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H. ABRAMSON

SHAFT PROJECTILE

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2,671,401

FIG.1

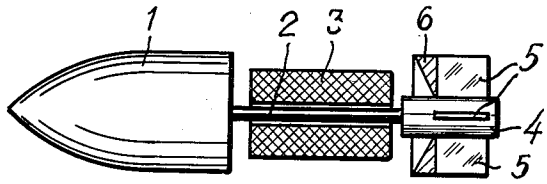


FIG.2

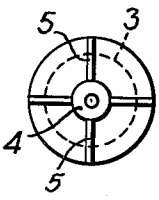


FIG.3

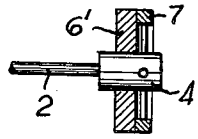
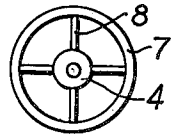


FIG.4



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SHAFT PROJECTILE

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Application January 15, 1951, Serial No. 206,084

Claims priority, application Sweden January 16, 1950

5 Claims. (Cl. 102—49)

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The present invention refers to impulse rockets, and more particularly to such rockets wherein the projectile body proper is provided with a rearwardly extending shaft on which the powder charge is generally arranged. A projectile of this description, which is here called a shaft projectile, is made use of in fire arms, line throwers or the like, which are provided with a launching tube from which the projectile is launched in the one direction, while the powder gases are discharged in the other direction to neutralize the recoil.

An object of the invention is to provide a projectile of the type referred to in which a supporting device may support an obturator or baffle plate for the powder gases so as to obtain a dam for the powder gases at the initiation of the development of powder gases. A further object of the invention is to provide a projectile with an obturator or baffle member of a material which is readily disintegrated under the influence of the powder gases at a certain moment of the development of such gases, whereby the gases are permitted to escape rearwardly as the projectile is launched forward. A still further object of the invention is to provide an obturator or baffle member which is of substantially uniform strength from the centre to the periphery thereof, so that the member will break approximately at the same time in various points thereof.

A pair of embodiments of the invention is illustrated by way of example in the accompanying drawing, in which:

Fig. 1 is a part sectional view of a shaft projectile according to the invention,

Fig. 2 is a rear end view of the projectile illustrated in Fig. 1,

Fig. 3 is a fragmentary axial section of a modified form of the invention, and

Fig. 4 is an end view corresponding to Fig. 3.

In the drawing, Figs. 1 and 2, 1 designates the projectile body proper, 2 the shaft secured thereto, and 3 a powder cartridge arranged on said shaft. Secured to the shaft is a support, which here takes the form of a hub 4 with radial wings 5. If desired, the wings may be attached directly to the shaft. Bearing on the wings 5 is an obturator or baffle member in the form of a plate 6 from a material adapted to be readily disintegrated under the influence of the powder gases at firing, such material being impregnated paper, fabric, Bakelite or the like, for example. The plate 6 tapers from its periphery successively inwardly toward the centre thereof. Since the

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portions of the wings located next to the hub 4 are situated more closely to each other than are the more peripheral portions, and since the distance between them is successively reduced from the periphery in an inward direction, a construction of more uniform strength is thus obtained than if the plate were of uniform thickness.

The support need not take the form of wings, but may be made as a guide ring 7 as shown in Figs. 3 and 4 forming a guiding means for the rear end of the shaft in contact with the launching tube, the ring 7 being secured by radial arms 8 at the hub 4 on the shaft 2. Generally, it will be found suitable to make use of some member located on the shaft as a supporting member, which would even otherwise come into use for other reasons, as for the guidance of the projectile in the tube or during its flight after the projectile has left the tube. In Figs. 3 and 4 the baffle plate is shown as a circular plate 6' of uniform thickness but it may have the same form as the plate 6 shown in Figs. 1 and 2.

What I claim is:

1. A projectile for fire arms and line throwers of the type having a launching tube ejecting the projectile in one direction and the powder gases in the opposite direction for neutralizing the recoil, said projectile comprising a projectile body, a shaft extending rearward of said body, an obturator member mounted on said shaft spaced from the projectile body to form a powder space, and guiding means secured to the shaft closely behind said obturator member, said latter member being seated against said guiding means and made of a material breaking under the influence of the powder gases developed in the space between the projectile body and said member.

2. A projectile for fire arms and line throwers of the type having a launching tube ejecting the projectile in one direction and the powder gases in the opposite direction for neutralizing the recoil, said projectile comprising a projectile body, a shaft extending rearward of said body, a frangible baffle plate mounted on said shaft in spaced relation to the projectile body to form a powder space, and guiding means for the projectile mounted at the rear part of the shaft in supporting relation behind the baffle plate to support said plate during the development of powder gases in the powder space but permitting destruction and disintegration thereof at launching.

3. A projectile for fire arms and line throwers of the type having a launching tube ejecting the projectile in one direction and the powder gases in the opposite direction for neutralizing the recoil, said projectile comprising a projectile body, a shaft extending rearward of said body, a frangible baffle plate mounted on the shaft in spaced relation to the projectile body to form a powder space, said baffle plate being thicker at its peripheral portion than nearer to its centre, and a support in the form of a hub with radial wings on the shaft in supporting relation behind the baffle plate to support said plate during the development of powder gases in the powder space but permitting destruction and disintegration thereof at launching.

4. A projectile as claimed in claim 1 and further characterized by the fact that the guiding means comprises a ring coaxial with the shaft, a hub on the shaft, and radial arms securing said ring to said hub.

5. A projectile as claimed in claim 1, wherein said guiding means comprises radial fins.

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