Feb. 26, 1929. 1,703,461

F. A. THOMAS

ANCHORING POST

Filed Feb. 23, 1928

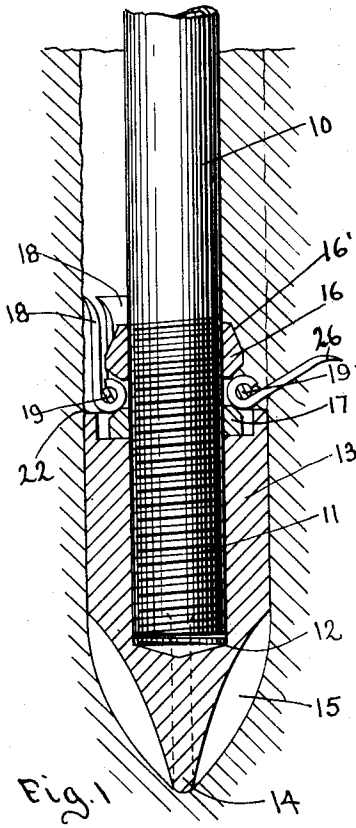


Fig. 1

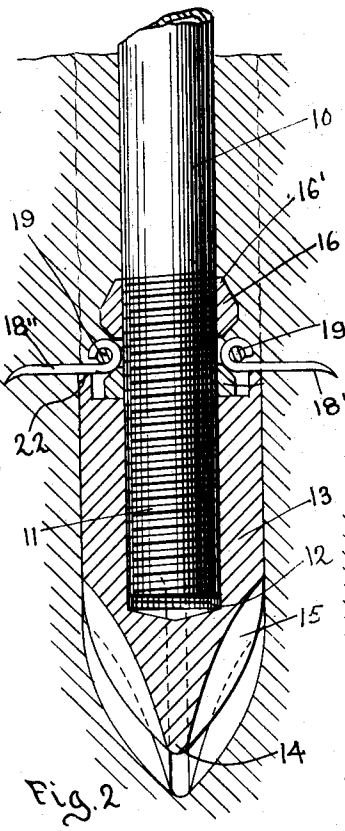


Fig. 2

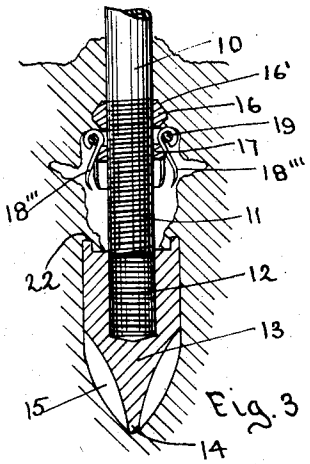


Fig. 3

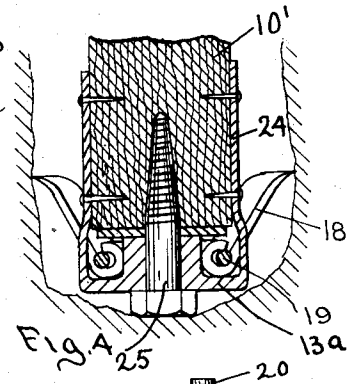


Fig. 4

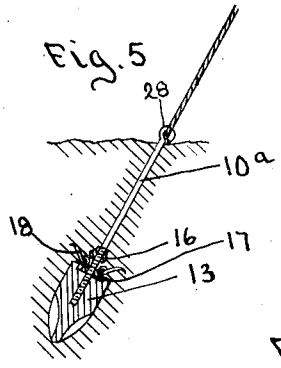


Fig. 5

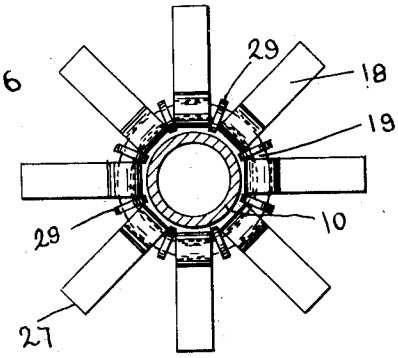


Fig. 6

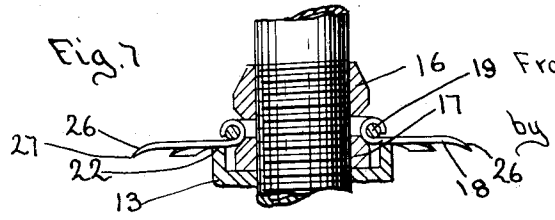


Fig. 7

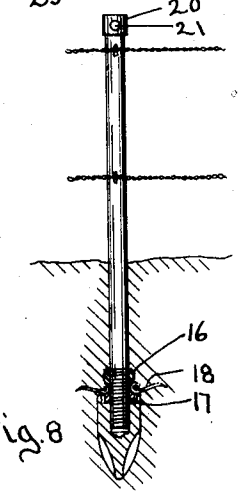


Fig. 8

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UNITED STATES PATENT OFFICE.

FRANKLIN A. THOMAS, OF MALDEN, MASSACHUSETTS.

ANCHORING POST.

Application filed February 23, 1928. Serial No. 256,830.

My invention relates to anchoring posts and particularly to posts used for fences and the like. It is, however, susceptible of modification for use with telephone or telegraph poles and for guys for bracing such poles.

One object of my invention is to provide a post that may be driven into the ground readily, firmly hold when so driven, and resist action that would tend to loosen or withdraw it from the ground.

A second object is to provide a post of this character that may be set for temporary use, and removed for service elsewhere without excavating for such removal.

In this connection it is often desirable to erect a temporary fence to enclose a particular area, and with my invention the posts so used may be withdrawn from the ground together with the anchor to be described, leaving the shoe of inexpensive character buried at a depth that will not interfere with cultivation, the post and anchor to be again used with another shoe. With my invention, I use a post of the required size together with an anchor attachable thereto, and a shoe assembled with the post and anchor, all of which are hereinafter described in detail. When the anchoring post is thus assembled, its position is located by driving a bar into the ground to ascertain if there is any obstruction, thus avoiding withdrawal of the post partially driven in obstructed ground. The post is then driven with a maul or sledge, the anchor offering no resistance to such driving. When driven to the required depth, the earth is filled in around the post and tamped, with the result that the anchor is expanded and the elements thereof forced into the earth surrounding the post. The anchor is of such character that any action tending to loosen or withdraw the post, causes the anchor elements to force further into the surrounding earth and resist such action. At the same time and in similar manner the anchor elements function to brace the post against tipping, as any bending action applied to the top of the post causes them to drive deeper on the side in the direction of the strain, while the opposite elements abut the shoe and operate as a broadened base to resist disturbing the ground, as shown in Figs. 2 and 7. When a series of posts are thus driven, wires or rails may be attached by any convenient means to complete the fence. For use with poles or posts of more permanent character, the shoe and anchor may be secured to the ends thereof in this or other suitable manner, and in Fig. 4 I have shown a means for applying my invention to a telegraph pole or other permanent post. As it is not feasible to drive in such cases, a post hole is excavated, and the anchor is used with a modified form of shoe. In the drawings forming a part of the specifications herewith, I have illustrated a preferred form of my invention with modifications, and have fully described and claimed the essential features. I do not confine myself to the construction shown, as other modifications may be made within the scope of my claims. In the form shown, I prefer to use for the post proper, a length of standard pipe of the required size, but other material suitably formed may be substituted if so desired, the description of the pipe post being equally applicable to posts of other material suitably formed to meet conditions.

In the drawings,

Fig. 1 shows an anchoring post in driven position partially tamped.

Fig. 2 shows a similar view with the post tamped and the resistance to undue strain or displacement indicated, if not unscrewed.

Fig. 3 is a reduced drawing illustrating the action of withdrawing a post from the ground for subsequent use.

Fig 4 shows my invention applied to a pole end.

Fig. 5 shows its application to a guy.

Figs. 6 and 7 show an anchor in its expanded position.

Fig. 8 shows a reduced view of a section of fence with which my invention is used.

In the drawings, the post, here shown as a section of standard pipe, as indicated at 10, is threaded on its lower end at 11, and screwed into the tapped socket 12 of the shoe 13. This shoe is preferably provided with a conical end 14 to facilitate driving, and wings 15 to prevent turning of the shoe in the ground when the post is to be removed as will be hereinafter described. The post 10 is provided with an abutment, here shown as a nut 16, which limits the upward axial movement of the anchor relative to the post, the nut 17 serving a similar purpose to limit the downward movement. The anchor unit comprises a plurality of arms

18, journalled on the ring 19 which functions as a hinge, common to all the arms, and of sufficient diameter to permit encircling the post without interference with the action of the arms on their hinge. When assembling, the post is passed through the anchor ring, and the nut 17 adjusted relative to the abutment 16, to permit freedom of action of the arms without undue axial movement relative to the post, which is then screwed into the shoe.

When thus assembled, the arms 18 in expanded position of the anchor, abut the shoe as at 22, Fig. 7. When the assembled post is driven as in Fig. 1, the arms 18 swing on their hinge ring as their ends impinge the wall of the hole formed by the shoe as it is driven. To facilitate the assembling of the post with the shoe and the withdrawal therefrom when it is desired to remove the post, I provide the upper end of the post with a cap 20, in which holes 21 are made, into which a bar may be inserted for the purposes of rotating the post. When driven to the required depth, it is advisable to unscrew the post a trifle, which operates to raise the anchor ring, and drive the ends of the arms into the side of the hole. Holes previously pierced in the post to provide for fastening means for the fence wires or rails may thus be brought into position in which such fastenings may be applied. When the surrounding earth is tamped about the post, the arms are swung outwardly and forced further into the ground, and as above stated, form a base of relatively large area, which stabilizes the post against displacement or withdrawal, and bracing the post against side strain. Referring to Fig. 3, when it is desired to remove the post with its anchor, the post proper is rotated within the anchor ring to unscrew from the shoe, the embedded arms preventing rotation of the anchor, and the wings 15 the rotation of the shoe. As the post is unscrewed, it is forced upward, and if the arms of the anchor are expanded to the position shown in Fig. 7, the nut 17 raises the hinge ring 19, drawing the arms from the ground and loosening the earth about the post and the anchor. It is preferable to employ an abutment on the post 10 which is conical as at 16′ as this operates as a wedge in the surrounding earth, as the post is forced upward when unscrewed.

If the arms are not expanded to their utmost, the ends are forced into the earth as they become fulcrums in the upward movement of the hinge. The ultimate result is the same in that, as the post is withdrawn from the shoe, the arms are permitted to swing to the position 18‴ Fig. 3, in which the ends 26 fall within the periphery of the hinge joints of the arms, and so offer no resistance other than that due to the joints themselves. When the arms are in this position, the threaded end of the post is about to disengage from the shoe and the earth has been so loosened that the post with the anchor may be readily withdrawn. In Fig. 4 I have shown the anchor unit applied to a pole or post sunk in a post hole previously excavated. In such cases the form of shoe may be modified and such a shoe 13ª may be secured to the end of the pole 10′ by straps 24 and the lag screw 25, or by any other suitable means that will permit the anchor elements to function in the manner described. For use with guys, I substitute the guy rod 10ª for the post 10, the upper end of the guy rod being formed with an eye 28 to which a cable or stay may be attached. I have found that the anchor arms function with greater efficiency if the outer ends are bent as at 26, and the ends sharpened as at 27, as the arms engage the sides of the hole and are forced into the surrounding ground with greater facility in arms of this form. To obviate any tendency of the arms interfering with the swinging of one another, I provide the washers 29 between the arms.

Having thus described my invention, I claim:

1. An anchoring post comprising a post proper threaded on one end; an anchor movably secured to the post and comprising a plurality of arms hinged concentric with the post axis and adapted to swing radially therewith, and limited in its movement as a unit axially on the post; and a shoe socketed and tapped to receive the threaded end of the post and provided with an abutment to limit the radial swing of the arms of the anchor.

2. An anchoring post comprising a post proper threaded on one end; an anchor movably secured to the post and automatically expansible to resist withdrawal or displacement of the post; a shoe socketed and tapped to receive the threaded end of the post and provided with an abutment for limiting the expansion of the anchor when normally assembled, the shoe serving as a base against which the post may react when unscrewed therefrom, for the purpose of forcing the post and anchor upwardly and away from the abutment, permitting the anchor to collapse and be withdrawn with the post from the shoe and surrounding ground.

3. An anchoring post comprising a post proper threaded on one end; an anchor comprising a plurality of arms hinged to the post concentric with the axis thereof, and adapted to swing radially therewith for the purpose of engaging the surrounding ground to resist withdrawal or displacement of the post and anchor; a shoe socketed and tapped to receive the threaded end of the post, and provided with an abutment for limiting the swinging of the arms when the

anchoring post is normally assembled, the shoe serving as a base against which the post may react when unscrewed therefrom, for the purpose of forcing the post and anchor upwardly and away from the abutment, permitting the arms to swing beyond normal position and downwardly against the post, as the post and anchor are withdrawn from the shoe and surrounding ground.

4. An anchoring post comprising a post proper threaded on one end; an anchor movably secured to the post and comprising a plurality of arms hinged concentric with the post axis and adapted to swing radially therewith, for the purpose of engaging the surrounding ground to resist withdrawal or displacement of the post and anchor; a shoe socketed and tapped to receive the threaded end of the post, and provided with an abutment for limiting the swinging of the arms when the anchoring post is normally assembled, the shoe serving as a base against which the post may react when unscrewed therefrom, for the purpose of forcing the post and anchor upwardly and away from the abutment, permitting the arms to swing beyond normal position and downwardly against the post, as the post and anchor are withdrawn from the shoe and surrounding ground.

FRANKLIN A. THOMAS.