

Sept. 8, 1942.

R. H. SHEPARD ET AL

2,295,431

ANCHOR

Filed Feb. 6, 1940

Fig. 1

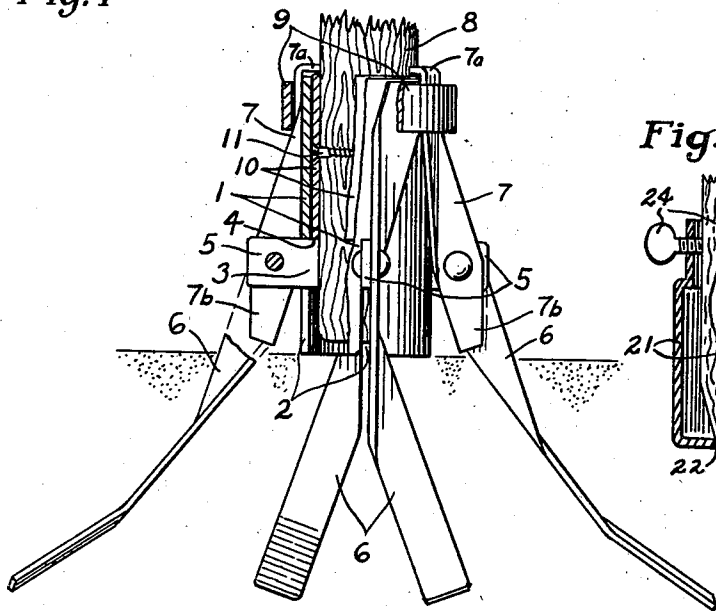


Fig. 4

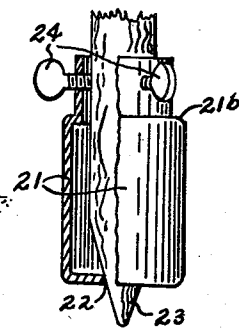


Fig. 2

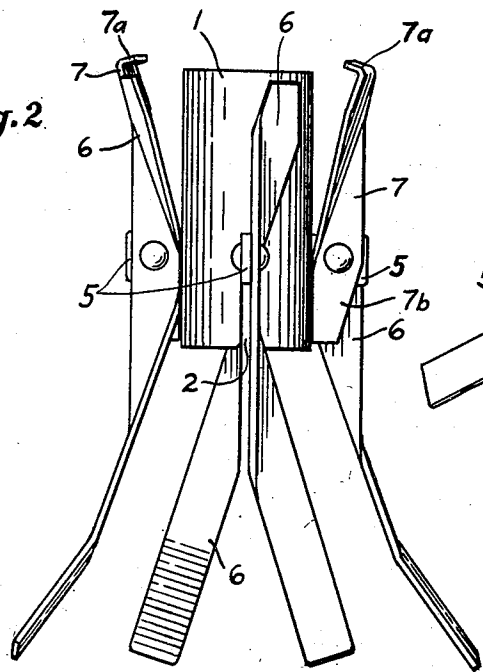
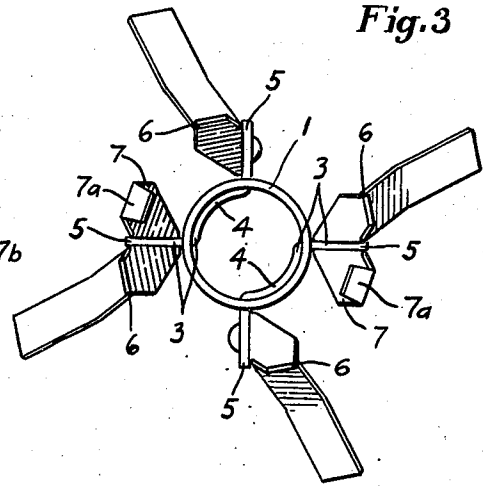
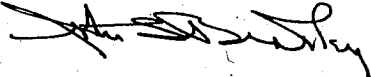


Fig. 3



William Hertz,  
Ralph H. Shepard  
& Paul A. Schwartz  
INVENTORS

BY   
ATTORNEY.

# UNITED STATES PATENT OFFICE

2,295,431

## ANCHOR

Ralph H. Shepard, New York, William Haas,  
Yonkers, and Paul A. Schwartz, Flushing,  
N. Y.

Application February 6, 1940, Serial No. 317,518

4 Claims. (Cl. 248—44)

This invention relates to a new and useful anchor for a staff, pole or leg such as that of a tripod or stand, designed to be easily inserted in a yielding substance such as earth or sand, and to hold firmly in such substance until manually released. It was devised primarily for anchoring and supporting a beach umbrella, but is equally useful for holding a flag staff, tent pole, lawn sprayer, leg of garden furniture, tripod leg of a surveying or military instrument or machine gun, or any other movable article which stands on earth, sand, gravel, or the like.

A beach umbrella is usually supported and held by the sand surrounding only a few inches of the pointed lower end of its staff. This is so because of the difficulty of forcing the staff into the sand, which must be displaced laterally as the cone point enters it. Only the friction of the sand on the staff holds it down, and even this restraint is reduced or eliminated if the umbrella is tilted after insertion. Rotation of the umbrella will also loosen the hold of the sand on the staff, and a very light breeze will suffice to tilt or rotate the umbrella, due to the inadequate support provided in the first place. Similarly, any other pointed staff or leg of a stand or tripod, simply thrust into sand or earth, may be withdrawn much more easily than it is inserted originally.

The present anchor was devised to overcome these conditions; to provide an article which can be inserted easily in sand or earth, which will support and hold a staff or leg securely, and which is not easily withdrawn except when released manually. The invention consists essentially of a plurality of levers, pivotally attached to the staff or leg or to a holder therefor, each having a spade-like lower end which enters the earth close to the corresponding parts of the other levers, but which moves away from said other parts when forced into the ground, altering the angle of the lever relative to the staff, and of a releasable locking means for maintaining the levers in that angular relation in which their lower ends are wide apart, or in anchoring position.

Three general forms of the invention are shown in the accompanying drawing: first, a separate anchoring holder with locking means suitable for an umbrella staff or the like, second, an anchoring and supporting means directly connected with the staff, and finally a tripod leg equipped with the anchoring device. Of these—

Figure 1 is a side elevation, partly cut away, of a form of the invention, shown as anchored

in the ground with the staff locked in place in the separate holder.

Figure 2 is a side elevation of the holder of Figure 1 but positioned as before insertion in the ground.

Figure 3 is a plan view of the same device, otherwise corresponding to Figure 2.

Figure 4 is a side elevation, partly cut away, of an adapter for use with the anchoring holder of Figures 1-3.

The form of the device shown in Figures 1-3 consists of a tubular body 1, provided at its lower end with slots 2, through each adjacent pair of which is inserted a bracket 3 which is welded or otherwise firmly secured to the body 1. The mid-part of each bracket 3 provides a shoulder 4 within the tubular body 1, and the ends 5 of each bracket, projecting radially through slots 2, provide bearings for levers.

In the drawing two brackets 3 are shown providing four bearings 5 spaced 90° around the body, to each of which is pivotally attached a lever 6. These levers may be strips bent as shown, or angles, channels or bars of any form of adequate strength, having spade-like lower ends bent slightly outward, and upper extensions also bent slightly outward, relative to the greater portion of the levers and designed to fit against the outside of body 1 when the device is in use. Pivotaly attached also to an opposed pair of the bearings 5 are levers 7, with upper portions somewhat similar to levers 6, but with their upper extremities 7a bent inward to form hooks which can pass over body 1, and with lower extensions 7b long enough only to limit the rotation of the levers. Levers 6 serve to anchor body 1 and hence the entire anchoring holder in the ground and will hereafter be called "anchoring levers," while levers 7 are for preventing withdrawal of the staff 8 from the holder, and are, therefore, termed "locking levers."

Another part of the device shown in Figures 1-3 is a locking ring 9, adapted to surround the upper ends of anchoring levers 6 and of locking levers 7, and to hold them firmly against the top of tubular body 1 when in anchoring position. There is also provided, preferably, a ring or sleeve 10 surrounding the staff 8 and fastened thereto by a screw 11, or other suitable means, although this sleeve may be omitted if the lower portion of staff is so formed as to serve the same purpose. The sleeve, when provided, fits loosely in the body 1 so that it may rotate freely and rest on the shoulder portions 4 of the brackets 3, and fits

under the hooked upper extremities 7a of the locking levers 7 when the device is in use.

When not in use, this form of anchoring holder appears as in Figure 2. Anchoring levers 6 then assume substantially vertical positions, with their upper ends separated from body 1, and with their lower ends comparatively close together. In this condition the holder is placed on the ground ready for use. The upper ends of locking levers 7 are also separated from body 1, with their hooked extremities wide apart.

The lower ends of anchoring levers 6 are forced into the ground by pressure on top of body 1, or by short blows of sleeve 10 against shoulders 4, the tubular body 1 acting as a guide for the sleeve as it is reciprocated with the staff 8. As the spade-like ends of levers 6 pass into the ground, they follow diverging paths due to their being bent outward, and all parts of each lever that enters the ground follows practically the same path traversed by the extreme lower end. Thus the displacement of sand or earth by insertion of the staff supporting anchorage is reduced to a minimum, resulting in easy insertion and negligible mutilation of the ground surface. This is obviously important in the case of on a lawn or in a garden.

When the anchoring levers are forced into the ground a sufficient distance, they assume the angular positions of Figure 1 with their upper ends lying along the tubular body 1. Staff 8, around which locking ring 9 has been placed, may then be inserted in body 1 so that sleeve 10 rests on shoulders 4 and lies wholly within the body. The hooked ends of locking levers 7 are pressed inward, passing over the top edges of tubular body 1 and sleeve 10. Whereupon locking ring 9 may be dropped down to surround the upper extensions of the anchoring levers 6 and the locking levers 7 to hold both sets of levers in fixed angular relations. In this condition, the staff 8 and sleeve 10 may rotate within the body 1 in response to wind vagaries, but may not be withdrawn. Nor may the anchoring holder be easily removed from the ground until locking ring 9 is lifted, because all the earth above the wide spread anchoring lever ends tends to resist its removal. With the locking ring lifted, however, the anchoring levers easily pass out through the holes they formed in entering, changing their angular relations as they rise. If desired, the locking levers 7 may be kept hooked over sleeve 10 after locking ring 9 is lifted to facilitate removal of the anchoring holder from the ground by using the staff 8 to lift it.

In Figures 1-3, the staff portions shown are especially adapted to fit the anchoring holders. However, beach umbrellas as usually made have staffs with cone-pointed lower ends and of somewhat varying diameters. In order to utilize the anchoring holders described, with their quick-locking-and-releasing and free-rotating features, with such varying umbrella staffs, adapters may be used. An adapter for use with the anchoring holder of Figures 1-3, appears in Figure 7. The adapter body 21 has a hole 22 at the bottom smaller than the outside of the staff, though the rest of the body is of a greater diameter than any staff likely to be found. The point of the staff 23 is thrust in to fit tightly in the hole 22, then

the thumb screws 24 at the top of body 21 are adjusted to hold the staff centrally and firmly. When in use, the hooked extremities 7a of locking levers 7 of Figure 1 fit over shoulder 21b of the adapter shown in Figure 7.

It will be evident to those skilled in the art that the invention is by no means limited to the form shown and described herein, but that it may be modified in many ways to best adapt it to particular uses without exceeding the scope thereof.

I claim:

1. A device for supporting a staff or similar article and anchoring it to the ground, which consists of a holder for the staff and a plurality of arms pivotally mounted in spaced relation on said holder and adapted to be driven through the top surface of and into the ground and while being so driven to automatically follow diverging paths, manually releasable means engageable with said arms for locking said arms in their diverged positions, and manually releasable means on said holder for retaining said staff in the holder before and after said arms are driven into the ground.

2. A device for supporting a staff or similar article and anchoring it to the ground, which consists of a holder for the staff and a plurality of arms pivotally mounted in spaced relation on said holder each arm having an outwardly inclined spade-like end adapted to be driven through the top surface of and into the ground and while being so driven to automatically follow an outwardly curving path, manually releasable means engageable with said arms for locking each arm in its outward position, and manually releasable means on said holder for retaining said staff in the holder while permitting it to rotate freely.

3. A device for supporting and anchoring to the ground a staff or other article, which consists of a holder for the staff, lugs projecting radially from said holder, an arm pivotally attached to each lug, the lower portion of which is bent outwardly and terminates in a spade-like end adapted to be driven through the top surface of and into the ground and while being so driven to automatically follow an outwardly curving path to anchor said holder to the ground, means engageable with said arms for locking said arms in anchoring position, and independent means for retaining said staff in said holder.

4. A device for supporting a staff or similar article and manually releasably anchoring it to the ground, which consists of a tubular holder with radial lugs projecting therefrom and arms pivotally mounted on said lugs intermediate their ends and adapted to be driven through the top surface of and into the ground and while being so driven to automatically follow diverging paths, other arms pivotally mounted on said lugs and adapted to retain said staff in said holder, and restraining means for locking the first-mentioned arms in position for anchoring said holder to the ground and for holding said other arms in engagement with said staff to prevent withdrawal of said staff from said holder.

WILLIAM HAAS.  
RALPH H. SHEPARD.  
PAUL A. SCHWARTZ.