F. BARR.

ELECTRIC SWITCH.

APPLICATION FILED APR. 26, 1911.

1,066,783.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

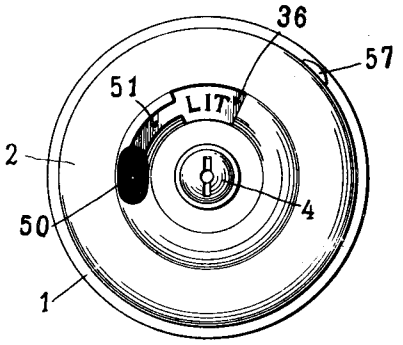


Fig. 2.

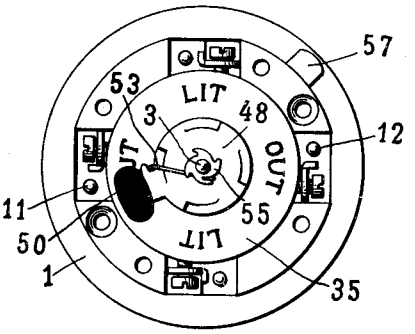


Fig. 3.

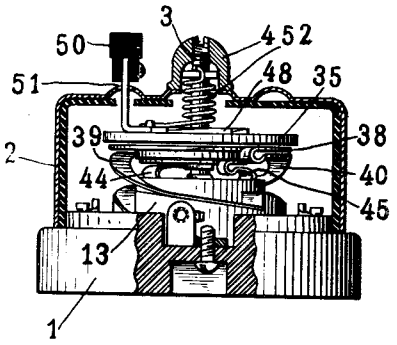


Fig. 4.

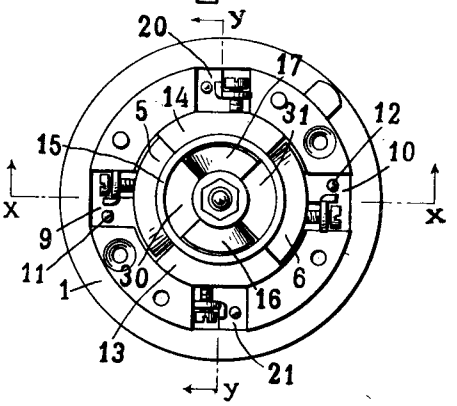


Fig. 5.

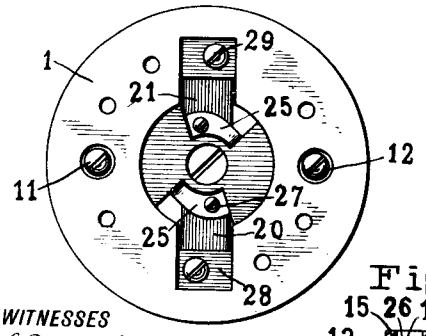


Fig. 6.

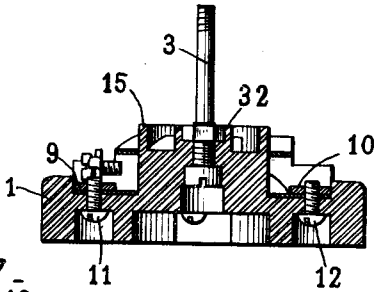
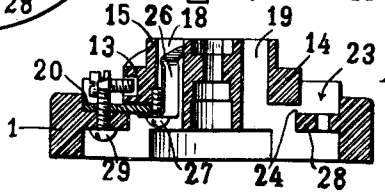


Fig. 7.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 8.

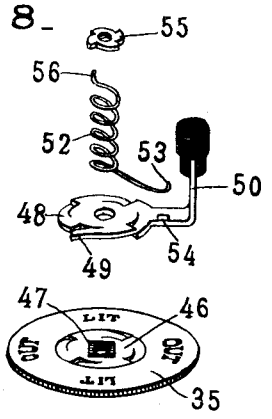


Fig. 9.

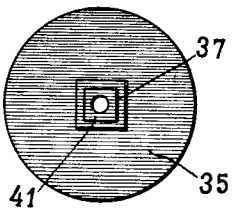


Fig. 12.

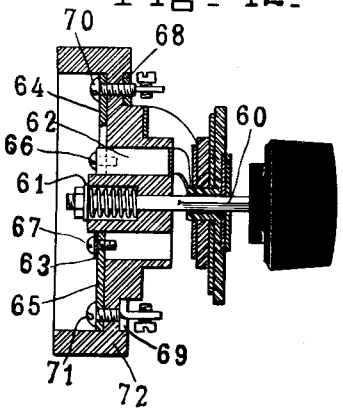
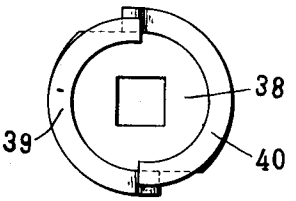


Fig. 10.



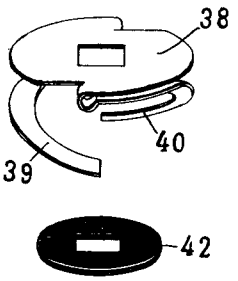
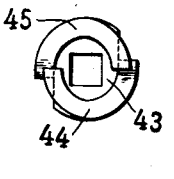
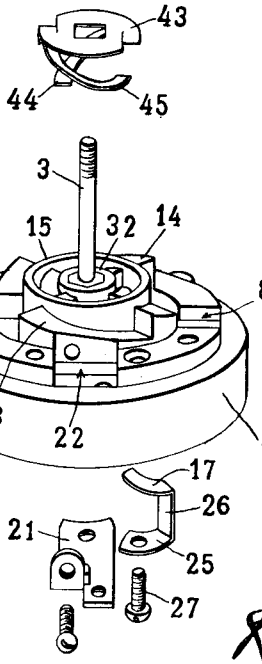
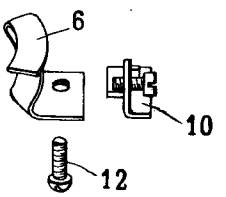


Fig. 11.







WITNESSES

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FREDERIC BARR, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

1,066,783. Specification of Letters Patent. Patented July 8, 1913.

Application filed April 26, 1911. Serial No. 623,371.

To all whom it may concern:

Be it known that I, FREDERIC BARR, a citizen of the United States, and resident of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

My invention relates particularly to double pole and double break snap switches of the rotary type.

The object is to provide a simple and reliable construction in which the parts are protected from short circuit and are capable of carrying large currents.

Another object is to provide an indicator device of a simple character.

Another object is to provide a construction having a strong and yet inexpensive insulating base.

Other improvements will be found to reside in the form and arrangement of the contact springs and rotary switch members.

Figure 1, is a front view of a switch embodying the improvements of my invention. Fig. 2, is a similar view with the cover removed. Fig. 3 is a vertical projection showing the casing and part of the base in section. Fig. 4, is a view similar to Fig. 2 but with the rotary parts removed. Fig. 5, is a bottom view. Fig. 6 is a vertical section on the line X X of Fig. 4. Fig. 7, is a vertical section on the plane of the line Y Y of Fig. 4 some of the parts being omitted. Fig. 8, is a drop perspective view of some of the parts of the switch. Fig. 9, is a view of the under side of the rotary carrier. Fig. 10, is a view of the under side of the main switch member. Fig. 11 is a similar view of the smaller switch member. Fig. 12, is a vertical section of a switch of my invention showing certain modifications of construction.

The base 1 is of porcelain or of other suitable insulating material. The casing 2 fits on the base. The spindle 3 is rigidly secured to the base and carries the rotary switch members and the oscillating operating member. A nut 4 screws onto the outer end of the spindle 3 and holds the cover in place.

The switch contacts 5 and 6 are secured in recesses 7 and 8, the feet of the contacts extending beneath the circuit terminals 9 and 10 which are secured to the base by the screws 11 and 12 respectively. Platforms 13 and 14 are arranged between the switch members 5 and 6. A cylindrical wall 15 is arranged inside of the switch contacts and platforms just described. Inside the wall 15 is arranged another pair of switch contacts 16 and 17 in the recesses 18 and 19. These are secured to circuit terminals 20 and 21, the outer ends of which are located in the recesses 22 and 23 and the inner ends of which extend through passages such as 24 to the bottoms of the recesses 18 and 19. The foot of each of the contacts 16 and 17, such as the foot 25 in Fig. 8 is bent back beneath the contact portion 17 being connected by the vertical part 26. This foot 25 extends underneath the terminal 21 and is secured to it by the screw 27. The outer end of the terminal 21 is secured to the platform 28 of the base by screw 29. Platforms 30 and 31 are arranged between the contacts 16 and 17. A wall 32 is arranged around the inner edge of the contacts 16 and 17 and platforms 30 and 31 so that a channel is formed between the walls 15 and 32.

An insulating disk 35 rotatably mounted on the spindle 3 has on it suitable words as the words "Lit" and "Out" which are visible through an opening 36 in the cover 2. This disk 35 has a hub 37 on which is mounted the switch plate 38 having the arms 39 and 40 for connecting the switch contacts 5 and 6. The disk 35 also has a square hub 41 on which is mounted the insulating disk 42 beneath the plate 38. On this same hub 41 is mounted a smaller switch plate 43 beneath the insulating disk 42. This plate 43 has the arms 44 and 45 for connecting the switch contacts 16 and 17. The disk 35 has in its upper surface a ratchet plate 46 which is let into a recess so as to be substantially flush with its upper surface. This plate fits on a hub 47 so that the plate and disk turn together. A ratchet member 48 having downwardly directed teeth such as 49 to engage the ratchet plate 46 is mounted on the spindle 3 above the disk 35. This ratchet member has an operating arm 50 which is adapted to be oscillated in the slot 51 of the cover 2. A spring 52 on the spindle has one end hooked at 53 to engage a lug 54 on the ratchet member. Screwed on the upper end of the spindle 3 is a notched nut 55 which serves as an abutment for the hooked end 56 of the spring. The spring tends to hold and return the parts to the

position shown in Figs. 1 and 3. When the operating member is moved clockwise as viewed in Fig. 1, the switch plates 38 and 43 are rotated with the ratchet member 48 and disk 35. When the operating member is released the spring 52 turns the ratchet member 48 back to the position shown in Fig. 1. The cover 2 may be prevented from rotating by the lug 57 on the base.

In Fig. 12 I have shown a modification in which the rotating switch parts are carried by the spindle 60 which is pressed downward by the spring 61. The outer set of switch contacts may be secured to the base in the same manner as in the form previously described. The inner pair of switch contacts 62 and 63 are secured to plates 64 and 65 by the screws 66 and 67. The circuit terminals 68 and 69 are secured to the plates 64 and 65 by screws 70 and 71 respectively arranged at the back of the base 72.

Other modifications of details and arrangement within the scope of the appended claims may be made without departing from the spirit and scope of my invention.

What I claim is:—

1. In a snap switch, a pair of inner switch contacts, a pair of outer switch contacts, a spindle, an insulating plate on said spindle, two rotatable switch plates carried by said insulating plate and having spring arms adapted to connect said contacts and an insulating disk between said switch plates.

2. In an electric switch, two sets of switch contacts, a spindle, a rotatable insulating disk mounted on said spindle and having two hubs and two switch plates insulated from each other and carried by the hubs of said insulating disk.

3. In a snap switch, an insulating base, a spindle carried thereby, stationary inclined contacts on opposite sides of said spindle, a switch plate having two spring contact arms and a central opening, a rotary insulating carrier disk on said spindle having a hub removably fitting said opening and adapted to fit said opening in either of two angular positions, a cover for said mechanism having a sight opening, said disk bearing indicating characters adapted to be seen through said opening and an operating member for rotating said disk.

4. In a switch, an insulating base having four terminal recesses, an outer set of inclined surfaces, inclined switch contacts arranged on two opposite surfaces and having bases located in two of said terminal recesses and terminal plates connected to said bases, an inner set of inclined surfaces, a cylindrical wall separating the inner and outer sets of inclined surfaces, inclined switch contacts arranged on two of said inner surfaces opposite each other and having portions extending through the insulating base with feet beneath said base and terminals in the other recesses connected to said feet.

5. As an article of manufacture, an insulating block for a switch base having a central spindle passage, a set of inclined surfaces arranged around said passage, an insulating wall surrounding said surfaces, an outer set of inclined surfaces around said wall, terminal recesses in the outer part of said block, one of said recesses being adjacent one of said outer surfaces, said block having a recess in its rear and a passage connecting one of said terminal recesses with said rear recess and a passage connecting said rear recess with one of said inner surfaces.

6. An electric switch comprising an insulating block having two sets of concentric inclined surfaces, an insulating wall separating said sets of surfaces, a switch contact on one of the surfaces of each set, terminal recesses in the outer surface of said block, circuit terminals located therein, one of said circuit terminals being connected to said inner contact and the other circuit terminal being connected to said outer contact.

7. An electric switch comprising an insulating block having two sets of concentric inclined surfaces, an insulating wall separating said sets of surfaces, a switch contact on one of the surfaces of each set, terminal recesses in the outer surface of said block, circuit terminals located therein, one of said circuit terminals being connected to said inner contact and the other circuit terminal being connected to said outer contact and a rotatable member comprising an insulating disk, a switch plate carried thereby and having an arm for engaging said outer contact, a second plate smaller than the first plate and carried by said insulating disk and having an arm for engaging the inner contact and an insulating layer between said switch plates.

8. In a snap switch, a base, a spindle carried thereby, a stationary contact on said base, switch mechanism mounted on said spindle and including a rotary member and an oscillating member having a handle projecting at substantially right angles to said base, and a casing for said mechanism having a segmental annular slot for said handle.

9. In a snap switch, a base, a spindle carried thereby, a stationary contact on said base, switch mechanism mounted on said spindle and including a rotary member and an oscillating member having a handle projecting at substantially right angles to said base, and a casing for said mechanism having a segmental annular slot for said handle, a portion of said slot being large enough to permit the handle to pass through and acting as a sight opening and said rotary member bearing indicating characters

adapted to be seen through said sight opening.

10. In a snap switch, a base, a spindle carried thereby and having an outer screw-threaded end, a rotary switch member on said spindle, an oscillating ratchet member on said spindle for rotating said switch member and having a handle projecting therefrom, a spring on said spindle pressing against said oscillating member, an abutment for said spring screwed on to said spindle, a casing fitting said base and surrounding the switch mechanism and having a central opening for said spindle and a segmental annular slot for said handle and a nut screwed on to the end of said spindle and holding said casing in place.

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Witnesses:
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E. BRADFORD.