Oct. 9, 1951 E. K. COLE 2,570,646

EARTH ANCHOR

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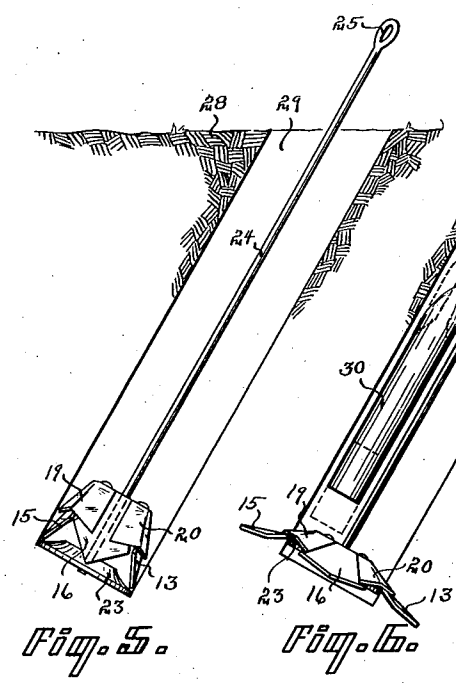


Fig. 5.

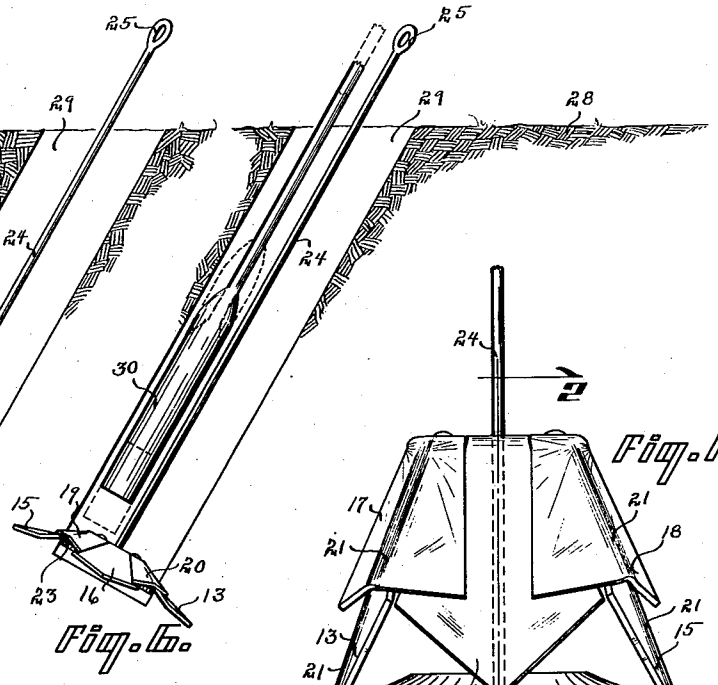


Fig. 6.

Fig. 1.

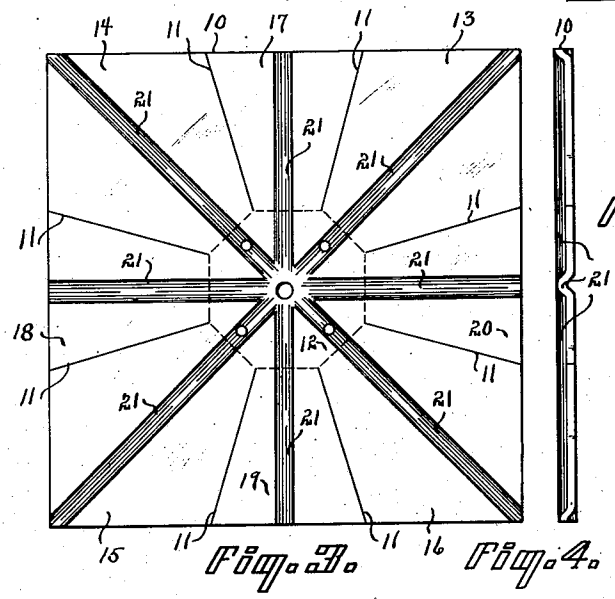


Fig. 3.

Fig. 4.

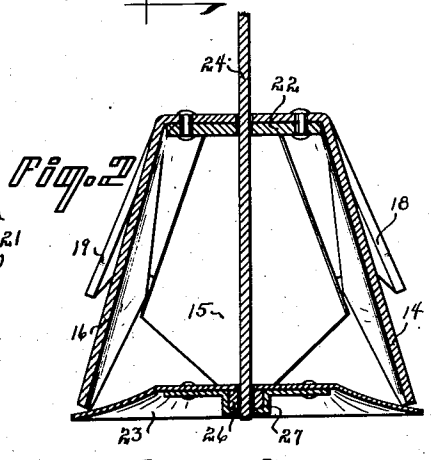


Fig. 2.

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UNITED STATES PATENT OFFICE

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EARTH ANCHOR

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2 Claims. (Cl. 189—92)

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The principal object of my invention is to provide a simple anchor means for securing cables or like to the earth that has a plurality of wings stamped or formed from a single sheet of metal.

A further object of this invention is to provide an expanding earth anchor that may be substantially all formed from sheet metal.

A still further object of my invention is to provide a strong but relatively light weight expandable anchor.

A still further object of this invention is to provide an expandable earth anchor that is economical in manufacture, refined in appearance and durable in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a side view of my anchor ready for use.

Fig. 2 is a vertical sectional view of the anchor, taken on line 2—2 of Fig. 1, and more fully illustrates its construction.

Fig. 3 is a plan view of the metal sheet element that is to be bent and formed into the anchor wings.

Fig. 4 is an end view of the sheet shown in Fig. 3.

Fig. 5 is a side view of my anchor being placed in a hole for use.

Fig. 6 is a side view of the anchor in a hole and being expanded by a tamper or like.

Earth anchors are universally used wherever it is desired to secure a brace rod cable, guy rope, wire or like to the ground. Most of such anchors are made of cast iron bases and cast iron wings. Obviously, such a construction is objectionably heavy and costly. Furthermore, these anchors that have hinged cast wings are of many parts and are complicated for both manufacture and assembly. I have overcome such objections by providing an anchor having a plurality of bendable wings cut and formed from a sheet of suitable metal such as sheet steel or sheet iron.

Referring to the drawings I have used the numeral 10 to designate a square sheet of metal from which the anchor wings are made. This sheet is cut on eight substantially radially extending lines 11. These cut lines terminate short of the center of the metal sheet as shown in Fig.

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3 and form an eight sided center base section 12. The lines 11 are cut so that they extend at each side of each corner of the metal sheet thereby forming the four major elongated pointed segments 13, 14, 15 and 16. Between each of these major wing segments is a minor or short wing segment. These minor segments are designated by the numerals 17, 18, 19 and 20. To strengthen each of these major and minor segments I have provided an elongated bead or corrugation 21 that extends down the center of each segment. To form this portion of my anchor the segments 13, 14, 15 and 16 are first bent downwardly from the center portion 12, with each segment wing having its side edges slightly bent horizontally inwardly or curved from its center corrugation, as shown in the drawings. This brings the side marginal edges of the major wings adjacent each other thereby producing an inverted cup. Next the minor wing segments are bent downwardly, and horizontally inwardly to embrace the major wings. Each minor segment wing overlaps two major wings as shown in Fig. 1. If desired, the wings may be formed to extend downwardly and outwardly in a curved path, or substantially straight, as shown in the drawings. For reinforcement purposes, I rivet, spot weld or otherwise secure a strengthening plate 22 on the underside of the portion 12 as shown in Fig. 2. The numeral 23 designates the circular base wing spreading plate. The shape of this plate is similar to an inverted saucer in that its marginal edge portion extends downwardly and outwardly in slight curve. The numeral 24 designates a rod or like to which the cable, rope, wire or like to be held is secured. Such rods are common and usually have an attaching eye 25 at their upper ends. This rod slidably extends through the center of the portion 12 and the plate 22 and has its lower end portion slidably extending through the plate 23 and threaded into the nut 26. This nut is on the bottom of the plate 23 and may be secured thereon by any suitable means such as a nut retainer 27, riveted, spot welded or otherwise secured to the plate 23. These few parts complete my anchor. If desired, more or less wings may be cut and formed from the sheet 10 than that shown in the drawings. I find that a very suitable anchor may be produced by forming only four wings. In any event, it will be noted that there is absolutely no waste material in the sheet 10. The numeral 28 designates the earth and a prepared hole 29 therein. My anchor is inserted in the hole 29 as shown in Fig. 5. The next op-

eration is to hammer by a tamping tool or like 30 on top of the portion 12 as shown in Fig. 6. This hammering forces the top of the anchor toward the base plate 23. This action causes the major wings to engage the plate 23 and spread out into extended positions as shown in Fig. 6. After all the wings have been suitably spread the hole is refilled with dirt and the buried anchor is ready to perform its requirements. If it is ever desired to discontinue the use of the anchor, the rod may be unscrewed therefrom and removed, or by hammering on the upper end of the rod the nut retainer will break and permit the rod to be driven into the earth and out of the way.

Some changes may be made in the construction and arrangement of my earth anchor without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. An earth anchor assembly comprising a guy rod, an anchor body comprising a sheet metal member of substantially rectangular shape having a substantially central bore slidably receiving said guy rod and having an octagonal base area surrounding said bore for engagement with a tamping bar, said anchor body having a plurality of slits therein extending from said octagonal base outwardly to the sides of said member and forming four short side blades and four longer pointed corner blades, each of said side blades being interposed between its respective corner blades, all of said blades being bent downward along lines located at the edges of said octagonal base area to form a generally conical anchor body, the corner blades being bent into position with their side edges being adjacent, and the side blades overlapping the adjacent portions of the corner blades, a spreader member having a body portion provided with a substantially central aperture receiving said guy rod and a substantially circular expanding portion for spreading said anchor blades, the ends of the longer corner blades engaging the expanding portion of said spreader, so that tamping upon the octagonal base area causes the blades to move downward and outward over the spreader, the outer edges of said blades engaging in undisturbed earth surrounding a hole in which the anchor is installed, and means securing said guy rod to said spreader.

2. An earth anchor assembly comprising an anchor body comprising a sheet metal member of substantially rectangular shape having a substantially central bore for slidably receiving a guy rod and having an octagonal base area surrounding said bore for engagement with a tamping bar, said anchor body having a plurality of slits therein extending from said octagonal base outwardly to the sides of said body and forming four short side blades and four longer pointed corner blades, each of said side blades being interposed between its respective corner blades, all of said blades being bent downward along lines located at the edges of said octagonal base area to form a generally conical anchor body, the corner blades being bent into position with their side edges being adjacent, and the side blades overlapping the adjacent portions of the corner blades, and a spreader member having a body portion provided with a substantially central aperture for receiving a guy rod and a substantially circular expanding portion for spreading said anchor blades, the ends of the longer corner blades engaging the expanding portion of said spreader, so that tamping upon the octagonal base area causes the blades to move downward and outward over the spreader, the outer edges of said blades engaging in undisturbed earth surrounding a hole in which the anchor is installed.

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The following references are of record in the file of this patent:

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