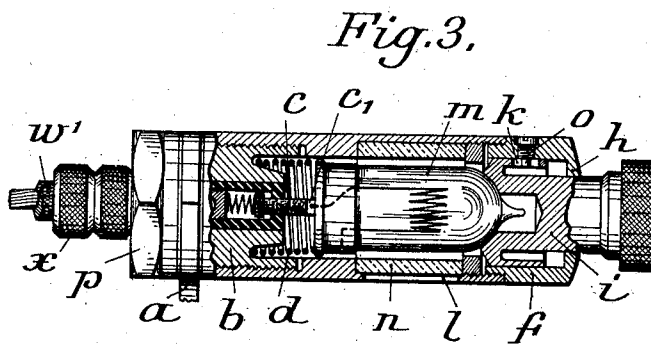
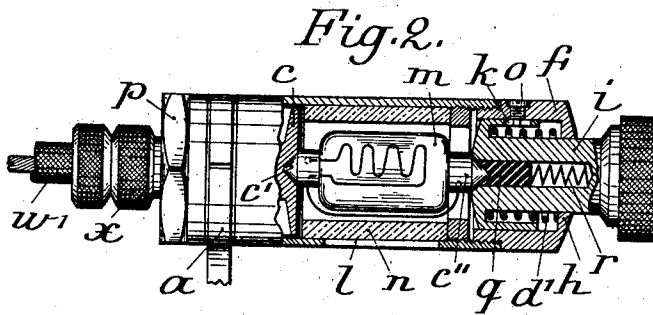
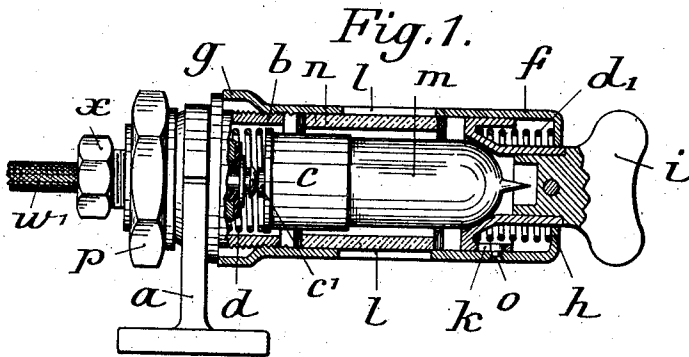


F. KRATZ,
ELECTRIC LAMP FIXTURE.
APPLICATION FILED OCT. 23, 1913.

1,180,658.

Patented Apr. 25, 1916.

2 SHEETS—SHEET 1.



WITNESSES

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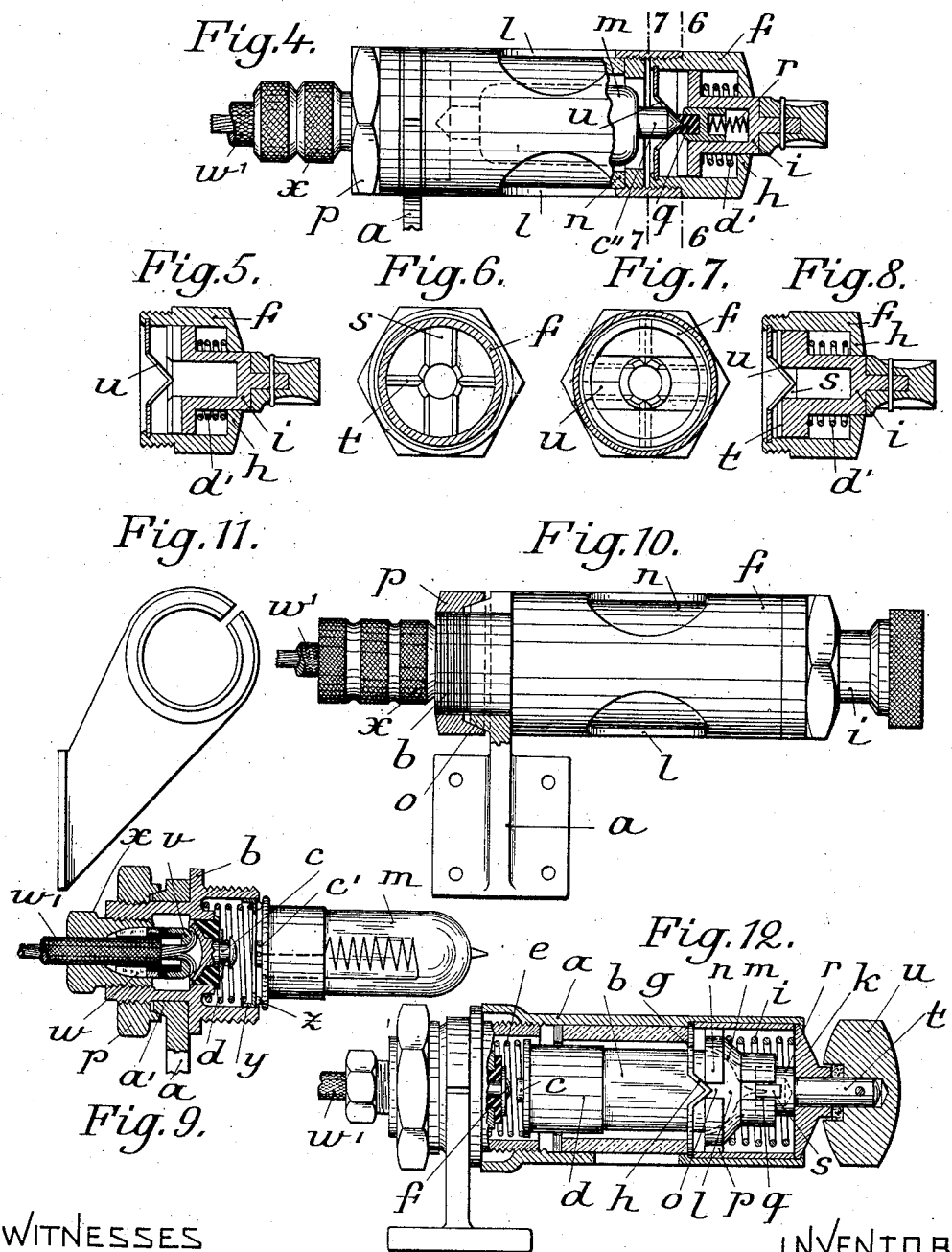
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2 SHEETS—SHEET 2.



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ELECTRIC-LAMP FIXTURE.

1,180,658.

Specification of Letters Patent.

Patented Apr. 25, 1916.

Application filed October 23, 1913. Serial No. 796,751.

To all whom it may concern:

Be it known that I, FRANZ KRATZ, a subject of the Emperor of Germany, residing at Stuttgart, Schlossstrasse 59^a, Germany, have invented certain new and useful Improvements in Electric-Lamp Fixtures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to electric lamp fixtures particularly applicable for incandescent lighting on the dash boards and similar places of automobiles, and in other installations such as boats. In these cases, a compact and simple fixture is required, and the lamp should be protected against breakage. Furthermore, the electrical connection to the lamp should be reliable so as to withstand continued vibration, and a switch which should be simple and appropriate is sometimes necessary. In all cases, the fixture should be capable of easy assembly and ready disassembly.

The accompanying drawings illustrate the preferred form and several modifications within my invention, all being designed to meet the conditions hereinbefore mentioned. In the drawings Figure 1 represents one form of a lamp fixture, principally in longitudinal section; Fig. 2 represents another form of lamp fixture, principally in longitudinal section; Fig. 3 represents a lamp fixture somewhat similar to Fig. 1, but having a central spring contact; Fig. 4 represents another form of lamp fixture, somewhat similar to Fig. 2, but having a modified form of switch; Fig. 5 represents a view principally showing the switch of Fig. 4 in its open position; Figs. 6 and 7 are sections on lines 6—6 and 7—7, respectively, of Fig. 4; Fig. 8 represents a view principally showing the switch of Fig. 4 in its closed position; Fig. 9 represents a longitudinal section of a threaded plug with a cable connection for a lamp fixture; Fig. 10 represents in elevation a lamp fixture with its supporting bracket; and Fig. 11 represents a side view of the supporting bracket. Fig. 12 shows a modification of the switch.

All the embodiments shown herein have a tubular shaped incandescent lamp *m* inclosed in a glass cylinder *n*. This cylinder is suitably held in an outer protecting frame *f* of metal which has a plurality of outlets

l for the light of a lamp. The cylinder may be of colored glass and in some cases it may be preferably of different colors at the different outlets.

In Fig. 1 the frame *f* is screwed fast on a metal plug *b* which serves both for fastening to the bracket support *a* and for connecting to an electric supply cable *w'*, as shown in Fig. 9. The bracket support *a* has a slotted eye and is provided with a conical annular flange *a'*. A reduced extension of the plug *b* passes through this eye and is secured in place by a nut *p* having a laterally extending flange bearing on the conical surface of the flange *a'*. The plug *b* is screw threaded internally to engage the metal plug *x* which has an interior conical cavity adapted to force the conical shaped slotted sleeve *w* of metal into intimate contact with the sheath forming one conductor of the concentric conductor cable *w'*. The sheath of the cable terminates at the insulation extending within the sleeve *w*, while the stranded core of the cable passes through a member *v* which is insulated from the sleeve *w* as shown. The wire strands are spread out and are forced into intimate contact with the insulated contact *c* of metal when the plug *x* is screwed into place, while at the same time the slotted cylinder *w* is clamped around the conducting sheath of the cable. A spring *d* presses against an internal flange in the plug *b* and against the socket of the lamp *m*, thereby electrically connecting the sheath of the cable *w'* to that terminal of the lamp filament which is connected to the lamp socket. Thus since the other terminal of the lamp filament is electrically connected to the insulated metal contact *c'*, the filament becomes connected to the supply circuit when the co-operative contacts *c* and *c'* are brought into engagement. The electrical connection between the socket of a lamp and the plug *b* is improved by use of a metal ring *y* having three projections *z* in contact with the socket, the ring being soldered to the spring *d*.

The outer end of the lamp rests against the spring pressed abutment *i* which in Fig. 1 passes through the flanged end *h* of the frame and terminates in a switch handle. The abutment is recessed as shown in order to accommodate the glass tip of the lamp. The spring *d'* is stronger than the opposing spring *d*, so that when the switch handle *i* is allowed to move longitudinally, the co-

operative contacts *c* and *c'* are pressed into intimate engagement, to establish the electrical circuit through the lamp filament. When it is desired to interrupt this circuit, the switch handle is moved back against the pressure of the spring *d'*, and the spring *d* then separates the cooperative contacts *c* and *c'*. A pin *o* projecting inwardly from the frame *f* into the inclined slot *k* causes a turning movement of the switch handle *i* to effect a longitudinal shifting movement of the abutment and lamp. The lamp is supported in the frame, as shown, and is subjected to longitudinal pressure between the springs *d* and *d'*. The enlarged end *g* of the frame has a hexagonal outline so as to be readily turned for dismantling the fixture. In Fig. 2, the terminals of the filament are electrically connected to the individual insulated contacts at the two ends of the lamp. The contact *c'* is permanently seated in the insulated contact *c* of the frame, the latter contact being electrically connected to the core of the cable *w'*, as will be understood from the previous description of Figs. 1 and 9. The insulated contact *c''* at the other end of the lamp is permanently seated in the insulating block *q*. This block is mounted to slide in the central bore of the switch handle *i*, and is spring pressed therefrom by the spring *r*. In Fig. 2, the switch handle *i* occupies its inner or closed position, and the conducting part of the switch handle is in engagement with the contact *c''*. Thus the circuit is completed through the lamp filament. To interrupt this circuit the switch handle *i* is turned against the pressure of the spring *d'* until the conducting portion of the switch handle is moved longitudinally out of engagement with the contact *c''*. The insulating block *q* will still be held against the contact, and will therefore support that end of the lamp.

The construction shown in Fig. 3 is similar to that of Fig. 1, excepting that there is provided a central carbon contact *c* slidably mounted in an insulating bushing and spring pressed from an abutment in electrical connection with the core of cable *w'*. This construction does not require the spring *d'* of Fig. 1, the spring *d* moving the lamp longitudinally when the switch handle *i* is turned from its closed position as shown to the position at which the insulated contact *c'* of the lamp is out of engagement with the contact *c*.

The lamp fixture of Fig. 4 differs from Fig. 2 principally in the construction of the switch. As shown in Figs. 4 to 8, the switch consists essentially of an abutment *i* of metal spring pressed from the end of the frame by the spring *d'*. The insulating block *q* is arranged to slide in a central bore of the switch *i* in response to the pressure of spring *r*. The switch *i* is provided with two inter-

secting surface grooves, a wide groove *s* and a narrow groove *t*. An intermediate wall having a rib *u* of triangular section is permanently mounted opposite these grooves, and it has a circular opening at its center for the projection therethrough of the lamp contact *c''*. When the rib *u* engages the narrow groove *t* the switch *i* is forced back to its open position and the insulating block *q* holds the lamp fast, as shown in the drawing; but when the switch handle is turned to its closed position, the wide groove *s* snaps over the rib *u* and the switch *i* is moved longitudinally inward by the spring *d'* until the conducting portion of the switch engages the contact *c''* and thereby completes the electric circuit through the lamp filament.

Fig. 10 shows the outward appearance of a complete lamp fixture of the form similar to that shown in Figs. 2, 3 and 4. When a switch is not required, the construction will be simplified but without effecting the essence of the other features of this invention.

In Fig. 12 a modification of the switch is shown by which the necessity is avoided of longitudinal movement. A shaft *z* carrying a handle *u* is provided with projections *s* engaging grooves *q* in a cup *l*. Cup *l* is provided with flanges *n* having small notches *o* and large notches *p* cooperating with stationary projections *h*. When the handle is turned alternately the small notches snap onto the extreme points of the projections and the large notches onto the entire projections, thereby shifting the cup longitudinally. By this means groove *q* is likewise shifted longitudinally of projection *s*. Thus the shaft need only perform rotary movements and can be secured against longitudinal movement. The effect of this modification is to avoid the introduction of water which may be splashed onto the switch and which is easily drawn into the interior by longitudinal movements of the switch handle, the same not being the case where the handle is only rotated.

Having thus described my invention, what I claim is:—

1. The combination with a multiple conductor cable, of an incandescent lamp, a lamp inclosing frame providing a support for one end of the lamp, a cable connector fastening the cable to the frame, and a switch providing a support for the other end of the lamp; substantially as described.

2. The combination with a multiple conductor cable, of an incandescent lamp, a lamp inclosing frame providing a support for one end of the lamp, a cable connector fastening the cable to the frame, and a longitudinally-movable lamp switch providing a support for the other end of the lamp; substantially as described.

3. The combination with a concentric-conductor cable, of an electric lamp fixture comprising a bracket support, an incandescent lamp, a lamp-inclosing frame having a conducting portion electrically connected to one terminal of the lamp filament and also having a contact insulated from said conducting portion and electrically connected to the other terminal of the lamp filament, and a connecting device for forcing one conductor of the cable into engagement with the conducting portion of the frame and for forcing the other conductor of the cable into engagement with the insulated contact, the frame being held rigidly to the bracket support by the connecting device; substantially as described.

4. In a lamp fixture for electric circuits, an incandescent lamp, a lamp inclosing frame providing a support for one end of the lamp, and a longitudinally-movable lamp switch providing a support for the other end of the lamp; substantially as described.

5. In a lamp fixture for electric circuits, an incandescent lamp having an insulated terminal and another terminal electrically connected to one terminal of the supply circuit, a lamp-inclosing frame, and a switch comprising a movable conducting portion spring pressed toward said insulated terminal and electrically connected to the other terminal of the supply circuit, an insulating member carried by the movable conducting portion and spring pressed therefrom against said insulated contact, and means for moving the movable portion in the frame into engagement with the insulated contact to thereby complete the circuit to the lamp; substantially as described.

6. In a lamp fixture for electric circuits, an incandescent lamp having an insulated terminal and another terminal electrically connected to one terminal of the supply circuit, a lamp-inclosing frame, and a switch comprising a movable conducting portion spring pressed toward said insulated contact and electrically connected to the other terminal of the supply circuit, an insulating member carried by the movable conducting portion and spring pressed therefrom against said insulated contact, and means for bringing the movable conducting portion in the frame into engagement with the insulated contact to thereby complete the circuit to the lamp; substantially as described.

7. In a lamp fixture for electric circuits, an incandescent lamp having an insulated terminal and another terminal electrically connected to one terminal of the supply circuit, a lamp-inclosing frame, and a switch comprising a conducting portion spring pressed toward said insulated terminal and electrically connected to the other terminal

of the supply circuit, an insulated member spring pressed from the movable conducting portion and supporting one end of the lamp, and means for moving the movable conducting portion in the frame into engagement with the insulated contact to thereby complete the circuit to the lamp; substantially as described.

8. In a lamp fixture for electric circuits, an incandescent lamp having an insulated terminal, a lamp inclosing frame, a rigid abutment in the frame, and a switch having a longitudinally movable portion with intersecting grooves adapted to coact with said abutment, said grooves being designed to permit the conducting portion of the switch to engage the insulated contact at one position and to be insulated therefrom at another position; substantially as described.

9. In a lamp fixture for electric circuits, an incandescent lamp having an insulated terminal, a lamp-inclosing frame, a rigid abutment in the frame having an opening exposing the insulated terminal and also having an outstanding rib, and a switch having a spring pressed movable conducting portion with intersecting surface grooves adapted to engage said rib and also having a spring pressed insulating member, said grooves being designed to permit the conducting portion of the switch to engage the insulated contact at one position and to be insulated therefrom by the insulating member at another position; substantially as described.

10. In a lamp fixture for electric circuits, an incandescent lamp having an insulated terminal, a lamp-inclosing frame, a rigid abutment in the frame having an opening exposing said insulated terminal and also having a diametrically-disposed rib, and a switch designed to move longitudinally in the frame and comprising a spring pressed movable conducting portion with a narrow groove and a broad deep groove intersecting the narrow groove, an insulating member carried by the movable portion and spring pressed therefrom, and means for turning said movable portion to bring the deep groove into engagement with the rib to thereby engage the movable portion and the insulated terminal and also to bring the narrow groove into engagement with the rib to thereby disengage the movable portion and the insulated terminal; substantially as described.

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

FRANZ KRATZ.

Witnesses:

PAUL WOLFAST,
HERMANN SCHNEIDER.