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E. A. BOLLE
LAMP SWITCH ACTUATOR FOR USE IN CONJUNCTION
WITH A TELEPHONE APPARATUS
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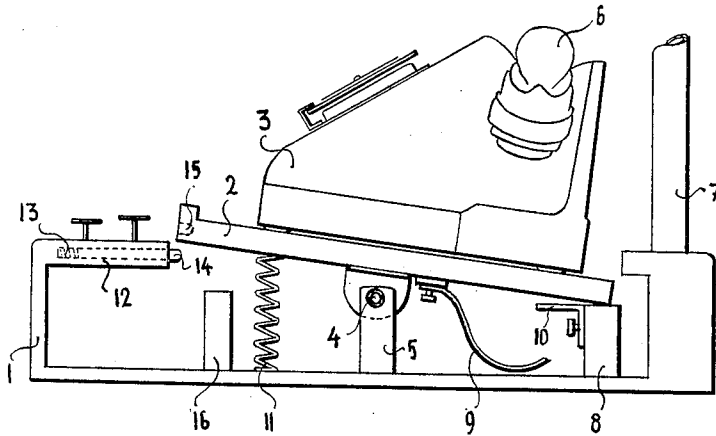


FIG. 1

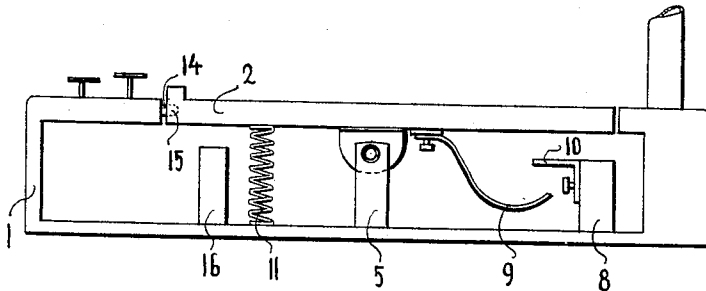


FIG. 2

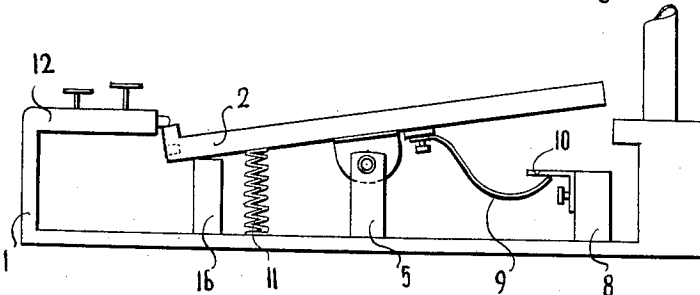


FIG. 3

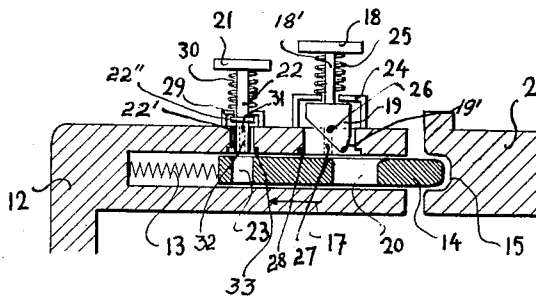


FIG. 4

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LAMP SWITCH ACTUATOR FOR USE IN
CONJUNCTION WITH A TELEPHONE
APPARATUS

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9 Claims. (Cl. 200—85)

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This invention relates to switch actuators and more particularly to a lamp switch actuator for use in conjunction with a telephone apparatus.

An object of this invention is to provide a lamp switch actuator which automatically causes a closing of the lamp switch in response to the lifting of the receiver from the telephone apparatus and automatically causes an opening of the lamp switch upon repositioning of the receiver.

Another object of this invention is to provide a lamp switch actuator for use in conjunction with a telephone apparatus which actuator may be selectively set in such a way that it either automatically causes a closing of the lamp switch in response to the lifting of the receiver from the apparatus or holds the lamp switch in open condition in spite of a lifting of the receiver, for a subsequent manual closing of the lamp switch at will.

A further object of this invention is to provide a lamp switch actuator for use in conjunction with a telephone apparatus which actuator may be selectively set in such a way that—after a closing of the lamp switch—it either automatically causes an opening of the lamp switch upon repositioning of the receiver or holds the lamp switch in closed condition in spite of repositioning of the receiver, for subsequent manual opening of the lamp switch at will.

Other objects and structural details of the invention will be apparent from the following description when read in conjunction with the accompanying drawings forming part of this specification, wherein:

Fig. 1 is a side elevational view of a lamp switch actuator according to the invention, a movable plate of the actuator carrying the telephone apparatus being in its normal position,

Fig. 2 is a side elevational view of the lamp switch actuator shown in Fig. 1, the movable plate of the actuator, however, being in an intermediate position,

Fig. 3 is a side elevational view of the lamp switch actuator shown in Fig. 1, the movable plate of the actuator, however, being in an inclined position for closing the lamp switch, and

Fig. 4 is a sectional view of the mechanism for selectively setting an automatic or manual actuation of the lamp switch.

Referring now to Figs. 1–3, a supporting plate 2 arranged for carrying a telephone apparatus 3 is swingably mounted at 4 on a pair of lugs 5 (only one lug being shown in the drawings) mounted on a frame 1 of the device. At the rear end of the device a lamp stand 7 is attached to the frame 1. The swingable mounting of the supporting plate 2 is made in such a manner that the rear end of the supporting plate 2 facing the lamp stand 7 normally rests on a supporting member 8 secured to the frame 1, when the re-

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ceiver 6 is placed on the apparatus 3. A first contact strip 9 of a lamp switch is secured to the lower surface of the supporting plate 2 at the rear end thereof. This contact strip 9 is disengaged from a second contact strip 10 secured to the supporting member 8, when the supporting plate 2 is in the position shown in Figs. 1 and 2. However, when the supporting plate 2 is in the position shown in Fig. 3, the contact strips 9 and 10 of the lamp switch arranged in the lamp circuit are in engagement with each other for closing this lamp circuit. One end of the tension spring 11 is attached to the lower surface of the supporting plate 2 at the side opposite to the side carrying the contact strip 9 of the lamp switch; the other end of this tension spring 11 is secured to the frame 1 of the device. When the receiver 6 is lifted from the apparatus 3, the tension spring 11 tends to swing the supporting plate 2 and the apparatus 3 placed thereon about the pivot 4 from the normal position shown in Fig. 1 in counter-clockwise direction for moving the contact strip 9 towards the contact strip 10.

As best shown in Figs. 1 and 4 a tongue 14 is slidably arranged in a cavity of a projecting portion 12 of the frame 1. A compression spring 13 arranged between the inner end wall of said cavity and one end of said tongue 14 tends to urge the latter outwardly for engagement with a recess 15 of the supporting plate 2, when the latter is swung about the pivot 4 from the normal position shown in Fig. 1 into the intermediate position shown in Figs. 2 and 4 by means of the tension spring 11 upon lifting of the receiver 6.

Thus, the supporting plate 2 may be safely held in the horizontal intermediate position of Fig. 2 by means of the spring-loaded tongue or holding means 14 engaged with the recess 15, so that the dial-plate of the telephone apparatus 3 resting on the supporting plate 2 may be operated normally. As the contact strips 9 and 10 are not yet engaged with each other when the supporting plate 2 is in the intermediate position shown in Fig. 2, the lamp carried by the stand 7 is not switched on. If, after completion of the telephone call the receiver 6 is placed again on the apparatus 3, the supporting plate 2 is returned automatically into the normal position shown in Fig. 1 against the action of the spring 11.

If, however, the illumination in the room is rather poor and a switching on of the lamp carried by the stand 7 is desired, after the lifting of the receiver 6 and the subsequent automatic swinging of the supporting plate 2 with the apparatus 3 into the intermediate position shown in Fig. 2 it is merely necessary to depress manually the front end of the supporting plate 2 or the telephone apparatus 3, whereby the plate 2 overcoming the holding action of the spring-loaded tongue or holding means 14 is moved

downwardly beyond this tongue into the inclined position shown in Fig. 3, wherein the front end of the plate 2 rests on a block 16 mounted on the frame 1. Then, the contact strips 9 and 10 are engaged with each other, whereby the lamp circuit is closed. When the supporting plate 2 is in the inclined position shown in Fig. 3, the telephone apparatus is also in a position sufficiently stable for permitting an actuation of the dial plate, as the spring-loaded tongue 14 being in its advanced position extends above a projection at the front end of the plate 2 thus preventing the latter from an undesired oscillation. When after completion of the telephone call the receiver 6 is placed again on the apparatus, the supporting plate 2 is automatically returned into its normal position shown in Fig. 1, whereby the lamp circuit is automatically interrupted.

According to another feature of the invention it is possible to provide, at times, for an automatic switching on of the lamp upon lifting of the receiver without necessitating a manual depressing of the supporting plate 2 from the intermediate horizontal position of Fig. 2 into the inclined position of Fig. 3. In such an event the spring-loaded tongue 14 may be readily rendered ineffective temporarily by means of the following mechanism: As best shown in Fig. 4, a setting means comprising a stem 18' carrying a knob 13 at one of its ends and being connected with a wedge-shaped member 19 at its other end is shiftably mounted on the projecting portion 12 of the frame 1. The wedge-shaped member 19 may be engaged with a recess 20 of the spring-loaded tongue 14 upon depressing the knob 13 against the action of a spring 25 arranged between the knob 13 and the end wall of a sleeve 24. Thus, when the knob 13 is depressed, and the member 19 comes into engagement with the recess 20 of the spring-loaded tongue 14, the latter is displaced in the direction of the arrow 17, whereby the free end of the tongue 14 is brought into an ineffective position out of the path of the supporting plate 2, so that it cannot come into engagement with the recess 15. The wedge-shaped member 19 is guided in the sleeve 24 covering the passage 19' for the member 19 in the projecting portion 12. This passage 19' is provided with a vertical guiding recess 27 for engagement with a pin 26 carried by the member 19. Furthermore, this passage 19' has a notch 28 at its lower end. The spring 25 normally tends to hold the setting means 18, 18', 19 in its upper, inactive position, wherein the member 19 is disengaged from the recess 20 of the spring-loaded tongue 14. This upper position of the setting means is limited by an abutment of the member 19 against the end wall of the sleeve 24. When the knob 13 is depressed, the pin 26 arranged on the member 19 slides in the guiding recess 27 of the passage 19'. As soon as the setting means 18, 18', 19 reaches its lowermost position, the pin 26 may be engaged with the notch 28 by a rotation of the knob 13, whereby the setting means is locked in its lower active position, wherein the member 19 is engaged with the recess 20 of the spring-loaded tongue 14 holding same in its retracted ineffective position. Therefore, as long as the setting means 18, 18', 19 is in the depressed active position, the supporting plate 2 swings automatically from the starting position shown in Fig. 1 into the inclined position shown in Fig. 3 upon a lifting of the receiver 6, whereby the switch 9, 10 is closed and the lamp is switched on.

The device according to the invention is also equipped with means for leaving the lamp switched on although the receiver 6 is placed on the apparatus 3 and the telephone is not used. For this purpose the device is provided with locking means comprising a stem 22 carrying a knob 21 and being shiftably mounted on the projection 12 of the frame 1, next to the setting means 18, 18', 19 (see Fig. 4). The reinforced lower end of the stem 22 may be engaged with a bore 23 of the spring-loaded tongue 14 upon depressing the knob 21 against a spring 30 arranged between the knob 21 and the end wall of a sleeve 29 covering a passage 22' of the projecting portion 12. Furthermore, the stem 22 is provided with a pin 31 laterally projecting therefrom for engagement with a vertical guiding recess 32 arranged in the wall of the passage 22'. The passage 22' has at its lower end a notch 33. The spring 30 normally tends to hold the locking means 21, 22 in its upper inactive position, wherein the stem 22 is disengaged from the bore 23 of the spring-loaded tongue 14. This upper position of the locking means 21, 22 is limited by the end wall of the sleeve 29 cooperating with a stop on the stem 22. When, upon a swinging movement of the supporting plate 2 into the position shown in Fig. 3, the knob 21 is depressed, the pin 31 arranged on the stem 22 slides in the guiding recess 32 of the passage 22'. As soon as the locking means 21, 22 reaches its lowermost position, the pin 31 may be engaged with the notch 33 by a rotation of the knob 21, whereby the locking means is locked in its lower active position, wherein the stem 22 is engaged with the bore 23 of the spring-loaded tongue 14 locking same in its advanced, effective position with its free end projecting above the supporting plate 2. Therefore, as long as the locking means 21, 22 is in the depressed, active position, the supporting plate 2 is held in the inclined position shown in Fig. 3, whereby the switch 9, 10 remains closed and the lamp remains switched on. Although the receiver 6 may be placed on the apparatus 3, the supporting plate 2 cannot return into its normal position shown in Fig. 1, unless the tongue 14 is unlocked by a release of the locking means 21, 22.

As will be readily understood, the locking means 21, 22 may also be used for holding the supporting plate 2 in the horizontal intermediate position shown in Fig. 2 upon engagement of the spring-loaded tongue 14 with the recess 15 of the supporting plate 2.

The arrangement of the springs 11 and 13 assures a swinging of the supporting plate 2 into the position of Fig. 2 or 3 respectively upon a lifting of the receiver 6, so that it becomes unnecessary to place the apparatus 3 on the supporting plate 2 in a predetermined position so as to ascertain a certain position of the center of gravity relative to the axis of the pivot 4. The proper dimensions of the springs 11 and 13 may be readily determined.

I have described a preferred embodiment of my invention but it is understood that this disclosure is for the purpose of illustration and that various omissions or changes in shape, proportion and arrangement of parts, as well as the substitution of equivalent elements for those herein shown and described, may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

For example, if desired, the tension spring 11 could be omitted. In such an event, the swinging of the supporting plate 2 with the apparatus 3 placed thereon, from the position shown in Fig. 1

into the position shown in Fig. 2 or Fig. 3, upon lifting of the receiver 6 would be caused by the displacement of the center of gravity relative to the axis of the pivot 4.

What I claim is:

1. A lamp switch actuator for use in conjunction with a telephone apparatus comprising: a frame, a supporting plate arranged for carrying the telephone apparatus, said supporting plate being movably mounted on said frame and being capable of assuming a first end position, an intermediate position and a second end position, cooperating holding means on said frame and said movable plate, said holding means being normally in an effective position for holding said plate in said intermediate position and being displaceable into an ineffective position for permitting movement of said plate into said second end position, said movable plate being in said first end position when the receiver of the telephone is placed on the apparatus and moving automatically from said first end position into one of said other positions in response to a lifting of said receiver from the apparatus, and a switch comprising a first contact element secured to said movable plate and a second contact element secured to said frame, said contact elements being disengaged from each other when said movable plate is in its first end position and in its intermediate position, and said contact elements being engaged with each other when said movable plate is in its second end position.

2. In a lamp switch actuator as claimed in claim 1, resilient means arranged between said movable plate and said frame, said resilient means urging said movable plate from said first end position into one of said other positions upon lifting of the receiver from the apparatus.

3. In a lamp switch actuator as claimed in claim 1, said cooperating holding means including a movable holding element and a spring cooperating with the latter for normally urging same into the effective position capable of holding said movable plate in said intermediate position, and said spring-loaded holding element being capable of yielding to a manual action on said movable plate for displacing same from said intermediate position into said second end position.

4. In a lamp switch actuator as claimed in claim 1, said cooperating holding means including a movable holding element and a spring cooperating with the latter for normally urging same into the effective position capable of holding said movable plate in said intermediate position, said spring-loaded holding element being capable of yielding to a manual action on said movable plate for displacing same from said intermediate position into said second end position, and adjustable setting means associated with said holding element for setting same against the action of said spring into the ineffective position for permitting an unrestricted movement of said movable plate between said first and second end positions.

5. In a lamp switch actuator as claimed in claim 1, said cooperating holding means including a movable holding element and a spring cooperating with the latter for normally urging same into the effective position capable of holding said movable plate in said intermediate position, said spring-loaded holding element being capable of yielding to a manual action on said movable plate for displacing same from said intermediate position into said second end position, adjustable setting means associated with said holding ele-

ment for setting same against the action of said spring into the ineffective position for permitting an unrestricted movement of said movable plate between said first and second end positions, and adjustable locking means associated with said holding means for locking same in its effective position.

6. A lamp switch actuator for use in conjunction with a telephone apparatus comprising: a frame, a supporting plate arranged for carrying the telephone apparatus, said supporting plate being swingably mounted on said frame and being capable of assuming a first end position, an intermediate position and a second end position, said movable plate having a recess, a holding element movably mounted on said frame, a spring cooperating with said holding element for normally urging same into an effective position capable of engagement with said recess of the movable plate so as to hold the latter in said intermediate position, said spring-loaded holding element being capable of yielding to a manual action on said movable plate for displacing same from said intermediate position into said second end position, said movable plate being in said first end position when the receiver of the telephone is placed on the apparatus and swinging automatically from said first end position into one of said other positions in response to a lifting of said receiver from the apparatus, and a switch comprising a first contact element secured to said movable plate and the second contact element secured to said frame, said contact elements being disengaged from each other when said movable plate is in its first end position and in its intermediate position, and said contact elements being engaged with each other when said movable plate is in its second end position.

7. In a lamp switch actuator as claimed in claim 6, resilient means arranged between said movable plate and said frame, said resilient means urging said movable plate from said first end position into one of said other positions upon lifting of the receiver from the apparatus.

8. In a lamp switch actuator as claimed in claim 6, adjustable setting means associated with said holding element for setting same against the action of said spring into an ineffective position out of the path of said movable plate for permitting an unrestricted movement of said movable plate between said first and second end positions.

9. In a lamp switch actuator as claimed in claim 6, adjustable setting means associated with said holding element for setting same against the action of said spring into an ineffective position out of the path of said movable plate for permitting an unrestricted movement of said movable plate between said first and second end positions, and adjustable locking means associated with said holding means for locking same in its effective position.

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The following references are of record in the file of this patent:

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