D. G. BUTTS.

ELECTRIC SWITCH.

APPLICATION FILED APR. 20, 1909.

948,441. Patented Feb. 8, 1910.

Fig. 1.

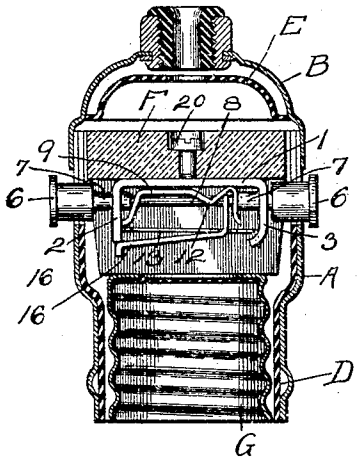


Fig. 2.

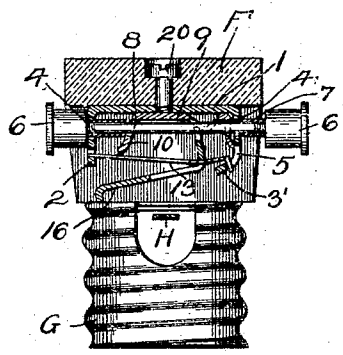


Fig. 3.

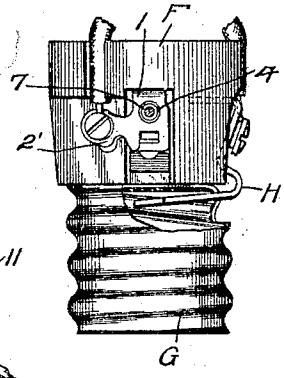


Fig. 4.

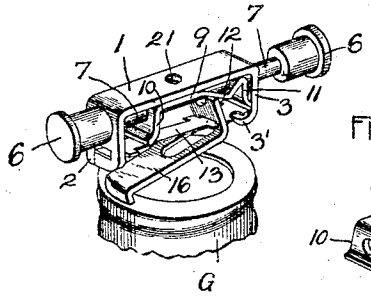
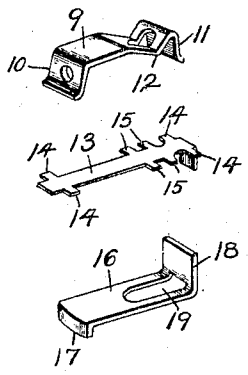


Fig. 5.



WITNESSES:

W. Ray Taylor.

J. Ellis Glen

INVENTOR:

DANIEL G. BUTTS

BY Albert G. Davis

ATTY

UNITED STATES PATENT OFFICE.

DANIEL G. BUTTS, OF CHICAGO, ILLINOIS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC SWITCH.

948,441. Specification of Letters Patent. Patented Feb. 8, 1910.

Application filed April 20, 1909. Serial No. 491,040.

To all whom it may concern:

Be it known that I, DANIEL G. BUTTS, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

The present invention relates to electric switches, and more especially to switches for incandescent lamp sockets and similar devices in which the available room for a switch mechanism is limited.

The object of my invention is to provide an improved push button switch which will operate with a positive snap action and occupy a minimum space.

One embodiment of my invention is shown in the accompanying drawing forming a part of this specification, in which—

Figure 1 shows a vertical section of an incandescent lamp socket with my switch applied thereto; Fig. 2 is a similar view of the same with the socket shell removed and the switch in closed position; Fig. 3 is a left-hand elevation of the parts shown in Fig. 2; Fig. 4 is a perspective view of the switch and a part of the screw shell contact; and Fig. 5 shows in perspective detached parts of the switch.

The socket shell A, cap B, linings D and E, base F and screw shell contact G and center contact H are of standard and well known construction and need not be described in detail here.

The switch frame 1 consists of a flat metal bar with its ends 2, 3 bent down at right angles to the main part and each provided with two apertures 4, 5. The right-hand end 3 is given a second bend so that its extreme lower portion forms an inwardly projecting ledge 3′, and the left-hand end has an offset lug 2′ carrying a binding screw for a line wire.

The actuating push buttons 6 are of insulating material and mounted upon screw-threaded sleeves 7 adapted to slide freely in apertures 4 in the frame ends and are screwed to opposite ends of a rod 8.

A cam slide 9 consists of a metal punching having its ends 10, 11 bent down and apertured for the passage therethrough of the rod 8, which serves to hold the slide in position to be actuated by the engagement of the ends of the push button sleeves 7 with the bent ends 10 and 11. The main portion of the slide 9 rests against the lower surface of the frame 1 and is provided at one side of its center with a V-shaped projection or cam 12 for engaging and actuating the movable contact member.

A flat or leaf spring 13 made of phosphor-bronze and provided with side lugs 14, 15 is mounted on the frame 1 and secured thereto by passing one end of the spring 13 through the aperture 5 in the left-hand end of the frame and a downwardly bent portion of the other end through the aperture 5 in the right-hand frame end and so as to rest on the ledge 3′.

The movable contact member 16 is a metal punching with its ends 17, 18 bent at right angles to the main portion and in opposite directions. An oblong aperture 19 is formed in the main portion and extending from near its center to a short distance into the bent end 18.

Prior to the attachment of the spring 13 to the frame, it is threaded edgewise through the aperture 19 and given an angular rotation so as to bring the pairs of lugs 15 on opposite sides of the contact and thereby serve as stops to prevent longitudinal movement of the contact while leaving it free to fulcrum thereon. The end 18 of the contact is held by the spring 13 in engagement with one side or other of the V-shaped cam 12 so that when the apex of the latter is moved to the left of the contact end 18 it instantly slides on the right-hand incline of the cam and throws the other end of the contact up or in the position indicated in Fig. 1, and when the cam is moved to the right of the contact end 18 it operates to throw the contact with a snap action into closed position or in engagement with the flange of the screw shell as indicated in Fig. 2. The switch is secured in a small transverse slot in the insulating base F by a screw 20 passing through an axial hole therein and engaging a tapped hole 21 in the frame 1.

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 and modified without departing from my invention.

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

1. A switch comprising a pivoted contact

member, a spring fulcrum therefor, a cam engaging one end of said contact, and means for actuating said cam.

2. A switch comprising a pivoted contact, a leaf spring on which said contact is fulcrumed, a cam engaging one end of said contact, and means for actuating said cam.

3. A switch comprising a frame, push buttons mounted thereon, a cam connected to said push buttons, a leaf spring extending longitudinally of said frame, and a contact member fulcrumed on said spring with a bent end in engagement with said cam.

4. A lamp socket comprising center and screw shell contacts, a base having a transverse slot, a frame secured in the slot of the base, a reciprocating cam carried by said frame, a spring, and a movable contact fulcrumed on said spring with one end in engagement with said cam and the other adapted to make contact with said screw shell.

In witness whereof, I have hereunto set my hand this 14th day of April, 1909.

DANIEL G. BUTTS.

Witnesses:

P. HAGAN,

D. C. KINGMAN, Jr.