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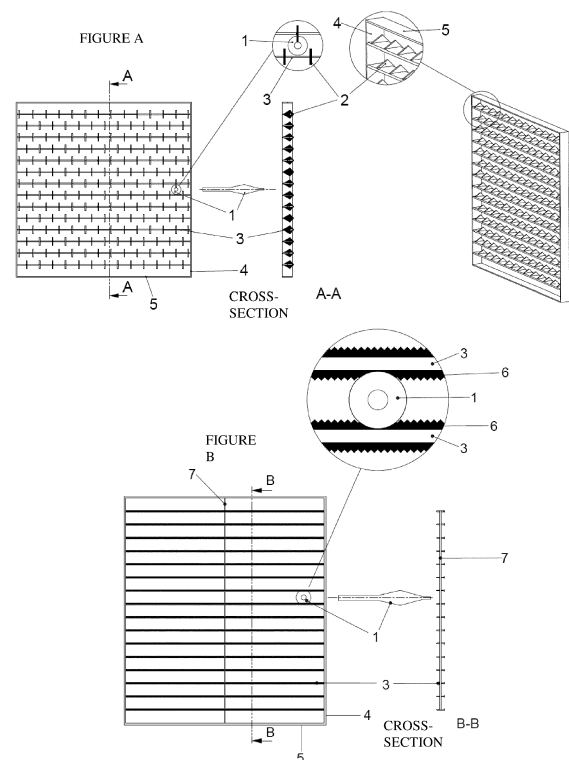
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(54) **A PROTECTIVE FRONT SCREEN AGAINST SHAPE CHARGED WARHEADS**

(57) The present invention relates to protecting constructions and vehicles such as stationary security cabins and armored vehicles against shaped charged warheads (1), and to deactivate and/or decreasing the effect of the warhead by means of deforming the conical metal form in the shape charged warhead (1) by means of shredder apparatuses on the intermittent or continuous horizontal profile (2, 6) which are designed to prevent the personnel from being harmed by protecting integrity of the present armor, which are fixed to the horizontal profile (3) and have triangle, square, rectangle, circular, elliptical, trap-ezoid, etc. geometrical forms.



Description

Field of the Invention

[0001] The invention relates to systems that are made from metallic, polymeric, ceramic, wood-based materials or composite materials formed by combining these materials or made from coated materials, which may be designed in wedge form or blunt-ended which can be applied either on immobile structures or mobile structures used in land and sea transport, in order to neutralize shape charged warheads.

Background of the Technique (Previous Art)

[0002] When the current state of the art is examined in terms of protection class front protective screens for shape charged warheads, the systems are divided into two, being active and passive systems. Active protection systems are the systems based on the detection of the incoming warhead via devices such as camera, motion sensor, etc. and detonation of it before impact. In passive systems, it is based on the damping the effect that is occurring by means of various techniques after the warhead explodes. The most commonly known among these are reactive armors called ERA, which contain explosives therein and dampen the warhead by the explosion of the explosive in the warhead. An example of passive defense systems is front screens. The reason for using the front screen is to reveal the effect before the part desired to be protected, to prevent the effect which will occur or to dampen the effect completely.

[0003] In the product wanted to be protected in patent document no US20160236264 A1, it is aimed to protect the structure by deviating the direction of incidence of the warhead by means of the front screen placed in front of the structure desired to be protected. The disadvantage of the said system is that the rocket may perforate the front screen due to its high speed; however it does not have a design to disrupt the shape charged structure.

[0004] In the product which is the subject of the patent document no SG 192388 A1, it is aimed to disrupt the shape charged form of the warhead and decrease its effect by means of shock absorbers fixed on the front screen from a plurality of points of the armored vehicle desired to be protected and the structure of the front screen. The disadvantage of the said system is that the distance between the vehicle and the front screen must be small, and that the front screen system does not have a structure that will disrupt the shape charged structure (hard, sharp edges, ends, etc.).

Summary of the Invention

[0005] The objective of the present invention is to stop the warheads having a shape charged structure using a front screen on the basis of the prior art. It is aimed that the front screen disrupts the form of the cone made from

copper or a different engineering material provided in shape charged structure by means of its front part in form of a wedge, etc., and therefore the explosion that will occur is prevented from creating jet form even if the piezo trigger is triggered. Triangular, square, rectangular, circular, elliptical, trapezoidal formed projections are made on the plates with wedge-shaped ends in order to ensure the deformation of the cone form in the warhead.

Description of the Drawings

[0006]

Figure-A- Front screen wherein shredding top apparatuses are included with intervals on the horizontal profile

Figure-B- Front screen wherein shredding top apparatuses are included without intervals on the horizontal profile

[0007] The components shown in the figures are each given reference numbers as follows:

1. Warhead
2. Shredder apparatus on the horizontal profile with intervals
3. Horizontal profile
4. Front screen construction vertical housing
5. Front screen construction horizontal housing
6. Continuous shredder apparatus on the horizontal profile
7. Vertical fixing rod

Detailed Description of the Invention

[0008] The subject matter of the invention comprises horizontal profile (3) which is required for front screen design and production that will provide protection against shape charged warheads (1), on which continuous or intermittent wedge form is made with suitable production method or which is made from steel which is not shaped or from a suitable engineering material, shredder apparatuses on the intermittent or continuous horizontal profile (2, 6) which can be any form such as triangle, square, rectangle, circular, wedge, trapezoid, etc. made from steel or any suitable engineering material, and which can be mounted on the horizontal profiles by means of welding, shrink fit, screwing, soldering, adhesion, riveting etc., and which can be flat as well as serrated, fixing rod (7) which fixes the horizontal profiles (3) to each other and which is made from steel or a suitable engineering material, or front screen construction vertical housing (4)

and/or front screen construction horizontal housing (5) which is formed in order to hold the structure together and made from steel or a suitable engineering material.

[0009] The invention is positioned at a certain distance from the surface desired to be protected. The warhead (1) directed to the target must contact the invention first. For this reason, an appropriate attack scenario should be established and the positioning should be adjusted such that the warhead (1) will come in contact with the invention first, no matter where it comes from. The invention ensures that the warhead (1) hits, but the piezo trigger is not triggered due to the positioning of both horizontal profile (3) intervals and shredder apparatuses on the intermittent or continuous horizontal profile (2,6). The said form of metal in the conical form inside the warhead (1) striking the invention will be disrupted and even if the warhead (1) striking the target explodes, it will completely or partially lose its penetrating effect.

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Claims

1. A front screen; which is manufactured from all types of steel, especially armor steel, abrasion resistant steel, cold drawn steels, engineering metals such as aluminum alloys, titanium alloys, magnesium alloys, copper alloys, zinc alloys, etc., composites and nano-composites with metal, ceramic or polymer matrix, engineering polymers, and wooden materials in order to provide protection against shape charged warheads (1); comprising front screen construction vertical housing (4) and/or front screen construction horizontal housing (5), shredder on the intermittent or continuous horizontal profile apparatuses (2, 6) which is fixed on the horizontal profile (3) continuously or with intervals, which has triangle, square, rectangle, circular, elliptical, trapezoid, etc. forms, and which does not allow the warhead (1) to pass geometrically.
2. A front screen according to claim 1, comprising horizontal profile (3) which is manufactured integrated, not separated, to the shredder apparatuses on the intermittent or continuous horizontal profile (2, 6).
3. A front screen according to claim 1, comprising horizontal profile (3) which is equipped with shredder apparatuses on the intermittent or continuous horizontal profile (2, 6), the edges of which are sharpened, dulled or rounded.
4. A front screen according to claim 1, comprising horizontal profiles (3) which can be connected to the structure in a movable way, wherein electrical control motor, hydraulic, pneumatic control mechanism or mechanical control mechanisms are used for the control of the movement.

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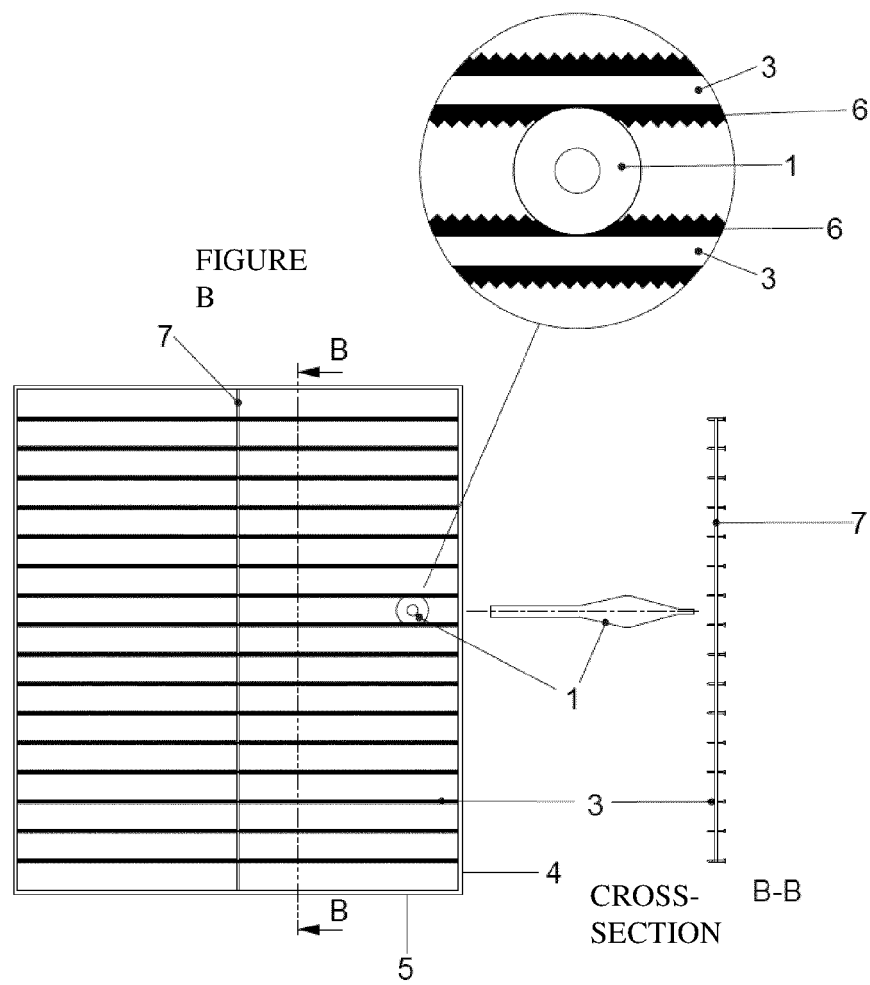
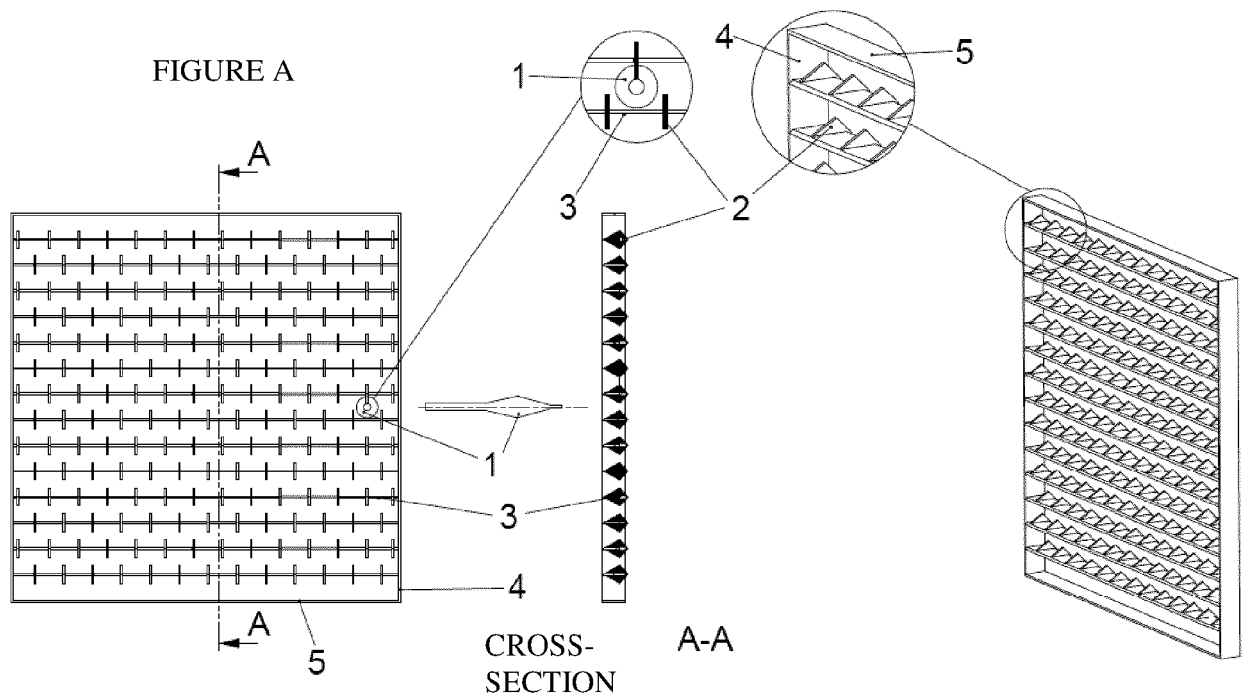
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EUROPEAN SEARCH REPORT

Application Number
EP 19 20 8148

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EPO FORM 1503 03.82 (P04C01)

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			TECHNICAL FIELDS SEARCHED (IPC)
			F41H F42B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 7 February 2020	Examiner Menier, Renan
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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- SG 192388 A1 [0004]