United States Patent [19]

Dill

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[54] **FENCE POST BRACE BRACKET**

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[52] **U.S. Cl.** **256/35,** 248/221, 248/300

[51] **Int. Cl.** **E04h 17/14**

[58] **Field of Search** 256/35, 36, 59, 65; 248/300, 221; 403/237, 234, 190

[56] **References Cited**

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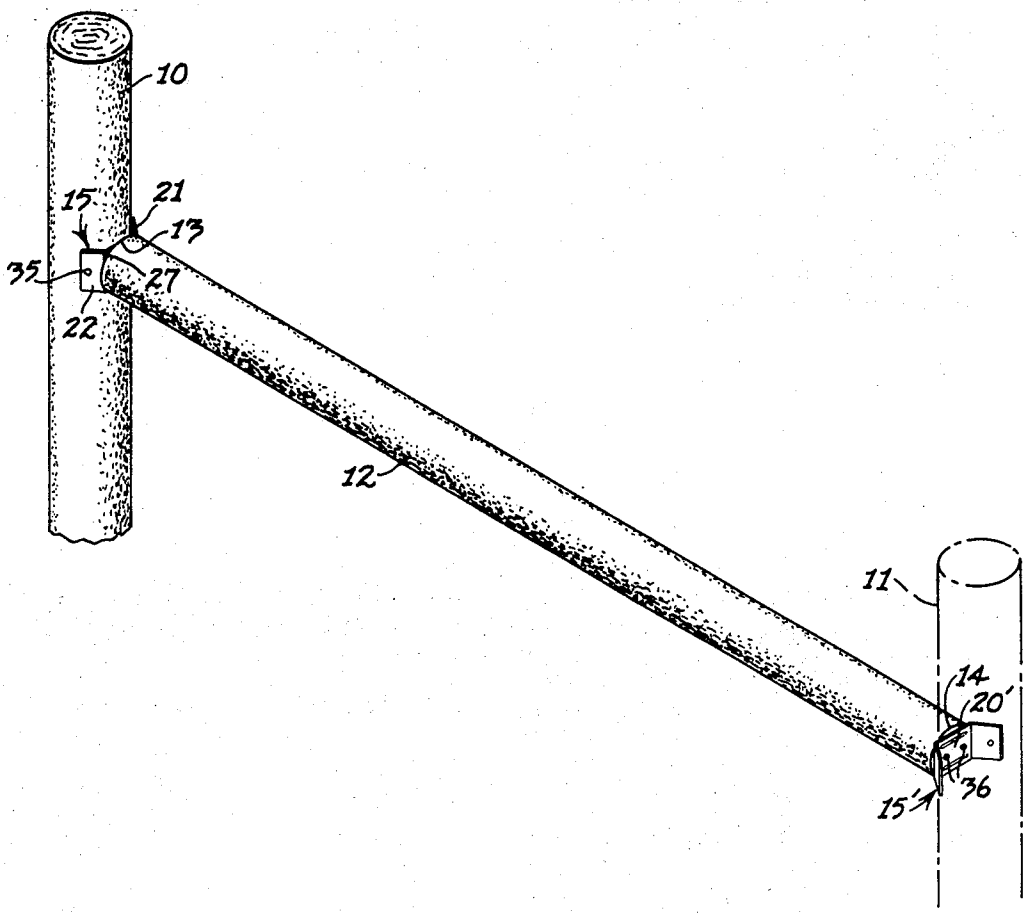
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[57] **ABSTRACT**

A bracket for connecting one flat end of an elongated brace member or pole to an upright fence post, having a round cross-section. The bracket is preferably an elongated unitary plate member having a middle section and flanges diverging from the ends of the inner surface of the middle section. The outer surface of the middle section is flat. Fastener members, such as nails or wood screws, are driven through holes in the middle section for securing the outer surface of the middle section flush against the flat end of the brace member and through holes in the flanges for securing the inner surfaces of the flanges to the fence post.

5 Claims, 5 Drawing Figures



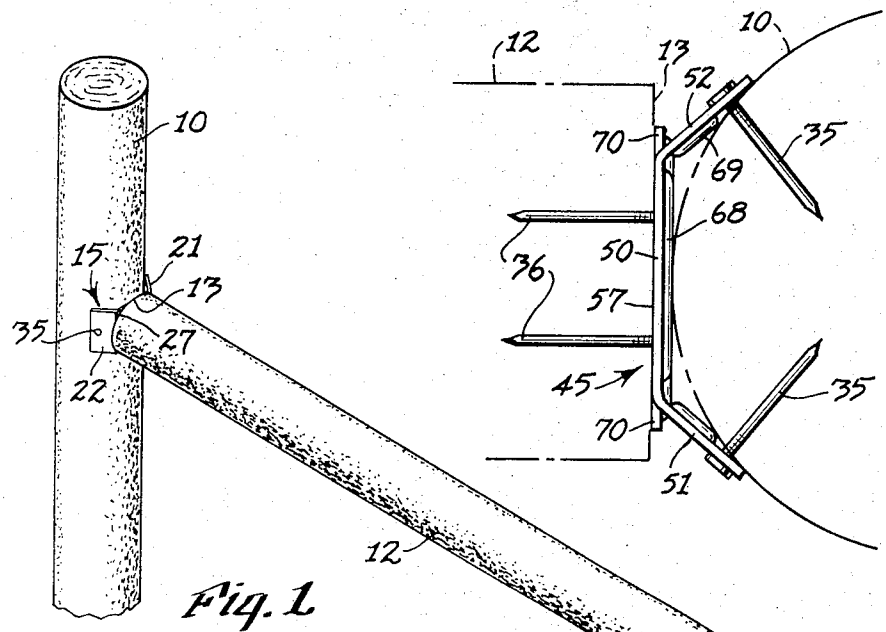


Fig. 1

Fig. 4

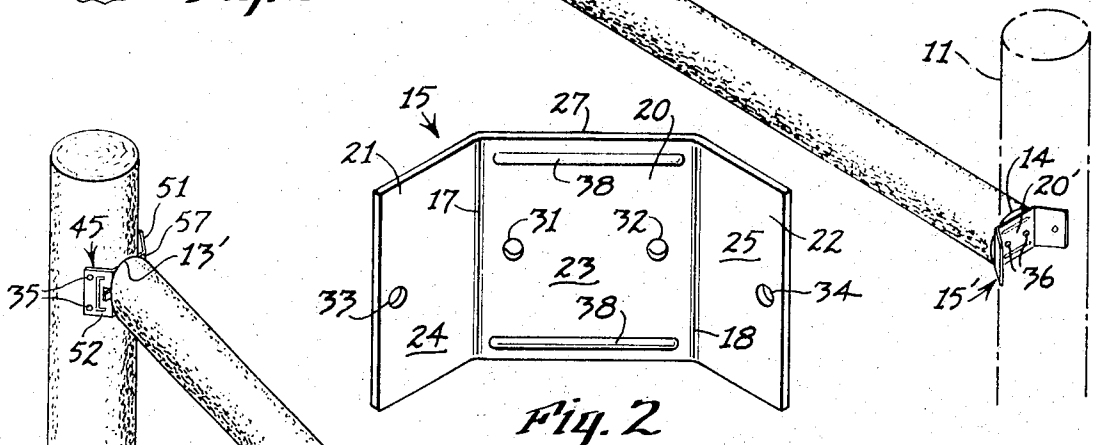


Fig. 2

Fig. 3

Fig. 5

FENCE POST BRACE BRACKET

BACKGROUND OF THE INVENTION

This invention relates to a brace bracket, and more particularly to a brace bracket for connecting the flat end of an elongated brace member or rail to the surface of an upright fence post.

Heretofore, some of the fence posts, to which fence wire or barbed wire are secured or strung, have required some type of bracing at intervals along the fence. These braces take the form of elongated brace poles long enough to span the distance between a pair of adjacent upright fence posts. The ends of the brace pole are usually fitted into corresponding notches formed in the opposed surfaces of the adjacent fence posts. Thus, two adjacent fence posts are used to brace each other through the intermediate brace member or brace pole in order to give stability to the fence after the wire is strung upon the fence posts.

The notching of fence posts to firmly secure the opposite ends of the brace member is time consuming, and therefore expensive by virtue of labor costs.

SUMMARY OF THE INVENTION

It is therefore an object of this invention to provide means for securing the opposite ends of elongated brace members or poles to adjacent pairs of round fence posts, which are not only made from relatively inexpensive materials, but which require considerably less time to install than the notching of the fence posts.

It is another object of this invention to provide means for attaching the opposite ends of a brace member to adjacent round fence posts without notching the posts at all.

It is another object of this invention to provide uniform brackets of relatively simple construction which may be quickly secured to both the ends of the brace member and the fence posts in a minimum of time.

A further object of this invention is to provide fence post brace brackets which may be pre-installed upon the elongated brace members, to further reduce the time of installation of the brace members upon the fence posts.

The brace bracket made in accordance with this invention is formed from an elongated unitary plate member, preferably bent along a pair of vertical lines to form a middle section having ends determined by the bent or crease lines and a pair of flanges diverging from the inner surface of the plate member at obtuse angles to the middle section. The outer surface of the middle section should be flat.

Holes are formed through the middle section and the flanges for receiving driven fasteners, such as nails or wood screws, for securing the outer surface of the middle section to the flat end of an elongated wooden brace member, and for securing the inner surfaces of both flanges to circumferentially spaced portions of a rounded wooden fence post. The location of the fastener holes in the flanges is preferably at or adjacent to the points of tangency of the post with the inner surfaces of the flanges. There should be at least two holes through the middle section, longitudinally spaced, for stabilizing the bracket upon the flat end of the brace member when secured by the fasteners.

The length of the middle section and the angles which the flanges make with the middle section should

be such that at least portions of all the inner surfaces of the middle section and both flanges are tangent to the rounded circumferential surface of the fence post when secured to the fence post.

The brace member and fence posts are assembled by first securing the middle section with its outer surface flush against the flat end of the brace member and then securing the flanges to the circumferential surface of the fence post by driven fastener members.

The inner surfaces of the middle section and/or the flanges may be provided with ribs or ridges for improving the frictional engagement, or grip, of the bracket against the fence post. The outer surfaces of the bracket, and particularly the middle section should be free of any such ribs to provide a flush fit between the outer surface of the middle section and the flat end of the brace member.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a pair of brackets made in accordance with this invention attached to the opposite ends of an elongated brace member and to a pair of adjacent fence posts, one of which posts is disclosed in phantom;

FIG. **2** is an enlarged perspective view of the inner surface of one of the brackets of FIG. **2**;

FIG. **3** is a view similar to FIG. **2** of a modified form of bracket;

FIG. **4** is a top plan view of the bracket disclosed in FIG. **3**, securing one end of a brace member, disclosed in phantom, to a fence post, disclosed in phantom; and

FIG. **5** is a view similar to FIG. **1**, but disclosing a pair of brackets illustrated in FIG. **3** connecting an elongated brace member in an inclined position to a pair of fence posts, one of which is shown in phantom.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in more detail, FIG. **1** discloses a pair of upright wooden fence posts **10** and **11** having round cross-sections and an elongated wooden brace member or pole **12**, the opposite ends **13** and **14** of which are secured to the respective fence posts **10** and **11** by brackets **15** and **15'**, made in accordance with this invention.

As best disclosed in FIG. **2**, the bracket **15** is made from an elongated, unitary, rectangular, plate member of substantially uniform thickness and height. The plate member **15** is bent along the parallel crease lines **17** and **18** to define a substantially planar middle section **20** and a pair of flanges **21** and **22** diverging from the ends **17** and **18** of the inner surface **23** of the middle section **20**. The inner surfaces **24** and **25** of flanges **21** and **22**, respectively, form substantially equal obtuse angles with the inner surface **23** of the middle section **20**. The value of the obtuse angles and the length of the middle section **20** are determined by the circumference or diameter of the post **10**. These values should be such that at least a portion of each of the inner surfaces **23**, **24** and **25** are tangent to the circumferential surface of fence post **10**.

The ends **13** and **14** of the brace member **12** are flat. When the brace member **12** extends horizontally between the posts **10** and **11**, the flat ends **13** and **14** are also perpendicular to the longitudinal axis of the elongated brace member **12**. Accordingly, the exterior sur-

face 27 of the middle section 20 is also flat or planar so that it will fit flush against the corresponding flat end 13 of the brace member 12.

Formed through the middle section 20 are a pair of fastener holes 31 and 32 substantially in the middle and spaced longitudinally of the middle section 20. A fastener hole 33 is formed through the flange 21, while a fastener hole 34 is formed through the flange 22. These fastener holes 33 and 34 are preferably formed substantially mid-way between the upper and lower edges of the flanges 21 and 22, but more importantly, in the portion of the respective flange which is tangent to the circumferential surface of the fence post 10. Thus, fasteners, such as the nail 35 (FIG. 1), may be driven through the hole 34 substantially at the point of tangency with the post 10, to thereby provide a secure and snug fit between the flange 22 and the post 10. Nails 36 or other appropriate driven fasteners, are driven through the corresponding holes 31 and 32 in the middle section 20 and into the flat end 13 of the elongated brace member 12. These nails 36 are disclosed in FIG. 1 projecting through the middle section 20' of the bracket 15' which is fastened to the flat end 14 of the brace member 12.

Cleats or ribs 38, such as those disclosed in FIG. 2, may also be formed to project from the inner surface 23 of the middle section 20 in order to grip or frictionally engage the circumferential surface of the fence post 10 for a more secure attachment between the bracket 15 and the post 10.

FIG. 3 discloses a modified form of bracket 45 which has essentially the same shape and structure as the bracket 15, but with additional structural features for strength in supporting larger brace members upon the larger posts.

The bracket 45 is also made of a unitary rectangular plate member sightly larger and thicker than the plate member 15 and bent along crease lines 46 and 47 to define a substantially rectangular middle section 50 and diverging flanges 51 and 52. The middle section 50 is provided with an inner surface 53, while the flanges 51 and 52 have inner surfaces 54 and 55, respectively. The middle section 50 is provided with a flat or planar outer surface 57.

The middle section 50 is provided with a plurality of fastener or nail holes 61 and 62, while the flanges 51 and 52 are provided with respective pairs of nail holes 63 and 64.

The middle section 50 may be provided with a pair of cleats or ribs 68, and cleats or ribs 69 may also be provided on the inner surfaces 54 and 55 of the respective flanges 51 and 52, in order to improve the traction or gripping action of the bracket 45 against the fence post 10 or 11.

When the plate member 45 is bent along the crease lines 46 and 47, tongue portions 70 may be struck out from corresponding slots 71 in the flanges 51 and 52 so that the tongues 70 project from the opposite ends of, and coplanar with, the middle section 50. These tongues 70 effectively extend the length of the middle section 50 to provide additional bearing surface against the flat end 13 of the brace member 12, as best illustrated in FIG. 4. The struck-out tongues 70 and slots 71 also facilitate bending along the crease lines 46 and 47, particularly where the plate member 45 is relatively thick. The tongues 70 may also be provided with their own projecting ribs or cleats 72, if desired.

The additional holes 61 and 62, 63 and 64 in the bracket 45 provide not only for additional nails 35 and 36, but also for better distribution of the nails and therefore stability in securing the brace member 12 to the post 10 or 11.

FIG. 4 shows the bracket 45 fixed to the flat end 13 of the elongated brace member 12 and secured to the circumferential surface of the fence post 10 by means of the nails 35 and 36. Although it is preferred that the nails 35 pass through the respective nails holes 63 and 64 at points of tangency of the flanges 51 and 52 with the post surface, so that the nails 35 will more or less extend radially of the post 10, nevertheless flanges 51 and 52 disclosed in FIG. 4 are not exactly tangent, but sufficiently close to provide adequate attachment to the post 10.

FIG. 5 illustrates a brace member 12' which is inclined to the horizontal and has its opposite ends 13' and 14' cut at an angle to the longitudinal axis of the brace member 12'. The ends 13' and 14' are still flat and parallel to each other so that they are disposed in substantial vertical planes for fitting flush against the middle sections 50 of the brackets 45 and 45'. Otherwise, the fence posts 10 and 11 are the same as those disclosed in FIG. 1, and the same brackets 45 and 45' as illustrated in FIGS. 3 and 4 may be employed for the inclined brace member 12', without modification.

In assembling the brackets 15 or 45 to secure the brace member 12 to adjacent posts 10 and 11, it is preferred that the middle sections 20 and 50 of the respective brackets be first secured to the flat ends 13 and 14 with the nails or other driven fasteners 36. As a matter of fact, the brackets 15 and 45 may be secured to the ends of the brace members 12 well in advance of the time for installing the brace members, and may be preassembled in mass quantity. Thus the brace members 12 and 12' having the brackets secured at opposite ends may be transported to the fence building site, so that the only procedure remaining for assembling the brace members 12 is to secure the respective flanges 21–22 or 51–52 to the respective posts 10 and 11.

As disclosed in the drawings, flanges 51 and 52 of bracket 45 form equal obtuse angles of approximately 130° each with the interior surface 53 of the middle section 50. Flanges 21 and 22 of bracket 15 form the same obtuse angles, approximately 130°, with the interior surface 23 of the middle section 20.

It is therefore apparent that brackets 15 and 45 are not only of simple, but also of relatively economical, construction, and may be easily and quickly attached to the opposite ends of a brace member 12 and also to circumferential surfaces of adjacent posts 10 and 11. Such brackets 15 and 45 eliminate the necessity for cutting notches into the posts 10 and 11, which is not only time consuming, but also weakens the posts 10 and 11. Accordingly, the brackets 15 and 45 provide a stronger and more secure means for attaching the brace members 12 and 12' to adjacent posts 10 and 11.

What is claimed:

1. A bracket for attaching the flat end of an elongated brace member to an upright fence post having a round cross-section, comprising:

a. a unitary plate member having an inner surface, a planar middle section and a pair of planar flanges,

b. said middle section having opposite ends and a flat outer surface,

c. said planar flanges being bent portions of said plate member forming vertical crease lines along the ends of said planar middle section and projecting from said opposite ends at substantially the same obtuse angle to the inner surface of said middle section,

d. the end-to-end dimension of said middle section and the angular relationship of said flanges to said middle section being such that when the inner surface of said plate member is fitted against a round fence post, portions of the inner surfaces of both said flanges and said middle section are tangent to the circumferential surface of the post,

e. at least one fastener hole extending through said middle section,

f. at least one fastener hole extending through each of said flanges,

g. a first driven fastener member receivable through each of said holes in said middle section for securing the flat outer surface of said middle section flush against the flat end of a brace member, and

h. a second driven fastener member receivable through each of said holes in said flanges for securing the inner surfaces of both said flanges tangentially against the round post.

2. The invention according to claim **1** further comprising at least one cleat projecting from the inner surface of said middle section for frictional engagement with the round post.

3. The invention according to claim **1** further comprising a slot formed through each of said vertical crease lines.

4. The invention according to claim **1** further comprising an upright fence post having a substantially round cross-section, and an elongated brace member having a flat end, said first fastener member projecting outward through each hole in said middle section and into the flat end of said brace member to secure the flat outer surface of said planar middle section flush against said flat end, and said second fastener members projecting inward through the holes in said flanges and into the contiguous portions of said round fence post to secure the inner surfaces of both said flanges tangentially against the round surface of said post so that a portion of said round surface is tangent to the inner surface of said middle section, and means rigidly supporting the opposite end of said brace member.

5. The invention according to claim **4** in which at least two holes are formed through said middle section, spaced apart in the end-to-end dimension of said middle section.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,833,201 Dated September 3, 1974

Inventor(s) Joe B. Dill

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

The Inventor's name should read -- Joe B. Dill --.

Signed and sealed this 3rd day of December 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

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