

PATENT SPECIFICATION

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(54) IMPROVED SELF-PROPELLED LINE-CARRYING EQUIPMENT

(71) We, SCHERMULY LIMITED, a British Company of Spru Works, Newdigate, Dorking, Surrey, England, 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:—

This invention relates to an improved self-propelled line-carrying equipment.

Known line-carrying rockets have a line attachment means carried to the rear of the choke end of the rocket, a common form of such line attachment means being a substantially U-shaped or substantially V-shaped stirrup pivoted at the free ends of its two limbs to the rear ends of a pair of rods disposed substantially parallel to the axis of the rocket casing and secured at their forward ends to the rocket casing. Such rockets are used mainly for projecting lines from ships in distress close to the shore with the object of establishing a line connection between the ship and land. On rare occasions, however, it is necessary to project a line into water, either from a ship or from land, for example when it is desired to project a line to a person in distress in water. In such cases it is necessary for the rocket to be buoyant so that it does not sink when it strikes the water. A special rocket provided with a buoyant head has to be used for such line-carrying operations.

It is sometimes necessary for a line-carrying rocket to project an anchoring member, for example a grapnel, for example to assist in cliff-scaling operations. Here again, it is necessary to employ a special rocket having the anchoring member secured to the head of the rocket.

In order to meet all eventualities a ship or a land-based rescue unit must be equipped with both known line-carrying rockets and special line-carrying rockets some provided with buoyant heads and others provided with anchoring members. These special line-carrying rockets are very seldom used and it is found in practice that usually they are

thrown away under time expiry regulations before they are used.

The present invention aims to provide a self-propelled line-carrying equipment which in addition to being used for known ship-to-shore operations can also be used for other line-carrying operations such as those described above.

According to the present invention, a self-propelled line-carrying equipment comprises the combination of a line-carrying rocket with a member detachably mountable on the forward end of the rocket by means of a bayonet joint, the cooperating parts of which are provided on said member and the forward end of the rocket, respectively.

The member mountable on the forward end of the rocket may be, for example, a buoyancy member, an anchoring member, for example a grapnel, or some form of signalling member, for example a device for emitting light, smoke or a radio signal.

One embodiment of a line-carrying equipment in accordance with the invention will now be described, by way of example, with reference to the drawing accompanying the provisional specification, in which:—

Figure 1 is a partly-sectioned elevation of the equipment, and

Figure 2 is a side view of part of the equipment shown in Figure 1.

Referring to the drawing, the line-carrying equipment shown includes a line-carrying rocket comprising a known metal cylindrical casing, containing propellant, and a substantially U-shaped support, generally designated by the reference numeral 3, which is secured to the forward end of the casing 1 by means of screws 4. The support 3 has two parallel limbs 5, 6 joined by an interconnecting limb 7. The screws 4 pass through the limb 7 for the purpose of securing the support 3 to the casing 1.

The limbs 5, 6 are disposed substantially parallel to the axis of the casing 1 and the rear ends 8 of these limbs are disposed to the rear of the choke end 9 of the casing 1. A

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substantially V-shaped stirrup 10 has the free ends of its limbs 11 pivotally connected to the ends 8 of the support 3. A line 12 (only a small part of which is shown) is secured to the stirrup 10.

The limb 7 of the support 3 has such a length that the limbs 5, 6 are spaced a short distance from the external surface of the casing 1 as can be seen clearly from Figure 1. This limb 7 serves as one part of a bayonet joint by which a buoyancy member, generally designated by the reference numeral 13, is detachably mounted on the forward end 2 of the casing 1. The buoyancy member 13 comprises a substantially right-circular cylindrical block 14 of balsa wood having an ogival head 15 at its forward end. At its rear end the buoyancy member is provided with the complementary member of the aforesaid bayonet joint in the form of a short tube 16 provided with bayonet joint slots 17. A plunger 18 is slidably mounted in the rear end of the buoyancy member 13 and projects into the tube 16. A spring 19 urges the free end of the plunger 18 towards the forward end 2 of the casing 1 when the buoyancy member is mounted on the rocket. This spring-loaded plunger 18 serves to maintain the two parts of the bayonet joint in engagement with one another. Instead of this spring-loaded plunger, a pad of resilient synthetic plastics material, for example foamed synthetic plastics material, can be secured to the rear end of the buoyancy member 13.

When the above described equipment is to be used for a ship-to-shore line-carrying operation, it is employed without the buoyancy member 13 secured to the rocket.

If, however, it is desired to project the line 12 into water, the buoyancy member 13 is secured to the forward end 2 of the rocket before the rocket is launched.

In other embodiments of the equipment in accordance with the invention the detachably mounted member may be some form of anchoring device, for example a grapnel, or some form of signalling device.

WHAT WE CLAIM IS:—

1. A self-propelled line-carrying equipment comprising a line-carrying rocket in combination with a member detachably mountable on the forward end of the rocket by means of a bayonet joint, the cooperating parts of which are provided on said member and the forward end of the rocket, respectively. 50
2. A line-carrying equipment as claimed in claim 1, in which said member is a buoyancy member, an anchoring member, or a signalling member. 60
3. A line-carrying equipment as claimed in claim 1 or 2, in which the cooperating parts of the bayonet joint are held together resiliently. 65
4. A self-propelled line-carrying equipment constructed and arranged substantially as herein described with reference to, and as illustrated in, the drawing accompanying the Provisional specification. 70

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substantially V-shaped stirrup 10 has the free ends of its limbs 11 pivotally connected to the ends 8 of the support 3. A line 12 (only a small part of which is shown) is secured to the stirrup 10.

5 The limb 7 of the support 3 has such a length that the limbs 5, 6 are spaced a short distance from the external surface of the casing 1 as can be seen clearly from Figure 1. This limb 7 serves as one part of a bayonet joint by which a buoyancy member, generally designated by the reference numeral 13, is detachably mounted on the forward end 2 of the casing 1. The buoyancy member 13 comprises a substantially right-circular cylindrical block 14 of balsa wood having an ogival head 15 at its forward end. At its rear end the buoyancy member is provided with the complementary member of the aforesaid bayonet joint in the form of a short tube 16 provided with bayonet joint slots 17. A plunger 18 is slidably mounted in the rear end of the buoyancy member 13 and projects into the tube 16. A spring 19 urges the free end of the plunger 18 towards the forward end 2 of the casing 1 when the buoyancy member is mounted on the rocket. This spring-loaded plunger 18 serves to maintain the two parts of the bayonet joint in engagement with one another. Instead of this spring-loaded plunger, a pad of resilient synthetic plastics material, for example foamed synthetic plastics material, can be secured to the rear end of the buoyancy member 13.

When the above described equipment is to be used for a ship-to-shore line-carrying operation, it is employed without the buoyancy member 13 secured to the rocket.

If, however, it is desired to project the line 12 into water, the buoyancy member 13 is secured to the forward end 2 of the rocket before the rocket is launched.

In other embodiments of the equipment in accordance with the invention the detachably mounted member may be some form of anchoring device, for example a grapnel, or some form of signalling device.

WHAT WE CLAIM IS:—

1. A self-propelled line-carrying equipment comprising a line-carrying rocket in combination with a member detachably mountable on the forward end of the rocket by means of a bayonet joint, the cooperating parts of which are provided on said member and the forward end of the rocket, respectively.

2. A line-carrying equipment as claimed in claim 1, in which said member is a buoyancy member, an anchoring member, or a signalling member.

3. A line-carrying equipment as claimed in claim 1 or 2, in which the cooperating parts of the bayonet joint are held together resiliently.

4. A self-propelled line-carrying equipment constructed and arranged substantially as herein described with reference to, and as illustrated in, the drawing accompanying the Provisional specification.

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