No. 816,857. PATENTED APR. 3, 1906.

O. GEORGE & P. SMITH.

ANCHOR.

APPLICATION FILED OCT. 30, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

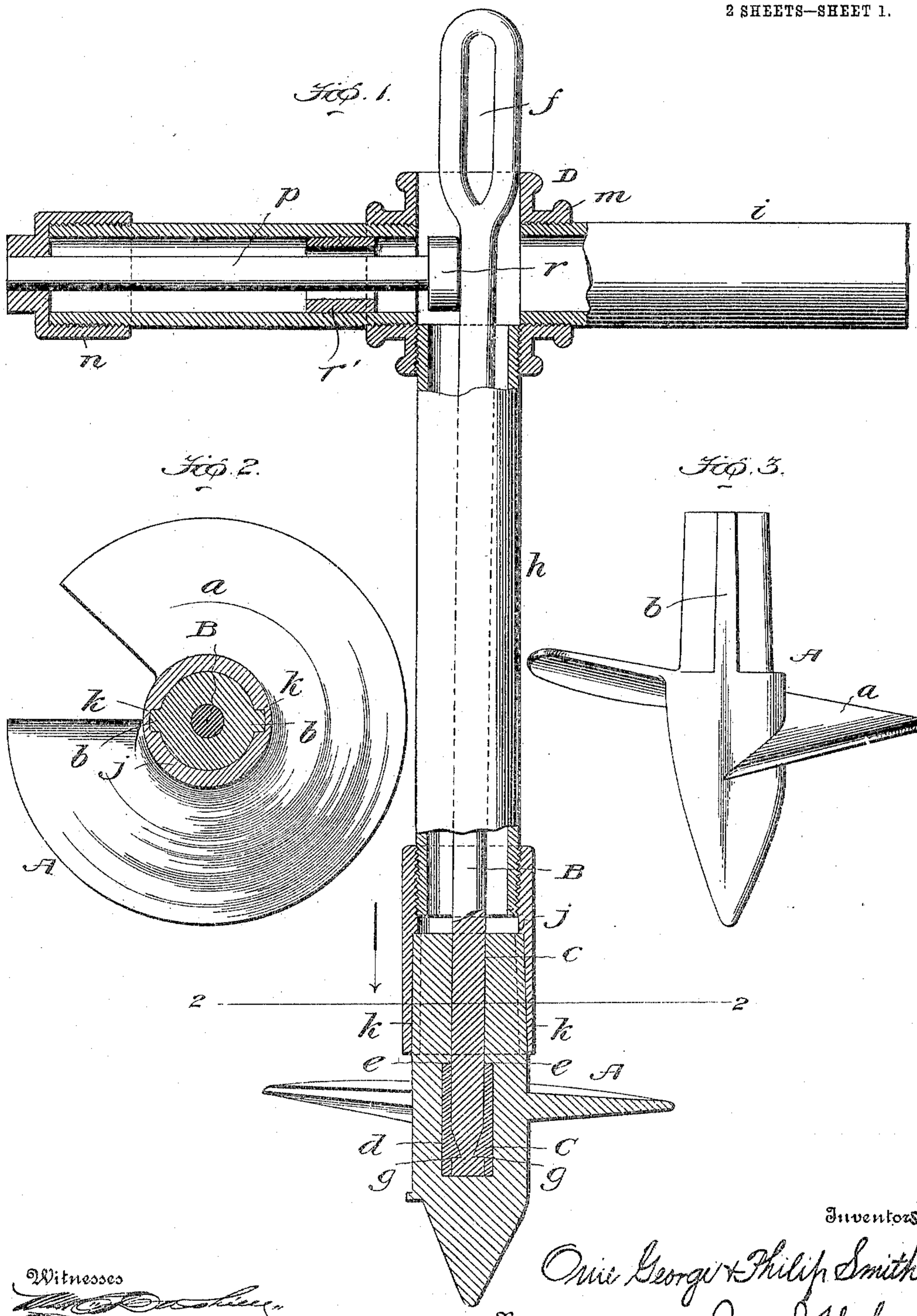

Fig. 2.

Fig. 3.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

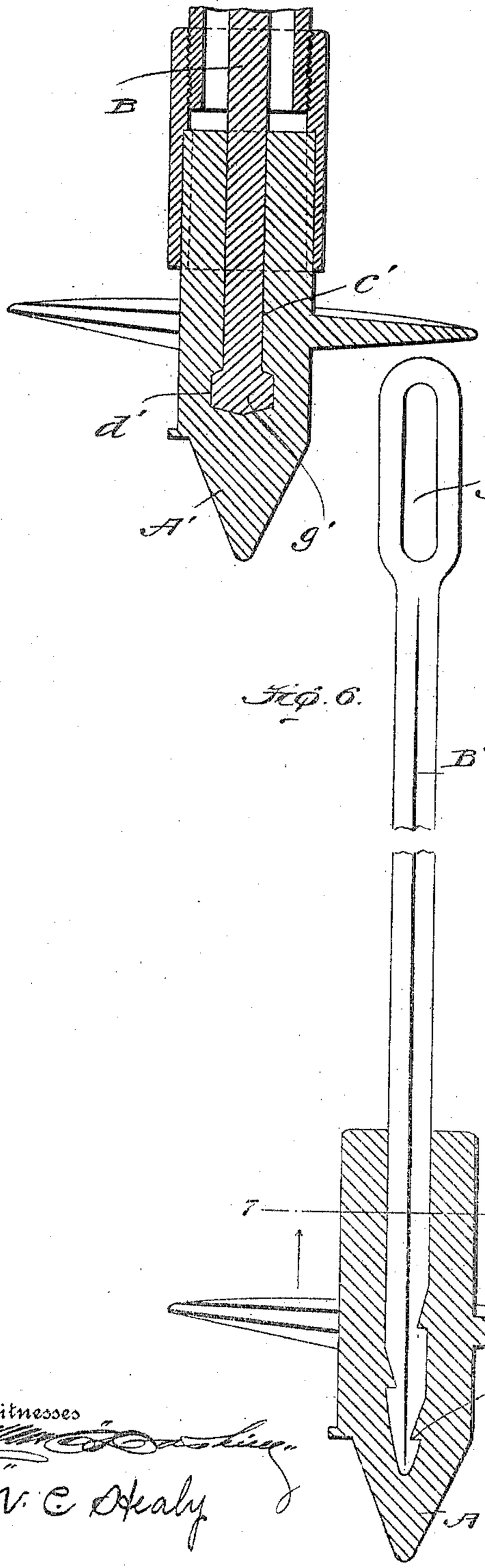


Fig. 5.

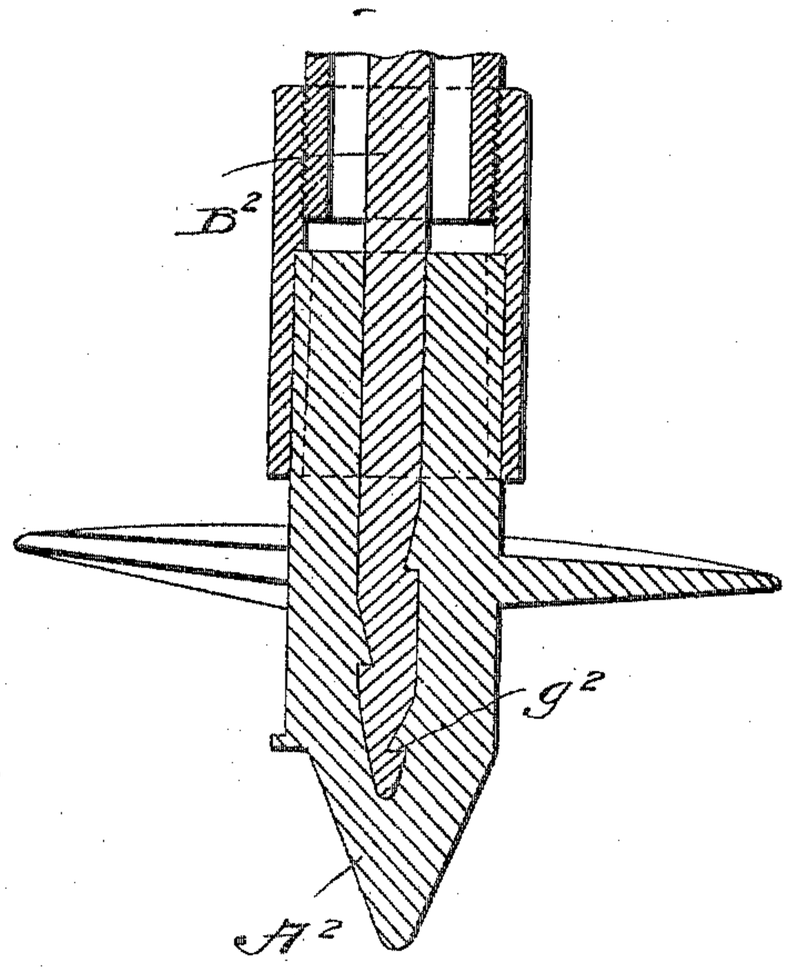
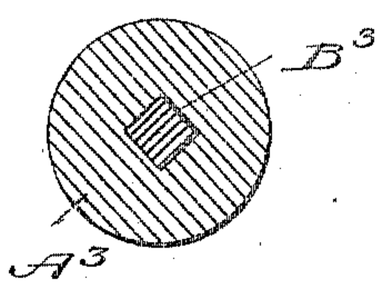


Fig. 6.

Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

ORRIE GEORGE AND PHILIP SMITH, OF SIDNEY, OHIO, ASSIGNORS TO THE PHILIP SMITH CO., OF SIDNEY, OHIO.

ANCHOR.

No. 816,857. Specification of Letters Patent. Patented April 3, 1906.

Application filed October 30, 1905. Serial No. 285,106.

To all whom it may concern:

Be it known that we, ORRIE GEORGE and PHILIP SMITH, citizens of the United States, residing at Sidney, in the county of Shelby and State of Ohio, have invented new and useful Improvements in Anchors, of which the following is a specification.

Our invention pertains to anchors, more particularly guy-anchors and devices for forcing the same into the ground; and it has for one of its objects to provide an anchor having an upwardly-extending rod fixed with respect thereto and adapted for the convenient connection of a guy-cable or the like.

Another object of the invention is the provision of a device for forcing the anchor into the ground, embodying means for engaging the anchor direct and means for engaging the rod, whereby casual disconnection of the said device from the anchor while the latter is being forced down in the ground is precluded.

Other advantageous features peculiar to our invention will be fully understood from the following description and claims when the same are considered in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view, partly in elevation and partly in vertical section, illustrating our novel anchor and our novel anchor-sinking device as properly applied to the anchor. Fig. 2 is a horizontal section taken in the plane indicated by the line 2 2 of Fig. 1 looking downwardly. Fig. 3 is a side elevation of the anchor *per se*. Figs. 4, 5, and 6 are vertical sections of modified anchors and anchor-rods hereinafter referred to in detail. Fig. 7 is a horizontal section taken in the plane indicated by the line 7 7 of Fig. 6 looking downwardly.

Referring by letter to the said drawings, and more particularly to Figs. 1 to 3 thereof, A is the anchor which we employ in one embodiment of our invention. The said anchor is made of cast-iron and is provided with a spiral blade *a* or other suitable means for holding it against upward movement in the ground. It is also provided on its upper portion with diametrically opposite vertical fins *b* and in its upper end has a bore *c*. This bore *c* is enlarged at its lower end, as indicated by *d*, so as to afford shoulders *e* for a purpose hereinafter set forth.

B is the anchor-rod, which is preferably of wrought-iron. The said rod B is provided at its upper end with an eye *f* for the connection of a guy or other cable, and it may be fixed with respect to the anchor A in any suitable manner without involving departure from the spirit of our invention. In accordance with one embodiment of our invention we fixedly connect the rod B to the anchor A in the manner shown in Fig. 1—that is to say, by arranging the lower end of the rod in the lower enlarged portion *d* of the bore *c* and filling the said enlarged portion *d* with Babbitt metal C, so that such metal will rest between the shoulders *e* in the anchor and the opposed shoulders *g*, provided adjacent to the lower end of the rod. In virtue of this arrangement it will be readily apparent that the Babbitt metal will effectually prevent withdrawal of the rod from the anchor, which is obviously an important advantage.

D is our device for forcing the anchor into the ground to the point or depth desired. This device D comprises an upright tubular portion *h*, provided at its lower end with means for directly engaging the anchor, so as to hold it against turning thereon, a handle *i* fixed to and disposed at right angles to the upright tubular portion, and means for directly engaging the anchor-rod B. The upper tubular portion *h* of the anchor-sinking device is preferably a section of gas-pipe, on the lower end of which is screwed a comparatively large pipe-section *j*, having diametrically opposite vertical grooves *k* in its inner side, Fig. 2, arranged to receive the fins *b* of the anchor A. Because of this construction the device D when properly applied is held against turning on the anchor A during the sinking of the latter into the ground, and yet may be readily withdrawn endwise from the anchor when it is desired so to do. The handle portion *i* of the device is preferably, though not necessarily, formed by two sections of gas-pipe, connected to the tubular portion *h* through the medium of a four-way coupling *m*, as shown. The means for di-

rectly engaging the rod B with a view of precluding casual disconnection of the device D from the anchor is preferably composed of a body *n*, in the form of a cap screwed on the outer end of one of the handle portions, and a stem *p*, fixed to said body and terminating at its inner end in a head *r*, arranged to bear against the side of the rod B. The body *n* of the said means is movable inwardly and outwardly on the handle portion, and hence it follows that the head *r* may be readily set against the rod B to fix the device D with respect thereto and may as readily be disengaged from the said rod to release the device D and permit of the same being drawn out of engagement with the anchor and the anchor-rod.

In the practical use of our improvements the device D is applied to and fixed on both the anchor A and the rod B in the manner shown in Fig. 1. The anchor A is then forced and turned through the medium of the device D down in the ground to the depth desired, when the body *n* is turned outwardly on the handle portion of the device D, when, as will be readily apparent, the said device D may be quickly and easily drawn out of engagement with the anchor and anchor-rod, leaving said anchor and rod in the ground.

The fixing of the device D to the anchor-rod obviously precludes casual disconnection or disengagement of said device D from the anchor A during the sinking of the latter in the ground. This will be appreciated as an important advantage when it is remembered that if the anchor-sinking device is disconnected from the anchor during the forcing of the latter down in the ground there is no way in which the device can be reëngaged with the anchor, and hence the anchor must be left at an insufficient depth or else dug up.

In addition to the advantages hereinbefore ascribed to our improvements it will be noticed that the same are simple and inexpensive in construction and are well adapted to withstand the rough usage to which anchors and anchor-sinking devices are ordinarily subjected.

The head *r* on the stem *p* is designed when the stem is moved outwardly to bring up against an annulus *r'*, secured in one of the sections of the handle *i*, this with a view of preventing withdrawal of the stem from the section.

The modified anchor A' and anchor-rod B', Fig. 4, are preferably of cast-iron and wrought-iron, respectively, and the bore *c'* in the anchor is provided at its lower end with a portion *d'* of comparatively large diameter. The anchor-rod B' is secured in the said anchor A' by placing the lower portion of the rod in the bore *c'* and subjecting the rod to hammer-blows or other means calculated to upset the lower end of the rod, as indicated by *g'*, and cause said end to occupy the lower comparatively large portion *d'* of the bore. In virtue of this it will be observed that shoulders on the anchor-rod are opposed to shoulders in the anchor, and hence there is no likelihood of the rod casually pulling out of the anchor.

In the modified construction shown in Fig. 5 the anchor A^2 is cast or molded on the lower portion of the anchor-rod B^2, and the said rod, which is preferably of wrought-iron, is provided with one or more notches in its side, the lower walls g^2 of which notches are disposed at right angles to the length of the rod, as shown. This construction obviously affords shoulders on the rod which are opposed to shoulders in the anchor and are to be depended on to prevent withdrawal of the rod from the anchor.

In the modified construction shown in Figs. 6 and 7 the anchor-rod B^3 is secured in the anchor A^3 in the same manner that the rod B^2, Fig. 5, is secured in the anchor A^2. The rod B^3, however, differs from the anchor-rod B^2 in that it is of rectangular form in cross-section.

When the rod B^3 is employed, the fins *b*, Figs. 1 to 3, may be omitted from the anchor A^3, and the said anchor may be driven into the ground through the medium of the rod B^3, the device D, Figs. 1 and 2, being dispensed with and a bar or the like being temporarily placed in the eye *f* of the rod B^3 to afford the necessary leverage.

We claim—

1. The combination with an anchor having exterior fins, and a rod fixed with respect to and extending upwardly from the anchor; of an anchor-sinking device comprising a tubular portion adapted to receive the rod and provided in its lower end with grooves arranged to snugly receive the fins of the anchor.

2. The combination with an anchor and a rod fixed with respect to and extending upwardly from the anchor; of an anchor-sinking device comprising a tubular portion adapted to receive the rod, a hollow handle portion extending at an angle to said tubular portion, a body screwed and movable in and out on the said handle portion, and a stem fixed to said body and arranged to be moved through the medium of the same into and out of engagement with the rod.

3. The combination with an anchor having exterior fins, and a rod fixed with respect to and extending upwardly from the anchor; of an anchor-sinking device comprising an upright tubular portion adapted to receive the rod and provided in its lower end with

grooves arranged to snugly receive the fins of the anchor, a tubular handle portion extending at an angle to the upright tubular portion, a cap-like body screwed on the outer end of said handle portion, and a stem fixed with respect to said cap-like body and arranged to engage the rod at the side thereof.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

ORRIE GEORGE.
PHILIP SMITH.

Witnesses:
CHAS. HALL,
JAMES FLINN