricity independently.

I do not limit myself to three contact-fingers and brushes, as any suitable number may be used without a departure from my invention.

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 bar provided with contact-fingers, all of said fingers in the same plane, brushes ar-

ranged in the same plane as the fingers, a spring-pressed latch adapted to engage in suitable openings and to hold the fingers stationary during a partial revolution of the handle, a handle, a bar, a spring supported by said bar put under tension by the movement of the handle in either direction, a means for removing the latch by a revolution of the handle, causing the spring to force the contact-fingers away from the brushes into contact with the next brushes, said latch arranged to engage with an opening adapted to hold the fingers in position after their movement by the spring, substantially as described.

2. In a current-director, a connecting-bar provided with contact-fingers, brushes with which said fingers are adapted to engage, a latch connected with a sliding plate, a spring adapted to hold said latch within openings, a handle provided with an arm adapted to put under tension a spring when said handle is moved in either direction, a lug on said sliding plate with which said arm will come in contact during a partial revolution of the handle, all substantially as described.

Signed by me at Albany, New York, this 11th day of September, 1899.

JAMES F. McELROY

Witnesses:

HARRY I. WELSH,  
CHAS. B. MITCHELL.