CONTACT ATTACHMENT FOR CURRENT INDICATORS

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5 Claims. (Cl. 173—273)

This invention is an attachment for current-indicating devices such as voltimeters, ammeters and the like, although not limited to these specific types of indicators. One of the objects of the invention is to provide a simple and inexpensive device by means of which contact may conveniently be made with the circuit to be tested, and the reading of the instrument be greatly facilitated. A further object is to provide a device of the character mentioned which is provided with a rigid contact normally in circuit with the indicating instrument, and a second adjustably mounted contact which may selectively be connected with said circuit. A further object is to provide an adjustably mounted contact having means by which it may be detachably connected with an element in the circuit to be tested.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view illustrating an electrical indicating device connected with an attachment constructed in accordance with the invention.

Figure 2 is an enlarged longitudinal sectional view of said attachment with the adjustably mounted contact in inoperative position. Figure 3 is a similar view with said contact in circuit-closed position. Figure 4 is a detail view illustrating said adjustable contact. Figure 5 is a similar view illustrating a slight modification.

Referring to the drawing, 10 designates a tubular barrel constructed of any suitable dielectric material, such as any one of the well known synthetic resins. Said barrel is provided at one end with an internally threaded portion indicated at 11.

Removably mounted within the threaded end of the barrel 10 is a plug P, having an externally threaded stem 12 complementary to the threaded portion 11, and also having an enlarged contact portion 13 of approximately the same external diameter as that of the barrel 10. The enlargement 13 also provides a shoulder which acts as an abutment engageable with the adjacent end of the barrel 10, so as to limit inward travel of the plug. The plug also has a shorter extension 14 which is externally threaded to receive a nut 15 having a closing wall 16 adapted to extend over the adjacent open end of the plug, and having an opening through which extends a contact pin 17. Said pin has a shoulder 18 which is engaged by said nut, so as to rigidly retain it in position. The nut also serves to retain in position a dielectric washer 19 and is normally held against rotation by being brazed or otherwise secured to the extension 14. The pin 17 and plug P are connected to a suitable wire 20, which leads to a testing device A, such as an ammeter, or other well known current-indicating device, which is provided with a permanent contact terminal 21.

Saidly mounted upon the exterior of the barrel 10 is a metal contact sleeve 25, which is provided with a radial arm 26 to which is secured a clip 27, such as an ordinary spring actuated "alligator" clip.

In operation, the slide 25 is usually raised to a position in which the contact sleeve 25 is out of engagement with the enlargement 13 of the plug P. In this position, the testing device may be operated by placing the pin 17 in contact with an element on one side of the circuit to be tested, the exposed end of wire 21 being contacted with an element on the other side of the circuit. A circuit will then be closed through the instrument A, and a reading may then be taken in a well known manner. However, there are conditions where it might be more convenient if engagement of one of the contacts with the circuit could be maintained without the necessity of the operator holding it in operative position. In such event, the sleeve 25 is slid downwardly, so as to cover the enlargement 13 of the plug P and thereby establish an electrical contact therewith. This will bring the clip 27 well below the plane of the pin 25, so that said clip may be secured to an element which is connected with one side of the circuit to be tested. For instance, in the case of testing batteries, the clip may be engaged with one of the poles of the battery, leaving the operator free to hold the testing device A in one hand and the wire 21 in the other hand. Thus, the circuit to the testing device A will be closed from the clip 27 and sleeve 25 to the enlargement of plug 13 and wire 19. It is obvious, however, that there are conditions of testing under which the device would be operative without regard to the relative positions of the pin 17 and the clip 27. For instance, if the test is to be made from the loose end of a wire, the clip 27 may be caused to grip an uncovered portion of the wire without any interference as to its functions by the said pin 17.

In Figure 5 is illustrated a fork-type of contact clip 27a which may be substituted for the clip 27, if so desired. Said clip 27a is provided with a contact sleeve 25a slidingly engaged with the barrel 10 and movable into and out of engagement with plug P.
Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the forms of its use, what is claimed is:

1. In a current indicating device, a contact attachment comprising a tubular barrel of dielectric material, a contact member mounted in one end of the barrel and adapted to be connected with one side of an indicator circuit, said contact member having an enlarged contact portion, a contact sleeve slidingly mounted on said dielectric barrel and engageable with said enlarged contact portion, and a second contact member integrally connected to and carried by said slidable contact sleeve.

2. In a current indicating device, a contact attachment comprising a tubular barrel of dielectric material, a plug having a reduced portion inserted into one end of the barrel and adapted to be connected with an electric conductor, said plug having a pointed contact terminal and an enlarged intermediate contact portion abutting against the adjacent end of the barrel, a second contact member slidingly mounted on said dielectric barrel and engageable with said enlarged contact portion, and a contact clip secured to and movable with said slidable contact member.

3. In a current indicating device, a contact attachment comprising a tubular barrel of dielectric material, a plug removably mounted in one end of said barrel and having a portion adapted for connection with an electric conductor, said plug having a pointed contact terminal, and also having an enlarged intermediate contact portion abutting against the adjacent end of the barrel and of approximately the same diameter as that of the barrel, a contact sleeve slidingly mounted on said barrel and engageable with said enlarged contact portion, and a second contact terminal connected to and movable with said sleeve.

4. In a current indicating device, a contact attachment comprising a tubular barrel of dielectric material, a hollow plug having a stem removably mounted in one end of said barrel and adapted to be connected with an electric conductor, said plug having a pointed contact fixedly secured thereto and also having an enlarged contact portion abutting against the adjacent end of said barrel, a member slidingly mounted on said barrel and having a contact portion complementary to and engageable with said enlarged contact portion, said sleeve having a radially disposed arm, and another contact member carried by said slidable member.

5. In a current indicating device, a contact attachment comprising a tubular barrel of dielectric material, a hollow plug having a stem removably mounted in one end of said barrel and adapted to be connected with an electric conductor, said plug having a pointed contact fixedly secured thereto and an enlarged intermediate contact portion abutting against the adjacent end of said barrel, said plug also having an axially disposed threaded boss, a contact sleeve slidingly mounted on said barrel and engageable with said enlarged contact portion, said sleeve having a radially disposed arm, a dielectric washer through which said boss is extended, and a nut engageable with said boss and said washer to retain the latter in place and having an opening through which said fixed contact protrudes.

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