May 29, 1928. 1,671,550

E. H. SEMMENS

SAFETY LATCH SPLIT ELECTRICAL PLUG

Filed April 30, 1927

Fig. 1.

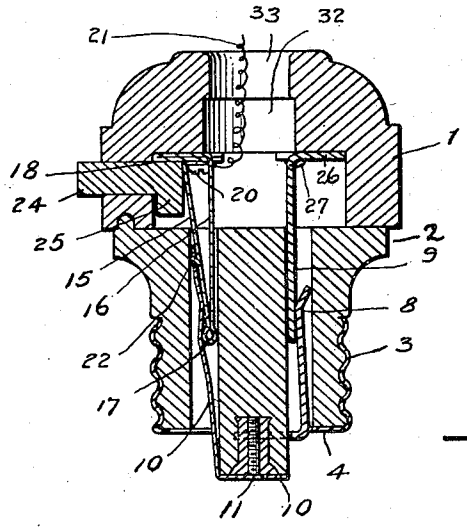


Fig. 5.

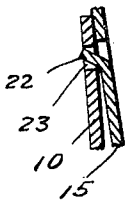


Fig. 2.

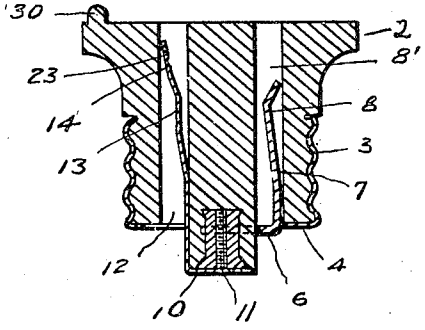


Fig. 4.

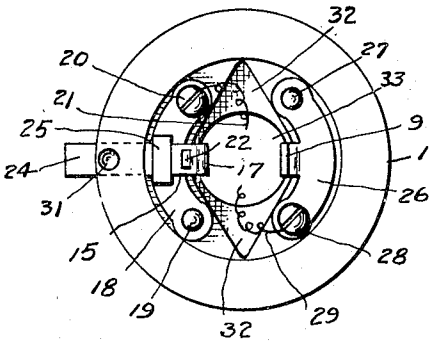
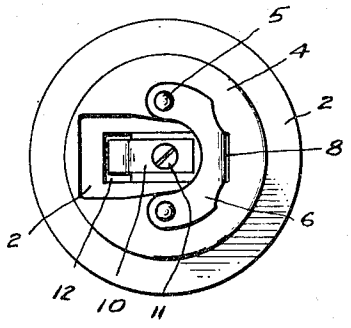


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SAFETY-LATCH SPLIT ELECTRICAL PLUG.

Application filed April 30, 1927. Serial No. 188,001.

This invention relates to plugs for electric connections, and particularly to split plugs, with one end attached to the electrical wires, and the other provided with a contact point for an ordinary electric light socket, the two parts of the split plug being held together by metal tongues for conveying the current, and readily separated.

The objects of the invention are to provide a two-part or split plug for electrical connections, with tongues arranged to transfer the electric current when in contact by resilient pressure, but held securely against any accidental disconnection.

In the use of split plugs, it is important that the two parts be easily put together to make proper electrical contacts and connections, and also important that the two parts be securely held in connected positions when in use, particularly when the plug is inserted in some elevated position and plug is connected with some heavy cord connection for vacuum cleaners, etc., when considerable force may be applied by the user, which tends to pull the two parts of the plug apart, against the wishes of the operator, and it is the object of this invention to provide a plug which will not only be securely held together against such pulling force, but may also be easily disconnected by the operator, when desired.

A further object of the invention is to provide a plurality of contacting tongues for transmitting the current between the parts of the plug, and also a locking lug on one tongue, and a corresponding opening in the adjoining tongue into which the lug expands when adjacent, and there remains, holding the two parts together until the operator desires to disconnect them, and to provide a push button for compressing the tongue with the lug away from the tongue and opening, whereby the parts become disengaged, and the sections of the plug readily separated.

With these and other objects, as may be further shown herein, I have illustrated my invention by the accompanying drawings, of which—

Figure 1 is a sectional view of the plug and parts assembled for use.

Figure 2 is a sectional view of the lower half of the plug and its parts.

Figure 3 is a bottom plan view of Figure 2.

Figure 4 is a bottom plan view of the upper half of the plug shown in Figure 1.

Figure 5 is a detail of the locking plug and opening.

Like numerals on the different figures represent like parts.

Numeral 1 is the upper half, and 2 is the lower half of the plug, the lower half or section provided with metal collar 3, threaded for fitting into an ordinary light or electric current socket commonly provided in the walls of buildings or light fixtures. The same metal forming the outer wall of the thread 3 is bent over a part of the lower face of the plug as 4, to which is attached, by rivets 5, the base 6 of a contact tongue 7 which is extended up into a well 8′ in the plug, and is preferably provided with an angular bend 8 for assuring certain and resilient contact with a respective tongue 9 when projected against the same from the upper part of the plug when assembled. It will be understood that the holding body of the parts 1 and 2 are of insulating material, and the tongues and electrical connections preferably of brass, or other suitable conducting material.

A second contacting tongue 10 is affixed by a screw 11 to the lower end of part 2 and bent up through well 12, preferably adjoining the inner wall of 12, for approximately a third of its length, then bent outward and inward and again outward to provide a contacting elbow 13 and a sloping face 14 for the guiding of its corresponding resilient tongue 15 affixed to part 1, when the parts are pressed together.

The tongue 15 is preferably of resilient and thin metal which is a continuation of a straight section 16, and bent at the lower end of the two parts to form an eye 17 for sliding between the elbow 13 and inner wall of the well 12 to press the tongue 10 outward and make and continue a certain contact between the tongue 10, the eye 17 and elements 13 and 16, for transmission of the current between the same when the parts 1 and 2 are adjusted together. The metal of 16 being thin, a reinforcing plate is provided for its connection to part 1 by folding the end thereof down and under the outward bend and top portion as at 18, through which a holding rivet 19 extends into the section 1 at one end, and a binding screw 20 is used at the other end of the plate 18 for holding the plate and tongue in proper position, together with a connecting wire 21 for the current. The top of the free end 15 of the

tongue extends to near the plate 18, and moves freely across its face when the parts 15 and 16 are depressed between the elbow 13 and the inner wall of well 12. A latch lug 22 is pressed outward from the section 15, and a corresponding hole is cut through the tongue 10, opposite the postion of the lug 22 when the plug is assembled, and, as the tongue 15 is depressed into contact with the tongue 10, the top of 15 is pressed inwardly by the lug 22 until the tip thereof has reached a position opposite the hole 23, whereupon the tongue 15 expands outwardly until the lug latch is securely seated in the opening 23, and the parts 1 and 2 are thereby securely held from disengagement, until the tongue 15 is compressed. This is accomplished by a button plug 24, slidably mounted on the side of the part 1, with a holding head 25 resting against the end of 15, and normally, the button is held in an extended position thereby, but when the operator desires to release the parts of the plug, the button is compressed, and the lug latch 22 is thereby pressed out of the opening 23, and the parts may be then readily separated.

The fixed tongue 9 terminates in a top plate 26 which is attached to the part 1 by a rivet 27 through one end and a binding screw 28 through the other end, the screw 28 also holding wire 29 for completing the circuit.

In order to facilitate the ready adjustment of the parts 1 and 2, and particularly in the dark, a guide lug 30 is extended from the rim of 2 and fits into a socket 31 in the rim of part 1, and in order to provide sufficient space for the ordinary insulation on the wires abutting the screws 20 and 28, a suitable enlarged opening 32 is provided in the lower face of part 1, in addition to the exit opening 33 for the two wires.

Having described my invention, I claim as new—

1. A two part plug for connecting electric current sockets, operating wires therefrom, a plurality of contacting tongues attached to one part of the plug, and a plurality of contacting tongues attached to the other part of the plug, with the respective tongues on the corresponding sides of the parts contacting by resilient pressure when the two parts of the plug are compressed together, a lock latch extending from the side of one of the tongues from one part, and a corresponding opening through one of the tongues extending from the other part, the latch normally held within the opening by the resilient action of the adjoining tongues when the parts of the plug are adjoining, a push button mounted in the side of one of the parts for pressing the latch out of the opening, when the parts are to be separated.

2. A two part plug for connecting electric wires with a socket, means for conducting the current from the socket through one side of plug by adjoining tongues resiliently pressed against each other, and means for conducting the current through the other side of the plug by resilient tongues compressed against each other, one of the latter tongues bent at its lower end to form an eye to aid in the insertion of tongue body inside the adjacent tongue and to assure continued electric contact through its body of light resilient metal, a latch lug extending out from the free end of the tongue so bent, and a hole in the adjacent tongue for receiving the latch when the two parts of the plug have been pressed together, means for releasing the latch.

3. A two part plug for connecting electric wires with a socket, described in the foregoing claim, a guide lug extending from the face of one part of the plug, and a corresponding opening in the face of the other part of the plug, for facilitating the adjustment of the two parts of the plug together, and to hold the parts from twisting action.

In testimony whereof I affix my signature.

ELMER H. SEMMENS.