Title: MULTI-ROW PANEL ACTIVE BLAST SYSTEM

Abstract: A countermeasure system is provided including a frame and two or more rows of countermeasures (412) disposed on the frame. Each row of the countermeasures (412) may be configured to be initiated substantially simultaneously along the length of the row. Additional countermeasure systems may include elongated explosive charges or masses disposed along the length of the rows. The frame may include two or more ridges (416) on a side opposite to the two or more rows of countermeasures, the ridges being configured to engage with corresponding ridges (426) on a vehicle when the countermeasure panel (410) is mounted to the vehicle.
Published: 15 January 2015

— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
INV. F41H7/00 F41H5/013 F41H5/007

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
F41H F16B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal , PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Category</th>
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<td>FR 2 780 155 AI (MESSERSCHMITT BÖKLÖW) BLOHM [DE] 24 December 1999 (1999-12-24)</td>
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X Further documents are listed in the continuation of Box C. X See patent family annex.

* Special categories of cited documents:
  "A" document defining the general state of the art which is not considered to be of particular relevance
  "E" earlier application or patent but published on or after the international filing date
  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  "O" document referring to an oral disclosure, use, exhibition or other means
  "P" document published prior to the international filing date but later than the priority date claimed
  "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  "Z" document member of the same patent family

Date of the actual completion of the international search
20 November 2014

Date of mailing of the international search report
04/12/2014

Name and mailing address of the ISA/
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016

Authorized officer
Gex-Col et, A

Form PCT/ISA/210 (second sheet) (April 2005)
**INTERNATIONAL SEARCH REPORT**

**Box No. II Observations where certain claims were found unsearchable** (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.☐ Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2.☐ Claims Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3.☐ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking** (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2.☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3.☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4.☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  

**Remark on Protest**

☐ The additional search fees were accompanied by the applicant’s protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.
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This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10

A countermeasure panel, comprising: a frame; and at least two rows of countermeasures disposed on the frame, wherein, each row of the countermeasures includes at least one of an elongated explosive charge disposed along the length of the row or a plurality of segmented explosive charges along the length of the row.

2. claims: 11-17

A countermeasure system configured to be mounted to a vehicle, said system comprising: a countermeasure configured to fire in an upward direction when mounted to the vehicle; a first sensor device including a plurality of accelerometers configured to detect vertical acceleration of the vehicle; a second sensor device configured to detect proximity to the vehicle; a processor in communication with said first sensor device and said second sensor device, said processor configured to initiate the countermeasure based on results of processing signals from said first sensor device, and based on results of processing signals from said second sensor device.

3. claims: 18-26

A countermeasure system, comprising a housing; and at least one of a mass ejector and a thruster held by the housing, wherein, the housing includes at least one attachment point for fixedly attaching the housing to a vehicle, and a plurality of ridges configured to engage with corresponding ridges on the vehicle when the countermeasure is mounted to the vehicle, as well as a method of mounting a countermeasure to a vehicle.