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ROCKET-BOMB FIRING APPARATUS

Filed June 14, 1960

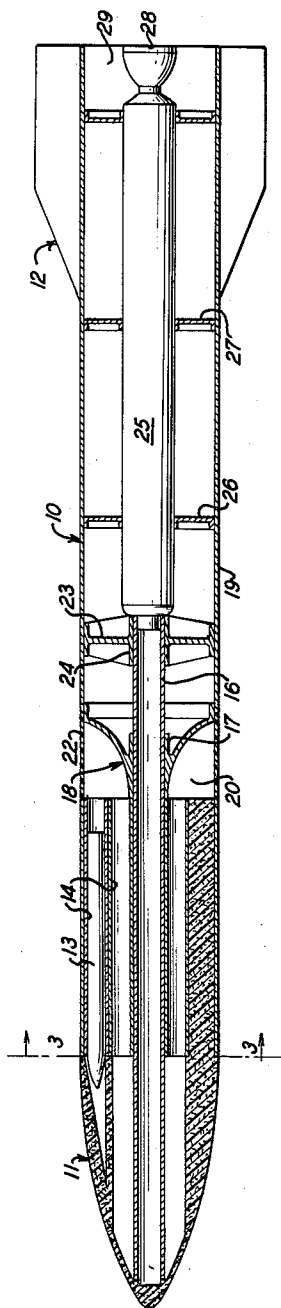


FIG. 1

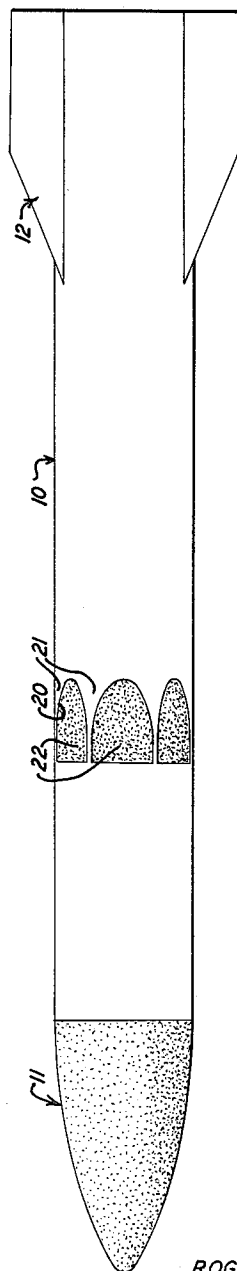


FIG. 2

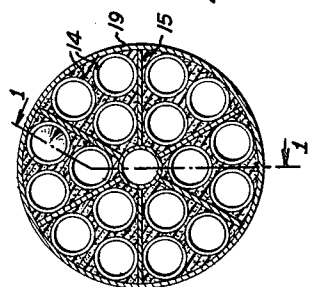


FIG. 3

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ROCKET-BOMB FIRING APPARATUS

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1 Claim. (Cl. 89—1.7)

This invention relates to improvements in apparatus for firing rocket-bombs and similar missiles.

It is especially directed to improving apparatus which is suspended from the underside of an aircraft and of the type comprising a casing containing a multiplicity of rocket-bombs or similar missiles (hereinafter termed rockets), and means for controllably firing said rockets. Heretofore the empty casing or container was released from the aircraft so as to restore the optimum aerodynamic characteristics to the aircraft.

With such an apparatus, the rockets are fired from the aircraft in the usual conditions of attack, that is, the aircraft first approaches the target to within firing range, fires the rockets, then usually climbs steeply to depart from the target. Such a maneuver is risky because of anti-aircraft weapons, especially light quick-firing guns which are able to track and fire at the aircraft during its approach.

It is an object of this invention to provide improved apparatus which will considerably reduce the risk incurred by an attacking airplane while providing equal or greater efficiency of rocket fire.

Another object is to provide rocket apparatus which will be simple and economical to construct.

A further object is to provide such apparatus which will present no particular operating problems.

According to the invention, there is provided a device comprising a container having an axis of symmetry. Additionally, there is provided means supporting a plurality of rockets in the container. In further accordance with the invention, a propulsion unit is fixedly secured in the container for propelling the same from the aircraft along a trajectory. The propulsion unit is secured along the axis of symmetry of the container. Also provided is an empennage rearwardly supported on the container for stabilizing the same. Furthermore, deflector members are positioned rearwardly of the means supporting the rockets and forwardly of the propulsion unit to guide the exhaust gases of the rockets. Additionally contemplated is a plurality of frangible portions symmetrically positioned on the container and adjacent the deflector members for permitting symmetrical discharge of the gases from the container.

Thus, the container is released from the aircraft by being bodily propelled towards the target by the propulsive unit therein. The rockets can be fired when said container has reached a prescribed distance from the target.

As a result of the invention it becomes possible, while using rockets of a standard type, which heretofore permitted attacking a target only from a predetermined distance corresponding to the firing range of the rockets (which exposed the airplane to enemy fire) to carry out an effective attack with the airplane remaining at a safe distance from the target. This is obtained by propelling the rockets to within their prescribed firing range by the action of the independent propulsive unit in the container, subsequent to the release of said container from the carrier plane.

An exemplary embodiment of the invention will now be described for purposes of illustration but not of limita-

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tion with reference to the accompanying drawings, wherein:

FIG. 1 is a longitudinal sectional view of improved apparatus;

FIG. 2 is an outer side view thereof; and

FIG. 3 is a larger-scale view in section on line 3—3 of FIG. 1.

The apparatus shown comprises a casing or container 10 of generally cylindrical form having a tapered front nose or ogive 11 and an empennage 12 at its tail end. Contained in a forward section of the container is a multiplicity of rockets 13 of a standard type, which may be mounted in any suitable way, for example as shown each in a respective tube 14 which tubes are held in position by means of transverse partitioning elements 15 defining a central tubular channel 16.

The nose section 11 is made from a readily breakable material, such as, polyurethane foam, and preferably this material also fills the intervening gaps between the tubes 14 and channel 16. Mounted around the rear portion of the central tubular channel 16 is a sleeve 17 which forms part of an arcuately tapered deflector member 18, connected outwardly and rearwardly with the cylindrical wall 19. In front of and closely adjacent to this connection, the cylindrical wall is formed with arcuately shaped cutouts 20 defining intervening tongue-like parts 21 integral with the metallic wall of the casing. The cutouts thus formed are covered-over with correspondingly shaped strips or plates 22 made of a readily breakable material such as the polyurethane foam mentioned above.

Mounted in the rear section of the container, beyond a transverse central bulkhead 23, and extending through a central opening in a hub 24 of said bulkhead, is a propulsion unit 25 held in position by spider arms 26 and 27, and having a jet nozzle 28 opening out from the central rear orifice 29 of the casing. The apparatus operates as follows:

The carrier airplane from which the apparatus described is suspended through conventional releasable suspension means not shown, approaches the target to within a suitable distance, which will generally be greater than the normal firing range of the rockets used, and then releases the container. Means are provided whereby such release fires the propulsion unit 25. By the action of the propulsion unit, the container is bodily propelled towards the target at a velocity which is the sum of the velocity of the attacking airplane at the time of release plus the velocity imparted by propulsion unit 25. When the rocket apparatus has reached a prescribed distance from the target equal to or less than the normal range of the rockets used, the rockets are fired and approach the target at a velocity which is the sum of the velocity of the apparatus as just indicated plus the velocity imparted by the rocket propellant means. The rockets on being fired break through the nose section 11 as they issue out of their guiding tubes, while the rocket exhaust gases, deflected laterally outwards by deflector 18, break through the frangible strips 22 and escape through the cutouts 20.

The invention contemplates one form of embodiment wherein the apparatus further includes means made operative on release of the apparatus from the carrier airplane, for guiding or homing the apparatus on to the target.

What we claim is:

An armament device adapted to be launched from a carrier aircraft, said device comprising: a container having an axis of symmetry, a plurality of rockets, means supporting said rockets in said container, a propulsion unit in said container for propelling said container from said

aircraft along a trajectory, said propulsion unit being
 fixedly secured in said container along the axis of sym-
 metry to provide thrust for said container only in an
 axial direction, an empennage rearwardly supported on
 said container for stabilizing the same, the rockets being
 adapted for being launched from the container while the
 latter is being propelled by the propulsion unit, and de-
 flector members positioned rearwardly of the means sup-
 porting said rockets and forwardly of the propulsion unit
 to guide exhaust gases of the rockets, a plurality of fran-
 gible portions symmetrically positioned on said container
 and adjacent said deflector members for permitting sym-

metrical discharge of said gases from the container, said
 empennage providing stability for said container with said
 rockets being launched to insure accuracy of said rockets.

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