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AUTOMATIC DISCONNECTING POTHEAD

Filed June 21, 1928

FIG. 1.

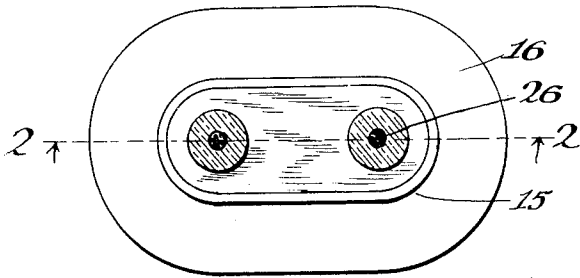


FIG. 2.

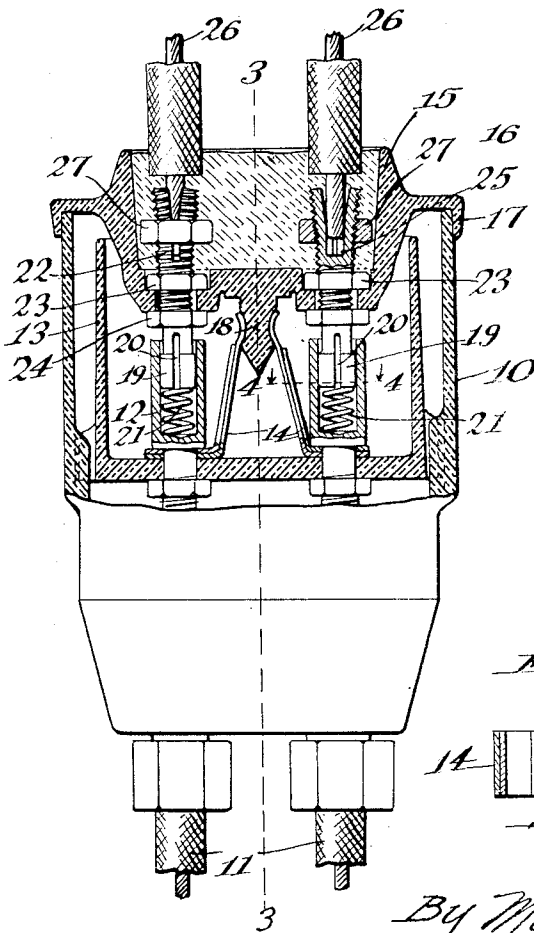


FIG. 3.

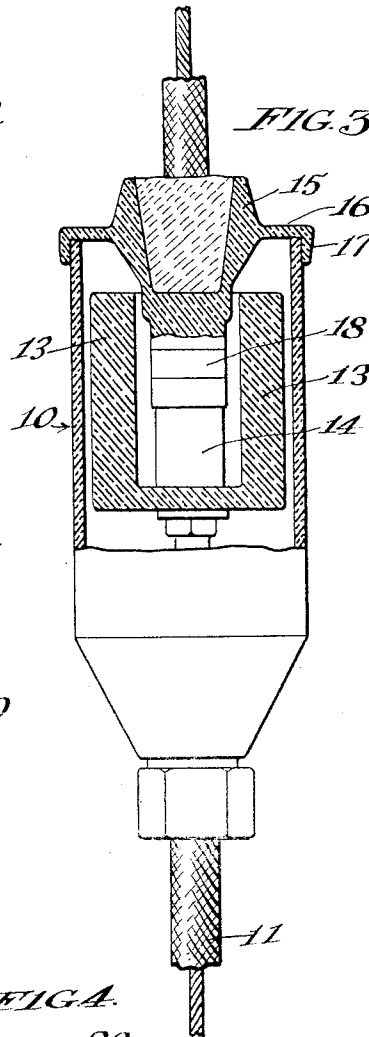
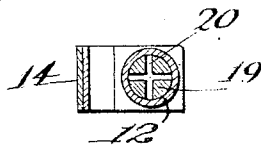


FIG. 4.



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AUTOMATIC DISCONNECTING POTHEAD

Application filed June 21, 1928. Serial No. 287,142.

My invention relates to an automatic disconnecting pothead of the same type forming the subject-matter of a copending application for U. S. Letters Patent filed by me April 4, 1927, Serial Number 180,841, and the principal objects of my present invention are to generally improve upon and simplify the construction of the pothead disclosed in my aforesaid application as well as other existing forms of similar devices, and further to provide a device of the character referred to that is relatively simple in construction, inexpensive of manufacture, and which may be readily assembled and installed for use.

15 A further object of my invention is to provide a pothead having an improved form of cap or head closing member and to equip said body or head closing member with improved means for clamping and insulating the cables that are connected to said cap or head closing member, and which enter the upper portion of the body or housing of the pothead.

Still further objects of my invention are to improve upon the construction of the contact pins or stems that depend from the detachable cap or head of the pothead and to provide an improved arrangement of the contact springs that are utilized for automatically short-circuiting the current through the pothead whenever the cap or removable head is disengaged from the body of the pothead.

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

Fig. 1 is a top plan view of an automatic disconnecting pothead constructed in accordance with my invention.

Fig. 2 is a vertical section taken approximately on the line 2—2 of Fig. 1.

Fig. 3 is a vertical transverse section taken approximately on the line 3—3 of Fig. 2.

Fig. 4 is an enlarged horizontal section taken on the line 4—4 of Fig. 2.

Referring by numerals to the accompanying drawings which illustrate a practical embodiment of my invention, 10 designates the shell or housing that serves as the body of the

pothead, said shell being closed at its lower end and open at its upper end.

Extending through the closed lower end of the housing are sheathed cables 11, the same being secured to the housing in any suitable manner, and the upper ends of the conductors of these cables are electrically connected to short vertically disposed tubular sockets 12 that are secured in any suitable manner to the bottom of a cup-shaped member 13, which latter is formed of suitable insulating material and being removably positioned in the upper portion of the housing 10.

Electrically connected to the lower portions of the sockets 12, or those portions that rest on the bottom of the insulating cup 13, are the lower ends of leaf springs 14, each spring being composed of two or more leaves, said springs extending upwardly between the sockets 14 so that their upper portions are adapted to make contact with each other when the removable cap or head of the pothead is disengaged as will be hereinafter more fully described and as a result of this contact of the springs the conductors within the cables 11 will be short circuited through the pothead.

By utilizing leaf construction in these springs, the same are rendered amply resilient to make the desired contact and produce the short circuit whenever the insulating wedge that is carried by the removable cap or head is withdrawn from position between the upper portion of said springs.

The removable cap or head member contemplated by my invention comprises a hollow oval-shaped cup 15 formed of suitable insulating material with which is formed integrally a horizontally disposed plate 16, and depending from the marginal portion of this plate is a flange 17 that fits over the upper portion of the wall of the housing 10.

When the cover member is properly positioned on the housing 10, the cup-shaped member 15 extends downwardly into the upper portion of the insulating shield 13 and formed integral with and projecting downwardly from the center of the underside of the cup 15 is a wedge-shaped finger 18 which, when the cap is positioned on the housing, occupies a position between the upper ends of

the springs 14 and thus holds the same out of contact with each other.

Adapted to occupy the upper portions of the tubular sockets 12 are the lower portions of contact pins or stems 19 and these lower portions are provided with longitudinally disposed intersecting slots 20, thereby providing between said slots a plurality of fingers which, due to the resiliency of the metal of which the stems are formed, make positive contact with the inner surfaces of the tubular sockets 12 and thus provide an electrical path for the current that travels from the conductors 11 to the conductors that lead upwardly from the removable cap or head 15.

When the contact stems 19 are positioned within the sockets 12 they rest on expansive coil springs 21 and are positioned within said sockets, and which springs normally exert upward pressure on said stems tending to eject the same from the sockets.

The upper portions of the stems 19 are externally threaded as designated by 22, and these threaded portions extend through suitably formed openings in the bottom of the cup 15, and said stems being securely clamped to the cup by nuts 23 that are seated on the threaded portions of the stems on top of the bottom of the cup 15, and which clamp said bottom against shoulders or collars 24 that are formed on said stems and which bear on the under face of the bottom of the cup.

The threaded portions 22 of the stems project a substantial distance upwardly into the chamber within cup 15 and said upper portions are provided with axial bores such as 25, which receive the conductors 26 of sheathed cables that lead from the cap or head member upwardly through the lamp post or other fixture with which the pothead is associated.

In order to firmly clamp the conductors in the upper ends of the contact pins or stems the upper portions of the latter are slotted lengthwise for a distance approximately equal to the length of the bores 25, thereby forming clamping fingers that engage the inserted ends of the conductors 26 and which fingers are very securely clamped to said conductors by nuts 27 that are mounted on the threaded upper portions of the stems above the nuts 23.

After the contact stems have been securely connected to the cup 15 by screwing said stems through the nuts 23 and the conductors 26 have been clamped in the recessed slotted upper ends of the stems, by manipulation of the nuts 27, the entire space within the cup-shaped portion 15 of the cap or head is filled with suitable insulating compound, for instance, a commercially used insulating material known to the trade as "ozite". This body of insulating material should completely fill the space within the cup-shaped member 15 and it affords perfect insulation and protection for the embedded parts.

When the detachable head or cover member is properly positioned on the body 10 of the pothead, said head or cover member occupies the position as illustrated in Figs. 2 and 3, with the flange 17 fitting down over the upper edge of the wall of the housing 10 with the slotted lower end of the stems 19 positioned in the upper portions of the sockets 12, thereby compressing the springs 21, and with the wedge finger 18 positioned between the upper ends of the leaf springs 14.

With the parts so positioned the current from one of the conductors entering the bottom of the pothead may flow uninterruptedly upwardly through the connections on one side of the pothead and thence downwardly through the connections on the other side for perfect electrical contact is produced between the sockets 12, stems 19 and between the upper ends of said stems and the conductor 26 of the cables that are connected to the removable head.

In the event that the lamp supporting post or standard with which my improved pothead is associated is accidentally struck and overturned, the cables leading from the removable cap or head will exert an upward pull on the cap, thereby disengaging the same from the upper portion of the pothead body and pulling the wedge member 18 from its position between the upper ends of springs 14.

The power stored in the coil springs 21 will act to "kick" or quickly force the contact pins 19 upwardly out of their sockets, thereby effecting a disengagement of said contact pins from said sockets and simultaneous with this disconnecting action, or as the wedge 18 leaves the springs 14, the upper ends of the latter will instantly move into contact with each other, thereby short-circuiting the cables 11 through the pothead.

By thus automatically and instantaneously short-circuiting the conductors within the underground cables, the danger of injury to persons engaged in removing the broken lamp post or standard, or in making repairs thereto, is entirely eliminated.

Thus it will be seen that I have provided an automatic disconnecting pothead with a removable cap or cover having improved means for clamping and insulating the conductors that lead from the pothead upwardly into the fixture with which it is associated, and likewise that I have provided improved means for positively effecting a short circuit of the conductors that lead to the pothead from the underground cables, and which short-circuiting occurs whenever the cap or cover is accidentally withdrawn from the top of the pothead.

It will be understood that minor changes in the size, form and construction of the various parts of my improved automatic disconnecting pothead may be made and substi-

tuted 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.

5 I claim as my invention:

1. In a disconnecting pothead, the combination with a housing having underground cables leading thereto and a cup of insulating material positioned within the upper portion
10 of said housing, sockets seated in the bottom of said cup, to which sockets said underground cables are connected, a detachable cover of insulating material for said housing, said cover having a centrally arranged recess,
15 contact pins arranged within said recess and extending through the wall at the bottom thereof, the lower ends of which contact pins are removably seated in said sockets, conductors secured to the upper ends of said
20 contact pins, and a body of insulating material within said recess for enclosing the upper portions of said contact pins and the portions of the conductors that are connected thereto.

2. In a disconnecting pothead, the combination with a housing having underground cables leading thereinto, of a cup of insulating material removably positioned within the upper portion of said housing, sockets within
30 said housing, to which sockets said underground cables are connected, a detachable cover of insulating material for said housing, said cover having a centrally arranged recess, contact pins arranged within said recess and
35 extending through the wall at the bottom thereof, means on said contact pins for clamping the same to said cover, the lower portions of which pins are adapted to enter the sockets in the housing, expansion springs arranged within said sockets and bearing
40 against the lower ends of said contact pins and a body of insulating material filling said recess and enclosing the upper portions of said contact pins and those portions of the
45 conductors that are secured thereto.

3. In a disconnecting pothead, the combination with a housing having underground cables leading thereinto, of a cup of insulating material removably positioned within the upper portion of said housing, sockets within
50 said housing, to which sockets said underground cables are connected, a detachable cover of insulating material for said housing, said cover having a centrally arranged recess, contact pins arranged within said recess and
55 extending through the wall at the bottom thereof, the lower portions of said pins being slotted lengthwise to form a plurality of resilient contact fingers that are adapted to enter the sockets in the housing, expansion
60 springs arranged within said sockets and bearing against the lower ends of said contact pins, means for clamping the contact pins to the cover, the upper portions of said
65 pins being recessed and slotted, conductors

seated in the recessed slotted ends of said contact pins, means for clamping said conductors to said pins, and a body of insulating material filling the recess in the cover and enclosing the upper portions of the contact
70 pins and those portions of the conductors that are connected thereto.

4. In a disconnecting pothead, the combination with a housing, of a detachable cover therefor, said cover being provided with a
75 centrally arranged open topped recess, contact pins extending through the wall at the bottom of said recess, means on said pins above and below the wall for clamping said pins to said wall, the lower portions of the
80 pins being slotted lengthwise to form a series of resilient fingers, the upper portions of the pins being recessed and slotted for the reception of conductors, a cup removably positioned within said housing below said cover,
85 sockets seated in the bottom of said cup, which sockets receive the slotted lower ends of said pins, expansible springs arranged in the sockets below said pins, means within said recess for clamping the recessed slotted
90 upper portions of the contact pins onto the inserted ends of the conductors.

5. In a disconnecting pothead, the combination with a housing, of a detachable cover therefor, said cover being provided with a
95 centrally arranged open topped recess, contact pins extending through the wall at the bottom of said recess, means on said pins above and below the wall for clamping said pins to said wall, the lower portions of the
100 pins being slotted lengthwise to form a series of resilient fingers, the upper portions of the pins being recessed and slotted for the reception of conductors, a cup removably positioned within said housing below said cover,
105 sockets seated in the bottom of said cup, which sockets receive the slotted lower ends of said pins, expansible springs arranged in the sockets below said pins, means within said recess for clamping the recessed slotted
110 upper portions of the contact pins onto the inserted ends of the conductors, and a body of insulating material filling said recess and enclosing the upper portions of said pins and those portions of the conductors that are secured
115 thereto.

In testimony whereof I affix my signature.

ALEX C. RUMBLE.

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