April 7, 1942. S. T. HOFFMAN 2,278,852

ELECTRICAL INSULATOR ATTACHMENT DEVICE

Filed Dec. 16, 1939

Fig. 1.

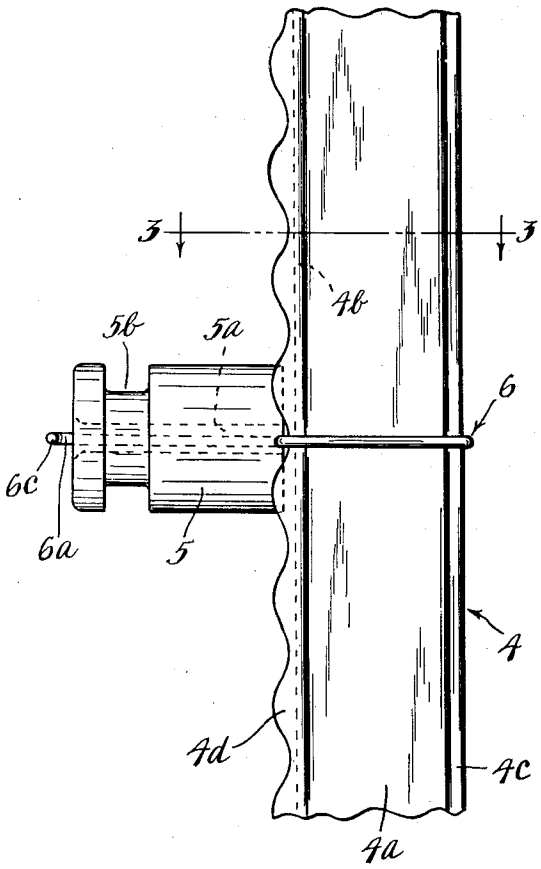


Fig. 2.

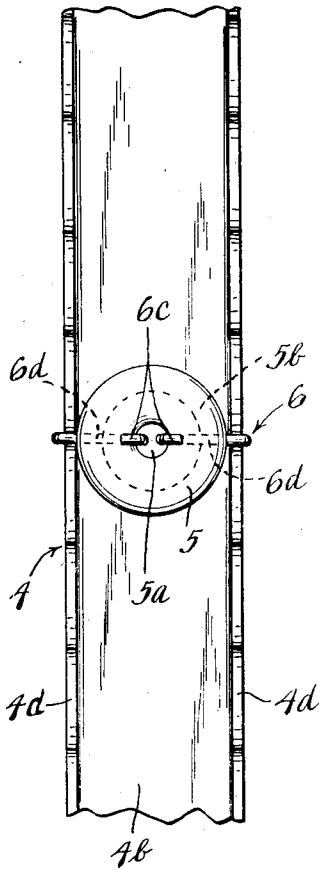
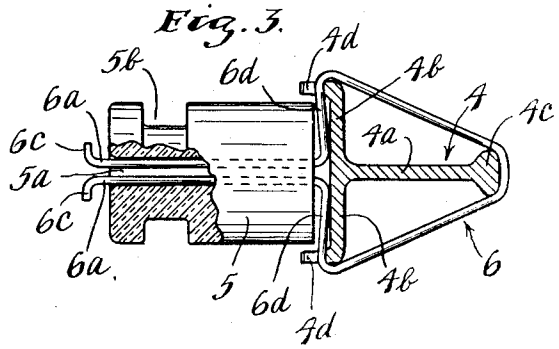


Fig. 3.



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Patented Apr. 7, 1942

2,278,852

UNITED STATES PATENT OFFICE

2,278,852

ELECTRICAL INSULATOR ATTACHMENT DEVICE

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Application December 16, 1939, Serial No. 309,593

1 Claim. (Cl. 174—158)

My invention relates to electrical insulators and particularly to devices for attaching knob type insulators to supports.

In construction of the so-called electric fences a wire is supported from fence posts by means of insulators which are usually of the longitudinally apertured knob type and may be attached to wooden fence posts by means of nails or screws. However, in many instances metal fence posts are already in place and it is desired to attach electrical insulators thereto.

An object of my invention is to provide means for attaching apertured insulators such as the common knob type insulator to supports such as steel fence posts or the like.

Another object is to provide such an attachment device which will firmly grip the support and which will retain the insulator from detachment in a positive manner.

Still another object is to provide such a device which may be placed upon a fence post and upon which an insulator may be placed quickly and easily and without the use of tools.

A further object is to provide such a device of particularly simple, light, compact, rugged and inexpensive construction.

These and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawing, wherein like reference characters refer to the same parts throughout the views, and, in which:

Fig. 1 is a vertical view of an embodiment of my invention operatively associated with a steel fence post and a knob type porcelain insulator;

Fig 2 is a vertical view taken at right-angles to the view of Fig. 1; and

Fig. 3 is a horizontal sectional view taken along the line 3—3 of Fig. 1 as indicated by the arrows and showing the insulator partially broken away and partially in horizontal section.

Referring to the drawing an embodiment of my invention is shown in association with a conventional type of steel fence post and a conventional type of grooved longitudinally apertured cylindrical porcelain electrical insulator.

The fence post **4** is of the type having a T-shaped cross section including a web **4***a* and two flanges **4***b* which project at opposite sides of the web **4***a* and are in a common plane so as to together present a flat outer surface. The free edge of the web **4***a* is provided with a bead **4***c* in accordance with conventional practice. The free edge portions **4***d* of the flanges **4***b* are bent outwardly and indicated in the drawing to provide narrow secondary flanges The secondary flanges **4***d* are scalloped with the scallops extending inwardly substantially to a plane flush with the common face of the flanges **4***b*.

The illustrated insulator **5** consists of a cylindrical porcelain body having therein a longitudinal aperture **5***a* and having also a circumferential wire receiving groove **5***b* near the outer end thereof.

My attachment device consists in general of structure for closely encircling a post such as the post **4** and including divergent resilient elements on which the apertured portion of an insulator such as the insulator **5** may be placed. Preferably the device is formed of relatively rigid but highly resilient wire.

The wire **6** is so bent that the central points thereon may engage the bead **4***c* of a T-shaped fence post such as the post **4**. From the above mentioned central point the wire **6** extends as shown in Fig. 3 in opopsite directions from the central point in straight lines to the edges of the respective flanges **4***b* of a post. From the edges of the flanges **4***b* the wire extends toward the junction between the respective flanges **4***b* but not quite far enough for the respective portions of the wire to meet. Next the wire is bent outwardly to form a pair of somewhat outwardly divergent resilient elements **6***a* which may be squeezed together to permit placement of the apertured portion of the insulator such as the insulator **5** thereon. Release of the resilient elements **6***a* will then enable the elements **6***a* to spring outwardly to forcibly engage portions of the insulator **5** defining the aperture **5***a*.

Means is provided to prevent outward shifting of the insulator relative to the resilient outwardly projecting elements **6***a*. For this purpose the free end portions **6***c* of the resilient elements **6***a* are bent substantially at right-angles to the elements **6***a* in respectively opposite directions as shown in Fig. 3 so as to form retaining elements for abutment with the outer end of the insulator **5**. The bent portions **6***c* are of less length that the diameter of the aperture **5***a* of the insulator **5** so that when the elements **6***a* are squeezed together for placement of an insulator thereon the retaining elements **6***c* will be disposed in side-by-side relation and occupy a small enough space so that the apertured portion of the insulator may be slipped thereover. After the insulator **5** has been placed in position on the resilient elements **6***a* and the resilient elements **6***a* have been released the retaining elements **6***c* will assume the positions thereof shown

in Fig 3 so as to prevent undesired removal of the insulator 5.

Portions 6d of the wire extending from the edges of the post flanges 4b to the inner ends of the resilient projecting elements 6a together constitute a base against which the inner end of the insulator 5 may be placed. The retaining elements 6c are spaced outwardly from the base portions 6d of the device by a distance only slightly exceeding the length of the aperture 5a of the insulator.

In applying my insulator attachment device to a fence post and insulator the device is first spread to enable placement thereof on a fence post. The device is then bent together to closely encircle the fence post 4. Also the device is positioned vertically of the fence post so that the base portions 6d will be disposed in the deepest cut portions of the scalloped secondary flanges 4d of the fence post 4 as indicated in the drawing. The portions of the device encircling the fence post are frictionally engaged therewith and also the scallops of the secondary flanges 4d assist in preventing displacement of the device in a vertical direction on the post 4. After the device has been attached to the fence post an insulator such as the insulator 5 may be placed thereon in a manner described above. It is to be noted that prior to placement of the insulator 5 on the device the resilient outwardly projecting elements 6a of the device will be disposed in outwardly divergent relation with each other.

It is to be noted that my insulator attachment device may be applied to a fence post and that an insulator may be placed upon the attachment device all without tools of any kind. While the drawing and description relate to an embodiment of my invention applicable to a certain specific shape of metal fence post and a specific type of electrical insulator it should be apparent that the portion of the device for encircling the post may within the scope of my invention be formed in suitable other shapes than that disclosed to fit the cross-sectional shape of any other type of metal fence post and also that the insulator used with the device may be any type of apertured insulator and that the length of the resilient elements 5a and the length of the retaining elements 5c may be proportioned for proper application to any apertured form of insulator.

It is apparent that I have invented a novel, extremely light, compact, simple, and inexpensive type of device for easy and rapid attachment of an electrical insulator to a support such as a metal fence post without the use of tools.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What is claimed is:

The combination with a post having a series of spaced projecting portions longitudinally thereof, of an electrical insulator having an electrical conduit attaching portion on the exterior thereof and having an aperture therethrough, and an element made of spring metal and having a post encircling portion, said element also having a pair of elongated arms extending from said post encircling portion, the outer ends of said arms being bent outwardly away from each other substantially at right angles to said arms, the outwardly bent end of each arm being of less length than the diameter of the aperture through said insulator, said element being expansible to slip longitudinally along said post and past said spaced projecting portions thereof and also being compressible to bring its arms toward each other to grip said post between spaced projecting portions of the post to prevent longitudinal movement of said element on said post, and said arms further being movable toward each other to permit their insertion through the aperture in said insulator, the inherent expansibility of said element being such as to spread the oppositely bent ends of said arms to prevent said insulator from slipping off of said arms, and the diameter of the aperture through said insulator being such as to maintain said arms in closely spaced relation and to constrict the post encircling portion of said element to prevent said post encircling portion from slipping past the projecting portions of said post.

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