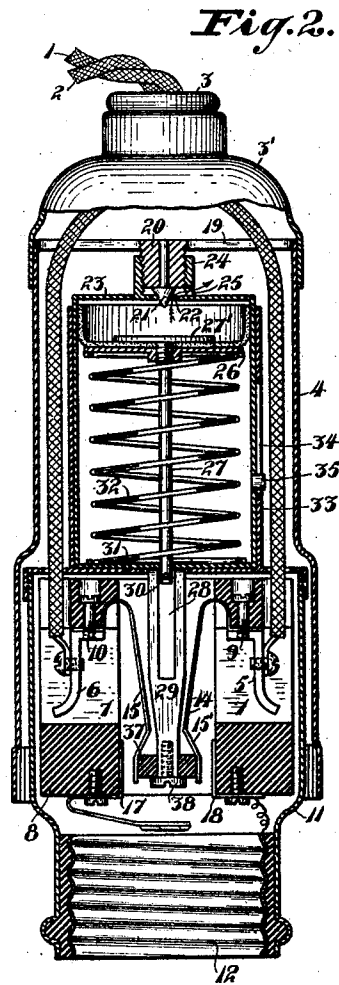
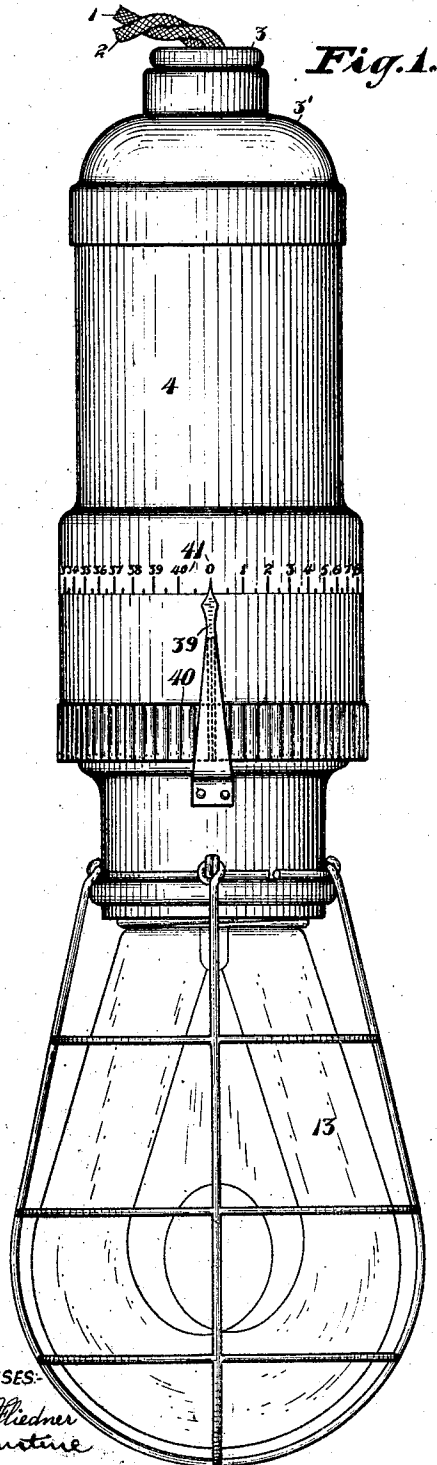


F. O. STALLMAN.
 COMBINED AUTOMATIC CUT-OFF SWITCH AND LAMP SOCKET.
 APPLICATION FILED JUNE 19, 1912.

1,039,835.

Patented Oct. 1, 1912.

2 SHEETS—SHEET 1.



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Fig. 3.

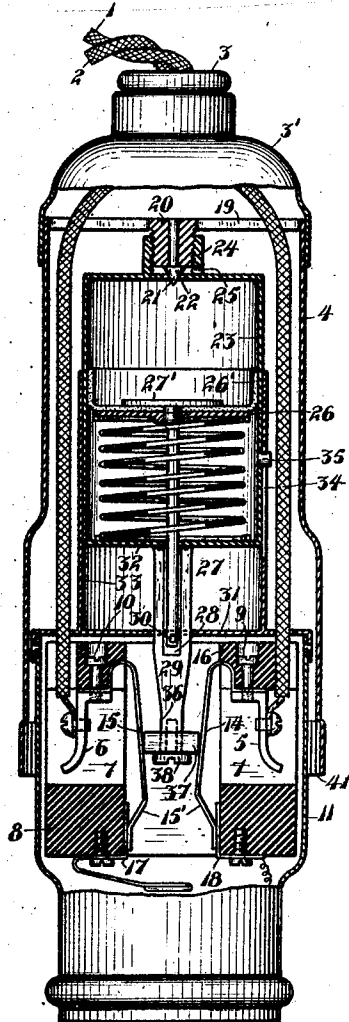
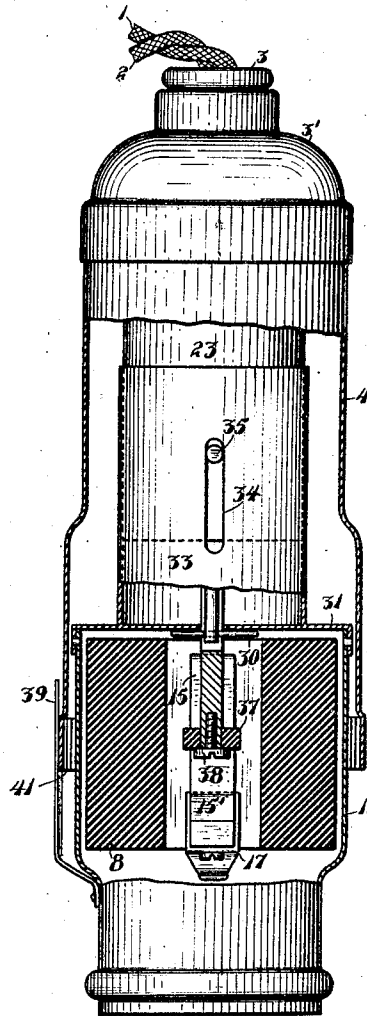


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK O. STALLMAN, OF SAN FRANCISCO, CALIFORNIA.

COMBINED AUTOMATIC CUT-OFF SWITCH AND LAMP-SOCKET.

1,039,835.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed June 19, 1912. Serial No. 704,568.

To all whom it may concern:

Be it known that I, FRANK O. STALLMAN, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Combined Automatic Cut-Off Switches and Lamp-Sockets, of which the following is a specification.

10 The hereinafter described invention relates to an improved automatic electric light switch and lamp socket and particularly to a combined cut-off switch and lamp socket adapted to be employed in all places such as cellars, vaults and the like, where one is apt to turn on the electric current for the light, and then when through with the same forget to turn the current off; and the principal object of the invention being to provide a simple, inexpensive and durable lamp socket having incorporated therein means for breaking the electrical contact at a predetermined time, the time controlled element being regulated by pneumatic pressure and being adjustable to operate to break the contact at any time desired after such contact is once made.

Another object is to provide a device of the above mentioned type wherein means are employed to quickly disconnect the contact points from each other, thus preventing the formation of an arc within the socket, which is liable to injure the same.

With the above mentioned and other objects in view, the invention consists in the novel construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any advantages of the invention.

To fully comprehend the invention, reference should be had to the accompanying drawings illustrating a complete constructed device for successfully carrying out the invention, wherein—

Figure 1 is a view in elevation of my improved device as applied to a pendant electric incandescent lamp, and disclosing the indicating means for setting the device to operate at a predetermined time. Fig. 2 is a longitudinal sectional view taken through

the center of the device, disclosing the various parts in their respective positions, when the contact points are disengaged from each other and the light is out. Fig. 3 is a view similar to Fig. 2 but with the parts in their respective positions after the operator has pulled the movable portion of the socket, completed the circuit of the contacts, and the light is lighted. Fig. 4 is a longitudinal sectional view taken on line 4—4, Fig. 3, disclosing the pin carried by the piston rod, and in contact with the movable portion of the socket for restoring the same to its normal position after being pulled downwardly.

In the drawings, the reference numerals 1 and 2 indicate the insulated pendent wires connected to a suitable source of electricity, and extending through an opening 3 formed in the upper end of a metallic cap 3' adapted to be detachably secured over a metallic casing 4, the lower portions of said wires extending close to the inner walls of said casing 4 and secured respectively at their lower ends to connectors 5 and 6, which are in turn secured in suitable cut out portions 7 in each side of an insulating porcelain 8 by suitable securing screws 9 and 10, the porcelain being secured within the upper end of a cylindrical socket portion 11 in any suitable manner, and said socket is provided at its open end with suitable screw threads 12 adapted to receive the base of the usual incandescent globe 13, the upper portion of the socket portion 11 adapted for reciprocation within the metallic casing 4, as in Fig. 2.

Suitable spring fingers 14 and 15 are secured between their respective connectors 5 and 6 and the porcelain insulating block 8, and said fingers are each provided with an outwardly flared portion 15' adjacent their free ends and project in spaced relation to each other, through an annular centrally arranged bore 16 to a point adjacent the outer end of said porcelain, and are adapted to be thrown into contact, in a hereinafter described manner, with suitable contacts 17 and 18 secured to the outer face of the porcelain 8, the contact 17 adapted for engagement with the usual central contact portion of a lamp, and the contact 17' providing a portion of the usual screw thread contact for the lamp.

Extending transversely of the top of the casing 4 is a plate 19, provided in its center

with a downwardly projecting threaded screw 20 having a tapered point or needle valve 21 at its lower end, which extends through and is adapted to be seated in a correspondingly tapered opening 22 in the upper end wall of a closed barrel 23, the end wall carrying a circular internally screw threaded bore 24 adapted to fit over the screw 20, and said bore is provided with a small outlet opening 25 in one side thereof adjacent its lower edge, for the escape of the air within said barrel.

Mounted to reciprocate in the barrel 23 is a piston 26 formed with the flexible annular washer packing 26' and provided with a piston rod 27, the lower end of which is adapted to slide within an elongated slot 28, formed within a cylindrical supporting shaft 29, projecting downwardly from the underside of the barrel 23.

A pin 30 is inserted through a suitable opening in the lower end of the piston rod 27 and the ends thereof project through each side of the slot 28 and are adapted to engage the underside of a horizontal upper or roof portion 31 of the socket member 11. The portion 31 of the socket 11 is formed with a suitable opening through which is adapted to reciprocate the member 29 extending from the underside of the barrel 23. A coiled spring 32 is positioned within the barrel 23 between the underside of the piston 26 and the bottom of the barrel 23, and surrounds the piston rod 27 forcing said piston and the parts carried thereby upwardly.

A cylindrical member or sleeve 33 extends upwardly from the roof 31 and the same is provided with outwardly projecting vertically extending grooves 34 arranged at diametrically opposite sides thereof and in which are adapted to slide suitable lugs 35 projecting outwardly from the sides of the barrel 23.

The cylindrical member 29 is provided with a contracted lower end 36 on which is slidably mounted a suitable circular spreader or switch 37 of non conducting material of a diameter slightly larger than the space between the spring fingers 14 and 15, the spreader being secured on said lower end by a screw 38.

From the above description it will be observed that the parts being in the position disclosed in Fig. 2, and it is desired to light the light, the operator by pulling the socket member downwardly, which carries with it the porcelain member 8 and the spring fingers 14 and 15 will move the flared portion 15' of the fingers 14 and 15 beyond the spreader 27 and the same will engage the straight portions of the fingers and force the same into engagement with their respective contacts, thus completing the circuit to the lamp and lighting the light, and during this operation it will also be observed that the

pin 30 extending through the piston rod 27 below the roof 31 will draw downwardly in the slot 28 carrying with it the piston 26 and compressing the spring 32 and drawing air in the upper portion of the barrel 23. The closing speed or travel of the piston is regulated by turning the socket portion 11 either to the right or left thereby closing or opening the needle valve 21 relative to its seat 22 and permitting the escape of more or less air through the outlet opening 25. It will also be observed by reference to Figs. 2 and 3, that when the socket member is pulled downwardly the switch or spreader 37 will be, by frictional contact with the spring fingers 14 and 15, moved on its supporting shaft into contact with the retaining screw 38, but upon the return movement of the plunger, by the action of the coiled spring 32, the spreader will be drawn to the opposite end of its supporting shaft and when said spreader reaches the point of said fingers 14 and 15 where the outwardly flaring portions 15' begin, the spreader will be rapidly forced by the action of the spring fingers thereon, toward the retaining screw 38 thereby permitting the free ends of the spring fingers 14 and 15 to quickly disengage from their respective contacts and by so doing quickly breaking the circuit to the lamp.

A spring indicating finger 39 is secured to the outer surface of the socket portion 11, extends over the casing 4 and is adapted to be seated in suitable serrations 40 extending circumferentially of the lower edge of said casing 4, and the upper or free end of said finger is adapted, when said finger is seated in said serrations, to lie opposite certain graduations 41 on the outer surface of the casing, the graduations indicating the interval of time the light will remain lighted, if lighted, when the finger is pointing to the same.

While the lower ends of the wires 1 and 2 are secured to the connectors 5 and 6 the upper portions thereof are arranged somewhat slack within the casing to allow for the downward movement of the socket portion thereof, the upper portion of the said wires being held to the casing in any suitable manner.

Inasmuch as a nut 27' of small diameter holds the packing 26' to the piston 26, the flexible packing gives inwardly on the downward movement of the piston and permits the air to by-pass from the under face of the piston, thereby providing against a vacuum being created during such stroke of the said piston.

Having thus fully described my invention what is claimed as new and is desired to be protected by Letters Patent is—

1. In an electric light circuit having a lamp and plug, the combination of a casing

comprising a stationary portion and a movable portion capable of reciprocation within said stationary portion and having at its lower end a threaded socket for the reception of the lamp plug, lamp contacts associated with said socket, contact fingers associated with said lamp contacts and normally in spaced relation thereto, means carried by the stationary portion for forcing said contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable portion, and pressure actuated means for maintaining said contact fingers in their engaged position for a pre-determined period.

2. In an electric light circuit having a lamp and plug, the combination of a casing comprising a stationary portion and a movable portion capable of reciprocation within said stationary portion and having at its lower end a threaded socket for the reception of the lamp plug, lamp contacts associated with said socket, contact fingers associated with said lamp contacts and normally in spaced relation thereto, means carried by the stationary portion for forcing said contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable portion, pressure actuated means for maintaining said contact fingers in their engaged position for a pre-determined period, and means for controlling the actuation of said pressure actuated means.

3. In an electric light circuit having a lamp and plug, the combination of a casing comprising a stationary portion and a movable portion capable of reciprocation within said stationary portion and having at its lower end a threaded socket for the reception of the lamp plug, a barrel rotatably mounted within said stationary portion and on which said movable portion reciprocates, lamp contacts associated with said socket, contact fingers associated with said lamp contacts and normally in spaced relation thereto, means projecting from said barrel for forcing said contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable portion, pressure actuated means for maintaining said contact fingers in their engaged position, and means controllable upon the rotation of said barrel for timing the operation of said pressure actuated means.

4. In an electric light circuit having a lamp and plug, the combination of a casing comprising a stationary portion and a movable portion capable of reciprocation within said stationary portion and having at its lower end a threaded socket for the reception of the lamp plug, a barrel rotatably mounted within said stationary portion and on which said movable portion reciprocates, lamp contacts associated with said socket,

contact fingers associated with said lamp contacts and normally in spaced relation thereto, means projecting from said barrel for forcing said contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable portion, and a pressure actuated piston mounted within said barrel and connected to said movable portion for maintaining said contact fingers in their engaged position for a predetermined period.

5. In an electric light circuit having a lamp and plug, the combination of a casing comprising a stationary portion and a movable portion capable of reciprocation within said stationary portion and having at its lower end a threaded socket for the reception of the lamp plug, a barrel rotatably mounted within said stationary portion and on which said movable portion reciprocates, lamp contacts associated with said socket, contact fingers associated with said lamp contacts and normally in spaced relation thereto, means projecting from said barrel for forcing said contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable portion, a pressure actuated piston mounted within said barrel and connected to said movable portion for maintaining said contact fingers in their engaged position for a predetermined period, and a valve controllable by the rotation of said barrel for timing the operation of said pressure actuated piston.

6. In an electric light circuit having a lamp and plug, the combination of a casing comprising a stationary portion and a movable portion capable of reciprocation within said stationary portion and having at its lower end a threaded socket for the reception of the lamp plug, a barrel mounted within said stationary portion and on which said movable portion reciprocates, lamp contacts associated with said socket, spring contact fingers associated with said lamp contacts and normally in spaced relation thereto, a supporting shaft projecting from said barrel and extending between said spring contact fingers, means slidably mounted on said shaft for forcing said spring contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable part in one direction and capable of a sudden disengagement from said spring fingers upon the reciprocation of said movable part in the opposite direction, and pressure actuated means within said barrel for maintaining said contact fingers in their engaged position for a predetermined period.

7. In an electric light circuit having a lamp and plug, the combination of a casing comprising a stationary portion and a movable portion capable of reciprocation within

said stationary portion and having at its lower end a socket for the reception of the lamp plug, lamp contacts associated with said socket, spring contact fingers associated with said lamp contacts and normally in spaced relation thereto, a supporting shaft associated with said stationary portion and extending between said spring contact fingers, and means slidably mounted on said shaft for forcing said spring contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable part in one direction and capable of sudden disengagement from said spring fingers upon the reciprocation of said movable part in the opposite direction.

8. In an electric light circuit having a lamp and plug, the combination of a casing comprising a stationary portion and a movable portion capable of reciprocation within said stationary portion and having at its lower end a socket for the reception of the lamp plug, lamp contacts associated with

said socket, spring contact fingers associated with said lamp contacts and normally in spaced relation thereto, a supporting shaft associated with said stationary portion and extending between said spring contact fingers, means slidably mounted on said shaft for forcing said spring contact fingers into engagement with their respective lamp contacts upon the reciprocation of said movable part in one direction and capable of sudden disengagement from said spring fingers upon the reciprocation of said movable part in the opposite direction, and pressure actuated means for maintaining said contact fingers in engaged position for a predetermined period.

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

FRANK O. STALLMAN.

Witnesses:

N. A. ACKER,
D. B. RICHARDS.