July 6, 1943. P. F. NEWMAN 2,323,561

MEANS FOR DESTROYING AIRCRAFT

Filed Jan. 27, 1941 2 Sheets-Sheet 1

Fig. 1.

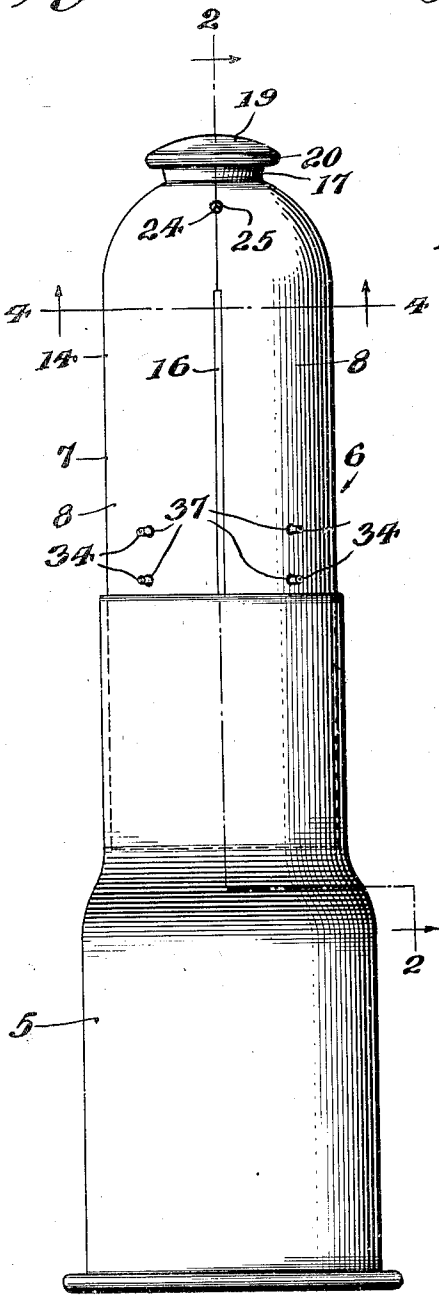
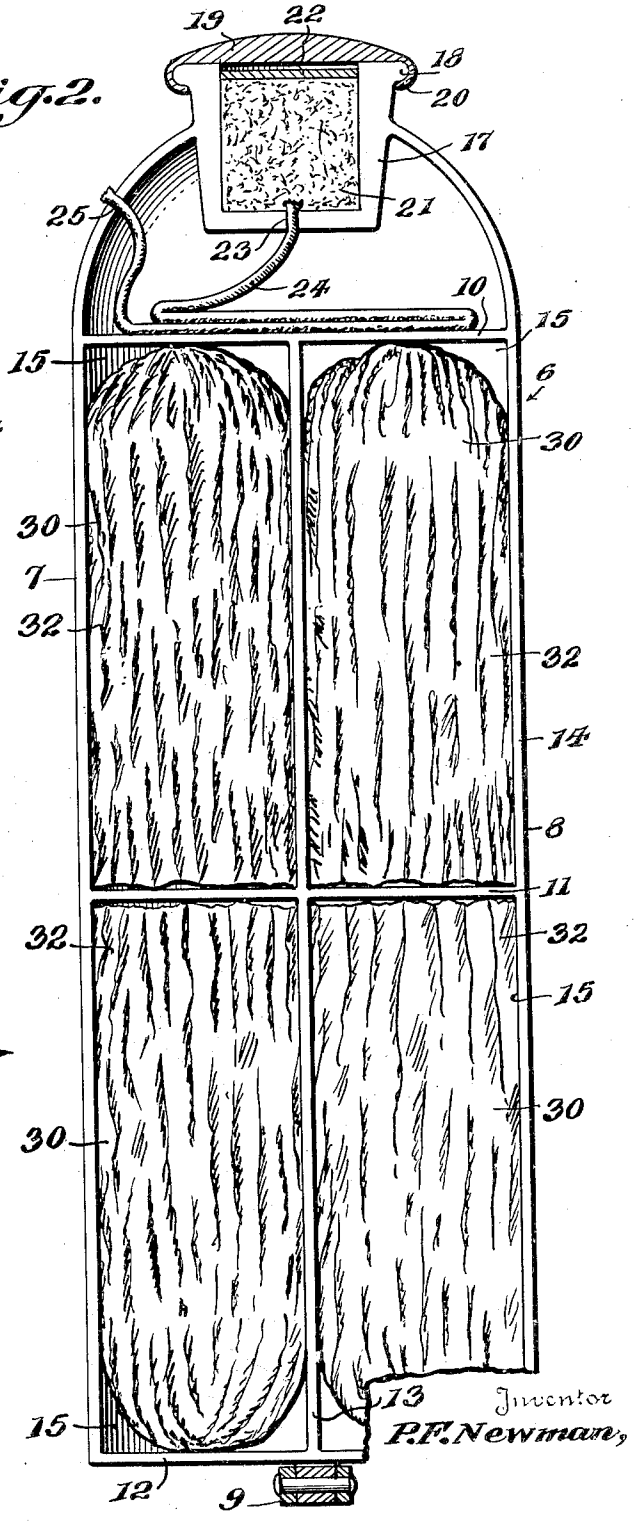


Fig. 2.



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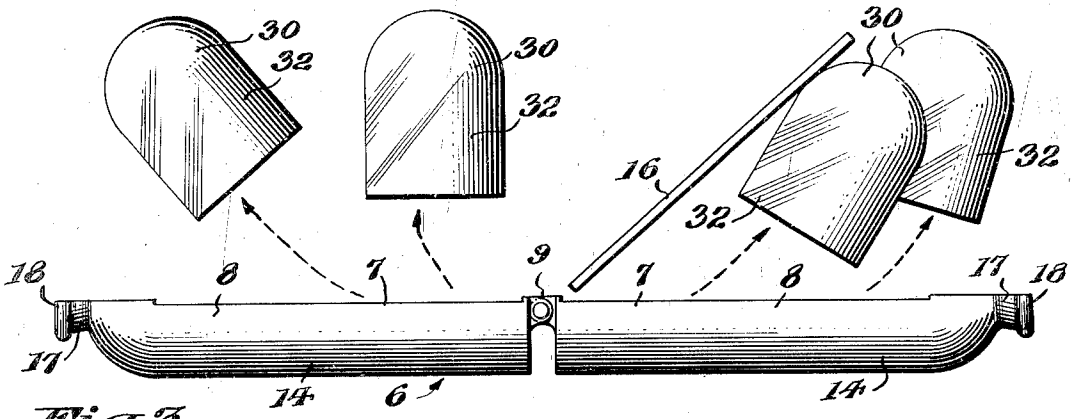


Fig. 3.

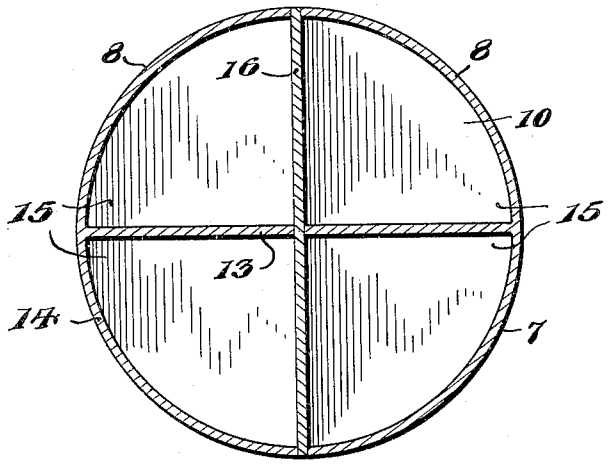


Fig. 4.

Fig. 5.

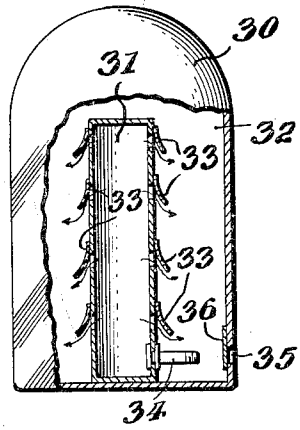
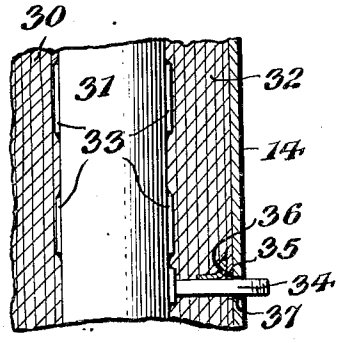


Fig. 6.



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UNITED STATES PATENT OFFICE

2,323,561

MEANS FOR DESTROYING AIRCRAFT

Phil F. Newman, Blackwell, Okla.

Application January 27, 1941, Serial No. 376,213

2 Claims. (Cl. 102—63)

My invention is directed to means for destroying aircraft and has as one of the principal objects thereof the provision of a device so constructed and arranged whereby a mine or mine field may be projected and suspended in the air for destroying hostile aircraft during warfare.

Another object of my invention is to provide a device of the above described character equipped with means operable for maintaining a mine or mine field in the air over appreciable length of time as compared with mines equipped with parachutes and the like.

A further object of my invention is to provide a device of the above described character so constructed and arranged wherein the mine or mines may be released or "planted" in the air at a predetermined height.

An important object of my invention is to provide a device of the character described which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claims and annexed drawings.

Referring to the drawings wherein like reference characters designate like parts throughout the several views:

Figure 1 is a side elevation of my invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a side elevation of the projectile and illustrating the same in open position with a plurality of mines released therefrom.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a vertical sectional view, partly in elevation of one of the mines.

Figure 6 is a detail sectional view illustrating the arrangement of the valve stem and projectile wall whereby the inner compartment or tube of the mine is inflated previous to the projectile being fired into the air and the mine released therefrom.

My invention is directed to producing novel and effective means for destroying hostile aircraft and constitutes means for an attack upon a plane, or fleet of planes, and also as a defensive means for discouraging or excluding hostile planes from flying over a city, fort, ship, fleet or other area or locality to be protected.

In practising my invention, as illustrated in the drawings, I provide a shell 5 having fitted in the open end thereof the lower or base end portion of a projectile 6, it being understood that the shell 5 is provided with a suitable explosive charge (not shown) whereby the projectile is fired into the air, a suitable gun or similar device being employed for receiving the shell and projectile and for detonating the aforementioned explosive charge.

The projectile 6 comprises an elongated substantially cylindriform casing 7 formed with a pair of lengthwise disposed separable sections 8 and with said sections being hinged together at their lower ends as at 9. Each section is fashioned with upper, interjacent and lower partitions 10, 11 and 12 respectively and with the partition 12 constituting the bottom wall of the projectile. Each section 8 is also fashioned with a longitudinal partition 13 extending between the partitions 10 and 12 and coacting with the partitions 10, 11 and 12 and the peripheral wall 14 of the projectile to define a quaternary of mine compartments or chambers 15 with the compartments of one section separated from the compartments of the other sections by a releasable partition 16 inserted therebetween.

The upper end of each section, superjacent the partition 10, is fashioned with a substantially semicylindriform housing coacting with the housing of the other section to form a substantially cylindriform bowl 17 having its upper and lower ends disposed an appreciable distance without and within the upper end of the projectile respectively. The upper end of the bowl is fashioned with a circumferential flange 18 and closed by means of a cap 19 having its margin formed with an arcuate lip 20 embracing and surrounding the flange 18 whereby the upper ends of the sections 8 are secured together in connected relation.

Disposed within the bowl 17 is an explosive 21, for instance, gun powder or the like, maintained in substantially compressed condition therein by means of a disk 22 overlying said powder and subjacent the cap 19. The bottom wall of the bowl 17 is provided with an opening 23 through which extends one end of a fuse 24, the latter being coiled or otherwise disposed within the top of the projectile between the bowl and the partitions 9. The opposite end of the fuse 24 extends through an opening 25 formed in the wall 14 of the projectile and terminates in proximity to the bowl 17. Obviously, igniting of the outward disposed end of the fuse 24 will explode the powder 21 within the bowl 17 when the fuse is consumed. The explosion of the powder 21 effects rupture of the lip 20 and pivotable separation or opening of the sections

8 with respect to each other as clearly illustrated in Figure 3 of the drawings. Opening of the sections 8 serve to release the partition 16 thereby opening the chambers or compartments 15 of their respective sections. From the foregoing, it will be apparent that by varying the length of the fuse 24, the exploding of the powder 21 may be obtained at a desired and predetermined time.

Disposed in each of the compartments 15 is a mine 30, the latter constituting a balloon. The balloon comprises inner and outer tubes 31 and 32 respectively and which are constructed of rubber or other suitable material. The inner tube 31, which is of relatively stiff material, is disposed substantially centrally within the outer tube 32 and is provided with a plurality of outlet flapper valves 33 and an intake valve stem 34 whereby a suitable fluid may be introduced therein for inflating the outer tube. The outer tube 32, adjacent the stem 34, is provided with an opening 35 for receiving the outer end of the stem 34 and with a flapper valve 36 for closing said opening 35 when the outer tube 32 is inflated and the stem withdrawn from said opening. The peripheral wall 14 of the projectile is provided with a plurality of openigns 37 through which the outer ends of the valve stems 34 extend.

The balloons 30 are deflated and disposed within the respective compartments 15 when the sections 8 are secured together in closed relation. When the balloons are thus positioned, the valve stems extend through the openings 37 and inflating fluid is introduced into the inner tube 31 through said stem 37, it being understood that the fluid is contained within the inner tube 31 under pressure and that the outer tube 32 is enwrapped about said inner tube.

In operation, the projectile is fired in a desired direction in the air with the outer end of the fuse 24 ignited to effect explosion of the powder 21 at a predetermined height. When the sections 8 are exploded to open position by the powder 21, as heretofore described, the balloons 30 will be released from the sections, it being understood that the release of the partition 16 permits inflation of the outer tubes 32 to cause a subsequent floating of the balloons in the air. Each ballon may carry an explosive and a detonating means therefor set off by impact. This forms no part of the present invention.

From the foregoing, it will be apparent that I have provided novel means for destroying aircraft and that said means is so constructed and arranged whereby the same is maintained in the air over a materially greater period of time as compared to parachutes suspended mines or the like.

Without further elaboration the foregoing will so fully explain the invention that others may, by applying current knowledge, readily adapt the same for use under various conditions of service. Moreover, it is not indispensable that all the features of the invention be used conjointly since they may be employed advantageously in various combinations and sub-combinations.

It is obvious that the invention is not confined to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be understood that the invention is not limited to the specific construction as illustrated and described as the same is only illustrative of the principles of operation, which are capable of extended application in various forms, and that the invention comprehends all construction within the scope of the appended claims.

What I claim is:

1. In a projectile, an elongated substantially cylindrical container having one end reduced and rounded and including companion sections extending longitudinally thereof, means hinging the sections together to permit the container to swing fully open from end to end thereof, walls integral with the sections and extending inwardly and outwardly of the container at the rounded end thereof and coacting to form an explosive chamber fully open at one end and outwardly of the container, a destructible cap clinched to the walls outwardly of the container for closing the chamber to retain an explosive therein and for securing the sections together against separation and hinging movement relative movement to each other in an end to end manner relative to the container, a fuse connected with the chamber and extending through a wall of one of the sections of the container, partitions in each section to form balloon compartments, and a solid panel loosely mounted in said container to separate the balloon compartments of one section from like compartments of the other section.

2. In a projectile, an elongated substantially cylindrical container having one end reduced and rounded and including companion sections extending longitudinally thereof, means hinging the sections together to permit the container to swing fully open from end to end thereof, walls integral with the sections and extending inwardly and outwardly of the container at the rounded end thereof and coacting to form an explosive chamber fully open at one end and outwardly of the container, a destructible cap clinched to the walls outwardly of the container for closing the chamber to retain an explosive therein and for securing the sections together against separation and hinging movement relative to each other in an end to end manner relative to the container, a fuse connected with the chamber and extending through a wall of one of the sections of the container, partitions in each section to form balloon compartments, a solid panel loosely mounted in said container to separate the balloon compartments of one section from like compartments of the other section, and a collapsible balloon arranged in each compartment and including a collapsible outer airtight shell and a rigid tube arranged in the outer shell and in communication therewith, and means to permit the introduction of fluid pressure in said tubes while the balloons are collapsed within the compartments for inflating the outer shells of the balloons on the release of the latter from the compartments.

PHIL F. NEWMAN.