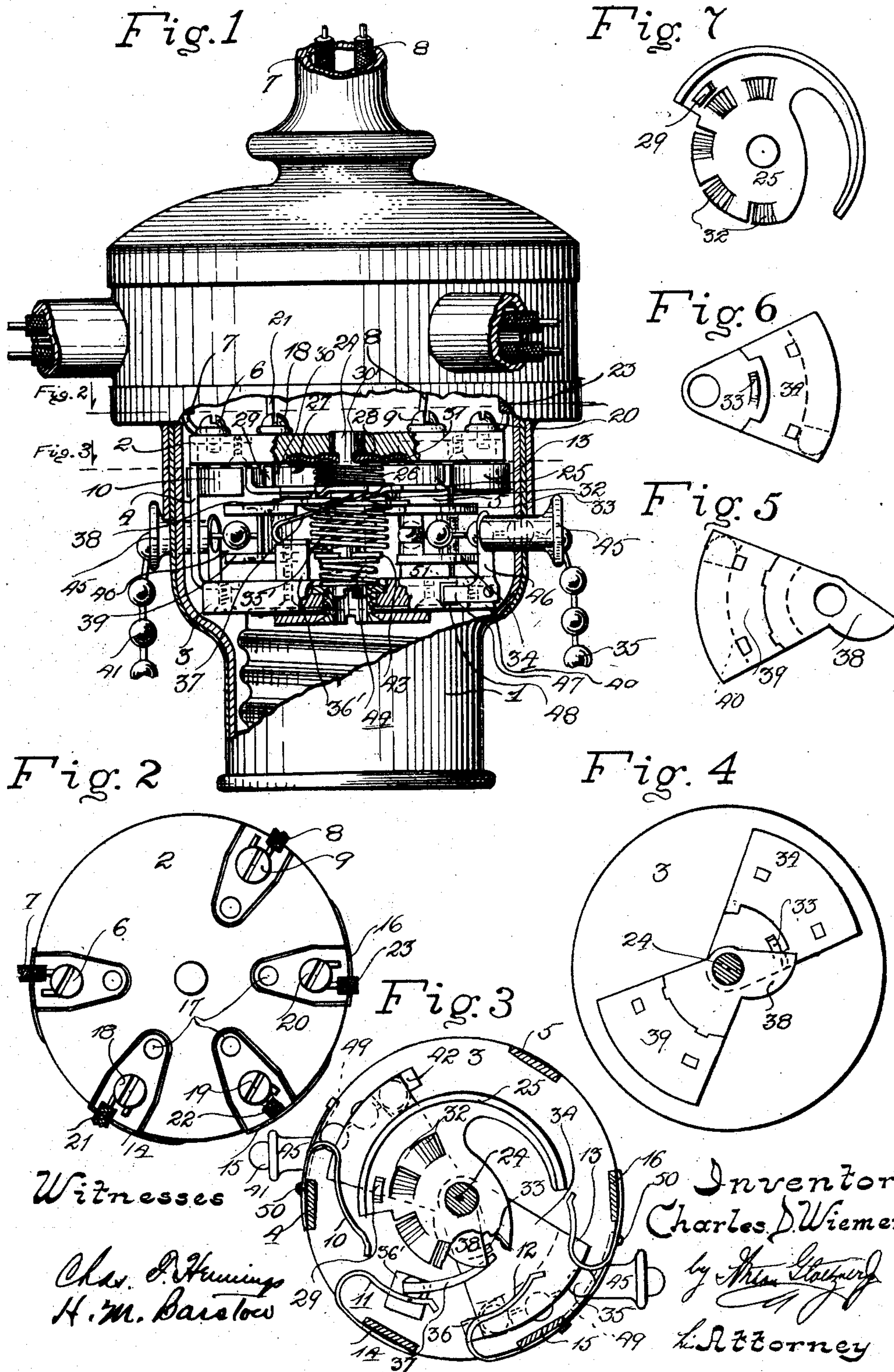


C. D. WIEMER.
 SWITCH MECHANISM.
 APPLICATION FILED MAY 9, 1910.

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UNITED STATES PATENT OFFICE.

CHARLES D. WIEMER, OF LOS ANGELES, CALIFORNIA.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES D. WIEMER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a certain new and useful Switch Mechanism, of which the following is a specification.

This invention relates to a device for controlling the circuits of one or a plurality of series of lamps in an electrolier, and has especial reference to that class of controlling mechanisms carried by what is commonly known as pull-sockets.

An object of this invention therefore is to provide a mechanism for controlling a plurality of series of lamps, by means of which the lamps may be progressively lighted and those lighted, extinguished, without the necessity of advancing the mechanism to include all of the lights in the light circuit, so that when one lamp is lighted, that particular lamp may be immediately extinguished, and likewise with a series of lamps.

With these and other objects in view, this invention consists of the features, details of construction and combination of parts, described in connection with the accompanying drawing and then more particularly pointed out in the claims.

In the drawings—Figure 1 is a side elevation partly in section and partly broken away, showing the switch controlling mechanism. Fig. 2 is a plan view of the upper plate or disk, showing the contact members and the binding posts for the wires. Fig. 3 is a sectional elevation on the lines indicated by Fig. 3 and looking in the direction of the arrow. Fig. 4 is a plan view showing the pawl and the member for disengaging the pawl from the ratchet. Fig. 5 is a plan detail of the disengaging member. Fig. 6 is a plan detail of the pawl, and Fig. 7 is a plan detail of the switch showing the ratchet teeth.

In the socket shell 1 of an electric fixture is mounted the operating mechanism of the switching device, consisting of two plates or circular disks 2 and 3 of non-conducting material, which disks are held spaced and connected by metallic braces, 4 and 5. Said brace 4 is provided with a binding post 6 to which feed wire 7 is secured; the return wire 8 is fastened to a binding post 9 provided in the brace 5. Between said disks 2 and 3 and extending inwardly therefrom, are a plurality of spring contacts 10, 11, 12

and 13. The contact 10 is fastened to the brace 4 as seen in Fig. 1, while the contacts 11, 12 and 13 depend from and are free of said disk 2, being mounted on ears 14, 15 and 16 which are secured to said disk 2 by screws 17. Said ears 14, 15 and 16 are severally provided with binding posts 18, 19 and 20 to which the wires 21, 22 and 23 are arranged to be connected, which wires lead to a series of lamps in the chandelier. Disposed approximately centrally of said disks 2 and 3 is an arbor 24. On said arbor is mounted in an oscillatory manner, a switch 25 in line with but normally out of engagement with said contacts 10, 11, 12 and 13, such normal position of said switch 25 being insured by a spring 26 coiled about said arbor 24 and having one end thereof fastened to said switch 25 while the other end is fastened to a detent 27 provided on a corrugated disk 28. The said switch 25 is provided with a stud 29 which is held in engagement with a lug 30 provided on the disk 2, by the said spring 26. Said aforementioned arbor 24 is grooved as seen at 30' to accommodate the said corrugated disk 28, which fits in a rabbet 31 in the disk 2, and which corrugated disk serves the two fold function of increasing the tension of said spring 26 when the arbor is turned for this purpose, and also to prevent the accidental rotation of said arbor 24 when the spring has been tightened. The aforementioned switch 25 is provided on the bottom thereof with downwardly extending lugs or teeth 32 preferably made integral therewith. Below said switch 25 and in operative relation to the teeth or lugs 32 thereof, is a pawl 33 provided on a grooved segment 34 to which is attached a pull chain 35 for operating said segment and causing said pawl 33 to engage the lugs or teeth 32 of the switch whereby to rotate and cause the same to successively engage the contacts 10, 11, 12 and 13. Said segment 34 is mounted in an oscillatory manner, on said arbor 24 and is under the tension of a spring 35' which normally holds the said segment in contact with a lug 36 provided on the plate or disk 3. On a boss 36' fastened to the disk 3 is a stop member 37 extending in line with the lugs or teeth 32 of the switch 25 and also in line with the said pawl 33, and this stop member serves to prevent the rearward rotation of said switch when pawl 33 under its spring tension returns to normal position, preparatory to engaging another of the

lugs or teeth 32 of the switch. As is obvious the alternate pull and release of the chain 35 causes a *seriatim* engagement of the switch 25 with the contacts 10, 11, 12 and 13. 5 the stop member 37 holding said switch in engagement with the contact or contacts when the pawl 33 under tension of spring 35, returns to normal position. Mounted in an oscillatory manner, on said arbor 24 as a releasing or wedge finger 38 secured to a segment 39 provided with a groove 40 for the accommodation of a chain or pull-cord 41. This finger 38 lies in a direct line with said 10 aforementioned stop member 37 and pawl 33 and is also under the tension of the above referred to spring 35', which holds said finger 38 in inoperative position and in engagement with a lug 42 provided on the disk 3. When the pull cord 41 is operated, 15 the finger 38 depresses the stop member 37 and also the pawl 33, leaving thereby the switch 25 free to respond to the tension of the spring 26 and return to normal position, thereby breaking contact with all of 25 the contacts 10, 11, 12 and 13. The operative position of said finger relatively to said stop member and pawl is clearly shown in Fig. 3.

The tension of the spring 35, which serves 30 to hold both the pawl 33 and the releasing finger 38 in inoperative position, is regulated by a collar 43 to which one end of said spring is attached. This collar is slotted and is arranged to be slipped on and to turn 35 with said arbor to tighten said spring. By means of a spring 44 bearing against the bottom of said collar 43, the corrugated plate is held in snug contact with the rabbet in the disk 2. Both chains 35 and 41 extend 40 through bell tubes 45, which are made integral with posts 46 provided with arms 47. These arms are arranged to fit in lips 48 of plates 49 which are secured to the disk 3, and the arms 46 are fastened onto the outside of said plates 49 by screws 50 or by 45 any other suitable means. Said plates are fastened to the under side of the disk 3 by screws 51.

What I claim is—

50 1. A switch mechanism comprising a plurality of stationary contacts, a movable contact, means to move said movable contact in engagement with said stationary contacts, means to hold movable contact in engagement 55 with said stationary contacts, and a means to disengage said moving means and said holding means from said movable contact to leave said movable contact free to return to normal position and out of engagement 60 with said stationary contacts.

2. A switch mechanism comprising a plurality of stationary contacts, a movable spring-controlled contact normally out of engagement with said stationary contacts, 65 means to move said movable contact in suc-

cessive engagement with one or all of said stationary contacts, means to hold said movable contact in such engagement, and a means to move said moving means and said holding means out of the path of said movable contact to cause said movable contact 70 to return to normal position.

3. A switch mechanism comprising a plurality of stationary contacts adapted to receive the wires for a series or a plurality of 75 series of lamps, an arbor, a contact movable on said arbor, a spring to normally hold said movable contact out of engagement with said stationary contacts, means to move said movable contact in engagement with one or 80 all of said stationary contacts, a stop to hold said movable contact in engagement with said stationary contacts, and means to control said stop to cause a disengagement of said movable contact with one or all of said 85 stationary contacts.

4. A switch mechanism comprising a plurality of stationary contacts arranged to receive the wires for a series or a plurality of 90 series of lamps, an arbor, a spring controlled movable contact on said arbor provided with a ratchet face, a pawl to engage said ratchet face and move said movable contact in successive engagement with one or all of said 95 stationary contacts, a stop to hold said movable contact against the tension of said spring, and a means to move both said pawl and stop out of engagement with said ratchet face to cause a disengagement of said movable contact with one or all of said station- 100 ary contacts.

5. In a switch mechanism, the combination with a plurality of spaced plates, and a plurality of stationary contacts to which the 105 wires of a series or a plurality of series of lamps are arranged to be connected, of an arbor carried by said plates, a contact movable on said arbor, and in engagement with said stationary contacts, a spring to hold 110 said movable contact normally out of engagement with said stationary contacts, a pawl to move said movable contact in engagement with one or all of said stationary contacts, a stop to prevent the return of 115 said movable contact to normal position, and a means on said arbor and between said movable contact and pawl, to move said pawl and stop out of engagement with said movable contact to cause a disengagement thereof with one or all of said stationary 120 contacts.

6. In a switch mechanism, the combination with a plurality of spaced plates, and a plurality of stationary contacts to which the 125 wires of a series or a plurality of series of lamps are arranged to be connected, of an arbor, means to hold said arbor against movement, a switch on said arbor, a spring to normally hold said switch out of engagement with said stationary contacts, a pawl 130

in operative relation to said switch, and
actuable to successively bring said switch
in engagement with one or all of said sta-
tionary contacts, a stop to hold said switch
5 in its moved position, and means to move
said pawl and stop out of engagement with
said switch to cause same to return to normal
position and out of engagement with said
stationary contacts.

10 7. In a switch mechanism, the combina-
tion with a plurality of spaced plates, pro-
vided with a plurality of resilient contacts
to which wires of a series or a plurality of
series of lamps are arranged to be connected,
15 of an arbor between said plates, a corru-
gated disk to hold said arbor against move-
ment, a switch on said arbor provided with
a ratchet face, a spring to normally hold
said switch out of engagement with said
20 contacts, a spring controlled pawl in en-
gagement with said ratchet face and oper-
able to successively move said switch in en-
gagement with one or all of said contacts, a
yielding stop to hold said switch in such

engagement, and a wedge movable between 25
said pawl and ratchet face to disengage said
pawl and said stop from said ratchet face,
to cause said spring controlled switch to re-
turn to normal position.

8. A switch mechanism comprising a plu- 30
rality of stationary contacts, a movable con-
tact normally under spring tension and out
of engagement with said stationary contacts,
means to move said movable contact in suc-
cessive engagement with one or all of said 35
stationary contacts, a stop to hold said mov-
able contact when so moved against the ten-
sion of said spring, and a wedge member to
disengage said moving means and stop for
said movable contact to cause same to return 40
to normal position.

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

CHARLES D. WIEMER.

Witnesses:

F. SNOVER,
ANTON GLOETZNER, Jr.