March 2, 1926. 1,575,407

B. J. BARMACK

STRAIN INSULATOR CLEVIS

Filed May 31, 1921

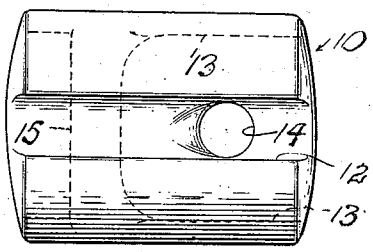


FIG. 5.

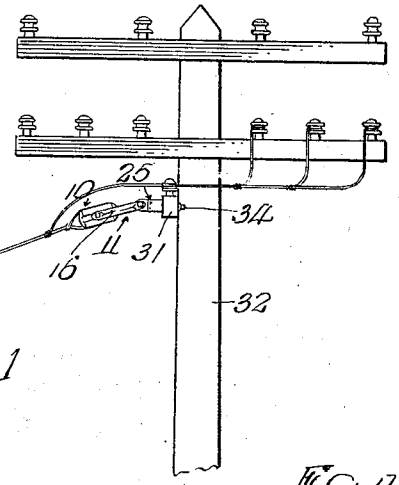


FIG. 1

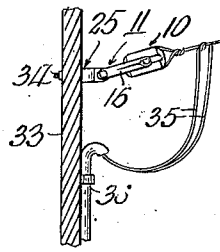


FIG. 4.

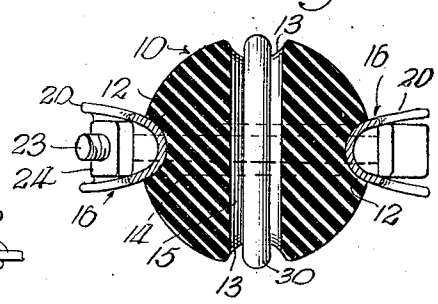


FIG. 2.

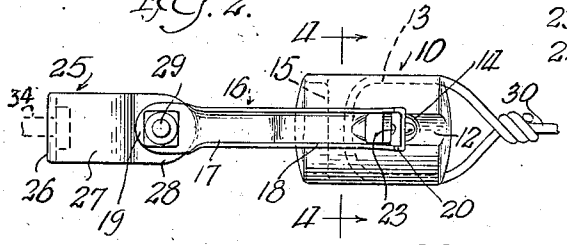


FIG. 3.

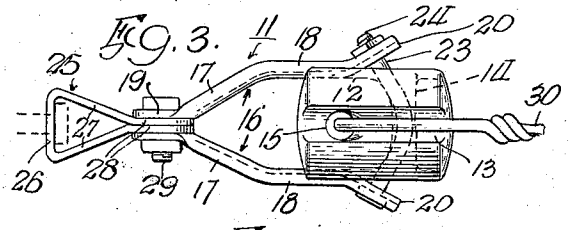


FIG. 6

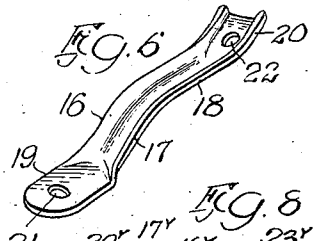


FIG. 7.

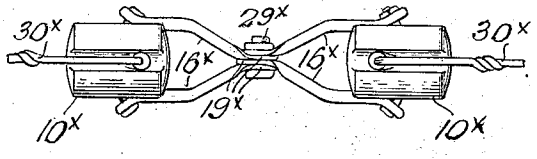
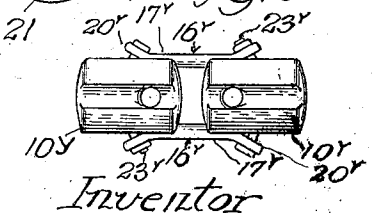


FIG. 8



Inventor

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Patented Mar. 2, 1926. 1,575,407

UNITED STATES PATENT OFFICE.

BORIS J. BARMACK, OF CHICAGO, ILLINOIS.

STRAIN-INSULATOR CLEVIS.

Application filed May 31, 1921. Serial No. 473,754.

To all whom it may concern:

Be it known that I, BORIS J. BARMACK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Strain-Insulator Clevises; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in strain insulator clevis and consists of the matters hereinafter described and more particularly pointed out in the appended claim.

The invention relates more particularly to a device especially adapted for use in electrical service work, for not only providing a suitable break in the current line or wire in which it is interposed, but also to resist the strain produced by the weight or tension of said line or wire.

One of the objects of the invention is to provide a two-part clevis which is capable of use with many different sizes and types of insulator blocks, thus eliminating the necessity of making a special clevis for each size and type of insulator which increases the cost thereof due to the investment in the tools and dies for making the same.

Another object of the invention is to so construct the yoke arms, that they may be easily applied to the insulator blocks and will so engage the same, as to prevent the end for end turning or reversing of the block when the device as a whole is in place in a line wire, due to the tension or strain imposed upon it.

The many advantages of the invention will more fully appear as I proceed with my specification.

In the drawings:—

Fig. 1 is a view showing the installation of my improved strain insulator when used in dead-ending a secondary current wire from a service pole cross-arm to a building wall.

Fig. 2 is a view in side elevation on an enlarged scale, of one of my improved strain insulators, illustrated in Fig. 1.

Fig. 3 is a top plan view of my improved strain insulator.

Fig. 4 is a vertical sectional view on a further enlarged scale taken on the line 4—4 of Fig. 2.

Fig. 5 is a view in side elevation of an insulator block forming a part of my improved strain insulator.

Fig. 6 is a perspective view of one of the clevis or yoke arms embodied in my improved strain insulator.

Fig. 7 is a view in plan elevation, showing the manner of connecting two of my improved strain insulators together by means of the clevis or yoke arms and using them to provide a break in primary current wires.

Fig. 8 is a slightly modified form of the invention and will be more specifically referred to later.

Referring now in detail to that embodiment of the invention illustrated in Figs. 1 to 6 inclusive of the accompanying drawings the improved strain insulator consists primarily of an insulator block 10 and a clevis or yoke 11 (see Fig. 3). The insulator block is preferably a cylinder of glazed porcelain or the like, with rounded ends, and in the sides of the block are arcuately spaced, longitudinally extending, oppositely disposed grooves 12—12 and 13—13 respectively, arranged in pairs. Near the ends of the block are transversely extending holes 14 and 15 arranged at a right angle to the grooves 12 and 13 and to each other, there being one hole associated with and opening into each pair of grooves 12—12 and 13—13.

The clevis or yoke 11 comprises two identical arms 16 (see Figs. 3 and 6). Each arm includes transversely rounded body parts 17 and 18 adapted to fit either of the pairs of grooves 12—13, which body parts are formed at an angle to each other, each body part terminating in the ends 19 and 20 respectively. The end 19 associated with the body part 17 extends in a plane parallel with the body part 18 while the end 20 associated with the body part 18 extends in a plane parallel with the body part 17. The end 19 is flattened out and is provided with a hole 21 while the end 20 is of a flattened channel cross section and is provided with a hole 22, as shown in Fig. 6.

When the yoke arms are in place upon a block 10, the body parts 18 thereof seat in the longer portion of one of the pairs of grooves, when the position of either hole 14 or 15 is considered, it being immaterial which pair of grooves and associated hole is used in the assembly. In the drawings the yoke arms are shown as seated in the ends of the grooves 12, furthest removed from the

hole 14. A bent or curved bolt 23 is passed through the hole 22 in the end of one of the yoke arms, then through the hole 14 in the insulator block, and then through the hole 22 in the end of the other yoke arm, a nut 24 being threaded upon the bolt, the ends 19 of the arms 16 are spread apart to facilitate said threading.

Usually associated with the flattened end 19 of the yoke arms, is a dead eye clip 25. This clip has an apertured end wall 26, and converging walls 27 which terminate in parallel end parts or ears 28, which have registering holes in them. The ears 28 of the dead eye are interposed between the flattened ends 19 of the yoke arms, a bolt 29 passing through the said ends of the yoke arms and dead eye.

In Fig. 1 the strain insulator just described is illustrated in use for dead ending one of a plurality of secondary current wires 30, on the cross-arm 31 of a service pole 32 and the wall 33 of a building. The ends of said secondary wires are threaded through the holes 15 in the insulator block and are then twisted or wrapped or otherwise secured upon the main parts of said secondary wires in the usual manner. In this instance bolts or lag screws 34 pass through the end wall 26 of the dead eyes and through the cross arm 31 and building wall 33 to secure said dead eyes in place thereon. As shown in Fig. 1, the secondary wires are tapped by leaders 35 which are threaded into a conduit 36 secured in the usual manner to the building wall. Thus the device not only insulates the current wires but take up the strain induced by the weight of and tension on said wires.

The yoke arm being made of two identical parts, permits of a quick and easy attachment of the yoke arm to the dead eye without removing the yoke from the insulator block, it only being necessary to position the dead eye with reference to the yoke as before mentioned and then secure them together by a bolt 29. Furthermore with the yoke arms engaged with the insulator as before described, it is impossible for the insulator block to turn or reverse itself end for end, due to the tension of the line wire on which they are used. As the yoke arms are identical, they may be made by the drop hammer method at an extremely low cost and no confusion can result in the assembly thereof due to the necessity of matching right and left hand parts.

In Fig. 7 I have illustrated two strain insulators connected together so as to be capable of being used as a breaker or gap producer in a primary current wire to provide an emergency or test center therein: that is, it provides a convenient point in the line in which it is interposed for the purpose of taking off a lead therefrom or to tap into the line for the purpose of testing the same.

In this instance the strain insulator blocks 10^x (which are identical with the blocks 10 before described) are each provided with a pair of yoke arms 16^x, the flattened ends 19^x of which alternate in engagement, that is the end 19^x of one arm 16^x associated with one block 10^x is interposed between the flattened ends 19^x of the arms associated with the other blocks and vice versa, a bolt 29^x passing through the flattened ends of all the arms to secure them together. When the strain insulators are thus used, the ends of the primary wires 30^x are secured to the blocks 10^x in the same manner as the secondary wire 30 before mentioned.

Should it be found necessary to provide an emergency or test center, wherein the insulator blocks must be more closely spaced I provide the construction shown in Fig. 8.

In said figure, 10^y indicates a pair of said insulator blocks arranged in end to end spaced relation, there being associated with said blocks on opposite sides thereof, two connecting arms 16^y—16^y. Each arm comprises a main body part 17^y having outwardly bent ends 20^y through which the bolt 23^y extends in the same manner as that described in connection with Figs. 1 to 6 inclusive.

It is apparent from the foregoing description that the improved strain insulator possesses many advantages and that its peculiar characteristics make it possible to use the same in a great many places where the strain insulators now on the market would not only be impractical but dangerous to those whose duty it would be to install them.

While in describing my invention, I have referred to certain details of form, construction and arrangement of parts, I do not wish to be limited thereto except as is pointed out in the appended claim.

I claim as my invention:—

An adjustable clevis for a strain insulator having longitudinal grooves in its sides with a transverse hole in one end, said clevis comprising two similar arms each having a part near one end adapted to engage in a part of an associated groove, of said insulator with said end part bent outwardly therefrom, a bolt adapted to pass through said insulator hole and through the outwardly bent ends of said clevis arms, said bolt having a head on one end, the sides of which engage with parts of one of said bent arm ends, a nut on the other end of the bolt, the sides of which engage with parts of the other of said bent arm ends to prevent rotation of either said bolt or nut, and means connecting the other ends of said clevis arms together.

In testimony that I claim the foregoing as my invention, I affix my signature this twenty seventh day of May A. D. 1921.

BORIS J. BARMACK.