July 27, 1965 C. TROMSNESS 3,197,557

ELECTRIC FENCE INSULATOR MOUNT

Filed June 8, 1962

FIG. 1

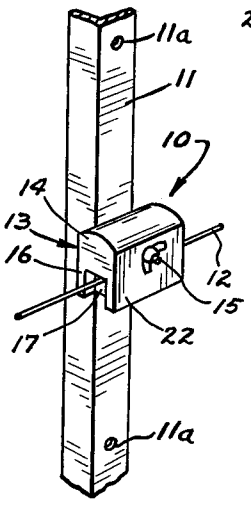


FIG. 2

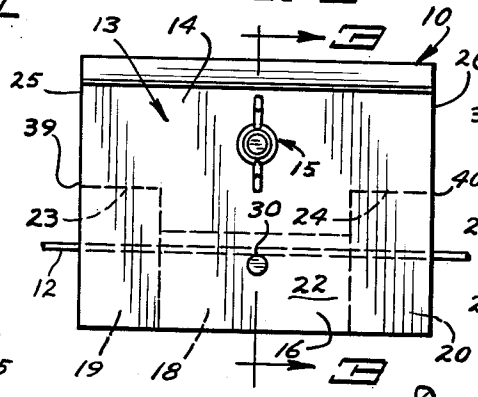


FIG. 3

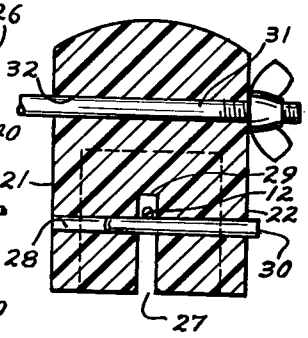
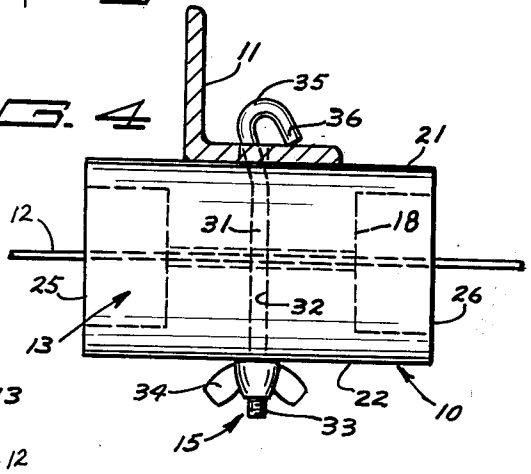


FIG. 4



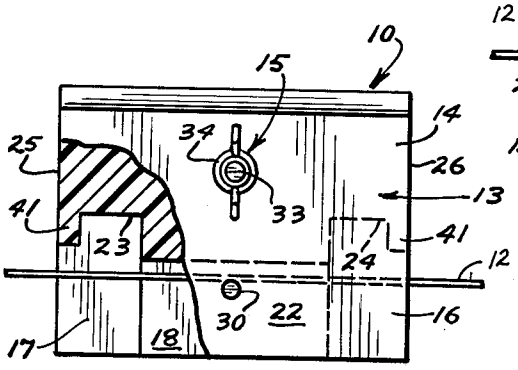
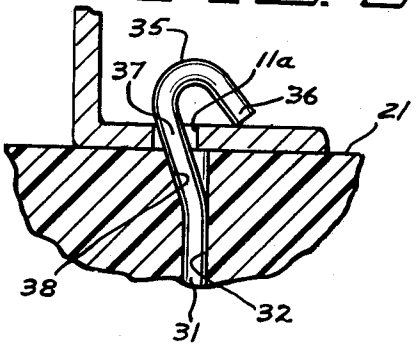


FIG. 6

FIG. 5



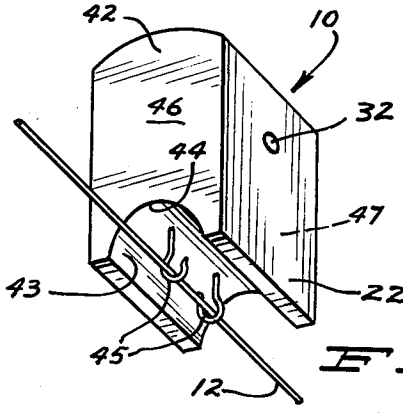


FIG. 7

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ELECTRIC FENCE INSULATOR MOUNT

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3 Claims. (Cl. 174—158)

This invention relates to electrical conductor mounting insulators and more particularly to insulators used in electric fences to isolate an electric wire from its supporting post.

Some of the more common types of electric fence insulators have an unprotected means for securing the electric fence line to the insulator whereby the wire, insulator, and fence post are exposed to the weather elements such as rain, snow, etc. When these elements are wet with water, there is a natural electrical surface leakage path created between the wire and the fence post. Through this surface leakage, a small amount of the potential applied to the fence wire is grounded out through the fence post. With the usual spacing of fence posts at 100 foot intervals or thereabouts, it will readily be recognized that accumulatively there is an appreciable amount of voltage drop from the one end of the fence where the voltage is supplied to the other end where the wire terminates.

Accordingly, an object of this invention is to provide an electric fence insulator which shields the connection between the insulator and the wire from precipitation such as rain, snow, and the like and thereby prevents shortage of the electric fence wire to ground through avoidance of surface leakage paths.

Another object of this invention is to provide an insulator as set forth above which is readily and easily attachable to a fence post in any of a plurality of vertically spaced positions with a minimum of effort.

A further object is to provide an insulator which will easily and readily receive the installation of a wire and then secure it in a positive manner.

A still further object of this invention is to provide an insulator for fence posts as set forth above which is inexpensive and easy to manufacture.

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

FIGURE 1 is a perspective view showing one form of the insulator attached to a fence post and supporting an electric fence wire;

FIGURE 2 is an enlarged front view of the insulator shown in FIGURE 1;

FIGURE 3 is a cross sectional end view of FIGURE 2 taken on line 3—3;

FIGURE 4 is a top view of FIGURE 1 showing the means by which the insulator is secured to a fence post;

FIGURE 5 is an enlarged partial cross sectional top view of FIGURE 4 showing in greater detail the relation between the insulator block and the mounting means;

FIGURE 6 is a front view of the insulator shown in FIGURE 1 but having one end thereof partially broken away to disclose a modified form of the insulator block; and

FIGURE 7 is a perspective view of another modified form of the insulator block together with its means for supporting the electric fence wire.

With more specific reference now to FIGURE 1, an insulator referred to generally as **10** is shown secured to a fence post **11** of a conventional angular shape having mounting apertures **11***a*. The electric fence wire **12** is in turn shown secured to the insulator.

The insulator block **13** has three principal portions, namely, an upper body portion **14** through which a securing means **15** is positioned and a lower body portion **16** having an undercut portion **17**.

Referring to FIGURE 2, an enlarged front view of the insulator **10** is shown whereby the interrelation of the parts is more clearly set forth. The block **13**, as shown, is a substantially rectangular piece of material which may be molded of plastic or other high dielectric strength material or may be made of wood having a preservative impregnated surface which will aid in runoff of moisture as well as prevention of corrosion. The block shown in FIGURE 2 has within the lower body portion **16**, a bridge **18** which is formed between the two undercut areas **19** and **20**. Each of the undercuts is defined by the side walls **21** and **22** which extend for the full length of the block **13**. Also partially defining the undercut portions **19** and **20** are upper walls **23** and **24** which extend inwardly from the ends **25** and **26** to the bridge **18**.

Referring to FIGURE 3, a longitudinal slot **27** is cut up into the bridge on a line intermediate the two sides **21** and **22**. The longitudinal slot is of sufficient width to receive the wire which is to be isolated from the fence post. Positioned transversely to the longitudinal slot **27** and extending through the block is a bore **28** which is located a slight distance below the upper edge **29** of the longitudinal slot. Slidably journaled within the bore **28**, but with a slight friction fit to prevent accidental removal therefrom, is a supporting pin **30**. As seen, the supporting pin **30** holds the wire **12** in a spaced position within the longitudinal slot **27**.

Referring to FIGURES 4 and 5, a new and novel method of securing the insulator block to the fence post will be described. The securing means **15**, previously mentioned, consists in this situation of a J-hook which has a shank portion **31** adapted to be journaled through the transverse mounting bore **32** of the upper body portion of the block. The shank terminates outwardly in a threaded end **33** to which is secured a wing nut **34** or the like. The shank also terminates at the opposite end in a hook portion **35**, the very end **36** of which is adapted to be clamped or tightly held against the fence post **11**. As seen more clearly in FIGURE 5, the hook portion joins the shank **31** in a slightly angulated portion **37**. Accordingly, therefore, the block **13** is provided with a diverging opening or slot at the end of the mounting bore **32**. The divergent opening is partially defined at one side thereof by the angulated wall portion **38**. The purpose of this diverging opening is to accommodate the angulation of area **37** of the J-hook and thus prevent twisting of the block around the J-hook **15**.

In the use of the form of invention just disclosed, the mounting of the block to the fence post is self-evident. When the wire **12** to be isolated has been stretched tautly, the pin **30** may be withdrawn from its bore **28** whereby to allow lateral insertion of the wire within the longitudinal slot **27**. To maintain the wire in the slot, the pin **30** is reinserted into the lower body **16** of the block where it will be maintained by the friction fit previously mentioned.

With reference now to FIGURE 2, it may be seen that, when in the event of rain or melting snow, the moisture or precipitation will freely run down the sides **21** and **22** of the block. Any moisture which may accumulate on the ends **25** and **26** will readily drip free at the edges **39** and **40**. In this manner, the connection between the wire **12** and block **13** will be maintained in a dry state. Thus, the objectionable surface leakage of potential applied to the wire **12** will be avoided.

To further aid in the dripping off of moisture collected on the ends **25** and **26**, an alternate form of the invention may be utilized as disclosed in FIGURE 6. In this instance, each of the ends **25** and **26** is provided with a lip portion **41** which will further shield the wire from re-

ceiving precipitation and will also prevent any migration, no matter how slight, of moisture as it drains down the ends 25 or 26, upon the upper wall surfaces 23 and 24.

With reference to FIGURE 7, a more simplified, yet just as efficient, alternate form of the invention is shown wherein a block 42 is provided which has a longitudinal undercut area 43 extending for its full length. The undercut area may be defined by a semi-circular wall 44, a square wall, or a triangular wall as desired. In either event, a pair of oppositely directed hooks 45 are provided to which the wire 12, to be isolated, is secured. The hooks are secured to the block an appreciable distance inwardly from the ends 46 and 47. In this manner, no moisture will be allowed to gather upon the hook and wire joint or if some does, it will be only a negligible amount. Thus, again, there will be a substantially dry connection between the wire 12 and the fence post to which the block 42 is adapted to be secured in a similar manner to that set forth above. It is pointed out that if the hooks 45 are of the small screw type, then the hooks may be easily turned to face opposite directions as shown and mentioned above. In this manner, the wire is more positively held to the block 42 and swaying of the wire 12 in wind, or because of being bumped by animals or the like, will not allow dislodging thereof from the hooks.

Thus, it is seen that the applicant has disclosed a means for maintaining certain critical portions of an insulator dry so that the voltage applied to the wire being insulated will not be appreciably reduced over the entire length of the wire due to surface leakage caused by shorting thereof through a wet or moisture saturated joint.

It will, of course, be understood that various changes may be made in the form, details, arrangements and proportions of the parts without departing from the scope of my invention as set forth in the appended claims.

What is claimed:

1. An electric fence insulator comprising,
(a) an insulator block having an upper body portion and a lower body portion of material having high dielectric strength,
(b) said lower body portion having a bridge positioned intermediate the longitudinal ends which is partially defined by an undercut portion at each end,
(c) said bridge further having a longitudinal slot therethrough adapted for receiving therethrough a wire that is to be isolated,
(d) a supporting pin positioned transversely across said lower body portion and slidably extending across said longitudinal slot for suspending said wire in spaced relation beneath said upper body portion, and
(e) means extending laterally outward from said upper body portion and adapted for securing said insulator block to a fence post, whereby said upper body portion will provide a protective shield over said supporting hook to protect the same from the weather elements.

2. An electric fence insulator comprising:
(a) an insulator block of high dielectric strength material having a body with an undercut portion on the lower side thereof which is adapted for receiving therethrough a wire which is to be isolated,
(b) said body having a vertically depending lip at each longitudinal end which extends downwardly slightly into said undercut portion;
(c) narrow supporting means positioned within said undercut portion for suspending said wire in spaced relation beneath said body; and
(d) means extending laterally outward from said upper body portion and adapted for securing said insulator block to a fence post, whereby said body will provide a protective shield over said supporting means to protect the same from the weather elements.

3. An electric fence insulator comprising,
(a) an insulator block having an upper body portion and a lower body portion of material having high dielectric strength,
(b) said lower body portion having a bridge positioned intermediate the longitudinal ends which is partially defined by an undercut portion at each end,
(c) said bridge further having a longitudinal slot therethrough adapted for receiving therethrough a wire that is to be isolated,
(d) narrow supporting means positioned within said undercut portion and spaced from the longitudinal ends thereof for suspending said wires in spaced relationship to the upper body portion, and
(e) means extending laterally outward from said upper body portion and adapted for securing said insulator block to a fence post, whereby said upper body portion will provide a protective shield over said supporting hook to protect the same from the weather elements.

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