

June 5, 1956

W. O. SCHULTZ

2,748,909

GROUND ANCHOR

Filed March 20, 1950

2 Sheets-Sheet 1

FIG. 1.

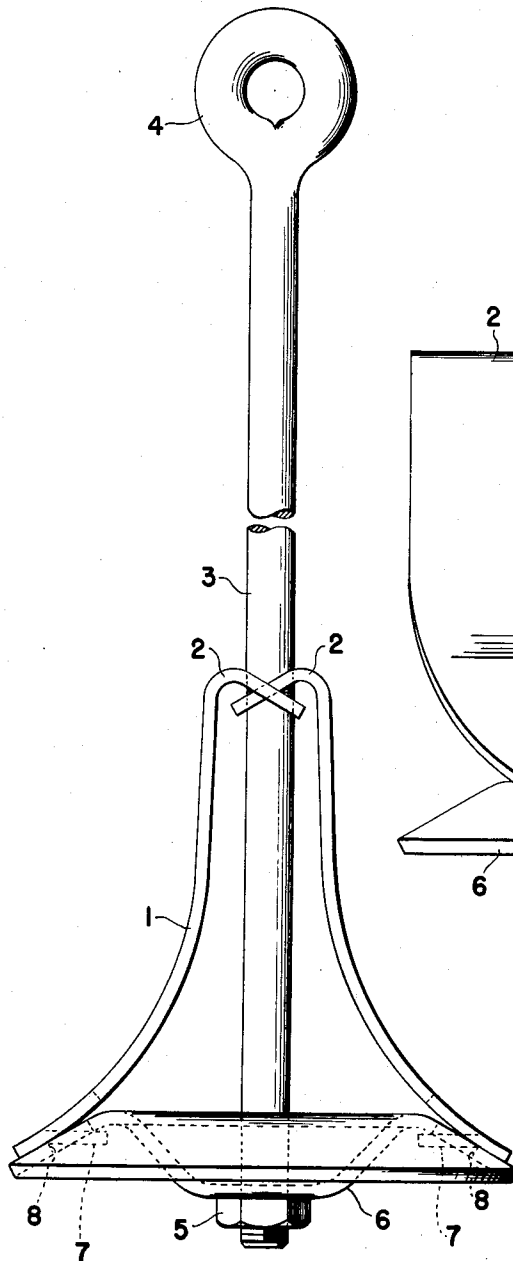
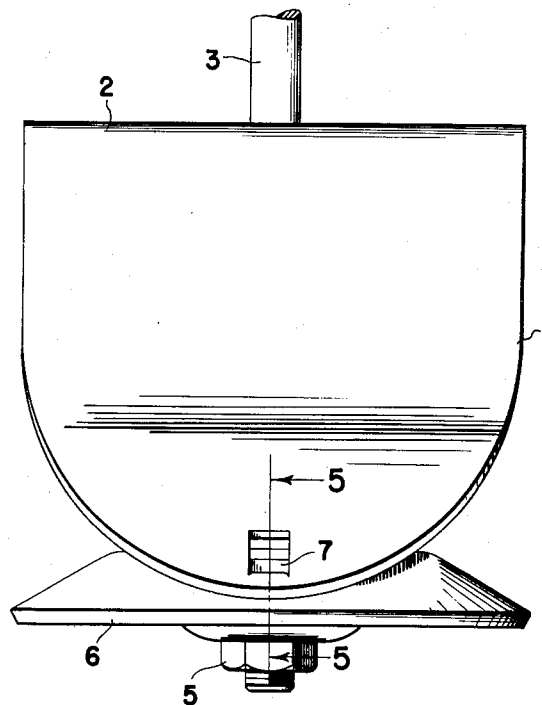


FIG. 2.



INVENTOR.
WILLIAM O. SCHULTZ
BY *Chester W. Brown*
ATTORNEY

June 5, 1956

W. O. SCHULTZ

2,748,909

GROUND ANCHOR

Filed March 20, 1950

2 Sheets-Sheet 2

FIG. 3.

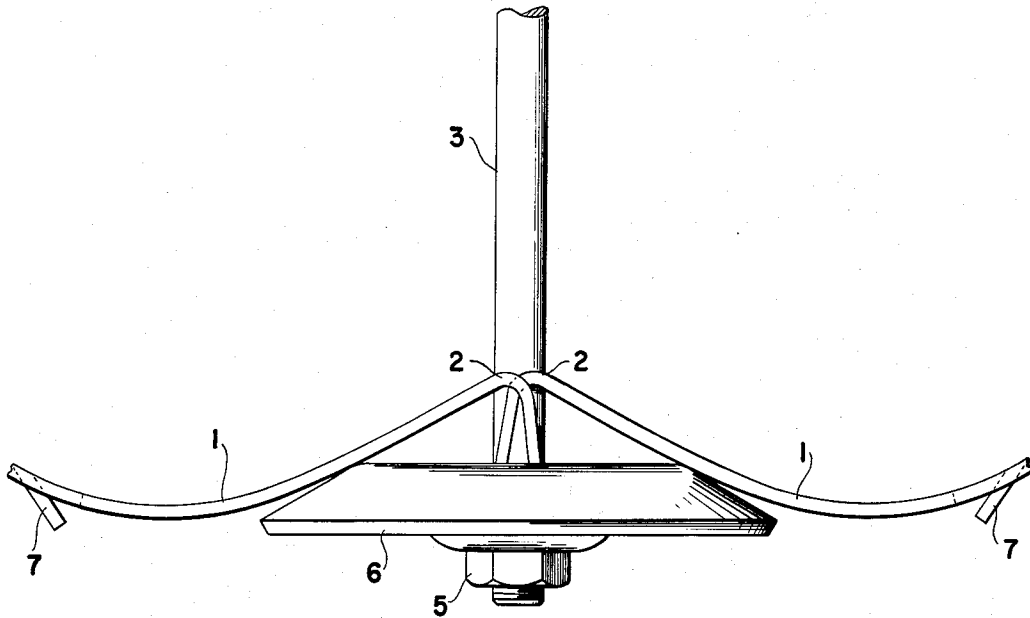


FIG. 4.

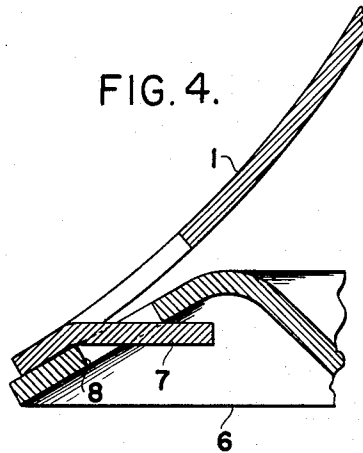
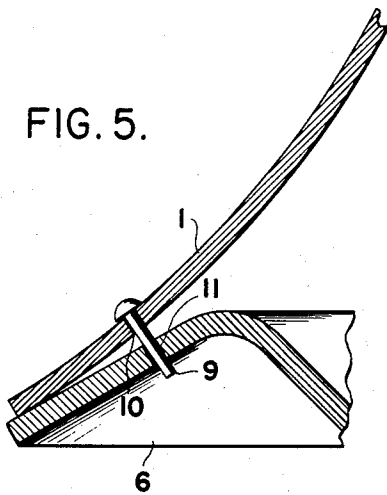


FIG. 5.



INVENTOR.
WILLIAM O. SCHULTZ

BY *Chester W. Brown*
ATTORNEY

1

2,748,909

GROUND ANCHOR

William O. Schultz, Marshfield, Wis., assignor to McGraw Electric Company, Milwaukee, Wis., a corporation of Delaware

Application March 20, 1950, Serial No. 150,605

2 Claims. (Cl. 189—92)

This invention relates to improvements in ground anchors.

Ground anchors are usually placed in previously dug holes with anchoring blades or flukes held in an unexpanded position. After insertion, the blades are expanded to an anchoring position in various ways, which may include external pounding. It is therefore a primary object of this invention to provide a means for temporarily locking a ground anchor blade to its spreader member, or anchor base, in an unexpanded position prior to final anchoring.

Another object of this invention is to provide a locking lug for holding ground anchor blades in a closed position during shipment of the anchor unit, or as a convenient and easily releasable means for initially holding blades prior to insertion of the ground anchor disclosed in the copending application of Alwin G. Steinmayer, Serial No. 108,155, filed August 2, 1949, now Patent No. 2,633,212, and assigned to the assignee of the present application. One of the unique features of this particular anchor is that the various parts may be packed and shipped in a break-down state which necessitates an easily assembled means for temporarily holding the blades in an unexpanded state during insertion of the anchor, which means is provided by this invention.

A further object of this invention is to provide a temporary frictional locking means for ground anchor blades or flukes that may be manufactured by either a simple piercing operation performed concurrently with the stamping of the sheet metal blades and the base, or as a subsequent modification of existing ground anchor elements.

An embodiment of the invention is shown in the accompanying drawings, in which:

Fig. 1 is a side elevation of a ground anchor incorporating a preferred form of the present invention.

Fig. 2 is a view corresponding to Fig. 1 but taken at right angles to that of Fig. 1 and showing the ground anchor broken off with a single blade or fluke temporarily locked in position with the base prior to expansion.

Fig. 3 is a view showing a ground anchor in expanded position.

Fig. 4 is an enlarged sectional view on the line 5—5 of Fig. 2.

Fig. 5 is a view similar to Fig. 4, but illustrating a modified form of my invention.

In the embodiment selected to illustrate my invention, I make use of the ground anchor as disclosed in said copending application, Serial No. 108,155, which is illustrated in Fig. 1 as assembled prior to expansion of the anchoring blades or flukes 1. These blades are pivotally interlocked at the heels 2 and as a unit slidably embrace anchor rod 3 which is provided at the upper end with an integral eyelet 4 adapted to receive the guide wire. At its lower portion, the anchor rod is threaded and receives nut 5 which bears against the spreader member, or base 6. The preferred form of my invention is shown in broken lines in Fig. 1 and designated by reference characters 7

2

and 8, of which 7 is a locking tongue, or lug, formed in each blade 1 and slidably extending into opening 8 of base 6, thus temporarily holding the blade in a closed condition as is shown in Fig. 1.

Fig. 2 illustrates one side of the ground anchor with the blades or flukes 1 temporarily locked in place by means of the tongues 7 prior to expansion to an anchoring position. The preferred form of my invention is illustrated more clearly by Fig. 4, an enlarged section view taken on the line 5—5 of Fig. 2. The blade 1 is frictionally held in a closed position, with the locking tongue or lug 7, simultaneously pressing against the upper and lower edges of hole 8 of base 6. This hole may be drilled or pierced into the base. As shown here, the base or spreader member 6 is of a sheet metal stamping generally of the shape of a truncated cone, but it could be of cast metal in various shapes and still embody the present invention. Although the tongue 7 and opening 8 may each be stamped simultaneously with the respective forming of the fluke 1 and the spreader member 6, it may be seen that a subsequent stamping operation on existing ground anchor members will obtain the same results.

The anchoring expansion of the blades or flukes 1 is accomplished after insertion of the ground anchor into a previously dug hole by a pounding member (not shown), which is used to apply successive impacts to the heels 2 of the curved portions of the blades 1, causing the locking tongue or lug 7 to move outward from the base hole 8, thus releasing the blade and allowing it to travel downward on the anchor rod 3 and to ride outwardly on the spreader member or base 6 to the position shown in Fig. 3.

A modified form of the present invention is illustrated by Fig. 5, wherein a frangible-shearable pin 9 extends through an opening 10 in the fluke 1 and a pin engaging opening 11 in the spreader member, or base 6.

The operation of this modified form is as follows: The anchor is assembled prior to inserting into the previously dug hole with the flukes or blades 1 in a closed position similar to the manner disclosed in Fig. 1. However, the flukes 1 are held in this position by the shear pin 9 which is placed through the openings 10 and 11. It will be apparent that the pin 9 may also be permanently fastened to either the fluke 1 or the base 6 (which manner of fastening is not shown) extending through the conforming opening of the slidably engaging member. When the anchor has been placed in the hole, a pounding force is applied by an external member (not shown) on the heels 2 of flukes 1 causing the pin 9 to shear, allowing the flukes 1 to slide freely in a downward direction on anchor rod 3, and outwardly on the spreader member 6 to the position shown in Fig. 3.

It will be apparent that a very simple device has been provided for temporarily locking ground anchor blades in a closed position for easy insertion of the anchor prior to expanding the blades to an anchoring position.

It will also be seen that the device may be stamped or pierced concurrently with the initial stamping of the ground anchor parts, or may be embodied into existing forms of ground anchors by simple modifications.

I claim:

1. A ground anchor assembly comprising in combination a blade member, a spreading member having a generally truncated conical surface positively coacting with said blade member, and an anchor rod projecting from said spreading member, said blade member slidably fastened at one end to said rod and slidable radially outwardly relative to said conical surface of said spreading member responsive to tamping forces applied to the fastened end thereof; releasable restraining means holding said blade member and said spreading member in assembled relation prior to tamping, and comprising a tongue-like projection laterally extending from one of said mem-

3

bers, the other of said members having a projection-receiving aperture therethrough, said projection extending in a plane substantially normal to the longitudinal axis of said rod in said aperture and frictionally engaging the defining marginal surface thereof.

2. A ground anchor assembly comprising in combination a blade member, a spreading member having a generally truncated conical surface positively coacting with said blade member, and an anchor rod projecting from said spreading member, said blade member slidably fastened at one end to said rod and slidable radially outwardly relative to the conical surface of said spreading member responsive to tamping forces applied to the fastened end thereof; releasable restraining means holding said blade member and said spreading member in assembled relation from sliding prior to tamping, and comprising a tongue-like projection laterally extending from said

4

blade member, said conical surface of said spreading member having a projection-receiving aperture therethrough, said projection extending in a plane substantially normal to the longitudinal axis of said rod in said aperture and frictionally engaging the defining marginal surface thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

10	817,044	Cissna	Apr. 3, 1906
	1,618,368	Dietle	Feb. 22, 1927
	2,159,268	Handel	May 23, 1939
	2,362,230	Ziemmerman	Nov. 7, 1944
	2,403,150	Pieper	July 2, 1946
15	2,538,409	Binkley	Jan. 16, 1951
	2,596,346	Soltysik	May 13, 1952
	2,633,212	Steinmayer	Mar. 31, 1953