F. J. CHAMBERS.

AERO BOMB.

APPLICATION FILED JAN. 9, 1918.

1,317,551. Patented Sept. 30, 1919.

Fig. 1.

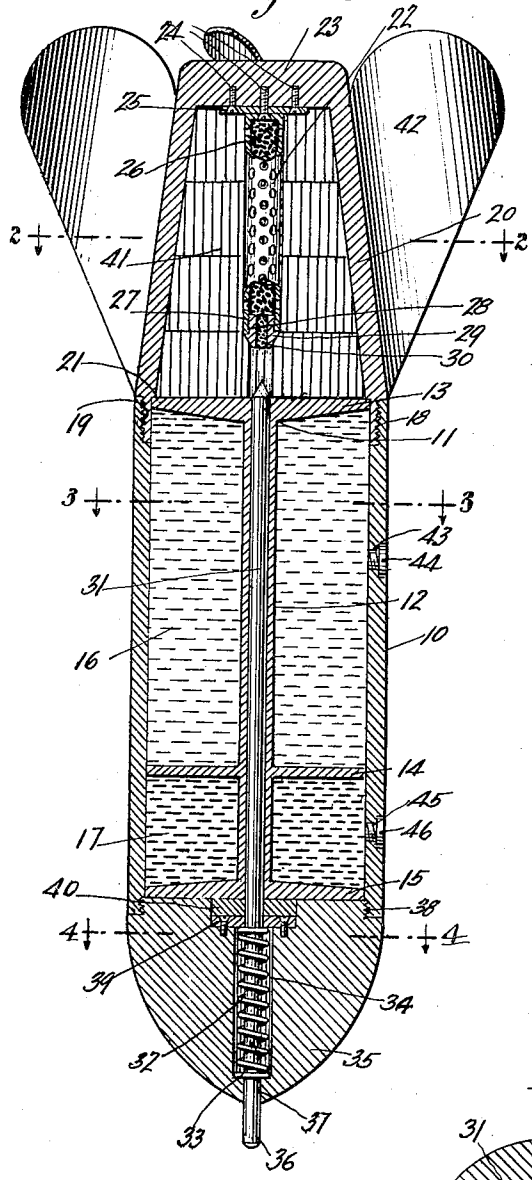


Fig. 2.

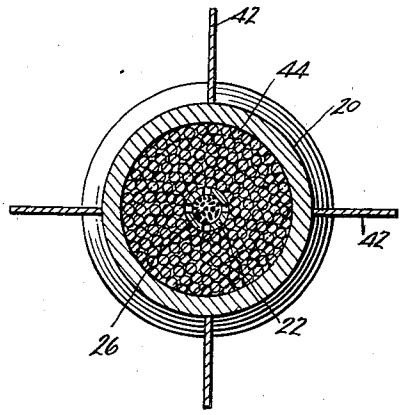


Fig. 3.

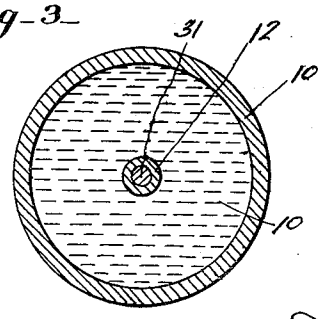


Fig. 4.

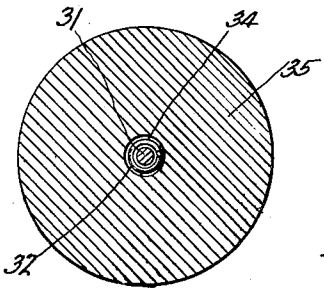
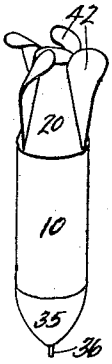


Fig. 5.



WITNESSES

Frank C. Palmer.

E. B. Marshall

INVENTOR

Frank J. Chambers

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANK JOSEPH CHAMBERS, OF NEW YORK, N. Y.

AERO-BOMB.

1,317,551. Specification of Letters Patent. Patented Sept. 30, 1919.

Application filed January 9, 1918. Serial No. 211,044.

To all whom it may concern:

Be it known that I, FRANK J. CHAMBERS, a citizen of the United States, and a resident of New York city, borough of Manhattan, in the county of New York and State of New York, have invented a new and Improved Aero-Bomb, of which the following is a full, clear, and exact description.

This invention has for its object to provide an aero bomb having a casing in which a plunger is disposed, the plunger having a partition separating a hydrocarbon chamber from an acid chamber. When the plunger is forced outwardly by the explosion of an explosive contained in the bomb on the bomb striking an object, the acid will mix with the hydrocarbon to ignite the latter.

Additional objects of the invention will appear in the following specification in which the preferred form of my invention is described.

In the drawings similar reference characters refer to similar parts in all the views, in which—

Figure 1 is a sectional elevation of the invention,

Fig. 2 is a sectional view on the line 2—2 of Fig. 1,

Fig. 3 is a sectional view on the line 3—3 of Fig. 1,

Fig. 4 is a sectional view on the line 4—4 of Fig. 1, and

Fig. 5 is a perspective view illustrating the aero bomb on a smaller scale.

By referring to the drawings, it will be seen that a casing 10 is provided in which a plunger 11 is disposed, this plunger 11 having a hollow core 12 which connects the partitions 13, 14 and 15; the said partitions together with the casing 10 forming a hydrocarbon chamber 16 and an acid chamber 17 which is separated from the hydrocarbon chamber 16 by the partition 14.

The upper end of the casing 10 is provided with teeth 18 which mesh with teeth 19 on a cap 20, the said cap 20 being provided for closing the upper end of the casing 10. This cap 20 is provided with a shoulder 21 against which abuts the partition 13. In the cap 20, there is disposed a tube 22 which is secured to the head or top 23 of the cap 20 by means of screws 24, a plate 25 being preferably disposed between the end of the tube 22 and the head or top 23 of the cap.

The tube 22 is perforated and contains gun powder 26, the lower end of the tube 22 having a thread 27 with which meshes a thread 28 on the cap 29 which holds the explosive cap 30. This explosive cap 30 is in alinement with the firing pin 31 which is disposed in the hollow core 12. The firing pin 31 is held yieldingly downward by means of a spring 32 which engages the washer 33 secured to the firing pin. The said spring 32 and the washer 33 are disposed in an opening 34 in the head 35. The terminal 36 of the firing pin 31 projects beyond the head 35 through an opening 37 which is a continuation of the opening 34, but of a lesser diameter.

The head 35 is weighted and is secured to the casing 10 by means of threads 38, the teeth of which are very much lighter than the teeth 18 and 19, so that with the explosion of an explosive in the cap 20, the plunger 11 will be forced outwardly, the threads 38 breaking, so that the movement of the head 35 relatively to the casing 10 will open the lower end of the casing through which the plunger 11 may be blown by the explosion. The spring 32 is introduced into the opening 34 in the head 35 through the opening 39 at the inner end of the head, and this opening 39 is closed after the firing pin and the spring 32 are in position, by means of washers 40 which may be held in place by screws.

The cap 20 around the tube 22 is filled with gun cotton 41 and the wings or vanes 42 are secured to the outer side of the cap 20, these wings or vanes 42 being bent slightly to give the bomb a rotary motion during its descent. It will be understood that when the end 36 of the firing pin 31 strikes an object, it will force the firing pin upwardly against the tension of the spring 32 and the firing pin will strike the cap 30 to ignite the gun powder contained in the tube 22, and that with the explosion of the gun powder, the gun cotton 41 will be fired. This explosion will force the plunger 11 downwardly, breaking the threads 38 which are lighter than the threads 18 and 19, as has been stated, the acid 17 mixing with the hydrocarbon 16 with the ejection of the plunger to ignite the hydrocarbon. The hydrocarbon contained in the bomb at 16 may be gasolene and the acid contained in the bomb at 17 may be perchloric acid. The

bomb may be filled with the hydrocarbon through the opening 43 which is closed by a screw plug 44 and the acid may be introduced into the bomb at the opening 45 which is normally closed by a plug 46.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A bomb, a plunger in the bomb having a transverse partition intermediate of its ends to form two compartments in the bomb around the plunger, the bomb having a chamber at one end of the plunger in which an explosive may be disposed to blow the plunger out of the casing, and firing means to ignite the explosive.

2. A bomb, a plunger in the bomb having a core and three transverse partitions spaced apart to form with the wall of the bomb two compartments, the bomb having a chamber beyond the plunger in which an explosive may be disposed to blow the plunger out of the casing, and means to detonate the explosive.

3. In a bomb, a casing, a plunger in the casing having a transverse partition intermediate the ends of the plunger to form two compartments in the casing around the plunger, a cap closing one end of the casing and having a chamber beyond the plunger for an explosive, and a head closing the other end of the casing which will permit the plunger to be blown from the casing on the expansion of gases in the said chamber.

4. In a bomb, a casing, a plunger in the casing having a partition to form two compartments in the casing, a cap closing one end of the casing and having a chamber for an explosive, a head closing the other end of the casing which will permit the plunger to be blown from the casing on the expansion of gases in the said chamber, and firing means for the explosive.

5. In a bomb, a casing, a plunger having a hollow core and three transverse partitions spaced apart to form with the casing three compartments, a cap closing one end of the casing and having a chamber for an explosive, a weighted head having an opening in alinement with the core for closing the other end of the casing, a firing pin extending through the opening and the core, and means by which the firing pin is adapted to explode an explosive in the cap.

6. In a bomb, a casing, a plunger having a hollow core and three transverse partitions spaced apart to form with the casing three compartments, a cap closing one end of the casing and having a chamber for an explosive, a weighted head having an opening in alinement with the core for closing the other end of the casing, a firing pin extending through the opening and the core, means by which the firing pin is adapted to explode an explosive in the cap, and resilient means in the head for holding the firing pin away from the cap.

7. A bomb, a plunger in the bomb having a transverse partition to form two compartments in the casing, a hydrocarbon in one compartment, and an acid in the other compartment, the bomb having a chamber for an explosive to blow the plunger out of the casing to ignite the hydrocarbon with the acid.

8. In a bomb, a casing having a thread at one end, a cap having a thread meshing with the first thread for closing the said end of the casing, there being a shoulder in the cap, a plunger in the casing having a core and three transverse partitions spaced apart, one of the partitions abutting against the shoulder, the other end of the casing having a thread, a head with a thread meshing with the last thread on the casing, and means to fire an explosive contained in the cap.

9. In a bomb, a casing having a thread at one end, a cap having a thread meshing with the first thread for closing the said end of the casing, there being a shoulder in the cap, a plunger in the casing having three transverse partitions to form two chambers, a hydrocarbon in one chamber, an acid in the other chamber, one of the partitions abutting against the shoulder in the cap, the other end of the casing having a thread, a head with a thread meshing with the last mentioned thread on the casing, and means to fire an explosive in the cap.

10. In a bomb, a casing, a plunger having a hollow core and three transverse partitions spaced apart to form with the casing two compartments, a cap closing one end of the casing and having a chamber for an explosive, a weighted head having an opening in alinement with the core for closing the other end of the chamber, a hydrocarbon in one of the compartments, an acid in the other compartment, a firing pin extending through the opening in the core, and means by which the firing pin is adapted to explode an explosive in the cap.

11. In a bomb, a casing having a thread at one end, a cap having a thread meshing with the first thread for closing the said end of the casing, there being a shoulder in the casing, a plunger in the casing having a hollow core and three transverse partitions spaced apart to form with the casing two compartments, one of the partitions abutting against the shoulder, the other end of the casing having a thread, a head having an opening in alinement with the core and provided with a thread meshing with the last mentioned thread on the casing, a tube disposed in the cap and secured thereto in alinement with the core, a firing pin in the core and projecting from the head through

the opening therein, and means to hold the firing pin yieldingly extended.

12. In a bomb, a casing having a cap, there being a shoulder in the casing, a plunger in the casing having a hollow core, and three transverse partitions spaced apart to form with the casing two compartments, one of the partitions abutting against the shoulder, the other end of the casing having a thread, a head having an opening in alinement with the core and provided with a thread meshing with the thread on the casing, a tube disposed in the cap and secured thereto in alinement with the core, a firing pin in the core and projecting from the head through the opening therein, means to hold the firing pin yieldingly extended, an explosive in the casing cap, a cap on the tube disposed in the path of the firing pin, a hydrocarbon in one of the compartments and an acid in the other compartment.

13. A bomb, a plunger in the bomb having a transverse partition to form two compartments in the bomb, acid in one of the compartments, hydrocarbon in the other compartment, the bomb having a chamber at one end of the plunger in which an explosive may be disposed to blow the plunger from the body of the bomb and thereby mix the acid and hydrocarbon, and firing means to ignite the explosive.

14. A bomb, a plunger in the bomb having a core and three transverse partitions spaced apart to form with the wall of the bomb two compartments, an acid in one compartment, hydrocarbon in the other compartment, the bomb having a chamber beyond the plunger in which an explosive may be disposed to blow the plunger out of the body of the bomb, and thereby mix the acid and hydrocarbon, and means to detonate the explosive.

15. In a bomb, a casing, a plunger in the casing having a transverse partition to form two compartments in the casing, an acid in one compartment, a hydrocarbon in the other compartment, a cap closing one end of the casing and having a chamber beyond the plunger for an explosive and a head closing the other end of the casing which will permit the plunger to be blown from the casing on the expansion of gases in the said chamber.

16. In a bomb, a casing, a plunger in the casing having a partition to form two compartments in the casing, an acid in one compartment, a hydrocarbon in the other compartment, a cap closing one end of the casing and having a chamber for an explosive, a head closing the other end of the casing which will permit the plunger to be blown from the casing on the expansion of gases in the said chamber, and firing means for the explosive.

FRANK JOSEPH CHAMBERS.