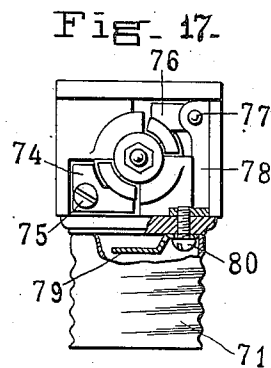
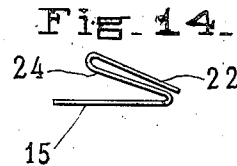
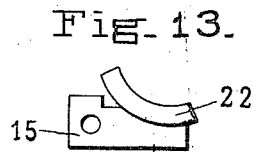
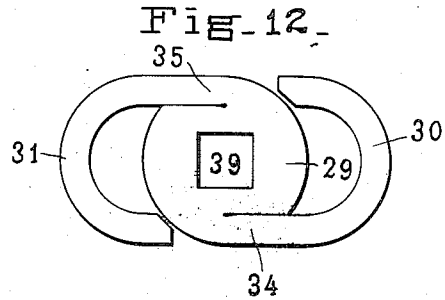
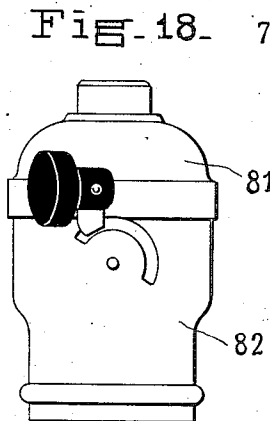
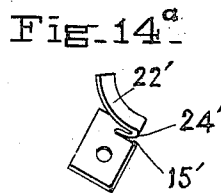
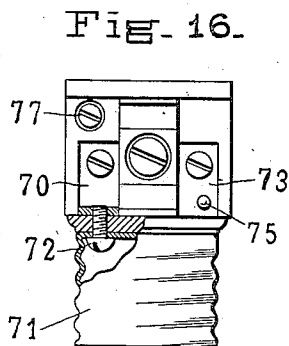
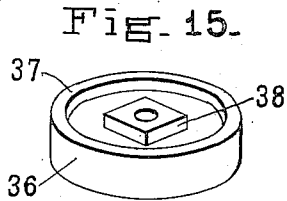
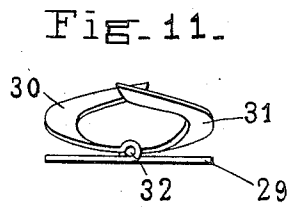
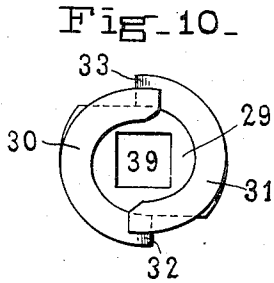


F. BARR.
ELECTRIC SWITCH.
APPLICATION FILED MAR. 27, 1911.

1,049,976.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 2.



WITNESSES

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FREDERIC BARR, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

1,049,976.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed March 27, 1911. Serial No. 617,056.

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 manually operable snap switches for use in pendant sockets, lamp sockets and the like.

The object is to provide an inexpensive but reliable construction, parts of which can be readily assembled and adjusted.

The invention claimed herein resides principally in the form of the spring contacts and the method of supporting the movable contact member and a construction for giving the necessary tension for returning the operating member to its normal position.

Figure 1, is a front view of a construction of my invention in which the switch is embodied in a pendant socket. Fig. 2, is a horizontal section and plan of the same taken on the plane of the line X X of Figs. 4 and 6. Fig. 3, is a perspective view of the lower part or body of the socket shell. Fig. 4, is a rear view of the switch removed from the socket. Fig. 5, is a side view of the same and partial section on the plane of the line Y Y of Figs. 4 and 6. Fig. 6, is a front view of the switch. Fig. 7, is a similar view, the movable switch member and operating member being removed. Fig. 8, is a perspective view showing the principal parts of the switch separated. Fig. 9 is an enlarged sectional view showing one of the stationary switch contacts and the movable switch member and the operating member. Fig. 10, is a view of the under side of the movable switch member. Fig. 11, is an edge view of the same. Fig. 12, shows the blank from which the movable switch member is formed. Fig. 13, is a face view of one of the stationary switch contacts. Fig. 14, is an edge view of the same. Fig. 14^a, is a perspective view of a modification. Fig. 15, is a perspective view of the carrier for the movable switch member. Fig. 16, is a rear view of a lamp socket switch embodying my invention. Fig. 17, is a front view of the same without the operating member and rotating switch member. Fig. 18, is a front view of the same with its socket.

The pendant shell consists of the body 1 and the cap 2 secured together by any suitable form of locking device. The switch proper consists of a body formed of insulating material such as porcelain together with the stationary and movable contacts and operating mechanism. The body consists of a main portion 3 having the top and bottom circular flanges 4 and 5. These are preferably connected by a rib 6 at the rear of the main portion 3 which strengthens the body.

The circuit terminals 7 and 8 are preferably set in flush with the rear of the main portion 3 within the recesses 9 and 10 formed by the rib 6 between the flanges 4 and 5. Perforations 11 and 12 may be provided through which the circuit wires may be passed. The stationary switch contacts 14 and 15 are located in recesses in the front of the main portion 3 of the body and connected to the circuit terminals 7 and 8 by the screws 16 and 17 respectively. The main post or spindle 18 on which the rotating parts of the switch are mounted is rigidly carried by the porcelain. The head 19 is located in a recess in the rib 6. The nut 20 is located in a recess in the boss 21 (see Fig. 8) and the threaded portion 20' of the post is screwed into it from the rear.

Each of the stationary switch contacts 15 and 14 is formed as shown in Figs. 13 and 14. Each is in the form of a double spring, the contact surface of the respective members being the arms 22 and 23. The contact arm 22 is connected to the base 15 by the intermediate arm 24 both being inclined as shown particularly in Fig. 14 so that the free end of the arm is down nearest the base 15. This gives a great resiliency and durability even with a light weight of metal and insures a more perfect contact with the movable contact member. The contact arms 22 and 23 are arranged at the sides of the boss 21 in the form of circular segments as shown in Fig. 7. Between the contacts 22 and 23 are seats 25 and 26 which preferably have the ends adjacent the lower portions of the contacts 22 and 23 raised so as to afford a greater drop for the rotating spring contact member and thus a quicker "make". Shoulders 27 and 28 are provided beneath the upper portions of the contacts 22 and 23 to prevent the rotatable contact member from

being rotated backwardly from the "off" position.

The rotatable switch contact member consists of a plate 29 for instance, of phosphor bronze having the curved spring arms 30 and 31 (see Figs. 10 and 11). Each of these arms is formed on an arc of about 180°. Each arm is joined to the plate 29 by an arched bend 32 and 33 whereby great resiliency and life is afforded. To form these contact members economically they are made from a blank as shown in Fig. 12. Here it will be noticed that the arms 30 and 31 really constitute extensions from the arms 34 and 35 which, in the flat blank are tangential to the main portion of the plate 29 of the blank. To form this spring preferably one arm is bent over into position and then the other is bent over past the first and into its position. The rotatable contact member is preferably carried by a porcelain disk or carrier 36 having an annular flange 37 and a square boss 38 forming a recess in which the plate 29 can fit, the latter having a square hole 39 to admit the boss 38. The other side of the carrier 36 has a flange 40 and a square boss 41 forming a recess to receive the ratchet plate 42, the square hole 43 fitting over the boss 41. This plate 42 has a number of shoulders 44 in its periphery. Both the plates 29 and 42 rotate with the carrier 36 by reason of the square hole and boss construction just described. The post 18 however is completely insulated from the plate 29 so that there can be no leakage when in use.

The carrier 36 and ratchet 42 may be operated by that which for convenience I will term an operator 45 which has a hole 46 to accommodate the post 18. This plate 45 has a number of ratchet teeth 47 for co-operating with the shoulders 44 of the plate 42. A suitable form of handle 48 may be provided on the operator 45. A spiral spring 49 fits on the post 18 outside of the ratchet operator 45. A nut 50 screws on to the threaded end 18' of the post 18 and has one or more teeth 51. The spring 49 has one end 52 which presses against the handle 48 of the ratchet plate 45 and the other end hooked at 53 to engage one of the teeth 51 of the nut 50. As the spring is wound right handed and the threads on the end of the post 18 are right handed the tendency of the spring is to tighten the nut 50 and also to press the lever 48 and ratchet plate 45 left handed. The projection 54 from the ratchet plate 45 normally presses against the shoulder 55 formed in the upper flange 4 of the porcelain body. The flange 5 of the porcelain serves as a stop when the operating lever is pressed downwardly.

The lower part or body 1 of the socket shell is provided with a curved slot 57 for

the operation of the handle 48. An entrance slot 58 is also cut to admit of assembling more readily. A slot or recess 59 is also provided in the shell 1 to receive the tip end of the post 18 so as to position the switch mechanism and prevent the parts from relatively rotating or otherwise shifting. The shell 1 being more or less elastic the top of the post 18 may be more readily disengaged from the hole 59 by simply pressing the sides of the shell so as to elongate it in the direction of the axis of the post 18. When the parts are properly proportioned this can only be done when cap 2 is removed. The tension of the spring 49 can be readily adjusted by shifting the hook 53 into the proper hook 51 of the nut 50 which will thus be seen to afford a stepped abutment.

In Figs. 16, 17 and 18 I have illustrated my invention as adapted to a lamp socket switch. The principal difference here is that circuit terminal 70 is connected to the lamp socket 71 by a screw 72. The other circuit terminal 73 is secured to one of the switch contacts 74 by a screw 75. The other switch contact 76 is secured by a screw 77 to a connector 78 which is in turn connected to the center lamp contact 79 by means of a screw 80. For a lamp socket switch the parts 81 and 82 of the shell are formed appropriately to accommodate the interior construction. When the rotating switch member is constructed so as to rotate right handed or clock-wise it is desirable to have the thread in the nut 20 and the corresponding thread 20' on the post 18 left handed so that the rotation of the switch member will not tend to work the post loose. The spring arms 30 and 31 may be stiffened by closing the bends 32 and 33. The form of contact member shown has particular advantages in a socket switch where the space is very limited.

In the modified form of stationary contact shown in Fig. 14^a the base is slitted at 15' to allow the intermediate arm 24' to be bent up and the contact arm 22' is inclined away from the base instead of toward it.

What I claim is:—

1. In a socket switch, a shell having a perforation and a passage, an insulating body and switch contacts carried thereby in said shell, a post secured to said body and having one end projecting into said perforation in said shell and an operating member on said post having a part projecting through said passage.

2. A switch construction comprising the combination of an insulating body, a post carried thereby, stationary and movable, switch contacts about said post, an operating member for the movable switch contact having an operating lever and a shell for inclosing said parts and consisting of a cap and

a body, said body having a curved slot for said lever and a perforation to receive and position the end of said post.

3. A switch construction comprising the combination of an insulating body, a post carried thereby, stationary and movable switch contacts arranged about said post, an operating member for the movable switch contact and a shell for inclosing said parts and consisting of a cap and a body, said shell having a passage for a part of said operating member and a perforation to receive and position the end of said post.

4. In an electric switch, a base, a post rigidly carried thereby, a stationary switch contact member adjacent said post, a rotary switch member mounted on said post, a ratchet operating member, a notched abutment screwed on the end of said post and a spiral spring having one end engaging said operating member and the other end engaging said notched abutment.

5. In an electric switch, an insulating body, a post rigidly carried thereby, a switch contact member rotatable on said post and insulated therefrom, an operating member therefor, a toothed nut screwed on the end of said post and a spring having one end connected to said nut and the other end coacting with said operating member.

6. In an electric switch, an insulating body, a post rigidly carried thereby, a switch contact member rotatable on said post and insulated therefrom, an operating member therefor, a toothed nut on the end of said post and a spring having one end connected to said nut and the other end coacting with said operating member, said body having a shoulder serving as a back stop for said operating member and a shell surrounding said parts and serving as a front stop for said operating member.

7. In an electric switch, a supporting body, a stationary switch segment mounted thereon and consisting of a base and a double inclined switch arm and a rotatable contact member having reflexed spring arms adapted to cooperate therewith.

8. In an electric switch, a supporting body, two stationary switch segments mounted thereon and each consisting of a base and a double inclined switch arm and a rotatable contact member having spring arms adapted to co-act therewith.

9. In an electric switch, a stationary contact member comprising a fixed base portion, an inclined spring contact portion and an inclined spring arm portion connecting said base portion and said inclined contact portion and a rotary switch member coacting with the contact portion of said stationary contact member.

10. In an electric switch, a stationary contact member comprising a fixed base por-

tion, an inclined spring contact portion and a spring arm portion connecting said base portion and said inclined contact portion and a rotary switch member having reflexed spring arms coacting with the contact portion of said stationary contact member.

11. In an electric switch, a stationary contact member comprising a fixed base portion, an inclined spring contact portion and a spring arm portion connecting said base portion and the upper end of said inclined contact portion and a rotary switch member coacting with the contact portion of said stationary contact member.

12. In an electric switch, a stationary contact member comprising a fixed base portion, an inclined spring contact portion and a spring arm portion connecting said base portion and the upper end of said inclined contact portion, and a rotary switch member having reflexed spring arms coacting with the contact portion of said stationary contact member.

13. In an electric switch, two stationary contact members each comprising a base portion, an inclined contact portion and a connecting spring portion and a rotating contact member comprising a disk and a plurality of reflexed spring contact arms.

14. In an electric switch, one or more stationary contacts and a rotatable contact member consisting of a plate portion and two spring arm portions connected to the plate portion by reflexed arched portions 32 and 33 substantially as shown and described.

15. In an electric switch, one or more stationary spring contacts and a rotatable contact member consisting of a plate portion and two spring arm portions connected to the plate portion by reflexed arched portions 32 and 33 substantially as shown and described.

16. In an electric switch, a rotatable switch contact member comprising a disk portion and a reflexed spring arm connected thereto by an integral bent portion whose axis is substantially radial to said disk.

17. In an electric switch, a rotatable switch contact member comprising a disk portion and two reflexed spring arms connected thereto by bent portions, each arm comprising a circular segment of substantially 180°.

18. As an article of manufacture, a switch contact member consisting of a plate portion and two reflexed spring arm portions integral therewith and connected to the plate portion tangentially and having their outer edges substantially overlying the outer edges of said plate portion.

19. As an article of manufacture, a switch contact member consisting of a plate portion and an arm portion integral therewith

and connected to the plate tangentially by an arched bend and having its outer edge substantially overlying the outer edge of said plate portion.

- 5 20. As an article of manufacture, a switch contact member comprising a disk portion and a plurality of reflexed spring contact

arms integrally connected thereto by arched bent portions 33, 33 whose axes are substantially radial.

FREDERIC BARR.

Witnesses:

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E. BRADFORD.