

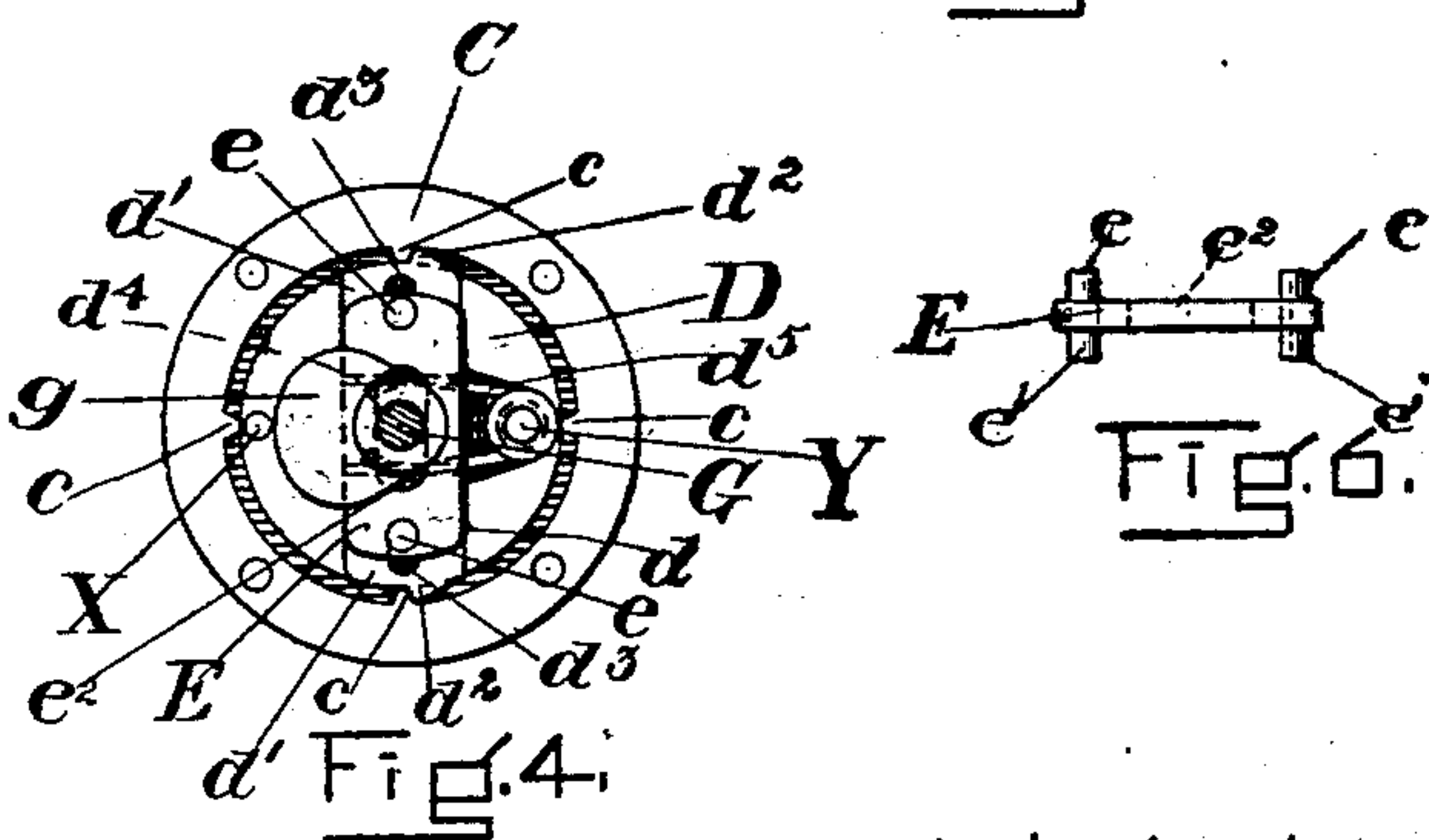
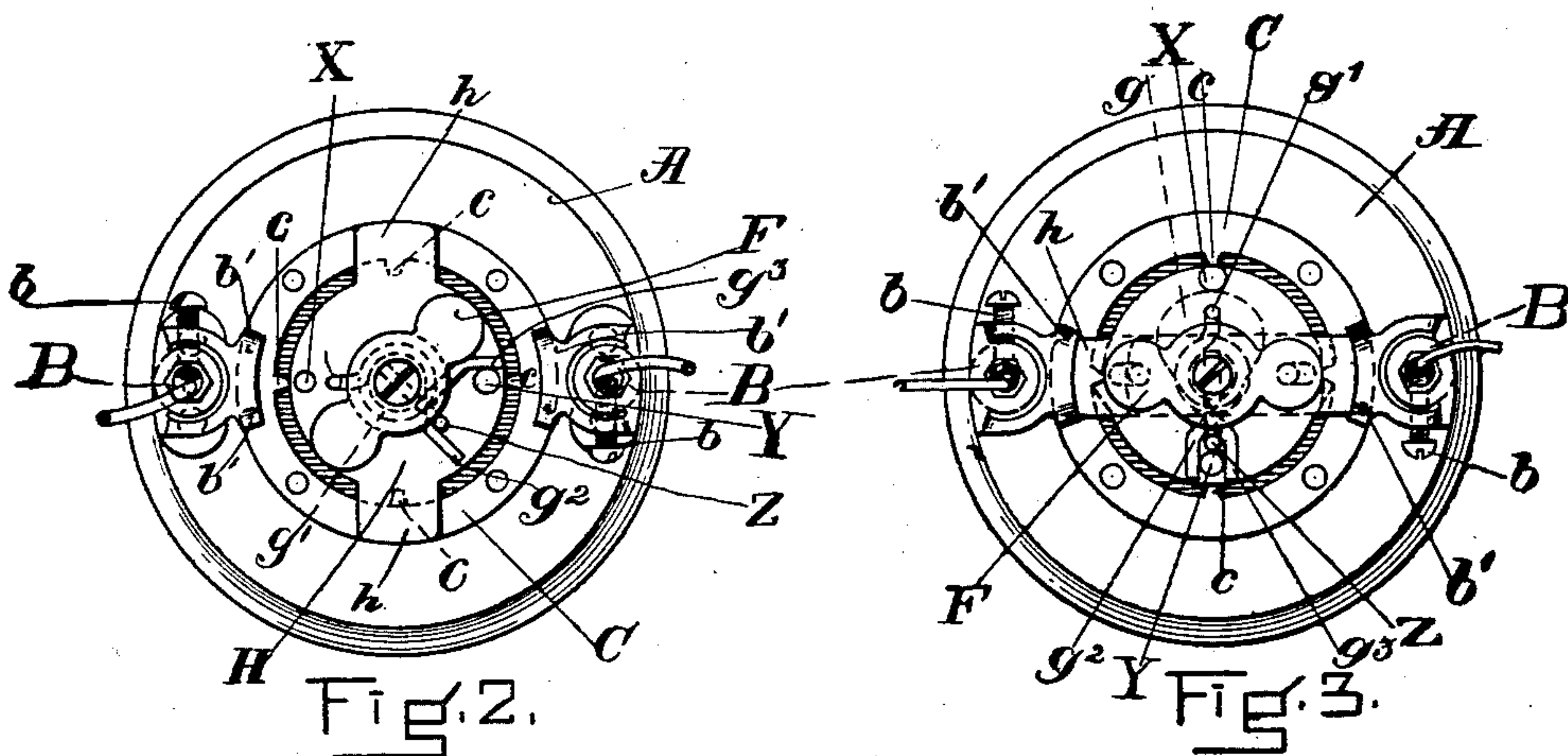
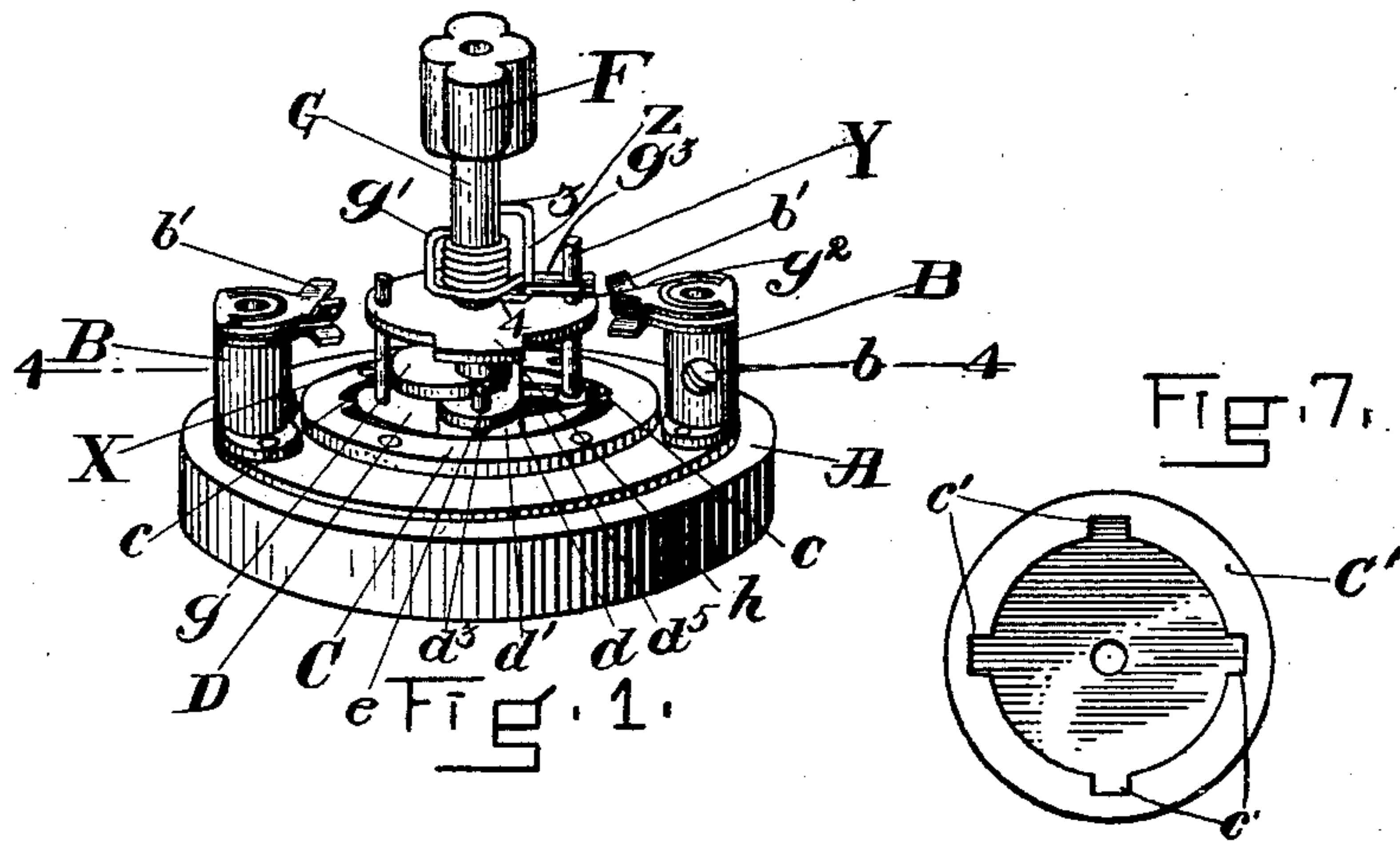
No. 677,269.

Patented June 25, 1901.

G. H. PROCTOR.  
REVERSIBLE SNAP SWITCH.

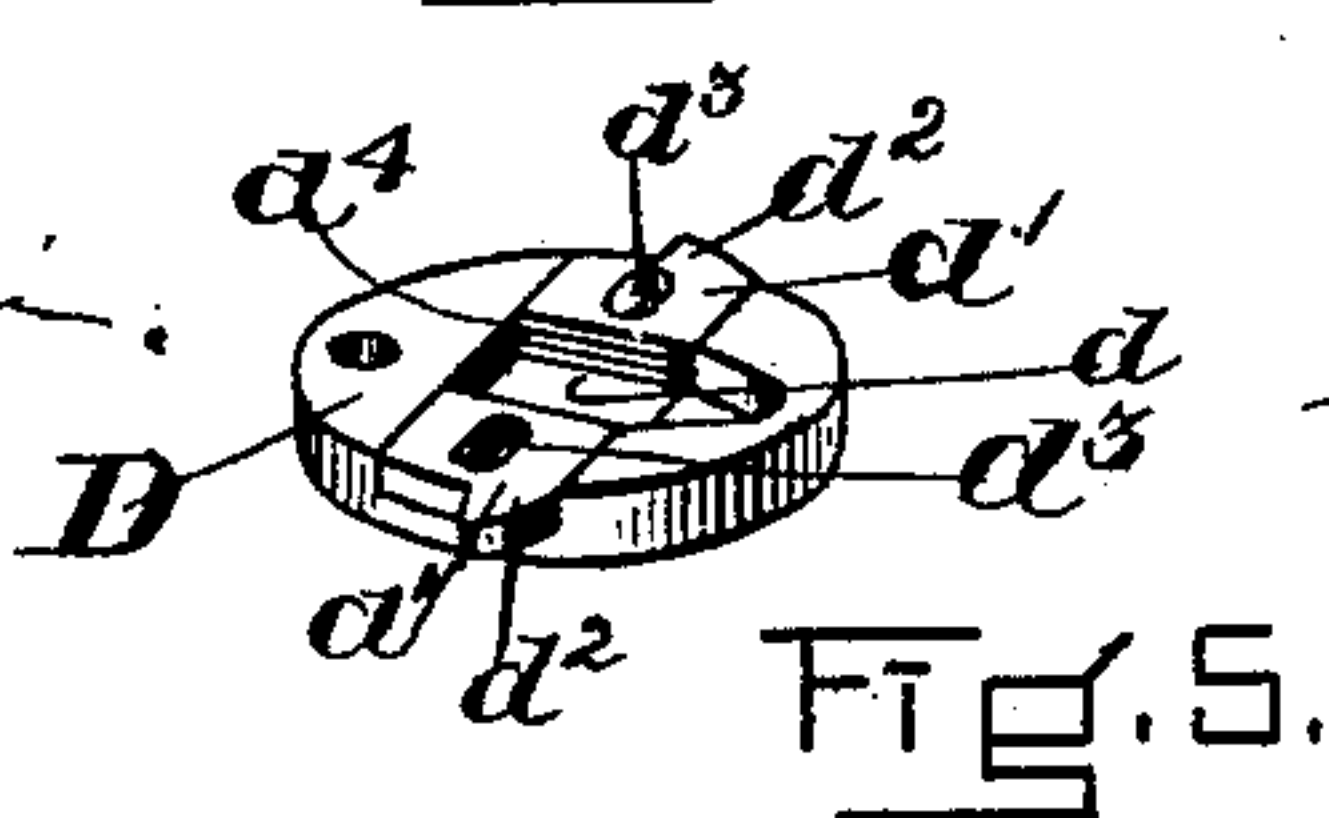
(Application filed Oct. 17, 1900.)

(No Model.)



WITNESSES.

*Fred C. Chamberlin.*  
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# UNITED STATES PATENT OFFICE.

GUY H. PROCTOR, OF SOMERVILLE, MASSACHUSETTS.

## REVERSIBLE SNAP-SWITCH.

SPECIFICATION forming part of Letters Patent No. 677,269, dated June 25, 1901.

Application filed October 17, 1900. Serial No. 33,350. (No model.)

*To all whom it may concern:*

Be it known that I, GUY H. PROCTOR, a citizen of the United States, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Reversible Snap-Switch, of which the following is a specification.

My invention relates to improvements in snap-switches used for making and breaking electric currents for electric incandescent lamps and similar purposes; and the objects of my improvement are, first, to provide a switch in which the handle being rigidly attached to the hub turning the handle in either direction instead of only in one direction, as hitherto practiced, will make or break the electric circuit, as desired, and, second, to provide a novel construction and combination of the necessary elements whereby this useful result may be obtained in a switch which while avoiding the necessity of continuous rotation shall be simple in its construction and certain in its operation. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of my switch when the electric circuit is open. Fig. 2 is a top plan after the hub has been slightly turned before the snap. Fig. 3 is a similar view after a quarter-turn of the hub has snapped the switch-bar to close the circuit. Fig. 4 is a detail section on line 4 4 of Fig. 1. Figs. 5 and 6 are details of the catch-plate and its parts and of plate E, respectively. Fig. 7 is an alternative form of stop-plate.

Similar letters refer to similar parts throughout the several views, the alternative parts having their own lettering.

I will now describe my apparatus.

An insulated base A supports the posts B, carrying the binding-screws  $b\ b$  for the circuit-wires and also the circuit-jaws  $b' b'$ . A stop-plate C in the base A has four stop-shoulders  $c$ . Within the circle of this stop-plate rotates in either direction, as desired, a catch-plate D, having a post-hole (not shown) and having the cut-away part or groove  $d$ , in which slide the catches  $d' d'$ , each having a nose  $d^2 d^2$  and slots  $d^3 d^3$  and each grooved, as shown, at  $d^4$  to contain the spring  $d^5$ , whose function is to hold one of the noses  $d^2$  normally against one of the stop-shoulders  $c$ .

From this plate D arise the posts X and Y, extending through, and one of them, Y, projecting above, the switch-plate, as hereinafter set forth. A plate E, slotted at  $e^2$ , has two upright studs  $e\ e$  and also two depending studs  $e' e'$ , Fig. 6, intended to play inside slots  $d^3 d^3$ .

A handle F is rigidly attached to an operating post or hub G, centered and turning in the base A, and which carries a projecting arm or cam  $g$ , adapted, when desired, to bear against either of the upright studs  $e\ e$ . About this hub is coiled and strained a spring  $g'$ , whose two ends  $g^2 g^3$  normally bear against the extension of the post Y. The hub G also carries a bit of wire Z, whose ends are inserted in the hub at 3 and 4, so that its projecting portion (normally behind the extension of post Y) may serve as a catch to bear against one of the ends of the spring  $g'$  whenever the hub is rotated in either direction.

A switch-plate H, having the ends  $h\ h$ , is supported by the aforesaid posts X and Y.

The operation of my switch is as follows: If being in the position of Fig. 1 the hub is turned in the direction of movement of the hands of a watch, the catch Z will move the end  $g^2$  of the spring  $g'$ , its other end,  $g^3$ , being detained by the post Y into the position shown in Fig. 2, and in completing a quarter-turn of the hub the projecting arm or cam  $g$  will bear with increasing force against one of the studs  $e\ e$ , and thereby move the plate E so that one of its dependent studs  $e' e'$  will draw a nose  $d^2$  of a catch  $d'$  away from a stop-shoulder  $c$  against the stress of spring  $d^5$ , whereupon the stress of the spring  $g'$  will snap the catch-plate D, and thereby the posts X and Y, together with the switch-plate H, into the position shown in Fig. 3, in which the ends  $h\ h$  of the switch-plate are within the circuit-jaws  $b' b'$ , thus establishing the circuit. The different functions of the catch Z and the catches  $d'$  will be easily understood, since that of the catch Z is to strain the spring  $g'$ , whose function is to snap the switch-plate, while that of the catches  $d'$  is to arrest and hold the catch-plate after each quarter-turn. It will be understood that the catch-nose  $d^2$  which does not release the switch will ride over the next stop-shoulder  $c$ , being pressed inward by the stop as the parts rotate. Evidently if



the handle be turned in the opposite direction from that just described a precisely similar operation and result will follow. From such position a quarter-turn either forward or  
 5 back will simply repeat the operation as above described and alternately turn on and turn off the current.

My invention is capable of embodiment with varying forms of some of its elements. For  
 10 example, instead of the stop-plate of Fig. 4 I may use a stop-plate like that of Fig. 7. Other modifications of the elements may suggest themselves to the skilled constructor which will not depart from the general character of  
 15 my invention.

Having described my invention and its operation, what I claim is—

1. A reversible snap-switch composed of a proper base and contacts thereon, an operating handle and hub having a projection therefrom, a stop-plate having stop-shoulders, a catch-plate, having a nose to engage the stop-plate, a plate adapted to receive lateral movement from the projection on the handle-hub and communicate it to the nose of the  
 25 catch-plate, a spring surrounding, and adapted to be strained by rotation of, the handle-hub and having two projecting ends, a switch-plate and supports connecting the catch-plate  
 30 and switch-plate, one of said supports being extended to be clasped by said projecting ends of said spring on the handle-hub; substantially as described.

2. A reversible snap-switch composed of a proper base and contacts thereon, an operating-hub having a projection and a handle, a stop-plate having stop-shoulders, a catch-plate with movable noses and a spring holding one of said noses normally against one of  
 35 the stop-shoulders, a slotted plate adapted to receive movement from the projection on the handle-hub and to communicate it to said noses of the stop-plate, a spring so attached to said handle-hub as to be strained by its  
 40 rotation and having two projecting ends, a switch-plate, and supports connecting said

catch-plate and switch-plate, one of said supports being extended to be clasped by said ends of said spring on the handle-hub; substantially as described. 50

3. A reversible snap-switch composed of a base provided with switch-terminals and a stop-plate having stop-shoulders, a catch-plate having a groove and two slotted slides therein provided with noses and a spring as  
 55 described, two upright posts carried by said catch-plate, a slotted plate provided with two studs upon its upper and two upon its under surface, an operating-hub, a cam projection on said hub, a spring coiled about said hub  
 60 and its two projecting ends normally bearing against an extension of one of the posts carried upon said catch-plate, a detent upon said hub adapted to bear against either projecting end of said spring, and a switch-plate  
 65 supported by said upright posts and having extremities adapted to make and break contact with the terminals of the electric circuit; substantially as described and shown.

4. In a reversible snap-switch, a catch-plate  
 70 composed of the grooved circular piece D, the catch-pieces  $d'$ ,  $d'$  having each a nose  $d^2$  and a slot  $d^3$ , playing in said groove, and a spring  $d^5$  adapted to fit into the rear of said catch-pieces; substantially as described and  
 75 shown.

5. In an electric snap-switch in combination with a hub, provided with a projection, handle, operating-spring, switch-plate, and stop-plate, a grooved catch-plate D having  
 80 the movable catch-pieces  $d'$ ,  $d'$  provided with the spring  $d^5$  and noses  $d^2$ ,  $d^2$ , and a plate E having the upper studs  $e$ ,  $e$  and the lower studs  $e'$ ,  $e'$ , and the posts X, Y whereby the  
 85 said catch-plate and switch-plate are connected; substantially as described and shown.

In witness whereof I hereunto subscribe my name this 15th day of October, 1900.

GUY H. PROCTOR.

In presence of—

FRED C. CHAMBERLIN,  
 JAMES A. HURLEY.