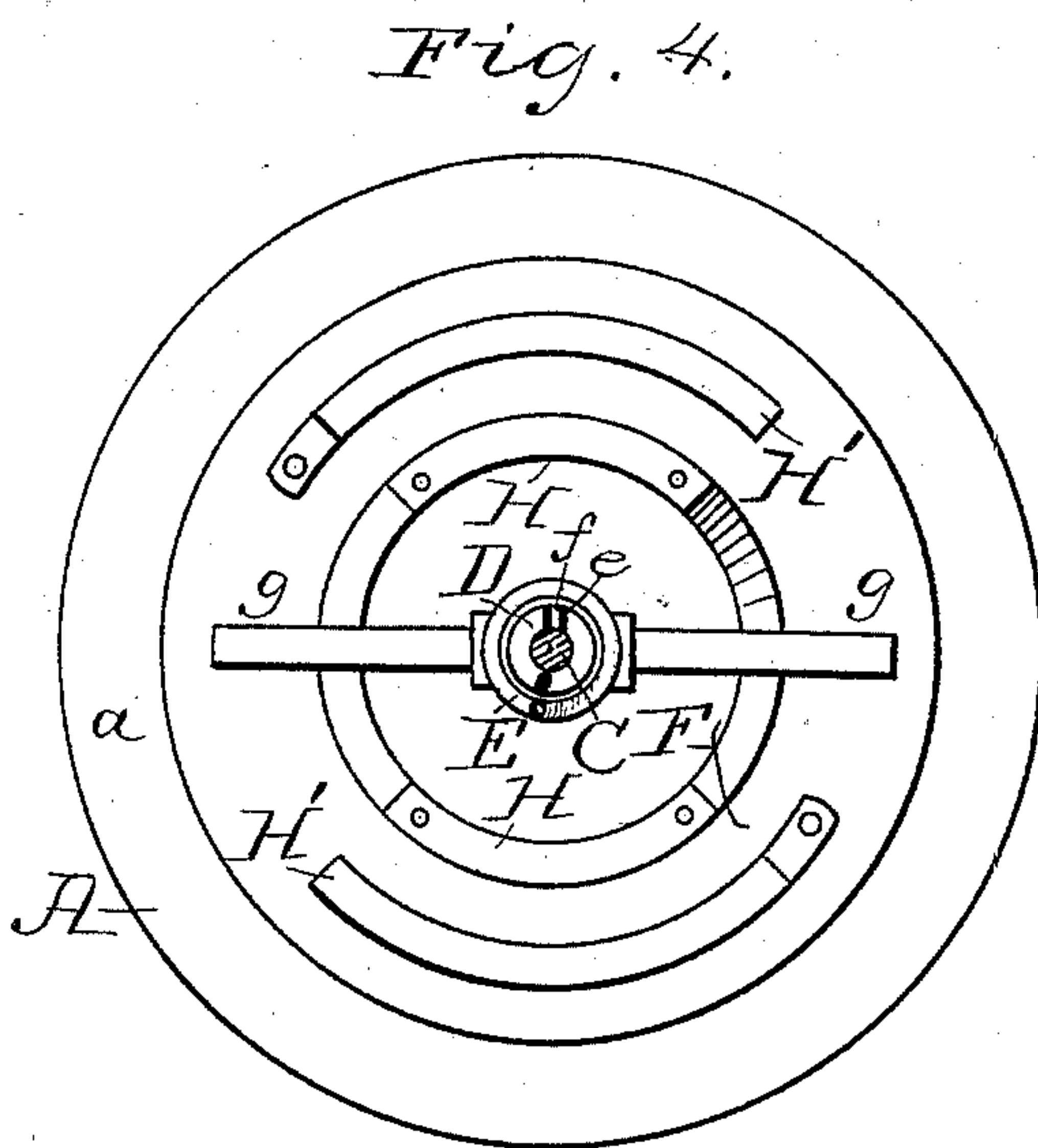
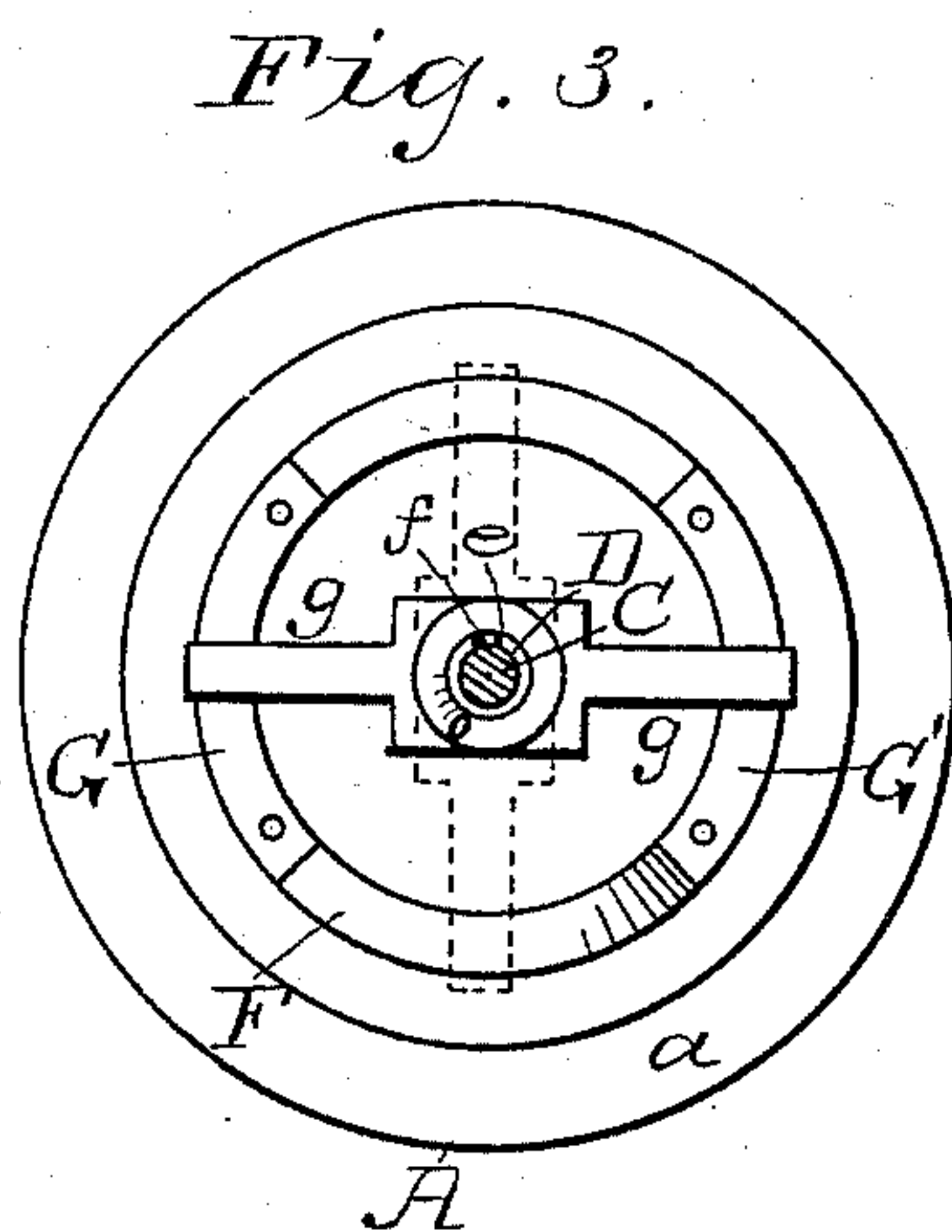
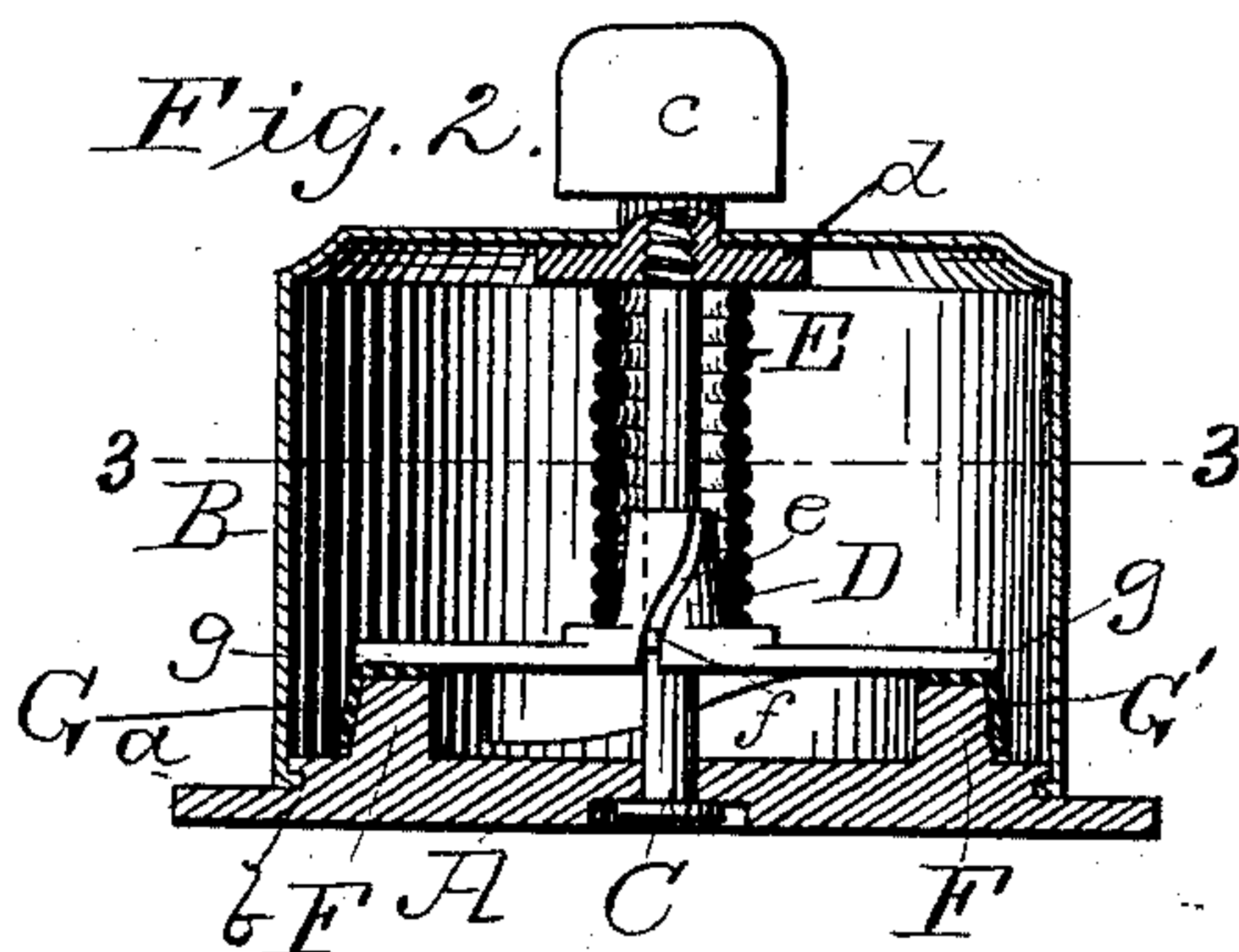
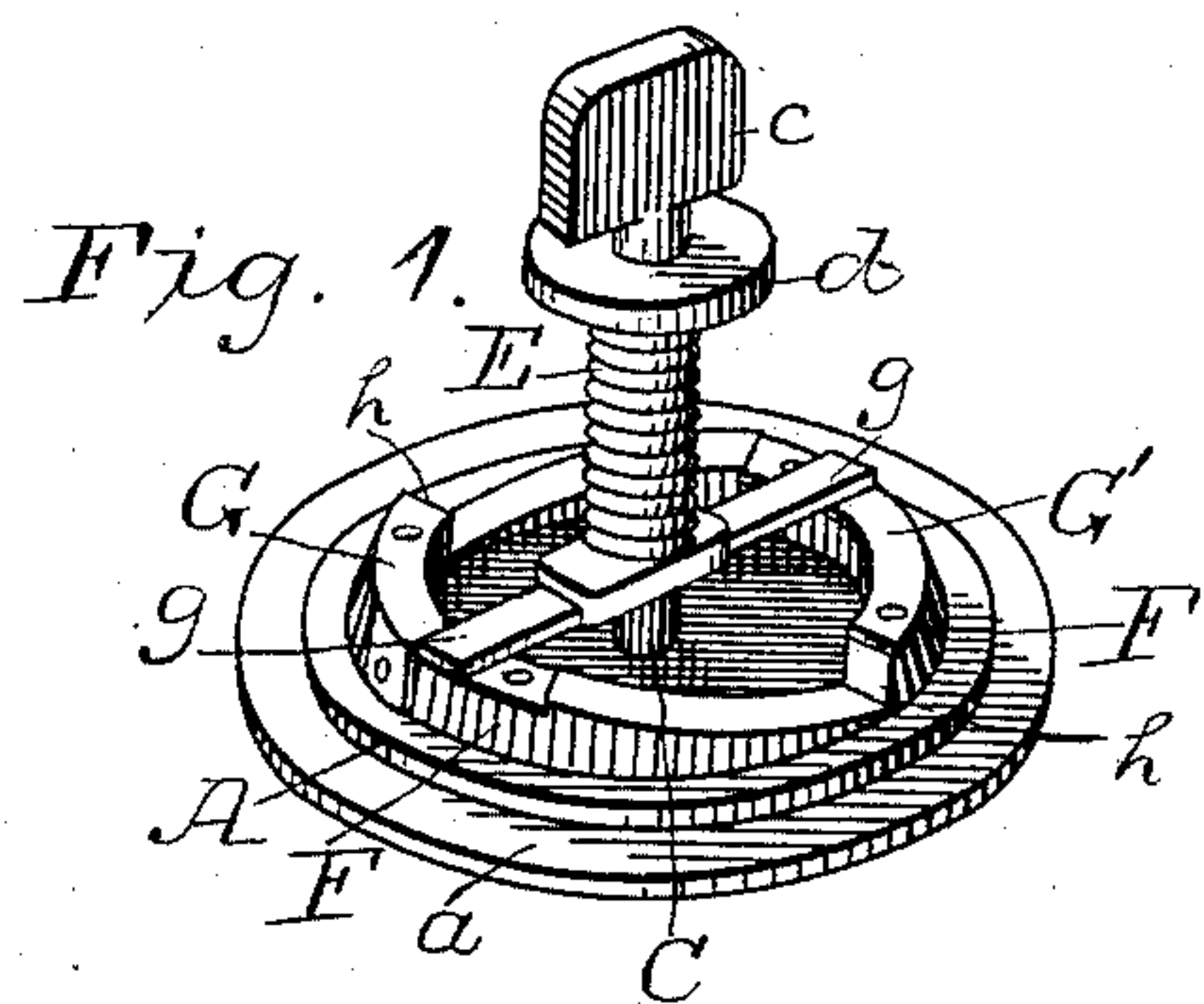


(No Model.)

C. E. WILSON.  
ELECTRIC SWITCH.

No. 434,899.

Patented Aug. 19, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES EDWIN WILSON, OF CHICAGO, ILLINOIS.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 434,899, dated August 19, 1890.

Application filed June 14, 1890. Serial No. 355,476. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES EDWIN WILSON, of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Switches for Incandescent Electric-Light Circuits, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to that class of switches more especially adapted for closing or opening an electric circuit suitable for operating a system of incandescent lamps; and its object, aside from considerations of cheapness and simplicity of construction, is to thoroughly break the arc when the circuit is closed, and to produce a durable switch, which reduces the possibility of its getting out of repair to the minimum, substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1 is a perspective view of my invention with the case removed. Fig. 2 is a transverse vertical section therethrough. Fig. 3 is a horizontal section therethrough taken on dotted line 3. Fig. 4 is a plan view of a modified form of my invention, showing the case removed.

Referring to the drawings, A represents a base-plate made of any suitable insulating material and provided with a marginal edge *a*, which extends beyond the limits of the case B, and is provided with suitable means for attaching it in position. The case B is preferably of a cylindrical shape, and is attached concentrically to the base-plate by flanging its free end edges inward, so that they enter the undercut circumferential groove *b* in the circular shoulder, made by providing the body of the base-plate with marginal edges, as shown.

Journalled in suitable openings in the centers of the base-plate and the closed outer end of the case is a short spindle C. The outer end of this spindle is provided with a suitable finger-grasp *c*, made of insulating material, and is also provided just next to said finger-grasp with a collar *d*, of insulating material, which is of such diameter that it fully insulates the spindle from the metal case. The inner end of said spindle is swaged or otherwise enlarged so as to prevent its being withdrawn outward through the base-plate.

D represents a loose sleeve which surrounds the spindle near the base-plate, and it is provided with a longitudinally-oblique slot *e* therein, into which a radially-projecting stud *f* from said spindle extends. Surrounding said spindle, between collar *d* and sleeve D, is a coil expansion-spring E, which continually pushes sleeve D toward the base-plate. Radiating preferably in diametrically-opposite directions from the inner end of the sleeve are the corresponding brushes *g g*, which extend sufficiently far that their ends bear upon the outer end edges of the annular flange F, projecting from the outer face of the base-plate concentric with said spindle. Diametrically opposite each other, and upon the outer edges of flange F, are segmental contact-plates G G', which are of a length corresponding to about an arc of a circle struck from the revolving center of the spindle, the former of which constitutes the negative pole of the circuit and the latter the positive pole. Now supposing the spindle be turned from left to right, it will be noticed that, taking into consideration the fact that the flange F is of the same material as the base-plate, the moment the brushes *g g* touch the contact-plates the circuit is closed, and when revolved so that they bear upon the unprotected edges of the flange between said contact-plates the circuit is opened.

In view of the fact that considerable carelessness is used in manipulating these switches, it is very likely, unless some construction were adopted which would when the brushes passed the plates automatically move them some distance therefrom, that the current, especially if a strong one, would describe an arc between the plates and brushes and thus create heat, and besides damaging the switch create an undesired circuit. I avoid this possibility by cutting away flange F at right angles to the plane of the outer surface thereof, so as to form a precipitate shoulder *h*, and then gradually incline the outer edges of the said flange from the base of said shoulder *h* to the plane of the next plate as the brushes are moved from left to right.

I have before alluded to the oblique slot *e* in the sleeve into which the stud *f* from the spindle extends. The object of this is to permit



the sleeve to move longitudinally independent of the spindle and yet be revolved therewith. The slot being oblique and inclining from left to right, when the brushes pass the contact-plates, and by reason of the pressure of spring E upon sleeve D are pushed toward the base-plate, the oblique slot causes the sleeve to automatically turn as it jumps said shoulder *h*.

It is apparent that the shoulder *h* and incline therefrom may be dispensed with and the brushes be revolved so as to bear on the non-conductive outer edges of the flange when it is desired to break the circuit. In this event the brushes would project direct from the spindle, and there would consequently be no use for the expansion-spring and the sleeve D. It is also apparent that the shoulder *h* in the flange might be made sufficiently deep, so that when the brushes dropped off the plates they could rest at the base thereof, without the possibility of an arc from said plates leaping to them. In this latter event a straight longitudinal slot in sleeve D would answer instead of oblique slot *e*, hereinbefore described.

The construction of my invention, as hereinbefore described, is for connecting the poles of a single circuit, and therefore I make the sleeve D connecting the brushes of a conductive material. When it is desired to adapt my invention for use in connecting double poles, as shown in Fig. 4, I make said sleeve of insulating material, or otherwise insulate the brushes one from the other. I also extend said brushes a suitable distance beyond the outer circumference of the flange F, so that when they are brought in contact with the plates H H their ends also come in contact with the segmental contact-plates H' H', which are concentric and conterminous with

plates H H. The plates H' are the negative poles of a circuit and the plates H are the positive poles. Thus when they are connected by the brushes they close the circuit, and when the brushes are revolved past the same the circuit is opened.

It is possible, although not desirable, for the brushes to be made elastic sufficiently to snap down from the plates G over the shoulder without sleeve D. I prefer the use of the sleeve, however.

What I claim as new is—

1. A base-plate A, an annular flange F projecting therefrom, and the contact-plates G G, secured to the outer edges thereof, said flange being cut away so as to provide a shoulder *a* at one end of said plate, and inclined from the base of said shoulder to the plane of the next following contact-plate, in combination with spindle C, spring E, sleeve D, having a longitudinal slot therein, into which a stud *f* from said spindle projects, and brushes *g g*, secured to and radiating from said sleeve, as set forth.

2. A base-plate A, an annular flange F, projecting concentrically from the outer face thereof, and the contact-plates G G, secured to the outer edges thereof, said flange being cut away so as to provide a shoulder *h* at one end of each contact-plate, and so as to incline from the base thereof to the plane of the next following contact-plate, in combination with revoluble spindle C, spring E, sleeve D, having a longitudinally-oblique slot therein, into which a suitable stud from said spindle projects, and brushes *g g*, secured to and radiating from said sleeve, as set forth.

CHARLES EDWIN WILSON.

Witnesses:

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