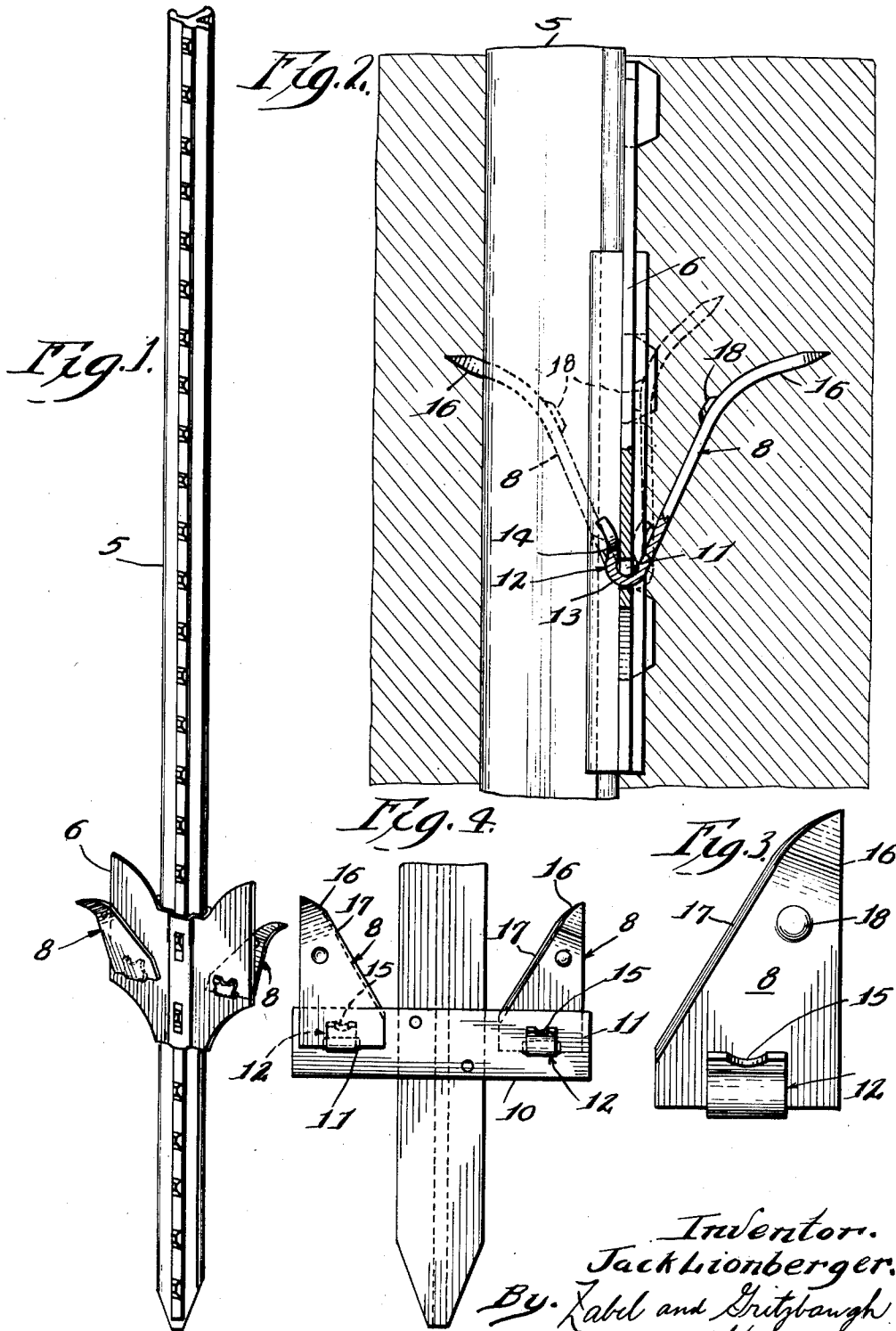


April 5, 1955

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FENCE POST ANCHOR MEANS

2,705,548

Filed July 27, 1951



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2,705,548

FENCE POST ANCHOR MEANS

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Application July 27, 1951, Serial No. 238,957

5 Claims. (Cl. 189—31)

My invention relates to a fence post anchor means designed primarily to be used with metal fence posts.

Metal fence posts offer many advantages over other types of posts, and, consequently, they are used on a large scale.

Despite many advantages, metal fence posts exhibit a somewhat greater tendency to work themselves out of the ground in certain instances than do other types of posts. One instance where this tendency is pronounced is in the case of fence posts used in hilly terrain. The posts located in valleys or depressions between adjacent higher ground levels are subjected to forces tending to pull them out of the ground. These forces, for the most part, are applied to the posts by the tightly stretched wire carried between the posts. The tension of the wire, of course, produces a force tending to make the wire horizontal, and any fence post fastened to the wire below a line between points of applied tension is subjected to a vertically upward force that tends to pull the post out of the ground.

Occasionally under ordinary conditions this force results in pulling a post out of the ground. The difficulty is aggravated in wet weather when the ground softens, and in freezing and thawing weather when there is a shifting of the soil around the post. Such shifting often applies an upwardly pushing force to the post. In these conditions a greater number of posts are uprooted, and the problem is substantial. In fact, there are sections of the country where metal fence posts are not used at all, generally speaking, because of their shortcoming in this respect.

One object of my invention, therefore, is to provide a fence post anchor means that may be used with metal fence posts and which will make the metal fence post as resistant to coming out of the ground as other types of fence post, such as a wooden post.

Another object is to provide an anchoring means that can be readily applied to practically all existing types of metal fence posts.

Still another object is to provide an anchoring means that is extremely inexpensive to manufacture, and is extremely simple to install on existing metal posts.

Another object is to provide an anchor means that requires but a minor alteration in existing metal fence posts so as to make such posts capable of receiving the anchor means of the invention.

Another and equally important object of the invention is to provide an anchor means which when applied to the post does not unduly increase the resistance of the post against being driven into the ground. It is to be appreciated that metal fence posts normally are driven into the ground by hand, and, consequently, it is important that the resistance of the post should not be increased substantially.

Another and similarly important object is to provide an anchor means that will operate in a foolproof manner despite variations in soil texture, and despite variations occasioned by moist or wet ground and conditions of freezing and thawing.

Other objects and advantages of my invention will be apparent as the description proceeds, reference being had to the accompanying drawing which illustrates one structural form of the invention. It is to be understood, of course, that in commercial applications of the invention various details might well vary somewhat from those here shown and described.

In the drawings:

Fig. 1 is a perspective view of a representative metal

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fence post provided with the anchoring means of my invention;

Fig. 2 is an enlarged side view, partly in section, of the below ground part of a fence post equipped with my invention;

Fig. 3 is an elevational view of one of the plates of my invention, and

Fig. 4 is an elevational view of the below ground end of a fence post showing a modified manner of applying my invention.

Referring to Fig. 1, there is illustrated a conventional metal fence post 5 together with associated conventional anchor plate 6. Post 5, as illustrated, is T-shaped in cross section, although my invention can be equally well used with fence posts of other well known cross sections, such as U or L-shapes. All such metal fence posts are normally provided with the so-called anchor plate 6, which is suitably affixed to the post in a secure and non-detachable manner.

The anchor plate 6, when the fence post is installed, extends in the direction of the fence wire. The primary purpose and function of the plate is to resist a tipping force that might be applied at or near the top of the post by the livestock confined within the fence. It is not particularly helpful in preventing the post from being pulled out of the ground in the instances mentioned above.

My invention contemplates a pair of generally triangular plates 8 that are adapted to be mounted in more or less symmetrical fashion on a standard metal fence post. Plates 8 are formed of metal, preferably hard metal such as railroad steel.

Plates 8 may be mounted on a standard metal fence post in a variety of particular places. They may be mounted on anchor plate 6, as illustrated in Figs. 1 and 2, or they may be mounted on an auxiliary transverse plate 10 (Fig. 4) that in turn may be riveted or otherwise secured near the lower end of the fence post. Further, they may be mounted on the lower portion of the post itself, the stem of a T-section or the web or legs of U and L-sections being suitable to receive the plates.

Since the particular place on the fence post to which my plates are mounted is more or less optional, a particular place itself is not actually an element of the invention. But, since the plates 8 must be mounted somewhere to enjoy their advantages, it is considered appropriate in some of the claims to mention a part of the fence post so as to define the relation therewith. Accordingly, such part of the fence post will hereinafter sometimes be referred to as a "plate portion" of the fence post. It is to be understood that this term refers to any plate portion on the fence post able to receive my triangular plates in a more or less symmetrical manner, such as the anchor plate 6, transverse plate 10, or the lower part of the stem, web, or leg of the post itself.

A plate portion of the post, such as anchor plate 6, transverse plate 10, or other part of the post, is provided with spaced apertures 11. The apertures 11 may be horizontally spaced as shown in Figs. 1 and 4, or they may be vertically spaced in case some plate portion (stem, web, or leg) of the post itself is used. The apertures 11 may be rectangular in shape as shown, although the precise shape is not particularly important.

Apertures 11 may be stamped in the desired plate portion during a stamping operation that cuts or forms the material, so no separate operation is really required to form the apertures.

The triangular plate 8 of my invention, best shown in Fig. 3, has a reduced lug 12 that extends from the base or narrow side of the triangle. Lug 12 has a U-bend 13 (Fig. 2) in the portion thereof near the plate proper, and a reverse curve 14 (Fig. 2) in the end portion thereof.

An aperture 11, U-bend 13 and reverse curve 14 are related in size whereby at least a moderate amount of force is required to cause the lug to enter the aperture. This force, applied by a hammer, for example, produces a slight yield in the metal so that the lug snaps through the aperture. The metal then restores itself so that the lug and associated plate 8 are retained securely in place on the plate portion of the post.

The apertured plate portion of the post and the U-bent portion of the leg cooperate to form a relatively loose hinge whereby the plate 8 (sometimes called a movable plate) may swing from a position parallel with the fence post plate portion outwardly through about 30 degrees. The outer portion of lug 12 bears against the plate portion of the post to limit the angular movement allowed by the hinge. As will be seen, this ability of the plate to swing outwardly through a limited angle is the feature which enables my arrangement to function as an anchor to hold the fence post securely in the ground against an upward force.

The end portion of lug 12 may desirably be cut away centrally as shown at 15 (Figs. 3 and 4). This feature prevents the packing of dirt in the region between the lug end and the plate portion of the post, and eliminates the possibility of failure of the hinge to operate due to packing of dirt in this space.

The pointed end 16 of plate 8, comprising roughly the end one-third of the plate, is bent out of the plane of the plate in the direction opposite to that of the U-bend in the lug. When plate 8 is mounted on the fence post, the direction of the bend of the pointed end is away from the plate portion of the post, as clearly shown in the drawing, particularly Fig. 2.

A further detail of the invention, of particular importance in the case of certain kinds of soil, is the provision of a boss 18 in plate 8. Boss 18 extends from the side of the plate that faces lug 12 and it functions, as shown in the dotted line plate on the right hand side of Fig. 2, to space plate 8 from the plate portion of the post. This spacing is of particular importance in gummy soil, or the like, so as to insure proper operation of the hinge. With this spacing, lug 12 is prevented from binding in aperture 11, and there is provided a well defined path for soil to enter the region between plate 8 and the plate portion of the post.

Inclined edge 17 (Fig. 3) of plate 8 may be bevelled on the side facing lug 12. This bevel helps the plate to bite into the soil when an upward force is applied to the post.

A plate 8 is mounted in each of the two apertures of the fence post as shown in Figs. 1, 2 and 4. One plate 8 is mounted to lie on one side of the plate portion of the post, while the other plate 8 is mounted to lie on the other side of the plate portion. This more or less symmetrical arrangement of the plates 8 insures an anchoring action on opposite post sides, and eliminates any tendency of an upward force to tilt the post at an angle, as would be the case of anchoring on one side only.

The single plate 8 on the left side of Fig. 2 and the plate 8 shown in full lines on the right side of Fig. 2 illustrate the positions assumed by the plates following the application of an upward force tending to pull the post out of the ground. When the post is driven into the ground, and immediately thereafter, the plates 8 lie in a position adjacent the plate portion of the post, as illustrated by the single dotted line plate on the right hand side of Fig. 2. It will be noted that the pointed end 16 of the plate and the end of lug 12 extend outwardly only a short distance from opposite sides of the plate portion of the post. The resistance to driving caused by these minor extensions is not excessive, and the post can be driven readily by hand.

In response to any force tending to pull or push the post upwardly and out of the ground, the pointed ends 16 and inclined edges of the plates 8 bite into the soil and, as additional force is applied, the plates 8 swing outwardly on their hinges. As the plates approach or reach the outward positions illustrated in Fig. 2, the resistance of the post against being pulled or pushed out of the ground is so great that nothing short of an abnormal force can succeed in uprooting the post.

It should be appreciated that the shape and dimensions of plate 8 are rather critical to the successful operation of the invention. The generally triangular shape of the plate is accurately described and set forth in the claims. Since

it is impractical to set forth finite dimensions, it is to be understood that the dimensioning of the plate 8, relative to the fence post, illustrated in the drawing should be used in order to insure most successful operation of the invention.

From the above description it is thought that the construction and advantages of my invention will be readily apparent to those skilled in the art. Various changes in detail may be made without departing from the spirit or losing the advantages of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A fence post anchor means comprising a plate portion of a metal fence post, said plate portion having a pair of spaced apertures therein, a pair of generally triangular movable plates mounted one on each side of said plate portion, each movable plate having a reduced lug extending from the base side of the triangle, said lug having a U-bend in the portion near the plate and a reverse curve in the end portion thereof, the end portion of said lug being centrally cut away, the aperture, U-bend and reverse curve being related in size whereby at least moderate force is required to cause said lug to enter said aperture, said U-bend and said aperture forming a hinge whereby said movable plate may swing from said fence post plate portion outwardly through about 30°, the end of said movable plate opposite said lug being bent away from said plate portion, and a boss on said movable plate for spacing the latter from said plate portion.

2. A fence post anchor means comprising a plate portion of a metal fence post, said plate portion having a pair of spaced apertures therein, a pair of generally triangular movable plates mounted one on each side of said plate portion, each movable plate having a reduced lug extending from the base side of the triangle, said lug having a U-bend in the portion near the plate and a reverse curve in the end portion thereof, the aperture, U-bend and reverse curve being related in size whereby at least moderate force is required to cause said lug to enter said aperture, said U-bend and said aperture forming a hinge whereby said movable plate may swing from said fence post plate portion outwardly through about 30°, the end of said movable plate opposite said lug being bent away from said plate portion.

3. A generally triangular plate having a reduced lug extending from the base side of the triangle, said lug having a U-bend in the portion near the plate and a reverse curve in the end portion thereof, the end portion of said lug being centrally cut away, the end of said plate opposite said lug being bent out of the plane of the plate in the direction opposite to that of the U-bend, the surface of said plate having a boss thereon spaced from said lug and extending from the side of the plate facing said lug.

4. A generally triangular plate having a reduced lug extending from the base side of the triangle, said lug having a U-bend in the portion near the plate and a reverse curve in the end portion thereof, the end of said plate opposite said lug being bent out of the plane of the plate in the direction opposite to that of the U-bend, the surface of said plate having a boss thereon spaced from said lug and extending from the side of the plate facing said lug.

5. A generally triangular plate having a reduced lug extending from the base side of the triangle, said lug having a U-bend in the portion near the plate and a reverse curve in the end portion thereof, the end of said plate opposite said lug being bent out of the plane of the plate in the direction opposite to that of the U-bend.

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