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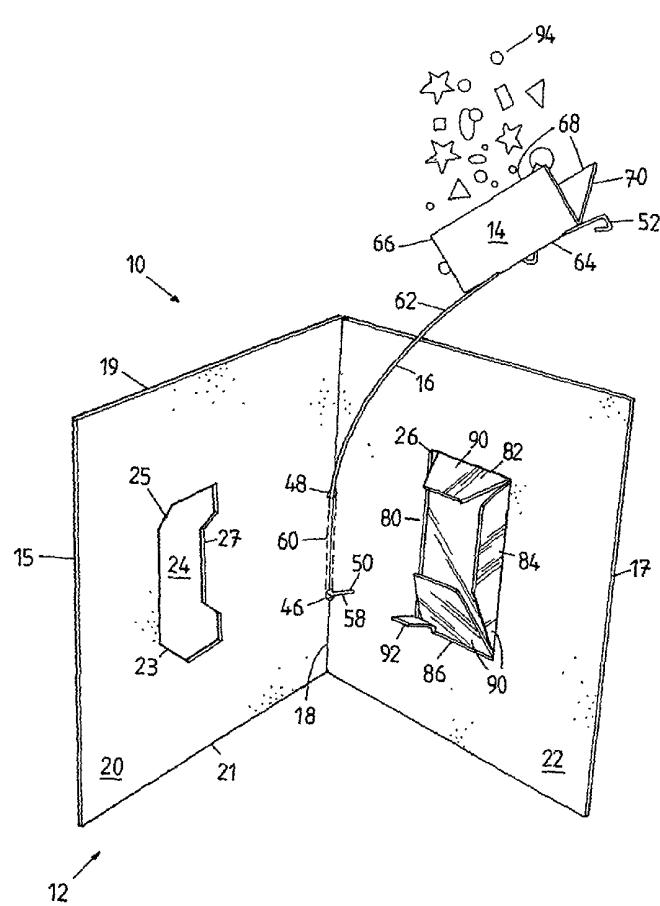
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**(54) Title: PARTICULATE MATTER PROPULSION APPARATUS**

**(57) Abstract:** A particulate matter propulsion apparatus (10) for propelling confetti (94) or similar from a greeting card (12). The propulsion device includes a particulate matter receptacle (14) attached to a supporting means (16), the supporting means (16) being store energy such that when the card (12) is opened the particulate matter (94) is propelled from the card (12).





**Published:**

— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**TITLE****“PARTICULATE MATTER PROPULSION APPARATUS”**

The present invention relates to a particulate matter propulsion apparatus

**FIELD OF THE INVENTION**

A common expression of celebration is the throwing in the air of particulate matter such as paper confetti or rice. It is considered desirable to incorporate this form of expression into a greeting card.

A known type of greeting card incorporates a tearable package of confetti within a closed card. The action of opening the greeting card causes the package to tear, and the confetti to be released. Such a card, however, includes no mechanism to actually propel the confetti into the air.

Another known type of greeting card includes an elastic member coiled within the card, and an envelope containing particulate matter connected to the elastic member. The action of opening this greeting card causes the elastic member to unwind, thus spinning the envelope of particulate material and causing the material to be flung outwards by the action of centrifugal force. This mechanism can cause the particulate material to be flung in all directions, not merely upwards.

The present invention attempts to overcome at least in part some of the aforementioned disadvantages of previous particulate matter propulsion apparatuses for greeting cards.

### **SUMMARY OF THE INVENTION**

In accordance with one aspect of the present invention there is provided a particulate matter propulsion apparatus for use in relation to a greeting card, the apparatus comprising a particulate matter receptacle attached to a supporting means, the apparatus characterised in that, in use, the supporting means urges the particulate matter receptacle away from the greeting card thus causing particulate matter within the particulate matter receptacle to be propelled into the air.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

The present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a view of a particulate matter propulsion apparatus in accordance with the present invention in a first position;

Figure 2 is a view of the particulate matter propulsion apparatus of Figure 1 in a second position;

Figure 3 is a view of the particulate matter propulsion apparatus of Figure 1 in a third position; and

Figure 4 is a view of the particulate matter propulsion apparatus of Figure 1 in a fourth position.

### **DESCRIPTION OF THE INVENTION**

Referring to the Figures, there is shown a particulate matter propulsion apparatus 10 including a card 12, and a particulate matter receptacle 14 having a supporting means 16. In the embodiment of the Figures the card 12 is arranged to be inserted within a

greeting card, however it will be appreciated that in an alternative embodiment the card 12 could in fact be a greeting card.

The card 12 is substantially rectangular in shape, and is composed of a suitable material, for instance cardboard. The card 12 has a first edge 15, a second edge 17 opposite the first edge 15, a top edge 19 and a bottom edge 21. The card 12 includes a fold 18 substantially in the centre of the card 12, thus dividing the card 12 into a first side 20 extending from the first edge 15 to the fold 18 and a second side 22 extending from the fold 18 to the second edge 17.

The card 12 includes a front window 24 disposed approximately centrally of the first side 20 and a rear window 26 disposed approximately centrally of the second side 22. The rear window 26 is substantially rectangular. The front window 24 is substantially rectangular with chamfered outer corners 23, 25 on the corners closest to the first edge 15. The front window 24 is smaller than the rear window 26. The front window 24 has a tab 27 extending from an edge of the front window 24 adjacent the fold 18. The front and rear windows 24, 26 are arranged so that when the card is closed along the fold 18 the front window 24 is substantially coextensive with an inner portion of the rear window 26.

The fold 18 includes a first aperture 46 located approximately one third of the way between the bottom edge 21 and the top edge 19, and a second aperture 48 located approximately two thirds of the way between the bottom edge 21 and the top edge 19.

The supporting means 16 is composed of a partially resilient material, for instance a metal such as spring steel. The supporting means 16 has a first end 50 and a second end 52. The supporting means 16 is arranged to pass through the first and second apertures 46, 48 such that the first end 50 is located adjacent the first aperture 46 on

the inner side of the card 12. The supporting means 16 thus has a first portion 58 extending from the first end 50 to the first aperture 46, a second portion 60 extending from the first aperture 46 to the second aperture 48 and a third portion 62 extending from the second aperture 48 to the second end 52. The first and third portions 58, 62 are thus positioned inside the card 12 and the second portion 60 outside the card 12. The first portion 58 is bent at the first aperture 46 so as to hold the supporting means 16 in position in the fold 18. The supporting means is bent around at the second end 52 so as to prevent a sharp point from being oriented outwards.

The particulate matter receptacle 14 is arranged adjacent the second end 52 of the supporting means 16. The particulate matter receptacle 14 comprises a substantially rectangular portion, with a central fold 64. Folding the rectangular portion along the central fold 64 forms an envelope open on three sides, a first side 66 adjacent the fold 64 and remote, in use, from the second end 52 of the supporting means 16, a second side 68 opposite the central fold 64 and a third side 70 opposite the first side 66 and adjacent, in use, the second end 52 of the supporting member 16. When folded, the particulate matter receptacle 14 is approximately the same size as the rear window 26. The particulate matter receptacle 14 is attached to the supporting means 16 by suitable means such that the supporting means 16 is arranged within the central fold 64 of the particulate matter receptacle 14. The supporting means 16 may be kinked at the fold 64 in order to attach to the particulate matter receptacle 14. The particulate matter receptacle 14 may be constructed from transparent material to allow a user to view particulate matter through the front window 24 of the card 12.

The rear window 26 of the card 12 has first, second, third and fourth sides 80, 82, 84 and 86 respectively, numbered in a clockwise fashion beginning with the first side

adjacent the fold 18 of the card 12. The second, third and fourth sides 82, 84, 86 include catches 90 arranged, in use, to receive the first, second and third sides 66, 68 and 70 of the particulate matter receptacle 14. A second tab 92 is provided attached to the fourth side 86 adjacent the first side 80. The second tab 92 is in front of the catch 90, so that the catch 90 is between the rear window 26 and the second tab 92.

The operation of the particulate matter propulsion apparatus will now be described with reference to the drawings.

The particulate matter propulsion apparatus is shown in Figure 1 in an initial open position, whereby the second end 52 of the supporting means 16 is free, and the particulate matter receptacle 14 is ready for the insertion of confetti 94.

The third portion 62 of the supporting means 16 is then bent, so as to store potential energy. This is shown in Figure 2. The open edges of the particulate matter receptacle 14, that is first, second and third edges 66, 68 and 70 are held within the catches 90 of the rear window 26 and thus the particulate matter 94 is restrained within the particulate matter receptacle 14.

The card 12 is then folded along the fold 18 to the closed position shown in Figure 3. The first tab 27 is passed between the particulate matter receptacle 14 and the rear window 26. The second tab 92 is passed through the front window 24, and may be secured on the outside of card by means of adhesive tape 96. The catches 90 are held closed about the particulate matter receptacle 14 by the chamfered edges 23, 25 of the front window 24. The card 12 may be safely transported in this position. The card 12 may be primed by removal of the adhesive tape 96.

When the card has thus been primed, opening of the card will cause the catches 90 to be released from the front window 24. The first tab 27 will pull the particulate matter

receptacle 14 away from the catches 90. At the same time the second tab 92 will release the supporting means 16. This release will allow the potential energy in the third portion 62 of the supporting means 16 to be released, and the supporting means 16 will spring back to its initial position. This will cause the confetti 94 to be propelled into the air, as shown in Figure 4.

The card 12 may be provided with adhesive strips 98 on the outer surface to enable it to be located within a greeting card. The card 12 may also be provided with a restraining portion 100 on the outside of the fold 18 to hold the second portion 60 of the supporting means 16 in position.

Modifications and variations as would be apparent to a skilled addressee are deemed to be within the scope of the present invention.

**CLAIMS**

1. A particulate matter propulsion apparatus for use in relation to a greeting card, the apparatus comprising a particulate matter receptacle attached to a supporting means, the apparatus characterised in that, in use, the supporting means urges the particulate matter receptacle away from the greeting card thus causing particulate matter within the particulate matter receptacle to be propelled into the air.
2. A particulate matter propulsion apparatus as claimed in Claim 1, characterised in that the particulate matter propulsion apparatus has a first side and a second side separated by a fold, the particulate matter propulsion apparatus having an open position when the fold is open and a closed position when the fold is closed.
3. A particulate matter propulsion apparatus as claimed in Claim 2, characterised in that the supporting means has a first end and a second end, the first end being located adjacent the fold of the particulate matter propulsion apparatus and the particulate matter receptacle being attached adjacent the second end.
4. A particulate matter propulsion apparatus as claimed in Claim 2, characterised in that the particulate matter propulsion apparatus has a first aperture and a second aperture in the fold of the particulate matter propulsion apparatus and the supporting means passes through the first and second apertures such that the supporting means has a first portion adjacent the first end, the first portion being on an inner side of the particulate matter propulsion apparatus, a second portion on an outer side of the particulate matter propulsion apparatus and a third portion adjacent the second end of the supporting means, the third portion being on an inner side of the particulate matter propulsion apparatus.

5. A particulate matter propulsion apparatus as claimed in any of the preceding claims, characterised in that the supporting means is comprised of a resilient material.
6. A particulate matter propulsion apparatus as claimed in Claim 5, characterised in that the supporting means is comprised of spring steel.
7. A particulate matter propulsion apparatus as claimed in Claim 2, characterised in that the particulate matter propulsion apparatus includes catches which are arranged to hold the particulate matter receptacle in a closed position.
8. A particulate matter propulsion apparatus as claimed in Claim 7, characterised in that the catches are located on the second side of the particulate matter propulsion apparatus.
9. A particulate matter propulsion apparatus as claimed in Claim 8, characterised in that the catches are restrained from releasing the particulate matter receptacle by the first side of the particulate matter propulsion apparatus when the particulate matter propulsion apparatus is in the closed position.
10. A particulate matter propulsion apparatus as claimed in Claim 9, characterised in that a first tab extends from the first side of the particulate matter propulsion apparatus, the first tab being arranged to be located between the particulate matter receptacle and the second side when the particulate matter propulsion apparatus is in the closed position.
11. A particulate matter propulsion apparatus as claimed in Claim 10, characterised in that a second tab extends from the second side and is arranged to pass through a window in the first side, such that when the second tab is secured to an outer portion of the first side the particulate matter propulsion apparatus is restrained from opening.

12. A particulate matter propulsion apparatus as claimed in Claim 10, characterised in that the particulate matter propulsion apparatus is activated by opening the particulate matter propulsion from the closed position.

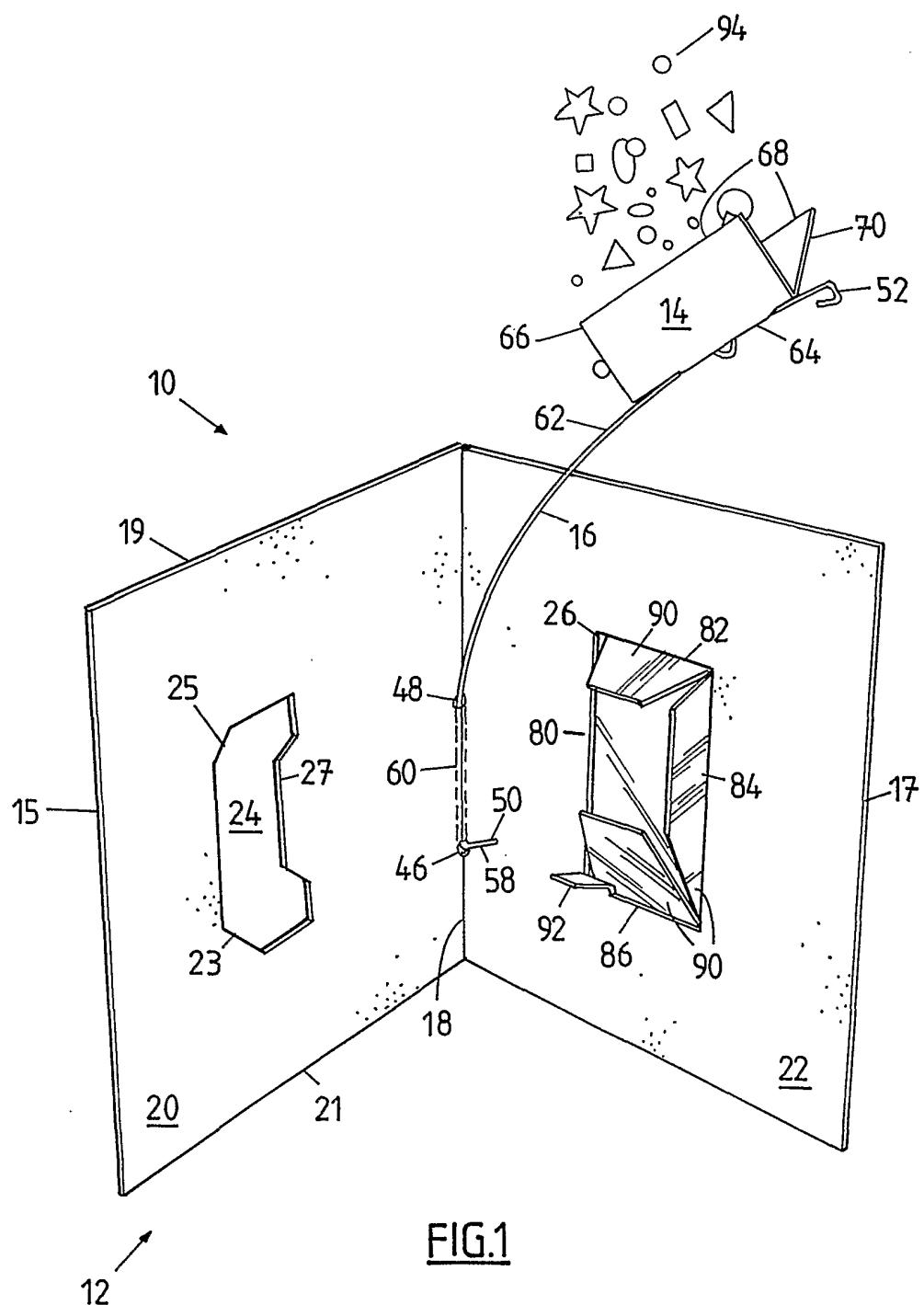
13. A particulate matter propulsion apparatus as claimed in any one of the preceding claims, characterised in that the particulate matter propulsion apparatus is a greeting card.

14. A particulate matter propulsion apparatus as claimed in any one of claims 1 to 12, characterised in that the particulate matter propulsion apparatus is an insert for a greeting card.

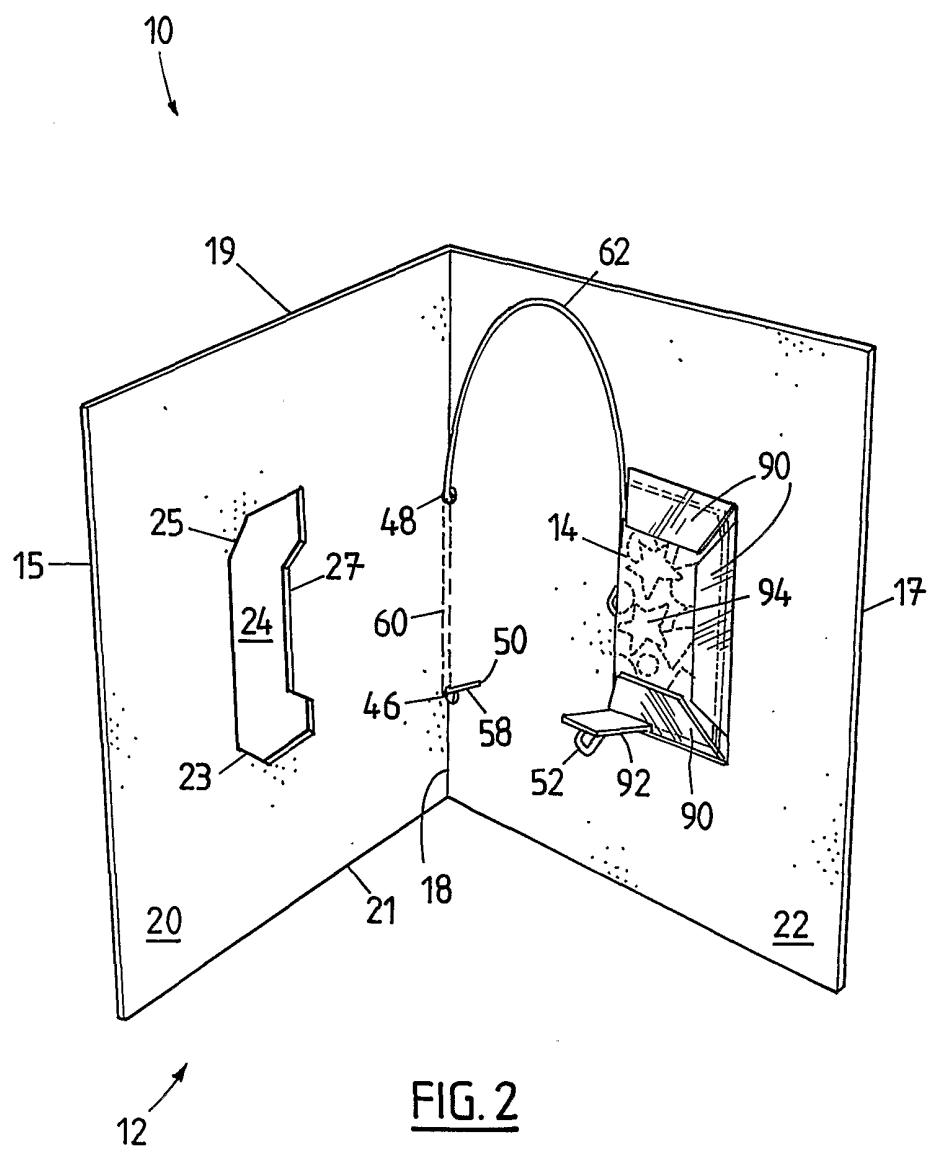
15. A particulate matter propulsion apparatus as claimed in Claim 14, characterised in that the particulate matter propulsion apparatus has a means for attachment to the greeting card.

16. A particulate matter propulsion apparatus as claimed in any one of the preceding claims, characterised in that the particulate matter is confetti.

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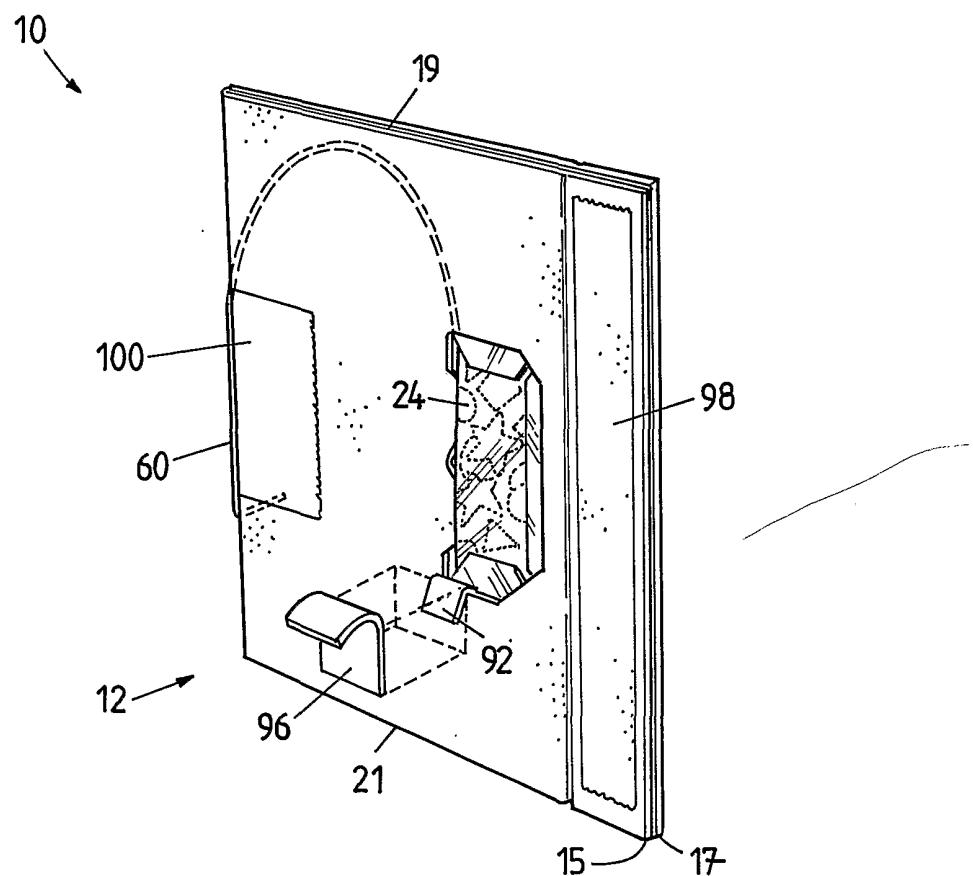
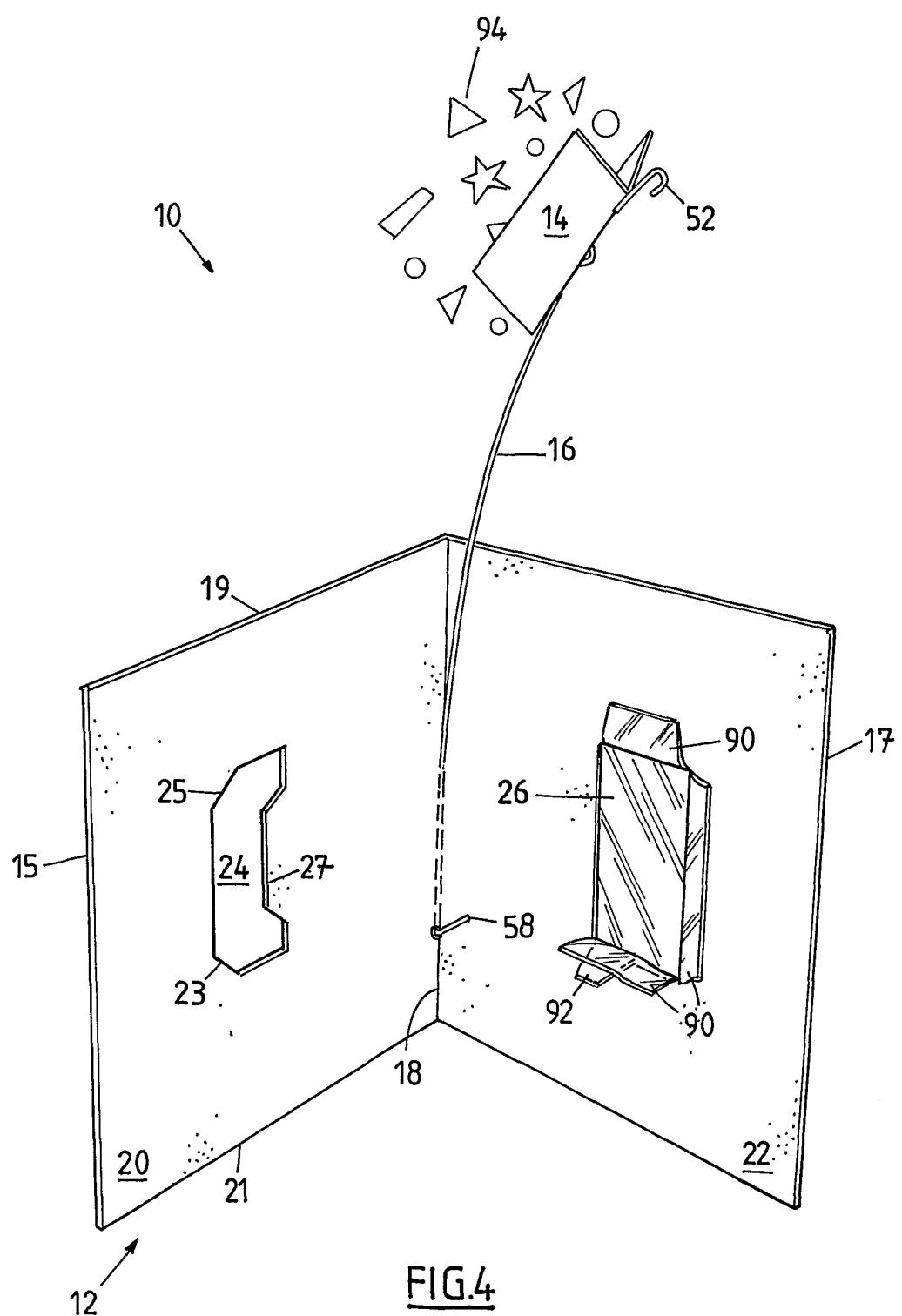


FIG.3

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU01/01550

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: B42D 15/04, G09F 1/04, A63H 37/00

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)

Refer to Electronic Database consulted below

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)

DWPI : IPC B42D 15/00, 15/02, 15/04, G09F 1/-, A63H 37/00, B65D 73/00 and keywords (card, greeting, confetti, particle, particulate, seed, propel, eject, release, spring, bias, resilient) and like terms

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2790423 A (EDITOR HOLDING SA) 8 September 2000 Entire document	1-16
X	US 4787160 A (BALSAMO) 29 November 1988 Entire document	1-16
X	US 5199745 A (BALSAMO) 6 April 1993 Entire document	1-16

Further documents are listed in the continuation of Box C  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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 13 December 2001	Date of mailing of the international search report - 7 JAN 2002
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer <b>A. ALI</b> Telephone No : (02) 6283 2607

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU01/01550

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5263890 A (DENT, IV) 23 November 1993 Entire document	1-16
X	FR 2699860 A (SACCOMAN) 1 July 1994 Figures in particular	1-16
X	GB 2336808 A (JOHNSON) 3 November 1999 Entire document	1-16

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
**PCT/AU01/01550**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member
FR 2790423	NONE
US 4787160	GB 2204534
US 5199745	NONE
US 5263890	AU 59835/94      WO 9514517
FR 2699860	NONE
GB 2336808	NONE

**END OF ANNEX**