

F. C. DE REAMER.
ELECTRIC SWITCH.
APPLICATION FILED NOV. 1, 1912.

1,059,846.

Patented Apr. 22, 1913.

Fig. 1.

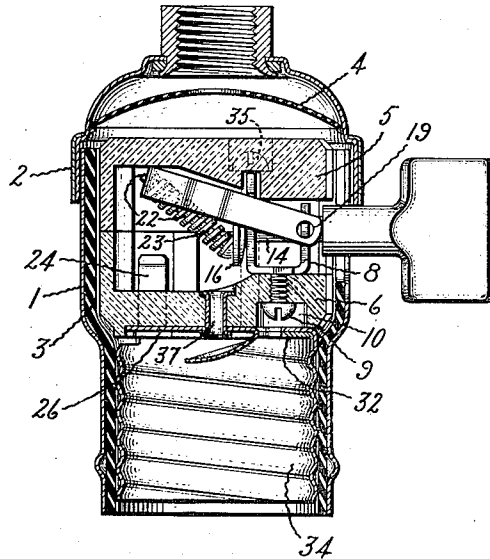


Fig. 2.

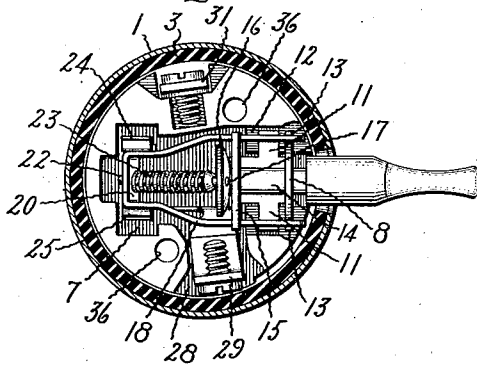
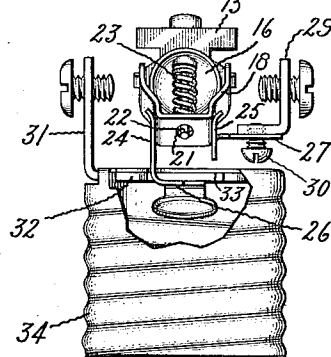


Fig. 3.



Witnesses:

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by *Alfred H. Davis*
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UNITED STATES PATENT OFFICE.

FRANK C. DE REAMER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL
ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC SWITCH.

1,059,846.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed November 1, 1912. Serial No. 729,142.

To all whom it may concern:

Be it known that I, FRANK C. DE REAMER, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

My invention relates to electric apparatus and more especially to electric switches.

The object of the invention is to provide a switch with a double quick make and quick break movement which shall be strong and durable, and of low cost to manufacture.

My improved switch mechanism is adapted for many uses, but for the purpose of this application I have shown and described it in connection with a lamp socket only.

In the drawing forming a part of this specification Figure 1 is a vertical section of a lamp socket with my improved switch mechanism applied thereto, Fig. 2 is a horizontal section of the shell showing the switch mechanism in plan view, Fig. 3 is a side elevation of the operative parts and their connections with parts broken away.

The shell consists of a main portion 1 and a cap 2 connected by any of the well known means. The main portion has a cylindrical lining 3 and the cap is provided with a disk lining 4. The insulating base consists of two washers 5 and 6 to the latter of which all the parts shown in Fig. 3 are attached.

The insulating washer 6 has an elongated recess 7 in its upper side as shown in Fig. 2 and near the right hand end of the recess 7 a U shaped supporting frame 8 is secured by a screw 9 extending through the bottom wall of the washer with its head seated in a countersunk recess 10 in the lower surface of the washer. The frame 8 has two transverse lugs 11 extending in opposite direction from its base portion, and located in shallow recesses formed between elevations 12 on the bottom of the recess 7, whereby the frame is rigidly held from pivotal movement about the attaching screw 9. The right hand vertical end of the frame is provided on opposite sides with two pivot lugs 13, and a center aperture in which the key spindle 14 is journaled near its outer end, and the left hand vertical end of the frame 8 is extended somewhat above the right hand end and provided with a T shaped head 15 and with a center aperture in which

the key shaft 14 is journaled. The key shaft 14 has rigidly attached to its left hand end a cup shaped crank plate 16 with an aperture 17 near its outer edge. The pole piece 18 consists of a flat bar of metal bent U shape as shown in Fig. 2, having the outer ends of its arms transversely apertured at 19 for reception of the pivot lugs 13 of the supporting frame and its transverse center portion 20 centrally apertured at 21.

The means for oscillating the pole piece 18 with a snap action upon rotation of the key shaft 14 consists of a headed rod 22 with a pivot on its head engaging the aperture 17 in the crank plate 16, while its other end passes freely through the aperture 21 in the transverse portion 20 of the pole piece and a spring 23 coiled about the rod 22 and thrusting at one end against the head thereof and at the other end against the transverse portion of the pole piece. The pole piece 18 when in open position stands as indicated in Fig. 1 in engagement with the T head 15 of the supporting frame, and upon partial rotation of the key shaft 14 the crank plate 16 will operate to carry the right hand end of rod 22 circularly upwardly, and as it does so compresses the spring 23 until it passes the dead center between the points 19 and 21, whereupon the spring through the toggle arrangement operates in a reverse direction to throw the pole piece 18 across the axis of the shaft 14 to its opposite extreme or closed position as shown in Fig. 3.

The stationary contacts which cooperate with the pole piece 18 consist of flexible arms 24 and 25 with the outer ends turned in opposite directions as shown in Fig. 3, so that the central portion of the pole piece 18 may readily enter between them. The arm 24 is formed by bending up an integral projection from the center contact 26 and passing it through a small aperture 27 in the lower wall of the base washer 6. The arm 25 is formed at the end of a plate 27 extending near the bottom of the recess 7 of the washer 6 and bent outwardly into a side opening 28 from the recess 7 and clamped between the bottom of the opening and the foot of an angle binding post 29, which is attached to the washer 6 by a screw 30. The second binding post 31 is formed as a right angled extension from a horse-shoe shaped connection plate 32 rest-

ing against the inner surface of a flange 33 of the screw shell contact 34.

The upper base washer 5 has a recess similar to recess 7 and serves as a cap to inclose the switch mechanism, and is secured in place by two screws 35 extending through apertures 36 in the base portions and engaging at their lower ends with the horse-shoe plate 32 in the usual manner. The center contact 26 is secured to the base washer 6 by a hollow rivet 37 extending through the foot of the contact and the bottom wall of the washer 6.

The electric current will pass from the binding post 29, spring contact 25, pole piece 18, spring contact 24, center contact 26 to one pole of the lamp and from the opposite pole through the screw shell contact 34 and binding post 31.

I do not desire to restrict myself to the particular form or arrangement of parts herein shown and described, since it is apparent that they may be changed or modified within the scope of the appended claims without departing from my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In an electric switch the combination of, stationary contacts, a pole piece mounted on a pivotal axis, a rotary crank mounted on an axis transverse to said pivotal axis, and yieldable means actuated by said crank to exert a biasing force upon said pole piece.

2. In an electric switch the combination of stationary contacts, a pole piece mounted on a pivotal axis, a rotary crank mounted on an axis transverse to said pivotal axis, and yieldable means actuated by said crank to exert a biasing force upon said pole piece alternately in opposite directions.

3. In an electric switch the combination of stationary contacts, a pole piece mounted on a pivotal axis, a crank mounted for continuous rotation in either direction on an axis transverse to said pivotal axis, and yieldable means actuated by said crank to exert a biasing force upon said pole piece alternately in opposite directions.

4. In an electric switch the combination of stationary contacts, a pole piece mounted on a pivotal axis, a crank revoluble on an axis at an angle to said pivotal axis, and a yieldable device connecting said crank and said pole piece.

5. In an electric switch the combination of stationary contacts, a pole piece mounted on a pivotal axis, a crank revoluble on an axis at an angle to said pivotal axis, and a spring connecting said crank and said pole piece.

6. In an electric switch the combination of stationary contacts, a pole piece mounted on a pivotal axis, a crank revoluble on an axis at an angle to said pivotal axis, and a

spring bearing at one end against said pole piece and connected at the other end to said crank so as to be compressed and moved across the dead center upon a partial revolution of said crank.

7. In an electric switch the combination of a member having a limited angular movement, a crank rotatable on an axis intersecting the angle through which said member moves, and a yieldable device connecting said member and said crank and movable by the crank past the dead center of said member when in either extreme position.

8. In an electric switch the combination of a switch member having a limited angular movement and provided with a transverse portion, a crank mounted on an axis intersecting the angle of movement of said member, a headed rod pivotally connected to said crank and projecting through the transverse portion of said member and a spring surrounding said rod and thrusting against said transverse portion and the head of said rod.

9. In an electric switch the combination of a switch member having a transverse portion and two arms mounted at their ends upon a pivotal axis, a crank rotatable between said arms on an axis at an angle to their pivotal axis, and a yieldable device between said crank and the transverse portion of said member.

10. In a lamp socket the combination of an insulating base, a lamp contact mounted on the lower side thereof and having a contact arm extending to the upper side, a second contact arm and connected binding post mounted on the upper side of said base, a switch member adapted to connect said contact arms and pivoted upon the upper side of said base, and means continuously rotatable in either direction to oscillate said member with a snap action in both directions.

11. In a lamp socket the combination of an insulating base, stationary contacts mounted thereon, a rotary shaft, a bearing frame therefor comprising two apertured arms, one arm provided with a T head and the other arm provided with transverse pivots, a U shaped switch member mounted on said pivots and adapted to engage said T head, a crank on said shaft inside of said T headed arm, and a yieldable device connecting said crank and the transverse portion of said U shaped member.

12. An incandescent lamp socket having an insulating body with wire terminals, lamp terminals and stationary contacts, a rotatable key spindle, a swinging pole piece having an axis transverse to the axis of said key spindle, and yieldable means connected at one end to said pole piece near its free end and having suitable connection at its other end with said key spindle, whereby

upon rotation of the latter said yieldable means will be biased and shifted from one side to the other of the axis of said pole piece.

- 5 13. An incandescent lamp socket having an insulating body with wire terminals, lamp terminals and spaced contacts for circuit, a rotatable key spindle, a pole piece consisting of a flat bar of metal bent into a
10 U-shape pivoted at the ends of its arms and adapted to close the circuit through said contacts at the bend of the U, and means to actuate said pole piece by the key spindle with a quick make and quick break at said
15 contacts.

14. An incandescent lamp socket having an insulating body with wire terminals, lamp terminals and spaced contacts for circuit, a rotatable key spindle, a pole piece

consisting of a centrally apertured flat bar 20 of metal bent into a U-shape pivoted at the ends of its arms and adapted to close the circuit through said contacts at the bend of the U, a rod arranged to move back and forth freely in the central aperture of said 25 pole piece, a compression spring supported by said bar, and suitable connection between the outer end of said rod and said key spindle whereby upon rotation of the latter in either direction said spring will be biased 30 and shifted from one side to other of the axis of said pole piece.

In witness whereof I have hereunto set my hand this 30th day of October 1912.

FRANK C. DE REAMER.

Witnesses:

HELEN ORFORD,

MARGARET E. WOOLLEY.