

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(19)



(54) GRENADE THROWER OR THE LIKE

(71) We, OY TAMPELLA AB, a Finnish Company of Tampere, Finland, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a grenade thrower or the like.

In the case of grenade-throwers and the like adjustment of the thrower usually takes place with the aid of a range table from which the various values for correct adjustment of the thrower can be read off. The range table may be separate from the thrower in which case it can be lost, or else a suitable place is sought for the range table to be attached to the weapon securely e.g. to the tube of the thrower. A range table attached to the tube of the thrower is subjected easily to damage by external agencies e.g. a blow if the thrower is being carried. As a result some values of the table can become illegible so that quick adjustment of the thrower in an emergency is made difficult.

The object of the invention is to arrange the range table intended for the thrower in such a way that on the one hand it is made sufficiently visible for operation of the thrower and on the other it is protected as far as possible to keep it safe from any damage, and in addition to make the range table unnecessary as a separate part.

According to the invention there is provided a grenade thrower of the like, comprising a tube, a support with which the lower end of the tube is articulated, a sleeve surrounding the tube, a bipod articulated to the sleeve and supporting the tube near its upper end, an aiming device pivotally mounted on the sleeve, and a rotary casing surrounding the tube, the casing having screw threads interengaging with screw threads on the sleeve, a control surface which on rotation of the casing relative to the sleeve alters the angular position of the aiming device relative to the sleeve and an outer peripheral surface bearing range table figures.

Such a design for the angular regulation of the aiming device makes it possible for the aiming device to be easily transferred in its entirety into the horizontal position. The casing rotatable around the tube of the thrower offers the possibility of carrying out the adjustment of the angular setting in a very sensitive manner and with a very fine setting.

The control surface may be an end surface of the rotary casing and be in contact with a bracket arm pivotally mounted with the aiming device on the sleeve. Preferably, the bracket arm is urged by a spring against the control surface. By this means it is possible to have available a very long adjustment path for regulating the angular setting of the aiming device, namely the periphery of the rotary casing up to almost 360°, with the casing being of large diameter since it surrounds the tube of the throwers that there is high sensitivity of adjustment.

The sleeve may be extended over the casing and have a window-like aperture through which the range table figures can be viewed. In this connection the position of the window-like aperture or the arrangement of the values of the range table can be set to the angular setting to be regulated by the rotary casing or the aiming device so that depending on the actual elevation of the tube those values of the range table appear in the window which correspond to the tube elevation regulated by the bipod.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:—

Fig. 1 shows a grenade thrower in the firing position in a side view and schematically illustrated;

Fig. 2 shows the mid-piece of the tube of the thrower with the aiming device to a larger scale, in partial elevation and in partial section;

Fig. 3 shows a side view on to the tube of the thrower with the aiming device of Fig. 2

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partially in longitudinal section through the tube and the regulating device; and

Fig. 4 shows a section along the line IV—IV of Fig. 2.

5 The grenade-thrower shown in Fig. 1 has a tube 2 which is rotatably mounted with its lower, spherically-shaped end 3 in a base plate 4 which has a spherical pan 5 corresponding to the spherical part 3. The tube 2 of the thrower is supported by a bipod 6. The bipod 6, of which only one leg is shown in Fig. 1 engages through a clip 7 with a clamp 8 which embraces the tube 2, this clip 7 of the bipod being connected by means of a joint 10 bolt 9 with lugs 8a of the clamp 8. The aiming attachment identified in its entirety with the reference number 10.

On the clamp 8 which is in the form of a closed sleeve is provided, towards the lower end of the tube, an extension 11 in the form of a bush which is firmly connected to the clamp sleeve 8 e.g. by being screwed on to it in appropriate manner with prevention of rotation being effected by means of screws 12. The bush 11 has on its inner periphery a fine thread 13. With the thread 13 engages a thread 14 of a casing 15 which is rotatably mounted around the tube 2. The casing 15 projects beyond the bush 11 below with the projecting casing part 15a acting as a grip. In this connection the outer peripheral surface of the casing part 15a can be roughened e.g. by milling. The bush 11 is provided with a window-like cutout section 16 so that through the window 16 the outer peripheral surface of the casing 15 becomes visible. This outer peripheral surface of the casing 15 is provided with appropriate divisions and other characterising values of a range table 17. Through window 16 a section of the range table 17 is made visible which can extend practically over the whole periphery of the casing 15.

The casing 15 is provided at the top end with a screwed-on ring 18 whose top surface 19 rises slightly like a cam. The firm securing of the ring 18 on the casing 15 can be effected by a pinned fitting 20. The aiming attachment 10 is supported by a shaft 21 acting as a holder which is mounted in a casing 22 which is secured by means of a flange 23 to the bush 11. At the end of the shaft 21 is located a rectangular support 21a which has a bracket arm 24 which rests at its front end, under the effect of a spring 25, on the curved surface 19 of ring 18. The bent-back end of the spring 25 engages in a bore 26 of the arm 24. The curved surface 19 of ring 18 is provided with a limiting projection 27. The clamp sleeve 8

on which the bipod articulates is under axial pressure from a spring 28 whereby to locate the clamp sleeve 8 in the required position relative to the tube.

By operating the casing 15 by means of the grip part 15a in one or the other direction of rotation it is possible, by means of the curved section 19 and the arm 24 of the mounting shaft 21 for the aiming attachment resting thereon, to bring the attachment into a horizontal position with the transfer members being set in relation to one another in such a way that the elevation angle, adjusted by means of the bipod, of the tube appears in the window 16 of the bush 11. From the part of the range table on the periphery of the casing 15 made visible through the window it is then possible to read off easily the other values required information. The lettering on casing 15 can be read at a distance of two to three metres.

WHAT WE CLAIM IS:—

1. A grenade-thrower or the like, comprising a tube, a support with which the lower end of the tube is articulated, a sleeve surrounding the tube, a bipod articulated to the sleeve and supporting the tube near its upper end, an aiming device pivotally mounted on the sleeve, and a rotary casing surrounding the tube, the casing having screw threads interengaging with screw threads on the sleeve, a control surface which on rotation of the casing relative to the sleeve alters the angular position of the aiming device relative to the sleeve and an outer peripheral surface bearing range table figures.

2. A grenade-thrower or the like according to claims 1, wherein the control surface is an end surface of the rotary casing and is in contact with a bracket arm pivotally mounted with the aiming device on the sleeve.

3. A grenade-thrower or the like according to claim 2 wherein the bracket arm is urged by a spring against the control surface of the rotary casing.

4. A grenade-thrower or the like according to claim 1, 2 or 3 wherein the control surface has a limiting projection.

5. A grenade-thrower or the like according to any preceding claim, wherein the sleeve is extended over the casing and has a window-like aperture through which the range table figures are visible.

6. A grenade-thrower or the like substantially as hereinbefore described with reference to the accompanying drawings.

partially in longitudinal section through the tube and the regulating device; and

Fig. 4 shows a section along the line IV—IV of Fig. 2.

5 The grenade-thrower shown in Fig. 1 has a tube 2 which is rotatably mounted with its lower spherically-shaped end 3 in a base plate 4 which has a spherical pan 5 corresponding to the spherical part 3. The tube 2 of the thrower is supported by a bipod 6. The bipod 6, of which only one leg is shown in Fig. 1 engages through a clip 7 with a clamp 8 which embraces the tube 2, this clip 7 of the bipod being connected by means of a joint bolt 9 with lugs 8a of the clamp 8. The aiming attachment identified in its entirety with the reference number 10.

On the clamp 8 which is in the form of a closed sleeve is provided, towards the lower end of the tube, an extension 11 in the form of a bush which is firmly connected to the clamp sleeve 8 e.g. by being screwed on to it in appropriate manner with prevention of rotation being effected by means of screws 12. The bush 11 has on its inner periphery a fine thread 13. With the thread 13 engages a thread 14 of a casing 15 which is rotatably mounted around the tube 2. The casing 15 projects beyond the bush 11 below with the projecting casing part 15a acting as a grip. In this connection the outer peripheral surface of the casing part 15a can be roughened e.g. by milling. The bush 11 is provided with a window-like cutout section 16 so that through the window 16 the outer peripheral surface of the casing 15 becomes visible. This outer peripheral surface of the casing 15 is provided with appropriate divisions and other characterising values of a range table 17. Through window 16 a section of the range table 17 is made visible which can extend practically over the whole periphery of the casing 15.

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2. A grenade-thrower or the like according to claims 1, wherein the control surface is an end surface of the rotary casing and is in contact with a bracket arm pivotally mounted with the aiming device on the sleeve.

3. A grenade-thrower or the like according to claim 2 wherein the bracket arm is urged by a spring against the control surface of the rotary casing.

4. A grenade-thrower or the like according to claim 1, 2 or 3 wherein the control surface has a limiting projection.

5. A grenade-thrower or the like according to any preceding claim, wherein the sleeve is extended over the casing and has a window-like aperture through which the range table figures are visible.

6. A grenade-thrower or the like substantially as hereinbefore described with reference to the accompanying drawings.



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