May 8, 1945. J. J. DI CARLO 2,375,351

BOMB EJECTOR

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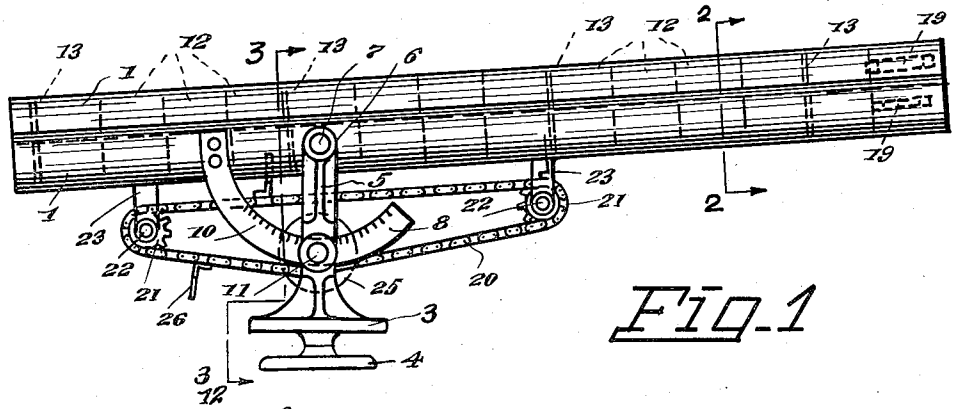


Fig. 1

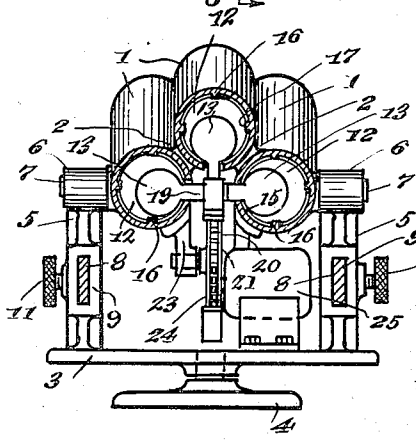


Fig. 3

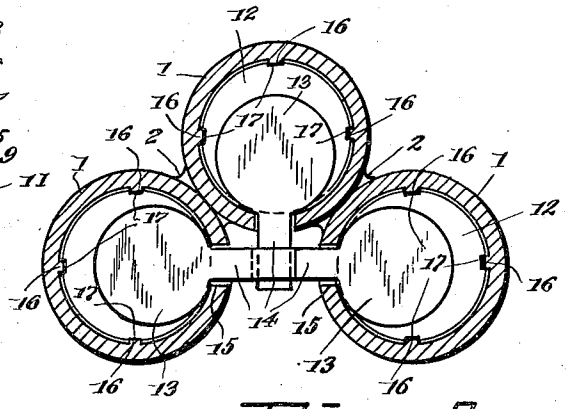


Fig. 2

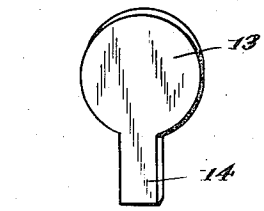


Fig. 4

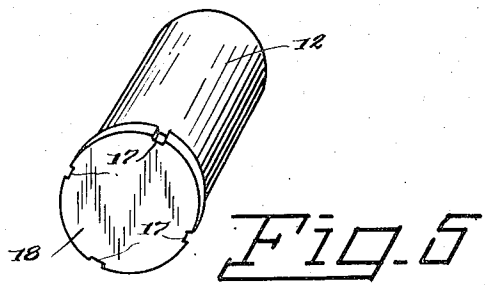


Fig. 5

Inventor

Joseph J. DiCarlo

By

Glenn & Fish

Attorney

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BOMB EJECTOR

Joseph J. Di Carlo, Spokane, Wash.

Application May 25, 1942, Serial No. 444,405

8 Claims. (Cl. 89—1.5)

This invention relates to a bomb ejector and it is one object of the invention to provide an ejector adapted for use upon air craft for bombing ground troops or other targets or upon boats for ejecting depth bombs when attacked by submarines.

Another object of the invention is to provide a device of this type having a number of barrels or tubes from which bombs may be simultaneously ejected by means of a single ejecting mechanism.

Another object of the invention is to provide a bombing gun wherein the ejecting mechanism consists of an endless chain driven by a motor and carrying members for shifting the bombs through the barrels toward the outlet ends thereof as the chain is moved longitudinally of the barrels.

Another object of the invention is to so mount the barrels that they may be tilted vertically to angularly adjusted positions and also allow the device to be swung about a vertical pivot to adjusted positions.

Another object of the invention is to guide movement of the bombs through the barrels and, in addition, prevent the bombs from prematurely sliding out of the barrels when the barrels are tilted to depress the muzzles.

In the accompanying drawing:

Fig. 1 is a side elevation of the improved bomb ejector.

Fig. 2 is a sectional view taken transversely through the barrels on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a spacer placed between bombs.

Fig. 5 is a perspective view of a bomb to be discharged from the gun.

This improved gun has a plurality of barrels 1 and, while three have been shown in the drawing, it is to be understood that any number desired may be employed. These barrels extend in side by side substantially parallel relation to each other and are held in place by welding, as shown at 2 in Figs. 2 and 3. The welds for holding the barrels to each other may extend the full length of the barrels or a number may be provided in spaced relation to each other. In the preferred arrangement, the barrels are disposed as shown in Figs. 2 and 3, with one barrel resting upon a pair of lower barrels and disposed over space between the lower barrels.

To support the barrels, there has been provided a carriage 3 swiveled to a base 4 so that the carriage may be swung above a vertical axis and the barrels pointed in the desired direction. Standards or brackets 5 extend upwardly from the carriage in such spaced relation to each other that the barrels may be disposed between the standards and, at their upper ends, the standards carry bearings 6 to receive stub shafts 7 projecting outwardly from the lower barrels. The barrels will thus be mounted for vertical tilting adjustment and may be disposed at a desired angle when discharging bombs. Arcuate arms 8 constituting quadrants are secured against outer sides of the lower barrels and extend downwardly and forwardly therefrom with their lower portions passing through openings 9 formed through the standards. These arms have scale markings 10 upon their outer side faces for observation by a crew member when tilting the barrels to adjusted angle, and set screws 11 are provided to engage the quadrants and secure the barrels in a set position.

The barrels are loaded with bombs 12 which are fed into rear ends of the barrels one after another to be shifted forwardly so that they are successively discharged from front ends of the barrels. Discs 13 are placed between certain of the bombs and are formed with arms or tongues 14 which project from the discs radially thereof and pass through slots 15 formed longitudinally of the barrels the full length thereof. While discs have been shown between certain of the and omitted between other bombs, it is to be understood that a disc may be placed against the rear end of each bomb as it is fed into a barrel. The slots 15 are so located in the barrels that the tongues projecting through the same may have their end portions overlapped, as shown in Fig. 2, and thus permit the tongues to brace each other and also permit the bombs in the three barrels to be simultaneously shifted longitudinally of the barrels toward front ends thereof. Ribs 16 extend longitudinally through the barrels to guide movement of the bombs and engage in notches 17 formed in heads 18 at rear ends of the bombs. It is necessary to prevent the bombs from accidentally or prematurely moving out of front ends of the barrels when the barrels are depressed and to do this, spring strips 19 are mounted in the barrels. These strips extend longitudinally of the forward end portions of the barrels and the bombs cannot move past said springs unless forced forwardly.

In order to shift the bombs forwardly through the barrels there has been provided discharge mechanism consisting of an endless mover 20 in the form of a sprocket chain extending longitudinally of the barrels under the same and trained

about sprocket wheels 21 which are rotatably mounted on shafts 22 supported in bearing brackets 23 depending from the lower barrels. The lower flight of the sprocket chain also engages a sprocket wheel 24 carried by the shaft of a motor 25 mounted on the carriage 3 and when the motor is running the sprocket chain will be moved in such a direction that its upper flight moves forwardly and arms 26 carried by and projecting upwardly from the upper flight of the chain will engage the arms or tongues 14 of the discs 13 and move the bombs forwardly through the barrels. The bombs will thus be successively ejected from the ends of the barrels and drop upon a target over which the air craft is flying or drop into the water over or close enough to an attacking submarine to sink the submarine when they explode.

Having thus described the invention, what is claimed is:

1. A bombing device comprising a base, standards rising from said base, a barrel mounted between said standards and being open at its front end and provided with a rear inlet and formed with a longitudinally extending slot, discs for fitting into said barrel between bombs, said discs having arms extending therefrom for passing outwardly through the slot, and bomb ejecting means including a member movable longitudinally of the barrel externally thereof and provided with abutments for engaging arms of the discs and shifting the discs and bombs in from of the discs through the barrel for exjection from the front end of the barrel.

2. A bombing device comprising a base, standards rising from said base, a barrel pivotally mounted between said standards for vertical tilting adjustment, means for releasably holding the barrel in adjusted position, the barrel being open at its front and having a rear inlet and being formed with a longitudinally extending slot, an endless carrier extending longitudinally of the barrel externally thereof in spaced parallel relation to the slot, and arms carried by said carrier and projecting therefrom for shifting bombs forwardly through the barrel when the carrier is in motion.

3. A bombing device comprising a base, standards rising from said base, barrels between said standards including lower barrels spaced transversely from each other and an upper barrel supported upon the lower barrels over space between same, said barrels being formed with longitudinally extending slots in portions confronting the space between the barrels, and means for ejecting bombs from the barrels including an endless carrier having a flight extending longitudinally of the barrels under said space, and arms carried by said carrier for moving forwardly through said space and shifting bombs forwardly through the barrels and out through the front ends of the barrels.

4. A bombing device comprising a base, standards rising from said base, barrels between said standards including lower barrels spaced transversely from each other and an upper barrel supported upon the lower barrels over space between same, said barrels being formed with longitudinally extending slots in portions confronting the space between the barrels, shafts extending outwardly from sides of the lower barrels and engaged in the standards to mount the barrels for vertical tilting adjustment, quadrants carried by the lower barrels and passing through said standards and provided with scale markings, set screws carried by the standards for engaging the quadrants and securing the barrels in adjustment, and ejecting means for bombs including members movable forwardly through space between the barrels for shifting bombs forwardly through the barrels and successively ejecting the bombs from front ends of the barrels.

5. A bombing device comprising a base, standards rising from said bars, barrels between said standards including lower barrels spaced transversely from each other and an upper barrel supported upon the lower barrels over space therebetween, said barrels being formed with longitudinally extending slots in portions confronting the space between the barrels, bearing brackets carried by the lower barrels and extending downwardly therefrom at opposite sides of the space between the barrels, front and rear sprocket wheels rotatably mounted between the bearing brackets, a sprocket chain trained about the sprocket wheels and extending longitudinally of the barrels under said space, arms projecting from the sprocket chain for moving forwardly through the space between the barrels for shifting bombs forwardly through the barrels when the chain is in motion, and means for driving the chain.

6. A bombing device comprising a base, standards rising from said base, barrels between said standards including lower barrels spaced transversely from each other and an upper barrel supported on the lower barrels over space between the same, said barrels being formed with longitudinally extending slots in portions confronting the space between the barrels, bearing brackets carried by the lower barrels and extending downwardly therefrom at opposite sides of the space between the barrels, front and rear sprocket wheels rotatably mounted between the bearing brackets, a sprocket chain trained about the sprocket wheels and extending longitudinally of the barrels under said space, arms projecting from the sprocket chain for moving forwardly through the space between the barrels for shifting bombs forwardly through the barrels when the chain is in motion, a motor mounted on said base, and a sprocket wheel carried by the shaft of said motor and engaging the lower flight of the sprocket chain for imparting motion to the sprocket chain.

7. A bombing device comprising a base, standards rising from said base, barrels between said standards including lower barrels spaced transversely from each other and an upper barrel supported upon the lower barrels over space therebetween, said barrels being formed with longitudinally extending slots in portions confronting the space between the barrels, bearing brackets carried by the lower barrels and extending downwardly therefrom at opposite sides of the space between the barrels, front and rear sprocket wheels rotatably mounted between the bearing brackets, a sprocket chain trained about the sprocket wheels and extending longitudinally of the barrels under said space, arms projecting from the sprocket chain for moving forwardly through the space between the barrels for shifting bombs forwardly through the barrels when the chain is in motion, means for imparting motion to said chain, and discs for fitting into the barrels against rear ends of bombs therein, said discs having tongues for projecting outwardly through the slots and into the space between the barrels in overlapping relation to each other in position for engagement by arms of the sprocket chain whereby bombs in the barrels may be

shifted forwardly through the barrels and out of front ends thereof during movement of the chain.

8. A bombing device comprising a base, standards rising from said base, barrels between said standards including lower barrels spaced transversely from each other and an upper barrel supported upon the lower barrels over space therebetween, said barrels being formed with longitudinally extending slots in portions confronting the space between the barrels, bearing brackets carried by the lower barrels and extending downwardly therefrom at opposite sides of the space between the barrels, front and rear sprocket wheels rotatably mounted between the bearing brackets, a sprocket chain trained about the sprocket wheels and extending longitudinally of the barrels under said space, arms projecting from the sprocket chain for moving forwardly through the space between the barrels for shifting bombs forwardly through the barrels when the chain is in motion, means for imparting motion to said chain, and discs for fitting into the barrels against rear ends of bombs therein, said discs having tongues for projecting outwardly through the slots and into the space between the barrels for engagement by arms of the chain to cause bombs in the barrels to be shifted forwardly through the barrels during movement of the chain.

JOSEPH J. DI CARLO.