Dec. 31, 1946. J. G. LEE 2,413,635

BOMB RACK

Filed Dec. 17, 1935

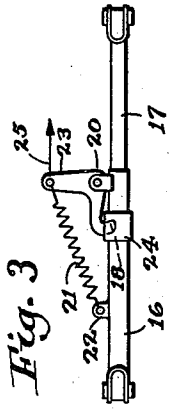


Fig. 3

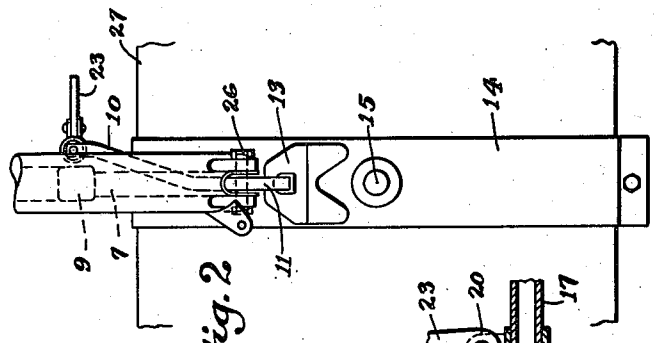


Fig. 2

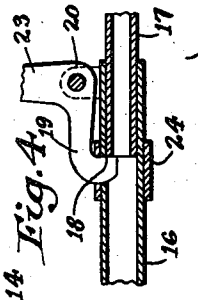


Fig. 4

Fig. 1

Inventor:
John G. Lee
by John J. Fitzgerald
Attorney

Patented Dec. 31, 1946

2,413,635

UNITED STATES PATENT OFFICE

2,413,635

BOMB RACK

John G. Lee, Farmington, Conn.

Application December 17, 1935, Serial No. 54,902

2 Claims. (Cl. 89—1.5)

1

This invention relates to a bomb rack for aircraft and more particularly to a rack especially adapted for use with the bomb displacing gear disclosed in my co-pending application Serial No. 54,901, filed December 17, 1935.

It is the object of this invention to provide a device of the type specified which is simple in structure and therefore not likely to get out of order and which utilizes the weight of the bomb itself for disengaging the bomb from the rack.

In the drawing:

Fig. 1 is a front elevational view of my novel bomb rack;

Fig. 2 is an end elevation thereof;

Fig. 3 is an assembly view of the lacking means; and

Fig. 4 is an enlarged detail view of parts of the locking mechanism.

The rack is secured to the structure of the airplane to extend below the lower surface thereof and, as shown in Fig. 1, it is disposed around the belly fuel tank 5. The side members 6 are fixed to any suitable part of the aircraft and each side member is extended downwardly to form a portion 7 of a bracket member which includes a portion 8 engaged with the cross brace 9.

At the lower end of each bracket there is pivotally mounted a lever 10 which has a hook 11 formed on its lower end, the bight face 12 of the hook being offset from pivot 26 toward the bomb and adapted to be engaged with the apertured ear 13 on a band 14 secured around the bomb 27. Trunnions 15 are fixed on the band 14 and are so positioned that they lie on a line through the center of gravity of the bomb. The trunnions 15 are to be engaged by the arms of bomb displacing gear, as shown in my said co-pending application, but it is to be understood that the bomb rack which forms the subject of the present application may be used apart from the said bomb displacing gear. The bomb will be steadied during flight by any suitable bracing means.

Pivotally connected to the levers 10 at the ends thereof, remote from the hooks 11, are the tubular members 16 and 17 which are in telescoping relation with each other, the length of the member 17 being such that the inner end thereof abuts the face 18 on the arm 19 of bell crank latch 20 when the hooks 11 are engaged with gears 13 to support the bomb. A spring 21 under tension is connected to an ear 22 on the member 16 and to the outer end

2

of arm 23 of latch 20 to hold the latch normally in locking position with the member 17, whereby the levers 10 are held against movement toward each other while the bomb is being carried. A reinforcing sleeve 24 is disposed around the member 16 to strengthen that member where the latch extends through the walls of 16.

When it is desired to release the bomb, pull is applied to the cable 25 which rocks the latch on its pivot against the pull of spring 21 and withdraws the latch from engagement with the end of member 17. Owing to the offset of the bight face 12 from pivot 26, the weight of the bomb exerts a component to swing the load into vertical alinement with pivot 26 which rotates the levers 10 on their pivots and so withdraws the hooks 11 from the ears 13, thereby releasing the bomb.

It is apparent that the bomb cannot be dropped until the latch 20 is rotated to permit telescoping of the members 16 and 17, and that the weight of the bomb will readily effect this telescoping action as soon as the outer ends of levers 10 are free to approach each other. The release mechanism is easily operated, owing to the fact that it is unnecessary to overcome a force of any great magnitude, since the distance between the point of support of the weight of the bomb and the fulcrum 26 of lever 10 is very short in comparison with the distance between that fulcrum and the point of connection of the members 16 and 17 thereto.

I claim:

1. A bomb rack, comprising a pair of spaced apart depending bracket members, a lever pivotally mounted at the lower end of each bracket and having a hook at one end, the pivot for each lever being adjacent the hook thereon and the said hooks being turned toward each other to engage a bomb, the bight face of each hook being offset from the pivot of the lever, a telescoping member comprising two elements extending transversely to the axis of a bomb carried by said rack, the said elements being each respectively pivoted to one of said levers at the end of the lever remote from the hook thereon, and a bell crank latch mounted on the outer one of said elements and having on one arm a hook extending through the said outer element to engage the inner of said elements to lock said elements in the extended position and retain said hooks in engagement with a bomb, whereby when said latch is moved to the unlocking position the weight of a bomb carried by the hooks on

said levers will rotate said levers on their pivots and release the bomb.

2. A bomb rack, comprising a pair of spaced apart depending bracket members, a lever pivotally mounted at the lower end of each bracket and having a hook at one end, the pivot for each lever being adjacent the hook thereon and the said hooks being turned toward each other to engage a bomb, the bight face of each hook being offset from the pivot of the lever, telescoping means extending transversely to the axis

of a bomb carried by said rack and connected to the ends of said levers remote from said hooks to hold said remote ends separated and retain the said hooks in engagement with a bomb, and releasable locking means for the aforesaid means to permit telescoping thereof, whereby when said locking means is released the weight of a bomb on said hooks will swing said levers on their pivots and drop the bomb.

JOHN G. LEE.