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(71) Applicant: **Broekhoff, Gerard Willem Johannes Singapore 469990 (SG)**

(72) Inventor: **Broekhoff, Gerard Willem Johannes Singapore 469990 (SG)**

(74) Representative: **Klavers, Cornelis Octrooibureau Klavers B.V. Markerkant 1201.20 1314 AJ Almere (NL)**

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(54) **A holder for consumer fireworks**

(57) There is disclosed a holder (1) for consumer fireworks (4). The holder comprises a tray (6) provided with legs (3), which extends above a surface after being installed on said legs, which tray is provided with at least one opening (7). The opening is configured to enclose consumer fireworks to be placed on said surface and has

a diameter and shape that correspond to the width of the fireworks. This results in a safe, lightweight holder for the ornamental consumer fireworks which is easy to manufacture at low cost. Where loosely placed fireworks cakes exhibit a greater tendency to fall over upon being ignited during festivities, this problem is eliminated by the simple holder according to the invention.

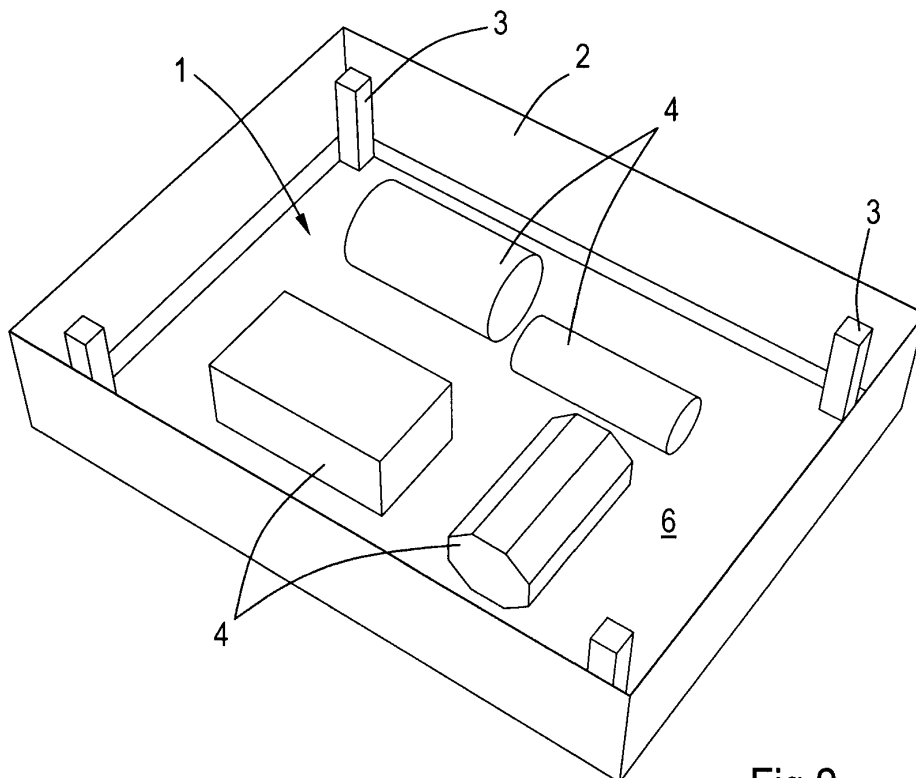


Fig.2

Description

[0001] The present invention relates to a holder for fireworks.

[0002] The present invention further relates to a package provided with such a holder.

[0003] Such a holder is known from EP-2 009 385 A1. The known holder that is shown therein comprises a box-like body which is open at the front side and at the rear side and which is provided with openings at the upper side, into which fixedly disposed detonator parts forming part of the fireworks, and which are supported on the closed bottom of the box, being interconnected by means of a fuse provided in the box, have been inserted upon manufacture of said fireworks. The openings for the fixedly disposed, interconnected fireworks have a diameter and a shape corresponding to the width of the individual detonator parts of the fireworks.

[0004] Such a holder is not suitable for use with the simpler, loose pieces of consumer fireworks.

[0005] The object of the present invention is to provide a reliable fireworks holder for loose consumer fireworks which can be used in a safe manner by the general public.

[0006] In order to accomplish that object, the consumer fireworks holder is according to the invention **characterised in that** the holder comprises a tray provided with legs, which extends above a surface after being installed on said legs, which tray is provided with at least one opening configured to enclose consumer fireworks to be placed on said surface, whose diameter and shape correspond to the width of the fireworks.

[0007] The advantage of the holder according to the invention is that it provides the average consumer with a possibility to place (possibly individually purchased) pieces of fireworks, in particular ornamental fireworks but generally no rockers, being held in an upright position in each tray opening directly on the same surface as the surface on which the legs are supported. This results in a safe, lightweight holder for the ornamental consumer fireworks which is easy to manufacture at low cost. Where loosely placed fireworks cakes exhibit a greater tendency to fall over upon being ignited during festivities, this problem is eliminated by the simple holder according to the invention.

[0008] Furthermore, each piece of fireworks in the holder can be ignited individually without adjacent pieces of fireworks detonating spontaneously when said piece of fireworks goes off, which adds to the level of reliability and safety when the fireworks are ignited and go off.

[0009] One embodiment of the holder according to the invention is **characterised in that** the legs each have a length such that the larger part of the height of the piece of fireworks that to be passed through the opening in question extends between the tray and the surface. The advantage of this is that it is practically impossible to insert the piece of fireworks incorrectly into the opening, because said piece of fireworks falls in place via the opening, as it were, but also that a piece of fireworks,

once it has been inserted into the opening, cannot fall over after being inserted but prior to being ignited.

[0010] Another embodiment of the holder according to the invention is **characterised in that** the holder comprises clamping means provided on the inner circumference of said at least one opening, which clamping means are preferably configured, for manufacturing reasons, as downwardly pivoting, movable flaps.

The advantage of the clamping means is that the fireworks are stably clamped in the opening, which makes it easier to light the projecting, accordingly stable fuse.

[0011] The present invention further relates to a package provided with such a holder, which holder comprises a tray provided with legs, which extends above a surface after being installed on said legs, which tray is provided with at least one opening, which at least one opening is configured to enclose consumer fireworks to be placed on said surface, whose diameter and shape correspond to the width of the fireworks, and which package contains the holder placed in an upside-down position therein, so that the fireworks are supported on the underside of the tray in the package.

The holder, which may need to be assembled yet after the package has been opened, is placed in the package in an upside-down position, such that the fireworks can be compactly placed in the package, in the open bottom side of the holder and on the underside of the tray, without any practical loss of space.

[0012] Other possible embodiments, which are defined in the dependent claims, and their concomitant advantages will be described in the description below.

[0013] Now in particular the holder according to the present invention will be explained in more detail with reference to the figures below, in which like parts are indicated by the same numerals. In the drawing:

Figure 1 shows a holder according to the invention placed on a surface; and

Figure 2 shows the holder of figure 1 placed in a package.

[0014] Figures 1 and 2 show a fireworks holder 1 which is available as one unit, for example together with a package 2 in which also the matching fireworks are packaged. The holder 1, which may or may not be extendible, can be supplied with fixed legs 3, but in a possible variant also with extendible legs or fold-out legs 3, or possibly with separate connectable, linkable or insertable legs 3, together with, preferably, consumer fireworks, quite in particular ornamental fireworks cakes 4. After the holder 1 has been placed on a stable surface 5 with its legs 3, a tray 6 of the holder 1 extends some distance above said surface 5. The tray 6 is provided with at least one opening 7, in which the matching ornamental fireworks cakes 4 are inserted, which, after being inserted, are supported on the surface 5, with the opening 7 enclosing the fireworks 4. The holder 1 is to that end open at the bottom side, which leads to a further saving in material and

weight of the holder 1. To provide a better support of the fireworks placed therein, the openings 7 have a diameter and a shape corresponding to the width of the fireworks cakes 4. The open bottom side of the holder 1 further ensures that the fuse 8, which is fixed to each piece of fireworks 4 and which is not connected to other fuses, projects beyond the circumference of the holder 1 under the tray and can be lit in a simple manner by the consumer/user, being within easy reach of said consumer/user, without the individual piece of fireworks placed in the holder running the risk of falling over and/or igniting other pieces of fireworks upon going off.

[0015] Although not shown in proportion in the figures, it is preferable if the legs 3 each have a length such that the larger part of the height of the piece of fireworks 4 to be passed through the opening 7 in question extends between the tray 6 and the surface 5. The advantages of this have already been described in the foregoing.

An extra stable enclosure of the outer circumference of the piece of fireworks 4, so that the firework is easy to insert into the opening but less easy to remove therefrom, is realised by providing the inner circumference of the holder 9 with clamping means 9. By way of illustration of a possible application thereof, one of the openings 5 is configured with downwardly pivoting, movable flaps 9, which can function as said clamping means.

The openings 7 may already have been formed upon manufacture of the holder 1, or be configured as push-through or pre-weakened openings 7 formed in the material of the holder 1.

Although this is not required, the openings may be distributed over the area of the tray 6, arranged in a matrix or 2x2, 2x3, 2x4, 2x5 or the like. The fuse 8 of each piece of fireworks 4 can in that case simply and safely be lit from the side of the tray 6. Other matrix arrangements, for example 3x3, are possible, in which case the pieces of fireworks which are positioned substantially in the centre of the tray can be lit from a fuse which projects above said pieces of fireworks.

If the holder 1 has three legs 3, it will stand stably on any surface 5, whilst the holder 1 will have four legs in the case of reasonably flat surface types.

In principle, the material of which the holder 1 is to be made can be freely selected. The holder may be made in one piece or of connectable parts, using foldable or non-foldable cardboard, a biodegradable material or, for example, plastic material.

Claims

1. A consumer fireworks holder comprising the holder comprises a tray provided with legs, which extends above a surface after being installed on said legs, which tray is provided with at least one opening configured to enclose consumer fireworks to be placed on said surface, whose diameter and shape correspond to the width of the fireworks.

2. A holder according to claim 1, **characterised in that** the legs each have a length such that the larger part of the height of the piece of fireworks that is to be passed through the opening in question extends between the tray and the surface.

3. A holder according to claim 1 or 2, **characterised in that** the holder comprises clamping means provided on the inner circumference of said at least one opening.

4. A holder according to claim 3, **characterised in that** said clamping means are configured as downwardly pivoting, movable flaps.

5. A holder according to any one of claims 1-4, **characterised in that** the openings in the material of the holder are push-through openings.

6. A holder according to any one of claims 1-5, **characterised in that** the holder is provided with three or four legs.

7. A holder according to any one of claims 1-6, **characterised in that** the holder has an open configuration, such that the part of the fireworks to be inserted into the opening that extends between the tray and the surface is accessible for igniting the fireworks.

8. A holder according to any one of claims 1-7, **characterised in that** the holder comprises legs which are fixed to the tray or which are to be bent outwards, or loose legs to be attached to the tray or, for example, to be inserted into holes in the tray or be otherwise fixed, hooked in place or clamped down.

9. A holder according to any one of claims 1-8, **characterised in that** the openings are distributed in a matrix of 2x2, 2x3, 2x4, 2x5 or the like.

10. A holder according to any one of claims 1-9, **characterised in that** the holder is made in one piece or of connectable parts of cardboard, a biodegradable material or plastic material.

11. A holder according to any one of claims 1-10, **characterised in that** the fireworks are only ornamental fireworks consisting of cakes, in particular ornamental fireworks cakes.

12. A package provided with a holder according to any one of claims 1-11, which holder comprises which holder comprises a tray provided with legs, which extends above a surface after being installed on said legs, which tray is provided with at least one opening, which at least one opening is configured to enclose consumer fireworks to be placed on said surface, whose diameter and shape correspond to the width

of the fireworks, and which package contains the holder placed in an upside-down position therein, so that the fireworks are supported on the underside of the tray in the package.

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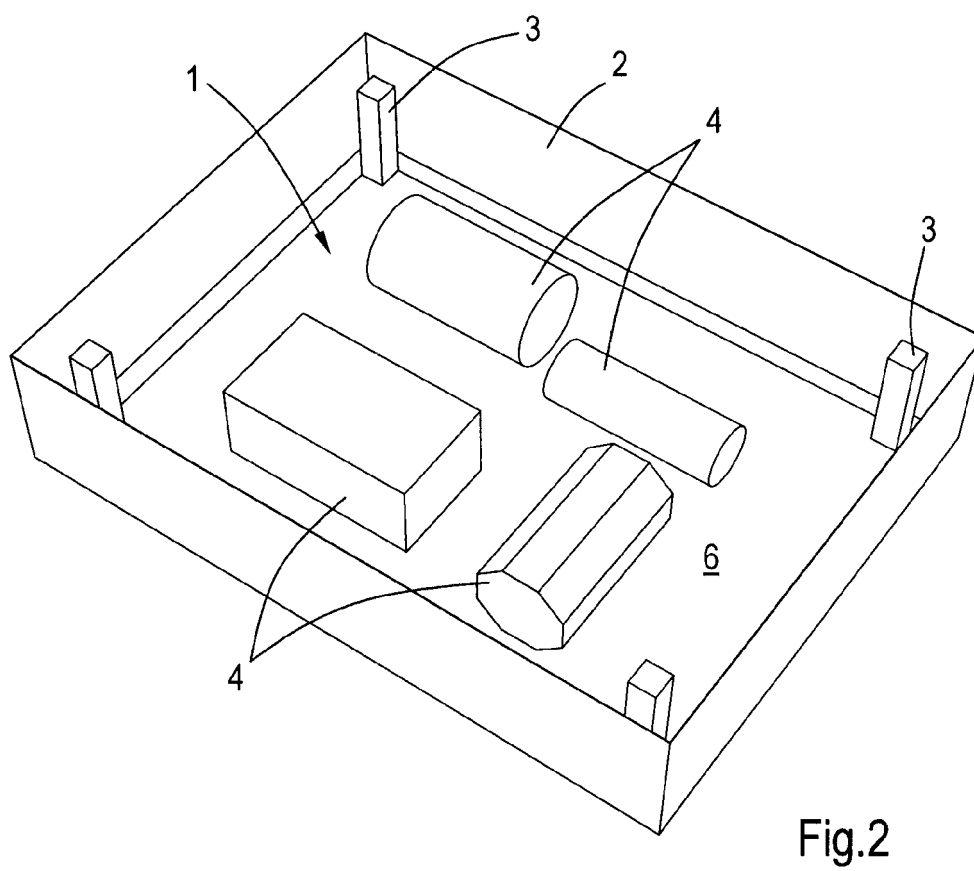
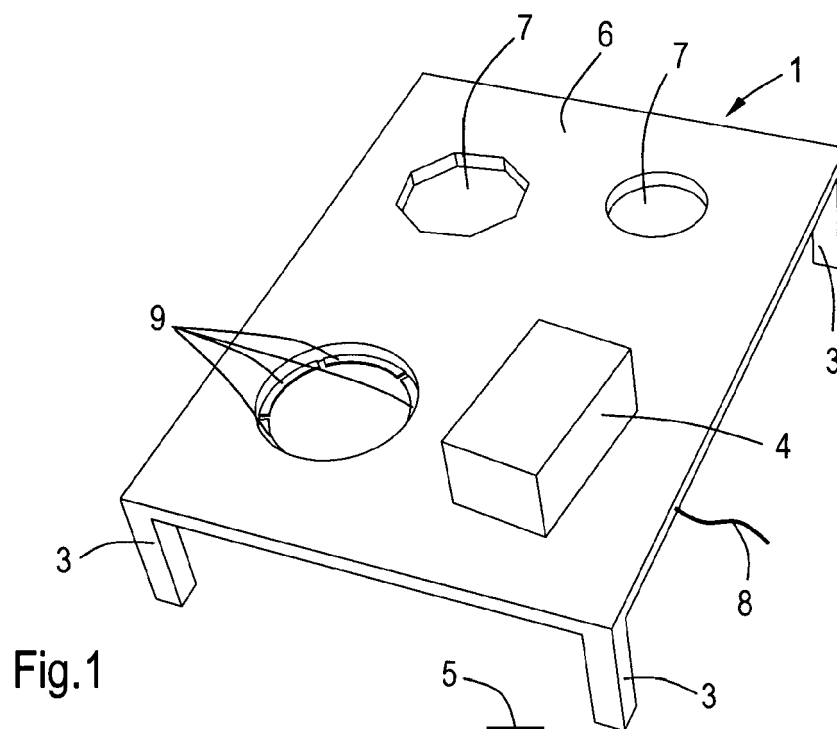
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EUROPEAN SEARCH REPORT

Application Number
EP 10 15 4103

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 200 03 904 U1 (STAPELMANN GMBH [DE]) 4 May 2000 (2000-05-04) * page 3 * * figures *	1,2,6-9	INV. F42B4/20 F42B4/06
X	----- US 2004/115595 A1 (DANCER PEGGY [US] ET AL) 17 June 2004 (2004-06-17) * abstract * * figures *	1,2,6-9	
X	----- DE 20 2005 018210 U1 (REICHENPFADER KURT [AT]; LANGER RENE [AT]) 16 March 2006 (2006-03-16)	1,2,6-11	
Y	* paragraph [0063] * * paragraph [0065] * * paragraph [0073] * * figures * * claims 13,18,19 *	3-5	
Y	----- NL 1 033 215 C1 (MOOY MARIANNE DE [NL]) 21 March 2007 (2007-03-21) * abstract * * page 3, line 10 - line 18 * * figures *	3-5	TECHNICAL FIELDS SEARCHED (IPC) F42B A47G
Y	----- JP 2001 241897 A (MATSUUCHI IKUKI) 7 September 2001 (2001-09-07) * abstract *	3-5	
X	----- US 7 096 790 B1 (WAH NG WING [HK]) 29 August 2006 (2006-08-29) * abstract * * column 3, line 16 - line 47 * * figures *	1-8	
X	----- US 2004/217020 A1 (PRICE JAMES E [US] ET AL) 4 November 2004 (2004-11-04) * the whole document *	1	
		-/--	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 May 2010	Examiner Vermander, Wim
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			

 4
EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
EP 10 15 4103

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 295 04 875 U1 (INNOVATIVE PYROTECHNIK GMBH [DE]) 6 July 1995 (1995-07-06) * the whole document * -----	12	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 May 2010	Examiner Vermander, Wim
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	

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 15 4103

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The members are as contained in the European Patent Office EDP file on
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06-05-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 20003904 U1	04-05-2000	NONE	
US 2004115595 A1	17-06-2004	NONE	
DE 202005018210 U1	16-03-2006	WO 2007057740 A1	24-05-2007
NL 1033215 C1	21-03-2007	NONE	
JP 2001241897 A	07-09-2001	NONE	
US 7096790 B1	29-08-2006	NONE	
US 2004217020 A1	04-11-2004	NONE	
DE 29504875 U1	06-07-1995	AT 1978 U1	25-02-1998
		SE 9601050 A	23-09-1996

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2009385 A1 [0003]