No. 837,638. PATENTED DEC. 4, 1906.

W. H. NICHOLS.

LAMP SOCKET.

APPLICATION FILED SEPT. 23, 1905.

Fig. 1.

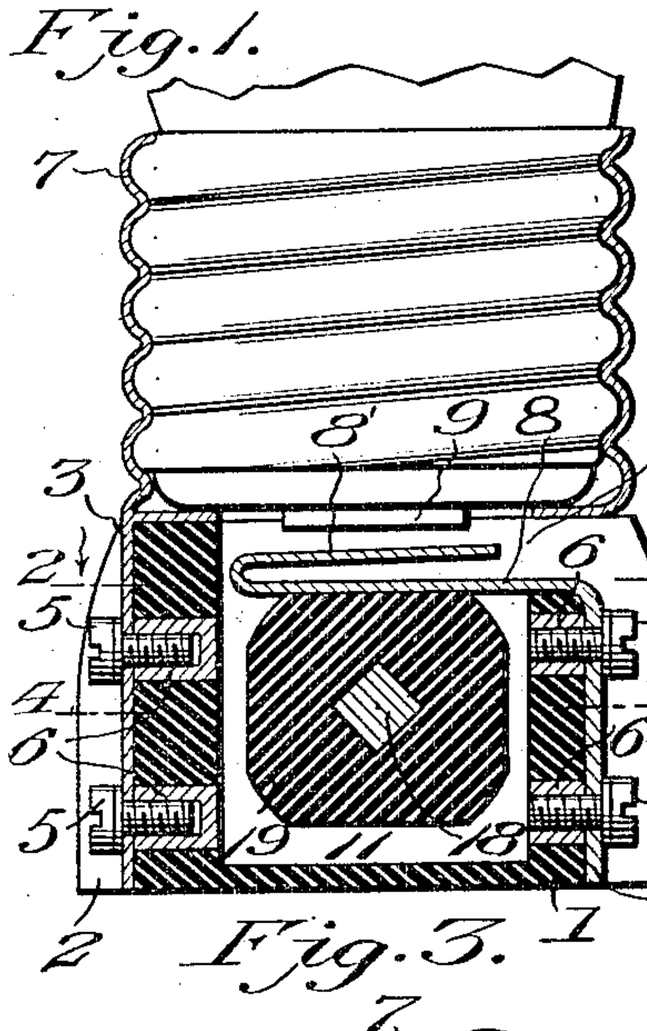


Fig. 3.

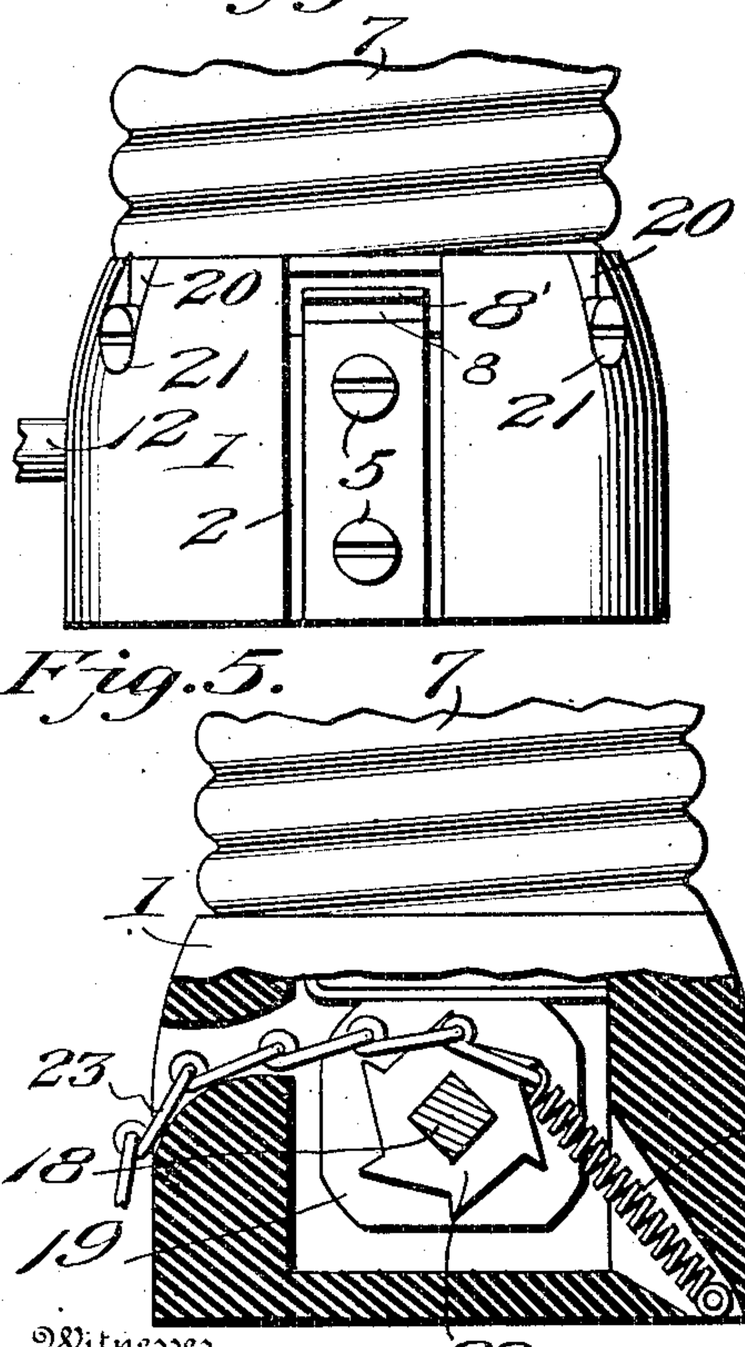


Fig. 5.

Fig. 2.

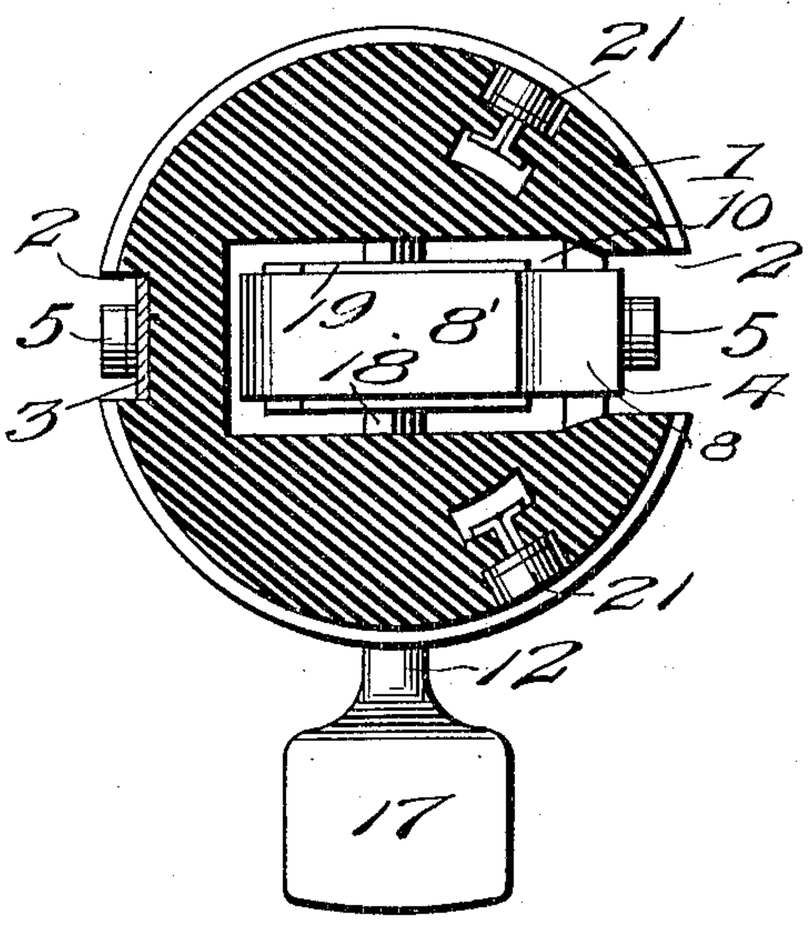
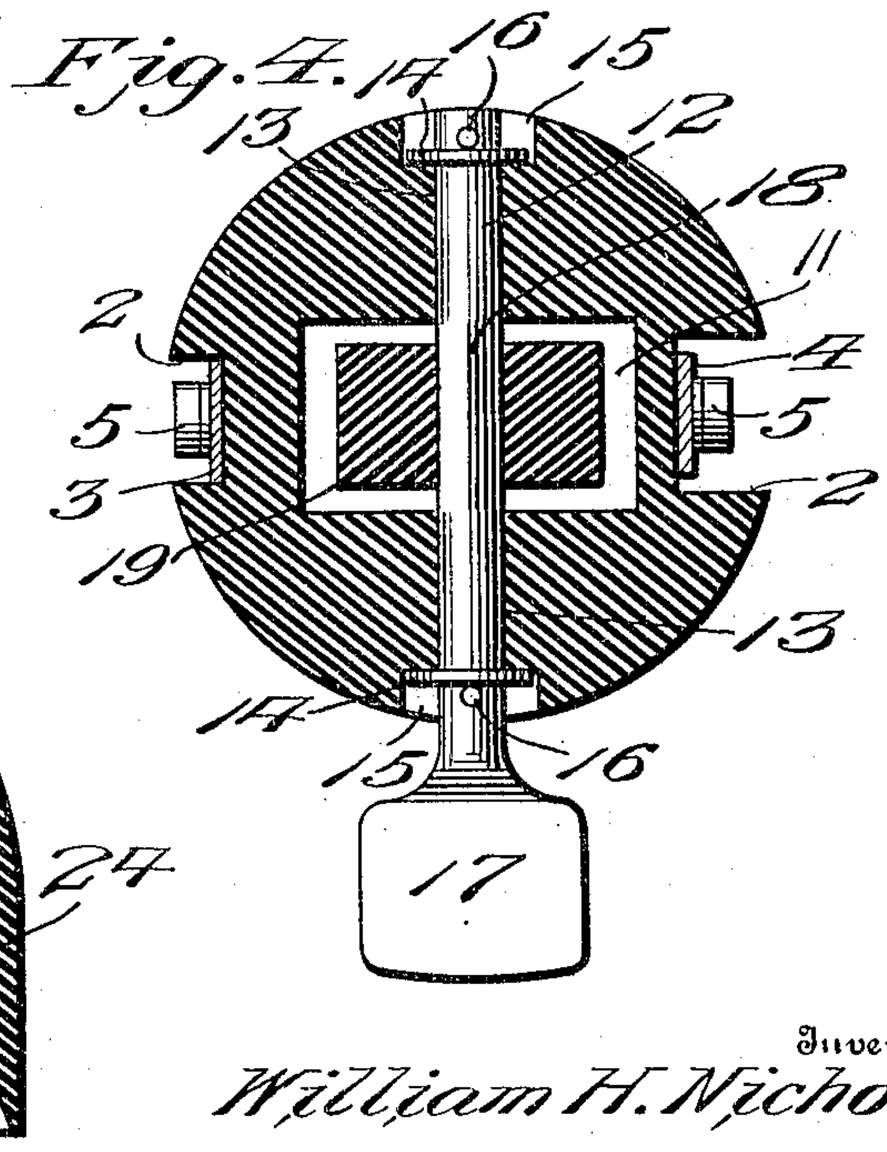


Fig. 4.



Witnesses

Edwin L. McKee

C. C. Hines.

Inventor

William H. Nichols

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. NICHOLS, OF BENNINGTON, VERMONT, ASSIGNOR OF ONE-HALF TO ELMER ELLSWORTH LARRABEE, OF BENNINGTON, VERMONT.

LAMP-SOCKET.

No. 837,638. Specification of Letters Patent. Patented Dec. 4, 1906.

Application filed September 23, 1905. Serial No. 279,782.

To all whom it may concern:

Be it known that I, WILLIAM H. NICHOLS, a citizen of the United States of America, residing at Bennington, in the county of Bennington and State of Vermont, have invented new and useful Improvements in Lamp-Sockets, of which the following is a specification.

My invention relates to improvements in incandescent-lamp sockets of that type wherein a rotary switch shaft or spindle operates a cam-block or tumbler for throwing the switch members into or out of contact to make or break the circuit. In lamp-sockets of this character of ordinary construction the switch-shaft forms or is connected to one terminal of the circuit and is necessarily insulated in some manner, usually by making the key or handle thereof of insulating material. This key or handle is fastened to the shaft and not only adds to the cost of construction, but is liable to become loose and inoperative or broken, in which event the entire socket is rendered useless and must be discarded. Another objection is that the ordinary key is of a different appearance from the socket and detracts from the finish thereof.

The object of my invention is to provide a socket in which these objections are effectually overcome by making the shaft and its key entirely of metal and insulating the same from the circuit connections. The shaft may therefore correspond in material and finish to the socket, and as the key is an integral part thereof it is not liable to become broken, and as a consequence the socket may be used for an indefinite period.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section through a lamp-socket embodying my invention. Fig. 2 is a cross-section thereof on line 2 2 of Fig. 1. Fig. 3 is a side elevation of the socket. Fig. 4 is a cross-section on line 4 4 of Fig. 1, and Fig. 5 is a section showing a modification in the means for operating the shaft.

The numeral 1 in the drawings represents the base of the socket, which is made of porcelain or some other suitable inexpensive insulating material. Formed in diametrically opposite sides of the base are grooves 2, in which are arranged metallic terminals or conducting-plates 3 and 4, fastened in position by binding-screws 5, passing through the plates and entering threaded metallic plugs or sockets 6, embedded or otherwise fixed in the base. Plate 3 forms an integral part of or is suitably attached to the socket 7, which, in addition to being connected to said plate, may be fastened in other preferred manner to the base. One of the circuit-wires is connected in practice with one of the binding-screws fastening the terminal plate 3, while the other circuit-wire is connected with one of the binding-screws fastening the terminal plate 4. The plate 4 is bent inwardly to form a spring-arm 8 and rebent or turned in an outward direction to provide a yielding contact member 8′, adapted to engage the coacting contact member 9 of the socket to complete the circuit. Said arm 8 and contact member 8′ occupy a recess 10, formed in the outer face of the base and communicating with the outer end of the recess 2, in which the terminal plate 4 is seated.

The base is formed with a chamber 11, through which extends the switch shaft or spindle 12, said spindle being journaled in bearing-openings 13 in the base and removably secured in position by washers 14, seated in recesses 15 in the sides of the base, and pins 16, fitted in the spindle and engaging said washers, thereby holding the spindle from longitudinal movement, while permitting it to have free rotation. The spindle and its key or finger 17 are formed of a single piece of metal, preferably of the same character as the socket 7 to conform in finish thereto, and by the described construction of said spindle and manner of mounting the same and the terminal connections it will be seen that the spindle is insulated from the socket and said connections and that as the key 17 is an integral part of the spindle it is not liable to become broken or otherwise injured. The central portion 18 of the spindle is of rectangular form and carries a tumbler or cam-block 19, having parallel sides and cut away or truncated corners adapted as the spindle is rotated to alternately and respectively engage the arm 8 to permit the contact-strip 8′ to move out of engagement with the socket-contact 9 or to force said strip into engagement with said socket-contact. Block 19 occupies the chamber 11 and may be applied to or removed from the spindle by

an endwise movement of the latter, the rectangular central portion of the spindle, however, fixing said block to the spindle for rotary movement. The construction of the arm 8 and contact member or strip 8′ insures a free and easy movement of these parts and a yielding action of the member or strip 8′ to adapt it to perfectly contact with contact member 9 on the socket. As one manner of fastening the socket upon the base the base, as shown in Fig. 3, may be provided in its outer edge with recesses 20 to receive and retain clamping-screws 21, carried by the inner end of the socket. These screws in connection with the terminal plate 3 will firmly fix the socket to the base.

It will thus be seen that my invention provides a construction wherein the switch shaft or spindle is insulated from the conducting-terminals and socket and may therefore be made entirely of metal, so that the key 17 may accord in finish with the socket and will be strong enough to resist breakage, thus adapting the socket to be used for an indefinite period. The cost of construction, furthermore, is not greater and, in fact, is less than the cost of production of the majority of sockets in common use.

In Fig. 5 I have shown a modification in which the switch or shaft is adapted to be operated by a pull connection. In this embodiment of the invention a toothed wheel 22 is fixed to the rectangular portion of the shaft and is adapted to be engaged by a pull-chain 23, secured at one end to a coiled retracting-spring 24, fastened to the base 1. A pull upon the chain 23 will bring one of the corners of the tumbler-block into action and force the contact 8′ into engagement with the contact 9, and upon release of the chain the spring will draw the same back to normal position, the chain in this action riding over the teeth of the wheel without reversely turning said wheel or the cam-block. A second pull upon the chain will then bring the following flat side of the block into engagement with the arm 8, thus retracting the contact-strip 8′. Successive pulls upon the chain will thereby alternately operate the cam-block to project and retract the contact 8′, thus throwing the lamp into and out of connection with the circuit, as will be readily understood.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A lamp-socket comprising a base of insulating material having a chamber and opposite exterior recesses, a socket proper attached to the base, terminal plates secured in said exterior recesses, one of said plates being connected with the socket proper and the other extended into the top of the chamber and bent to form a contact portion, a coöperating contact member on the socket proper, a shaft extending through the chamber, and a tumbler on said shaft operative to throw said contact portion into and out of engagement with the contact on the socket proper.

2. A lamp-socket comprising an insulating-base formed with a chamber and with diametrically opposite external recesses, a socket proper secured to the base, terminal conducting-strips fastened in said exterior recesses, one of said strips being connected with the socket proper and the other bent inwardly into the chamber to form an operating-strip and rebent to provide a flexible contact portion, a contact member on the socket proper adapted to be engaged by said contact portion, a shaft extending through the chamber, and a tumbler carried by said shaft and operative to engage the strip to move the flexible contact portion into and out of engagement with the contact on the socket proper.

3. A lamp-socket comprising an insulating-base formed with a chamber and diametrically opposite external recesses, one of said recesses communicating with the chamber, a socket proper attached to the base, socket-plugs carried by the base, conducting-strips arranged in said exterior recesses, screws fastening said strips to the socket-plugs, one of said conducting-strips being connected with the socket proper and the other extending through the communicating recess into the chamber to form an operating-strip and rebent to provide a flexible contact, a contact member on the socket proper, a shaft extending through the chamber, and a tumbler upon said shaft operative to engage the strip to move the contact member thereof into and out of engagement with the contact on the socket proper.

4. A lamp-socket comprising an insulating-base provided with a chamber, a socket proper attached to the base and carrying a contact, conducting-strips secured to the exterior of the base, one of said strips being directly attached to the socket proper and the other bent inwardly into the chamber to form a contact portion to engage the contact on the socket proper, a shaft extending through the chamber, and a tumbler on said shaft operative to engage said contact member.

5. In a lamp-socket, a base, circuit connections, an operating-shaft insulated from and controlling said circuit connections, a toothed wheel on the shaft, an open-linked chain engaging said wheel, and a retracting-spring connected directly to one end of the chain.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. NICHOLS.

Witnesses:
COLLINS Y. GRAVES,
EDWARD C. BENNETT.