G. B. THOMAS.

ELECTRIC SWITCH INDICATOR.

APPLICATION FILED JUNE 4, 1913.

1,190,041.

Patented July 4, 1916.

Fig. 1

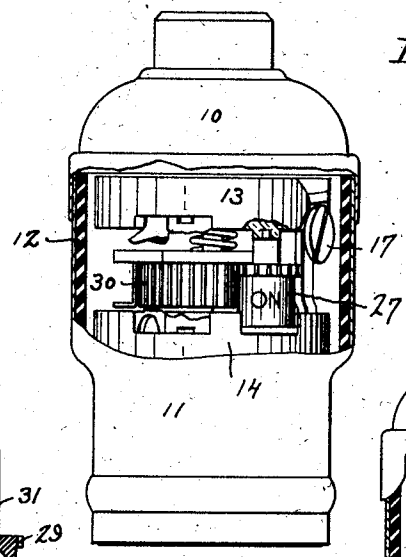


Fig. 2.

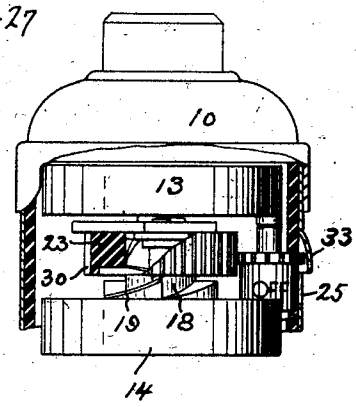


Fig. 3.

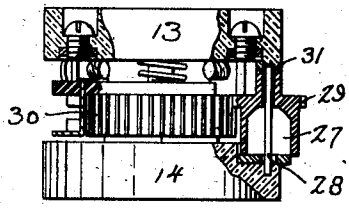


Fig. 4.

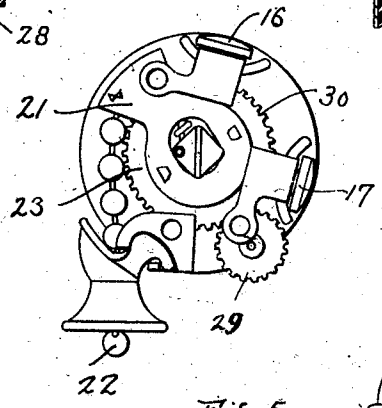


Fig. 8.

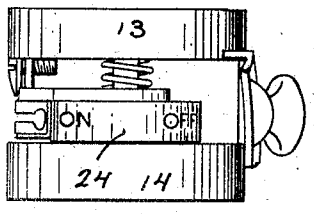


Fig. 5.

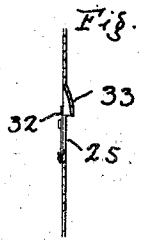


Fig. 7.

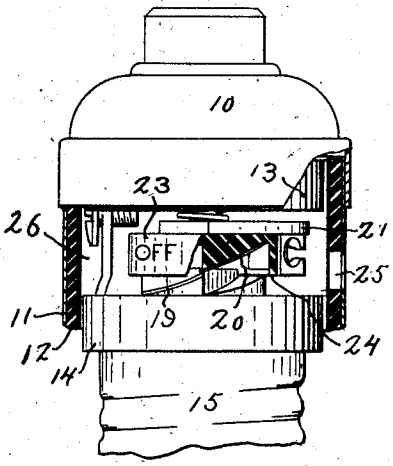
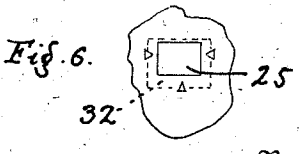


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE B. THOMAS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BRYANT ELECTRIC COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRIC-SWITCH INDICATOR.

1,190,041. Specification of Letters Patent. Patented July 4, 1916.

Application filed June 4, 1913. Serial No. 771,712.

To all whom it may concern:

Be it known that I, GEORGE B. THOMAS, 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 Improved Electric-Switch Indicator, of which the following is a specification.

My invention relates to an improved electric switch indicator and particularly to an indicator for pull switches, the special object of my invention being to provide an efficient indicating mechanism which may be conveniently installed in an electric lamp socket of the pull switch type.

In the accompanying drawings, Figure 1 is a broken elevation of an electric lamp socket of the pull type in which my invention is illustratively embodied in one form; Fig. 2 is a broken elevation of the same showing the switch in another position; Fig. 3 is a similar view of the socket body alone showing the indicator in section; Fig. 4 is a plan of the switch body showing the arrangement of this type of indicator therein; Figs. 5 and 6 are section and partial elevation of the casing, illustrating a detail; Fig. 7 is a broken section through a pull socket showing a second embodiment of my invention therein; Fig. 8 is a side elevation of the switch body shown in Fig. 7.

Referring first to Figs. 7 and 8, the present invention is shown embodied in an electric pull socket comprising the usual cap 10 and shell 11 with insulating lining 12. The socket body comprises the usual upper and lower insulating buttons 13 and 14, the latter carrying the lamp contacts, of which but the shell 15 is here shown. The wire and switch terminals are of the character shown in the Hubbell Patent 693,799, the binding screws 16 and 17 being mounted on spacing bars between the buttons 13 and 14. The switch terminal plates are mounted on the central ratchet faced boss 18 of the button 14, one being shown at 19, while the rotary contact plate 20 is intermittently operated by the ratchet plate 21 through pull chain 22.

As shown in my copending application Serial No. 679,311, the rotary contact plate 20 is covered with a disk of insulating material 23 designed to interpose a barrier between the parting contacts on the opening of the switch and thus to extinguish the arc which tends to form between the same. The skirt 24 of insulation which surrounds the outer edges of these contacts affords ready means for effecting an indication of the position of the switch. Where the disk moves quarter of a turn on each change of position of the switch, it is sufficient to space around the periphery of the skirt 24 the words "On" and "Off" at intervals of 90° and to open a sight aperture or window 25 in the shell and lining at a point in register with such indication when the disk is at rest. As the switch is rotated, an inspection of the indicator through the window 25 will reveal the position of the switch.

Owing to the general construction of the interior of the socket, it is impossible to bring the periphery of the disk very close to the window 25. To render the indication more conspicuous, the interior of the socket may be rendered luminous in any suitable manner, as for example by painting the interior lining 12 white or by affixing thereto a white reflecting surface such as a sheet of white paper 26. The light which enters through window 25 is thereby reflected upon the indicating periphery of the disk so that the indications thereon may be more easily read.

The reading of the indicator is facilitated in another manner by the arrangement shown in Figs. 1 to 4. Here the indications are marked on a drum 27, journaled on a spindle 28 and arranged to present a portion of its periphery close to the window 25. A pinion 29 is carried by or formed in one with the drum and meshes with the teeth 30 formed in the periphery of the disk 23 so that the latter acts as a coöperating pinion to rotate the indicator drum on the rotation of the switch contact. The ratio of teeth is predetermined to insure the appearance of alternating indications on the drum at the window 25 for succeeding positions of the switch.

The drum is mounted in any suitable man-

ner to insure its insulation from current carrying portions of the switch. Thus the spindle 28 is let into a recess in the lower button 14 while its upper end is socketed in the boss 31 which projects downward from the lower face of the upper button 13. To prevent possible contact with the shell 11, as well as to exclude dust from the interior of the socket, a small sheet of mica or other transparent insulating material 32 is arranged in the window and the metal above the same may be bowed out at 33 to afford ample clearance for the pinion 29.

The constructions shown may be varied in many ways to adapt the invention to the particular use to which it is to be put and the embodiments shown are to be regarded as merely illustrative of my invention.

I claim as my invention:—

1. A switch comprising an inclosing casing, a rotary switch piece within the same, an insulating member inclosing and moving with said switch piece and means in connection with said insulating member for indicating the open or closed position of the switch.

2. A switch comprising an inclosing casing, a rotary switch piece within the same, an insulating member inclosing and moving with said switch piece and means in connection with said insulating member for indicating within the casing the open or closed position of the switch, said casing being apertured to permit the inspection of the indicator.

3. An electric lamp socket comprising line and lamp terminals, a rotary switch piece interposed between the same, an independent rotary indicator for indicating the "on" or "off" position of the switch and gearing operatively connecting said indicator to the switch piece.

4. An electric lamp socket comprising line and lamp terminals, a rotary switch piece interposed between the same, an independent rotary indicator for indicating the "on" or "off" position of the switch and gearing operatively connecting said indicator to the switch piece, a socket casing comprising cap and shell, the latter being apertured in register with said rotary indicator to permit the inspection thereof, substantially as described.

5. A switch comprising a rotary switch piece, an insulating ring surrounding the periphery of the switch piece, a rotary indicator disclosing the open or closed position of the switch and an operative connection between said ring and indicator.

6. A switch comprising a rotary switch piece, an insulating ring surrounding the periphery of the switch piece, peripheral teeth formed in said ring, a rotary indicator disclosing the open or closed position of the switch and a pinion thereon meshing with the peripheral teeth of the insulating ring on the switch piece, substantially as described.

7. An electric lamp socket comprising a casing apertured to afford a window, line and lamp terminals within said casing, a rotary switch interposed between said line and lamp terminals, a rotary indicator arranged within the casing at said window and an operative connection between said indicator and switch whereby said indicator is operated to indicate the "on" or "off" position of the switch, substantially as described.

8. An electric lamp socket comprising a casing apertured to afford a window, line and lamp terminals within said casing, a rotary switch interposed between said line and lamp terminals, a rotary indicator arranged within the casing at said window and gearing operatively connecting said switch and indicator whereby the latter is operated to indicate the "on" or "off" position of the switch.

9. A switch comprising a casing apertured to afford a window, transparent insulation in said window, a rotary indicator arranged within the casing at said window, a rotary switch piece in said casing and gearing between said switch piece and indicator for actuating the latter.

10. An electric switch comprising a rotary switch piece having a reciprocating movement longitudinally of its axis on actuation thereof, an independent indicator for indicating the "on" or "off" position of the switch and an operative connection between said switch piece and indicator for actuating the latter on the actuation of the switch.

11. An electric switch comprising a rotary switch piece having a reciprocating movement longitudinally of its axis on actuation thereof, an independent indicator for indicating the "on" or "off" position of the switch, peripheral gearing on said switch piece and gearing operatively connecting the same to the indicator.

12. An electric switch comprising a rotary switch piece having a reciprocating movement longitudinally of its axis on the actuation of said switch piece, an independent indicator susceptible of only rotary displacement, a peripheral gear on said switch piece, and a gear on said indicator in constant mesh with said peripheral gear on the switch piece.

13. An electric switch comprising a rotary switch piece having a reciprocating movement longitudinally of its axis on the actuation of said switch piece, an independent indicator susceptible of only rotary displacement, a peripheral insulating gear ring on said switch piece and a gear on said indicator in constant mesh with said peripheral gear on the switch piece.

14. An electric switch comprising a rotary

switch piece having a reciprocating movement longitudinally of its axis on the actuation of said switch piece, an insulating member inclosing said switch piece, and means in connection with said insulating member for indicating the "on" or "off" position of the switch.

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

GEORGE B. THOMAS.

Witnesses:
G. W. GOODRIDGE,
H. M. WICHERT.