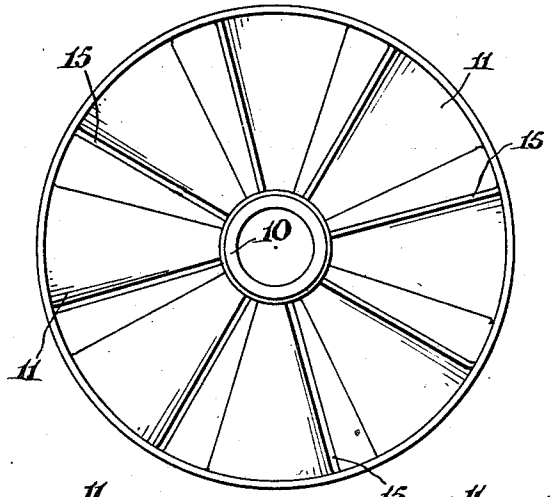
Nov. 7, 1944. H. A. SIMPSON 2,362,414

BOMB CARRIER

Filed Feb. 3, 1942

Fig. 2.



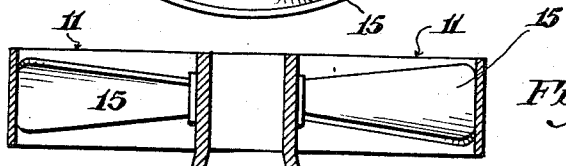


Fig. 1.

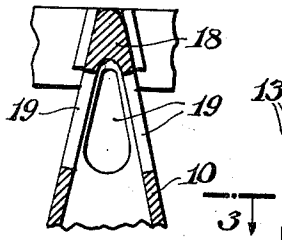
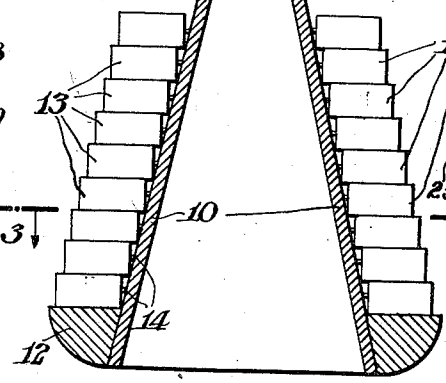


Fig. 5.



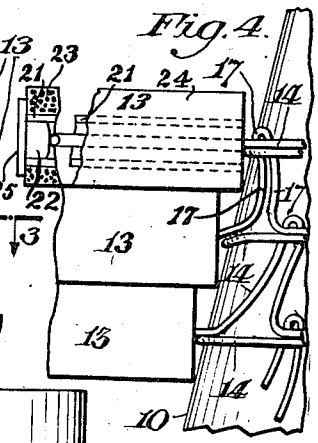


Fig. 4.

Fig. 3.

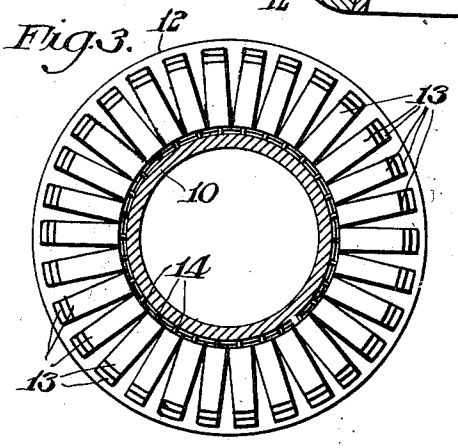
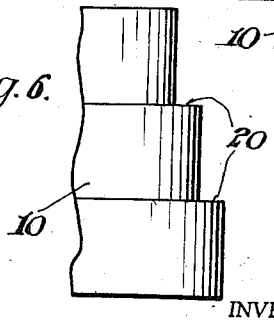


Fig. 6.



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Patented Nov. 7, 1944 2,362,414

UNITED STATES PATENT OFFICE

2,362,414

BOMB CARRIER

Henry A. Simpson, Philadelphia, Pa., assignor to Machine and Tool Designing Company, a corporation of Pennsylvania

Application February 3, 1942, Serial No. 429,367

3 Claims. (Cl. 102—7.2)

The invention covered herein may be manufactured by or for the Government of the United States of America, for governmental purposes, without payment of any royalty thereon.

My invention relates to improvements in a bomb carrier and distributor.

The object is to provide a carrier loaded with a plurality of bombs, to be distributed or discharged from the carrier at different elevations with increased distance of discharge as the speed of rotation of the falling carrier increases.

This results in wider distribution to different areas resulting from said increased falling and rotative speed of said falling carrier.

Referring to the drawing, which illustrates merely by way of example, suitable means for effecting my invention:

Fig. 1 is a vertical section of the device in accordance with my invention.

Fig. 2 is a top plan view.

Fig. 3 is a horizontal section on line 3—3 of Fig. 2.

Fig. 4 is a fragmentary elevation on an enlarged scale.

Fig. 5 is a fragmentary section, and

Fig. 6 is a fragmentary elevation also on an enlarged scale, showing modifications of the cone.

Similar numerals refer to similar parts throughout the several views.

The invention is especially adapted for the discharge and wide distribution of incendiary or fire bombs.

In the preferred form illustrated in the drawing, I provide an upwardly tapered tubular formation 10, to the top of which is rigidly secured an impeller or fan 11, and at the bottom of said tubular formation is secured an annular formation or flange 12, having a substantial weight which tends to maintain the axis of the formation 10 in vertical position. This flange or ring 12 also serves to support the bombs 13 arranged in layers or courses around the tubular formation 10. The passage-way, which tapers upwardly within the formation 10, from the flaring bottom to the restricted top, and which is open at both ends, also contributes to maintaining the vertical axis of the tubular formation 10 when falling.

Around the tapered formation 10 the bombs 13 are arranged in courses: the lowest course resting upon the flange or ring 12, each succeeding course resting upon the preceding course until the tubular formation or carrier 10 is loaded, as indicated in Figs. 1 and 3.

In each course the bombs may be arranged in close formation, as shown in Fig. 3, or in any desired spaced formation.

To each bomb is secured a wire or cord 14, of sufficient length to be wound around the tubular carrier 10, two or more times, normally to hold each bomb 13, in position as indicated in said Figs. 1, 3, and 4. Each wire or cord 14 is secured to the discharging mechanism of a bomb 13. For instance, the wire 14 may pass through a central inflammable tube 21 passing through the bomb 13 and be attached to a plug 22. The plug 22 is detachably secured to a disk 25 which is larger than the opening in the tube 21, which disk normally maintains the plug 22 stationary in the tube 21 adjacent its end but from which it is detached by centrifugal force transmitted through the cord or wire 14, during rotation of the carrier when falling, whereupon the plug 22 is drawn through the tube 21 substantially from end to end. The frictional engagement of the plug 22 with a coating of match composition or ignition material (not shown) on the interior of the tube 21 causes ignition of the tube 21, which is followed by ignition of the flare or explosive material 23 packed between the tube 21 and the casing 24 of the bomb, all as fully described in my copending application Serial No. 429,368, filed February 3, 1942, which issued July 6, 1943 as Patent No. 2,323,426.

The blades 15 of the impeller 11 are so directed as to cause the rotation of the carrier in the desired direction, as the carrier falls through the air, while the securing wires or cords 14 are wound about the tubular body of carrier 10 in the opposite direction, that is to say, if the carrier is rotated by the impeller in clockwise direction, the windings of the cord or wire are in contraclockwise direction, so that the rotation of the carrier tends to unwind the wire or cord which normally holds the bombs in initial position.

The cords or wires 14 securing said bombs are so arranged as to permit the release of one course only at a time. This restraining and releasing action is secured in the following way.

The restraining wires of the topmost course are free to unwind to permit the discharge of the bomb by centrifugal action. The wires 14 of the topmost course are so wound as to secure looped portions 17 of the wires of the next lower course to prevent the unwinding of the wires of said next lower course until the wires of the said uppermost course have been entirely unwound; and the next lower course becomes the topmost, whereupon the said operation is re-

peated through the several courses. This arrangement of the winding is indicated in Fig. 4.

In operation, when the carrier is dropped from a high altitude, the uppermost course of bombs tends to move outwardly and to discharge, due to the centrifugal force exerted by the rapid rotation of the carrier. In this way each successive course of bombs is discharged in its proper turn, from the carrier.

As the speed of rotation of the carrier, is constantly increasing, due to the gravitational law, the centrifugal force is correspondingly increased, to effect varying distances of flight of the bombs from the different courses.

The number of windings of the retaining wires or cords 14, and the pitch of the impeller blades 15 may be so adjusted or coordinated as to secure the time of discharge of each course of bombs, and also the distance thrown by the centrifugal force exerted.

Fig. 5 shows a modification of the cone, in which the apex 18 is closed, and slots or ports 19 are provided below but near the apex, for directing the air, which is compressed, due to the tapered form of the passage through the cone, to the blades of the fan or impeller.

In Fig. 6 is shown the cone having its outer surface provided with corrugations or steps 20 for facilitating the loading of the bombs.

While, as above stated, the invention is especially adapted for carrying and distributing incendiary or fire bombs, it will be understood that the invention is equally adapted for peace-time uses, such as carrying and distributing containers of chemicals or substances other than explosives or incendiary substances, for example, for dusting of crops and other similar purposes.

In the use of the word "bomb" in the specification and claims, it is intended to cover such containers.

What I claim is:

1. In a device of the character described, the combination with a plurality of bombs, of a bomb supporting carrier having a fan secured thereto, to cause the rotation of the carrier while falling from a height, said bombs being arranged in courses, one course upon another, a cord secured to each bomb and wound around the carrier in direction opposite to that of the carrier's rotation, the cords of each course so wound as to secure portions of the cords of a lower adjacent course from unwinding until the cords of an upper coarse are unwound.

2. In a bomb carrier, a hollow body with a fan secured to one end and a weighted flange secured to its other end, said fan being adapted to cause rotation of said hollow body in one direction during falling, and a plurality of bombs arranged in courses on said flange, and cords wrapped about the body in a direction opposite the direction of rotation and each secured at one end to the discharging means of one of said bombs and at the other end to said hollow body.

3. In a bomb carrier, a hollow body having a frusto-conical portion with a fan secured at its smaller end and a weighted flange secured to its larger end, said weighted flange being adapted to maintain said hollow body upright during falling and said fan being adapted to cause rotation of said hollow body in one direction, and a plurality of bombs arranged in superposed courses on said flange and disposed substantially radially of the longitudinal axis of said body, and a plurality of cords wrapped about said body in a direction opposite the direction of rotation, each of said cords being secured at one end to the discharging means of one of said bombs and at the other end to said hollow body, whereby said cords will progressively unwrap during falling of said body and consecutively discharge said bombs as they travel outwardly to the ends of said cords under the centrifugal force caused by rotation of said body.

HENRY A. SIMPSON.