

Description

The present invention concerns a signal flare cartridge.

Signal flares are required by combatants for various purposes which may be defined generally as identification and transmission of information. For example, a pilot who has to bail out of his plane and to land behind enemy lines may need a flare signal to identify himself to a search party; or various infantry units deployed at different spots of a terrain may use flare signals, possibly in various colours, for communication; etc.

Conventionally flare signals are produced with the aid of special firearms, e.g. a flare pistol using a special signal flare cartridge. The need for a special firearm for the production of a flare signal is an obvious disadvantage since it requires that the combatant should carry with him in addition to his assault or defence weapons, also a flare pistol.

There are also known manual flare signal launchers which are fired by striking the launcher base against a solid object such as a rock. Such launchers are however both unsafe and unreliable: unsafe because the operator may be hit by the launched, signal producing flare body, and unreliable because the necessary solid object on which the launcher has to be struck may not be available, e.g. where the operator is positioned in water or on a sand dune.

FR-A-831,254 and NL-A-288,972 each describe a flare cartridge for producing a flare signal, the cartridge comprising a tubular flare body and being adapted for mounting on a conventional firearm and for launching by means of live ammunition. They are of a kind in which the entire cartridge is launched by the action of a bullet fired from the firearm on which the cartridge is mounted. Thus, in accordance with FR-A-831,254 the flare cartridge comprises a tapering axial bore (3) holding a capsule (6). Upon firing of a round of ammunition from the firearm the fired bullet hits the cartridge when passing the tapering bore (3), imparting some of its kinetic energy to the flare cartridge whereby the latter is launched. Before launching, the flare cartridge is situated only partially within a cup-shaped holder, which affords little guidance of the flare cartridge. Consequently, the trajectory of the launched flare cartridge is uncontrollable. Furthermore, the flare cartridge is detached from the holder immediately it is struck by a round of ammunition or acted upon by the combustion gas. Thus there is little pressure build-up behind the flare cartridge, and so it is discharged with little force.

In the arrangement according to NL-A-288,972 there are provided flaps (10) which are hit by a passing bullet fired from the firearm whereby the flare cartridge is launched.

Launching of a flare signal cartridge by the action of a passing bullet is not quite satisfactory, for the reason, among others, that by the very interaction between a fired bullet and the cartridge, the latter may be damaged or even totally destroyed which leads to malfunctioning.

In accordance with the present invention a pressure chamber is provided near the rear end of the flare body, the flare body being disposed between the two ends of the launcher tube, and the front end of the flare body bearing on a bushing adapted to resist the axial dislocation of the flare body in the direction of the front end of the launcher tube until sufficient pressure builds up in the pressure chamber for the ejection of the flare body from the launcher tube.

The present invention is thus based on a new concept by which the flare cartridge is in form of an assembly comprising a launcher tube that itself is not launched and a launchable flare body so designed that it is untouched by a passing bullet and is launched exclusively by the action of the propellant gases of a round of ammunition fired from the firearm on which the cartridge is mounted.

By using a cartridge in accordance with the present invention, it is possible to use any conventional firearm such as an assault rifle, a pistol, a submachine gun etc. for producing a flare signal.

The invention is illustrated, by way of example only in the accompanying drawing which is a cut-away view of a signal flare cartridge according to the invention.

The cartridge 1 according to the invention here illustrated is adapted for use with an assault rifle which is, as a rule, fitted with a flash suppressor. The cartridge comprises a body 2 having a rear portion 3 designed as an adaptor for mounting on a flash suppressor of an assault rifle. Inside body 2 there is further provided a neck portion 4 of reduced diameter serving as stop for the front end of the flash suppressor mounted on the rifle barrel. Adaptor portion 3 is fitted with a resilient member 5 which serves as grip and, in the mounted position, bears springly on the flash suppressor to ensure that the cartridge is mounted on the rifle with a tight grip.

The functional part of the cartridge which is located in the front section 6 of body 2, is sealed off from the rear, adaptor section 3, 4 by a partition 7 which is so designed as to be readily penetrable by a bullet practically without any resistance and which serves to protect flare body 8 located inside front section 6 (see below).

Inside front section 6 within a circumferential recess thereof there is mounted a flare body 8 having an axial bore 9 designed for the unobstructed passage of a bullet therethrough. The front part of section 6 comprises a bushing 10 sealed off by a cup-shaped sealing member 11 having on its outside a bulging portion serving for nighttime identification. Between the rear end of flare body 8 and the partition 7 there is formed a chamber 12 which in operation serves as pressure chamber.

For operation the cartridge 1 shown in Fig. 1 is mounted on an assault rifle in such a way that the adaptor portion 3 grips the flash suppressor of the rifle. When a live ammunition round is fired from the assault rifle with the cartridge 1 mounted on it, the fired bullet penetrates partition 7, passes

through the axial bore 9 of the flare body and penetrates the cup-shaped sealing member 11, any resistance offered by partition 7 and sealing member 11 being minimal. The expansion of the propellant gases developed during the firing of the live ammunition is obstructed by the flare body whereupon pressure builds up in pressure chamber 12 whereby the flare body 8 is ignited and ejected from casing 2 together with bushing 10 and a desired flare signal is produced.

Claims

1. A cartridge (1) for producing a flare signal, the cartridge comprising a tubular flare body (8) and being adapted for mounting on a conventional firearm and for launching by means of live ammunition, the flare body (8) being located within a launcher tube (2) which is adapted for tight mounting over the muzzle of a conventional firearm, the flare body (8) being adapted to be launched from the launcher tube (2) in detachment thereof by the propelling action of said ammunition, the flare body (8) being ignitable by the combustion gas of said ammunition and having an axial bore (9) adapted for the unobstructed passage of the bullet from said ammunition, a pressure chamber (12) being provided near the rear end of the flare body (8), characterized in that the flare body (8) is disposed between the two ends of the launcher tube (2) and the front end of the flare body (8) bears on a bushing (10) adapted to resist the axial dislocation of the flare body (8) in the direction of the front end of the launcher tube (2) until sufficient pressure builds up in the pressure chamber (12) for the ejection of the flare body (8) from the launcher tube (2).

2. A cartridge according to claim 1 characterized in that an adaptor (3) is provided for mounting on a flash suppressor of a conventional firearm.

Patentansprüche

1. Patrone (1) zum Erzeugen eines Leuchtsignals, die einen röhrenförmigen Leuchtkörper (8) umfaßt und an einer normalen Feuerwaffe montierbar sowie mittels Überlebensmunition abschießbar ist, wobei der Leuchtkörper (8) sich in einem Abschußrohr (2) befindet, welches über der Mündung einer konventionellen Feuerwaffe fest montierbar ist, wobei der Leuchtkörper (8) ferner durch die Antriebswirkung besagter Munition vom Abschußrohr (2) unter Ablösung hiervon abschießbar ist, wobei der Leuchtkörper (8)

ferner durch das Verbrennungsgas besagter Munition entzündbar ist und ein axiales Bohrloch (9) aufweist, das vom Geschoß besagter Munition ungehindert passierbar ist und wobei in der Nähe des hinteren Endes des Leuchtkörpers (8) eine Druckkammer (12) vorgesehen ist, dadurch gekennzeichnet, daß der Leuchtkörper (8) zwischen den beiden Enden des Abschußrohrs (2) angebracht ist und das vordere Ende des Leuchtkörpers (8) auf eine Buchse (10) wirkt mittels der einer axialen Positionsveränderung des Leuchtkörpers (8) in Richtung auf das Vorderende des Abschußrohrs (2) entgegenwirkbar ist, bis sich in der Druckkammer (12) ein ausreichender Druck zum Ausstoß des Leuchtkörpers (8) aus dem Abschußrohr (2) aufgebaut hat.

2. Patrone nach Anspruch 1, dadurch gekennzeichnet, daß ein Adapter (3) vorgesehen ist, der an einer Überschlaglöschrichtung einer konventionellen Feuerwaffe aufnehmbar ist.

Revendications

1. Cartouche (1) pour produire un signal éclairant, la cartouche comprenant un corps éclairant tubulaire (8) et étant adaptée pour être montée sur une arme à feu classique et pour être lancée au moyen de munitions de guerre, le corps éclairant (8) étant situé dans un tube de lancement (2) qui est adapté pour un montage serré à la bouche du canon d'une arme à feu classique, le corps éclairant (8) étant adapté pour être lancé du tube de lancement (2) duquel il se sépare sous l'action propulsive de ladite munition, le corps éclairant étant allumable par les gaz de combustion de ladite munition et ayant un alésage axial (9) adapté pour offrir un passage libre à la balle de ladite munition, une chambre de pression (12) étant formée près de l'extrémité arrière du corps éclairant (8), caractérisée par le fait que le corps éclairant (8) est disposé entre les deux extrémités du tube de lancement (2) et que l'extrémité avant du corps éclairant (8) s'appuie sur une douille (10) adaptée pour s'opposer à la dislocation axial du corps éclairant (8) dans la direction de l'extrémité avant du tube de lancement (2) jusqu'à ce qu'une pression suffisante se soit créée dans la chambre de pression (12) en vue de l'éjection du corps éclairant (8) du tube de lancement (2).

2. Cartouche selon la revendication 1 caractérisée par le fait que la cartouche est dotée d'un adaptateur (3) pour un montage sur le cache-flamme d'une arme à feu classique.

through the axial bore 9 of the flare body and penetrates the cup-shaped sealing member 11, any resistance offered by partition 7 and sealing member 11 being minimal. The expansion of the propellant gases developed during the firing of the live ammunition is obstructed by the flare body whereupon pressure builds up in pressure chamber 12 whereby the flare body 8 is ignited and ejected from casing 2 together with bushing 10 and a desired flare signal is produced.

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