E. M. DE SHERBININ.

HOLDER FOR ROCKET BOMBS.

APPLICATION FILED JULY 18, 1918.

**1,332,716.** Patented Mar. 2, 1920.

Fig. 1.

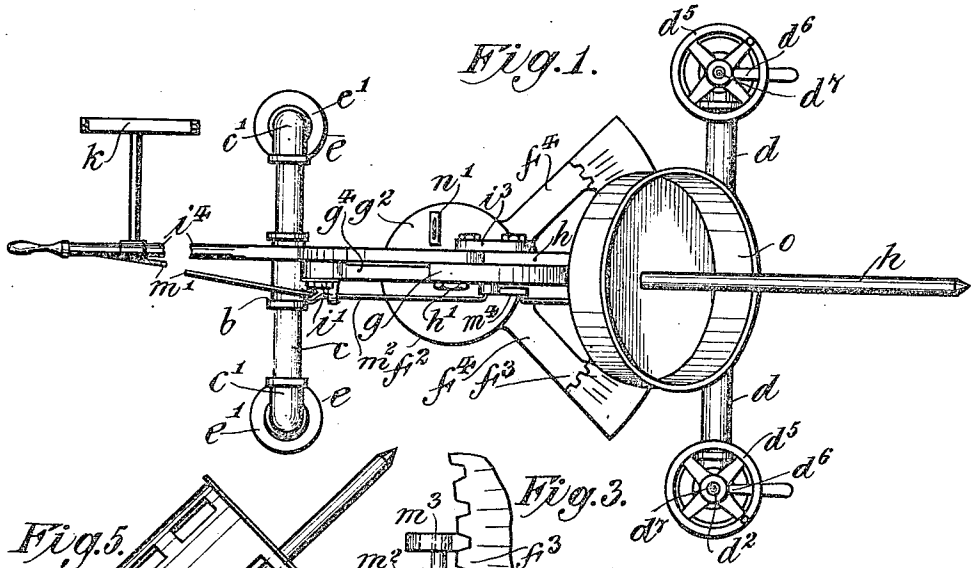


Fig. 3.



Fig. 5.

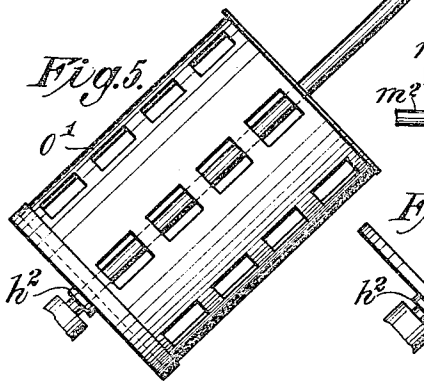


Fig. 6.

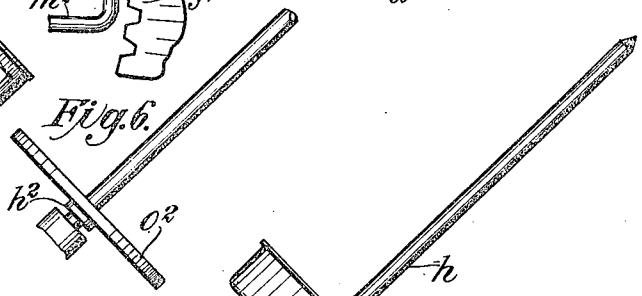


Fig. 2.

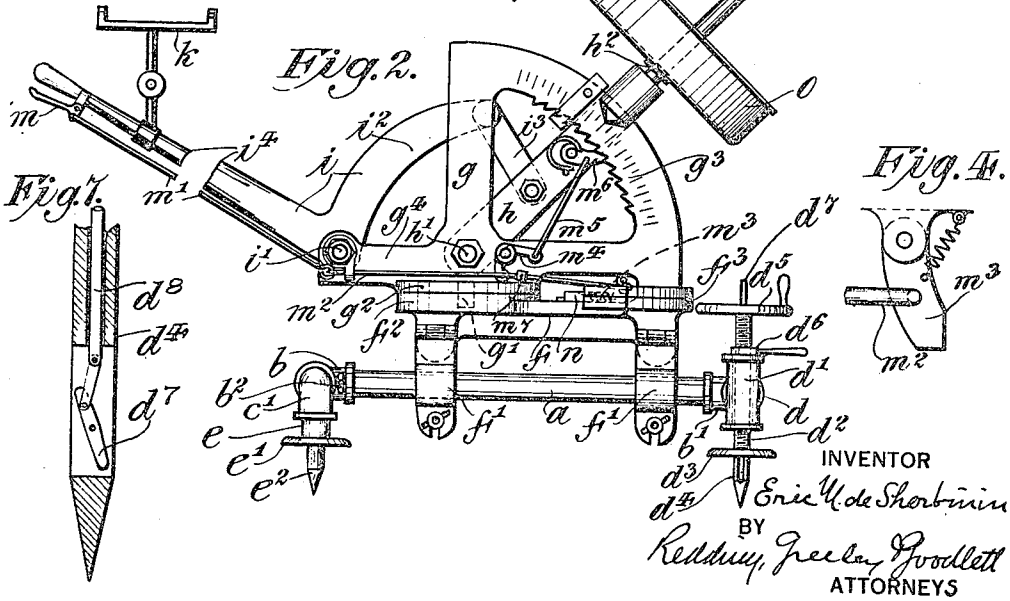


Fig. 7.



Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## HOLDER FOR ROCKET-BOMBS.

1,332,716. Specification of Letters Patent. Patented Mar. 2, 1920.

Application filed July 18, 1918. Serial No. 245,450.

*To all whom it may concern:*

Be it known that I, ERIC M. DE SHERBININ, a citizen of Russia, residing in the borough of Manhattan of the city of New York, in the State of New York, have invented certain new and useful Improvements in Holders for Rocket-Bombs, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

In an application of Peter E. Stogoff and Nicholas Timofeefe for Letters Patent of the United States Ser. No. 220,690, filed March 6, 1918, there are shown and described a rocket bomb and a holder from which the same is discharged by the reaction of its own propelling gases. The present invention relates to the holder and has for its object to improve the construction of the holder shown and described in such application for the purpose of enabling it to be set more readily in the desired position for directing the flight of the bomb and of permitting it to be manipulated more easily in placing it in a trench, loading it and aiming it. The invention will be more fully explained hereinafter with reference to the accompanying drawing in which it is illustrated, and in which—

Figure 1 is a top view of the improved holder, partly broken out to save space.

Fig. 2 is a view of the same in side elevation, also partly broken out.

Figs. 3 and 4 are detail views of parts to be referred to.

Figs. 5 and 6 are detail views showing modifications of the bomb support.

Fig. 7 is a detail view of the anchor foot shown in Fig. 2.

The base upon which the holder is mounted is so constructed as to constitute one part of the complete structure capable of being carried readily by one man, to have the holder readily mounted thereon and dismounted therefrom, and to be capable of accommodation to an uneven ground surface, as well as to form a suitable and secure support. As shown, it comprises a longitudinal member $a$, preferably tubular for the sake of lightness and stiffness, which has secured thereto at one end, as by a T-pipe coupling $b$, a rear cross arm $c$, and at its other end, as by a T-pipe coupling $b'$, a forward cross arm $d$, both cross arms preferably being formed of tubing of suitable size. The rear cross arm $c$ has at each end an elbow $c'$ which carries a foot piece $e$ provided with a flange $e'$ to give a broad footing on the surface of the ground, and a point $e^2$ to enter the ground to give a secure anchorage against lateral displacement. The T-coupling $b$ is swiveled upon the end of the longitudinal member $a$, as by a pin and slot connection, indicated at $b^2$, so that the rear cross arm $c$ is free to swivel to a limited extent for the purpose of accommodating the base to uneven ground surface. The cross arm $d$ has at each end a T-pipe coupling $d'$ which is threaded internally to receive a flanged stem $d^2$. The latter is provided with a broad flange $d^3$ to rest upon the surface and a point $d^4$ to enter the earth's surface, and is provided also with a suitable operating handle $d^5$ and with a handled lock nut $d^6$. This base affords a substantial footing for the holder and, by means of the screw $d^2$, is readily capable of adjustment to suit inequalities of surface and to give a substantially level support for the holder.

The bottom plate $f$ of the holder is provided with clamps $f'$ by which the holder can be readily attached to and detached from the base, while permitting easy adjustment about a substantially horizontal axis. It comprises a horizontal bearing plate $f^2$ and a horizontal toothed segment $f^3$ suitably graduated and carried by arms $f^4$. This member also is of such weight that it can be carried readily by one man.

On the horizontal bearing portion $f^2$ of the horizontal plate $f$ is pivotally mounted, as at $g'$, a vertical segment member $g$ which has a bearing foot $g^2$ to bear upon the plate $f^2$, the segment having a toothed and graduated portion $g^3$ and an extension arm $g^4$. This vertical segment arm is also capable of being carried easily.

Pivotally mounted on the segment member $g$, as at $h'$, is a spindle $h$ which is formed as at $h^2$ with a shoulder to support the rocket bomb (not shown) which is slipped upon the spindle and supported thereby in firing position. This spindle can be removed and replaced readily.

On the extension $g^4$ of the vertical segment member $g$, at $i'$, is pivotally mounted a bell crank operating lever $i$, the shorter arm $i^2$ of which is connected by a link $i^3$ with the spindle $h$, while the longer arm $i^4$ constitutes an operating handle. The arm $i^4$ has secured thereto a pivoted sighting device $k$. It has also secured thereto a latch lever

$m$ which is connected by suitable linkage $m'$, $m^2$, with a spring-pressed latch $m^3$ pivoted on the quadrant or segment $g$ and adapted to engage the toothed portion $f^3$ so as to retain the holder in position when it has been laid in proper direction. The link $m^2$ also engages a bell crank $m^4$ which is connected by a link $m^5$ with a spring-pressed detent $m^6$. The latter is pivoted on the spindle $h$ and is adapted to engage the toothed portion $g^3$ of the quadrant or segment $g$ for the purpose of retaining the spindle $h$ in position when it has been laid in elevation.

Spirit levels $n$ and $n'$ are affixed to the base plate $f$ and the flange $g^2$ of the segment or quadrant $g$ for the purpose of determining the truly horizontal position of the base of the holder.

As shown in Figs. 1 and 2 the spindle $h$ supports on the collar $h^2$ a cup-like receiver $o$ in which the end of the rocket bomb may rest. This cup-like receiver may be replaced by a deeper receiver $o'$, as shown in Fig. 5, or a flat plate $o^2$ as shown in Fig. 6. The selection of the bomb receiver will be determined by the requirements of use. It will be understood that the bomb used in this holder has an axial opening and is slipped upon the spindle $h$. It will further be understood that not only are the clamps $f'$ which secure the plate $f$ upon the longitudinal member $a$ of the base readily detachable and that the vertical segment or quadrant $g$ is pivoted loosely on the plate $f^2$, but that the bolts by which the spindle is pivoted upon the quadrant or segment $g$ and the lever $i$ upon the extension $g^4$ and by which the link $i^3$ is connected to the spindle $h$, are easily removable so that the complete holder can be taken apart readily, each part being of such size and weight that it can be handled easily by one man if the complete holder be of such size that it cannot be handled easily by one man. The rocket bombs to be used with the holder may be of great weight and provision is therefore made whereby not only may the spindle $h$ be lowered to horizontal position to receive the bomb but may be raised with the bomb to any desired angle of elevation, the operating handle $i^4$ giving it a long leverage, which is multiplied again by the connection of the link $i^3$ at the end of the arm $i^2$ and to a point of short radius on the spindle $h$. The teeth of the segment $g^3$ are perfectly shaped, as shown, so that they will permit the detent $m^6$ to slip over them in the upward movement, while the teeth of the segment $f^3$ are preferably shaped as shown in Fig. 3 so as to retain the vertical segment $g$ in proper directional position. A short movement of the latch lever $m$ suffices to disengage the detent $m^3$ so as to permit the desired change of direction to be effected, while the continued movement of the latch lever $m$, acting through a collar $m^7$ on the link $m^2$, disengages the detent $m^6$ so as to permit the elevation to be changed.

If desired, each stem $d^4$ or foot-piece may be provided with an anchoring device of any suitable form, such, for example, as that shown in detail in Fig. 7 in which the stem $d^4$ has swiveled in its lower portion an anchor piece $d^7$ which can be thrown out by a rod $d^8$ which passes through an axial base of the stem $d^4$.

I claim as my invention:

1. A holder for rocket bombs comprising a bomb receiving spindle pivoted upon a horizontal axis for movement in a vertical plane, a toothed quadrant to which the spindle is pivoted, a detent mounted on the spindle and engaging the toothed quadrant, an operating lever also pivoted on the quadrant, operating connections between the lever and the spindle, a latch lever mounted on the operating lever and operating connections between the latch lever and the detent.

2. A holder for rocket bombs comprising a horizontal quadrant, a vertical quadrant pivotally mounted on the horizontal quadrant to move in a horizontal plane, a bomb receiving spindle pivoted on the vertical quadrant to move in a vertical plane, an operating lever mounted on the vertical quadrant, and operating connections between the operating lever and the spindle.

3. A holder for rocket bombs comprising a horizontal, toothed quadrant, a vertical, toothed quadrant pivotally mounted on the horizontal quadrant, a bomb receiving spindle pivoted on the vertical quadrant, a detent mounted on the vertical quadrant to engage the toothed portion of the horizontal quadrant, a detent mounted on the spindle to engage the toothed portion of the vertical quadrant, an operating lever, and means to disengage said detent.

4. A holder for rocket bombs comprising a base, a horizontal quadrant detachably mounted on the base, a vertical quadrant detachably mounted on the horizontal quadrant, a bomb receiving spindle detachably mounted on the vertical quadrant, and an operating lever detachably mounted on the vertical quadrant and operatively connected with the spindle.

5. A holder for rocket bombs comprising a base having a longitudinal member, a cross arm swiveled on one end of the longitudinal member, a cross arm with adjustable feet fixed on the other end of the longitudinal member, a base plate detachably mounted on the base, a vertical quadrant pivotally mounted on the base plate and a bomb receiving spindle mounted on the vertical quadrant.

This specification signed this 12th day of July, A. D. 1918.

ERIC M. DE SHERBININ.