

Nov. 2, 1943.

L. H. GAY

2,333,558

AERIAL BOMB

Filed June 19, 1942

Fig. 1.

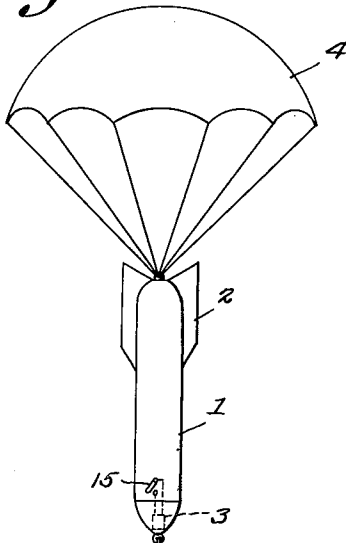


Fig. 2.

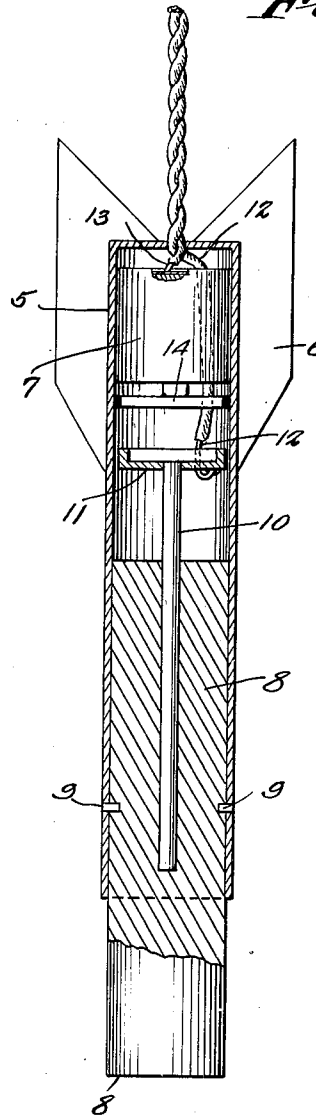
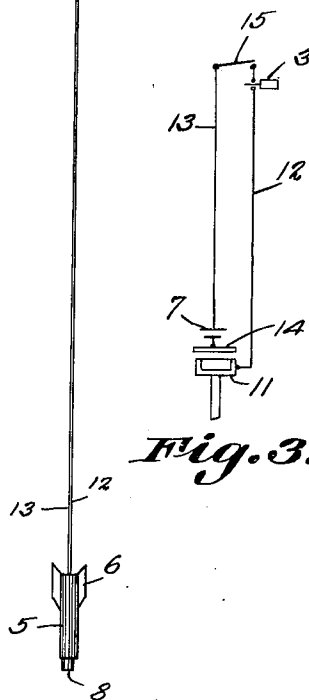


Fig. 3.



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2,333,558

AERIAL BOMB

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Application June 19, 1942, Serial No. 447,702

1 Claim. (Cl. 102-4)

This invention relates to an aerial bomb, one of the objects being to provide a bomb which, when released from an aircraft, will be retarded in its descent by a parachute joined thereto, there being means combined with the bomb and supported a desired distance therebelow, for causing the bomb to explode while still in the air as soon as said means touch the ground or any other unyielding surface in the path thereof.

Another object is to provide a means under control of the user by which a bomb can be caused to explode in the air at any predetermined distance above the ground.

A still further object is to provide a bomb which is easy to handle and which can easily be prevented from exploding should it fail to fall clear of the aircraft after being released.

A still further object is to provide a structure of this character which does not require any complicated mechanism and can be quickly and cheaply manufactured.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred form of the invention has been shown.

In said drawing

Figure 1 is an elevation of the device showing the relative positions of the parts while descending through the air.

Figure 2 is an enlarged central longitudinal section through the contact device or plummet which controls the firing of the bomb.

Figure 3 is a view showing, in diagram, the electrical connections.

Referring to the figures by characters of reference, 1 designates the casing of the bomb which can have the usual fins 2 for guiding it in its movement through the air. This casing can be charged with a high explosive and ignition means for the explosive have been indicated generally at 3. A parachute 4 is connected to the upper or butt end of the bomb and is adapted to open when the bomb is delivered from an aircraft and to retard the descent of the bomb.

A plummet or controlling device has been shown in detail in Fig. 2 and includes a tubular casing 5 which likewise can be formed with guiding fins 6. The upper closed end of the casing

can contain an electric battery 7 while the other end of the casing is provided with a plug 8 held normally projected from the casing by break pins 9 extending into the plug from the casing. This plug is provided with a stem 10 carrying a contact member 11 which is spaced from the casing 5. This contact is electrically connected to one end of a wire 12 and another wire 13 is electrically connected to one terminal of the battery 7. The other terminal of the battery has been indicated at 14 and is insulated from casing 5 and located where it can be engaged by contact 11 when the plug 8 is thrust backwardly into the casing 5.

The two wires 12 and 13 can be of any length desired and are both joined at one end to the sparking device 3, it being understood that a switch 15 can be located in one of the wires, as 12, whereby the circuit to the ignition device 3 can be broken when desired.

If it is desired to explode the bomb at fifty feet above the surface of the ground so that the fragments will be scattered over a wide area, the wires 12 and 13 will be fifty feet in length. These can be wrapped about the bomb and the plummet, wrapped wires, bomb and parachute can all be packaged into a compact bundle if desired. Switch 15 is normally open so that there will be no danger of premature explosion of the bomb.

When it is desired to use the bomb the same is delivered from an aircraft and the heavy plummet will immediately unwind the wires from the bomb 1 or uncoil them if they are otherwise arranged, the bomb 1 being retarded in its descent by the parachute 4 which will promptly open.

When the bomb reaches the altitude where explosion is to be effected, the plug 8 will come into contact with the surface thereunder and the weight of the casing 5 and the parts carried thereby combined with the continued downward movement of these parts due to their inertia, will cause the pins 9 to break off with the result that the casing will descend relative to plug 8 and cause the terminal 14 to engage the contact 11. As the switch 15 had been closed before the bomb was delivered from the aircraft, this action will promptly result in closing the circuit to the ignition device 3 which, being energized, will cause the explosive charge to be ignited.

Obviously the wires 12 and 13 will be increased or reduced in size according to the predetermined distance at which the bomb is to be exploded above the surface of the ground.

It is advantageous to locate the battery in the plummet because it is thus possible to promptly cut the wires 12 and 13 and release the plummet

from the ignition means should the bomb become hung at the time of delivery and there be danger of its exploding while the parts are entangled in the aircraft.

Under some conditions it might be found desirable to dispense with the use of a parachute and, instead, to suspend the bomb from and at a safe distance below the aircraft. Under these conditions the entire structure, without the parachute, would be reversed, the part 5 being located in the plane and the bomb 1 extended well below the plane. Thus by closing the circuit at 11 and 14 the bomb could be exploded when desired.

What is claimed is:

The combination with a parachute-supported bomb having an electrically-operated firing mechanism, of a plummet including a tubular

casing, a weight extending from one end of the casing, break pins for holding the weight normally against sliding movement relative to the casing, a battery in the casing, a contact connected to one pole of the battery, another contact carried by the weight and positioned for engagement with the first contact when there is relative movement between the weight and casing, and a wire connection between the battery, contacts and firing mechanism forming a circuit adapted to be closed when the contacts are brought together, and means on the casing for maintaining said casing in a substantially vertical position while descending, the wires constituting the sole support between the casing and the bomb.

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