July 16, 1963 R. M. WILSON 3,098,117

ELECTRIC FENCE INSULATOR

Filed Aug. 3, 1960 2 Sheets-Sheet 1

Fig. 1.

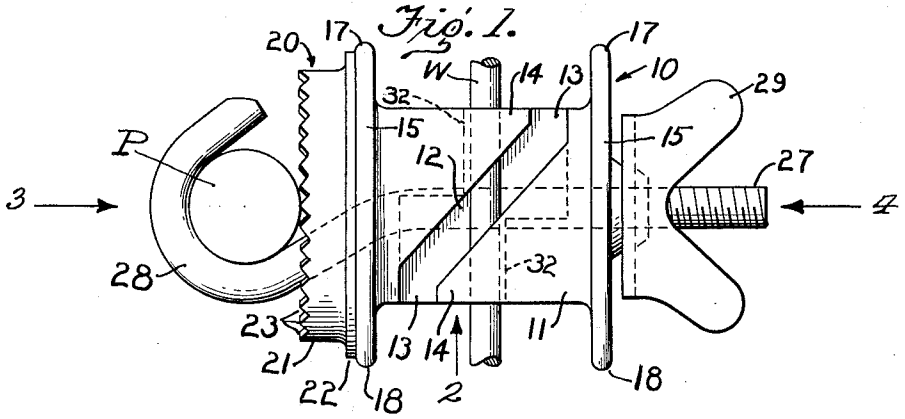


Fig. 2.

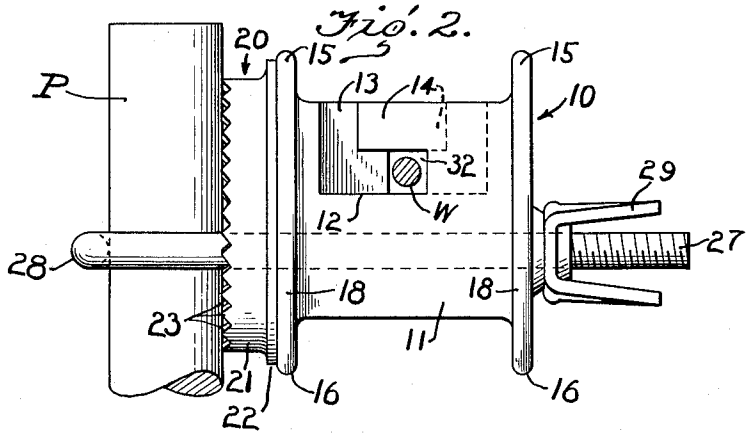


Fig. 3.

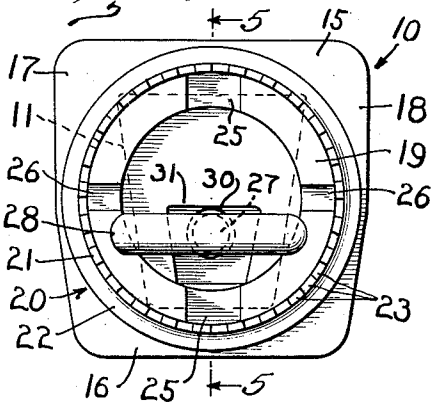
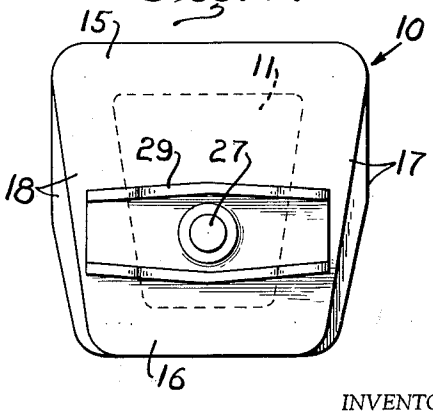


Fig. 4.



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July 16, 1963 R. M. WILSON 3,098,117

ELECTRIC FENCE INSULATOR

Filed Aug. 3, 1960 2 Sheets-Sheet 2

Fig. 5.

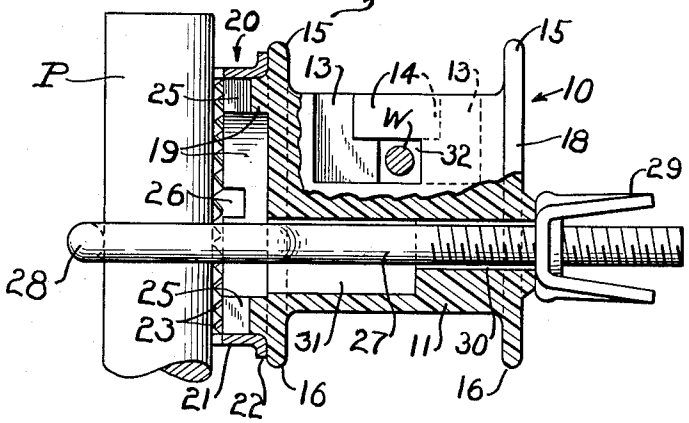


Fig. 6.

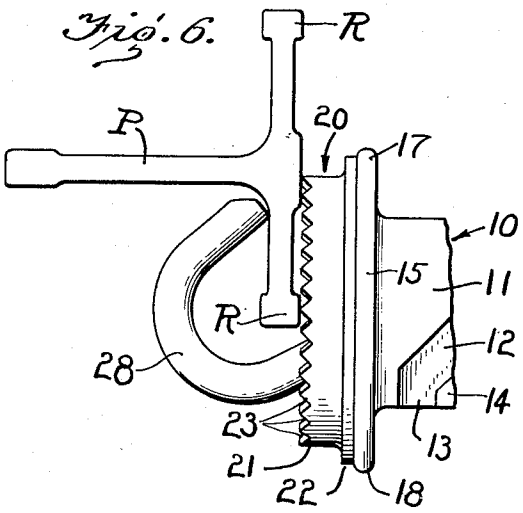


Fig. 7.

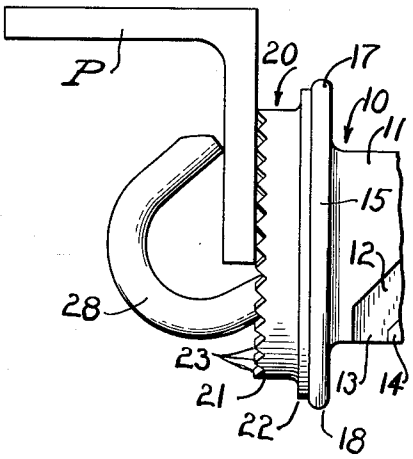
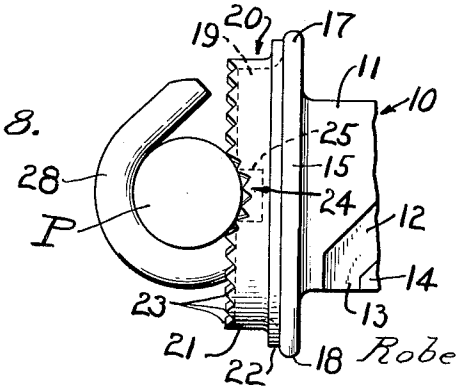


Fig. 8.



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ELECTRIC FENCE INSULATOR

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4 Claims. (Cl. 174—166)

This invention relates broadly to electric fencing and in its more specific phases to a new and improved insulator assembly intended primarily for use in the mounting of electric fence wires upon metal fence posts.

The mounting of electric fence insulators on various forms of steel fence posts is common practice, but great difficulty is encountered in devising a universal construction which will satisfactorily hold on the various forms of posts. This difficulty resides in the fact that a plain porcelain insulator has a glazed base which slides easily and is brittle, while plastic insulators tend to be somewhat flowable and slippery, particularly when hot or wet so that when pressed against a metal post they resist firm holding on the post and are, in most cases, easily displaced from desired position. Heat also aggravates this due to expansion of the metal anchoring member which relaxes the holding pressure exerted on the insulator and thus facilitates shifting of the insulator on the fence post, especially when the fence wire or insulator is bumped, pushed, or pulled under conditions of use. It was a recognition of this difficulty and the lack of any fully universally satisfactory solution permitting firm gripping of the insulator to most every type of standard metal fence post for electric fencing which led to the conception and development of the present invention.

Accordingly among the objects of the present invention is the provision of a novel construction in which the insulator body may be constructed from any suitable material such as from polyethylene or other modern plastic and provided with a special base in the form of a hardened metal crown having sharp teeth to bite antislippingly into any of various kinds of steel fence posts, thereby assuring effective and stable mounting of the fence wire by this improved insulator assembly on a fence post even though the plastic used may itself present a smooth and slippery surface.

Another object is to provide a novel construction in which the toothed crown is in the form of a ring snugly supported by and surrounding a cylindrical projection on the bottom of the insulator body to tenaciously connect and support said crown on said body in a simple and effective manner.

A further object is to provide an electric insulator with an internal cross channel for an electric fence wire with such channel having a diagonal cross entrance with tongues to overlie the ends of said channel to hold the wire in place after admission through said entrance, the ends of the insulator body also being provided with novel water-drip flanges which shield and minimize danger of the fence wire becoming grounded.

A still further object is to provide a more universal use, novel and practical insulator assembly construction which may be expeditiously manufactured and sold at a reasonable price, and yet will give maximum service.

Still further objects and advantages of the invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the insulator means hereinafter fully described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail certain means for carrying out the invention, such disclosed means illustrating, however, but several of various ways in which the principle of the invention may be used.

In the annexed drawings:

FIGURE 1 is a top view showing the improved insulator assembly in use for mounting a fence wire on a rod-type post.

FIGURE 2 is a side view of the assembly looking as indicated by the arrow 2 of FIGURE 1.

FIGURES 3 and 4 are end views, looking in the direction indicated by the arrows 3 and 4, respectively, of FIGURE 1, the post and wire being omitted.

FIGURE 5 is a vertical longitudinal section taken substantially on line 5—5 of FIGURE 3, looking in the direction of the arrows, but partly in elevation and again showing the invention in use with a rod-type post.

FIGURE 6 is a fragmentary top view showing the invention clamped to a T-section post.

FIGURE 7 is a similar view showing the invention clamped to an angle-section post.

FIGURE 8 is a view similar to a portion of FIGURE 1, but showing a modification particularly adapted for use on a rod-type post.

Preferences are illustrated in the drawings and will be rather specifically described, but it is to be understood that variations may be made within the spirit and scope of the invention as herein illustrated and described.

An insulator 10 is provided, and which, if desired, may be moulded from polyethylene or other suitable plastic. The insulator body 11 is in the form of a substantially rectangular block having an oblique or diagonal slot 12 in its top, through which to insert the electric fence wire W when the insulator and wire are relatively angled. This oblique slot 12 terminates at its bottom in a cross slot 32 through which wire W extends in use as shown in FIGURES 1, 2 and 5. The ends 13 of the slot 12 are at obtuse angles to the length of said slot 12 to facilitate threading the wire through slot 12 and into cross slot or channel 32 and at each slot end 13, there is a tongue 14 which overlies and holds said wire W when in cross slot 32, with the wire in normal use position as illustrated in FIGURE 1.

Each end of the body 11 is provided with four relatively wide and thin insulating and water-drip flanges 15, 16, 17 and 18. The flange 15 projects upwardly, FIGURE 2, flange 16 projects downwardly, and flanges 17 and 18, FIGURE 4, project laterally. All of these flanges are integral with the body 11 and with each other.

One end of the body 11 is provided with an integral projection in the form of a circular rib 19 which preferably mounts a hardened tooth, metal crown 20 on said body end. This crown 20 includes a ring 21 snugly surrounding the circular rib 19. One edge of the ring has an integral peripheral flange 22 which solidly abuts the adjacent end of the body 11, and the other edge of said ring has sharp circumferentially spaced teeth 23 to bite into portions of the post P, whether this post be of rod-type, as in FIGURES 1, 2, 5 and 8, of T-section, as in FIGURE 6, or of angle-section, as in FIGURE 7. In preferred construction the teeth 23 will be hardened, as by case hardening, to facilitate biting into the metal post P for firm anchoring against shifting.

If desired, the toothed edge of the ring 21 may have toothed shallow notches 24, as shown in FIGURE 8, to better engage a post of rod-type. At least, when this form of ring is employed, the rib 19 may have recesses 25 to clear the post. Such recesses are shown in full lines in FIGURES 3 and 5, and one is dotted in FIGURE 8.

In some installations, the insulator 10 may be used without the crown 20, and this crown may therefore be pried off. When this is done, the recesses 25 may engage

a ribbed formation or the like on the post P, such as one of the ribs R shown in FIGURE 6.

The rib **19** may have other recesses **26**, as shown in FIGURES 3 and 5, to accommodate portions of a known form of fastener (not shown) which is in the general shape of a long cotter pin, if it should be desired to use such a fastener in securing the insulator to the post, instead of using the attaching bolt **27** shown in the drawings. It is intended that the showing of bolt **27** will be considered to diagrammatically cover the long cotter pin type fastener which also engages the back of the post to grip the insulator to same.

The bolt **27** is preferably employed, and extends longitudinally through the body **11**, and has a post-engaging hook **28** on one end and a wing nut **29** threaded onto its other end. When the insulator **10** and the hook **28** are properly positioned with respect to the post, and the nut **29** is tightened, some of the crown teeth **23** will bite into the post, and the entire device will therefore be tenaciously and anti-slippingly secured to the post.

The body **11** is suitably recessed at **30** and **31**, FIGURE 5, to receive the bolt **27**. This same recessing would receive the old-style long cotter-pin-type of fastener, should this be employed instead of the bolt **27**. Should this old-type fastener be used, it would be inserted through the recesses **30** and **31**, the free ends of its arms would be bent out into and through the rib recesses **26**, and said arms would then be passed around the post and twisted together to tighten the assembly on the post the same as is accomplished by tightening wing nut **29** on bolt **27**.

From the foregoing, it will be seen that novel provision has been dsclosed for attaining the desired ends. However, attention is again invited to the possibility of making variations within the spirit and scope of the invention as herein illustrated and described.

Other modes of applying the principle of my invention may be employed instead of those explained, change being made as regards the insulation means herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. An electrical insulator comprising a heat-flowable, plastic body portion terminating at one end in a peripheral flange, said body portion including a through aperture extending through opposite ends thereof for receiving a pressure-applying fastener therethrough, said body portion including intermediate wire-receiving means for removably receiving a current conducting wire, said body portion including an integral rib projecting axially beyond said peripheral flange, inwardly and adjacent the outer edge thereof and surrounding said through aperture, and a rigid metal sleeve circumjacent to the other surface of said rib and including an outwardly extending, continuous flange seated on the outer surface of said peripheral flange of said body portion and adjacent the outer edge thereof, said sleeve projecting beyond the terminal end of said rib and terminating in a terminal edge including a serrated portion opening in the direction toward which said rib projects, said sleeve restraining said rib against deformation and expansion flow during installation, and said continuous flange of said sleeve providing a pressure base outwardly of said rib for distributing the application of pressure on said insulator outwardly of said rib when the insulator is installed.

2. The structure of claim 1 in which said sleeve includes at least one intermediate notch in said terminal edge, said one notch including serrations formed therein for engaging portions of a support.

3. The structure of claim 1 in which said rib on said body portion is annular.

4. The structure of claim 1 in which said continuous sleeve flange is disposed substantially outwardly of the outer surface of said body portion.

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