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(54) Title: NOVELTY BACKPACK

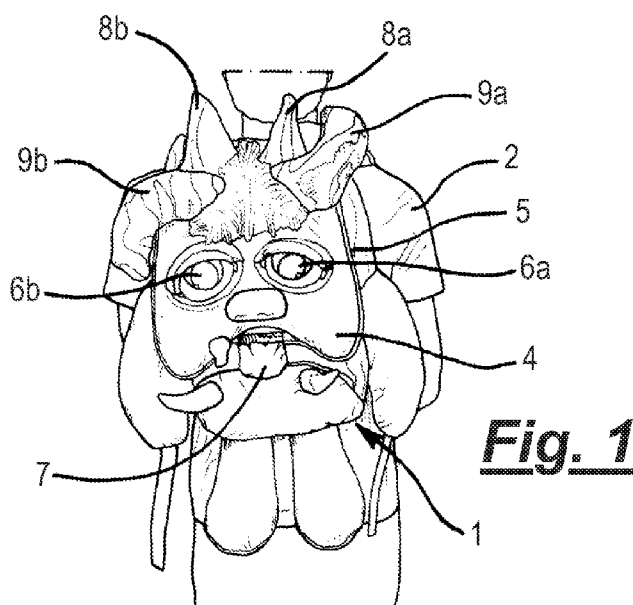


Fig. 1

(57) Abstract: Described are backpacks that comprise a number of moveable components that provide novel animated effects which are controlled by the user of the backpack. The movement of these components (6, 7, 8, 9) may be accompanied by sounds which add to the overall surprise and amusement induced by the bags to surrounding observers. The amusement and surprise is further enhanced by having the means for controlling the moveable components discretely located within the backpack (1) so that they are not immediately obvious to these observers. Locating the control mechanisms (11, 12, 13) within the backpack also provides them with physical protection and assists in preventing them becoming entangled with each other or with other components of the backpack (1).



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1 Novelty Backpack

2
3 The present invention relates to the field of bags. In particular a backpack is described
4 wherein animated effects are provided by the incorporation of movable features.
5

6 The term backpack relates to a portable container or receptacle suitable for carrying
7 articles. Such receptacles normally incorporate one or two shoulder straps so as to allow
8 a user to position the pack over their shoulders in a manner that allows for the weight of
9 the pack and the contained articles to be spread over the shoulders and back of the user.
10 Backpacks are often capable of being closed at the mouth and are known to be made from
11 a variety of materials, including leather, plastic or cloth.
12

13 It is known in the art to provide bags with fanciful designs so as to make them more
14 attractive for users. In particular, it is common to produce backpacks that incorporate a
15 picture of characters or more general images taken from popular television programmes or
16 feature films in order to make these products more appealing to children.
17

18 It is an object of an embodiment of the present invention to provide a bag that incorporates
19 moveable features thus rendering the bag more appealing to children.
20

Summary of Invention

According to a first aspect of the present invention there is provided a backpack wherein the backpack comprises one or more moveable features and one or more control mechanisms connected to the one or more moveable features wherein activation of the one or more control mechanisms acts to move one or more of the moveable features.

The above arrangement adapts a functional backpack so as to provide it with one or more moveable features which provide the backpack with a degree of user controlled animation.

The movement of the one or more movable features may comprise a translational movement of the one or more moveable features. Alternatively, the movement of the one or more movable features comprises a rotational movement of the one or more moveable features. The movement of the one or more movable features may comprise a translational and rotational movement of the one or more moveable features.

Most preferably one or more of the moveable features are located on an external surface of the backpack. In this embodiment the moveable features are fully visible to an observer prior to the activation of the one or more control mechanisms.

Preferably the backpack comprises one or more activators wherein operation of the one or more activators provides a means for activating one or more of the control mechanisms.

Most preferably the one or more moveable features are biased in a first position.

Preferably activation of the one or more control mechanisms causes one or more of the moveable features to move away from the first position.

The one or more control mechanisms may be located on a plate.

It is preferable for the one or more control mechanisms to be located internally within the backpack. This is preferable so that an observer will not see when the user induces movement of the one or more moveable features and thus there is no detracting from surprise and amusement induced by the backpack.

1
2 Most preferably the backpack further comprises a speaker. Preferably the activation of the
3 one or more of the control mechanisms induces a sound to be generated from the
4 speaker.

5
6 Optionally the one or more control mechanisms comprise a cord mechanically connected
7 to one or more moveable features. In this embodiment, the one or more activators may
8 comprise a ring attached to one end of the cord.

9
10 Alternatively the one or more control mechanisms may comprise an electrical circuit
11 connected to one or more moveable features. In this embodiment, the one or more
12 activators may comprise an electrical switch.

13
14 The electrical switch may be located within a remote control. In this embodiment the one
15 or more moveable features may be controlled without the user having to have physical
16 contact with the backpack.

17
18 The one or more moveable features may comprise a moveable features selected from the
19 set comprising eyes, ears, horns and tongues.

20
21 The tongue may be located in a recess and configured to move longitudinally relative to
22 the plate.

23
24 The recess may comprise a wall having a sloped profile such that the tongue is displaced
25 away from the plate as it moves longitudinally relative to the plate.

26
27 According to a second aspect of the present invention there is provided a method of
28 animating a backpack the method comprising:

- 29 - providing the backpack with one or more moveable features;
30 - providing the backpack with one or more control mechanisms connected to the one
31 or more moveable features;
32 - activating the one or more control mechanisms so as to induce a movement of one
33 or more of the moveable features.

34
35 Most preferably the one or more control mechanisms are activated manually.

The induced movement of the one or more movable features may comprise a translational movement of the one or more moveable features. Alternatively, the induced movement of the one or more movable features comprises a rotational movement of the one or more moveable features. The movement of the one or more movable features may comprise a translational and rotational movement of the one or more moveable features.

Preferably the method further comprises providing the backpack with one or more activators the operation of which activates one or more of the control mechanisms.

Most preferably the activation of the one or more of the control mechanisms acts to induce a sound to accompany the movement of one or more of the moveable features.

Embodiments of the second aspect of the present invention may comprise features to implement the preferred or optional features of the first aspect of the invention or vice versa.

Brief Description of Drawings

Aspects and advantages of the present invention will become apparent upon reading the following detailed description and upon reference to the following drawings in which:

Figure 1 presents a rear view of a backpack being worn by a user in accordance with an embodiment of the present invention;

Figure 2 presents a front view of the backpack of Figure 1 being worn by a user; and

Figure 3 presents:

(a) a perspective view of a first embodiment of an internal plate for the backpack of Figure 1; and

(b) a schematic front view of an alternative embodiment of an internal plate of the backpack of Figure 1; and

Figure 4 presents a schematic front view of a further alternative embodiment of an internal plate of the backpack of Figure 1.

1
2 In the description which follows, like parts are marked throughout the specification and
3 drawings with the same reference numerals. The drawings are not necessarily to scale
4 and the proportions of certain parts have been exaggerated to better illustrate details and
5 features of embodiments of the invention.

6
7 Detailed Description
8

9 Figure 1 presents a representation of a backpack 1 in accordance with an embodiment of
10 the present invention. The backpack 1 can be seen to be in the form of a monster. The
11 backpack 1 is worn by a user 2 by locating straps 3a and 3b over their shoulders. Located
12 around the flap 4 of the backpack 1 is the monster's head 5 which, in the presently
13 described embodiment, comprises two eyes 6a and 6b; a tongue 7; two ears 8a and 8b;
14 and two horns 9a and 9b one or more of which may function as movable novelty features
15 of the backpack 1.

16
17 The operation of these moveable features will now be further described with reference to
18 Figures 2 and 3. In particular, Figure 2 presents a front view of the backpack 1 of Figure 1
19 while Figure 3 presents a perspective view and a schematic front view of two
20 embodiments of an internal plate 10a and 10b of the backpack 1 of Figure 1.

21
22 The internal plates 10a and 10b are preferably located within the flap 4 so that their
23 components are hidden from view. They can be seen to comprise a first 11, a second 12
24 and a third manually operated control mechanism 13 which act to control the position of
25 the eyes 6a and 6b and the tongue 7 of the backpack 1, respectively.

26
27 The first 11 and second 12 manually operated control mechanisms are similar in design
28 and are employed to operate the left 6a and right eyes 6b of the backpack 1, respectfully.
29 Each mechanism 11 and 12 comprises an eyelid control plate 14 having three tab and pin
30 mechanisms 15, 16 and 17, one 15 located to the upper side of the eyelid control plate 14
31 and one 16 and 17 on either side of the eyelid control plate 14. The pins of the three tab
32 and pin mechanisms 15, 16 and 17 are movably located within corresponding slots 18, 19
33 and 20 of the internal plate 10a. Each of the slots 18, 19 and 20 are shown to be
34 substantially parallel.
35

1 Fixed between the internal plate 10a and the tab and pin mechanisms 16 and 17 is a
2 length of elastic 21. The lengths of elastic 21 provide a means for biasing the eyelid
3 control plates 14 such that the eyes 6a and 6b appear to be in a closed position.

4
5 Fixed between the tab and pin mechanisms 15 and movement activators, which in the
6 present embodiment comprise rings 22a and 22b are lengths of cord 23a and 23b. The
7 user 2 can then employ the rings 22a and 22b so as to pull on one of the lengths of cords
8 23a and 23b and thus overcome the tension provided by the corresponding length of
9 elastic 21 so moving the corresponding eye 6a and 6b from the closed position to an open
10 position.

11
12 It will be readily apparent to the skilled reader that the orientation of the lengths of elastic
13 21 and the lengths of the cords 23a and 23b with respect to the eyelid control plates 14
14 could be reversed such that one or both of the eyes 6a and 6b are biased in an open
15 position. In this embodiment, when the user 2 activates movement by pulling on the rings
16 22a and 22b the tension provided by the corresponding lengths of elastic 21 is again
17 overcome so moving the corresponding eye 6a and 6b from the open position to a closed
18 position.

19
20 The third manually operated control mechanism 13, employed to control the position of the
21 tongue 7 of the backpack 1, operates in a similar manner to the previously described with
22 respect to the first 11 and second 12 manually operated control mechanisms. In the
23 embodiment presented in Figure 3(a) the third manually operated control mechanism 13
24 can be seen to comprise a tongue control plate 24 located within a recess 25 of the
25 internal plate 10a. A fixing plate 26 may be employed to help retain the tongue control
26 plate 24 within the recess 25.

27
28 Two lengths of elastic 21 connected between the tongue control plate 24 and the recess
29 25 and act to bias the tongue control plate 24 within the recess 25. A length of cord 23c is
30 attached between a movement activator, ring 22c, and the tongue control plate 24 such
31 that when the user 2 employs the ring 22c so as to pull on the length of cord 23c they
32 overcome the tension provided by the corresponding lengths of elastic 21 resulting in the
33 tongue 7 moving longitudinally relative to the internal plate 10a. This provides the monster
34 with the effect that it is sticking its tongue 7 out of its mouth.

35

1 In the embodiment presented in Figure 3(b) the third manually operated control
2 mechanism 13 can again be seen to comprise a tongue control plate 24 located within the
3 recess 25 of the internal plate 10b. The fixing plate 26 may again be employed to help
4 retain the tongue control plate 24 with the recess 25. However, in this embodiment a
5 single length of elastic 21 is connected between the tongue control plate 24 and the fixing
6 plate 26 act so as to bias the tongue control plate 24 in an extended position from the
7 recess 25. The length of cord 23c is again attached between the ring 22c and the tongue
8 control plate 24 such that when the user 2 employs the ring 22c so as to pull on the length
9 of cords 23c they overcome the tension provided by the length of elastic 21 resulting in the
10 tongue 7 moving longitudinally relative to the internal plate 10b and into the recess. This
11 provides the monster with the effect that it is moving its tongue 7 into of its mouth.

12
13 In yet a further alternative embodiment, the rear surface of the recess 25 may also have a
14 sloped profile so as to also displace the tongue control plate 24 away from the internal
15 plate 10a and 10b as it moves longitudinally relative to the internal plate 10a and 10b and
16 out of the recess 25. This provides a more realistic effect to the projection of the tongue 7
17 from the mouth of the monster.

18
19 A preferred feature for all of the above described embodiments is to have the lengths of
20 cord 23a, 23b and 23c pass internally from the internal plates 10a and 10b and down
21 through the straps 3a and 3b before exiting the straps 3a and 3b at the front of the
22 backpack 1. With this arrangement there is a reduced chance of the lengths of cord 23a,
23 23b and 23c becoming entangled with each other. Further physical protection can be
24 provided for the lengths of cord 23a, 23b and 23c by locating them within recessed
25 channels 27 on the internal plate 10a and 10b. Clips 28 may also be employed so as to
26 assist in retaining the lengths of cord 23a, 23b and 23c within associated recessed
27 channels. Keeping the lengths of cord 23a, 23b and 23c straight and isolated from each
28 other is found to reduce friction and provide good and consistent movement of the lengths
29 of cord 23a, 23b and 23c. This results in a prolonged lifetime for the backpack 1 as well
30 as ease of activation by the user 2.

31
32 Each length of cord 23a, 23b and 23c may have a label 29a, 29b and 29c associated with
33 it so as to allow a user 2 to easily identify its function e.g. open eye, stick out tongue.
34 Preferably these labels 29a, 29b and 29c are attached to the movement activators, namely
35 rings 22a, 22b, and 22c associated with each of the lengths of cord 23a, 23b and 23c.

1
2 Enclosing the lengths of cord 23a, 23b and 23c within the backpack, as described above,
3 also acts to enhance the impact of the operation of the one or more moveable parts to
4 third party observers. This is because it will not be obvious to these observers when the
5 user 2 pulls on one of the lengths of cord 23a, 23b and 23c so as to activate one of the
6 moveable features.

7
8 It will be appreciated from the above description that the internal plates 10a and 10b are
9 configured to control the eyes 6a and 6b and the tongue 7 however in alternative
10 embodiments they can be adapted so as to allow for movement of one or more of the ears
11 8a and 8b or horns 9a and 9b of the backpack 1. The movement of one or more of the
12 ears 8a and 8b or horns 9a and 9b may be a rotational movement or a combination of
13 rotational and translational movement.

14
15 It is preferable that when a cord 23 is pulled so as to activate a movable features of the
16 backpack 1 that it also activates a corresponding sound to be produced by the backpack 1.
17 In the presently described embodiments this is achieved by the movement of the eyelid
18 control plates 14 and or the tongue control plate 24 being detected by a CPU 30. The
19 CPU 30 then selects a corresponding sound from an internal database to be played
20 through a speaker 31 located within the backpack 1 e.g. upon the internal plate 10. The
21 sound may be preselected so as to always correspond to the movement of a particular
22 feature or alternatively may be picked at random from the database of predetermined
23 sounds.

24
25 In an alternative embodiment the internal plates may be omitted. In these embodiments
26 the manually operated control mechanism 11, 12 and 13 would simply be fixed into the
27 fabric of the backpack 1.

28
29 It will be appreciated by the skilled reader that the moveable features in all of the above
30 described embodiments may comprise alternative activation means. By way of example,
31 and with reference to Figure 4, instead of lengths of cord 23a, 23b and 23c being
32 employed to mechanically control the position of a mechanical feature this may
33 alternatively be achieved through the employment of an electrical circuit 32 through which
34 a user 2 may activate and deactivate one or more pairs of electromagnets 33. For
35 example, operation of the moveable features may be activated by the user 2 employing

one or more switches located within the straps 3 of the backpack 1. Alternatively, the operation of the of the moveable features may be activated by the user 2 employing a remote control 34 so that they do not require to be in physical contact with the backpack 1 or bag in order activate these features. To allow this embodiment to function correctly the electrical circuit 32 would obviously be required to comprise a suitable receiver.

In the embodiment presented in Figure 4 the current direction of the electromagnets 33 associated with the eyes 6a and 6b is such that they act to repel each other, thus overcoming the biasing force on the eyes 6a and 6b e.g. gravity. However, the current direction of the electromagnets 33 associated with the tongue 7 is such that they act to attract each other while overcoming the biasing force on the tongue 7. Lengths of elastic 21 could alternatively be employed in this embodiment to provide the biasing force for the associated moveable feature.

Once the respective current is turned off the associated bias force causes the moveable feature to return to its original position.

Although Figure 4 presents a pair of electromagnets 33 associated with each moveable feature it will be appreciated that in a further alternative embodiment one of these electromagnets 33 could be replaces with a permanent magnet.

It will also be appreciated by the skilled reader that the location of the electromagnets 33, and their associated direction of current, may be also varied so as to provide alternative bias positions and or direction of motion for the associated moveable feature.

The above described backpacks comprise a number of moveable components that provide novel animated effects which are controlled by the user of the backpack. The movement of these components may be accompanied by sounds which add to the overall surprise and amusement induced by the bags to surrounding observers. The amusement and surprise is further enhanced by having the means for controlling the moveable components discretely located within the backpack so that they are not immediately obvious to these observers. Locating the control mechanisms within the backpack also provides them with physical protection and assists in preventing them becoming entangled with each other or with other components of the backpack.

1 The foregoing description of the invention has been presented for purposes of illustration
2 and description and is not intended to be exhaustive or to limit the invention to the precise
3 form disclosed. The described embodiments were chosen and described in order to best
4 explain the principles of the invention and its practical application to thereby enable others
5 skilled in the art to best utilise the invention in various embodiments and with various
6 modifications as are suited to the particular use contemplated. Therefore, further
7 modifications or improvements may be incorporated without departing from the scope of
8 the invention as defined by the appended claims.

9

10

1 Claims

- 2
- 3 1) A backpack comprising one or more moveable features and one or more control
4 mechanisms connected to the one or more moveable features wherein activation of
5 the one or more control mechanisms acts to move one or more of the moveable
6 features.
- 7
- 8 2) A backpack as claimed in claim 1 wherein the movement of the one or more
9 movable features comprises a translational movement of the one or more moveable
10 features.
- 11
- 12 3) A backpack as claimed in either of claims 1 or 2 wherein the movement of the one or
13 more movable features comprises a rotational movement of the one or more
14 moveable features.
- 15
- 16 4) A backpack as claimed in any of the preceding claims wherein one or more of the
17 moveable features are located on an external surface of the backpack.
- 18
- 19 5) A backpack as claimed in any of the preceding claims wherein the backpack further
20 comprises one or more activators wherein operation of the one or more activators
21 provides a means for activating one or more of the control mechanisms.
- 22
- 23 6) A backpack as claimed in any of the preceding claims wherein the one or more
24 moveable features are biased in a first position.
- 25
- 26 7) A backpack as claimed in claim 6 wherein activation of the one or more control
27 mechanisms causes one or more of the moveable features to move away from the
28 first position.
- 29
- 30 8) A backpack as claimed in any of the preceding claims wherein the one or more
31 control mechanisms are located on a plate.
- 32
- 33 9) A backpack as claimed in any of the preceding claims wherein the one or more
34 control mechanisms are located internally within the backpack.
- 35

- 1 10) A backpack as claimed in any of the preceding claims wherein the backpack further
2 comprises a speaker.
3
- 4 11) A backpack as claimed in claim 10 wherein the activation of the one or more of the
5 control mechanisms induces a sound to be generated from the speaker.
6
- 7 12) A backpack as claimed in any of the preceding claims wherein the one or more
8 control mechanisms comprise a cord mechanically connected to one or more
9 moveable features.
10
- 11 13) A backpack as claimed in claim 12 wherein the one or more activators comprise a
12 ring attached to one end of the cord.
13
- 14 14) A backpack as claimed in any of the preceding claims wherein the one or more
15 control mechanisms comprise an electrical circuit connected to one or more
16 moveable features.
17
- 18 15) A backpack as claimed in claim 14 wherein the one or more activators comprises an
19 electrical switch.
20
- 21 16) A backpack as claimed in claim 15 wherein the electrical switch is located within a
22 remote control.
23
- 24 17) A backpack as claimed in any of the preceding claims wherein the one or more
25 moveable features comprise a moveable feature selected from the set comprising
26 eyes, ears, horns and tongues.
27
- 28 18) A backpack as claimed in claim 17 wherein the tongue is located within a recess of
29 the plate and configured so as to move longitudinally relative to the plate.
30
- 31 19) A backpack as claimed in claim 18 wherein the recess comprises a wall having a
32 sloped profile such that the tongue is displaced away from the plate as it moves
33 longitudinally relative to the plate.
34
- 35 20) A method of animating a backpack the method comprising:

- 1 - providing the backpack with one or more moveable features;
- 2 - providing the backpack with one or more control mechanisms connected to the one
- 3 or more moveable features;
- 4 - activating the one or more control mechanisms so as to induce a movement of one
- 5 or more of the moveable features.

6

- 7 21) A method of animating a backpack as claimed in claim 20 wherein the one or more
8 control mechanisms are activated manually.

9

- 10 22) A method of animating a backpack as claimed in either of claims 20 or 21 wherein
11 the induced movement of the one or more movable features comprises a
12 translational movement of the one or more moveable features.

13

- 14 23) A method of animating a backpack as claimed in any of claims 20 to 22 wherein the
15 induced movement of the one or more movable features comprises a rotational
16 movement of the one or more moveable features.

17

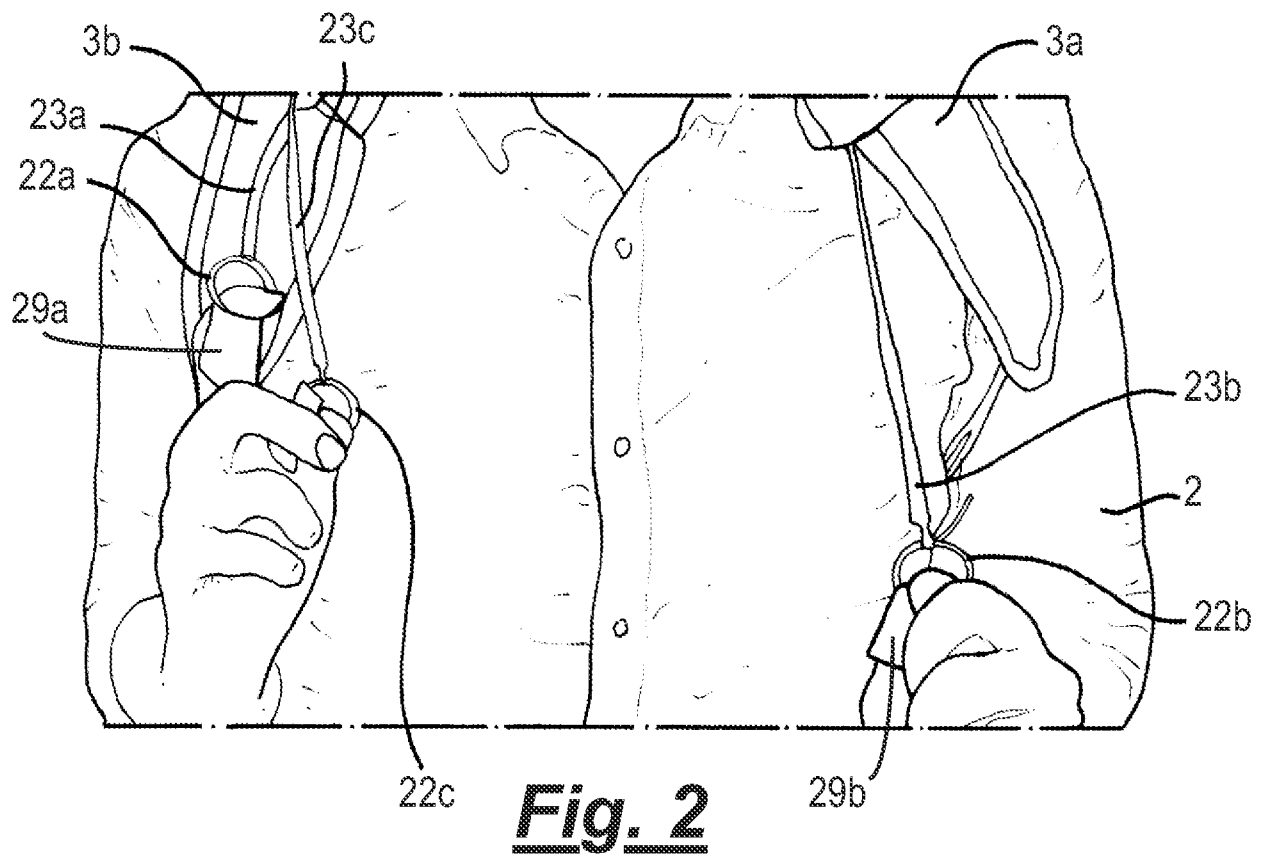
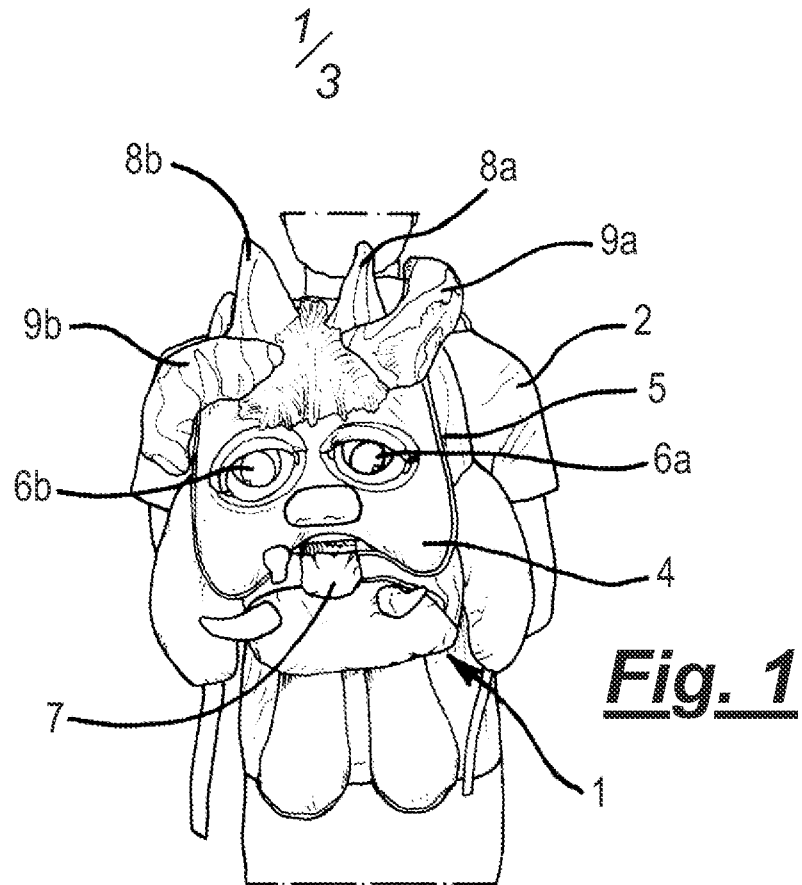
- 18 24) A method of animating a backpack as claimed in any of claims 20 to 23 wherein the
19 method further comprises providing the backpack with one or more activators the
20 operation of which activates one or more of the control mechanisms.

21

- 22 25) A method of animating a backpack as claimed in any of claims 20 to 24 wherein the
23 activation of the one or more of the control mechanisms acts to induce a sound to
24 accompany the movement of one or more of the moveable features.

25

26



2/3

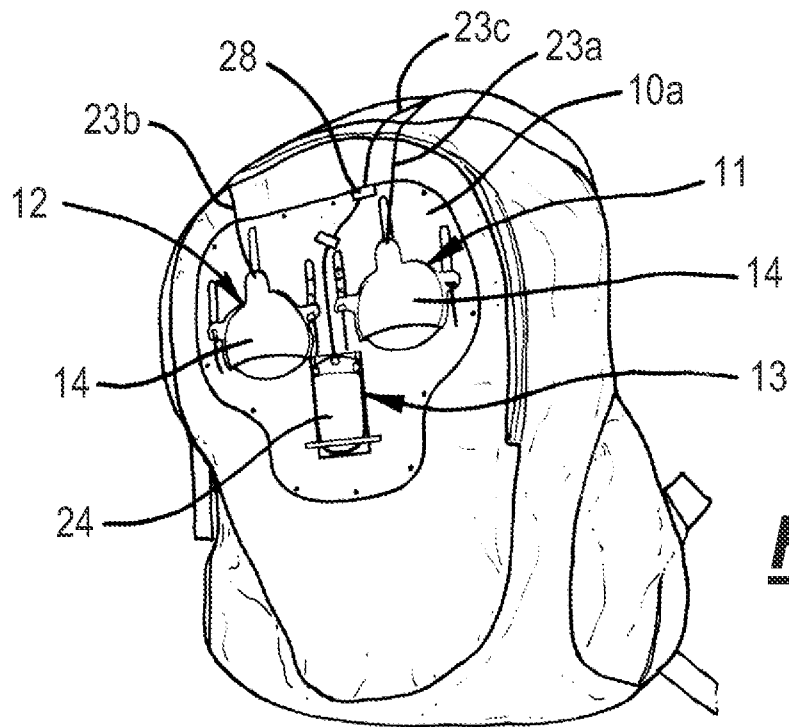


Fig. 3(a)

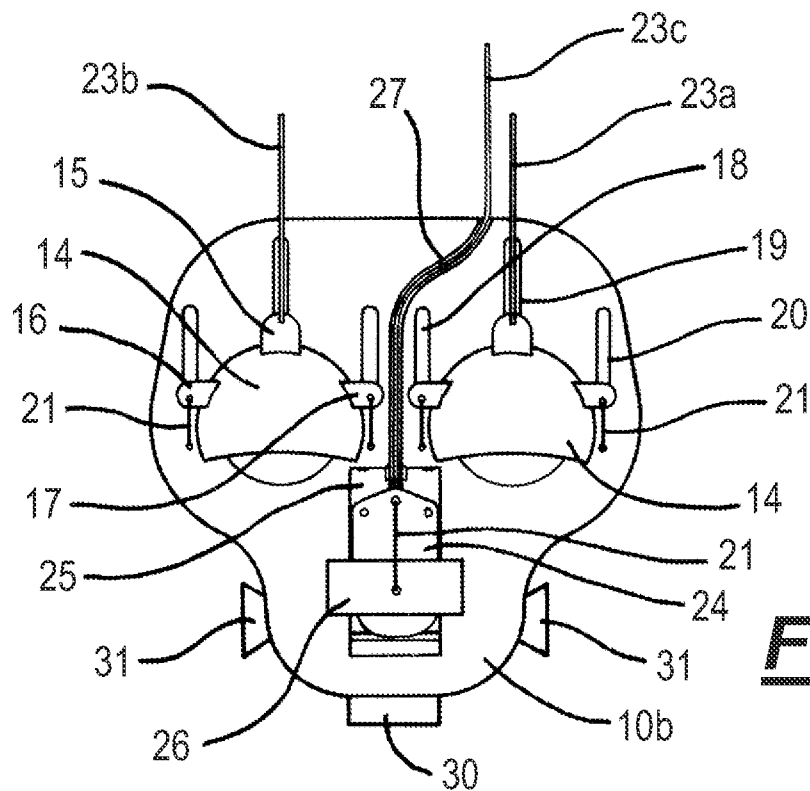


Fig. 3(b)

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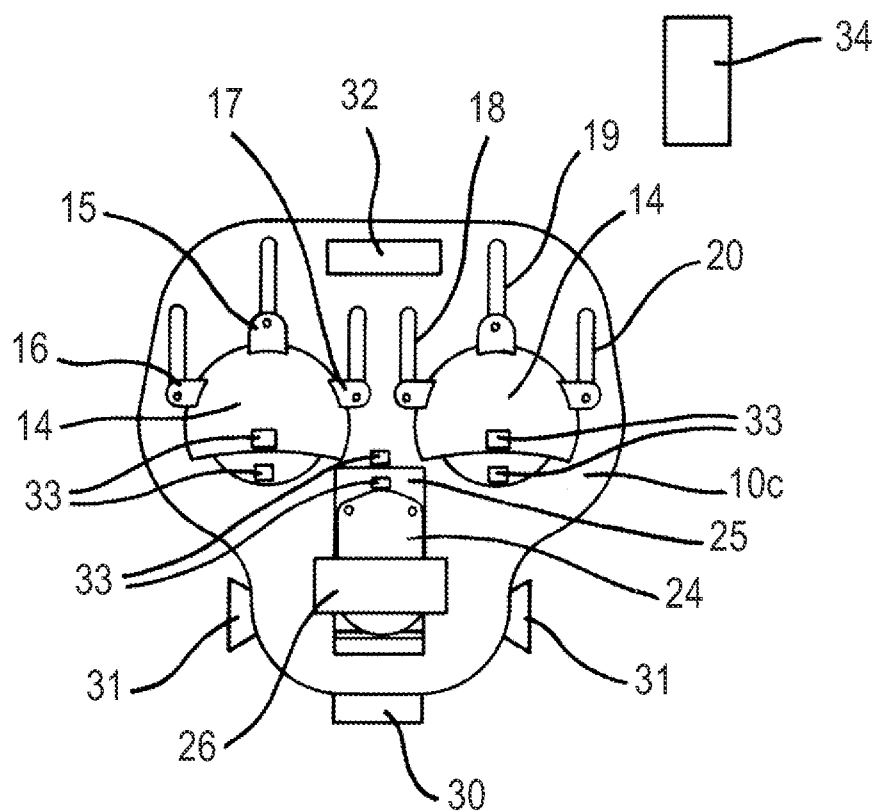


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2013/052224

A. CLASSIFICATION OF SUBJECT MATTER
INV. A45C13/08 A45F3/04
ADD.

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)

A45F A45C

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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008/173686 A1 (KENNEDY COLLEEN T [US]) 24 July 2008 (2008-07-24)	1-9,12, 13,17, 18,20-24
Y	paragraph [0017] - paragraph [0033]; figures 1-10d	10,11, 14-16,25
Y	FR 2 853 502 A1 (WELL DONE CONCEPTS S A S [FR]) 15 October 2004 (2004-10-15) page 3, line 21 - page 5, line 28; figures 1-3	10,11, 14-16,25
A	US 2004/200871 A1 (HAN ANGELA W [TW]) 14 October 2004 (2004-10-14) paragraph [0015]; figures 1-4	10,11,14
A	US 2003/017847 A1 (TOUPIN PAUL M [CA]) 23 January 2003 (2003-01-23) paragraph [0069]; figure 4	1-25

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2013/052224

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008173686	A1	24-07-2008	NONE
FR 2853502	A1	15-10-2004	NONE
US 2004200871	A1	14-10-2004	NONE
US 2003017847	A1	23-01-2003	US 2003017847 A1 23-01-2003
			US 2005124385 A1 09-06-2005
			US 2010153117 A1 17-06-2010
			US 2012198340 A1 02-08-2012