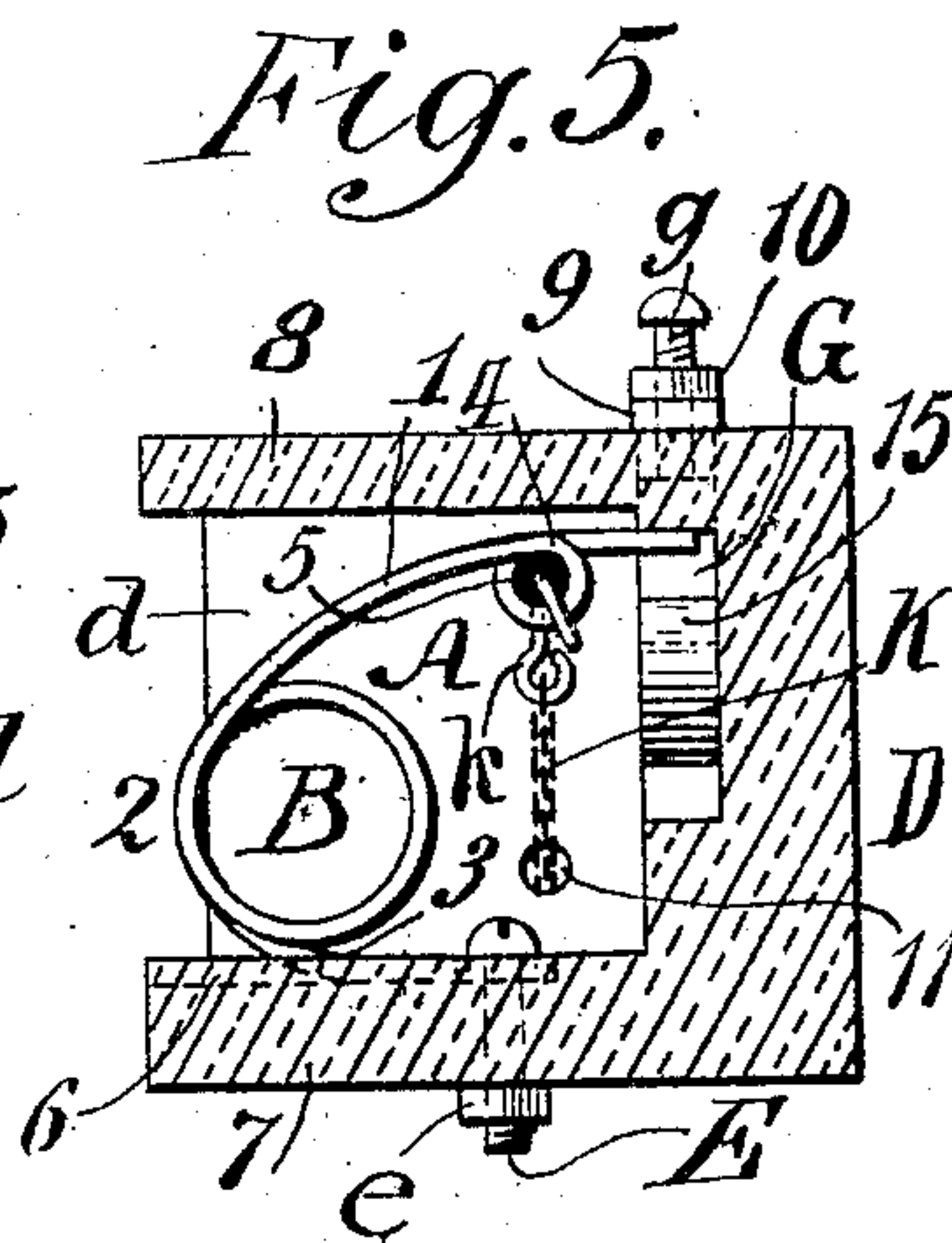
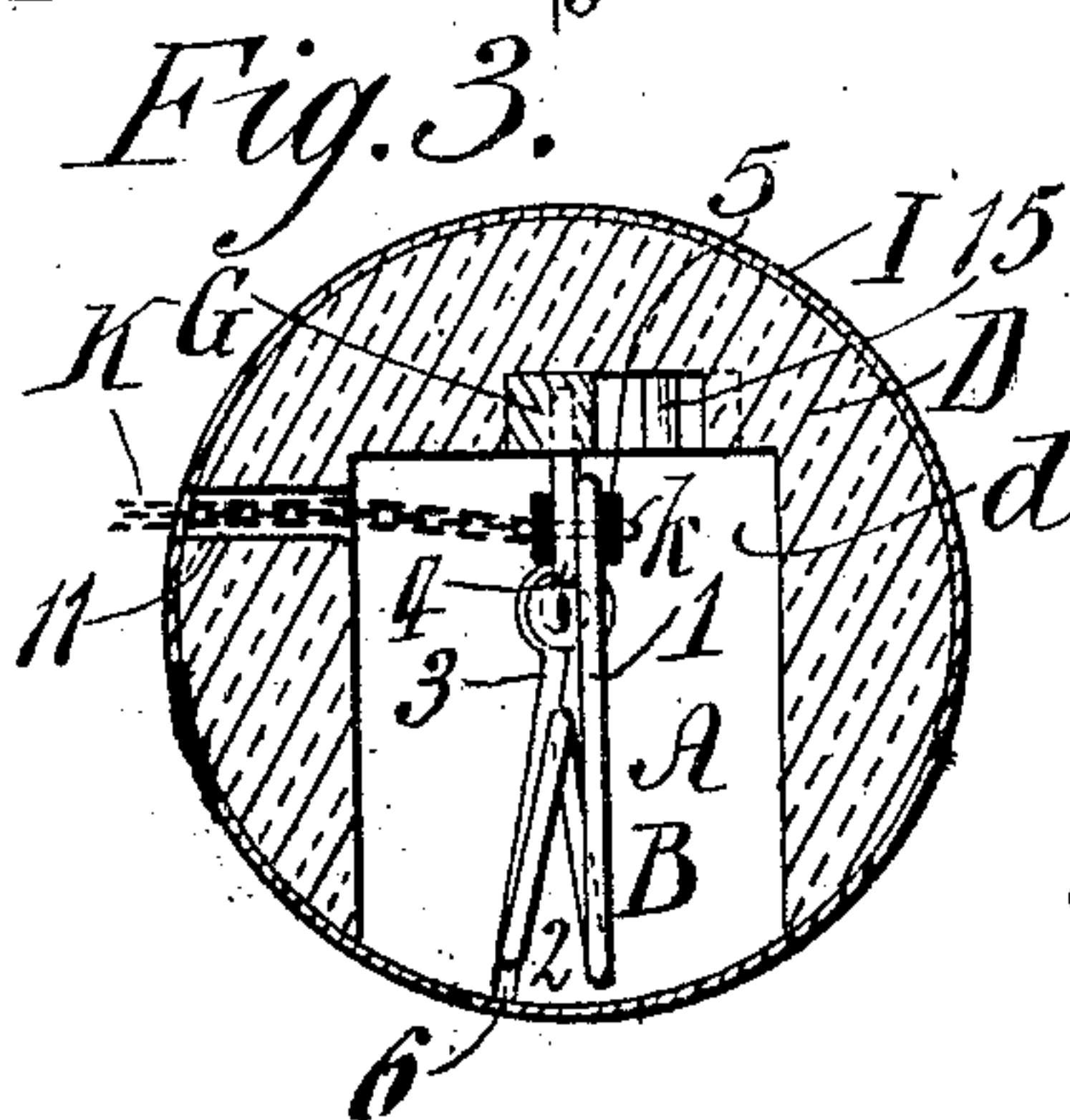
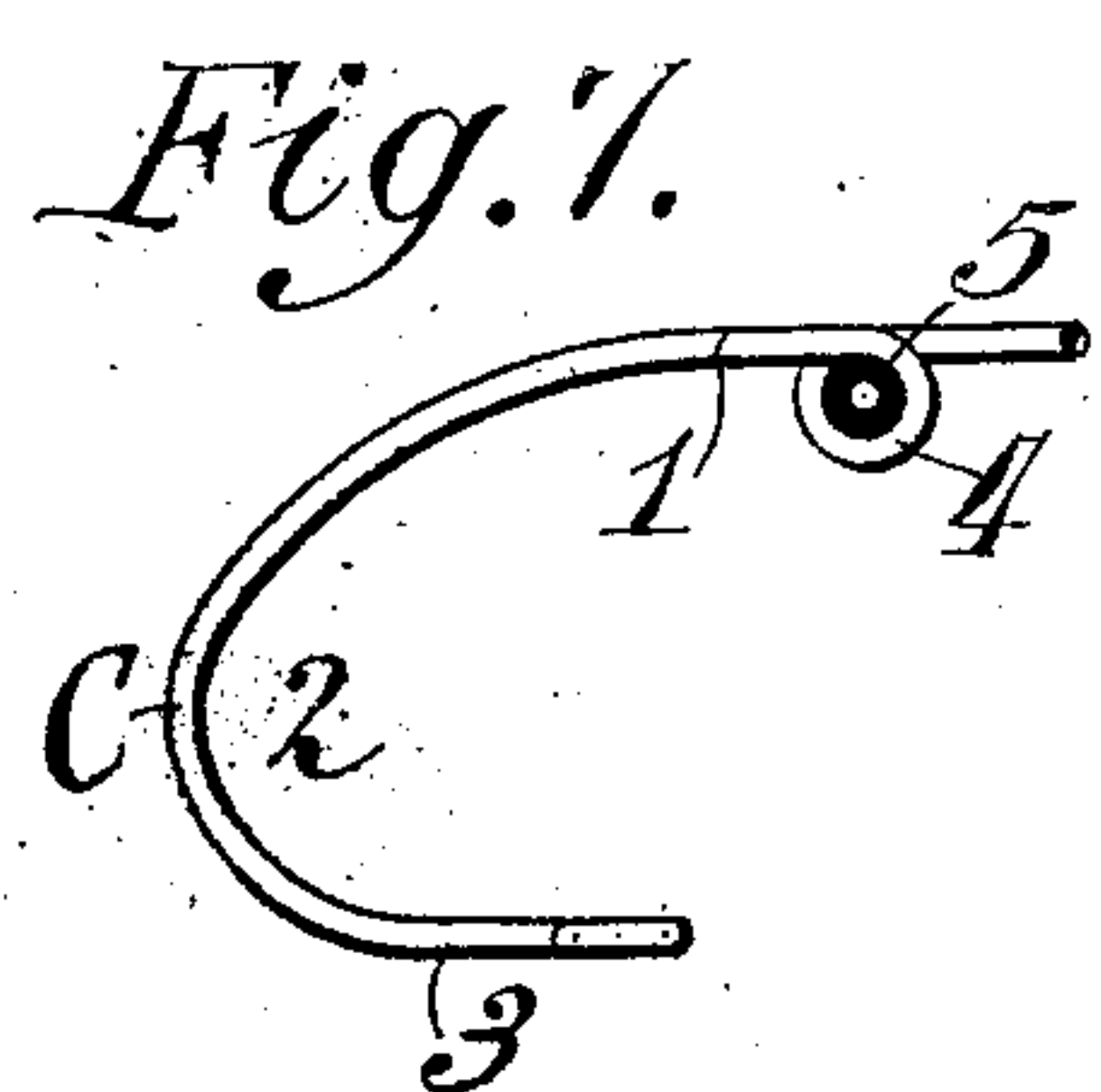
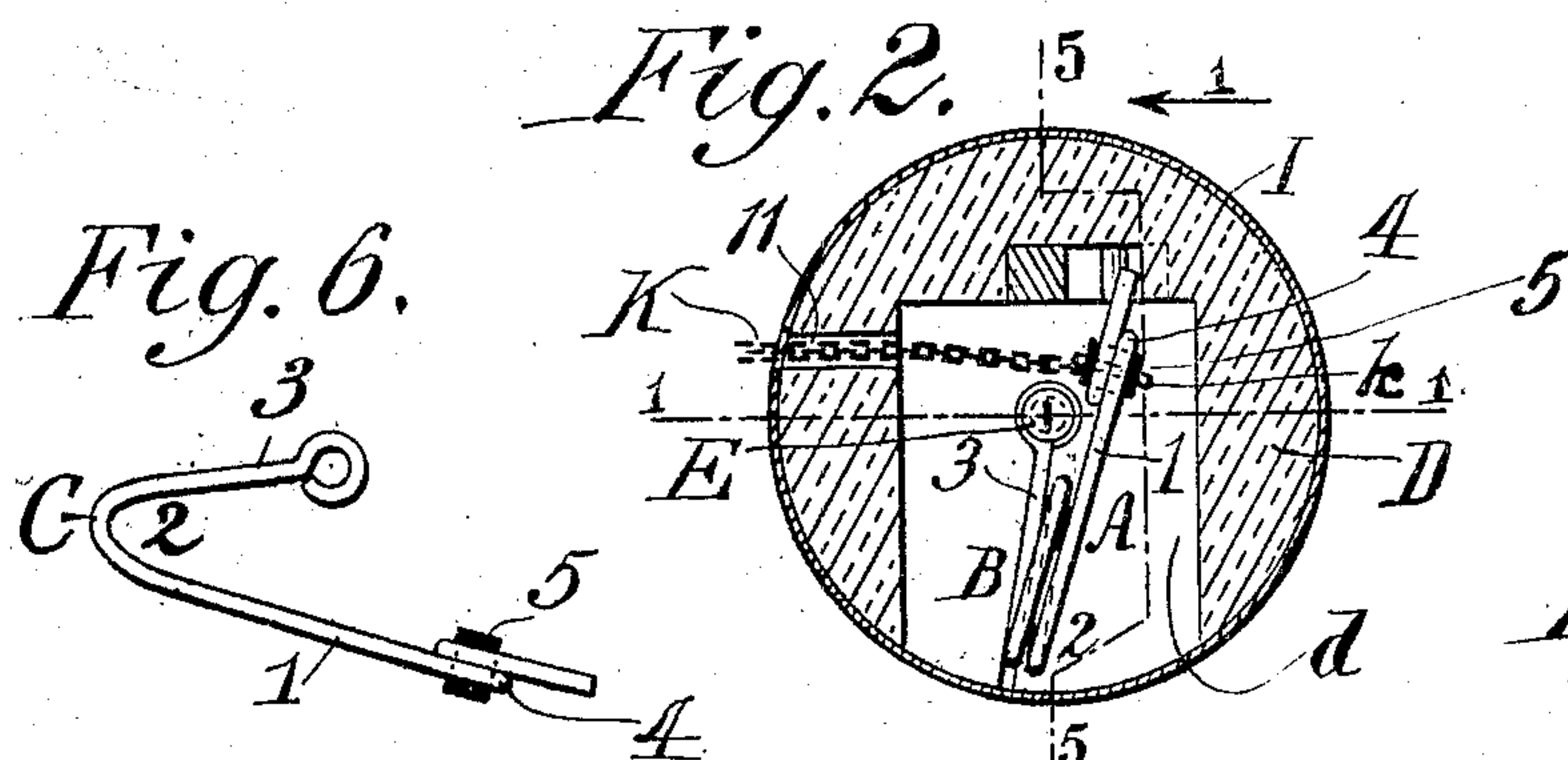


910,239.

The image contains two technical drawings of a mechanical device, labeled Fig. 1 and Fig. 4.

Fig. 1 is a cross-sectional view of the device. It shows a cylindrical upper housing (8) with a central vertical shaft (5) passing through it. The shaft has a gear or cam (4) at the top and a lower part (6) that interacts with a lever (7). The lever is pivoted on a point (3) and has a hook (2) at its end. The entire assembly is mounted on a base (e) which has a series of horizontal ridges. Various other parts are labeled with letters and numbers: H (top flange), F (top cap), 9 (internal components), 10 (screw), G (screw), I (screw), 15 (screw), 17 (screw), 14 (screw), 12 (screw), M (screw), E (screw), J (screw), L (screw), and K (chain).

Fig. 4 is a detailed view of the lever mechanism (7) from Fig. 1. It shows the lever (7) pivoted on a point (3) and having a hook (2) at its end. The lever is shown in a different position, with the hook (2) engaged with a component (13). Other parts are labeled: H (top flange), 9 (internal components), 8 (housing), 10 (screw), G (screw), J (screw), 15 (screw), 17 (screw), 14 (screw), 12 (screw), 13 (component), and 16 (component).



WITNESSES:

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No. 5 Dow

INVENTOR

Thomas M. Smith

BY

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS M. SMITH, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

No. 910,239.

Specification of Letters Patent.

Patented Jan. 19, 1909.

Application filed December 18, 1907. Serial No. 407,022.

To all whom it may concern:

Be it known that I, THOMAS M. SMITH, a citizen of the United States, and resident of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to electric switches for employment in the industrial application of electricity, the device being applicable for use in conjunction with sockets for electric lamps, chandeliers, fans and various other electrically operated devices.

The object of the invention is to provide a safe, accurate, reliable and economical electric switch which can be alternately caused to instantly and positively make and break electrical connections by means of an actuating pull-cord or chain successively pulled in one general direction.

The invention will be hereinafter fully described and specifically set forth in the annexed claims.

In the accompanying drawings forming part of this specification Figure 1, is a vertical sectional elevation illustrating the application of my invention to an electric lamp socket, the section being taken on the line 1—1, of Fig. 2; Fig. 2, a sectional plan view taken on the line 2—2, of Fig. 1, and showing the parts of the device in position required when the current is cut off; Fig. 3, is a similar view showing the several parts of the device in position for conducting the current; Fig. 4, is a vertical sectional elevation illustrating some details of the invention, and drawn on an enlarged scale; Fig. 5, is a vertical sectional elevation taken on the line 5—5, of Fig. 2, looking in the direction of the arrow 1; Fig. 6, is a plan view of a modified form of conducting bow, and Fig. 7, is a side elevation thereof.

In the drawings A indicates a resilient metallic bow composed of good conducting material. This bow embodies an oscillating arm 1, a spring 2, and a fixed base-member 3. The spring may embody a coil, as B, or a single curved part C, shown by Figs. 6 and 7, of the drawings. The several members of the bow A, are preferably formed integral; but the oscillating arm, the base-member and the actuating spring may be formed separately;

however they must be rigidly connected to each other so that the completed bow forms a continuous conductor of electricity having a fixed member and a normally divergent arm adapted for universal oscillating movement. The said oscillating arm is provided near its free end with a loop 4, containing a cylindrical insulator 5, to engage a metallic hook *k*, of a pull cord or chain K, as will be hereinafter described. The bow A is mounted within a porcelain cylinder D, having the recess *d*, to admit of free movement of the arm 1; the member 3, being held within a channel 6, formed in the bottom wall 7, of the porcelain cylinder D, and secured by means of the metallic bolt E, and nut *e*, the same comprising a contact-post for making electrical connection with the lamp, part of which is shown by the dotted lines L, Fig. 1, of the drawings. Fitting snugly within a squared opening leading through the upper wall 8, of the porcelain cylinder D, is a metallic block G, having a threaded spindle *g*, in pivotal engagement therewith, which extends through the wall 8, and is threaded through a fixed metallic plate 9, whereby said block is susceptible of vertical adjustment, a jam nut 10, is also provided for locking the parts in required relative arrangement, the said parts acting in conjunction to form a binding post for connection with a feedwire, as H. The binding-post M, for connection with the other wire F, leads through the porcelain and is in electrical connection with the metallic socket J, whereby a circuit may be maintained with the lamp in the usual manner. The said block G, is provided in its under surface with a groove *j*, which is approximately the shape of an inverted V, and is adapted for contact with the free end of the arm 1, of the conducting-bow A, to conduct a current from the upper binding-post and maintain electrical connection with a lamp or other electrical device. As a means for operating the arm 1, of the conducting-bow a cord, chain or analogous agent K, is attached thereto, by means of a hook *k*, which passes through the insulator 5; said cord is led downwardly at an angle, thence laterally through an opening 11, formed in one side wall of the porcelain cylinder D.

In the end wall of the porcelain cylinder D, is formed a guideway for the free end of the arm 1. This embodies the downwardly directed channel 12, which communicates

with an upwardly and obliquely directed channel 13, the latter named channel terminates directly beneath the V-shaped groove j, of the block G, and thence communicates with a recess 14, which leads into the channel 12, whereby an endless channel of irregular contour is formed for guidance of the arm 1, of the conducting-bow A. The upwardly extended part 15, located between the recess 14, and channel 12, acts as a means for preventing entry of the arm 1, into the recess 14, when said arm is being pulled in a downward direction as will be hereinafter described.

In the example of my invention shown in the drawings, the porcelain cylinder D, has the usual metallic casing I, and screw socket J, for engagement with a lamp or other electrically operated appliance. The bow of resilient material is so formed that its arm 1, is normally extended to occupy the position illustrated by Figs. 1 and 2, of the drawings, the free end of the arm being near the end of its normal lateral swing, but the spring being under tension to maintain said arm in position pressed upwardly, and in which position the current is cut off owing to the fact that said end contacts with the porcelain which acts as an insulator. To make electrical connection a pull on the chain K, carries the free end of the arm 1, downwardly and laterally against the porcelain part 15, then it moves downwardly through the channel 12, until it passes the point 16, whereupon on releasing the cord the spring B will force the arm 1, upwardly through the groove of the block G, and makes electrical connection therewith, whereby the current may be carried through the bow to complete the current between the lamp and the feed-wires II and F. To break the electrical connection it is simply necessary to again pull the cord in the same direction until the free end of the arm 1, passes the point 17, whereupon on releasing the cord the arm will automatically and very rapidly retract and take its initial position with electrical connection broken. By reason of the fact that the pull-cord or chain worked by two positive independent pulls in the same direction alternately makes and breaks electrical connection, the device, is in constant position for the next required movement of the switch, whereby it always acts positively either to make or break contact and is susceptible of successful use for an indefinite period. The positive and very rapid removal of the free end of the arm 1, from contact with the block G, by a short downward and then simultaneous lateral and very quick upward movement of said arm suddenly breaks the current and prevents formation of an arc, while at the same time good electrical connection is maintained when the current is on because at that time the spring is at considerable tension, owing

to the low position of the contact point of the block G, relative to the contact point of the porcelain when the arm 1 is at its extended position.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In an electric switch, the combination with a block of non-conducting material, having an interior chamber, and having a guiding groove in the inner surface of one of the walls of said chamber, and an electric conductor forming a part of one of the walls of said groove, of a resilient bow of conducting material, fastened by one end to a conductor within said chamber, and having its other end arranged to move in said groove and in connection with said first named conductor, to close and break an electric current.

2. In an electric switch, the combination with a block of non-conducting material, having an interior chamber, and having a guiding groove in the interior surface of one of the walls of said chamber, and an adjustable conductor forming a part of one of the walls of said groove, of a resilient bow of conducting material, comprising two divergent members fastened by one end in said chamber, to a stationary conductor, and having its other end arranged to move in said groove, and in connection with said adjustable conductor to close and break an electric circuit.

3. In an electric switch, the combination with a block of non-conducting material, having an interior chamber, and having a guiding groove in the inner surface of one of the walls of said chamber, and an adjustable conductor extending both within and without said chamber and forming a part of one of the walls of said groove, of a resilient bow of conducting material comprising two diverging members with an interposed spring, having one end fastened within said chamber to a stationary conductor, which extends both within and without said chamber and the free end of the said bow arranged to move in said groove and in connection with said adjustable conductor to close and break an electric current.

4. In an electric switch, the combination with a block of non-conducting material having an interior chamber, and having a guiding groove in the inner surface of one of the walls of said chamber, an adjustable conductor extending both within and without said chamber and forming a part of one of the walls of said groove and means for adjustably holding said conductor, of a stationary conductor extending both within and without said chamber, means for fastening said stationary conductor, a resilient bow of conducting material comprising two diverging members with an interposed spring, said bow having one end fastened within

said chamber to said stationary conductor, and having its free end arranged to move in said groove, and in connection with said adjustable conductor to close and break an electric current.

5 5. In an electric switch, the combination with a block of non-conducting material, having an interior chamber, and having a guiding groove in the inner surface of one of
10 the walls of said chamber, an adjustable conductor extending both within and without said chamber and forming a part of one of the walls of said groove, and means for adjustably holding said conductor, of a station-
15 ary conductor extending within and without said chamber, means for holding said stationary conductor in fixed position, a resilient bow of conducting material comprising two extending members with an interposed

spring, one end of said bow being fastened 20 in said chamber to said stationary conductor and the other end of said bow being arranged to move in said groove, and in connection with said adjustable conductor to close and break an electric current, and means for 25 moving the free end of said resilient bow in said groove for holding it in electrical connection with said adjustable conductor, and for detaching it therefrom.

In testimony that, I claim the foregoing as 30 my invention, I have signed my name in presence of two witnesses, this 26th day of November 1907.

THOMAS M. SMITH.

Witnesses:

M. S. Dow,

THOS. C. BENNETT.