United States Patent

Wilson

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[54] REVERSIBLY MOUNTABLE INSULATOR

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[52] **U.S. Cl.** .....**174/45 R**, 174/163 F, 174/175, 248/72, 248/221, 248/228

[51] **Int. Cl.**.....**H01b 17/16**, A01k 3/00

[58] **Field of Search**.....174/45 R, 154, 155, 158 R, 174/158 F, 161 R, 161 F, 163 R, 163 F, 168, 174, 175; D8/230; D26/10; 248/65, 70, 72, 73, 221, 226 R, 226 D, 226 E, 227, 228, 229, 230; 256/3, 10, 11, 47, 48, 54, 55

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A page (page number unknown) from a brochure published by Wall Manufacturing, Inc., Box 146, Hutchinson, Minnesota, 55350, entitled " The Stur-dee Bracket," Publication date unknown, but cited by the applicant as prior art.

Two loose-leaf pages (page numbers unknown) listed as " Catalog Service," entitled " Red Snap' r Electric Fence Insulators," copyright 1960, published by North Central Plastics Incorp., Ellendale, Minnesota.

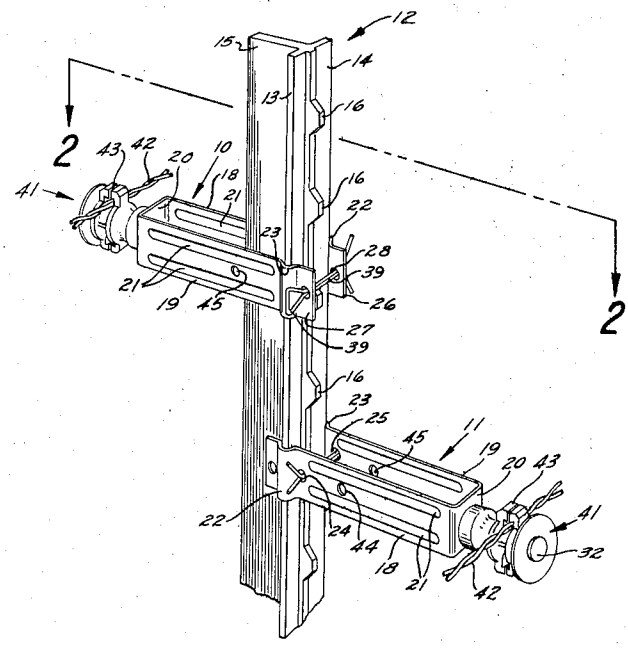
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[57] **ABSTRACT**

An insulator assembly is provided adapted to be mounted on an electric fence post and to support electrically charged wire. The insulator is provided with a long extender body adapted to support the electrically charged wire in a position wherein it is spaced apart from the fence post a substantial distance. The base of the insulator assembly is provided with a clip adapted to engage laterally extending flanges of the fence post, as for example, the laterally extending flanges of a steel fence post having a T-shaped cross section. Apertures are provided in the extender body immediately adjacent the base clip to receive a cotter pin or other means for clamping the jaws of the clip together on the fence post, when the insulator is so mounted that the extender is directed outboard of the fence post. Additionally, longitudinally extended flanges are provided in the base clip and provided with apertures to receive a cotter pin or similar means for clamping the jaws together when the extender body is positioned inboard of the flanges of the fence post.

7 Claims, 6 Drawing Figures



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SHEET 1 OF 2

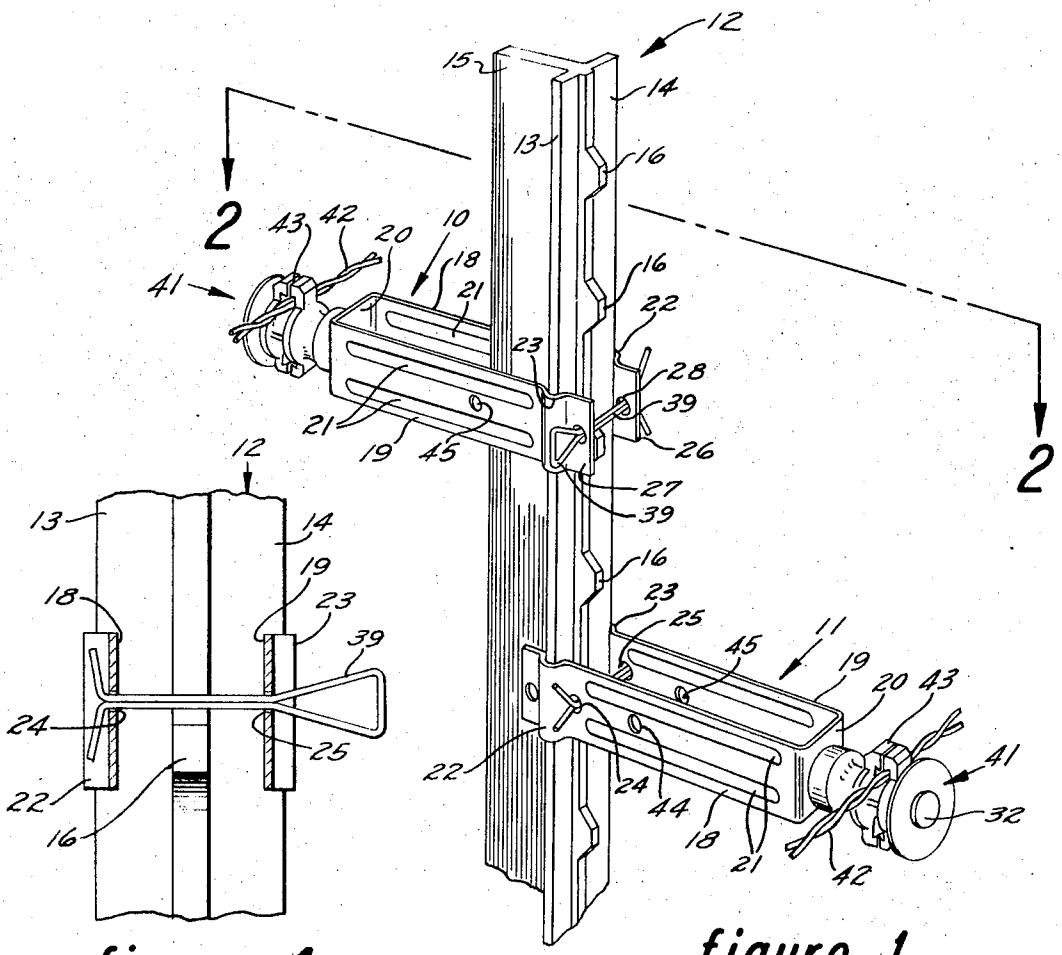


figure 1

figure 4

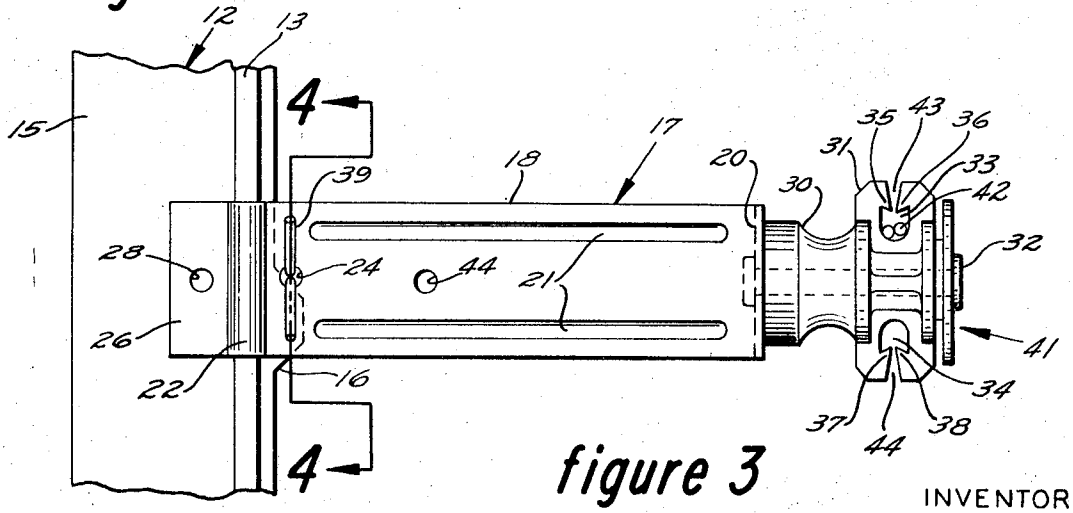


figure 3

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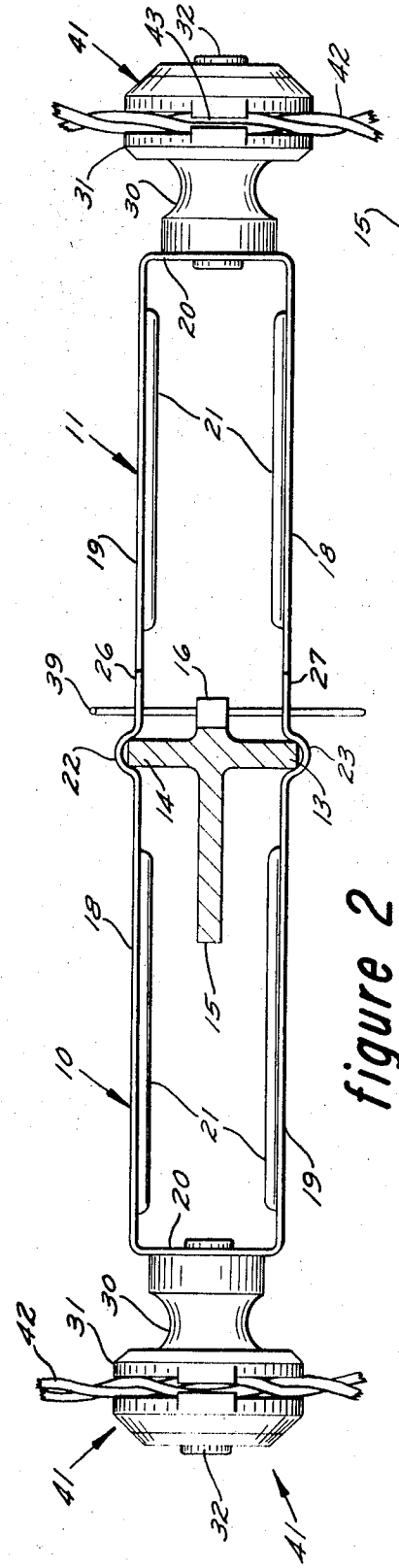


figure 2

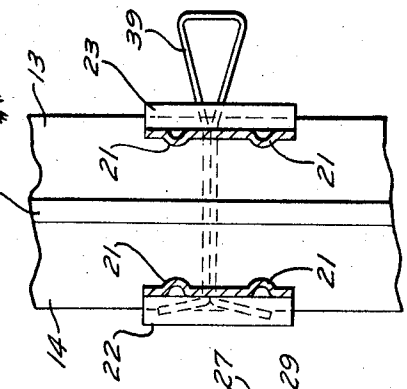


figure 6

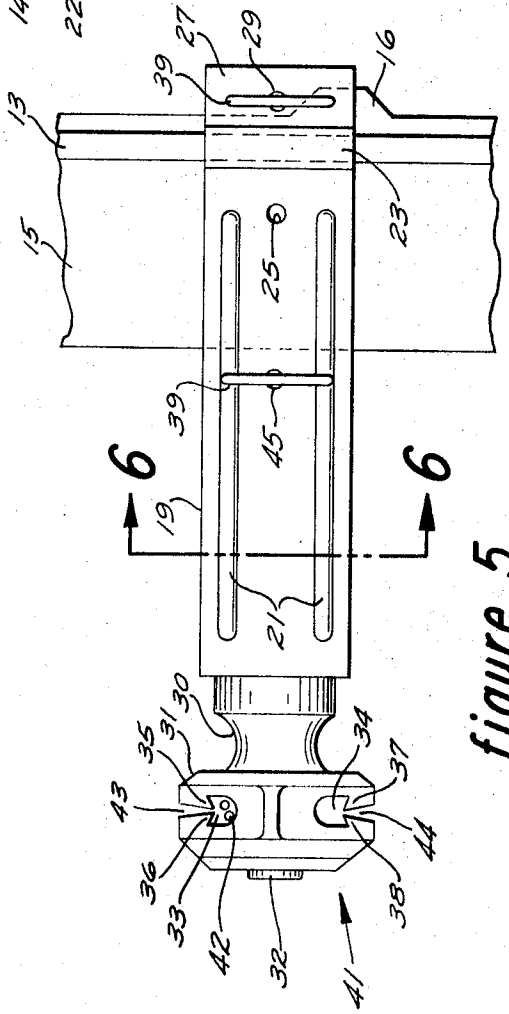


figure 5

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REVERSIBLY MOUNTABLE INSULATOR

BACKGROUND OF THE INVENTION

The present invention deals broadly with insulator assemblies for mounting on fence posts of electrically charged fences, and more particularly refers to insulator assemblies having a long extender body to space the electrically charged wires a substantial distance from the fence post and having clip means for engaging the laterally extending flanges of a fence post. Fence posts for use in erecting electrically charged fences are available in many different cross-sectional forms, as for example angle-form, T-form, U-form, or arcuate, generally having laterally extending flanges upon which insulator assemblies may be mounted. Insulators for such fence posts are well known in the art. More recently, particularly because of the use of higher voltage electrical currents, it has become desirable to mount the electrically charged wires spaced a considerable distance from the fence post to prevent shorting and current leakage. Various extending type clips have been disclosed in the art. However, such clips must generally be mounted outboard of the fence post if the clip of the insulator is to be securely affixed.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an insulator assembly for supporting electrically charged wires on a metal fence post having means for extending the insulating body supporting the electrically charged wires a substantial distance from the fence post.

It is a further object to provide an insulator assembly of the type described having clip means for engaging laterally extending flanges of the fence post, as for example a fence post having a T-cross section.

It is still further an object to provide an insulator assembly of the type described wherein the clip engaging the flanges of the fence post may be securely affixed as by means of a cotter pin.

It is still further an object to provide an insulator assembly of the type described wherein means is provided so that the clip of the assembly may be mounted on the lateral flanges of a fence post, for example a T-cross section fence post and secured thereto by means such as a cotter pin, with the insulator assembly being adaptable for mounting either outboard or inboard with respect to the fence post.

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 an extender including insulator assembly which may be adjustably mounted on a standard flanged edge electrical fence post and utilized to support an electrically charged wire, as herein fully described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail certain illustrative embodiments of the invention, such disclosed embodiments illustrating, however, but several of the various ways in which the present invention may be used.

BRIEF DESCRIPTION OF THE DRAWINGS

In the annexed drawings:

FIG. 1 is a perspective view illustrating insulator assemblies according to the present invention mounted in both outboard and inboard relationship with respect to a T-cross section fence post.

FIG. 2 is a view partly in cross section taken at the line 2—2 of FIG. 1, looking in the direction of the arrows.

FIG. 3 is a side elevational view of an outboard mounted insulator assembly on a fence post.

FIG. 4 is a view partly in cross section taken at the line 4—4 of FIG. 3, looking in the direction of the arrows. FIG. 5 is a side elevational view of an inboard mounted insulator assembly; and

FIG. 6 is a cross-sectional view taken at the line 6—6 of FIG. 5, looking in the direction of the arrows.

DESCRIPTION OF THE SPECIFIC EMBODIMENTS

Referring to the drawings, FIG. 1 illustrates two insulator assemblies **10** and **11** according to the invention mounted on a fence post **12** of T-shaped cross section and having a pair of lateral flanges **13** and **14** and a longitudinal flange **15**. Studs **16** are conventionally provided to limit vertical travel of objects mounted on the fence post. The insulator assembly **11** is mounted outboard of the fence post **12**, that is, the main portion of the insulator assembly extends externally of the fence post. The insulator assembly **10** is mounted inboard of the fence post, since the U-shaped insulator body **20** includes the entire longitudinal flange **15** of fence post **12** therein between its lateral flanges **18** and **19**.

Referring to the drawings, and particularly FIGS. **3** and **4**, the insulator assembly comprises a U-shaped body **17** having lateral members **18** and **19** and a cross member **20** connecting the outer ends of the lateral members. The lateral members are preferably provided with longitudinal ribs **21** for imparting rigidity to same. Near one end of the lateral members **18** and **19** are a pair of clamping grooves or jaws **22** and **23** adapted to engage the lateral flanges **13** and **14** of the fence post. Holes **24** and **25** are provided in the lateral members **18** and **19**, respectively, for the insertion of a cotter pin **39** therethrough with its ends bent over to provide clamping force permanently maintaining the insulator assembly affixed to the fence post. Beyond the clamping grooves or jaws **22** and **23** are provided longitudinal extensions **26** and **27** of the lateral members **18** and **19**, having holes **28** and **29**, respectively, provided therein. As shown in FIGS. **5** and **6**, a cotter pin **39** is inserted through the holes **28** and **29** with its ends bent over to clamp the insulator assembly **11** to the fence post, when the insulator assembly is mounted in inboard position. Because of the arrangement shown in which extensions **26** and **27** are provided with additional cotter pin mounting holes **28** and **29**, the insulator assemblies may be mounted either inboard or outboard, as desired. Holes **44** and **45** are provided for receiving a cotter pin if bowing of the lateral members occurs when the insulator assembly is mounted in inboard position. With either type of mounting, the insulator body should be positioned so that the cotter pins **39** engage the upper surface of a lug **16** to prevent downward sliding of the insulator assembly.

As shown in the drawings, and particularly in FIGS. **2**, **3** and **5**, an insulator body **41** is mounted on the cross member **20** and preferably affixed thereto by means of a rivet **32**. The insulator body is preferably molded of an electrically insulating material such as a plastic material or rubber. The insulator body is shaped to provide a neck **30** in the form of an annular groove adapted to lengthen the electrical leakage path, and a head **31**. The head is provided with horizontal channels **33** and **34** for retaining the electrical conducting wires **42** which may be of single or multiple strand type, which is diagrammatically illustrated. The channels, in this preferred construction, communicate with the upper and lower surfaces, respectively, of the head **31** by means of constricted notches **43** and **44** terminating in hooks **35**, **36**, **37** and **38** adapted to retain the wires **42** after they have been pushed through the notches **43** and **44** and into the channels **33** and **34**.

In mounting the insulator assemblies according to the present invention, the lateral members **18** and **19** are spread apart and the clamping grooves **22** and **23** placed over the lateral flanges **13** and **14** of the post, either in the outboard position as shown in FIGS. **3** and **4**, or in inboard position as shown in FIGS. **5** and **6**. A cotter pin **39** is then placed through the holes **24** and **25** when mounted in the outboard position or through the holes **28** and **29** when mounted in the inboard position. The ends of the cotter pin are bent over to provide clamping force permanently affixing the insulator assembly to the pole. The insulator assemblies are preferably positioned so that the cotter pin engages a lug **16** to prevent downward sliding of the insulator assembly. The wire **42** may then be inserted into the channel **33**.

Although a particular form of insulator body has been shown and described, it is to be understood that any of a large

number of insulator heads known in the art may be utilized in its place, without substantially affecting the operation of the invention.

The insulator assembly of the present invention is superior to those disclosed in the art since it provides an extender for supporting the insulator for electrically charged fences a considerable distance out from the metal post, and provides an assembly which may be positively clamped to a post, as for example of the T-shaped type, with the electrical wires being held at a substantial distance from the post, and also provides a novel means for permanently mounting and affixing the insulator assembly to a post with a cotter pin (which provides removability when desired) in either inboard or outboard position. Additionally, the insulator assembly is relatively simple to manufacture and can be inexpensively produced.

It will be seen from the above that a simple and relatively inexpensive yet practical and durable means has been disclosed for attaining the desired ends. Attention is invited, however, to the possibility of making variations within the spirit and scope of the invention set forth, and therefore the embodiments shown in the drawings are to be considered as merely setting forth the invention for illustrative purposes, and with no intention to limit the scope of the invention herein described, illustrated, and claimed.

Other modes of applying the principle of my invention may be employed, instead of those explained, change being made as regards the insulator assembly 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 insulator assembly adapted to be mounted on a fence post having laterally extending flanges, comprising a U-shaped extender body having a pair of substantially parallel spaced apart lateral members connected together at one end by a cross member and having an insulator body of an electrically insulating material mounted on said cross member, said lateral members being provided with clamping jaws near the other end each having a narrow groove provided adapted to engage snugly the laterally extending flanges of said fence post, and having longitudinal extensions beyond said clamping jaws, a pair of cooperating holes provided in said lateral members immediately adjacent to and on the proximal side of the grooves of said clamping jaws with respect to said cross member adapted to receive fastening means for clamping said jaws to said lateral flanges when the main portion of the insulator assembly extends externally of the fence post, and a second pair of cooperating holes provided in said longitudinal extensions immediately adjacent to the grooves of said clamping jaws and distal with respect to said cross member adapted to receive fastening means for clamping said jaws to said laterally extending flanges when the entire longitudinal flange of the fence post extends between the lateral members of the U-shaped extender body.

2. An insulator assembly according to claim 1, additionally including a cotter pin disposed within a pair of said cooperating holes and bent over to clamp said clamping jaws to the laterally extending flanges of said fence post.

3. An insulator assembly according to claim 1, wherein said lateral members are each provided with longitudinally directed ribs, thereby stiffening said lateral members.

4. An insulator assembly according to claim 1, wherein said insulator body is comprised of a molded electrically insulating material and includes a horizontal channel for supporting an electrical wire and a restricted notch communicating with the exterior and enabling said wire to be inserted within said channel.

5. In combination, a fence post having a T-shaped cross section including a pair of laterally extending flanges, and an insulator assembly mounted on said fence post comprising a U-shaped extender body comprising a pair of substantially parallel spaced apart lateral members connected together at one end by a cross member and having an insulator body of an electrically insulating material mounted on said cross member, said lateral members being provided with clamping jaws near the other end thereof engaging the laterally extending flanges of said fence post, said lateral members having longitudinal extensions beyond said clamping jaws, a pair of cooperating holes provided in said lateral members adjacent to and on the proximal side of said clamping jaws with respect to said cross member, a second pair of cooperating holes provided in said longitudinal extensions adjacent to said clamping jaws and distal with respect to said cross member, and fastening means extending through one of said pair of cooperating holes and clamping said jaws to the laterally extending flanges of said post.

6. The combination according to claim 5, wherein said insulator assembly is mounted so that the main portion of the insulator assembly extends externally of the fence post and said fastening means comprises a cotter pin extending through the cooperating holes on the proximal side of said clamping jaws.

7. The combination according to claim 5, wherein said insulator assembly is mounted so that it includes the entire longitudinal flange of said fence post between the lateral members thereof and said fastening means comprises a cotter pin extending through the cooperating holes distal to said cross member.

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