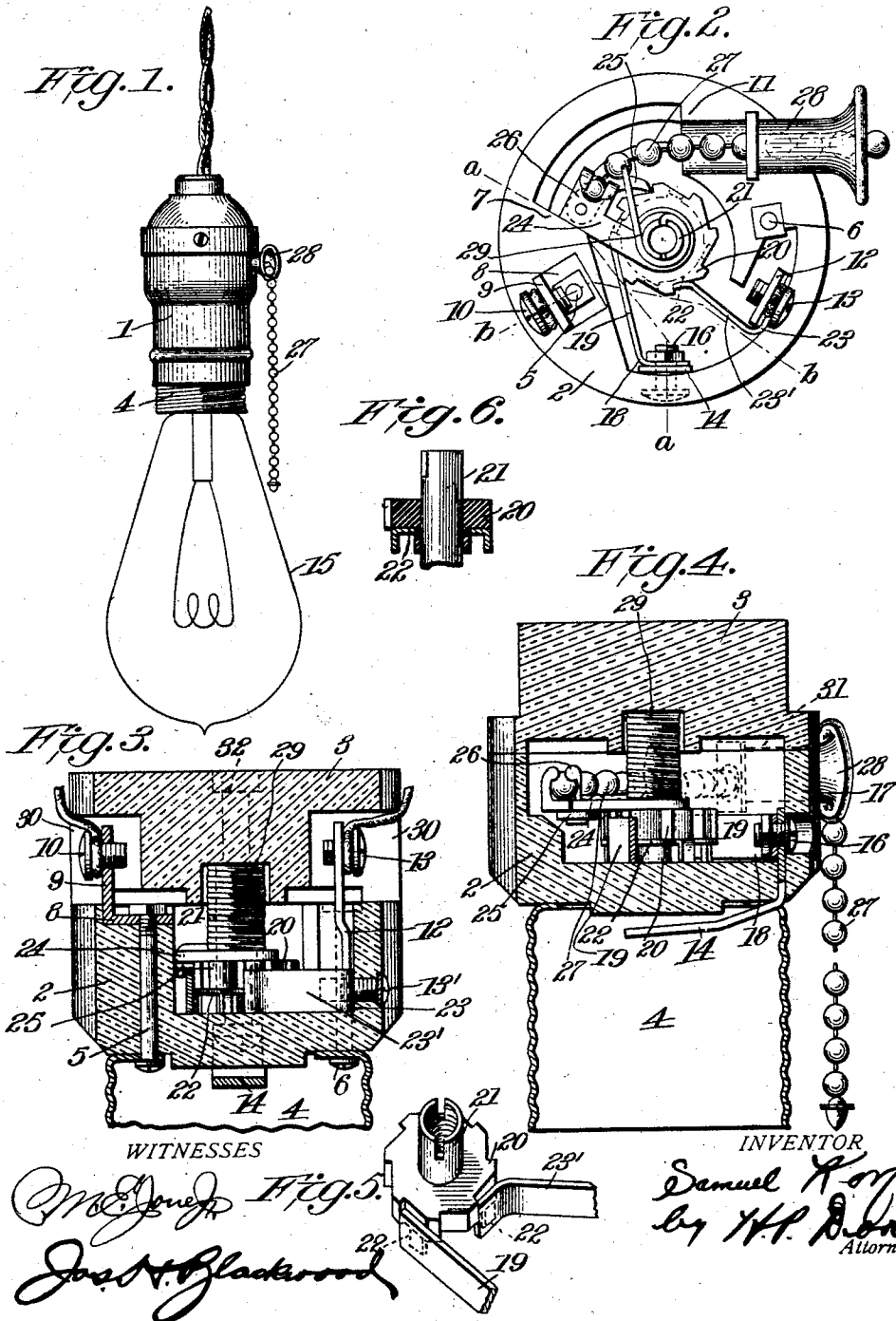


S. KORF.
 ROTARY SNAP SWITCH.
 APPLICATION FILED JUNE 6, 1910.

997,563.

Patented July 11, 1911.



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ROTARY SNAP-SWITCH.

997,563.

Specification of Letters Patent. Patented July 11, 1911.

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To all whom it may concern:

Be it known that I, SAMUEL KORF, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rotary Snap-Switches, of which the following is a specification.

My invention relates to rotary snap-switches and its object is to provide a device of this kind of simple and compact construction particularly adapted for use in connection with electric lamp sockets.

My invention is embodied in preferable form in the device hereinafter described and illustrated in the accompanying drawings.

In these drawings, Figure 1 is an exterior view in elevation showing the device applied to an incandescent electric lamp; Fig. 2, a horizontal section; Fig. 3, a vertical section on the line *a-a* of Fig. 2; Fig. 4, a vertical section on the line *b-b* of Fig. 2; Fig. 5, a detail perspective of the contact ratchet wheel and contact strips and Fig. 6, a detail section through the ratchet wheel member.

Referring to the drawings, 1 is an exterior metallic inclosing shell. Within this shell is fitted a two-part plug, preferably of porcelain and adapted to support the mechanism of the switch. One part 2 of this plug has secured to it by suitable screws a metallic lamp socket and the other part, 3, serves as an inclosing and retaining member for the switch mechanism. The lamp socket member 4 is attached to the plug member by means of screws, 5, 6. One of these screws 5 passes up through the plug member 2 and makes electrical contact with an arm 8 of a post 9, through which passes a binding screw 10, which is adapted to receive one of the terminal wires of the circuit. The other screw 6 passes through the plug 2 which is of suitable insulating material and thereby insulates the screw from the circuit. A post 12 rises from the plug adjacent to the latter screw and has a binding screw 13 to which the other terminal connects. A spring metal conductor bar 14, substantially L-shaped, has its long arm extending through slots in the plug member 2 and in the socket member 4 and across the center of the socket so as to establish a circuit through the lamp or other object to which current is to be conducted. In the draw-

ings, an electric lamp 15 is shown as the object to which the current is to be supplied.

The short arm of the conductor bar 14 engages a screw 16 passing through the circumferential wall 17 of the plug member 2 which member is cup-shaped, as shown. On the screw 16 is mounted the short vertical arm of a substantially L-shaped spring contact strip 18, having a long arm 19 by means of which the contact strip is constituted a detent pawl and which is adapted to engage the teeth of a ratchet wheel, 20, rotatably mounted on a central fixed tubular post 21, carried by the plug member 2. The body of this wheel is made of some suitable non-conducting material such as hard rubber or fiber and surrounding it, friction tight adjacent to the base of the plug member is a circumferential metallic conducting band 22, having radial teeth projecting therefrom, one half in number to those of the ratchet wheel proper and adapted to register with each alternate tooth of said wheel. The arm 19 of the contact pawl strip is made wide enough to extend across the teeth of the conducting band and into engagement with the ratchet teeth of the body of the wheel, so as to alternately engage one of the non-conducting teeth of the wheel alone or simultaneously engage one of said teeth and one of the contact teeth of the conducting band.

Mounted on a binding screw 13' of the post 12, which connects with one of the terminals as before stated, is an L-shaped contact detent strip 23 the inner end of which terminates in a tooth 23' extending into the path of the ratchet teeth of the wheel and the contact teeth of the conducting band and is adapted to make and break contact therewith on the rotation of the wheel and band.

Loosely mounted on the central post 21 above the ratchet wheel is an arm 24, carrying a ratchet pawl 25, which is adapted to engage the teeth of the ratchet wheel and thereby turn the same. A forked arm 26 projects angularly from the end of the arm 24 and is adapted to receive the end of a chain 27 which passes through a guide sleeve 28 held between the two parts 2 and 3 of the plug and depends below the shell and serves as an operating pull member for turning the ratchet wheel to throw the switch on or off.

A spiral spring 29 is mounted on the post 21, having one end bearing against the same and the other end bearing against the arm 24, so as to act to retract the arm after each actuation thereof by the pull-chain.

The retaining and closing plug member 3 is adapted to fit on the edge of the wall of the cup-shaped plug member 2, and it is provided in its side wall with slots 30 to receive and engage the posts 9 and 12 and also with a slot 31 to register with a corresponding slot in the plug member 2 to permit the projection from the plug of the pull chain guide sleeve.

A central retaining screw 32 passes through the member 3 and engages the central post 21 which is interiorly threaded to receive said screw.

The operation of the device is as follows: Upon a pull on the chain the ratchet will be moved to turn the ratchet wheel one tooth, the movement of the arm 24 being limited by and between the two abutment blocks 7 and 11. This movement will carry one of the contact teeth of the conducting band 22 into contact with the contact detent pawl 18 and also carry one of the other teeth of said band into contact with the other contact strip 23, thereby establishing a circuit through said contact strips, the conducting band, the two terminals, the conductor bar 14 and the socket member. Upon releasing the pull-chain the spring 29 retracts the ratchet arm and pawl to normal position. Upon another pull on the chain the ratchet wheel is turned another tooth so as to remove the contact teeth of the conducting band from engagement with the strips 18 and 23 and break the circuit. The detent wheel from moving backward and thus performs the double function of a detent pawl and a contact member.

Having thus described my invention, what I claim is,

1. An electric rotary snap-switch having a ratchet wheel, a swinging arm and pawl to operate said wheel, said wheel mounted on a post out of the electric circuit and having non-conducting teeth and having teeth of conducting material registering with the alternate non-conducting teeth, a detent contact pawl adapted to engage both sets of teeth, an object to which current is to be conducted and means to establish a circuit between said contact pawl and said object, substantially as described.

2. An electric rotary snap switch having a cup-shaped plug member of non-conducting material, a ratchet wheel of non-con-

ducting material centrally mounted on said plug member and having a band of conducting material around the same, said band having projections corresponding with elongated teeth of the ratchet wheel, contact strips adapted to simultaneously contact with two of said band projections, a ratchet arm, a pawl connected to said ratchet arm and a spring for retracting said ratchet arm, substantially as described.

3. An electric rotary snap switch having a ratchet wheel of non-conducting material provided with a band of conducting material having projections corresponding with elongated teeth on the ratchet wheel, contact strips adapted to simultaneously contact with two of said band projections, and means to rotate the ratchet wheel, substantially as described.

4. In an electric rotary snap switch, a non-conducting central post, a rotatable wheel of non-conducting material, a tubular extension on said ratchet wheel, a conducting band surrounding said extension and having teeth arranged in extension of the ratchet teeth, and conducting contact strips adapted to simultaneously contact with two of said conducting teeth, substantially as described.

5. In an electric rotary snap switch, a plug member insulated from the switch, a central post secured to the plug, a ratchet wheel insulated from the post provided with non-conducting teeth, a non-conducting extension on said ratchet, a conducting member surrounding said extension provided with teeth in extension of the non-conducting teeth, a binder post in electrical connection with a lamp, a second binder post, a detent contact strip in electrical connection with the same, a spring metal contact strip adapted to be engaged by a lamp, a detent contact strip connected thereto, said detent strips adapted to simultaneously engage teeth of the conducting member, a swinging arm carrying a pawl for the ratchet, a spring surrounding the post and bearing against the pawl, an operating member connected to the arm and extending through the plug and depending on the exterior thereof, the swinging movement of the arms being limited by abutment against portions of the plug, substantially as described.

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

SAMUEL KORF.

Witnesses:

M. E. JONES, Jr.,
H. P. DOOLITTLE.