

Aug. 30, 1938.

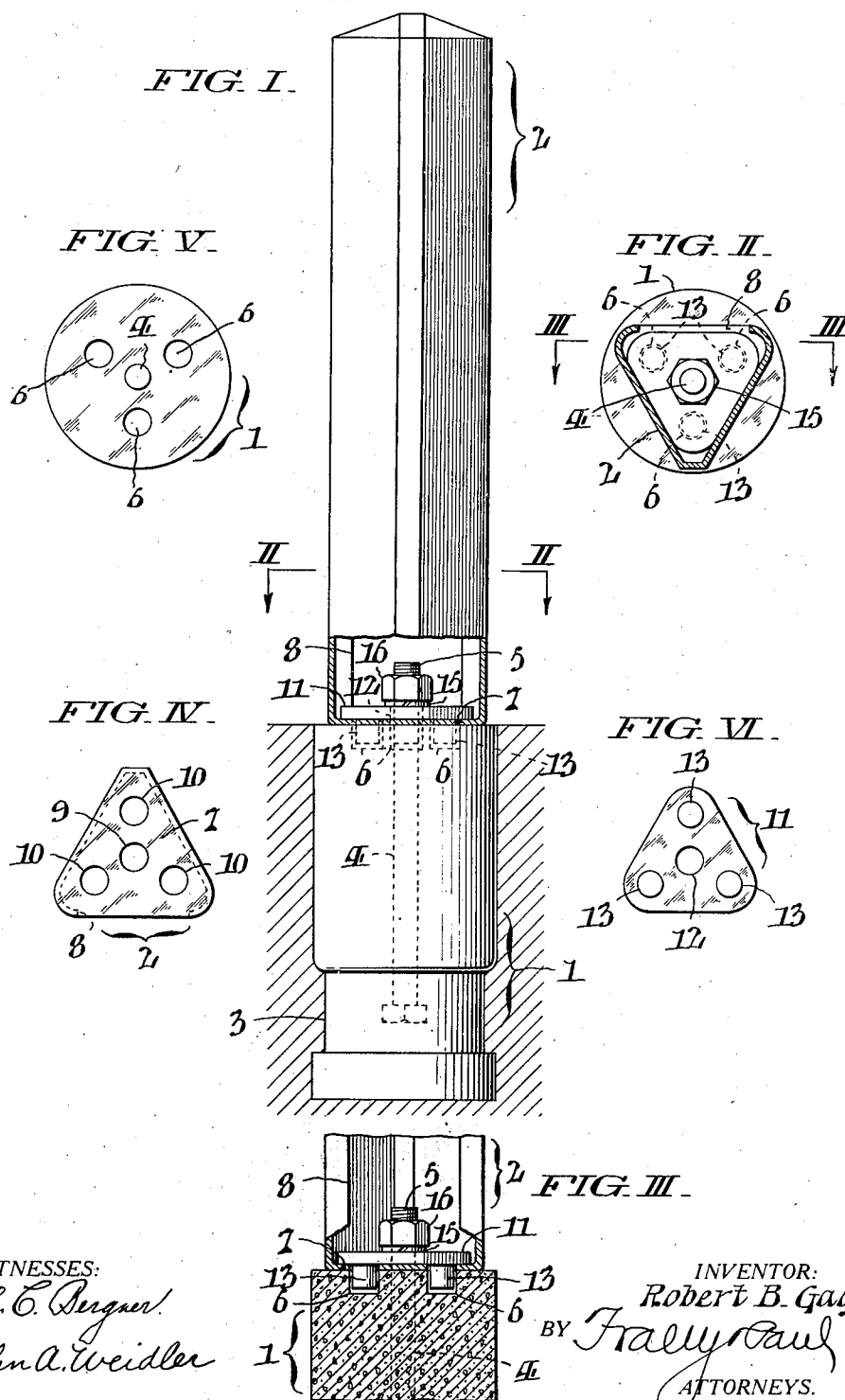
R. B. GAGE

2,128,294

POST

Filed April 18, 1936

2 Sheets-Sheet 1



WITNESSES:
John C. Berger
John A. Weidler

INVENTOR:
Robert B. Gage
 BY *Frally Paul*
 ATTORNEYS.

Aug. 30, 1938.

R. B. GAGE

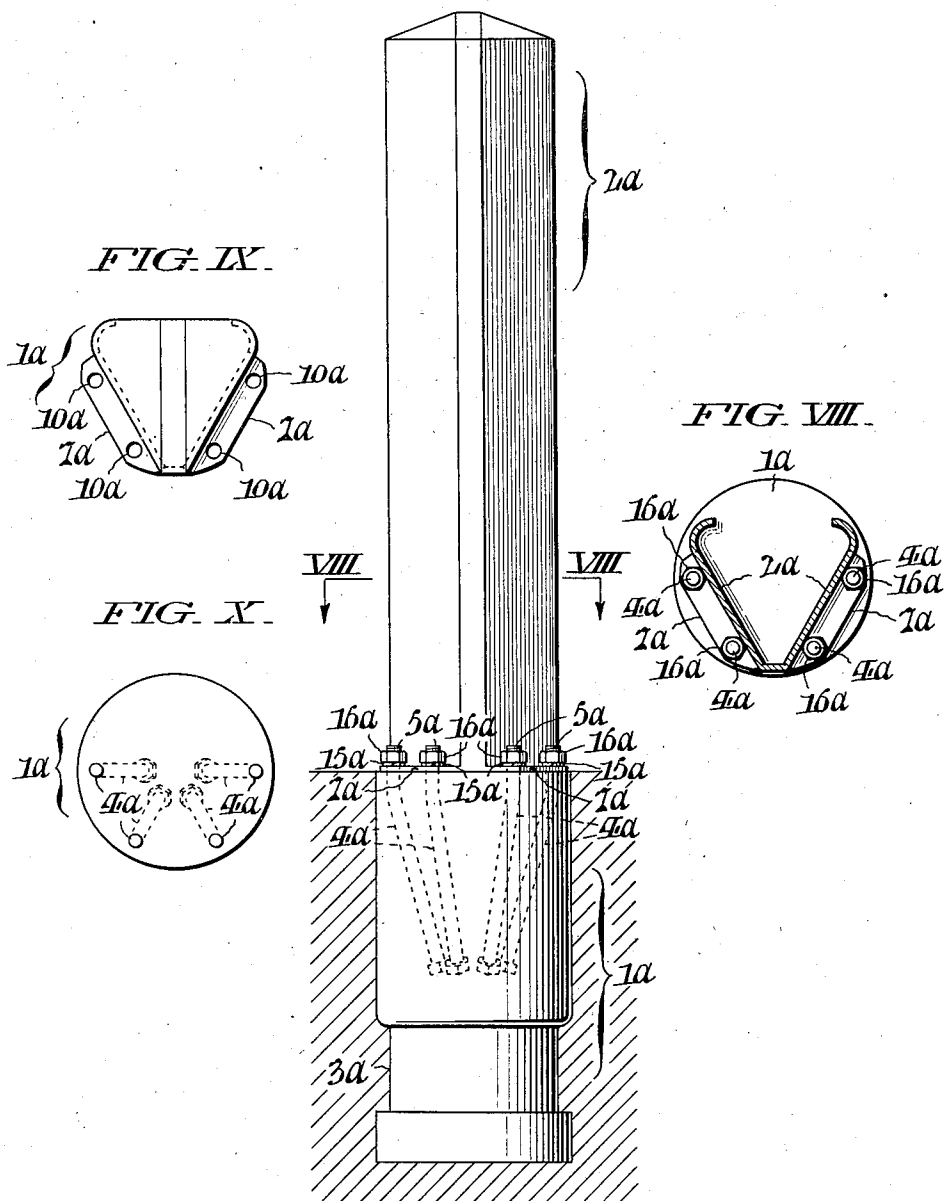
2,128,294

POST

Filed April 18, 1936

2 Sheets-Sheet 2

FIG. VII.



WITNESSES:

John C. Burgher
John A. Weidler

INVENTOR:

Robert B. Gage
BY *Frally Paul*
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,128,294

POST

Robert B. Gage, West Trenton, N. J.

Application April 18, 1936, Serial No. 75,115

8 Claims. (Cl. 189—23)

Ordinary guard rail posts of wood or iron deteriorate very rapidly under the decaying and corrosive action of the elements, particularly those portions of them which are below ground in direct contact with the soil. While it is possible to prolong the life of wood to some extent by application of, or impregnation with creosote, the use of this preservative is impractical since the treated wood will not take the light-color paint necessary for the visibility of guard rail posts. The cost of galvanized iron posts, on the other hand, is generally prohibitive, and unless the galvanizing is very heavy, such posts soon yield to corrosive action. Thus, after a comparatively short time, wooden and iron posts which appear to be in good condition, may be rotted or eaten away below ground to such an extent that, under the impact of an automobile, truck, or other vehicle, with the guard rail, they will break off at, or near the ground level and so fail in the safety or guarding function for which they were designed. Obviously, frequent painting of the exposed portions of the posts will not alleviate the difficulty. Furthermore, failure of the posts under the conditions noted, entails complete replacement, which is costly and therefore uneconomical.

My invention is directed toward overcoming the various difficulties and drawbacks which have been pointed out. This desideratum I attain in practice, as hereinafter more fully disclosed, through provision of a composite post, that is to say, a post which consists of a lower component of indestructible material, like concrete, adapted to be set or function in the ground with its top end or face above the ground level; and a renewable above-ground component of metal or the like which is detachably secured to said lower component, and which can be readily preserved against deterioration by occasional application of paint thereto.

In connection with a composite post having the above attributes, it is another aim of my invention to embody in the lower or underground component, provisions which will insure firm anchorage of said component in the ground and thereby preclude its being uprooted or pulled out of place incident to impacts received by the exposed or guard rail supporting upper component.

Another object of this invention is to secure the advantages of lightness and manufacturing economy in the construction of the upper component of my improved post, by pressing or otherwise fashioning it hollow from sheet or plate metal with a cross-sectional configuration of

maximum resistance strength to distortion and bending under impact.

Other objects and attendant advantages will appear from the detailed description which follows of the attached accompanying drawings, wherein Fig. I is a view, partly in front elevation and partly in axial section, of a guard rail post conveniently embodying my invention in one form.

Fig. II is a cross section of the post taken as indicated by the arrows II—II in Fig. I.

Fig. III is a fragmentary vertical sectional view of the post looking from the rear and taken as indicated by the arrows III—III in Fig. II.

Fig. IV shows the bottom face of the upper component of the post.

Fig. V shows the upper face of the lower component of the post.

Fig. VI shows the lower face of a hold down plate constituting part of the post structure.

Fig. VII shows the front elevation of an alternative form of my improved post.

Fig. VIII is a plan sectional view taken as indicated by the arrows VIII—VIII in Fig. VII.

Fig. IX shows the top plan view of the upper component of the alternative form of post; and,

Fig. X shows the top face view of the lower component of said post.

Referring first to Figs. I—VI, my improved post comprises a lower component 1 which is adapted to be set into the ground with its top end exposed; and a detachable upper or above-ground component 2. In practice, the lower component 1 is cast or molded from indestructible material like concrete preferably to cylindric configuration, and near its bottom formed with an annular or circumferential groove or recess 3 for anchorage in the ground. Axially embedded in the component 1 is a bolt 4 with the upper threaded-end thereof projecting as at 5. In its top, the lower component 1 is provided with socket holes 6 (of which there are three in the present instance) for a purpose presently explained, these socket holes 6 being equi-spaced circumferentially of, and at corresponding radial distances from the bolt 4.

The upper component 2 of the post is die-pressed or otherwise to hollow triangular cross-sectional configuration from relatively thin sheet or plate metal, with closed in top and similar bottom 7, and with the rear side open as at 8. As shown in Fig. IV, the triangular bottom 7 of the upper component 2 has a central hole 9 to engage over the protruding upper threaded end 5 of the bolt 4, as well as apertures 10 corresponding in

position with the socket holes 6 in the lower component 1. Attention is also particularly directed to the fact that the upper component sides have their longitudinal free edges inwardly turned or slightly molded for stiffening purposes, as clearly understandable from Figs. II, IV, VIII and IX.

Also forming a part of my improved post structure is a hold-down plate 11 which is detailed in Fig. VI, said plate being triangular to fit the interior of the upper component 2, and, like the bottom 7 of the latter, provided with a central hole 12 to engage over the protruding end 5 of the bolt 4 in the lower component 1. The hold-down plate 11 moreover has three pendant lugs 13 near the angular corners which are adapted to pass down through the openings 10 in the bottom 7 of the upper component 2 and engage the socket holes 6 in the top of the lower component 1 as shown in Figs. I and III.

In assembling the post, the hold-down plate 11 is introduced through the open back of the upper component 2 with its lugs 13 projecting down through the openings 10 in the bottom 7. The upper component 2 is then placed on the lower component 1 with the registering central holes 3 and 12 respectively in the bottom 7 and in the hold-down plate 11 engaged over the projecting end 5 of the bolt 4, and with the lugs 13 of said plate engaging the socket-holes 6 in the top of said lower component, whereupon a washer 15 and a nut 16 are applied to said bolt 4. As the nut 16 is tightened, it forces the plate 11 down on the bottom 7 of the upper component 2 which latter is in turn clamped firmly and squarely down on the top of the lower component 1. The assembled post is set into the ground with the vertex of the angle of the upper component 2 forward at right angles to the roadway. Additional posts are similarly set into the ground at suitable intervals along the roadside, and guard rails or cables (not illustrated) secured to them in a manner that will meet with approved or recommended standards.

My improved posts will effectively resist dislodgment or uprooting under impact, due to anchorage of the lower component 1 by the earth which packs into the circumferential recess or groove 3. The hollow upper component 2 will, at the same time, ordinarily resist distortion or bending effectively irrespective of the angle of the impact by virtue of its triangular cross-section; but if in severe cases of impact it should yield, it would not break since it is formed from wrought metal and will therefore hold the guard rails to prevent the colliding automobile or truck from leaving the road. In the event that the upper component 2 of the post is damaged, it can easily be replaced by another without necessitating renewal of the post as a whole, this operation requiring but a minimum amount of time in its accomplishment. Since the upper portion of the post is entirely above ground, it is safeguarded against corrosion through contact with the earth and can be maintained in good condition at relatively small expense by occasional painting.

In the alternative form of post illustrated in Figs. VII-X the upper component 2a is provided with lateral base flanges 7a along its solid sides in lieu of the closed bottom of the first described embodiment. As shown in Fig. IX, the flanges 7a are provided with apertures 10a to engage over the projecting threaded ends 5a of correspondingly allocated bolts 4a embedded in the lower component 1a, the upper component being secured in place by nuts 16a screwed onto said bolt ends. The advantage attained with the alternative em-

bodiment is that a hold-down plate is dispensed with. In all other respects the alternative embodiment of Figs. VII-X is like that of the first described embodiment, and accordingly in order to preclude the necessity for repetitive description, all corresponding parts which have not been specifically referred to are identified with the same reference numerals previously employed except for the addition in each instance of the letter "a".

The two forms of post exemplified herein are of course to be considered as typical of other forms possible within the scope of the appended claims.

Having thus described my invention, I claim:

1. In a post of the type described, the combination of a lower cylindric component of concrete or the like adapted to be set into the ground, said component having an annular recess near its bottom end to insure its firm anchorage; an upper above-ground hollow-triangular component of plate metal to include a closed-in single-thickness bottom and longitudinally open rear side detachably secured to said lower component, and means including spaced lugs effective to prevent relative rotary movement of said components.

2. In a post of the type described, the combination of a lower cylindric component of concrete or the like adapted to be set into the ground, said lower component having an annular groove near its bottom and an axial bolt embedded therein with a threaded portion projecting thereabove; a hollow upper above-ground sheet metal component of hollow-triangular even cross-section with an apertured closed-in bottom and the rear side longitudinally open, said upper component and bottom being adapted to engage over the threaded end of the bolt projecting upward from the lower component and to be secured thereto by a nut screwed onto said bolt projecting end, and means including downwardly directed spaced lugs effective to retain said components in axial alignment while concurrently preventing their relative rotary movement.

3. A post as defined in claim 2 wherein the upper component has the rear side continuously open for permitting access to the securing nut, its top closed-in, and the solid sides thereof inwardly turned for strengthening purposes.

4. A post comprising a lower component of concrete or the like, adapted to be set into the ground, and having a bolt embedded axially therein with a threaded portion projecting thereabove; a hollow upper above-ground sheet-metal component of hollow-triangular cross-section including two solid sides and an open back with an integrally formed closed-in bottom having a central hole, for engagement over the projecting threaded end of the bolt, interposed means coactive with the confronting component ends to prevent relative turning movement of said components, and said upper component solid sides having their free edges slightly turned inward and being secured in place by a nut screwed onto said bolt end.

5. A post according to claim 4, including a centrally apertured hold-down triangular plate interposed between the closed-in bottom of the upper component and the securing nut, and having pendant lugs proximate the angular corners thereof for passage down through holes in the bottom of said upper component for engagement in socket holes in the top of said lower component.

6. A post according to claim 4, wherein the upper component is fashioned to triangular cross

section with an opening in one side thereof, and including a centrally-apertured plate configured to fit the interior of the upper component and adapted to be interposed between the bottom of the latter and the securing nut, said plate having pendant lugs near its corners passing down through said bottom and engaging correspondingly-allocated socket holes in the top of said lower component.

7. A post according to claim 4, including a centrally apertured hold-down triangular plate interposed between the closed-in bottom of the upper component and the securing nut, and hav-

ing pendant lugs proximate the angular corners thereof for passage down through holes in the bottom of said upper component for engagement in socket holes in the top of said lower component.

8. A post according to claim 4, wherein the means coacting with the confronting component ends consists of a centrally apertured plate configured to fit the interior of the upper component, said plate having pendant lugs passing down through the upper component bottom and engaging correspondingly-allocated socket holes in the top of the lower component.

ROBERT B. GAGE.