

No. 761,563.

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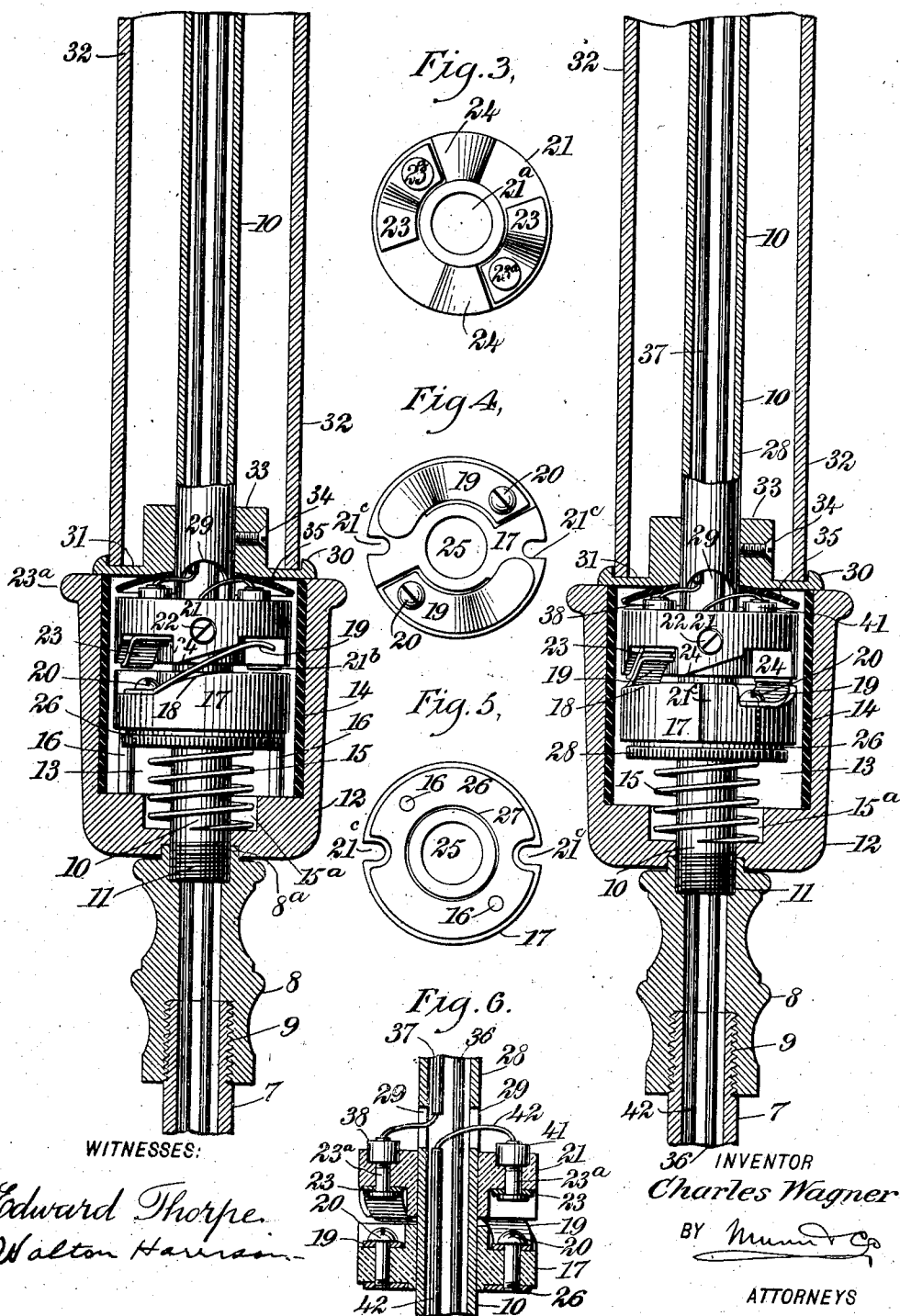
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SWITCH FOR ELECTRIC LAMPS.

APPLICATION FILED AUG. 22, 1903.

NO MODEL.

Fig. 1,

Fig. 2,



WITNESSES:

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SWITCH FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 761,563, dated May 31, 1904.

Application filed August 22, 1903. Serial No. 170,450. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WAGNER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Switch for Electric Lamps, of which the following is a full, clear, and exact description.

My invention relates to means for turning the current on and off at will, and more particularly to such means as can be used with electric lamps.

My special object is to provide an improved switch for service with incandescent lamps and to insure good electrical contact, while at the same time giving the lamp a comparatively neat appearance.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical central section through the lamp embodying my invention. Fig. 2 is a somewhat similar view taken at right angles to the view shown in Fig. 1. Fig. 3 is an inverted plan view of the disk 21 removed from the switch. Fig. 4 is a plan view of the disk 17, also removed from the switch. Fig. 5 is an inverted plan view of the disk 17, showing the contact-plate 26; and Fig. 6 is a fragmentary section through the two cam-disks 17 and 21, showing certain parts in elevation.

Upon a tubular stem 7 is mounted a head 8 by means of appropriate screw-threads 9. This head is provided with a shoulder 8^a, which encircles the tubular stem 10, thereby giving better support to the screw-thread 11. Mounted upon the shoulder 8^a and encircling the stem 10 is a revoluble casing 12, the hollow 13 of which is preferably cylindrical and lined with a sleeve 14 of insulating material—such, for instance, as fiber or hard rubber. A spring 15 rests within a depression 15^a in the bottom of the casing 12. A pair of guide-stems 16 are rigidly connected with the casing 12 and extend upwardly parallel with each other, as indicated more particularly in Fig. 1.

A disk 17 is provided with inclined sur-

faces 18 and with spring-tongues 19, serving as contact members, these tongues being secured upon the disk 17 by means of screws 20 and free to spring toward and from the inclined surfaces 18 when pressed upon from above. The disk 21 has a central opening 21^a, which encircles the stem 10. The disk 17 is provided with guide-slots 21^c, which slidably engage the guide-stems 16, so that the disk 17 is free to move vertically within certain limits and is normally tensioned by the upward pressure of the spring 15. This disk 17 is revoluble with the casing 12, which is free to turn upon the shoulder 8^a, this shoulder acting as a bearing therefor. The revolution of the casing is centered upon the stem 10, so that the disk 17 is movable relatively to this stem. Mounted upon this disk 21 are spring-tongues 23, secured thereto by means of fastening-screws 23^a, these spring-tongues being free to yield, and thereby to be forced toward the inclined surfaces 24, to which they are immediately adjacent.

It will be noted that divers of the inclined surfaces 24 of the disk 21 are not provided with spring-tongues 23, but are left blank. The distribution of the tongues 23 is such that every other or alternate surface 24 is left blank, and the inclined surfaces provided with the spring-tongues are disposed between the blank surfaces. In other words, the blank surfaces and the surfaces provided with tongues alternate with each other, there being an even number of the inclined surfaces 24 upon the upper disk 21. The disk 17 is provided at its bottom with a metallic ring 26 and with an annular groove 27, this groove being engaged by the spring 15 for the purpose of maintaining the spring concentric with the stem 10. The stem 10 is provided with holes 29, as shown more particularly in Figs. 1 and 6.

Mounted upon the casing 12 and forming a cap therefor is a circular plate 30, provided with a groove 31, in which rests the tube 32, this tube having preferably the form of a candle for the purpose of giving a picturesque effect to the lamp. A lug 33 is integral with the plate 31 and is provided with a screw 34

for securing the lug rigidly to the stem 10. A disk 25, of insulating material, made preferably rotund, as indicated, is mounted within the top of the casing 12 for the purpose of insulating divers parts within the casing, as will be readily understood from Figs. 1 and 2.

One of the lamp-wires is shown at 36 and passes vertically through the stem 10, being protected thereby. The other lamp-wire is shown at 37 and passes outwardly through one of the holes 29 and through a binding-post 38, this post being engaged by the screw 23^a, which holds the spring-contact 23 in position. Similarly, the binding-post 41 is engaged by the other screw 23^a, which holds in position one of the spring-contact members 23. A wire 42 leads out from the binding-post 41. It will thus be seen that the disk 17 has only two spring-contact members 19 and that these members are movable relatively toward and from the inclined surfaces 18, whereas the disk 21 has four inclined surfaces 24, two of which are blank, the other two being provided with spring-contact members 23, which are movable toward and from their respective inclined surfaces. It will also be seen that when the disk 17 is rotated by means of the casing 12 the disk 21 is immovable, so that the spring-tongues 19 may be brought into engagement with either the contact members 23 or with the blank surfaces 24. Thus the circuit may be left open or closed, according to the degree of rotation of the casing 12.

With the apparatus in the position indicated in Fig. 1 the circuit is open, whereas in Fig. 2 the circuit is closed. The circuit may be traced as follows: wire 36 to lamp, thence back through wire 37, binding-post 28, screw 23^a, contact members 23 and 19, plate 26, screw 20, the other contact members 19 and 23, screw 23^a, binding-post 41, and wire 42.

As the casing 12 is rotated in a "left-handed" direction as viewed from the bottom of the drawings, the current is of course turned on and off at every quarter of a revolution.

It will be noted that the inclined surfaces 18 and 24 upon the respective disks 17 and 21 are, in effect, cam-lobes and that the disk 17 has an axial movement independent of its rotary motion.

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

1. In a switch for electric lamps, the combination of a pair of cam-disks, one of which is revoluble relatively to the other, spring-tongue contact members mounted upon said cam-disks respectively, the spring-tongue contact members of each of said cam-disks slidably engaging those of the other and free to bend under pressure thereof and to become parallel thereto under sliding pressure exerted thereby, electrical connections for said contact members, and means for rotating one of said disks relatively to the other.

2. In a switch for electric lamps, the com-

bination of a pair of disks provided with lobes having inclined surfaces, one of said disks being revoluble relatively to the other, spring-tongue contact members each of longitudinal form mounted upon both of said disks and free to bend toward and from said lobes, the spring-contact members of one of said disks being free to slidably engage those of the other disk and to become substantially parallel thereto in the general direction of their length for the purpose of presenting a large contact-surface thereto, electrical connections for all of said contact members, and means for rotating one of said disks in relation to the other.

3. In a switch for electric lamps, the combination of a pair of disks each provided with lobes having inclined surfaces, one of said disks being free to rotate relatively to the other and also being free to move axially in relation thereto, said lobes of one of said disks facing the lobes of the other disk, a spring for forcing one of said disks toward the other, spring-contact members of longitudinal form mounted upon divers of said inclined surfaces, said spring-contact members of one disk being free to slidably engage those of the other disk and to become substantially parallel thereto in the general direction of the length thereof for the purpose of presenting a large contact-surface thereto, and electrical connections for said contact members.

4. In a switch for electric lamps, the combination of a disk provided with an even number of lobes having inclined surfaces and with contact members of longitudinal form mounted adjacent to divers of said inclined surfaces and free to move toward and from the same, others of said inclined surfaces not being provided with contact members, a second disk provided with contact members of longitudinal form for engaging said first-mentioned contact members and also for engaging said inclined surfaces not provided with contact members, electrical connections for all of said contact members, and means controllable at will for rotating one of said disks relatively to the other in such direction as to cause its contact members to move in the general direction of the length thereof, thereby slidably engaging the other contact members and becoming parallel thereto under pressure thereof and in the general direction of the length thereof.

5. In a switch for electric lamps, the combination of a disk provided with a plurality of lobes, divers of said lobes being provided with spring-contact members of longitudinal form and others of said lobes not being so provided, said lobes and said contact members having inclined surfaces, a revoluble member provided with inclined surfaces and with spring-contact members, also of longitudinal form, said inclined surfaces and said spring-contact members facing said lobes and said

spring-contact members of said disk, said revoluble member being free to move axially toward and from said disk, electrical connections for all of said contact members, and
5 means controllable at will for actuating said revoluble member.

In testimony whereof I have signed my name

to this specification in the presence of two subscribing witnesses.

CHARLES WAGNER.

Witnesses:

L. LIVINGSTON,
GEORGE W. WEILL.