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G. F. SWORTFINGER.  
EARTH ANCHOR.

APPLICATION FILED AUG. 1, 1905.

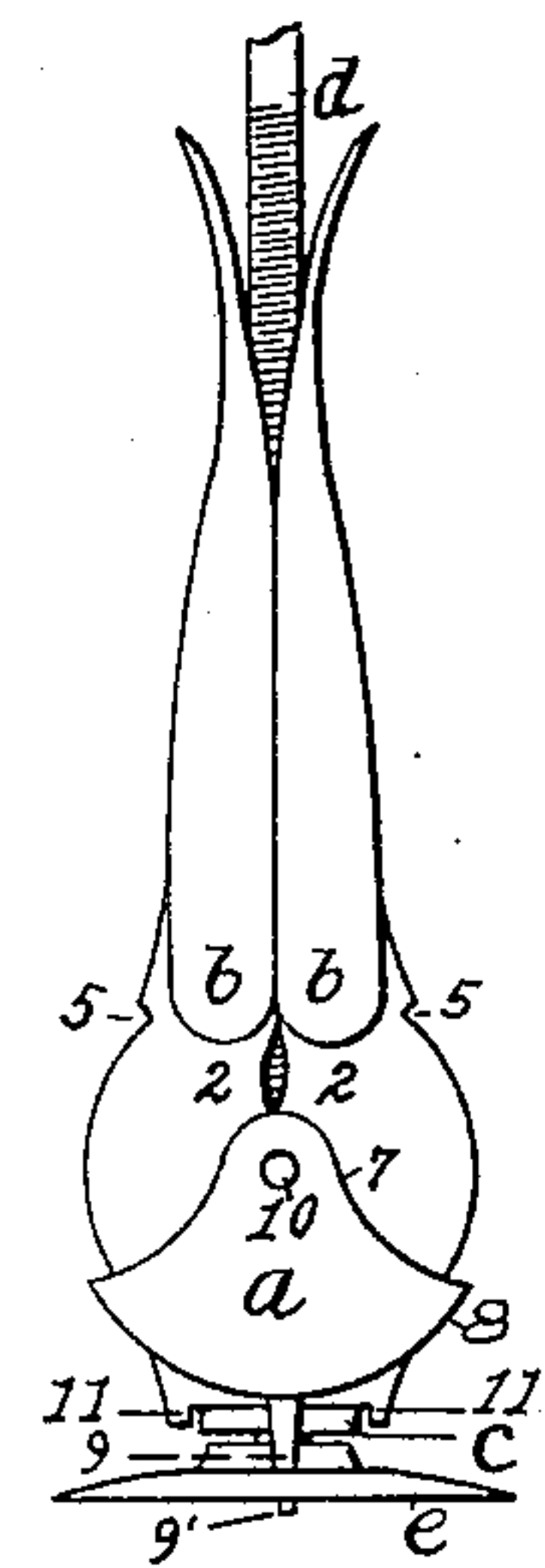


Fig. 2

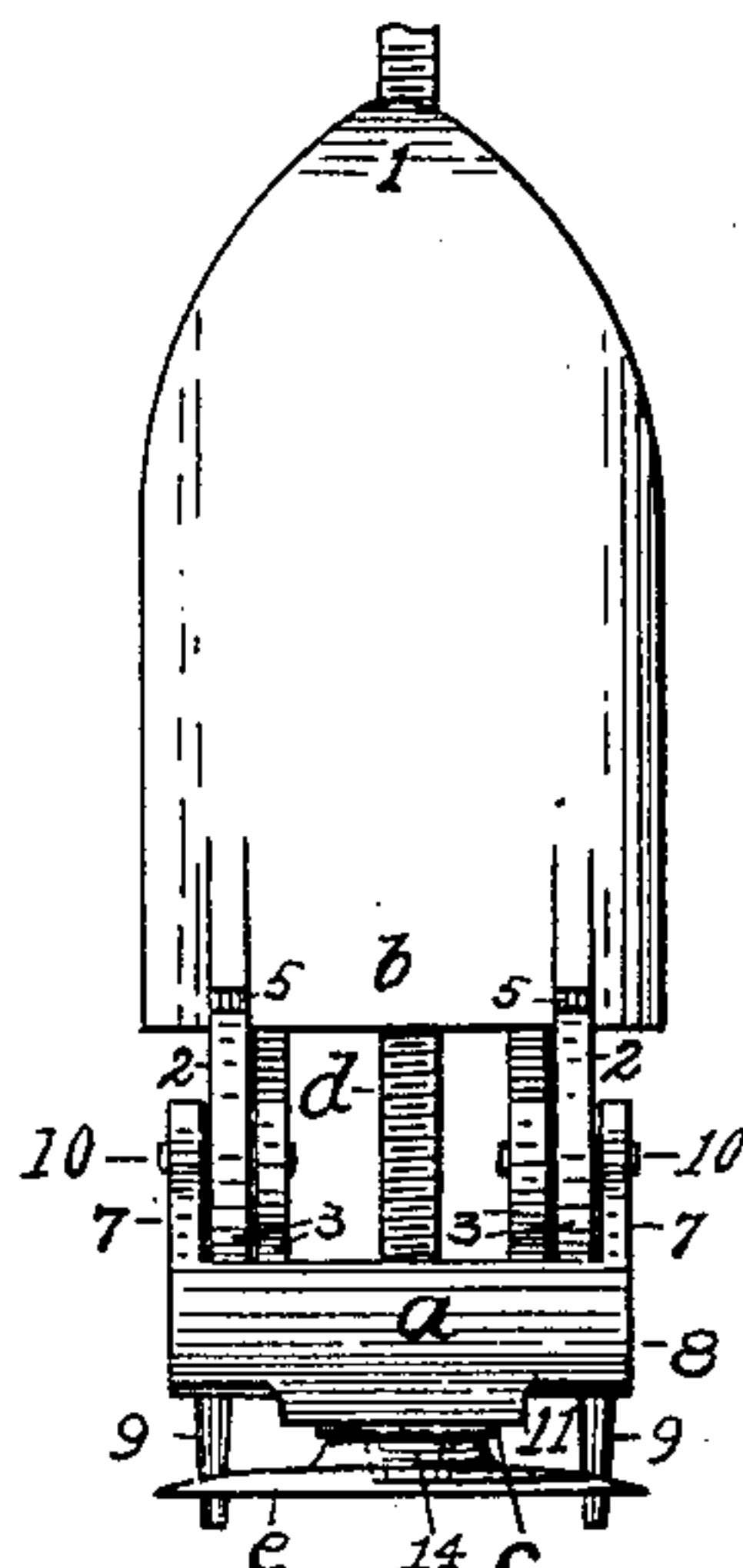


Fig. 3

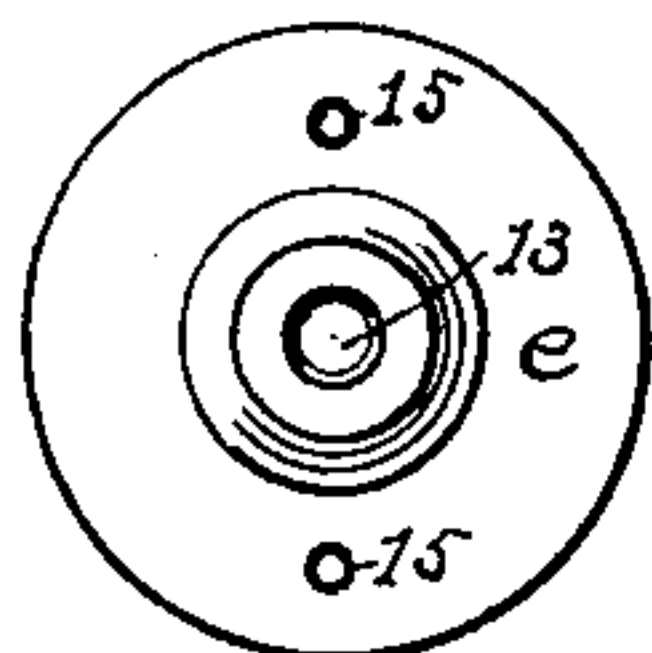


Fig. 4

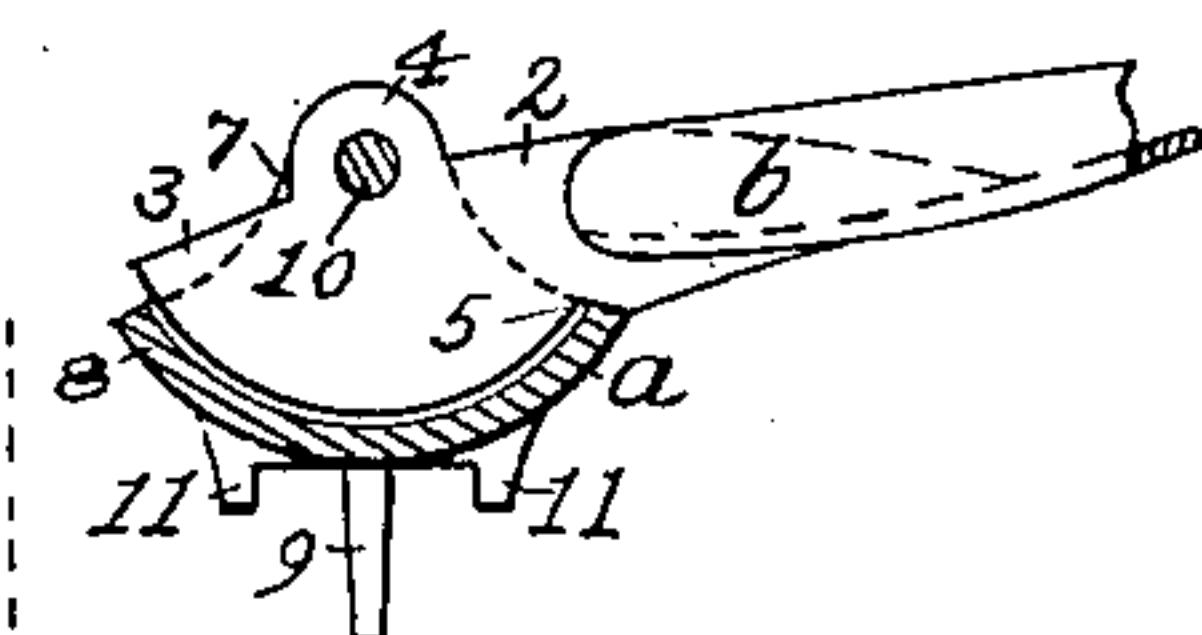


Fig. 5

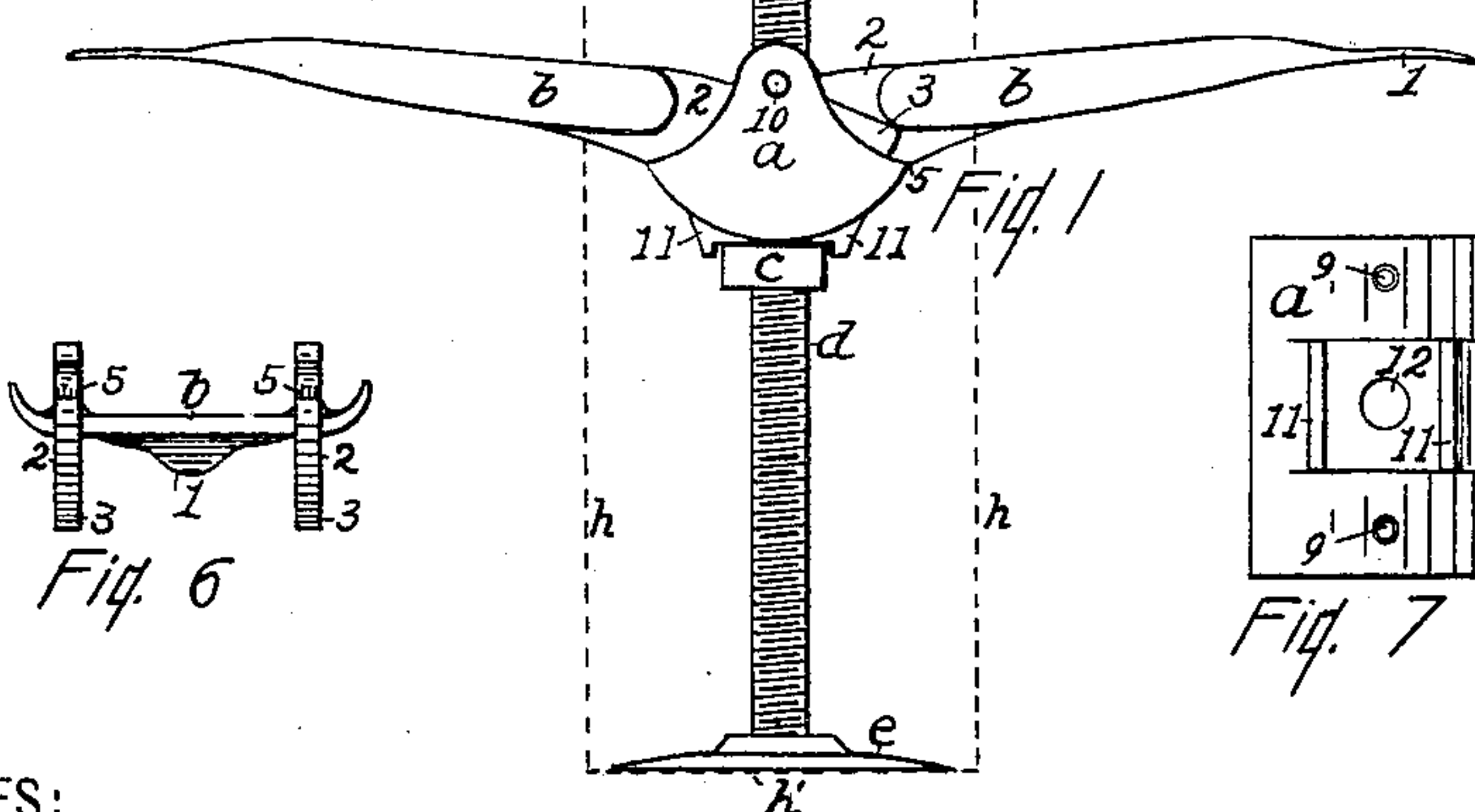


Fig. 1

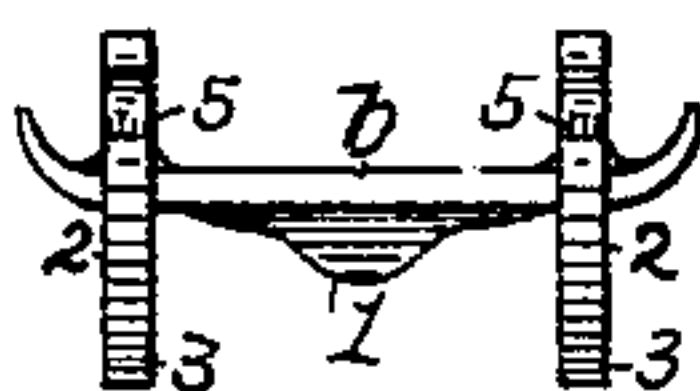


Fig. 6

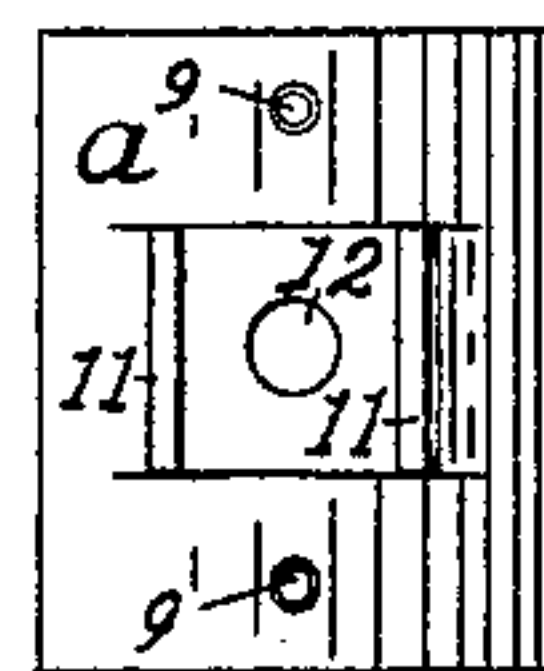


Fig. 7

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# UNITED STATES PATENT OFFICE.

GEORGE F. SWORTFINGER, OF NEWARK, NEW JERSEY.

## EARTH-ANCHOR.

No. 809,032.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed August 1, 1905. Serial No. 272,210.

*To all whom it may concern:*

Be it known that I, GEORGE F. SWORTFINGER, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Earth-Anchors, of which the following is a specification.

This invention relates to anchors for guys and like purposes, and has for its objects an easily-placed and secure earth anchorage and one in which the anchor-bolt may be recovered if the anchorage should be abandoned.

The objects are attained by the means set forth in this specification, and the accompanying drawings, in which like letters and numerals refer to similar parts throughout the several views.

Figure 1 represents the anchor with its part spread out, as when in position in the ground. Fig. 2 is an edge elevation of the parts of the anchor as folded in position for insertion in a hole in the ground. Fig. 3 is a side elevation of the folded anchor. Fig. 4 represents the earth-plate. Fig. 5 is a partially cross-sectional view showing the interlocking parts of the anchor-blades. Fig. 6 is an end view of one of the anchor-blades viewed from the hinge end. Fig. 7 is a bottom view of the box to which the blades are hinged.

The anchor comprises a box *a*, Figs. 1, 2, 3, 5, 7, having a transversely-rounded bottom 8 with perpendicular ends extended into hinge-lugs 7. A hole is made in the center of the bottom for the free passage of the anchor-bolt *d*. Contiguous to the hole 12 are lugs 11 11, between which a nut *c* on the bolt *d* finds lodgment to prevent its turning, as shown particularly in Fig. 1. Within this box *a* two blades *b* (shown in all the figures except 4 and 7) are hinged to the lugs 7. Lugs on the end of one blade pass between similar lugs on the other blade, as shown in Fig. 3, and a pin 10, passing through the lugs at each end of the box, enables the swinging of the blades to and from each other from a closed position, as shown in Fig. 2, to a horizontal position, as shown in Fig. 1.

Fig. 5 shows one end of the box *a* removed and shows how the downward swing of the blade is limited by a notch 5 in the back of the lug 2, which impinges against the edge of the box *a*. As a means of interlocking the blades the lugs 2 are extended to a point 3, Fig. 5, which is adapted on each blade to catch under the end of the opposite blade, as shown in Fig. 1. The blades have a broad surface

with upturned edges, as in Fig. 6, and have a rounded spade-point, which is given a slight curve to direct and cause its penetration into the soil.

An earth-plate *e*, Figs. 1, 2, 3, 4, has a recess 13 in its center (see Fig. 4) to receive the end of the bolt *d*. It is also perforated with holes 15 15, that are adapted to receive the projections 9, that are on the under side of the box *a*. (Shown in Figs. 1, 2, 3, 5, 7.) The projections are made tapering, so that the plate *e* may be driven upon them hard enough to secure it against displacement except by forcing it off by means of the bolt *d*.

The anchor is operated as follows: The blades being securely hinged in the box *a*, an anchor or guy bolt *d* is passed between the blades through the hole in the box *a*. A nut *c* is placed on the rod *d*, so as to be engaged by the lugs 11 11. The earth-plate is secured on the pins 9 9, and the end of the bolt has a seat in the recess 13 in the plate. As thus united and folded the anchor presents the appearance shown by Figs. 2, 3. A hole is bored in the earth of a size to admit of the easy insertion of the anchor and of a suitable depth. The anchor is dropped to the bottom of the hole, resting on the earth-plate. The points of the blades will drop against the sides of the hole. Turning the bolt will cause the nut thereon to rise, separating the anchor from the earth-plate, the plate serving as a firm foundation upon which to operate the bolt. As the nut rises on the bolt the blades are forced into the soil and will continue their penetration until they are spread out to a horizontal position, as shown in Fig. 1. The broken lines *h h h'* represent the sides and bottom of the hole. The anchor can be drawn up to a solid bearing, so that in setting these anchors the spreading of the blades is a positive operation, leaving no doubt as to their immediately taking a full hold and no uncertainty as to whether the guy will give from a readjustment of the blades after they have been under pressure for a time. If it should be desired to abandon the anchorage, the bolt may be unscrewed and saved, while the remaining parts of the anchor would not be of sufficient value to warrant digging them up.

The lugs 2 are represented as having their outer edges formed as arcs of a circle conforming to the inner surface of the box or supporting-body *a*. The curved form of the box is derived from the swing of the exten-



sion 3 of the lugs 2, so that the combination of curves is chiefly to produce a symmetry of construction. Thus other features of the construction may be varied without departure from the spirit of my invention, and I claim the right to make such variations as may be desirable or expedient.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in an earth-anchor of a supporting-body, earth-penetrating blades hinged therein, the blades having hinge-lugs with notches in their back edges to form catches against the supporting-body, the ends of the lugs extended to engage with the opposite blades when the blades are wide open, the blades comprising broad surfaces terminating in rounded and outwardly-curved points, an anchor-bolt passing through the supporting-body between the blades, there being a long thread on said bolt, a nut on the bolt below the supporting-body, there being lugs on the under side of said body to prevent the turning of the nut, and projections on the under side of said body for insertion in holes in an earth-plate, and an earth-plate as a thrust-bearing for the bolt.

2. In an earth-anchor as shown, a supporting-body with hinge-lugs, a hole through the center of the body for the anchor-bolt, a long threaded anchor-bolt, a nut on the bolt below said body, there being lugs on the under side of said body to prevent turning of the nut, and there being projections on the under side of the body to engage with holes in an earth-plate, an earth-plate to engage with the projections on the supporting-body and containing a recess for the end of the anchor-bolt,

blades with upturned edges for penetrating the soil with rounded and curved points, having hinge-lugs pivoted to the lugs of the supporting-body, the lugs provided with notches for engagement with the supporting-body, and extended ends for engagement with opposite blades when the blades are wide open.

3. An earth-anchor with soil-penetrating blades pivoted to a movable support as set forth, an anchor-bolt provided with a long thread extending through the anchor, a nut on the bolt held from turning by means on the anchor-blades' support, and an earth-plate to receive the thrust of the bolt.

4. An earth-anchor with soil-penetrating blades pivoted to a movable support, an anchor-bolt provided with a long thread extending through the anchor, a nut on the bolt below the anchor, there being lugs on the anchor to prevent the turning of the nut, there being projections on the anchor to temporarily hold an earth-plate by engagement with holes in said plate, and an earth-plate to receive the thrust of the bolt.

5. In combination with a anchor-bolt, an anchor movable by means of a long-threaded bolt through the anchor and a nut on the bolt under the anchor, the bolt thrusting against a fixed plate, separated from the anchor whereby the anchor is caused to rise by turning the bolt.

Signed at Newark, in the county of Essex and State of New Jersey, this 17th day of July, A. D. 1905.

GEO. F. SWORTFINGER.

Witnesses:

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