PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) A BARREL FOR A LAUNCHER FOR FIN-STABILISED PROJECTILES

(71) We, ETABLISSEMENT SALGAD, a Body Corporate organised and existing under the laws of Liechtenstein, of Vaduz, Liechtenstein, 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 barrel for a launcher for fin-stabilised projectiles, for example mortars.

Mortars can usually be dismantled for carrying, as they consist of a barrel, a base-plate and a biped stand as separate parts. The lower end of the barrel has a base-piece which engages with the base-plate. As the barrel must be of a certain length in order to provide corresponding guidance for the projectile, the barrel is the longest part of the mortar, considerably exceeding the dimensions of the biped stand or the base-plate. This makes the barrel clumsy to transport. In the case, particularly of the transport of mortar parts by paratroopers, the barrel exceeds the dimensions permitted for direct carrying by the paratroopers. The result of this has been that when troops are carried by plane, the mortar could not be carried by the soldier, even when broken down into its component parts. These parts were separately conveyed in the plane, and thrown out separately by the team jumping from the plane. This was made necessary at least by the barrel of the mortar, and was a complicated procedure leading to a not inconsiderable loss of time. The same applied when the mortar parts are carried by infantry. The barrel is heavy to carry and hinders the carrier, particularly in overgrown terrain.

The object of the invention is to make it possible to keep all parts of the mortar below a pre-determined length, in order to make these parts suitable for carrying by the paratrooper himself. The invention provides a barrel for a launcher for fin-stabilised projectiles, the barrel comprising a muzzle portion and a base portion having mutually engageable threaded surfaces and mutually engageable guiding surfaces adjacent to the threaded surfaces, grooving being provided to interrupt the continuity of mutual engagement between the said threaded surfaces and between the said guiding surfaces without permitting the said threaded surfaces and the said guiding surfaces to be brought into and out of mutual engagement other than wholly by respective screwing and unscrewing movement of one barrel portion relative to the other.

This design makes it possible for the paratrooper to carry the dismantled mortar in a normal weapons container. The barrel parts are easy to handle, and present no hindrance to the regulation parachute jump. At the same time the connection between the barrel parts is so designed that the parts can easily be separated and put together again. Futhermore, any dirt on the guiding surfaces and the threading will be conveyed into the grooving during assembly of the barrel and out of harm's way.

The invention is described hereinafter by way of example with reference to the accompanying drawing in which:—

Fig. 1 shows a longitudinal section of an example of a barrel according to the invention;

Fig. 2 shows a side view of a barrel as in Fig. 1;

Fig. 3 shows a cross-section along line III—III of Fig. 1.

A barrel 1 of a mortar consists of two barrel portions 2 and 3 of approximately the same length. The portion 2 is the upper, muzzle portion, whereas the base portion 3 is adapted to be fixed at the bottom to a base-plate (not shown). In order to join the parts 2 and 3, the muzzle portion 2 is provided with a sleeve 4, which has threading 5 on its inner surface between its ends. The base portion 3 is correspondingly provided with threading 6. Cylindrical guiding surfaces *7a*, *7b* and *8a*, *8b* are provided above and below the threaded sections 5 and 6. These guiding surfaces are preferably

lapped surfaces. This applies in the same way to the base portion 3 with an annular surface 9*a* coming into contact, as a seal, with an annular surface 9*b* of the muzzle portion 2.

Several longitudinal grooves 10 are distributed over the circumference of the base portion 3, these grooves extending over the entire length of the connection, i.e. the guide-surface 7*b*, threading 6 and guide-surface 8*b*. Thus the base portion 3 can be screwed into the sleeve 4 of the muzzle portion 2 in such a way that the guide-surface 8*b* is not completely covered by the sleeve 4, so that the grooves 10 open outwards at openings 11. When the barrel portions are screwed together, any dirt located on the connection-surfaces is pushed into grooves 10, whence it can be blown away. At 10*a*, each of the end walls of the grooves 10 is formed as a slight incline. The longitudinal grooves 10 serve to catch any dirt present on the threading of the fitting-surfaces when screwing the parts 2 and 3 together. The grooves are also provided in case leading surfaces 9*a* and 9*b* are not screwed firmly against one another. In this case, without the grooves 10, the issuing explosive gases would lead to melting on the guide-surfaces or on the threading. The longitudinal grooves have the object of freely leading off any such issuing gases.

Blind holes 14 and 15 are provided in a re-inforced annular part 13 of the base portion 3 and in the sleeve 4 respectively; these holes serve for the insertion of hook-shaped keys, so that with the aid of these tools barrel portions 2 and 3 can easily be screwed together and taken apart again. The holes 14 and 15 are so provided that the barrel wall is not weakened at the connection-point.

WHAT WE CLAIM IS:—

1. A barrel for a launcher for fin-stabilised projectiles, the barrel comprising a muzzle portion and a base portion having mutually engageable threaded surfaces and mutually engageable guiding surfaces adjacent to the threaded surfaces, grooving being provided to interrupt the continuity of mutual engagement between the said threaded surfaces and between the said guiding surfaces without permitting the said threaded surfaces and the said guiding surfaces to be brought into and out of mutual engagement other than wholly by respective screwing and unscrewing movement of one barrel portion relative to the other.

2. A barrel according to claim 1, wherein the mutually engageable guiding surfaces are provided on both sides of the mutually engageable threaded surfaces.

3. A barrel according to claim 1 or 2, wherein the grooving is longitudinal of the barrel and provided on the threaded and guiding surfaces of one of the barrel portions.

4. A barrel according to claim 3, wherein the said one barrel portion is the base portion.

5. A barrel according to any preceding claim, wherein the grooving opens endwise at the circumference of the barrel when the barrel portions are interconnected.

6. A barrel according to claim 5, wherein the grooving is inclined outwardly where it opens.

7. A barrel for a launcher for fin-stabilised projectiles, substantially as hereinbefore described with reference to the accompanying drawing.

FITZPATRICKS,
Chartered Patent Agents,
14/18 Cadogan Street,
Glasgow, C.2,
and
27 Chancery Lane,
London, W.C.2.

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