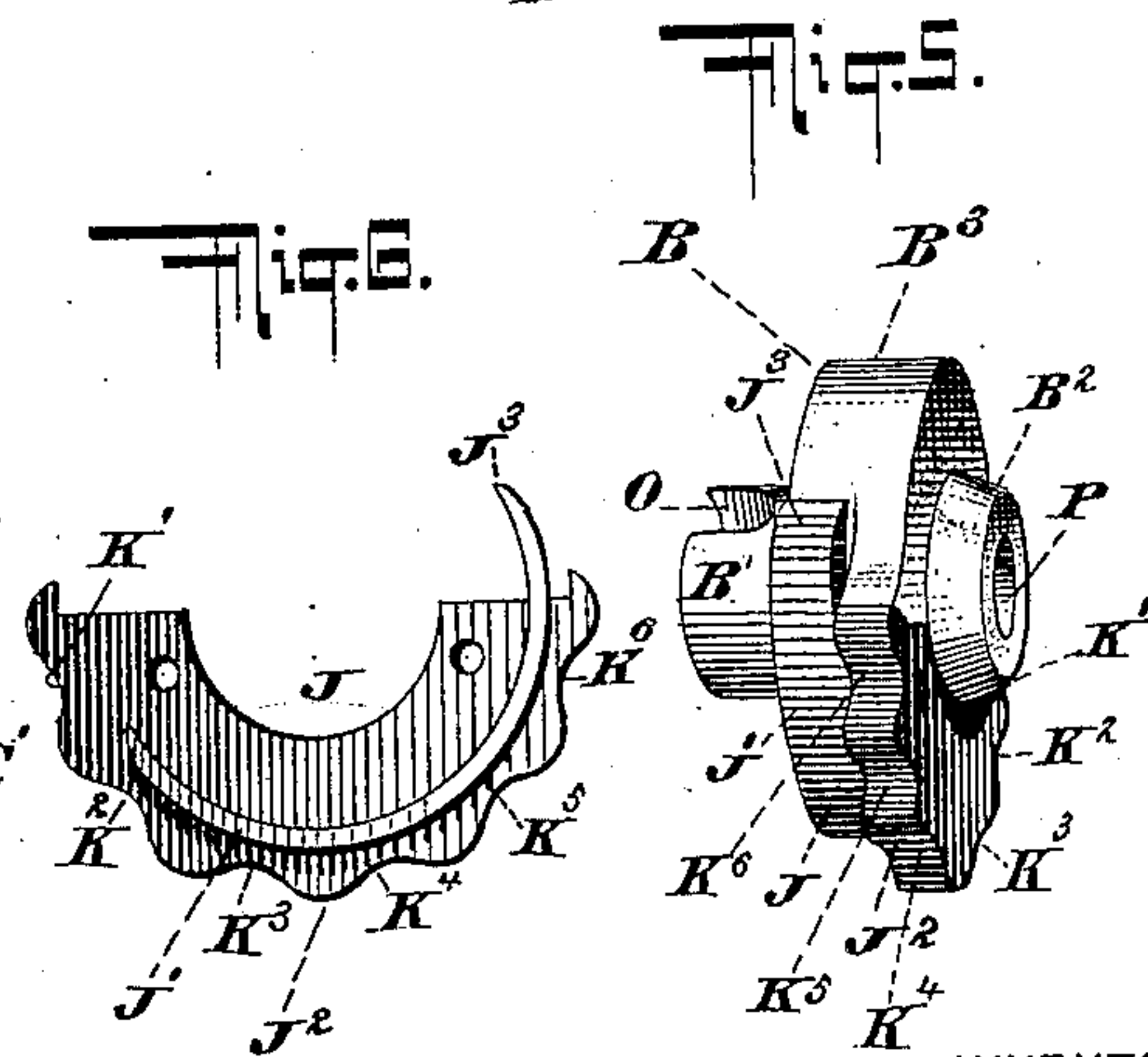
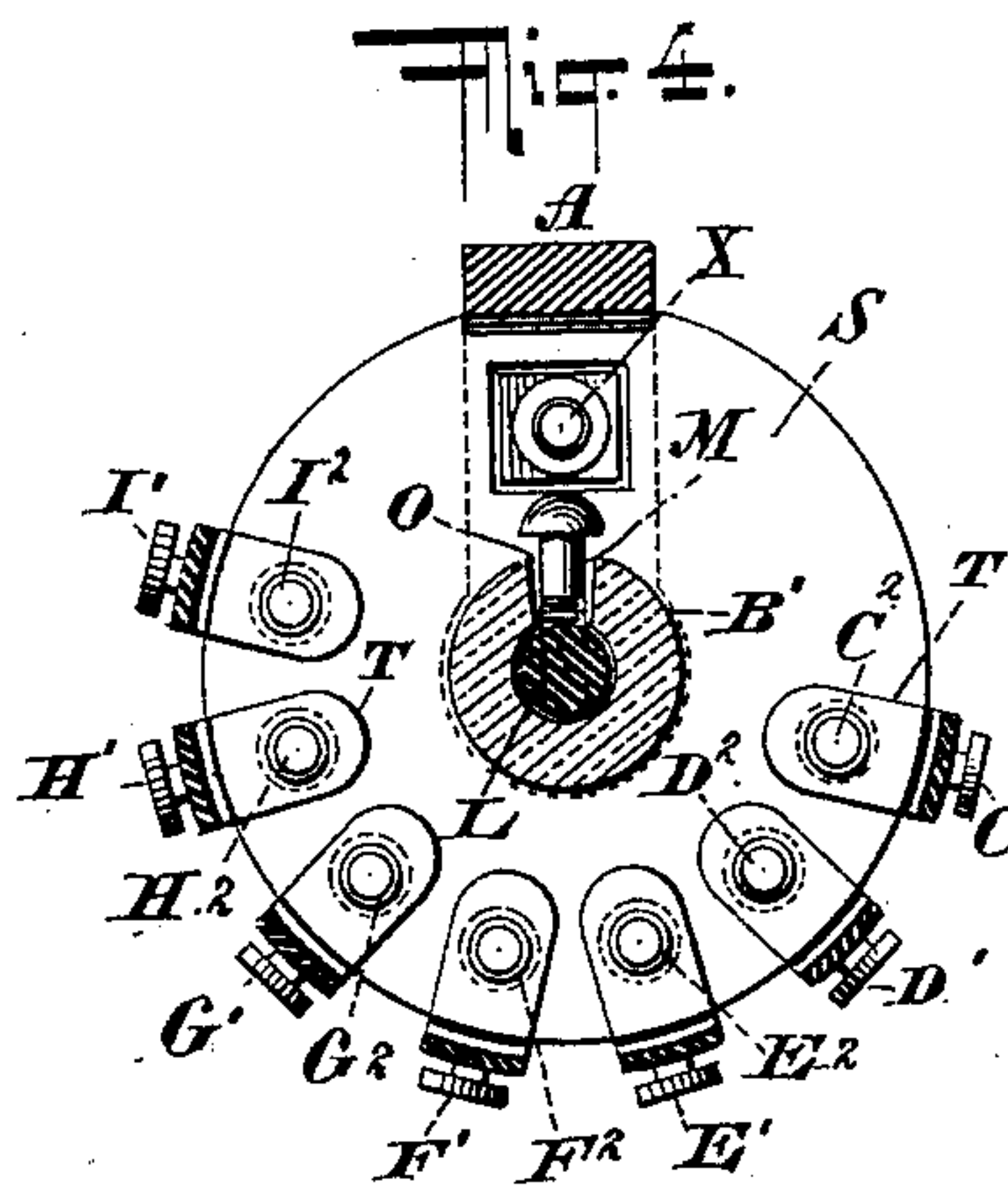
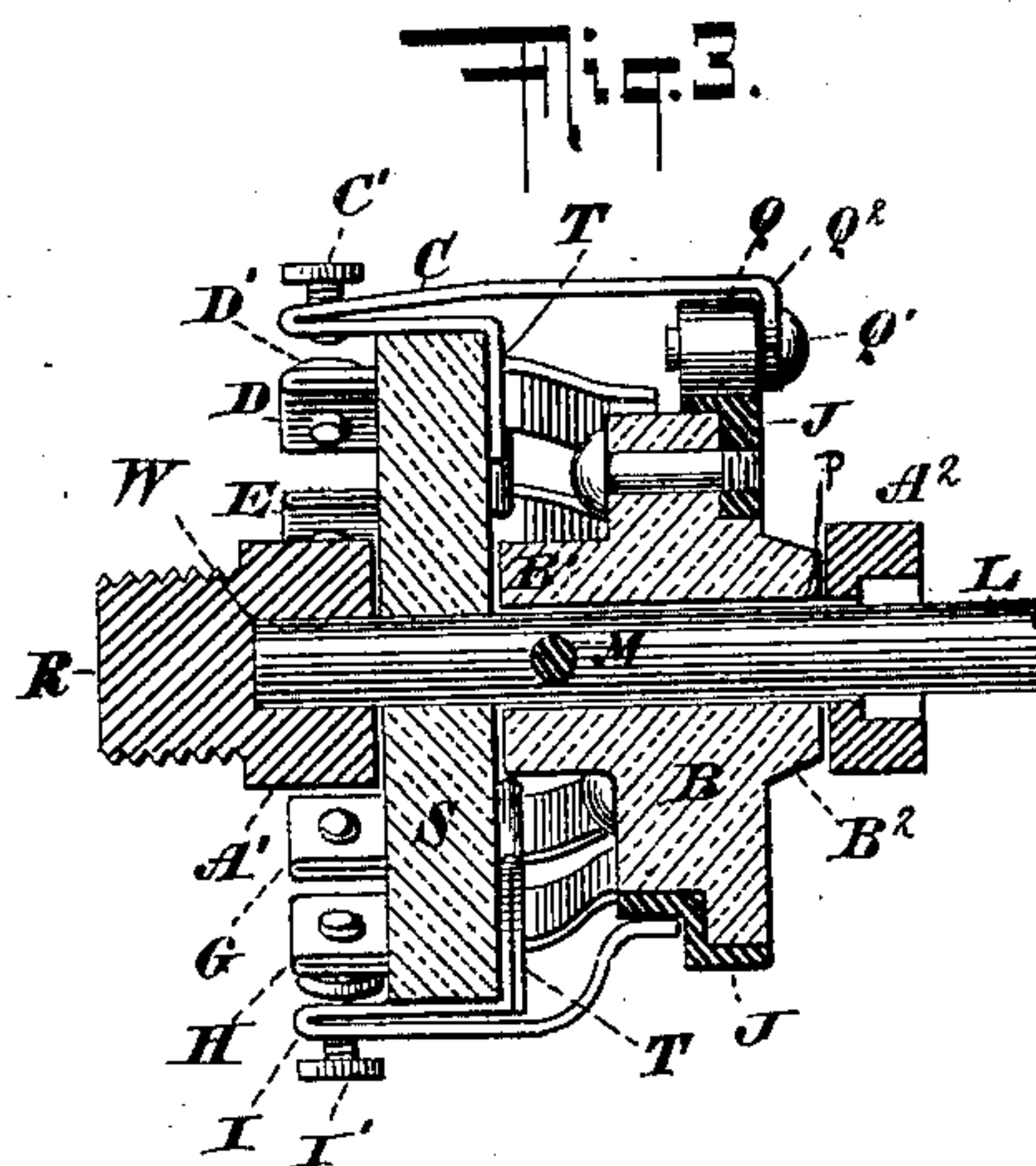
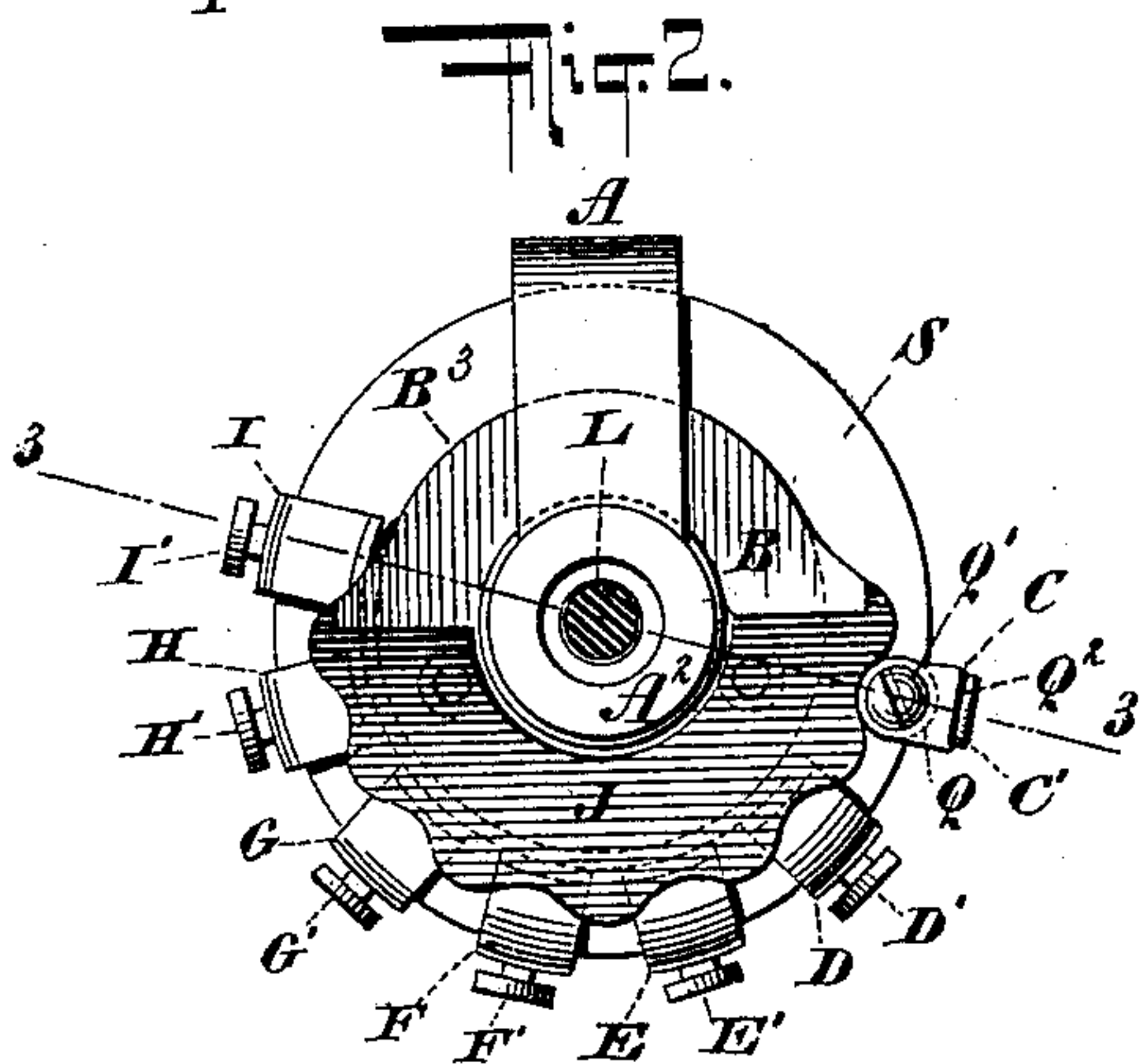
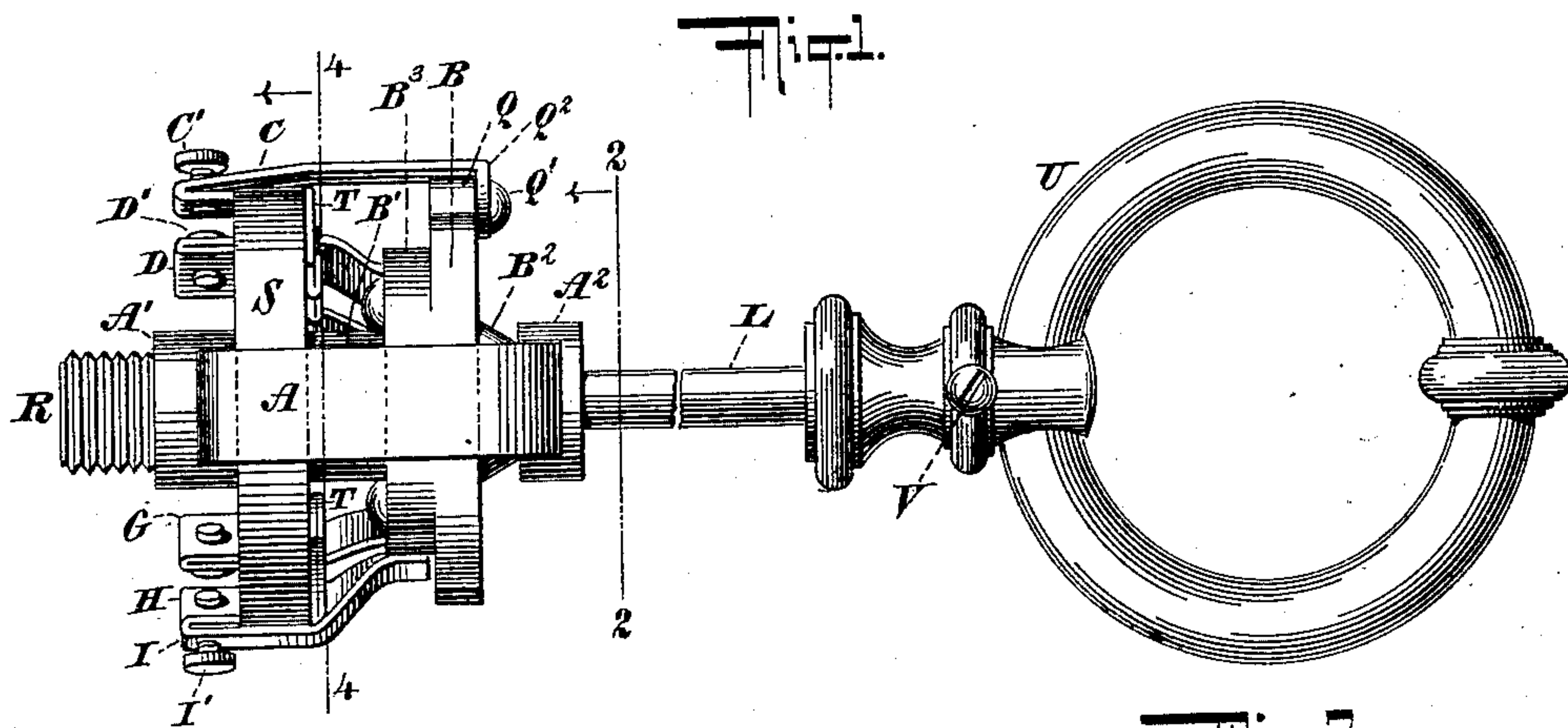


(No Model.)

J. C. CASSIDY.
ELECTRIC SWITCH.

No. 548,744.

Patented Oct. 29, 1895.



WITNESSES:

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JOHN C. CASSIDY, OF EAST ORANGE, NEW JERSEY.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 548,744, dated October 29, 1895.

Application filed July 19, 1895. Serial No. 556,533. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. CASSIDY, of East Orange, State of New Jersey, have invented a certain new and useful Improvement in Electric Switches or Cut-Outs, of which the following is a specification and description.

The object of this invention is to show an improvement of the switch and cut-out described in Letters Patent of the United States heretofore granted to me, No. 529,363, dated November 20, 1894, and No. 529,595, dated November 20, 1894. In this application I desire to show a simpler device for securing the ends attained in each and both of said Letters Patent.

In the accompanying drawings, Figure 1 represents a rear view of my improved electric switch and cut-out. Fig. 2 shows a section of Fig. 1 on the line 2 2, looking in the direction of the arrow, Fig. 1. Fig. 3 shows a section of Fig. 2 on the line 3 3 thereof. Fig. 4 shows a section of Fig. 1 on the line 4 4 thereof, looking in the direction of the arrow, Fig. 1. Figs. 5 and 6 respectively show details of the improvement herein described.

Similar letters refer to corresponding parts in the various figures.

A represents a frame made of any material, the object of which frame is to hold together the various parts making up my improved electric switch and cut-out. Said frame A has two collars A' and A², which are integral parts of the said frame A. An integral part of said frame A is the screw R, by means of which the switch is attached to the chandelier or electrolier.

The rotary shaft L, to which is fastened the handle U by means of the screw V, projects through the collar A² and openings P of the rotary wheel B, through the insulating-block S into the aperture W of the collar A', said rotary shaft being made a part of the revolving block B by means of the screw M, which bears on said rotary shaft L through the aperture O of the collar B'.

S is a block, of insulating material, rigidly attached to the frame A by means of screw X, Fig. 4, or other well-known devices. Fastened to said block S by means of the screws C², D², E², F², G², H², and I², Fig. 4, are the contact-springs C, D, E, F, G, H, and I, Fig. 1.

Said screws C², D², E², F², G², H², and I² penetrate through the block S and hold said contact-pieces C, D, E, F, G, H, and I in place by means of the arms T of said contact-pieces C, D, E, F, G, H, and I. (Shown in Fig. 3.)

B is a rotary block, of insulating material, placed between the block of insulating material S and the collar A² of the frame A. Said rotary block B is so formed as to have as integral parts of it collars B' and B², all of insulating material. The block B also has a contact-surface J, made of conducting material, composed of the smooth surface J' and a corrugated surface J², which are so arranged that the corrugated surface J² projects a short distance away from the smooth surface J' of the connecting portion J, said projection, as shown in Figs. 5 and 6, being about the width of the shoulder of each corrugation. The said corrugated contact-surface J² and the smooth surface J' are so placed with respect to each other that the beginning of the smooth surface J' is of a distance equal to about one and a half corrugations from the point of beginning of said corrugated surface J² and that the arm J³ of the smooth contact-surface J' projects a similar distance beyond the last corrugation K⁶, Fig. 6.

The contact-pieces D, E, F, G, H, and I are so arranged that their ends may rest upon the smooth surface J' of the rotary block B. The contact-piece C is made longer than the pieces D, E, F, G, H, and I and carries at its one end a roller Q, fastened to the arm Q² of the contact-piece C by means of the screw Q'.

C', D', E', F', G', H', and I' are contact-screws. Electrical connections are made through the screw C', the contact-piece C, roller Q, the connecting-surfaces J' and J², the springs D, E, F, G, H, and I, and the contact-screws D', E', F', G', H', and I'. In this construction it will be observed that the circuit is completed when the screws D', E', F', G', H', and I' and the springs D, E, F, G, H, and I are, or any one of them is, in engagement with the contact-surfaces J' and J², and said contact-surfaces are engaged by means of the roller Q with the spring C and screw C'. The roller Q acts not only as a connecting medium, but assists in passing the contact-spring C over the corrugations K', K², K³, K⁴, K⁵, and K⁶, and also because the spring of the contact-piece C

holds the rotary block R in place when the said spring C engages any of the corrugations K^1, K^2, K^3, K^4, K^5 , and K^6 of the surface J^2 .

The operation of my improved electric switch and cut-out is as follows: The rotary shaft L, having firmly affixed at its one end the finger-piece U and bearing through the collars A^2, B^2, B' , and A' , will when it is turned, because of the connection made by means of the screw H, cause the rotary block B to revolve, while the other parts remain rigid. If, therefore, the rotary shaft L is caused to move in either direction by means of the finger-piece U or other well-known means, it will carry with it the rotary block B. Therefore by properly turning this rotary shaft L a circuit may be made or broken, according as the connecting-springs C, D, E, F, G, H, and I are, or either of them is, brought in contact with the conducting-surfaces J' and J^2 . When said rotary block B is turned the proper distance, it will make a complete circuit between the springs C, D, E, F, G, H, and I and the contact-surfaces J' and J^2 , so that all the lamps of the chandelier or electrolier will be lighted, when the connecting-spring C, by means of its roller Q, is brought in contact with the corrugation K' of the corrugated surface J^2 . In order to turn out all the lamps, it will simply be necessary to turn the block B back, so that the roller Q will move out of the corrugation K' on to the insulated surface B^3 , Figs. 2 and 5, and the circuit will be destroyed. After the contact is made between the spring C, roller Q, and surface J^2 of the corrugation K' each of the lamps connected with I, H, G, F, E, or D can be disconnected by further rotating the block B, so that the spring C, through the roller Q, will make connection with the surface J^2 at the corrugation K^2 . In that event the lamps connected with the spring I will be thrown out of circuit, inasmuch as the spring I will then be in contact with the insulated surface B^3 of the block B, and in this manner the block B may be rotated and contact made at K^3, K^4, K^5 , or K^6 through the roller Q and spring C and part of the lamps of the chandelier or electrolier or any of them connected or disconnected at pleasure. When the roller Q then rests in the corrugation K^6 , the lamp connected with the spring D alone will be connected.

As heretofore stated in the specifications of Letters Patent Nos. 529,363 and 529,595, the springs C, D, E, F, G, H, and I should be made of such width that when the connection is not broken with all of said springs arcing may be prevented. Of course the collars B' and B^2 may be displaced by any well-known means tending to keep the parts B^3, J' , and J^2 of the revolving block B away from the insulated surface S and collar A^2 , so long as a feasible connection be made with the rotary shaft L.

I do not limit myself to the precise means herein shown, but desire to cover by my in-

vention the mechanical equivalents of any of the parts or means herein described.

Having thus described my invention, I desire to secure by Letters Patent—

1. An electric switch and cut-out, consisting of a frame A, to which is rigidly fixed an insulated block S, carrying contact springs C, D, E, F, G, H and I, which have contact screws C', D', E', F', G', H' and I' ; said contact springs D, E, F, G, H and I being of such a length as to form a connection with a conducting surface J' of a rotary block B; said contact spring C being of such a length as to make connection with the corrugated contact surface J^2 of said block B, by means of a roller Q, being part of said contact spring C, said roller Q being made of conducting material, and fastened to said spring C by means of a screw Q^2 , also made of conducting material with a rotary block B having collars B' and B^2 , and an insulated surface B^3 , all in combination with a rotary shaft L, which said rotary shaft L bears through openings P in the collar B^2 , and O in the collar B' , into the opening W of collar A' , and is held in position by a screw M, substantially as and for the purposes herein described.

2. In an electric switch and cut-out, a contact spring C, carrying a roller Q, in combination with a rotary block B; said rotary block B having a corrugated contact surface J^2 and a smooth contact surface J' , and an insulated surface B^3 ; said corrugated surface J^2 projecting away from said smooth connecting surface J' ; said smooth surface J' and corrugated surface J^2 being so arranged relative to each other, upon said rotary block B, that when the roller Q of the spring C rests upon the corrugation K' of the corrugated surface K , said smooth surface J' will be in contact with the connecting springs D, E, F, G, H and I, and the binding screws C', D', E', F', G', H' and I' , substantially as and for the purposes herein described.

3. An electric switch or cut-out, consisting of a frame A, having collars A' and A^2 and screw R, which are integral parts of said frame A, to which said collar A' of said frame A is affixed an insulated block S, carrying the contact pieces C, D, E, F, G, H and I, which said contact pieces C, D, E, F, G, H and I are fastened to said insulated block S by means of the screws $C^2, D^2, E^2, F^2, G^2, H^2$ and I^2 , and the arms T of said contact springs C, D, E, F, G, H and I, in combination with a rotary shaft L, which said rotary shaft L has affixed at its one end a finger piece U, and bears through the collars A^2 and openings P in the collar B^2 through said block B, through the opening O of the collar B' , and into the opening W in the collar A' , in combination with the screw M and said rotary block B, said rotary block B having the collars B' and B^2 , an insulated surface B^3 and contact surfaces J' and J^2 ; said spring C carrying a roller Q, said roller Q being of conducting material and fastened to the arm Q' of said contact piece C by means

of the screw Q^2 , substantially as and for the purposes herein described.

4. In an electric switch and cut-out, a revolving block B, composed of the collars B' and B^2 , an insulated surface B^3 , a smooth contact surface J' and corrugated surface J^2 , having the corrugations K', K^2, K^3, K^4, K^5 and K^6 ; in combination with a connecting spring C and contact screw C' , said contact spring C having attached to it a roller Q, by means of the screw Q^2 , in combination with contact springs D, E, F, G and H, and connecting screws D', E', F', G' and H' ; said surfaces J' and J^2 being so arranged with reference to each other that the beginning of the contact

of the smooth surface J' on the block B, will be at a distance of about one and a half corrugations from the beginning of the contact of said block B and said corrugated surface J^2 , so that an arm J^3 of said smooth surface J' will project a similar distance on said insulated part B^3 of said block B, beyond the corrugation K^6 of said corrugated surface J^2 ; substantially as and for the purposes herein described.

J. C. CASSIDY.

Witnesses:

SEYMOUR WORK,
MAYER C. GOLDMAN.