

Sept. 23, 1924.

1,509,336

W. A. BORDEN

STABILIZER OR FIN ASSEMBLY OF A BOMB

Filed June 27, 1922

2 Sheets-Sheet 1

Fig. 1.

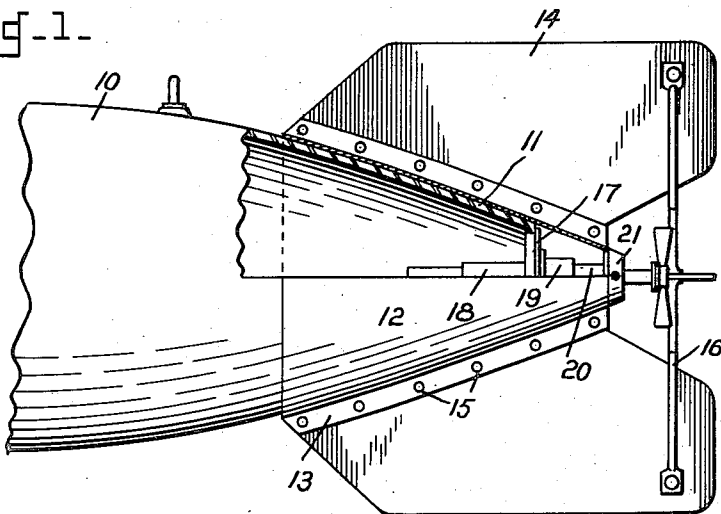


Fig. 6.

Fig. 2.

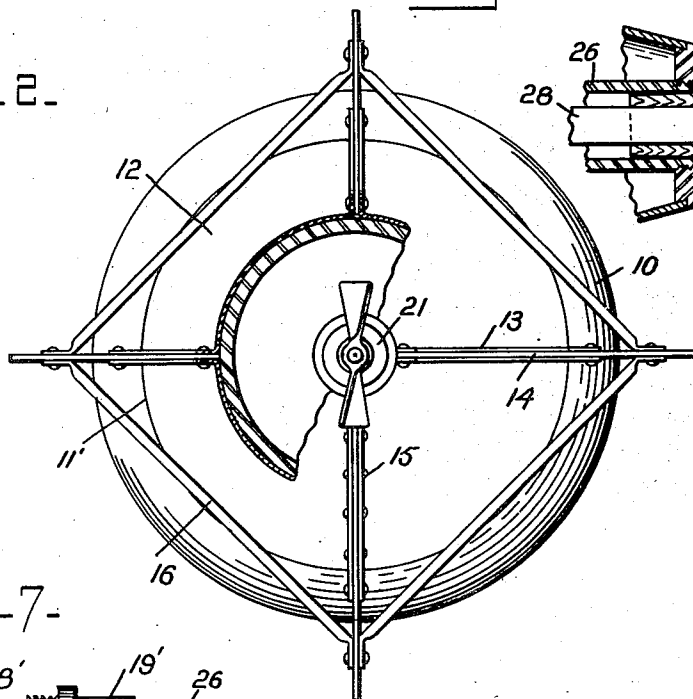
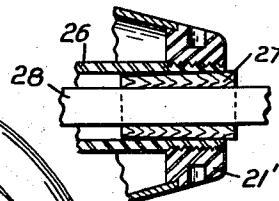
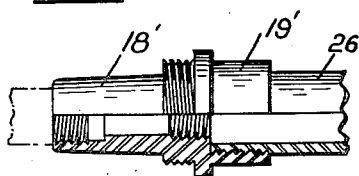


Fig. 7.



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Fig. 3.

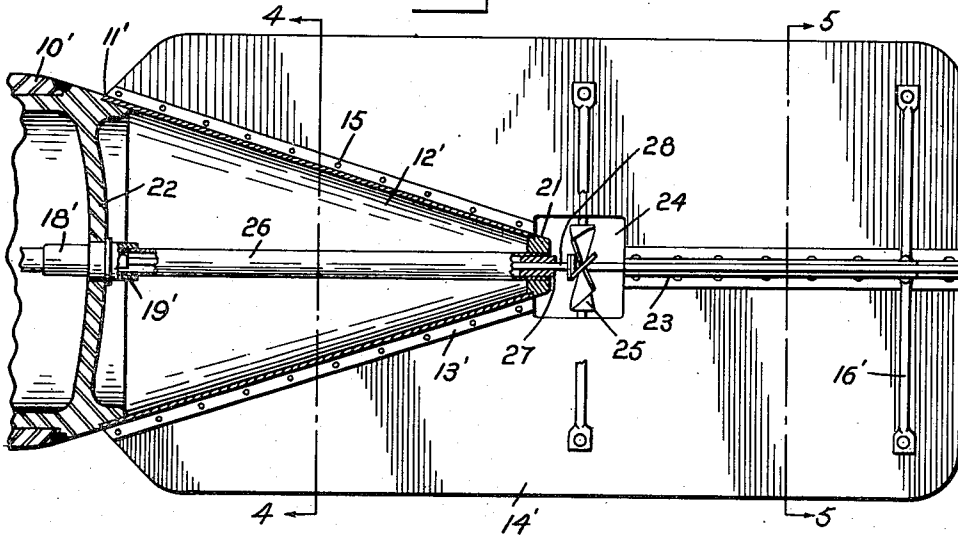


Fig. 4.

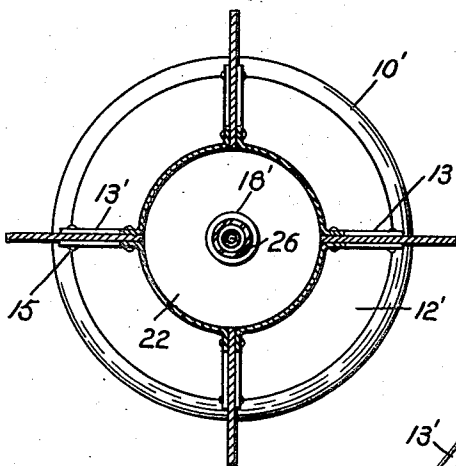


Fig. 5.

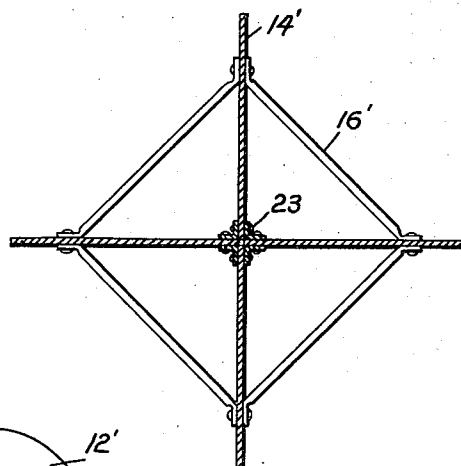
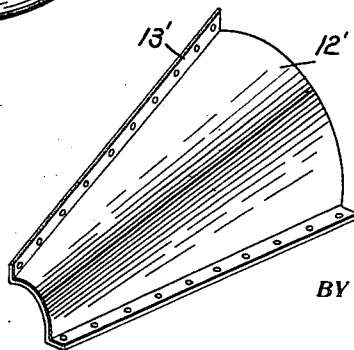


Fig. 6.



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WILLIAM A. BORDEN, OF THE UNITED STATES ARMY.

STABILIZER OR FIN ASSEMBLY OF A BOMB.

Application filed June 27, 1922. Serial No. 571,221.

(FILED UNDER THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

To all whom it may concern:

Be it known that I, WILLIAM A. BORDEN, major, Ordnance Department, United States Army, a citizen of the United States, stationed at Washington, District of Columbia, have invented an Improvement in a Stabilizer or Fin Assembly of a Bomb, of which the following is a specification.

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment to me of any royalty thereon, in accordance with the act of March 3, 1883.

In the construction of the stabilizer or fin assembly of a bomb it is desirable that the parts be so designed as to lend themselves to quantity production; that the fins or stabilizers be so held that there is small chance for distortion thereof and that the base cap may be readily and easily assembled on the bomb body.

The present invention has been devised with a view to accomplishing the foregoing desirable results.

With these and other objects in view, my invention resides in the novel arrangement and combination of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

Practical embodiments of the invention are illustrated in the accompanying drawings, wherein:

Fig. 1 is a view in side elevation of a fragment of a bomb with a fin assembly constructed in accordance with the invention in place thereon, parts being in section;

Fig. 2 is a rear elevation of the same, parts in section;

Fig. 3 is a view in side elevation, partly in section, of a modified form of the device;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a section on the line 5—5 of Fig. 3;

Fig. 6 is a perspective of a section of the base cap;

Fig. 7 is an enlarged detailed view in elevation, partly in section, of the adapter shown in Fig. 3;

Fig. 8 is an enlarged detailed view of the retaining nut and spacing plug or sleeve.

Referring to the drawings by numerals of reference:

I provide a bomb body 10, tapered toward its base or tail end to provide a portion 11 over which the forward end of the base cap may slip.

The base cap is of substantially conical formation, though the walls of the cone may be slightly curved longitudinally as shown most clearly in Fig. 1. The base cap is preferably made up of sections 12, herein shown as four in number, the longitudinal edges of each section bent outwardly to form flanges 13.

It will be noted that the depth of these flanges is such that the sections may be stamped out with the longitudinal curvature mentioned without seriously straining or buckling the material of the flanges.

Between the flanges of adjacent sections 12 the inner edges of the stabilizers or fins 14 are placed and the flanges bound against the stabilizers in any suitable manner. As herein shown, the flanges and stabilizers are provided with alining apertures through which rivets 15 are passed or the same may be secured by spot welding or by a combination of riveting and spot welding. This gives the stabilizers a very rigid connection and braces the base of the stabilizer in an effective manner so that distortion thereof is unlikely.

To further secure the stabilizers against flexure or distortion, braces 16 may be employed which extend between adjoining stabilizers to which they are conveniently connected by means of riveting.

In order that the fin assembly may be held properly assembled on the body, I may provide a closure plug 17 which is threaded into or otherwise connected in the aperture formed in the base of the body 10, in which closure plug is threaded an adapter 18

formed with a rearwardly extending tubular portion 19 conveniently threaded interiorly to receive the threaded end of a plug 20 formed with an enlarged head 21 which
 5 seats upon the periphery of the rear end of the base cap and holds the same firmly in place on the bomb body.

In the modification shown in Figs. 3 to 8 inclusive, the bomb body 10' is closed by a
 10 base piece 22 which may be conveniently welded to the body and the annular flange of which is reduced and tapered to take into the forward end of the base cap of the fin assembly and to provide a shoulder 11'
 15 against which the forward end of the base cap rests.

The base cap is made up of sections 12' each formed with flanges 13' as heretofore described and between these flanges the
 20 stabilizers or fins 14' are bound.

The stabilizers or fins 14' in this instance, extending for a considerable distance to the rear of the base cap and the adjacent edges of such extending portions are conveniently
 25 bound together by angle strips 23 which may be riveted or otherwise connected in place as indicated most clearly in Figs. 3 and 5.

Braces 16' are provided for bracing the
 30 outer edges of these vanes similar to those hereinbefore described. An opening 24 may be provided in the fins to accommodate a wind wheel 25 through which the fuse is armed and also to permit assembling of the
 35 parts.

The fin assembly in this instance is assembled on the body as follows:

An adapter 18' is threaded into the base of the body and is formed with a rearwardly extending portion 19' into which is
 40 threaded a tube 26 which tube acts as a housing for the fuse mechanism and as a coupler to hold the fin assembly to the body. The outer end of this tube is threaded exteriorly to receive a nut 21' which seats
 45 upon the rear end of the base cap and so binds the fin assembly in place. A tubular

plug 27 may be forced into the rear end of the tube 26 to properly center and hold the fuse casing.

I claim:

1. A base cap and stabilizer construction for bombs, including a bomb body formed with a reduced rear end, a base cap adapted to embrace the rear end, said cap comprising
 55 sections bent outwardly along their longitudinal edges to form flanges, fins secured between the flanges, a closure element secured in the rear end of the body and
 60 formed with a rearwardly extending portion and a plug connected to said rearwardly extending portion, said plug formed with an enlarged head adapted to seat on the rear end of the cap to bind the cap in place
 65 upon the body.

2. A bomb, including a body formed with a reduced rear end, a base cap embracing the reduced rear end, said cap constructed of sections having flanged longitudinal edges, stabilizers secured between the flanges, a
 70 closure element secured in the rear end of the body, and a plug connected to said closure element and seated on the rear end of the cap to bind the cap in place upon the body.

3. A bomb, including a body, a cap adapted to embrace the rear end of the body, stabilizers carried by the cap, a closure for the rear end of the body, and a plug connected to the closure and adapted to seat
 80 upon the rear end of the cap to bind the cap in place upon the body.

4. A bomb, including a body, a cap adapted to embrace the rear end of the body, stabilizers secured to the cap, a tubular
 85 member connected to the body, means carried by the tubular member and engaging the cap to hold the cap assembled with the body, a fuse housed within the tubular member and a closure for the rear end of the
 90 tubular member said closure centering the fuse within the member.

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