Nov. 3, 1925. 1,560,451

W. B. WEYRICK

ANCHOR FOR AIRSHIPS

Filed Nov. 5, 1921 2 Sheets-Sheet 1

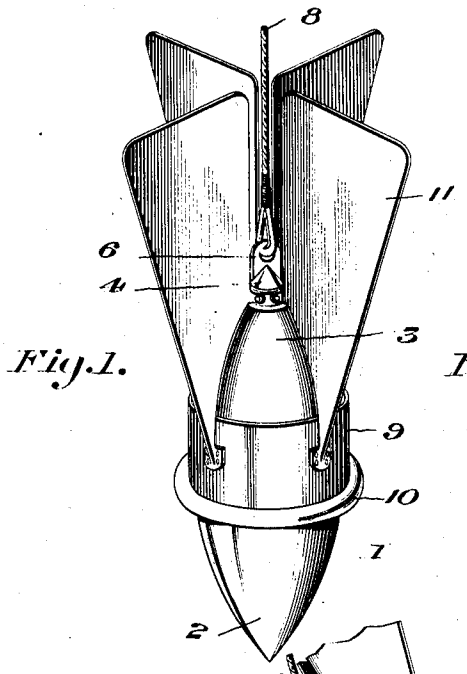


Fig. 1.

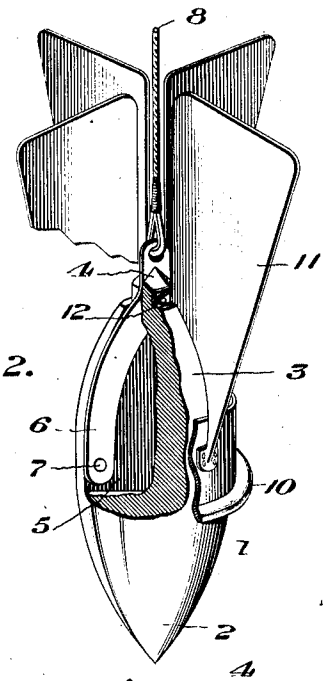
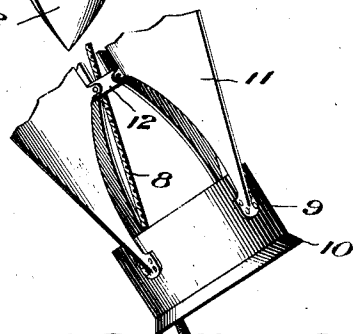


Fig. 2.



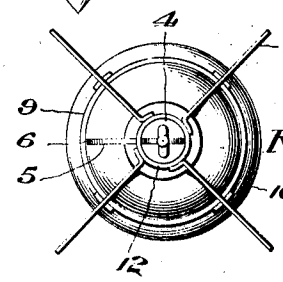


Fig. 3.

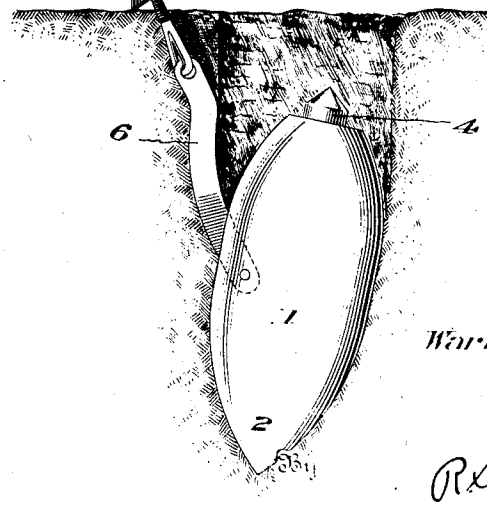


Fig. 4.

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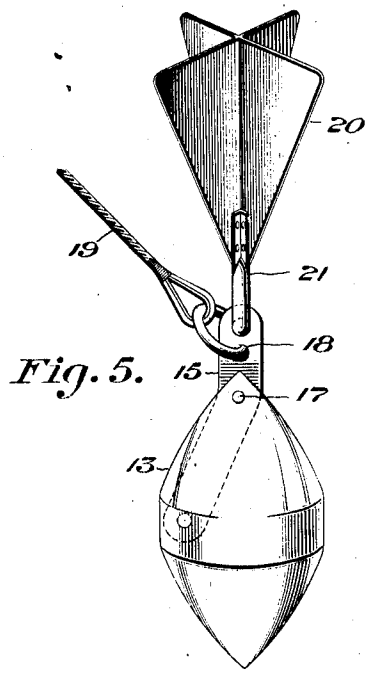


Fig. 5.

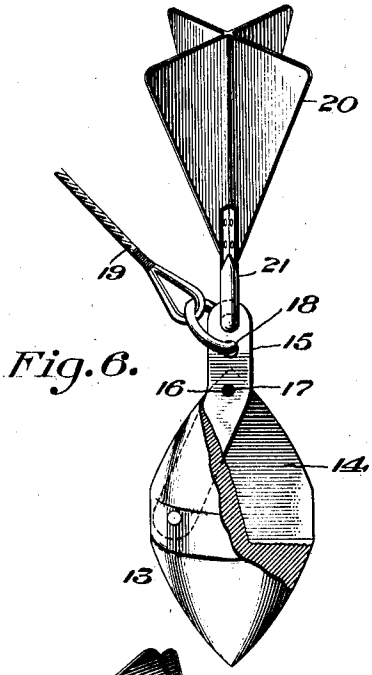


Fig. 6.

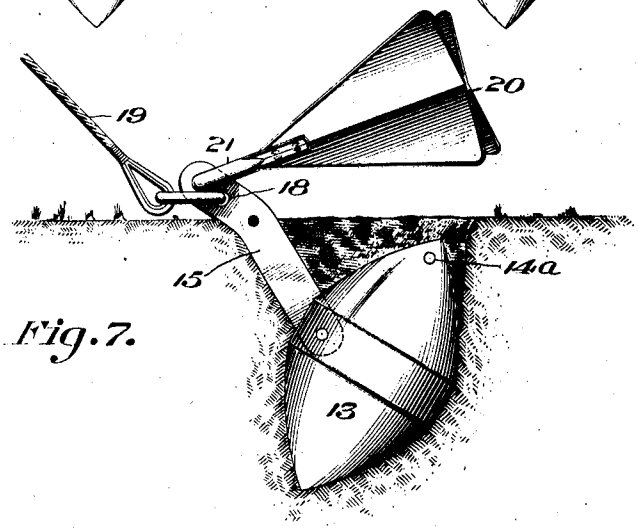


Fig. 7.

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Patented Nov. 3, 1925. 1,560,451

UNITED STATES PATENT OFFICE.

WARREN B. WEYRICK, OF AKRON, OHIO, ASSIGNOR TO THE GOODYEAR TIRE AND RUBBER COMPANY, OF AKRON, OHIO, A CORPORATION OF OHIO.

ANCHOR FOR AIRSHIPS.

Application filed November 5, 1921. Serial No. 513,095.

To all whom it may concern:

Be it known that I, WARREN B. WEYRICK, a citizen of the United States, and resident of Akron, Ohio, have invented new and useful Improvements in Anchors for Airships, of which the following is a specification.

My invention relates to anchors for airships and it has, for its primary object, the provision of an anchor which shall afford dependable anchorage under emergency conditions.

The principal object of my invention is to provide a device which may be released quickly in a haphazard manner, and which shall at all times insure proper functioning of the anchorage device regardless of the direction of force transmitted from an aircraft to the anchor.

Other and ancillary objects will be apparent from the following detailed description of my invention in connection with the accompanying drawings in which a preferred form of anchor, together with a modification thereof, is illustrated.

In the drawings:

Fig. 1 is an elevation of an anchor constructed in accordance with my invention;

Fig. 2 is a similar view, with parts broken away to illustrate certain features of construction;

Fig. 3 is a top plan view of the device shown in Fig. 1;

Fig. 4 is an elevational view, with parts broken away, of the device as it appears in operation;

Fig. 5 is a side elevation of a modified form of anchor;

Fig. 6 is a similar view, with parts broken away to illustrate certain features of construction; and

Fig. 7 is an elevation of the anchor shown in Fig. 5 as it appears in operation.

In practicing my invention, I may construct an anchor by utilizing a suitable form of plummet, preferably one having ends tapered from its intermediate portion, provided with suitable stabilizing means to control the position of the plummet while in flight. In the preferred form of my invention, stabilizing means is constructed by securing a plurality of fins to an annular member and to a resilient ring, which clamps or frictionally engages a reduced end portion of the plummet. The stabilizing means thus provided is adapted to be released from the plummet when it penetrates anchoring ground, thereby reducing the danger of the stabilizing means becoming damaged.

The modified form of my invention results mainly from a change in the stabilizing means, which change resides in providing a unitary member having radial fins that are movably but not detachably secured to the plummet. Although the preferred form embodies the advantage of reducing the danger of damage to the stabilizing means, the modified form also possesses certain inherent advantages because of its less complicated structure, and, consequently, less expensive assembly. However, both forms of my invention embody the same general principle of operation.

In order to insure a clear and accurate understanding of my invention reference may be had to the drawings, particularly to Figs. 1 to 4, inclusive, in which an anchoring device is shown comprising a plummet 1 having tapered ends 2 and 3. The tapered end 3 is provided with a reduced portion 4 and with a slot 5, which extends from substantially the central portion of the plummet through the reduced portion 4. In order to provide means for securing the plummet to an aircraft, an angular arm 6 is pivotally mounted at one end within the recess 5, as indicated at 7. The other end of the arm being provided with an opening to receive a cable 8, or other suitable fastening device. The arm 6 is preferably so curved, or bent, in its construction as to normally lie completely within the recess 5 with its free end, or the end attached to the cable 8, projecting from the recess at the reduced portion 4.

Since it is, of course, desirable to control the position the plummet assumes in flight, I have provided stabilizing means comprising an annular member 9 having an integral cup-shaped flange 10. A plurality of fins 11 are rigidly secured to the member 9 and to a resilient ring 12, which is adapted to tightly engage the reduced portion 4 of the plummet 1.

In operating the above described anchoring device, the stabilizing means is assembled upon the plummet, as shown in Fig. 1, and when it is desired to anchor the aircraft to which the plummet is attached, it is only necessary to drop the plummet without regard to its direction of fall. The fins 11 act as a guide or rudder and cause the plummet

to penetrate the earth, or other anchoring ground, with the free tapered end of the plummet in advanced position. Obviously, as the plummet penetrates the anchoring ground the flange 10 of the annular member 9 engages the ground and causes the stabilizing means to be forcibly removed from the plummet, since it is only maintained thereon by means of the resilient clamping ring 12. The position of the anchoring device or plummet will then assume some such position as indicated in Fig. 4. Obviously, the force or pull transmitted from the aircraft will not tend to remove the plummet from the anchoring ground, since it cannot possibly be applied in exactly the same direction in which the plummet enters the ground and, consequently, tends to twist it or otherwise turn it, which results in more firm grip being obtained by the plummet. It should be noted that the arm 6 is preferably pivoted to the plummet at one side thereof and is spaced from its center in order to increase the tendency of the plummet to twist in the anchoring ground when a force is applied thereto by the drag of the aircraft. The shock or jar resulting from suddenly arresting the aircraft's flight may be reduced to a minimum by making at least a portion of the cable 8 of a resilient material, such as rubber.

In Figs. 5 to 7 a modified form of anchoring device is shown comprising a plummet 13 having tapered ends and being provided with a recess 14. An angular arm 15 is pivoted at its lower end to one side of the plummet within the recess 14, and is provided with an opening 16 to be alined with an opening 14^a in the end of the plummet to receive a pin 17. The recess 14, as shown in the drawing, extends to one end of the plummet, which permits of the arm 15 being completely disposed therein with the exception of its free end, which is provided with an opening 18 to receive a cable 19. In this form of the invention the stabilizing means comprise a plurality of fins 20, which are integrally formed and secured to the arm 15 by means of a supporting member 21, which is loosely mounted upon the arm 15.

The modified form of anchor, above described, functions in substantially the same manner as the preferred form previously described. The pin 17 is utilized to normally maintain the arm with its end substantially parallel with the longitudinal axis of the plummet, so that the stabilizing means 20 functions to cause the free end of the plummet to penetrate the anchoring ground. When the plummet has been dropped and a pull is applied thereto, the pin 17 is sheared, thus permitting a portion of the arm to move free of the plummet. On account of the manner of shaping the arm 15 and its attachment to the plummet, any pull applied thereto by the aircraft will tend to cause it to twist in the ground and, consequently, to obtain a firm grip thereon. The pin 17 is, of course, constructed of such material as may be sheared by a relatively small force during the operation of the device.

Although I have shown and described a plurality of devices constructed in accordance with my invention, it will be obvious that minor changes may be made in the construction of the parts and in the assembly thereof, without departing from the spirit and scope of my invention, and I desire, therefore, that no limitations be imposed, except such as are indicated in the appended claims.

What I claim is:

1. An anchor for aircraft comprising a plummet provided with stabilizing means and means for connecting the plummet to an aircraft.

2. An anchor for aircraft comprising a plummet having tapered ends and means connected intermediate said ends whereby the pull transmitted from the aircraft will be applied to the plummet at an angle to the plummet's course of travel when dropped from the aircraft.

3. An anchor for aircraft comprising a plummet and an arm pivotally connected intermediate the ends of the plummet.

4. An anchor for aircraft comprising a plummet, an arm pivotally connected to one side thereof and stabilizing means also attached to the plummet.

5. An anchor for aircraft comprising a plummet, an arm pivotally connected to one side thereof and stabilizing means movably attached to the plummet.

6. An anchor for aircraft comprising a plummet and stabilizing means removably mounted thereon.

7. An anchor for aircraft comprising a plummet having a recess, an arm pivotally mounted upon the plummet within the recess and means for stabilizing the position of the plummet in flight.

8. An anchor for aircraft comprising a plummet having a recess, an arm pivotally mounted upon the plummet within the recess and means removably mounted upon the plummet for stabilizing its position in flight.

9. An anchor for aircraft comprising a plummet provided with a recess, an arm pivotally mounted within the recess and stabilizing means mounted upon the plummet by means of a resilient member in frictional engagement with the plummet.

10. An anchor for aircraft comprising a plummet provided with a recess and having a reduced end portion, an arm pivotally mounted within the recess and stabilizing means mounted upon the plummet, said

means including a plurality of fins secured to an annular member and a resilient ring adapted to engage the reduced end portion of the plummet.

11. An anchor for aircraft comprising a plummet, means for connecting it to an aircraft, means for stabilizing the plummet in flight and means for effecting separation of the plummet and its stabilizing means when the plummet penetrates anchoring ground.

12. An anchor for aircraft comprising a plummet provided with a recess, an angular arm pivotally mounted within the recess, means for maintaining the arm in substantially parallel relation to the longitudinal axis of the plummet and stabilizing means attached to the arm.

In witness whereof, I have hereunto signed my name.

WARREN B. WEYRICK.