

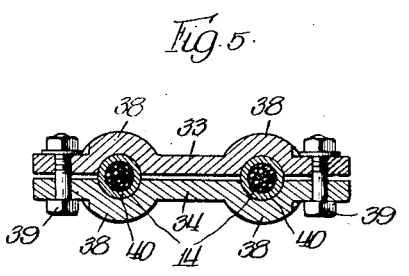
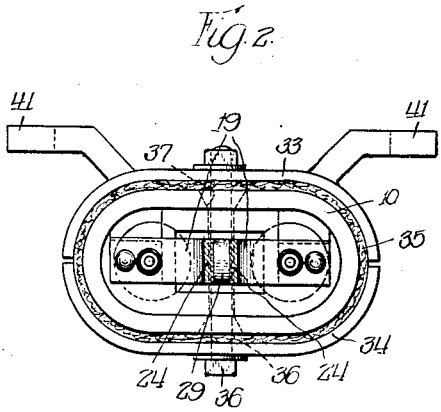
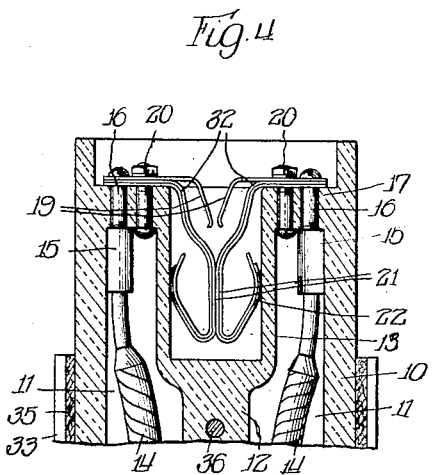
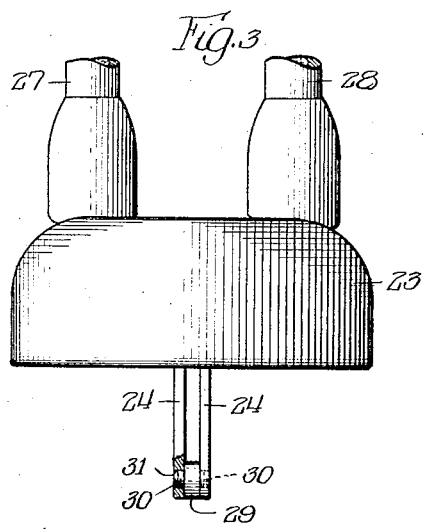
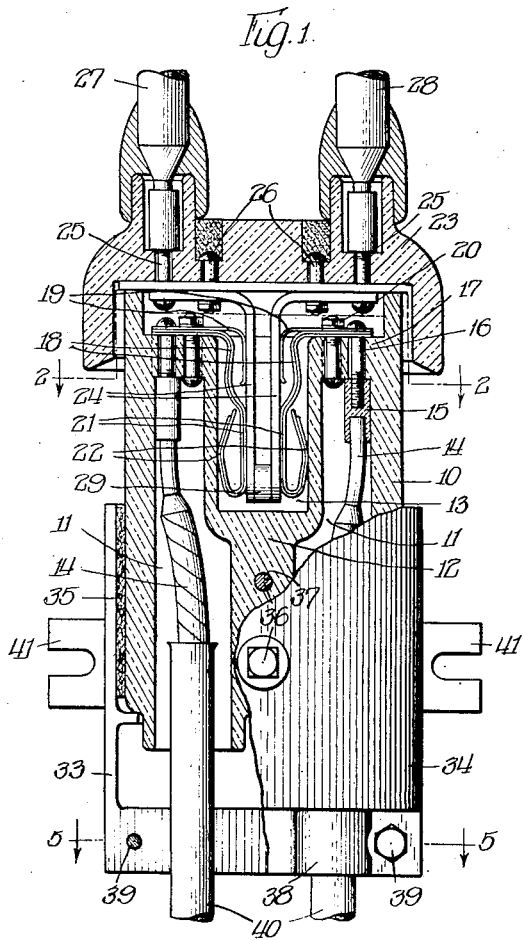
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COMBINATION POTHEAD AND SERIES CUT-OUT

Filed May 16, 1925



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UNITED STATES PATENT OFFICE

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COMBINATION POTHEAD AND SERIES CUT-OUT

Application filed May 16, 1925. Serial No. 30,764.

This invention relates to a combination pothead and series cut-out and is an improvement upon the arrangement disclosed in my earlier Patent No. 1,190,836, granted July 11, 1916.

One object of the invention is to provide a combination pothead and series cut-out in which the yieldable contacts are so shaped and arranged as to prevent fatigue of the metal of said contacts and to positively insure engagement of said contacts when the normal separating medium of said contacts is withdrawn.

Another object is to provide a combination pothead and series cut-out having cooperating, confined, yieldable contacts which are adapted to be separated for making a lighting circuit effective, which contacts tend to move into engagement with each other to form a circuit around said lighting circuit, said contacts cooperating and being so arranged and shaped as to prevent fatigue of same and to insure their interengagement when the separating influence is withdrawn.

Another object is to provide simple and improved means for spacing the contacts carried by the removable top of the pothead and which are connected to the lighting circuit.

Another object is to provide simple, durable and efficient bracket means for not only clamping the pothead in position, but also, for simultaneously clamping in position the cable or cables entering said pothead.

Another object is to provide a simple, reliable, durable and efficient combination of pothead and series cut-out adapted to meet all the requirements under service conditions.

These and other objects are accomplished by means of the arrangement disclosed on the accompanying sheet of drawings, in which

Fig. 1 is a vertical sectional view, parts being shown in elevation, of my improved combination pothead and series cut-out;

Fig. 2 is a sectional view taken in the plane of line 2—2 of Fig. 1;

Fig. 3 is a front elevation, a part being in section, of the pothead top removed from the body of the pothead and showing an insulating button threaded into the contacts for not

only separating said contacts but preventing displacement of said insulating button;

Fig. 4 is a detailed vertical sectional view showing the main spring contact members in engagement with each other for completing a circuit around the lighting circuit when the top of the pothead with its contacts are removed; and,

Fig. 5 is a detailed sectional view taken in plane 5—5 of Fig. 1.

The various novel features of this invention will be apparent from the following description and drawings and will be particularly pointed out in the appended claims.

My present invention is illustrated in connection with a combination pothead and series cut-out in which the pothead 10 preferably is made of porcelain and has two main cable receiving passageways 11 and a centrally arranged partition 12 having a pocket 13. A cable 14 is received in each of the said passageways 11 and is electrically secured to an associated cable terminal 15 into which a screw 16 extends for supporting the cable terminal in position with respect to a bracket 17 formed in the upper portion of the body 10. A main spring contact 18 and an auxiliary or arcing contact 19 are secured in position by each of the screws 16, and a cooperating screw and nut arrangement 20 locks each of said contacts 18 and 19 in position.

The cooperating main spring contacts 18 are confined within the pocket 13 and each of said main spring contacts 18 is looped or bent upon itself, that is to say, the free end of each spring contact is bent to form a contact engaging portion 21 and a wall engaging portion 22. These confined or compressed main spring contacts 18 tend to move into engagement with each other as shown in Fig. 4 of the drawings. In such position current is supplied through one of the cables 14, then through said engaging contacts 18 and out through the other cable 14. Such is the circuit connection when the top of the pothead is removed and the lighting or other circuit is disconnected from the main supply circuit. By bending each of the main spring contacts upon itself, interengagement of said contacts is positively insured when the me-

dium which separates said contacts is removed. Furthermore, by so shaping said contacts the metal thereof is prevented from becoming fatigued as quickly as is the case with spring contacts heretofore used in combination potheads and series cut-outs.

As indicated above, the pothead has a removable top 23 to which two contacts 24 are secured by screws 25 and 26, each of said contacts 24 being electrically connected to associated serial or other cables 27 and 28. Referring particularly to Fig. 3, it will be noted that the contacts 24 at their extremities are spaced by an insulating button 29, said button having laterally-extending or projecting threaded portions 30, which cooperate with corresponding openings 31 formed in said contacts. Said insulating button 29 not only acts as a spacer to prevent said contacts from moving into engagement with each other, but, by virtue of the threaded arrangement, the insulating button 29 is held in position against accidental displacement.

As shown in Fig. 1 of the drawings, the pothead top is in its normal position and the contacts 24 are in engagement with the associated spring contacts 18 for separating the latter and establishing an active circuit from one of the cables 14 through one of the spring contacts 18, one of the contacts 24, aerial cable 27, through the lighting circuit, back through aerial cable 28, the other contact 24 and other spring contact 18 through the other ground cable 14. With the contacts 24 in engagement with the main yieldable contacts 18, it will be seen that the latter are under considerable compression for making a good electrical connection between said contact members. Also, an electrical connection is established between the contacts 24 at the arcing contacts 19.

If for any reason it is desired to remove the top of the pothead and disconnect the contacts 24 from the yieldable contacts 18, as, for example, when trouble has occurred in the lighting circuit, the top 23 of said pothead is drawn away from the main body portion with the result that as soon as the contacts 24 are withdrawn from the associated spring contacts 18, the latter spring into electrical engagement with each other for establishing a circuit directly from one ground cable 14 to the other for forming a circuit around the lighting circuit, which lighting circuit includes the aerial cables 27 and 28, and, upon further withdrawal movement of the contacts 24, said contacts pass out of engagement with the arcing contacts 19. It is to be noted, however, that an electrical circuit is established between the main spring contacts 18 before the circuit is broken at the arcing contacts 19, thereby preventing any arcing, especially at the main contacts 18. Upon an inspection of Fig. 4, it will be appreciated that because of the bent con-

struction of the springs 18, said spring contacts quickly and vigorously spring into engagement with each other for establishing an intimate electrical contact as soon as the separating medium or contacts 24 are withdrawn from between said spring contacts 18. Heretofore, the main force for pressing the spring contacts into engagement with each other has been concentrated in the points of the spring contacts as indicated by reference characters 32. With such an arrangement, it will be understood that the metal in time will become fatigued at such points with the result that poor contact will be formed between the spring contacts and ultimately may be no contact at all can be established between same. However, with my improved arrangement an intimate electrical engagement is established between the spring contacts 18 and likelihood of fatiguing of the metal of said contacts is greatly reduced. When fitting the pothead top in place on the main body portion of the pothead for again completing the lighting circuit, the contacts 24 first contact with the auxiliary or arcing contacts 19 before passing into engagement with the main spring contacts 18, thereby preventing any possibility of burning the main contacts 18.

This pothead is provided with a mounting bracket which takes the form of a two piece split bracket, said two pieces 33 and 34 being of yieldable metal for clamping the pothead. A felt gasket 35 preferably is interposed between the bracket and the pothead 10 and the parts 33 and 34 of the split bracket are pressed and held in position by two bolts 36 which pass through openings 37 formed in the partition 12 of the pothead and also, through aligned openings in the clamp parts 33 and 34. Not only do the clamp members 33 and 34 clamp the pothead 10 for holding it in position, but the clamp members have semi-circular portions 38 which embrace and clamp the ground cables 14 for assisting in supporting said cables and to prevent strain on the connection between said ground cables and the cable terminals 15. Auxiliary clamping bolts 39 are used to increase the clamping action on the cables. It will be understood that the cables 14 are housed in metal sheaths 40, such as lead, said sheaths extending up into the pothead a predetermined distance. One of the clamp parts 33 is provided with slotted attaching legs 41 whereby the whole pothead may be secured to any suitable support.

By means of this simple, reliable and efficient combination pothead and series cut-out arrangement, all of the requirements under service conditions are met.

I claim:

1. In a device of the class described, the combination of a pothead, confined yieldable contacts mounted therein, a removable top for said pothead, spaced contacts carried

thereby which when electrically connected with said yieldable contacts separate the latter to complete a given circuit, said yieldable contacts springing into engagement with each other when said other contacts are withdrawn to form a circuit around said other circuit, said yieldable contacts being in the form of a loop to provide a pothead engaging portion to prevent fatigue of same and to insure their interengagement when said other contacts are withdrawn.

2. In a device of the class described, the combination of a pothead, cooperating confined yieldable contacts mounted therein, associated spaced contacts which when electrically connected with said yieldable contacts separate the latter to complete a given circuit, said yieldable contacts springing into engagement with each other when said other contacts are withdrawn to form a circuit around said first circuit, said yieldable contacts being bent upon themselves with their free ends engaging said pothead to prevent fatigue of same and to insure their interengagement when said other contacts are withdrawn.

3. In a device of the class described, the combination of a pothead, cooperating confined yieldable contacts which are adapted to be separated for making a given circuit effective and which tend to move into engagement with each other to form a circuit around said other circuit, said yieldable contacts being bent back on themselves with their free ends engaging said potheads to prevent fatigue of same and to insure their interengagement when the separating influence is withdrawn.

4. In a device of the class described, the combination of a support, cooperating confined yieldable contacts therein which are adapted to be separated for making a given circuit effective and which contacts tend to move into engagement with each other to form a circuit around said other circuit, said yieldable contacts having looped ends to provide a portion for yieldingly engaging said support to prevent fatigue of same and to insure their interengagement when the separating influence is withdrawn.

5. In a device of the class described, the combination of a pothead, associated contacts carried thereby which when in engagement with each other will complete a circuit through one path, a pothead cover carrying spaced contacts for separating said other contacts and establishing a circuit through another path, and a clamping bracket secured to said pothead for clamping the latter in position and for clamping in position cables entering said pothead.

6. In a device of the character described, the combination with a recessed container, a plurality of cables, means associated with each cable adapted to have contact with a part of said container and so formed as to

have a double springing tendency, and means adapted to be interposed between said first named means to break contact between said first named means to form connections between said first named cables and other cables.

7. In a device of the class described, the combination of a pothead, yieldable contacts mounted therein, a removable top for said pothead, spaced contacts carried thereby which when electrically connected with said yieldable contacts separate the latter to complete a given circuit, said yieldable contacts springing into engagement with each other when said other contacts are withdrawn to form a circuit around said other circuit, said yieldable contacts having looped ends to form a portion for yieldingly engaging said pothead to insure their engagement when the separating influence is withdrawn.

8. In a device of the class described, the combination of a pothead provided with a plurality of recesses, cables disposed in one recess, yieldable contacts disposed in the other recess and having means for electrical connection with said cables, a removable top for said pothead, spaced contacts carried thereby which, when electrically connected with said yieldable contacts, separate the latter to complete a given circuit, said yieldable contacts springing into engagement with each other when said other contacts are withdrawn to form a circuit around said other circuit, said yieldable contacts being bent upon themselves to form a looped end to provide a contact engaging portion and a pothead engaging portion to prevent fatigue of same and to insure their engagement when the separating influence is withdrawn.

Signed at Chicago, Illinois, this 13th day of May, 1925.

PAUL F. WILLIAMS.