

(12) INNOVATION PATENT
(19) AUSTRALIAN PATENT OFFICE

(11) Application No. **AU 2003100527 A4**

(54) Title
Fence post stay assembly

(51)⁷ International Patent Classification(s)
E04H 017/14

(21) Application No: **2003100527** (22) Date of Filing: **2003.07.01**

(45) Publication Date: **2003.08.14**

(45) Publication Journal Date: **2003.08.14**

(45) Granted Journal Date: **2003.08.14**

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ABSTRACT

A stay for a fence post, comprising a thrust pad locatable on the ground, a bracket engageable with the thrust pad, the bracket being adapted to couple with the lower end
5 portion of a downwardly-inclined prop extending from the post, and a tie rod of adjustable effective length adapted to extend between the bracket and the fence post such that adjustment of the effective length of the tie rod places the tie rod under tension between the bracket and post. The connection between the upper end portion of the prop and the
10 post comprises a flange of generally flat form at the upper end of the prop engaged in a slot in the post. When the prop is of tubular metal, the flange can be formed by flattening one end of the prop. This form of connection is suitable for metal posts and wooden posts.

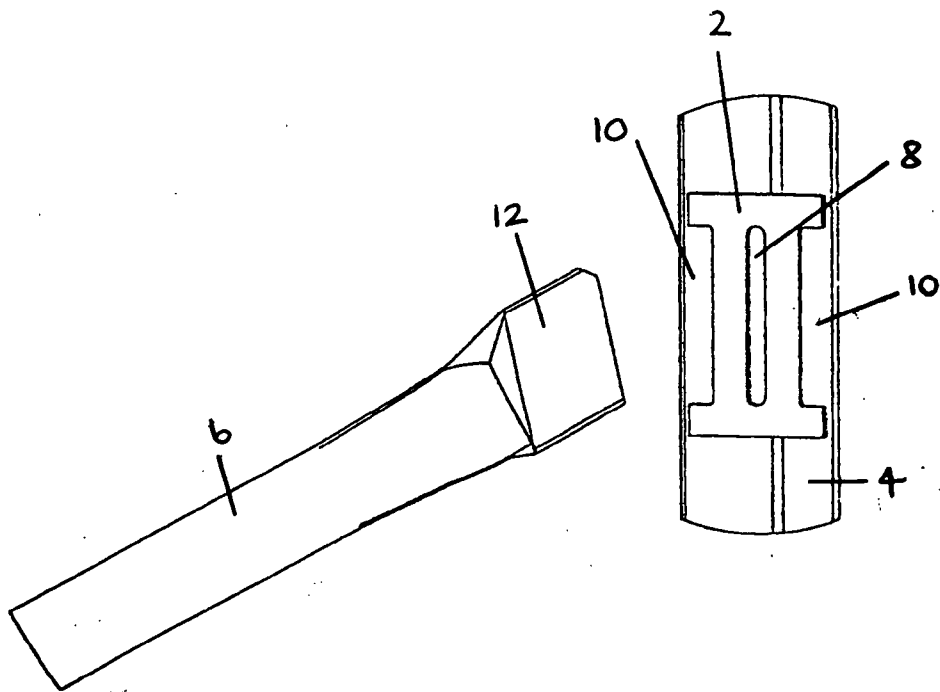


FIG. 3

A U S T R A L I A

Patents Act 1990

INNOVATION SPECIFICATION

for the invention entitled:

"Fence post stay assembly"

The invention is described in the following statement:

FENCE POST STAY ASSEMBLY

The present invention relates to an assembly for staying a fence post anchored within the ground and comprising a downwardly inclined prop extending between the post and a thrust pad on the ground.

There is described in our innovation patent no. 2002100597 a stay for a fence post, comprising a thrust pad locatable on the ground, a bracket engageable in a channel at the upper surface of the thrust pad, the bracket being adapted to couple with the lower end portion of a downwardly-inclined prop extending from the post, and a tie rod of adjustable effective length adapted to extend between the bracket and the fence post such that adjustment of the effective length of the tie rod places the tie rod under tension between the bracket and post.

As described in our earlier patent, the prop is of tubular form and the upper end of the prop carries a cap with a projecting spigot which locates within a hole drilled into the fence post. This form of coupling between the prop and the fence post is designed for use with wooden posts.

One aspect of the present invention relates to an alternative form of fixing to provide a connection between the prop and a metal post while still being suitable for use with wooden posts.

According to that aspect of the invention, there is provided a stay for a fence post, comprising a thrust pad locatable on the ground, a bracket engageable with the thrust pad, the bracket being adapted to couple with the lower end portion of a downwardly-inclined prop extending from the post, and a tie rod of adjustable effective length adapted to extend between the bracket and the fence post such that adjustment of the effective length of the tie rod places the tie rod under tension between the bracket and post, wherein the connection between the upper end portion of the prop and the post comprises a flange of generally flat form at the upper end of the prop engaged in a slot in the post.

Another aspect of the invention relates to an alternative form of fixing between the bracket and thrust pad.

According to that aspect of the invention, there is provided a stay for a fence post, comprising a thrust pad locatable on the ground, a bracket engageable with the thrust pad, the bracket being adapted to couple with the lower end portion of a downwardly-inclined prop extending from the post, and a tie rod of adjustable effective length adapted to extend between the bracket and the fence post such that adjustment of the effective length of the tie rod places the tie rod under tension between the bracket and post, wherein the bracket has a downwardly directed projection engageable as a firm friction fit in an aperture in the upper surface of the thrust pad in order to couple the bracket to the pad during assembly.

The invention will now be further described by way of example only with reference to the accompanying drawings in which:

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Figure 1 is a view showing the upper end of the prop and adjacent part of the post prior to connection of the prop to the post;

Figure 2 is a view showing the prop when connected to the post;

Figure 3 is a further view corresponding to Figure 1; and

20 Figure 4 shows the thrust pad and bracket prior to assembly.

A first aspect of the invention relates to a stay of the general form disclosed in the earlier innovation patent as aforesaid but with a different form of connection between the upper end of the prop and the fence post. Although fence posts are commonly of wood, nevertheless fence posts of metal are also in common use. Steel fence posts for agricultural use are usually of angular section, either with two limbs at right angles to provide an approximately L-shaped section or with three limbs radiating from a central core, as so-called star picket. Although the preferred embodiment of the invention will be particularly described in relation to a metal post of L-section nevertheless it will be clearly understood that the principles described are equally applicable to metal posts of other angled section, or metal posts of box section or tubular section.

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- 3 -

To provide the connection, a plate 2 is welded to the post 4 to extend across the open side of the post between the outer edges of the two adjacent limbs, the plate 2 being positioned at the height at which the connection with the prop 6 is to be made. The plate 2 is formed with a central vertical slot 8 and the two outer side edges of the plate are formed with a rectangular cut-out each of which defines with the adjacent surface of the post a further vertical slot 10, these outer slots 10 being wider than the central vertical slot for reasons to be explained.

The prop 6 is of tubular metal and the upper end of the prop 6 is flattened to produce a vertical flange 12 which can fit into any one of the three vertical slots 8, 10 formed in the plate 2. If required, the end of the flange 12 can be cut at an angle so that when inserted into the slots and inclined downwardly towards the thrust pad it can lie substantially flat against the internal surface of the post 4 at the junction between the two limbs, but this is not essential.

Depending on the configuration of the post 4 within the fence itself, the post 4 may be stayed by a single prop engaged with its flange inserted into the central slot 8 of the plate 2 or, if the post 4 is a corner post, it can be stayed either by a single prop again inserted into the central slot 8 and extending at approximately 45° to the two adjacent fencing lines or alternatively the corner post can be stayed by two props each inserted into one of the two outer slots 10 so that the two props are approximately at right angles with each prop extending along a respective one of the two fencing lines. In this second configuration the flattened upper end flanges 12 of the two props 6 will each extend approximately parallel to the adjacent limbs of the post 4 and will be obliquely inclined relative to the plate 2 and it is for this reason that the two outer slots 10 need to be slightly wider than the central slot 8 which is used when the plane of the flattened flange 12 is approximately perpendicular to the plane of the plate 2.

Although the presence of the three slots is preferred to permit versatility in installation, nevertheless in alternative arrangements only a single slot may be provided as that will still permit staying as an end post or as a corner post.

The flattened flange 12 at the end of the prop 6 can be produced quickly and inexpensively in a simple pressing operation and this avoids to produce a separate end fitting for the prop. The plate 2 for attachment to the post can itself be produced inexpensively by stamping from metal plate or cutting from metal plate by a plasma cutting process.

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Although in the embodiment shown the plate 2 is formed to provide vertical slots for receipt of the flattened flanges of the prop, in an alternative arrangement the plate could be formed to provide horizontal slots for that purpose. In that case it will be understood that the depth of each slot needs to be sufficient to permit the necessary inclination of the prop
10 between the post and the thrust pad.

When the metal post is of box section or tubular section, the or each of the slots can be formed directly in the post, for example by plasma cutting.

15 Props 2 with flattened flanges 12 as described can also be used with conventional wooden posts. In that case all that is necessary is for a vertical slot to be cut into the wooden post to receive the flange. This can be done in a matter of seconds during installation using a chainsaw.

20 Another aspect of the invention concerns a modification to the thrust pad and bracket with respect to the arrangement specifically described in our earlier innovation patent. As described in the earlier innovation patent, the bracket is locked to the thrust pad by wedging engagement between a projection on the base of a channel in the thrust pad and an aperture in the bracket. In the arrangement shown in Figure 4 the bracket 20 is formed
25 with a downwardly directed projection or tang 22 engageable as a firm friction fit within a corresponding aperture 24 formed in the base of the channel 26 in the thrust pad 28. In practice, application of the bracket 20 to the thrust pad 28 can be effected by an operator positioning the bracket 20 so that the tang 22 is aligned with the aperture 24 and then applying foot pressure to the bracket 20 to force the tang 22 into the aperture 24. The tang
30 22 itself can simply be formed by a pressing operation during the manufacture of the bracket 20. The bracket 20 is also associated with a threaded tie rod (now shown) extending to the post in the manner described in the earlier innovation patent.

Throughout this specification and claims which follow, unless the context requires otherwise, the word "comprise", and variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers or steps but not
5 the exclusion of any other integer or group of integers.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A stay for a fence post, comprising a thrust pad locatable on the ground, a bracket engageable with the thrust pad, the bracket being adapted to couple with the lower end portion of a downwardly-inclined prop extending from the post, and a tie rod of adjustable effective length adapted to extend between the bracket and the fence post such that adjustment of the effective length of the tie rod places the tie rod under tension between the bracket and post, wherein the connection between the upper end portion of the prop and the post comprises a flange of generally flat form at the upper end of the prop engaged in a slot in the post.

2. A stay according to claim 1, wherein the post has a plurality of slots to receive the flanges of two such props extending in different directions relative to the post.

3. A stay according to claim 1 or claim 2, wherein the post is a metal post having a plurality of angled limbs with a plate spanning adjacent limbs, the plate providing at least one slot for receiving the flange.

4. A prop for use in a stay according to any one of claims 1 to 3, wherein the prop is of tubular metal and the flange is formed by flattening the prop at one end portion thereof.

5. A stay for a fence post, comprising a thrust pad locatable on the ground, a bracket engageable with the thrust pad, the bracket being adapted to couple with the lower end portion of a downwardly-inclined prop extending from the post, and a tie rod of adjustable effective length adapted to extend between the bracket and the fence post such that adjustment of the effective length of the tie rod places the tie rod under tension between the bracket and post, wherein the bracket has a downwardly directed projection engageable as a firm friction fit in an aperture in the upper surface of the thrust pad in order to couple the bracket to the pad during assembly.

DATED this 1st day of July 2003

Lyc0 Industries Pty. Ltd. AND OneSteel Wire Pty. Limited

by their Patent Attorneys
DAVIES COLLISON CAVE

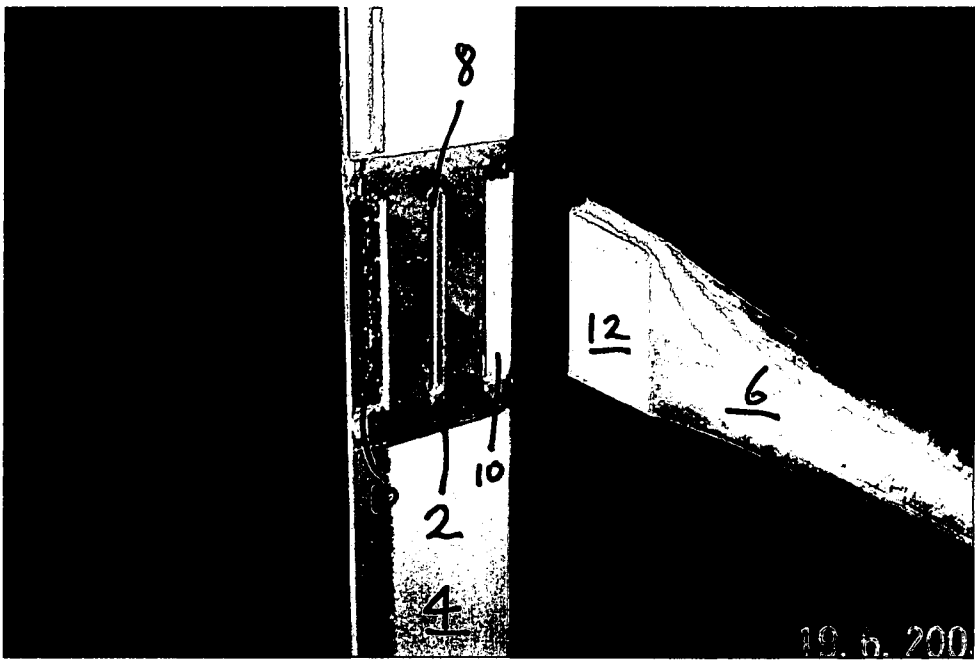


FIG. 1

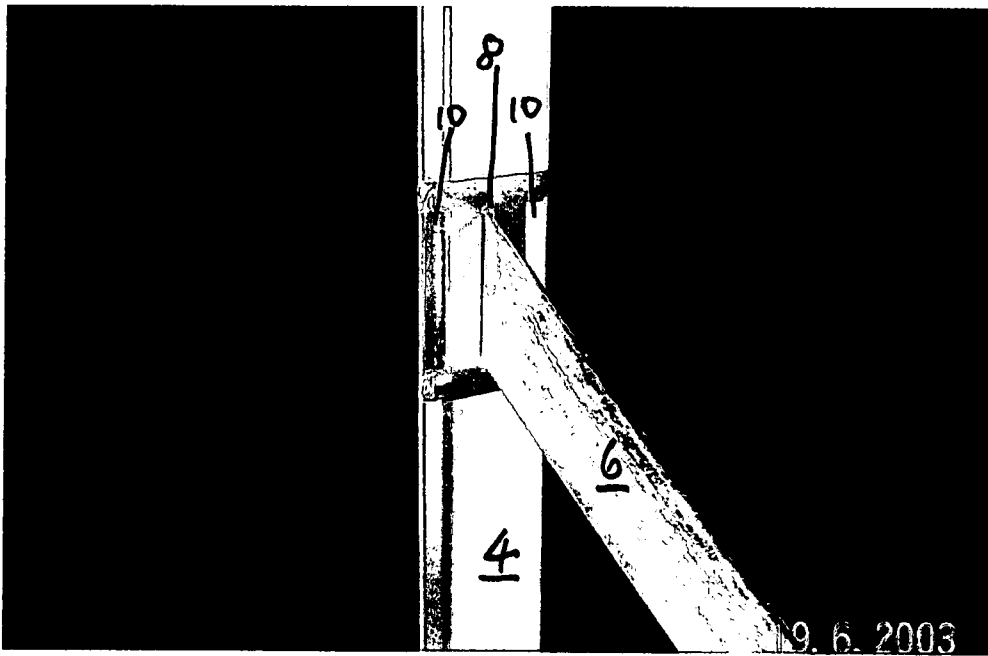


FIG. 2

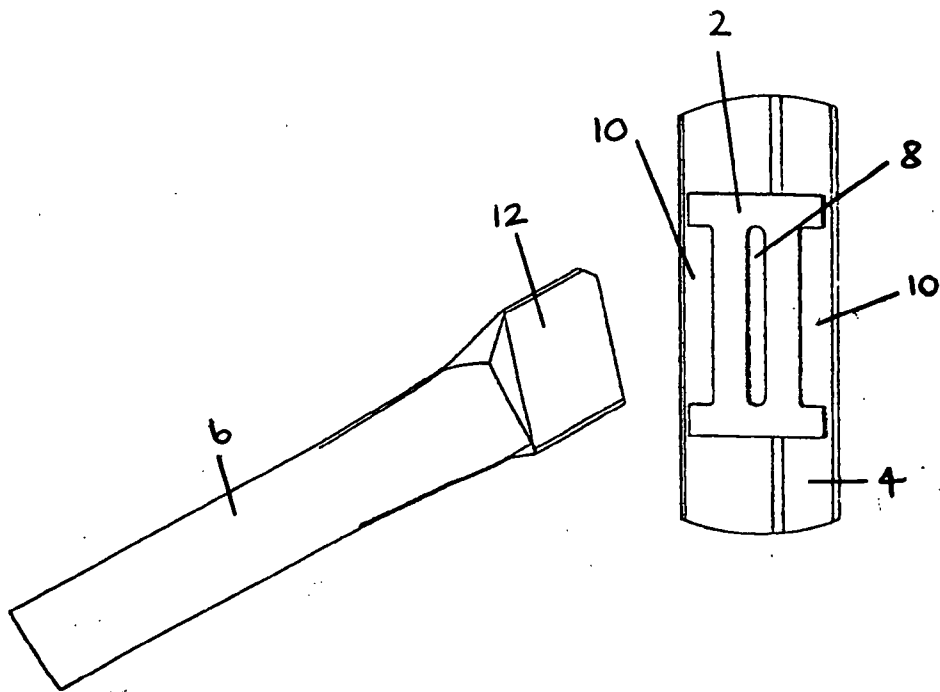


FIG. 3

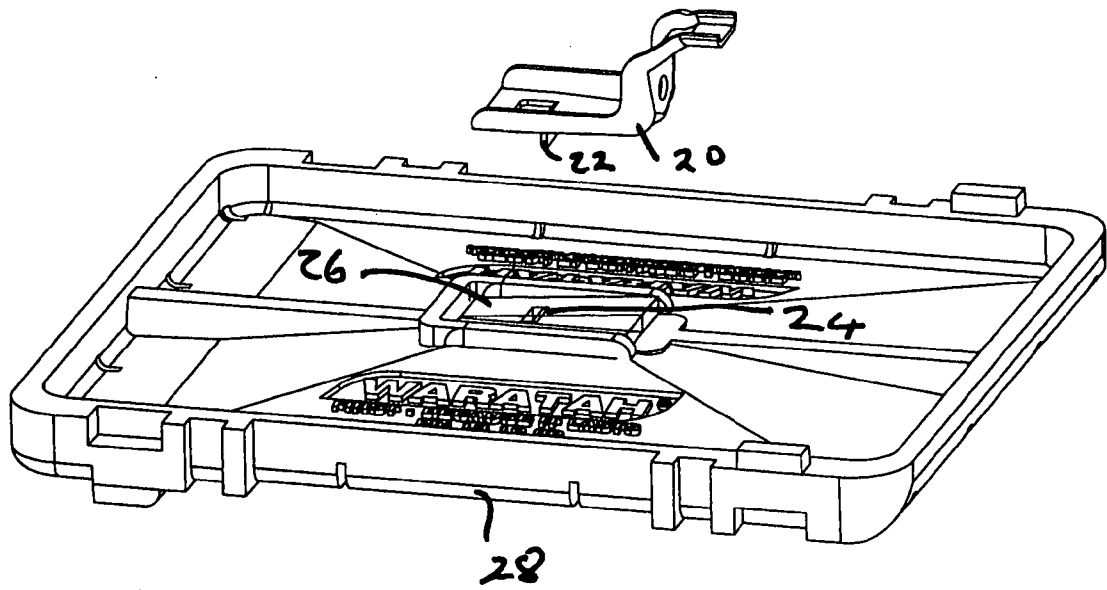


FIG. 4