April 27, 1926. 1,582,454

M. E. EVANS

SELF ANCHORING POST

Original Filed Jan. 5. 1921 2 Sheets-Sheet 1

FIG.1.

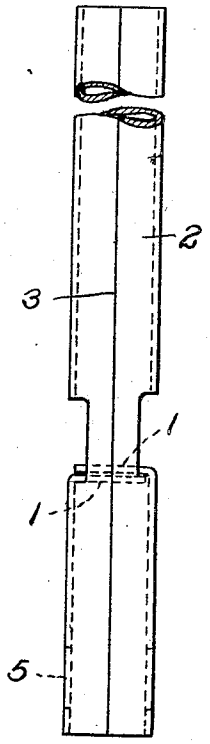



FIG.2.

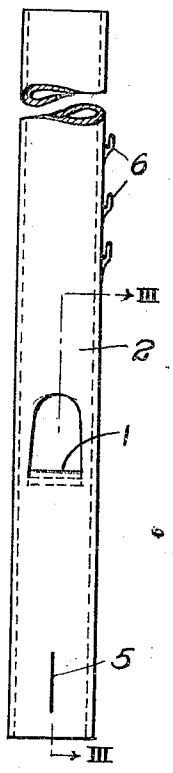



FIG.3.

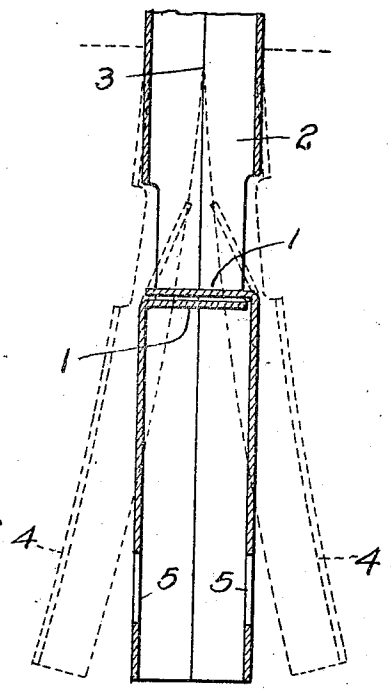



FIG.5.

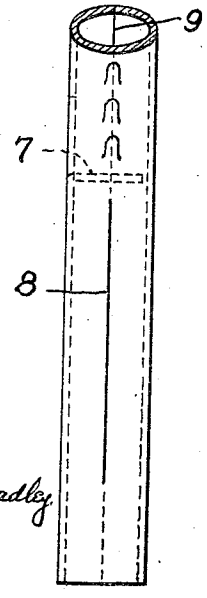



FIG.6.

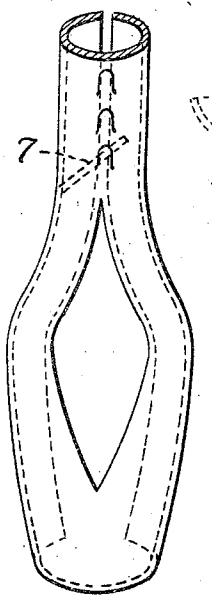
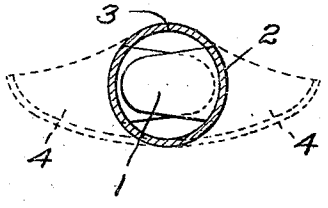



FIG.4.




WITNESSES

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SELF ANCHORING POST

Original Filed Jan. 5, 1921 2 Sheets-Sheet 2

FIG.7.

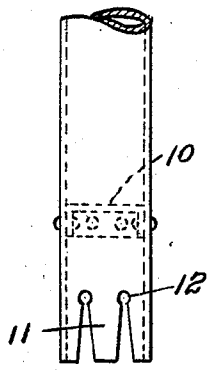



FIG.8.

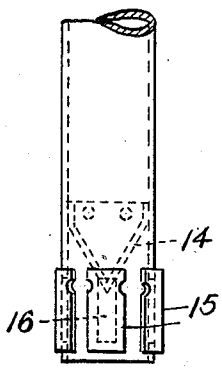



FIG.9.

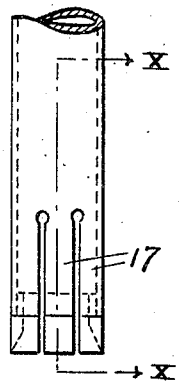



FIG.10.

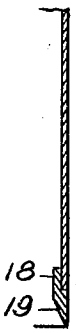



FIG.12.

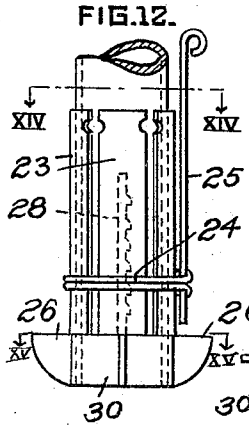



FIG.13.

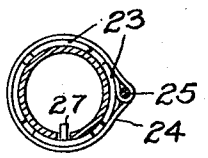



FIG.14.

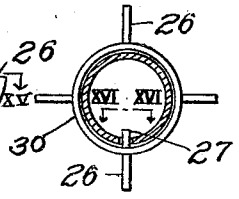



FIG.15.

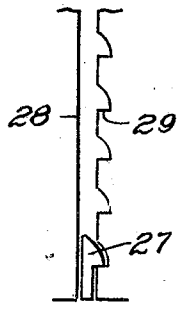



FIG.16.

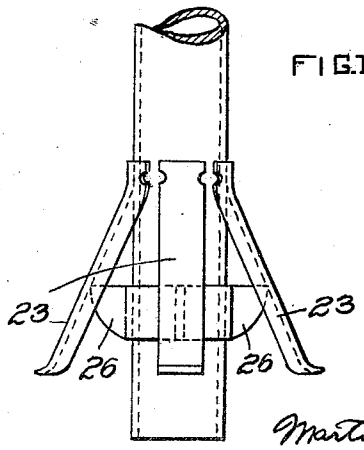
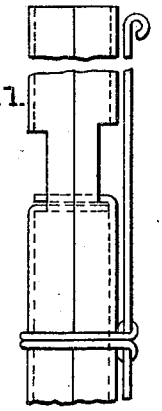



FIG.11.



WITNESSES

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Patented Apr. 27, 1926. 1,582,454

# UNITED STATES PATENT OFFICE.

MARTIN E. EVANS, OF KANKAKEE, ILLINOIS.

## SELF-ANCHORING POST.

Application filed January 5, 1921, Serial No. 435,107. Renewed March 5, 1926.

*To all whom it may concern:*

Be it known that I, MARTIN E. EVANS, a citizen of the United States, and a resident of Kankakee, in the county of Kankakee and State of Illinois, have invented a new and useful Improvement in Self-Anchoring Posts, of which the following is a specification.

The invention relates to posts which are adapted to be driven into the ground, and while unlimited to posts for any specific purpose, it is particularly applicable to fence posts and is so illustrated herein.

The principal object of the invention is to provide a post so constructed that its bottom portion will readily spread laterally by or in consequence of the pressure of earth when the post is driven into the ground and thereby render the post self-anchoring. Further objects of the invention will appear in the following description of it.

The invention is illustrated in the accompanying sheets of drawings of which Fig. 1 is a view of one side of a fence post; Fig. 2 a view of the side of the post taken at right angles to that of Fig. 1; Fig. 3 a vertical sectional view to enlarged scale of the lower end of the post; the plane of view being indicated by the lines III—III, Fig. 2, and in this figure the form of a post after it has been driven is indicated in dotted lines; Fig. 4 a plan view of the post, the form of the post after it has been driven being indicated in dotted lines; Fig. 5 a side view of the botton portion of a post showing a modification of construction; Fig. 6, a view of the post of Fig. 5 after the post has been driven; Figs. 7, 8 and 9, side views of the bottom portions of posts showing modifications of construction; Fig. 10, a sectional view taken on the line X—X, Fig. 9; Fig. 11, a side view of a post similar to that shown in Figs. 1, 2 and 3, but provided with spread-restraining means; Fig. 12, a side view of the bottom portion of a post showing a still further modification of construction; Figs. 13 and 14, sectional views taken respectively on the lines XIV—XIV and XV—XV, Fig. 12; Fig. 15, a view to enlarged scale of a detail of construction of the post of Figs 12, 13 and 14, the plane of view being indicated by the line XVI—XVI, Fig. 14 and Fig. 16 a view of the bottom portion of the post of Fig. 12 after the post has been driven.

In the practice of the invention, the post is provided with a laterally extending lug, or its equivalent, against which earth presses when the post is driven, and the bottom of the post has an anchoring portion which is spreadable laterally by or in consequence of the pressure of earth upon the lug. The post is preferably tubular, particularly at its lower end, and may be formed of various types of tubing. It is illustrated in the drawings as being formed, in some instances, of tubes having longitudinal open seams, and in other instances of tubes which may be either seamless or welded tubes.

In the preferred form of the invention, a lug or lugs extend across the interior of the post above its lower end and resist the passage of earth upwardly through the tube, with the result that lateral pressure is applied to the interior of the tube to spread the anchoring portion outwardly. As illustrated in Figs. 1–4, inclusive, two pressure-resisting lugs 1 may be formed of portions of the wall of the tubular post 2 and bent inwardly, one above the other. The post shown in these figures has an open seam 3, which extends upwardly from the bottom of the post, and the lugs are arranged, one on each side of the seam. When the post is driven, earth freely passes upwardly through its interior until the post has been driven to such depth that the earth bears against the lowermost lug 1. Further driving of the post causes the earth in its bottom to be placed under pressure, which, acting as fluid pressure, spreads the lower end of the post substantially to the form indicated in dotted lines at 4, the result being that the post becomes firmly anchored in the ground.

To minimize the resistance of the lower end of the post to spreading, particularly when the post is formed of rather heavy gage material, slits or cuts 5 may be formed longitudinally of the post at a short distance from its lower end. These slits weaken the metal, and as many of them may be provided as found necessary to render a post of any particular gage easily spreadable by the earth pressure acting upon the lugs in the manner described. When the post is used as a fence post, it may be provided with out-

wardly extending lugs 6 spaced at the desired intervals, such lugs being cut from and bent laterally of the tube for the purpose of supporting wire fence.

In place of using a pair of lugs such as illustrated in the post of Figs. 1–4, a single laterally extending lug 7 may be cut from the metal of the post and bent across the interior, as indicated in Figs. 5 and 6. The post shown in these figures further differs from that of Figs. 1–4 in that it is provided with a long longitudinal slit 8 substantially opposite to the open seam 9. Such slit forms a separating plane longitudinally of the post in addition to the separating plane formed by the seam 9. When the post is driven, the pressure of earth acting upon the lug 7 causes the lower end of the post to expand to substantially the shape indicated in Fig. 6.

It is not necessary that the pressure-resisting lugs be formed integrally of the post. In the post of Fig. 7, a pressure-resisting lug 10 formed of a separate piece of metal extends transversely of the interior of the tube and is riveted or welded to the tube in the manner indicated. Also, instead of expanding the lower end of the post in the plane of a longitudinal open seam or slit, the lower end of the post may, as illustrated in Fig. 7, be provided with a plurality of flukes 11 formed by cutting portions of the metal from the post. The flukes may be rendered more easily spreadable and the metal less liable to tear by providing taper openings 12 at the upper ends of the slots of spaces between the flukes. The post illustrated in this figure may have an open seam, but is preferably formed of a tube without such seam. When the post is driven, the lug 10 resists the upward flow of earth and thereby causes the earth to press laterally upon the flukes 11 and spread them outwardly.

In the post of Fig. 8, the pressure-resisting lug is in the form of an inverted cone 14 secured to the interior of the post in the same manner as the lug 10 of Fig. 7. The anchoring portions of the post in this form comprises flukes 15 formed of separate pieces of metal attached to the exterior of the post which is provided with an opening 16 beneath each fluke. The pressure of the earth within the lower end of the post acts through the opening 16 to spread the flukes 15 outwardly.

In all the forms of the invention thus far described, the laterally extending lugs for causing the outward spreading of the anchoring portion of the post are arranged within the posts at a distance from their lower ends. The self-anchoring of the post may be similarly effected by arranging lugs at the lower end of the post. As shown in Figs. 9 and 10, this may be done by forming flukes 17 at the lower end of the post and providing the ends of such flukes with lugs 18 having tapered ends 19 which resist the upward passage of earth into the tube and accordingly cause the flukes to be spread outwardly.

In the forms of posts illustrated in Figs. 9 and 10, the lateral spreading of the flukes or anchoring portions commences as soon as, or very shortly after, the post enters the ground. If it is desired to somewhat delay this spreading action, a shallow hole may be dug in the ground, in which hole the post is inserted and then driven. However, the invention contemplates the provision of special means for holding the anchoring portions of the post against spreading during the initial driving of the post, such means being releasable after the post has been driven to the depth at which it is desired to have the anchoring portion spread. Means to this end are illustrated in the post of Figs. 13–16, particularly, in Figs. 13 and 14. The post in this instance is provided with flukes or wings 23 secured to the exterior of the post. At the lower end of the flukes, there is a metal strap 24 provided with looped ends, through which loops there extends a rod 25 which may be withdrawn at any time during the driving of the post. When withdrawn, the strap no longer holds the flukes adjacent to the post, and the further driving of the post results in the flukes being spread outwardly to form an anchor. Manifestly, such means for so restraining the spreading of the anchoring portion may be applied to the other forms of posts shown herein.

For example, in Fig. 11 there is illustrated the form of post shown in Figs. 1, 2 and 3 provided with a metal strap $24^a$ and rod $25^a$. Such spread-restraining means may be advantageously used on posts of this type to prevent premature spreading when the posts are formed of relatively thin metal.

In the post of Figs. 12–16, a means is provided for resisting reverse bending of the flukes in case the post is pulled upwardly. Preferably, a special member is provided for holding the flukes outwardly, such member including a collar 30 surrounding the lower end of the post and longitudinally slidable thereon. The collar is provided with outwardly extending vanes 26, one being arranged below each of the flukes 23. The collar is also provided with a projection 27 which extends through a slot 28 formed in the wall of the post. This projection is provided with a hook adapted to engage detents 29 formed adjacent to such slot and to thereby hold the collar against downward movement both before and after the driving of the post.

When the post is driven, the spreading of the flukes 23 is effected by the pressure of the earth acting upon the ends of the flukes.

The collar 30 then moves upwardly as the post is driven and finally takes the position indicated in Fig. 16, in which the vanes 26 hold the flukes 23 outwardly. The collar 30 is held positively in its upper position by the engagement of the lug 27 with one of the notches 29.

It is characteristic of the several embodiments of the invention illustrated herein that the post is provided interiorly with a lug which, by reason of the earth pressure incident to the driving of the post causes the anchoring portion of the post to spread laterally. As previously explained, these lugs may be arranged in various positions. In all cases, they eliminate the necessity of providing means, separate and apart from the post, for causing the anchoring portions to spread. In other words, the post, previous to its being driven, is so formed that the desired anchoring may be readily effected.

I claim:

1. A self-anchoring post having a lug as a part thereof extending inwardly from its outer wall and against which earth presses when the post is driven, and having a bottom anchoring portion spreadable laterally in consequence of said pressure of earth upon said lug.

2. A self-anchoring tubular post having as a part thereof a lug extending across its interior above its lower end against which lug earth presses when the post is driven, and having a bottom anchoring portion spreadable laterally in consequence of the pressure of earth upon said lug.

3. A self-anchoring tubular post having as a part thereof a lug extending across its interior above its lower end against which earth presses when the post is driven, and having a bottom anchoring portion spreadable laterally in consequence of the pressure of earth upon said lug, and releasable means for holding said anchoring portion against spreading during the initial driving of the post.

4. A self-anchoring post having an expandible tube at its lower end, the tube being open at the bottom and provided with a longitudinal open seam extending upwardly from the bottom of the tube, and a lug secured to the tube and extending across its interior and adapted, when the post is driven, to resist the passage of earth upwardly through the tube whereby lateral pressure is applied to the interior of the tube to spread its lower end outwardly.

5. A self-anchoring post comprising a bendable metal tube open at the bottom and provided with a longitudinal open seam extending upwardly from the bottom of the tube, and a lug secured to the tube near its lower end and extending across its interior and adapted, when the post is driven, to resist the passage of earth upwardly through the tube whereby lateral pressure is applied to the interior of the tube to spread its lower end outwardly.

6. A self-anchoring post comprising a bendable metal tube open at its bottom and provided with a longitudinal open seam extending upwardly from the bottom of the tube, and a lug stamped from the tube wall near its lower end and bent inwardly across the interior of the tube and adapted, when the post is driven, to resist the passage of earth upwardly through the tube whereby lateral pressure is applied to the interior of the tube to spread its lower end laterally.

7. A self-anchoring post comprising a bendable metal tube open at its bottom and provided with a longitudinal open seam extending upwardly from the bottom of the tube, and a pair of lugs stamped from the tube wall near its lower end one on each side of said seam, said lugs being bent inwardly one immediately above the other across the interior of the tube.

8. A self-anchoring post having a laterally extending lug against which earth presses when the post is driven, and having a bottom anchoring portion spreadable laterally in consequence of the pressure of earth upon said lug, and releasable means for holding said anchoring portion against spreading during the initial driving of the post.

In testimony whereof, I have hereunto set my hand.

MARTIN E. EVANS.