F. W. SLADY.

PULL SOCKET.

APPLICATION FILED APR. 24, 1909.

958,554.

Patented May 17, 1910.

Fig. 1.

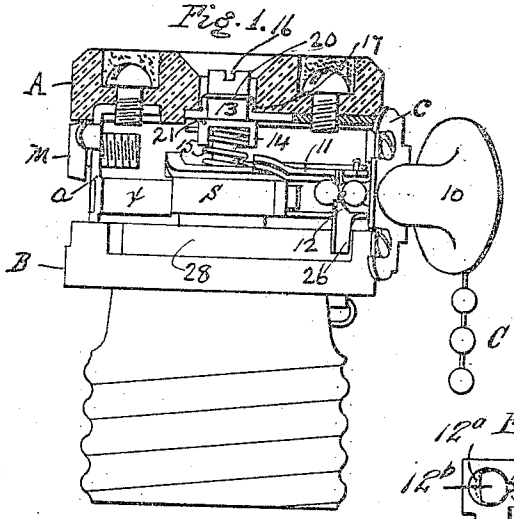


Fig. 7

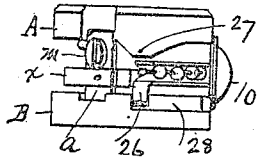


Fig. 9

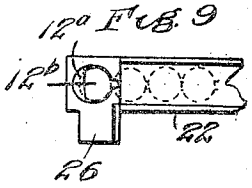


Fig. 8.

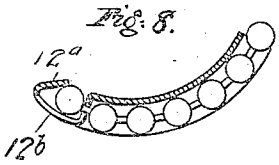


Fig. 2.

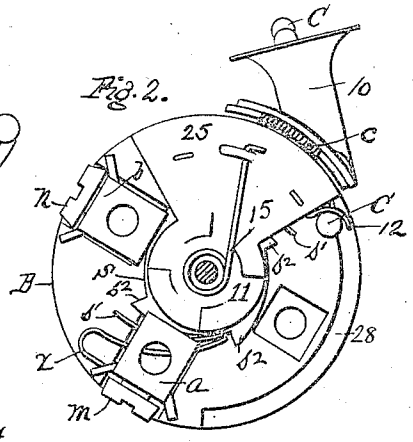


Fig. 4

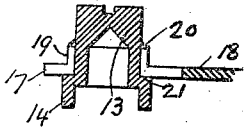


Fig. 5.

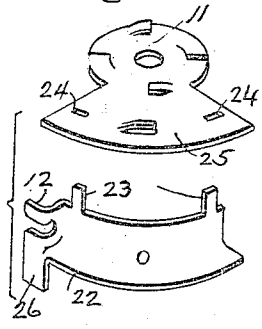


Fig. 6.

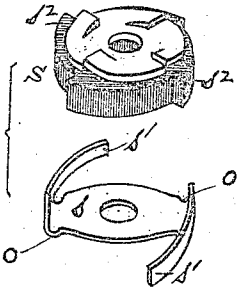
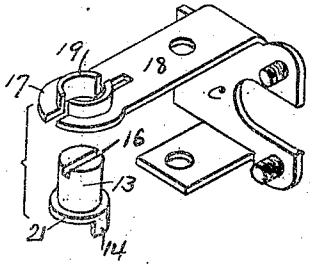


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK W. SLADY, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BRYANT ELECTRIC COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PULL-SOCKET.

958,554. Specification of Letters Patent. Patented May 17, 1910.

Application filed April 24, 1909. Serial No. 492,016.

To all whom it may concern:

Be it known that I, FRANK W. SLADY, a citizen of the United States of America, and residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Pull-Sockets, of which the following is a specification.

My invention relates to pull sockets for incandescent lamps and more particularly to certain details of construction hereafter referred to, the object of my invention being to provide an improved construction of such details.

In the accompanying drawings, Figure 1 is a side elevation partly in section of said socket; Fig. 2 is a plan of the same with the top button removed; Fig. 3 is a perspective of the spring tensioning device, parts detached and drawn to a larger scale; Fig. 4 is a similar view of the same partially broken away, with the parts assembled; Fig. 5 is a similar view of the chain carrier parts; and Fig. 6 is a similar view of the rotary switch member and its carrier detached; Fig. 7 is a side elevation of the socket drawn to a smaller scale; Fig. 8 is a longitudinal section; and Fig. 9 is a partial plan of a chain carrier of modified form.

The socket illustrated is of the type shown in the Platt Patent 716,578 and in the copending application Goodridge 467,619, and comprises upper and lower insulating buttons A and B spaced apart by standards *a*, *b* and *c*, of which the first two serve as binding posts, while the last mentioned carries the chain guide and the tensioning device for the ratchet spring as will be more fully described hereafter. The leading-in wires may be secured to the standards *a* and *b* by means of the binding screws *m* and *n* and the lamp circuit is completed through the spring contact *x* on the standard *a* cooperating with the rotary switch piece S to be more fully described. The latter is operated by means of a chain C which, passing through the chain guide 10, is secured to the actuating ratchet member 11 through the chain carrier 12 fast thereon.

It has been found that the rotary switch member of the type generally in use in switches of this character is not wholly satisfactory, since in the course of time the parting edges of the two contact members become rounded by wear and do not break sharply; furthermore unless the teeth of the rotary switch piece are cut very deep, the distance between the two contact members is not great enough to entirely avoid the danger of arcing. Furthermore there is apt to be an accumulation of dust at the base of the teeth of the rotary switch piece S which tends to increase this danger. To remedy these defects I propose to provide the rotary switch piece S, the body of which is of insulating material as is customary, with a current carrying band *s*, the contact wings s^1 of which are of spring metal and are formed so as to normally spring out from the teeth s^2 above which they lie. Upon one movement of the ratchet, the piece S is partially rotated, the contact wing s^1 is pressed against the tooth s^2 by the spring contact *x* and the lamp circuit is completed. As the piece S is again partially rotated by the ratchet and the contact *x* reaches the end of the tooth s^2, the contact wing s^1 is freed and flies outward while the spring contact *x* drops inward to the base of the tooth. The contact is thus not only sharply broken, but the distance between the current carrying members is about twice that usually obtained. The danger of arcing through accumulation of dust is minimized by the insulating air space which separates the contact wing s^1 from the tooth s^2 on the switch piece S. As an improved detail of manufacture it will be noted that in bending up the wings s^1 into position over the circumferential teeth s^2 on the switch piece S, a preliminary bend in the opposite direction is imparted at O so that the angle of curvature need not be made so sharp as heretofore customary. This materially lessens the percentage of breakage now incidental to the usual method of folding the wings s^1 sharply over the side of the teeth s^2. At the same time I provide an improved spring tensioning means for the ratchet member, more clearly shown in Fig. 3. This comprises a rotary abutment member 13, socketed on the end of the switch spindle and provided with downwardly extending lugs 14 against any one or more of which the upper end of the actuating spring 15 abuts. A slot 16 in the head of the abutment member affords means for

rotating the same by a screw driver for instance. A friction bearing 17 for the member 13, sufficient to hold the latter in any position to which it may be adjusted, is afforded by means of an arm 18 of spring metal preferably integral with the standard *c*, said arm being split at the bearing end and provided with a split collar 19 which affords additional frictional surface. The member 13, which is of greater diameter than the normal diameter of the bearing, is inserted by spreading the split ends of the arm 18. Collars 20 and 21 above and below the bearing prevent the abutment member 13 from being pushed out of its bearing in either direction, the collar 20 being formed after the parts have been assembled.

An improved construction of the ratchet and chain rail is also shown. Heretofore it has been customary to form the chain rail either integral with the ratchet as described in the Platt patent above mentioned, or in two pieces joined together at right angles and subsequently united to the ratchet member. The latter is the prevailing method since it has been found practically impossible to manufacture the parts from a single blank, the percentage of breakage and imperfect pieces being too high. I have found however that the chain rail proper 22 may be formed from a single blank, by suitably rolling the same. If the blank be provided with lugs 23 and corresponding perforations 24 be formed in the wing 25 of the ratchet 11, the rail may be readily attached by merely passing the lugs 23 therethrough and spreading their ends. This is quite a saving over the three-piece process, since but two blanks are formed for both ratchet and chain rail and the rolling of the latter into desired form is extremely simple. Another improvement in the chain rail is shown in Figs. 8 and 9 and comprises a modification of the common claw 12 shown in Fig. 5. By substituting for the latter a tongue 12^a perforated and slotted at 12^b to permit the insertion of a chain ball and bending the end of the tongue around beneath the slot I prevent the insertion of more than the terminal ball of the chain. This eliminates the possible danger of a dangling chain end within the interior of the socket.

To prevent the possibility of the chain carrier jumping out of the runway 28 in which its lug 26 works and causing a short circuit by coming in contact with the terminal *a*, I provide a shoulder 27 on the upper insulating button which extends downward a sufficient distance to depress the chain carrier and bring the lug 26 back into the runway 28 in case it should have been lifted out through any accident.

It will be readily understood that the precise structure of the features described may be varied without departing from my invention and I do not limit myself to the details as shown.

I claim as my invention:

1. In an electric switch mechanism, a ratchet member, a spring tending to turn the same in one direction, and a tensioning device for said spring, comprising an abutment member engaged by one end of said spring and a frictional collar forming a bearing for said abutment piece and holding the latter in any position to which it may be adjusted by merely rotating the same.

2. In an electric switch mechanism, a ratchet member, a spring tending to turn the same in one direction, and a tensioning device for said spring, comprising an abutment member engaged by one end of said spring and a split frictional collar forming a bearing for said abutment piece and holding the latter in any position to which it may be adjusted by merely rotating the same.

3. In an electric switch mechanism, a ratchet member, a spring tending to turn the same in one direction, and a tensioning device for said spring, comprising an abutment member engaged by one end of said spring and a frictional collar forming a bearing for said abutment piece, said abutment being offset above and below said collar to prevent axial displacement.

4. In a pull socket a stationary spring terminal and a coöperating rotary switch member comprising a non-conducting body and conducting spring contact wings rotating therewith.

5. In a pull socket a stationary spring terminal and a rotary switch member cooperating therewith, said switch member comprising a non-conducting body with circumferential teeth formed therein and conducting spring wings lying circumferentially above certain of said teeth and substantially co-terminous therewith.

6. In an electric switch, a rotary switch member comprising a non-conducting body provided with circumferential teeth and a conducting member movable therewith, the latter forming a plate lying against a face of said body with wings angled over certain of said circumferential teeth, the said wings being curved away from and then toward said body piece whereby a curve of relatively great radius is secured at the junction of said wings with said body piece, substantially as described.

7. In an electric switch, a rotary switch member comprising a non-conducting body provided with circumferential teeth and a conducting member carried thereby, the latter forming a plate lying against a face of said body with contact wings at right angles thereto rounded over certain of said circum-

ferential teeth on a curve of greater than normal radius.

8. In a pull socket, a pair of insulating buttons, a rotary switch member arranged between said buttons, a ratchet member to actuate the same, a stop in connection with the lower button to limit the angular movement of said ratchet and a shoulder on said upper button to depress said ratchet against said stop, substantially as described.

9. In a pull socket, a pair of insulating buttons, a rotary switch member arranged between said buttons, a ratchet member to actuate the same, a stop in connection with the lower button to limit the angular movement of said ratchet and means carried by the upper button to insure the operation of said stop.

10. In a pull socket, a chain rail having means for securing the chain thereto and means in connection therewith for limiting the length of the chain within the socket, substantially as described.

11. In a pull socket, a chain rail having means for securing a chain thereto and a tongue arranged with relation to said securing means to limit the extent of chain extending into said socket beyond said securing means.

12. In a pull socket, a chain rail having a channel for the body of the chain and an offset end slotted to receive and retain a ball of the chain together with a tongue arranged to prevent the insertion of more than a predetermined length of chain through said slot.

13. In a pull socket, a pair of insulating buttons, a switch operating ratchet arranged between said buttons and provided with a stop lug, one of said buttons being provided with an offset runway in which said lug works, whereby the extent of oscillation of said ratchet is limited, and the other button being provided with a shoulder over said runway whereby the accidental rise of said lug out of said runway is prevented, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

FRANK W. SLADY.

Witnesses:

GREBUT W. GOODRIDGE,

H. W. GOLDSBOROUGH.