J. E. PETTIBONE.

EMERGENCY ELECTRIC LAMP SOCKET.

APPLICATION FILED JUNE 15, 1917.

1,285,361.

Patented Nov. 19, 1918.

2 SHEETS—SHEET 1.

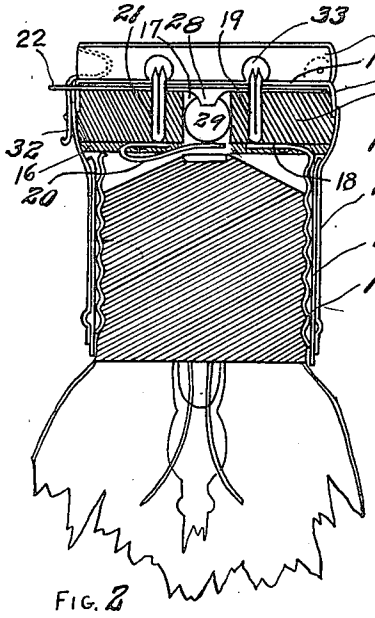


FIG. 2

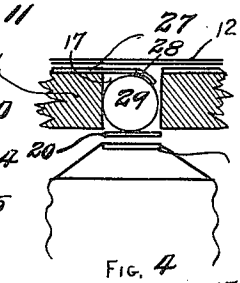


FIG. 4

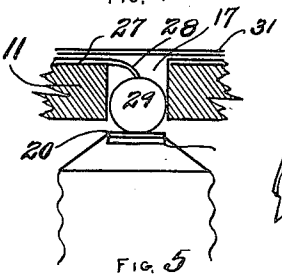


FIG. 5

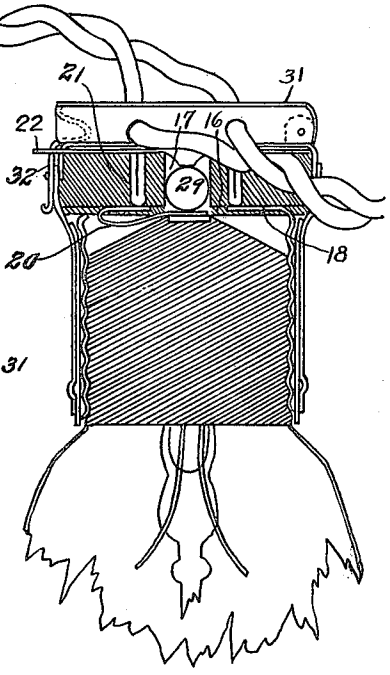


FIG. 3

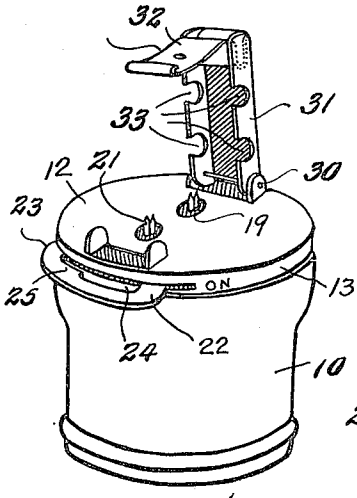


FIG. 1

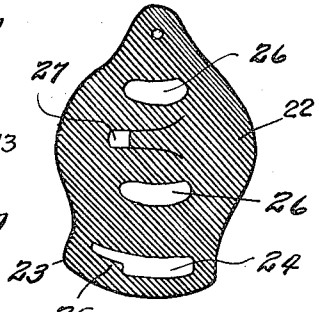


FIG. 6

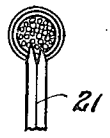


FIG. 7



FIG. 8

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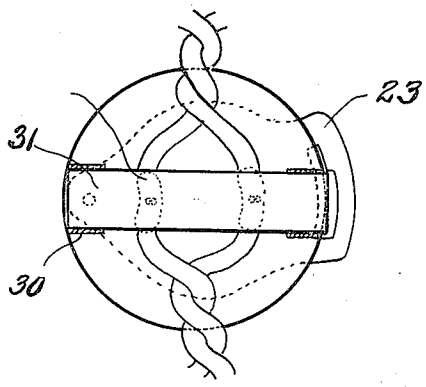


FIG. 9

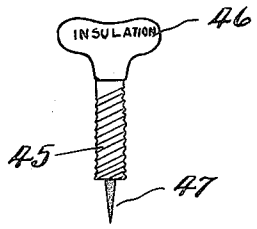


FIG. 11

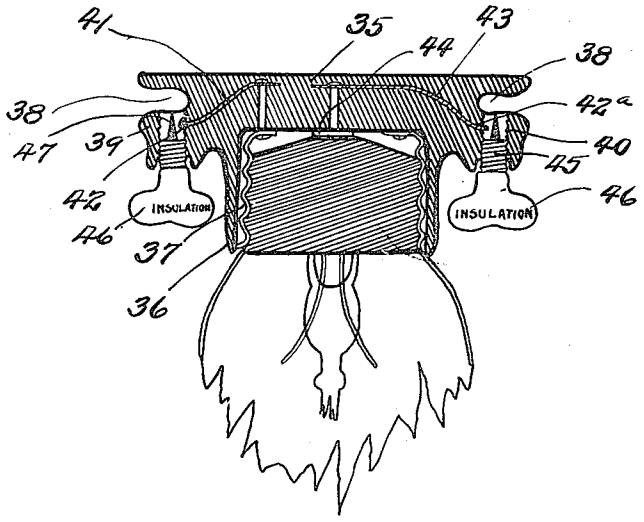


FIG. 10

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EMERGENCY ELECTRIC-LAMP SOCKET.

1,285,361. Specification of Letters Patent. Patented Nov. 19, 1918.

Application filed June 15, 1917. Serial No. 174,879.

To all whom it may concern:

Be it known that I, JAMES E. PETTIBONE, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Emergency Electric-Lamp Sockets, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates generally to electric fixtures and more specifically to a socket which, by virtue of its construction, is adapted to be easily and quickly applied to any portion of an exposed electric cord particularly those used as connections or extensions from a wall box or overhead fixture to an electrically operated appliance, such as a reading lamp, fan, or the like.

It will be understood that practically all exposed electric current carrying wires, or those used as connections to drop lights, fans, and like appliances, are covered with insulation, either rubber, composition, fabric, or a combination therof, and it is the principal object of my invention to provide a comparatively simple and inexpensive socket which is adapted to receive an electric lamp or an ordinary plug connected to an extension cord, and which socket is so constructed as to be applied to the strands of the current carrying wires without removing the insulation therefrom and without involving the use of insulating tape and the like which is usually employed where a branch connection is made.

Further objects of my invention are to provide an emergency socket which can be readily applied to or removed from current carrying wires, said socket being provided with a switch or contact closing member which when actuated locks the socket to the wires and which when unlocked opens the switch or contact, thereby minimizing the possibility of short circuit through the socket, and further, to provide a socket which will not appreciably affect or injure the insulation around the wires to which said socket is applied.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a socket of my improved construction, with the wire engaging keeper in open position;

Fig. 2 is a vertical section taken through the center of the socket with the switch or contact therein, open;

Fig. 3 is a section similar to Fig. 2 and showing the switch or contact closed;

Fig. 4 is a detail section through the central portion of the top of the socket and showing the switch or contact open;

Fig. 5 is a detail section similar to Fig. 4, and showing the switch or contact closed;

Fig. 6 is a plan view of a plate utilized as a switch or contact closing member and as a locking member for the cord engaging keeper;

Fig. 7 is a sectional view of a current carrying cord made up of a series of strands of wire and showing a pair of the contact pins of my improved device in contact with said wires;

Fig. 8 is a sectional view of a cord or line comprising a single wire covered with insulation and showing the pins in contact with said wire;

Fig. 9 is a plan view of the socket;

Fig. 10 is a sectional view of a modified form of the socket;

Fig. 11 is a detail view of a contact screw utilized in the modified form.

In the drawings, particularly Figs. 1 to 9, inclusive, which illustrate a practical embodiment of my invention, it will be seen that the body of my improved socket is made up of a cylindrical member or shell 10, preferably constructed of thin sheet metal and positioned in the upper end thereof is a disk 11 of fiber, wood or other suitable insulating material.

Positioned immediately above this disk of insulation is a metal cap-piece 12, the same being spaced a slight distance away from the top surface of said disk 11 and the edge of said cap-piece is provided with a depending flange 13 which is fixed in any suitable manner to the upper end of shell 10.

Positioned within shell 10 below disk 11 is a wall or lining 14 of suitable insulating ma-

terial and positioned inside said wall or lining is a metal shell 15, the wall of which is provided with a head adapted to receive the threaded portion of an ordinary electric lamp or a plug which is secured to the end of an ordinary extension cord. The upper end of this threaded shell 15 is secured in any suitable maner to the disk 11.

Formed in the underside of disk 11 is a diametrically disposed groove or channel 16 and formed through the center of said disk is an aperture 17. A tongue 18 is formed integral with the upper end of shell 15, said tongue extending into the groove or channel 16 and terminating a short distance away from aperture 17.

Fixed in any suitable manner to the inner end of this tongue is a plurality of comparatively small pins 19, the same extending upward through disk 11 and through a suitable aperture in cap 12, the upper or exposed ends of said pins being pointed.

Positioned within the groove or channel 16 on the opposite side of the aperture 17 from tongue 18 is a resilient contact member 20, one end of which is fixed in any suitable manner to said disk 11 and the free end of this contact member is positioned directly beneath the aperture 17. Secured to this contact member and projecting upwardly through disk 11 and through an aperture in cap 12 is a plurality of contact pins 21, the same being provided with pointed upper ends. One end of a metal plate 22 is pivotally connected to disk 11 at a point near one edge thereof and in alinement with the pairs of pins 19 and 21, the opposite end of said plate being provided with an ear 23 which projects through a horizontally disposed slot formed in the depending flange 13 of cap 12. Formed through this ear is an arcuate slot 24, the same being concentric with the pivot point of said plate and projecting into said slot at one end thereof is a shoulder 25.

Formed in this plate 2 on opposite sides of the center thereof are slots 26 for the accommodation of the contact pins 19 and 21. Struck from the central portion of the plate 22 or at a point between the slots 26 is a tongue 27, the free end of which is bent downwardly as designated by 28, and this downwardly bent end projects into the upper portion of aperture 17 and is adapted to bear on top of a small ball 29 of glass, porcelain or suitable insulating material. This ball is loosely mounted in aperture 17 and normally rests on top of the free end of contact member 20.

Hinged to a pair of ears 30 which are pressed upwardly from one side of the cap 12 and at a point above the pivot point of plate 22 is one end of a keeper 31, the same being preferably constructed of sheet metal and substantially of inverted U-shape in cross section, the free end of said keeper being provided with a depending tongue 32 which is adapted to pass through slot 24 in plate 22 and fit snugly against the upper portion of shell 10 when in closed position.

Formed in the vertically disposed legs or side walls of this keeper are substantially inverted U-shaped notches 33 which are suitably spaced apart so that when the keeper is closed, said notches occupy positions in alinement with the respective sets of contact pins 19 and 21.

To apply my improved socket, the strands of an ordinary current carrying cord are separated so that the separated portions may be fitted into the notches 33 in keeper 31, it being understood that said keeper is in open position as illustrated in Fig. 1. Before the keeper can be moved downward into closed position, it is necessary to shift plate 12 so as to bring the wide portion of slot 24 into vertical alinement with tongue 32 and with the plate in this position, the downwardly bent end 28 of tongue 27 occupies a position at one side of aperture 17, as illustrated in Fig. 4, and when so positioned, the ball 29 is positioned at its upward limit of movement, being so held by the free end of contact member 20, and which latter tends to normally move upward.

Keeper 31 is now swung downward onto cap plate 12 and as such movement takes place, tongue 32 will pass through the withdrawn portion of slot 24 and bear snugly against the upper portion of shell 10. As the keeper is thus moved downward, the pointed upper ends of the contact pins 19 and 21 will pass through or puncture the insulation on the strands of the current carrying wires, and said pointed ends will make contact with said current carrying wires as illustrated in Figs. 7 and 8.

To lock the keeper in its closed position, plate 22 is swung upon its pivot so as to bring the shoulder 25 against the outer face of tongue 32 and with the parts so positioned, the keeper is locked against upward swinging movement.

As plate 22 is thus swung into position to lock the keeper 31, the downwardly bent end of tongue 27 will ride onto the top of ball 29, with the result that the free end of contact member 20 will be moved downwardly into contact with the central contact on the plug which is screwed into the pocket or into a position where it will readily engage the center contact of a plug when the latter is screwed into the socket. (See Figs. 3 and 5.)

Necessarily a reversal of the operations just described will permit the free end of contact member 20 to move upward or to a position out of contact with the center contact on the inserted plug, and likewise permitting the keeper 31 to be swung up-

ward, thereby withdrawing the current carrying wires from the points of contact pins 19 and 21.

By virtue of the fact that the pins 19 and 21 are very small in diameter and their upper ends are pointed, the openings or punctures made in the insulation of the current carrying wires will be extremely small, and as the insulation is usually made of rubber, composition, or fabric, said punctures will readily close after the withdrawal of the points of the pins, thus leaving the insulation practically uninjured.

In my improved socket it is impossible to produce an arc between the ends of the contact pins 19 and 21 and the current carrying wires, and which arc would burn and dull the pointed ends of the pins, for, when the plate 22 is moved into position to release the keeper 31, contact between member 20 and the contact point carried by the inserted plug is broken, and further, keeper 31 cannot be moved downward to bring the current carrying wires into contact with the pins 19 and 21 until plate 22 has been moved so as to permit tongue 32 of keeper 31 to pass through the wide portion of slot 24 and at this time contact 20 is in its elevated or open position. Thus the plate 22 controls the contact between member 20 and the contact carried by the inserted plug and likewise said plate is effective in locking the keeper 31 in its closed position.

The form of socket illustrated in Fig. 10 and which is particularly intended for use upon comparatively heavy current carrying wires, 35 designates a plate or block of suitable insulating material with which is formed integral an annular flange 36. Positioned within this flange is a threaded shell 37 of metal which is adapted to receive the threaded portion of an ordinary incandescent lamp or a plug on the end of an extension cord.

Formed in opposite sides of the block or plate 36 are wire or cable receiving notches or recesses 38, and formed through ears 39 immediately below these notches or recesses are threaded apertures 40. Embedded in the body of the plate 35 is a conductor 41 which leads from the shell 37 to a contact point 42, the latter being located in one of the threaded apertures 40.

Leading from a contact member 42^a within the opposite threaded aperture 40 through the body of the block 35 is a conductor 43, the same being connected with a contact plate 44 which is located in the bottom of the opening or recess within annular flange 36.

Screws 45 are provided on their outer ends with ears or wings 46 of insulating material, said screws being adapted to be seated in the threaded apertures 40, and carried by the ends of said screws are pointed pins 47 which are adapted to engage the wires or cables positioned in recesses 38.

When this form of socket is utilized, the current carrying wires or cables are placed in the notches 38 after which screws 45 are manipulated so as to cause the points 47 to pass through the insulation on the current carrying wires and make contact with the latter and with the parts so positioned, said screws make contact with the points 42 and 42^a with the result that current is carried through the conductors 41 and 43 to the contact members of the lamp or plug which is screw-seated in the socket.

A socket of my improved construction is comparatively simple, can be easily and quickly applied to or removed from current carrying wires, eliminates the necessity of stripping the insulation from current carrying wires to which a branch line is connected, and likewise eliminates the wrapping of the joints between the branch line and main line wires, and provides an effective efficient device wherever it is desirable or necessary to make a temporary branch connection with the exposed current carrying wires ordinarily used in household lighting systems.

It will be readily understood that minor changes in the size, form and construction of the various parts of my improved socket can be made and substituted for those herein shown and described, without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim:

1. A socket of the class described comprising a body adapted to receive a plug, spaced contact members carried by said body, the projecting ends of which contacts are pointed, a keeper adapted to engage the strands of a current carrying line and retain said strands in contact with the pointed ends of the contact members, means for locking the keeper in closed position, and contact making means which is normally open or in inactive position and adapted to be shifted to active position by the locking means when the latter is moved to locking position.

2. A socket of the class described comprising a body adapted to receive a plug, spaced contact members carried by said body, the projecting ends of which contacts are pointed, a keeper adapted to engage the strands of a current carrying line and retain said strands in contact with the pointed ends of the contact members, means for locking said keeper in closed position, and a contact member adapted to be actuated by said locking means.

3. In a socket of the class described, a body adapted to receive a plug, spaced contact pins carried by said body, a contact

member connected to one of said pins, a keeper adapted to engage the strands of a current carrying line and maintain the same in engagement with the points of the contact pins, means for locking the keeper in closed position, and means adapted to be actuated by said locking means for moving the contact member into position to make contact with a part of the plug inserted in the socket.

4. In a socket of the class described, a body adapted to receive a plug, pairs of contact pins arranged in said body, portions of which pins project beyond the body and are pointed, a keeper hinged to said body and adapted to receive the strands of a current carrying line and hold said strands in contact with the pointed ends of the contact pins, means connected to said contact pins for making contact with parts of the plug which is inserted in the socket, and means adapted to lock the keeper in closed position and to simultaneously actuate a part of the contact making means.

5. In a lamp socket of the class described, a body adapted to receive a plug, pairs of spaced contact pins carried by said body, portions of which pins project beyond the body and are pointed, a keeper adapted to engage the strands of a current carrying line and retain the same in engagement with the pointed ends of the contact pins, a resilient contact member connected to one of said pins, a member adapted to engage said resilient contact member and force the same into position to be engaged by a portion of the plug inserted in the socket, and a member for locking the keeper in closed position, a portion of which member is adapted to engage the resilient contact actuating member.

In testimony whereof I hereunto affix my signature this 13th day of June, 1917.

JAMES E. PETTIBONE.