F. V. SIMPSON & R. FRANCHOT.

GROUND ANCHOR.

APPLICATION FILED AUG. 7, 1908.

936,824.

Patented Oct. 12, 1909.

Fig. 1.

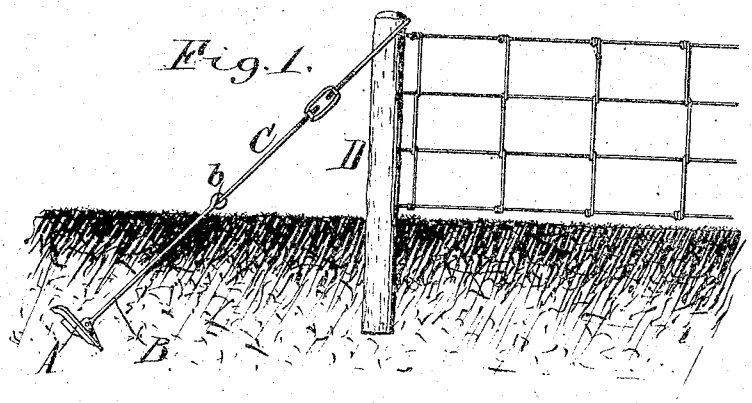


Fig. 2.

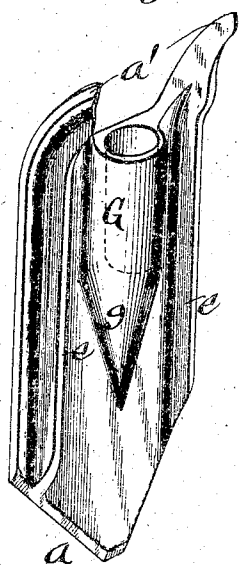


Fig. 6.

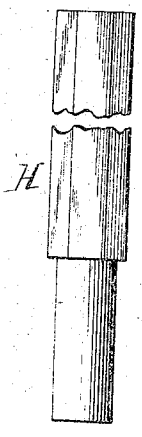


Fig. 3.

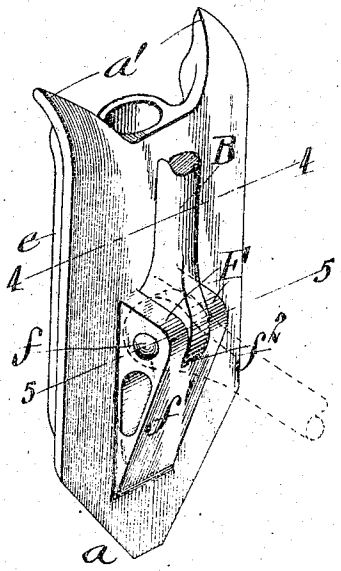


Fig. 4.

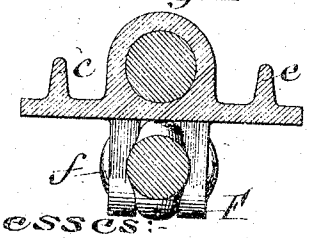
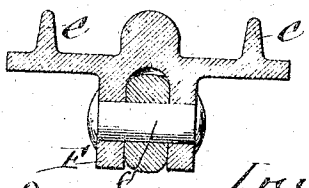


Fig. 5.



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UNITED STATES PATENT OFFICE.

FREDRICK V. SIMPSON AND RICHARD FRANCHOT, OF NIAGARA FALLS, NEW YORK.

GROUND-ANCHOR.

936,824. Specification of Letters Patent. Patented Oct. 12, 1909.

Application filed August 7, 1908. Serial No. 447,369.

To all whom it may concern:

Be it known that we, FREDRICK V. SIMPSON and RICHARD FRANCHOT, citizens of the United States, and residing at Niagara Falls, in the county of Niagara and State of New York, have invented a new and useful Improvement in Ground-Anchors, of which the following is a specification.

This invention relates to the class of ground anchors which are driven into the soil by means of a detachable driving bar, as distinguished from anchors of the type for which holes are previously dug. A driven anchor of this kind is shown and described in Letters Patent of the United States No. 768,705 issued August 30, 1904 to W. W. Swan, and the present invention has more particular reference to improvements in the anchor of that patent. That anchor consists of a comparatively thin and narrow plate pointed at its entering end and provided at its rear end with a pair of rearwardly curved points or spurs which cause the driven anchor to turn perpendicularly to the line of pull when tension is applied to the stay-rod attached to the front or upper side of the anchor-plate, so that the anchor presents its greatest area to the resistance of the soil.

One of the objects of our invention is the construction of an efficient anchor of this character which can be driven with comparative ease into hard as well as soft soil.

Further objects of the invention are to increase the strength of the anchor without materially increasing its weight; to provide the same with an increased bearing surface for the lower end of the driving rod, so as to effectually resist splitting or breakage of the anchor, and to improve the construction of the anchor in other respects, as hereinafter described.

In the accompanying drawings: Figure 1 is a sectional elevation showing the improved anchor applied to a fence post. Figs. 2 and 3 are perspective views of the anchor viewed from opposite sides. Figs. 4 and 5 are transverse sections thereof on the correspondingly numbered lines in Fig. 3. Fig. 6 is a side elevation of the driving bar on a reduced scale.

Similar letters of reference indicate corresponding parts throughout the several views.

A indicates the anchor, B the usual stay rod or wire pivotally attached to the upper or front side of the anchor and provided at its upper end with the customary eye *b*, and C indicates the usual connection between said eye and the fence-post D or other object to be stayed or braced.

The anchor consists of an oblong plate, preferably cast of malleable iron and pointed at its entering end, as shown at *a*, and provided at its opposite rear end with rearwardly curved points or spurs a^1, substantially as in the anchor of the patent hereinbefore referred to. On its lower side the anchor plate is preferably provided with stiffening ribs *e* arranged in line with the spurs a^1, so as to reinforce the latter as well as the body of the anchor plate. On its upper side the anchor is provided about midway of its ends with lugs F to which the lower end of the stay rod D is pivoted by a transverse pin *f*, so that the anchor plate is free to turn in line with or at an angle to the stay rod, in the usual manner.

f^1 is an inclined brace extending downwardly from the outer edges of the lugs F to the face of the anchor-plate. This brace serves not only to stiffen the lugs, but also protects them from breakage by contact with a stone or similar hard obstruction, the inclined face of the brace deflecting the anchor and relieving the lugs from undue strain in the event of encountering such an obstruction in driving the anchor. The upper end of this brace forms a stop or shoulder f^2 which is adapted to abut against the side of the stay-rod B when the anchor is substantially perpendicular to the rod, as shown in Fig. 1. By this simple provision, the anchor is prevented from turning beyond the position in which it presents its broad side to the soil and withdrawal of the anchor is obviated.

The anchor plate is provided at or near its rear end with a longitudinal socket G adapted to receive a suitable driving-bar H, the anchor being sunk to the desired depth by blows delivered upon the upper end of said bar, in a manner common to this class of anchors. The preferred socket shown in the drawings is cylindrical and the driving bar has a reduced lower end of corresponding form. This socket is preferably arranged on the rear side of the anchor-plate, centrally between the ribs *e*, and its lower end is pointed or tapered, as shown at *g* to facilitate driving the anchor. The closed bottom of the socket affords a comparatively large contact surface for the lower end of

the driving bar and withstands a considerable impact without danger of breaking or splitting the anchor plate in driving the anchor in hard or stony soil. The socket also reinforces and stiffens the anchor plate. In driving the anchor, the socket moreover forms a hole in the ground of larger diameter than the driving bar, thus providing the necessary clearance for easily withdrawing the driving bar by hand. The arrangement of the socket on the rear side of the anchor plate, that is, the same side as the curved points a^1, as shown, affords the further important advantage of counteracting the tendency of the points to cause the anchor to swerve or drive crooked. The result is that the driving tool does not become bound on the anchor, which is liable to occur when the anchor deviates from a straight line in driving, and the bar can therefore be easily detached from the anchor plate after driving it.

In bracing or staying a fence post or other object by means of our improved anchor, after attaching the stay rod B to the anchor, the latter is driven edgewise into the ground at the desired angle by the use of the driving bar H, and after sinking the anchor to a suitable depth, the driving bar is withdrawn from the socket of the anchor and the latter is turned at right angles to the stay rod by a vigorous pull on the same, after which the fence post is connected with the stay rod by the connection C, in the usual manner.

The improvements hereinbefore described, while materially increasing the strength, convenience and efficiency of the anchor do not add to its cost, inasmuch as the device can be cast in a single piece, of malleable iron or other suitable metal.

We claim as our invention:

1. A ground anchor of the character described, consisting of a plate provided with an attachment for a stay-member and a longitudinally disposed socket arranged on one side of the plate and adapted to receive a driving-bar.

2. A ground anchor of the character described, consisting of a plate provided with an attachment for a stay-member and a laterally-projecting socket for a driving-bar having a tapering front end, substantially as set forth.

3. A ground anchor of the character described, provided on one side with an attachment for a stay-member and on its opposite side with a socket adapted to receive a driving-bar, substantially as set forth.

4. A ground anchor of the character described, consisting of a plate provided at its rear end with one or more spurs curved toward one side thereof, a socket for a driving-bar arranged on the same side of the plate as said spurs, and an attachment for a stay-member arranged on the opposite side of the plate, substantially as set forth.

5. A ground anchor of the character described, consisting of a plate provided on its rear side with longitudinal stiffening ribs and a longitudinal socket for a driving-bar arranged between said ribs, substantially as set forth.

6. A ground anchor adapted to be driven into the ground by a detachable driving-bar and consisting of a plate having a pointed entering end, a pair of spaced lugs on one side of the plate for the attachment of a stay-member, and an inclined deflecting surface extending from the outer ends of said lugs to the plate in the direction of its entering end.

7. A ground anchor of the character described, consisting of a plate provided on its upper side at a distance from its ends with an attachment for a stay-member, and a stop adjacent to said attachment adapted to engage the stay-member for limiting the turning movement of the anchor relative to the stay-member.

8. In a ground anchor of the character described, the combination of an anchor-plate having a pointed entering end and provided on its front side between its ends with a pair of lugs and a stop arranged at one side of the space between said lugs, a stay-member arranged between said lugs and adapted to abut against said stop, and a pivot-pin passing through said lugs and the stay-member.

Witness our hands this 9th day of July, 1908.

FREDRICK V. SIMPSON.
RICHARD FRANCHOT

Witnesses:
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