



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.10.2011 Bulletin 2011/42

(51) Int Cl.:
F21L 4/02 (2006.01) **F21S 8/00** (2006.01)
F21S 10/00 (2006.01) **F21V 23/04** (2006.01)

(21) Application number: **11275064.1**

(22) Date of filing: **19.04.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME

(30) Priority: **19.04.2010 GB 1006458**
31.08.2010 GB 1014366

(71) Applicant: **Worlds Apart Limited**
Trekenning, St. Columb Major,
Cornwall, TR9 6SX (GB)

(72) Inventor: **Gray, Neil**
Cornwall, TR9 6SX (GB)

(74) Representative: **Wood, Graham**
Bailey Walsh & Co LLP
5 York Place,
Leeds LS1 2SD (GB)

(54) **Lighting apparatus**

(57) The invention relates to lighting apparatus which typically can be used in at least two configurations, one of which may be as a torch light or a night light and the other of which is as a projector. At least one image from a projection member can be projected onto a surface for viewing from the apparatus. The projection member can include a series of images and include a blank portion which when positioned with respect to the housing changes the configuration of the apparatus from a projector to a night light configuration. The apparatus housing can be placed directly onto a support surface or onto a base and the housing or base may include a portion which is angled so as to provide an angle at which the projection of the image from the apparatus can be viewed.

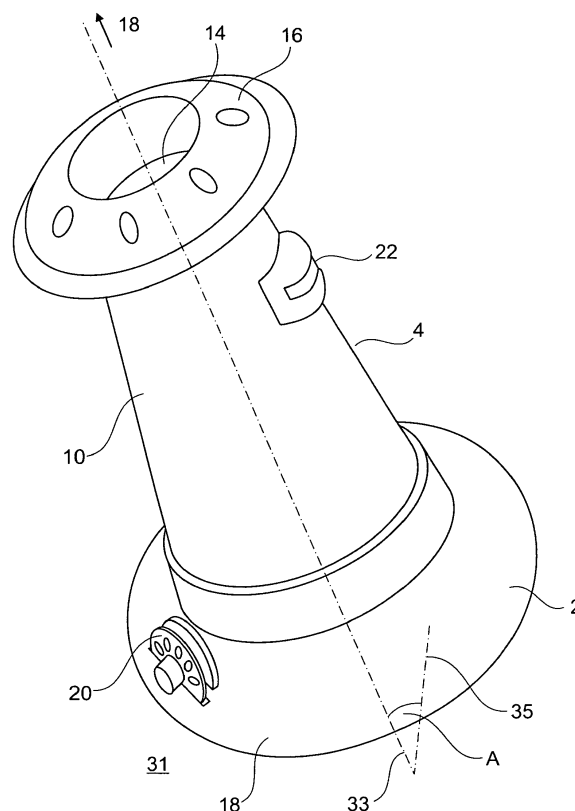


Fig. 4

Description

[0001] The invention to which this application relates is to a lighting apparatus which allows the provision of a first lighting effect and, typically, a second lighting effect, different to the first. The particular lighting effect which is created at a given time, can be selected by the user manipulation of switching means and/or the selective configuration of the apparatus.

[0002] The applicant, in their patent EP1811226 describes a combination lighting apparatus. The apparatus is provided to allow the selective operation of the apparatus as a torch, in which a housing is held by the user and at least one light source illuminated to provide torchlight from an end thereof and also to allow the apparatus to be operable in a second configuration as a nightlight in which the same, or, more typically, alternative light sources are illuminated to provide a glowing light effect through at least a portion of the walls of the housing. In the patent, the selection of the particular configuration of operation of the apparatus can be made by the user deciding whether to grip the housing and use the same as a torch or to place the housing onto a base or surface which causes operation of the apparatus as a night light.

[0003] The applicant has identified that there are yet further advantages to be achieved with combined lighting apparatus of this type so as to further increase the utility of the same by using the apparatus to project a light effect onto a further surface.

[0004] An aim of the present invention is to provide an apparatus which allows the projection of images therefrom and preferably to provide the projection apparatus in a particular manner which enables the same to be used in conjunction with at least one further lighting effect created from the apparatus. A further aim is to provide a combination lighting apparatus which can also be used to house one or more further articles therein and to allow the display of the same.

[0005] In a first aspect of the invention, there is provided apparatus operable to provide a plurality of lighting effects, said apparatus operable in any or any combination of a torch light configuration and/or night light configuration, and a projection configuration and wherein in the projection configuration, light passes from at least one light source mounted in a housing of the apparatus through at least one image provided on a projection member mounted on or in said housing.

[0006] Typically, the projection member can be selectively positioned with regard to the housing so as to allow the selection and positioning of a particular image, from a range of images provided on the projection member, which is to be displayed when the apparatus is being used in the projection configuration. In one embodiment, the projection member includes a blank or masked portion which, when selectively positioned in the housing, prevents light from passing through the apparatus and therefore prevents the apparatus from being used in a projection configuration. Typically, when the blank por-

tion is in the selected position, the apparatus configuration is to operate as a night light when at least one light source within the apparatus is illuminated and a glow light effect is created through at least part of the walls of the housing.

[0007] In one embodiment, the projection member includes a series of images provided thereon, each of said images being sufficiently transparent so as to allow light to pass therethrough and for the images thereon to be projected from the housing onto a display surface such as a wall.

[0008] In one embodiment, each of the images is linked so as to allow the selective and sequential positioning of the projection member by the user with respect to the housing to create a storyline by the sequential generation of the projected images.

[0009] In one embodiment, the apparatus comprises a housing in which there is provided a first light source, which, when illuminated, provides a torch light and at least one second light source which, when illuminated, creates a night light effect or provides a projection light. Typically, the first and second light sources are not illuminated at the same time.

[0010] In one embodiment, the torch light source can be illuminated when the housing is gripped by a user so as to allow the torch light to be generated as the user moves around. The change in configuration to a night light and /or projection configuration can be achieved with the second light source being illuminated when the housing is placed on a further surface or on a base and is therefore retained in a fixed position with a circuit completed to connect a power source with the said second light source. In one embodiment the power source can be provided by batteries located in the housing or alternatively a mains power source can also be connected at least when the apparatus is in the configuration for operation as a night light or projector.

[0011] In one embodiment, the housing is provided with a switch which is actuated to allow illumination of the second light source when the housing is placed onto the base or surface.

[0012] In one embodiment, the switch is movable by placement of the housing onto the surface or base. In another embodiment, the switch is formed by electrical contact means which are provided on the base or further article and on the housing such that when electrical contact between the contact means is made the switch is moved to an on position.

[0013] Typically, the aperture for receipt of the projection member, is provided in the housing at a location such that the member inserted therein lies between a light source in the housing and an external face through which light and the image generated from the projection member can be projected. In one embodiment, focussing means and/or magnifying means are provided in the housing to allow the projected image to be focussed and/or magnified when it is displayed on the external display surface, such as a wall or ceiling. In one embodiment

the focussing means are an adjustable lens.

[0014] Typically, the image is magnified on said further surface and passes through at least one lens provided in the apparatus.

[0015] In one embodiment, the apparatus comprises a base having location means and electrical contact means for a housing, said housing, when in location on the base, making electrical contact to activate at least one light source. In another embodiment only the housing is provided and the electrical contact is achieved by operation of a switch provided on the housing.

[0016] Typically the light source is positioned with respect to a projection member carried on the housing such that light emitted from the light source passes through an image on the projection member so as to project that image from an opening in the housing, onto a display surface.

[0017] Typically the opening in the housing is provided with at least one lens, and adjustable means to allow the focusing of the image which is displayed on the said further surface.

[0018] In one embodiment, the base is provided with location means for one or more projection members which are not being used at that time.

[0019] In one embodiment, the base or the housing base is provided with a portion on the underside thereof which allows the housing to be positioned at a specific angle which is found to be useful in the projection of an image from the housing onto a further surface, such as, for example a wall or ceiling of a room.

[0020] In a further aspect of the invention there is provided apparatus which is capable of operation in a projection configuration, said apparatus including a housing in which there is provided at least one light source, said housing including a face through which light can be emitted and, intermediate said face and light source there is provided a location means for receipt of a projection member which is positionable with respect to the housing to allow one of a range of images on said projection member to lie in the path of light from the light source and be projected from the housing through said face

[0021] In a further aspect of the invention, there is provided projection apparatus, said apparatus comprising a housing having at least one light source located therein, and a location means for a projection member therewith, said projection member provided with at least one image thereon which can be selectively positioned in a light path between the illuminated light source within the housing and an external face through which light can be emitted such that the image on the member, is projected via the light path from the apparatus onto a further surface for display.

[0022] In a further aspect of the invention which can be used in conjunction with any of the other aspects or independently, there is provided a lighting means including a housing having a plurality of light sources which can be selectively illuminated to allow the lighting means to be used as a torch or as a night light and wherein said

housing includes an aperture for reception of a member, said member including a plurality of transparent or semi-transparent portions, said member selectively positionable with regard to the housing so as to allow one of the transparent portions to be located with respect to at least one of the light sources.

[0023] Typically, the transparent or semi transparent portions are of different colours so that the selective location of one of said portions in respect of the light source, allows the user to select a particular colour of light which is emitted at that time. In one embodiment the said member is provided in the form of a disk and the portions are formed along a circular path on said disk.

[0024] Typically the member can be selectively rotated with regard to the housing, when placed in the aperture so as to allow the appropriate portion to be located with regard to the light source to create the desired light effect or, in another embodiment, a graphical effect to be created.

[0025] In a further aspect of the invention, there is provided an apparatus which is capable of operation in at least two lighting configurations, said apparatus including a housing in which there is provided at least one light source, said housing including a face through which light can be emitted, said face being at least partially transparent to allow an article held within the housing, to be viewable therethrough.

[0026] In one embodiment, said face is provided in, or as, a part fitted to the housing of the apparatus and is selectively removable from the remainder of the housing so as to allow the article located therein to be selectively replaced and/or positioned within the housing.

[0027] Typically, the apparatus in this aspect, will be operable in at least a nightlight configuration but may also, preferably, be operable in both a torchlight configuration and/or a projection configuration.

[0028] In one embodiment the character is located in the housing and light is emitted from the interior of the housing to shine around the character. In one embodiment the character is located over the illuminated light and may also include means and/or be transparent so as to allow light to pass into the character and to pass out therefrom.

[0029] In one embodiment one of a range of characters in a set of characters can be selectively positioned in the housing and removed therefrom. Typically when the characters are removed from the housing they can be used as a toy.

[0030] In a yet further aspect of the invention there is provided a lighting means, said lighting means including a housing with first and second light sources which can be selectively illuminated, said housing including a portion which can be selectively removed from the housing and which portion forms, in conjunction with at least one face of the housing, a cavity into which one or more articles can be placed.

[0031] Typically the article which is provided to be placed into the cavity is a character model or selectable

item and in one embodiment the articles can be interchanged by the user. In one embodiment the cavity is at least partially transparent and the same acts to display the article to the onlooker.

[0032] Typically the selective illumination of the light sources can be achieved via switching means as defined in the applicant's co-pending application, or other switching means.

[0033] Specific embodiments of the invention are now described with reference to the accompanying drawings wherein;

Figure 1 illustrates a perspective view of apparatus in accordance with one embodiment of the invention;

Figure 2 illustrates apparatus in accordance with Figure 1 in a first configuration of operation;

Figure 3 illustrates an elevation of apparatus in accordance with a further configuration of operation in accordance with the invention;

Figure 4 illustrates the apparatus of Figures 1-3 in a third configuration of operation;

Figure 5 illustrates a projection member in accordance with one embodiment of the invention;

Figure 6 illustrate a further embodiment of the invention;

Figure 7a-g illustrate views of the lighting means in accordance with one embodiment of the invention; and

Figures 8a-c illustrate a partial cross sectional elevation of the lighting means in one embodiment.

[0034] With reference to Figures 1-5, there is illustrated apparatus in accordance with the first embodiment of the invention. In this embodiment, there is provided a base 2 which is provided to receive a housing 4 although in another embodiment the base may be dispensed with and only the housing is provided.

[0035] In this embodiment shown, the housing and base are provided with electrical contact means not shown, which are located such that when the housing is located on the base, electrical contact is made between the housing and the base which allows the illumination of at least one light source located within the housing and contact with a power source provided within the base and/or housing. When the base 2 and housing 4 are separate as illustrated in Figure 2, a second light source in the housing is illuminated which causes light to be emitted from face 8 of the housing and hence allow the housing to be used as a torch.

[0036] When the housing 4 is placed in position on the base 2, the said light source shown in Figure 2 is extin-

guished and the light source within the housing 4 is illuminated by the creation of the electrical contact between the base and the housing. The illumination of this light source causes light to be projected as a night light through the walls 10 of the housing as illustrated in Figure 3. In an alternative arrangement the base 2 may be dispensed with and a switch to allow switching between the light source which is to be illuminated is provided for either manual movement by the user of the device or by placing the housing onto a surface which causes the switch condition to alter

[0037] In accordance with the invention the light source used to create the light effect and/or a further light source, can be used as a projection light which is emitted through the opening 14 of the housing 4 as shown in Figure 4. At the opening there is provided a transparent lens and focussing means 16, which allow the focusing of an image generated through the said face and beamed onto another display surface in the general direction 18, to be achieved.

[0038] The apparatus includes a projection member 20 which, in this embodiment is provided as a disc which, in Figure 4, is shown in a storage position on the base but which, when the apparatus is to be used in the projecting configuration, is in the embodiment shown, inserted into the aperture 22 in the housing 4. The projection member 20 is shown in more detail in Figure 5 and includes a series of projection images 24 provided along an annular path on the disc. Once the projection member is in position in the aperture 22 it can be rotated so as to selectively move a particular image 24 into the light path which is created by the illumination of the light source towards the external face. The light which is created passes through the image 24 and causes the same to be projected towards the opening 14 of the housing and hence onto a further surface such as a wall to be displayed.

[0039] The projection member can be rotated to move different images 24 into position and hence create a storyboard effect by the sequential movement of the projection member and hence generation of the displayed images. Typically, the images which are provided on the projection member 20, are linked to the images which are shown on other parts of the apparatus.

[0040] In many cases, it will still be desired to operate the apparatus as a night light rather than a projection means and therefore the projection member is provided with a blanking portion 26. When this blanking portion is selectively positioned in the light path, it prevents light from reaching the opening 14 and hence the light which is created by the illumination of the light source is solely emitted from the side walls of the housing so as to create the night light effect.

[0041] When a base 2 is provided as part of the apparatus, it is preferred that part of the underside 28 of the base and/or side wall of the base is provided at an angled arrangement such that when the apparatus is to be used in a projection configuration the base can be placed onto

the angled portion 28 and thereby locate the housing in a preferred position so as to project the image onto a further surface. Figure 4 illustrates how the portion 28 can be placed on to the surface 31 such that the housing is placed at an angle other than vertical as is illustrated in Figure 4 where the longitudinal axis 33 of the apparatus is oriented at an angle A with respect to the vertical axis 35. This allows the image which is projected from the apparatus to be projected at a desired display angle onto a surface such as a wall or ceiling in the direction 18. It should be appreciated that in certain instances the apparatus does not include the base and the underside of the housing will be placed directly onto the support surface. In this case the surface of the housing which is to be used to contact the support surface can include at least one angled portion to thereby still allow the housing to be located at an angled configuration with respect to the support surface when that portion is placed into contact with the support surface.

[0042] Referring now to Figures 7a-g and 8a-c there are illustrated two embodiments of a lighting means 202 in accordance with one form of the invention. Figures 7a-g illustrate the outer form of the apparatus and Figures 8a-c illustrate a potential inner arrangement of the apparatus. The lighting means includes a base 204 from which a first light can be displayed from the transparent face (not shown) of the housing 208. The base is provided as part of a housing 208 which includes a further light source 209 which is positioned to illuminate the walls 210 of the housing and/or cavity 212. The cavity 212 is shown to have located therein a character model 214 which is viewable through the transparent walls of the portion 216 which is removably attached to the housing via attachment means 218.

[0043] The housing is also provided with an aperture 220 in the form of a slot which is provided to receive a projection member in the form of a disc 222 which can be similar to that shown under the reference numeral 20 in Figure 5. The projection member 222 is typically formed of a translucent material with a series of apertures 224 formed along circular path 226. The projection member is provided, when inserted into the aperture 220, to be rotatable with respect to the housing so as to allow a user to rotate the disc to bring one of the apertures to lie over the path of the light source 209 in the housing. Each of the apertures is typically provided with a transparent material or coloured material such that each aperture will give a different visual effect when positioned over the light source.

[0044] The base 204 of the apparatus includes, as shown in Figures 7a-g a number of angled portions 241 on the underside 243 and the base and hence apparatus can be placed with any of these portions 241 in contact with the support surface so as to provide the longitudinal axis of the housing at an angle other than perpendicular to the support surface. It is envisaged that this will be particularly useful when the apparatus is being used in a projection configuration.

[0045] In order to ensure that the light from the light source 209 reaches the cavity 212 and/or passes out of the housing to act as the projection light then an interior part 230 can be provided as shown in the embodiment of Figures 8a-c which restricts the light from passing to the side walls of the housing and instead channels the light from the light source in the direction of arrow 223 towards the cavity 212. Thus the part 230 effectively catches and channels light emitted from the light source 209 to the cavity to maximise the visual effect which is achieved.

[0046] When the apparatus is to be used as a projection means the character 214 and portion 216 are removed as shown in Figure 7a and the light can pass through the aperture 237 from the light source 209 and hence project the light and the image from the projection member externally of the housing in the direction of arrow 239.

[0047] The part 230 comprises a skirt portion 232 which fits over the wall of the housing to locate the part 230 with respect to the housing. The part also includes an inner guide cylinder 234 which has a free end which is located around the light source 209 and which extends towards the entry into the cavity 212 at which the skirt 232 is located. The skirt also includes a protrusion 236 which can be used to retain the cavity portion 216 thereon.

[0048] Turning now to Figure 6, there is illustrated a further embodiment of the invention in which there is once more provided apparatus comprising a base 102 and a housing 104. In this case, the housing includes a plurality of light sources 109, 111, which are illuminated in a similar manner to that described above with the other embodiments of the invention in order to allow the apparatus to be used as a torch when the source 111 is illuminated and as a night light when the source 109 is illuminated, although it should be appreciated that in another embodiment only one set of light sources may be provided to operate the night light configuration, with the torch operating configuration not being provided in that embodiment. In this case, the housing is at least partially formed by a portion 130 with transparent faces which can be selectively removed, so as to allow an article 132 located therein, to be removed from the housing 104 and used as a toy. The article or other articles can be selectively positioned in the housing and then enclosed by the replacement of the portion 130 into position. Thus, in this case, in the night light mode of operation, the article held within the housing is illuminated by the illumination of a light source when the housing is positioned on the base. In one embodiment the article can be provided with light transmission means and/or be transparent such that the same can be positioned over the light source and light passes into the article and then out therefrom so as to effectively "light up" the article.

[0049] It should be appreciated that although the embodiments illustrated herein, show the provision of the apparatus as a base and housing combination, that other

embodiments of the apparatus may only include a housing and these may operate in a similar manner. In this embodiment, the change between configurations of operation, can be achieved by the provision of a switch on the housing which, can either be manually operated or alternatively, can be operated by the placement of the housing onto a surface.

Claims

1. Apparatus operable to provide a plurality of lighting effects, said apparatus operable in any or any combination of a torch light configuration and/or night light configuration, and a projection configuration and wherein in the projection configuration, light passes from at least one light source mounted in a housing of the apparatus through at least one image provided on a projection member mounted on or in said housing.
2. Apparatus according to claim 1 wherein the projection member can be selectively positioned with regard to the housing so as to allow the selective positioning of one of a number of images provided on the projection member with respect to the light such that said selected image is displayed when the apparatus is being used in a projection configuration.
3. Apparatus according to claim 1 wherein the projection member includes a blank or masked portion which can be selectively positioned with respect to the light so as to provide the apparatus in a configuration of a night light or torch light.
4. Apparatus according to claim 3 wherein the when the blank or masked portion is positioned in the path of the light from the light source the apparatus is not used in the projection configuration.
5. Apparatus according to claim 1 wherein the projection member includes a series of images provided thereon on sheet material which is sufficiently transparent so as to allow light to pass therethrough and for the image thereon to be projected from the housing.
6. Apparatus according to claim 5 wherein each of the images is linked so as to allow the sequential positioning of the projection member by the user with respect of the housing to project a predetermined sequence of images from the apparatus.
7. Apparatus according to claim 1 wherein the housing includes a first light source which, when illuminated, is used to create the torchlight configuration and at least one second light source which, when illuminated, is used when the apparatus is in the night light

or projection configurations.

8. Apparatus according to claim 7 wherein the light source for the torchlight configuration can be illuminated when the housing is gripped by a user.
9. Apparatus according to claim 7 wherein the second light source can be illuminated when the housing is placed on a support surface or on a base.
10. Apparatus according to claim 9 wherein an electrical circuit to connect a power source and allow illumination of the second light source is completed when the housing is placed onto the base or support surface.
11. Apparatus according to claim 1 wherein an aperture is provided in the housing for receipt of the projection member such that the projection member lies between the light source in the housing and an external face through which light and an image generated from the projection member can be projected.
12. Apparatus according to claim 11 wherein focusing means and/or magnification means are provided in the housing to allow the projected image to be focused and/or magnified with regard to the surface on to which the same is to be displayed.
13. Apparatus according to any of the preceding claims wherein the housing base, or a base onto which the housing is placed, includes at least one portion which can be selectively brought into contact with a support surface when in use in the projection configuration to retain the housing at a specific angle other than perpendicular to the support surface.
14. Apparatus according to any of the preceding claims wherein the housing includes a portion which is formed of substantially transparent material through which light can be emitted and said portion is provided in conjunction with a location means for one or more articles which can be selectively retained within the housing.
15. Apparatus according to claim 14 wherein the one or more articles within the housing, are positioned with respect to the light source such that light from the light source passes into the same to provide a lighted and/or glowing effect of said one or more articles.
16. Apparatus according to claim 14 wherein the portion and article are removable from the housing to allow the apparatus to be used in a projection configuration.
17. An apparatus which is capable of operation in a projection configuration, said apparatus including a

housing in which there is provided at least one light source, said housing including a face through which light can be emitted and, intermediate said face and light source, there is provided a location means for receipt of a projection member which is positionable with respect to the housing to allow one of a range of images on said projection member to lie in the path of the light from the light source and be projected from the housing through said face.

5

10

- 18.** A lighting means including a housing having a plurality of light sources which can be selectively illuminated to allow the lighting means to be used as a torch or as a night light and wherein said housing includes an aperture for reception of a member, said member including a plurality of transparent or semi-transparent portions, said member selectively positionable with regard to the housing so as to allow one of the transparent portions to be located with respect to at least one of the light sources.

15

20

- 19.** A lighting means according to claim 18 wherein the transparent or semi transparent portions are of different colours so that the selective location of one of said portions in respect of the light source allows the user to select a particular colour of light which is emitted at that time.

25

- 20.** Lighting means according to claim 18 wherein the said member is provided in the form of a disk and the portions are formed along a circular path on said disk.

30

- 21.** Lighting means according to claim 20 wherein the member can be selectively rotated with regard to the housing, when placed in the aperture so as to allow the appropriate portion to be located with regard to the light source to create the desired light effect or, in another embodiment, a graphical effect to be created.

35

40

- 22.** Apparatus which is operable at least in a night light configuration said apparatus including a housing in which there is provided at least one light source, said housing including a portion with substantially transparent faces for the receipt of at least one article therein and into which portion light can pass to illuminate the portion and the article therein.

45

- 23.** Apparatus according to claim 22 wherein the said portion can be selectively removed from the housing and forms, in conjunction with at least one face of the housing, a cavity into which one or more articles can be placed.

50

55

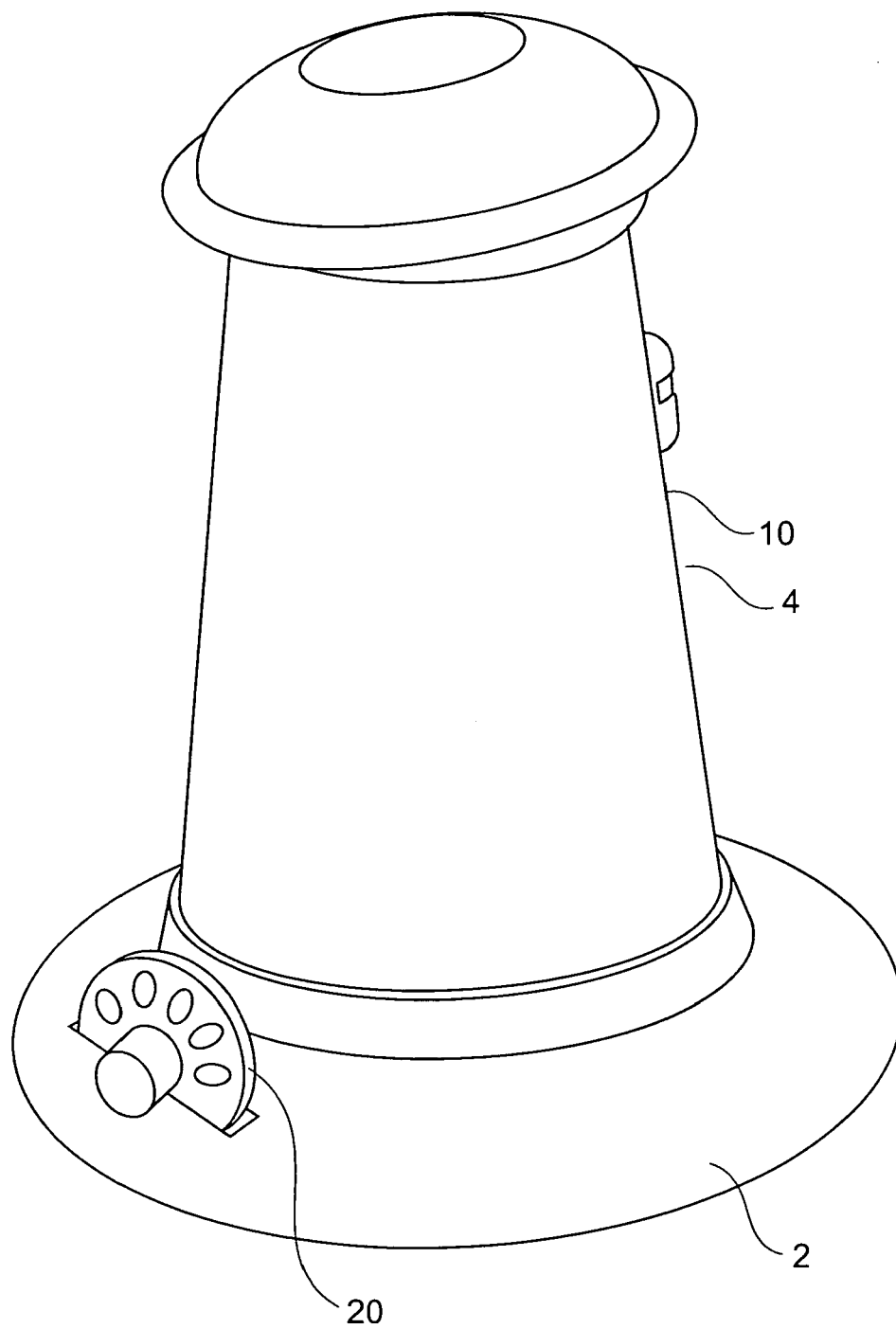


Fig. 1

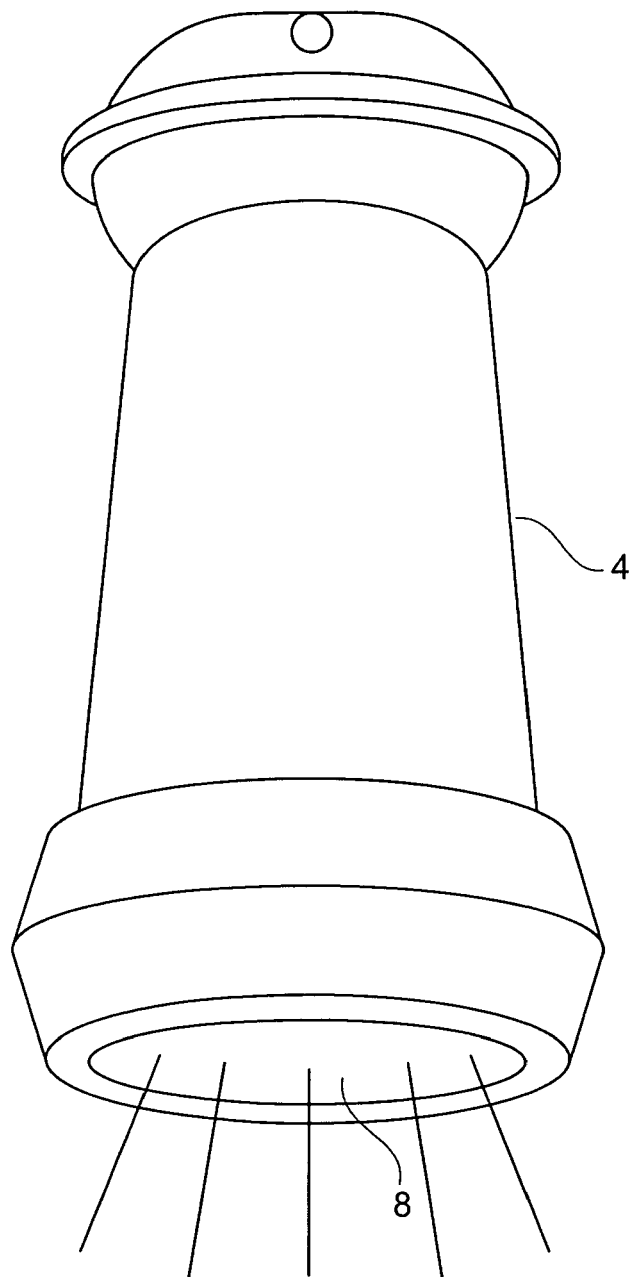


Fig. 2

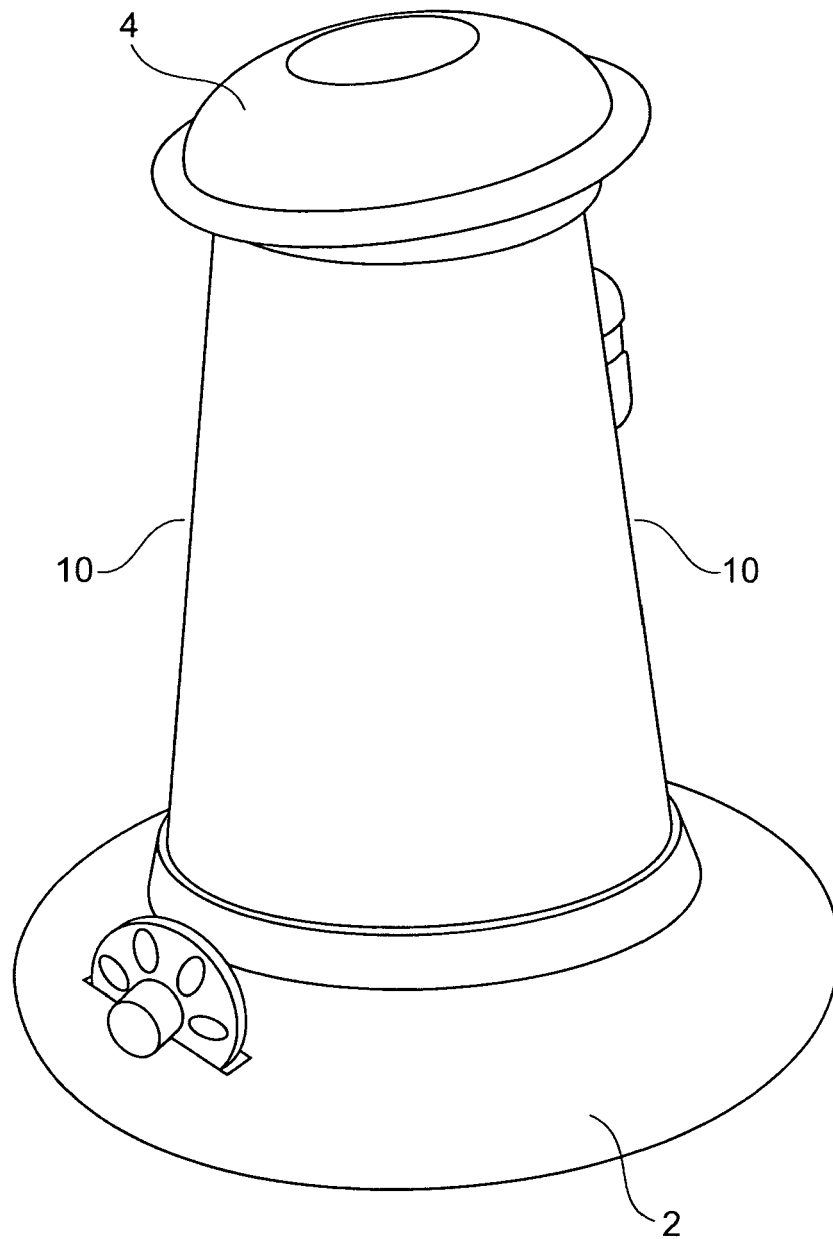


Fig. 3

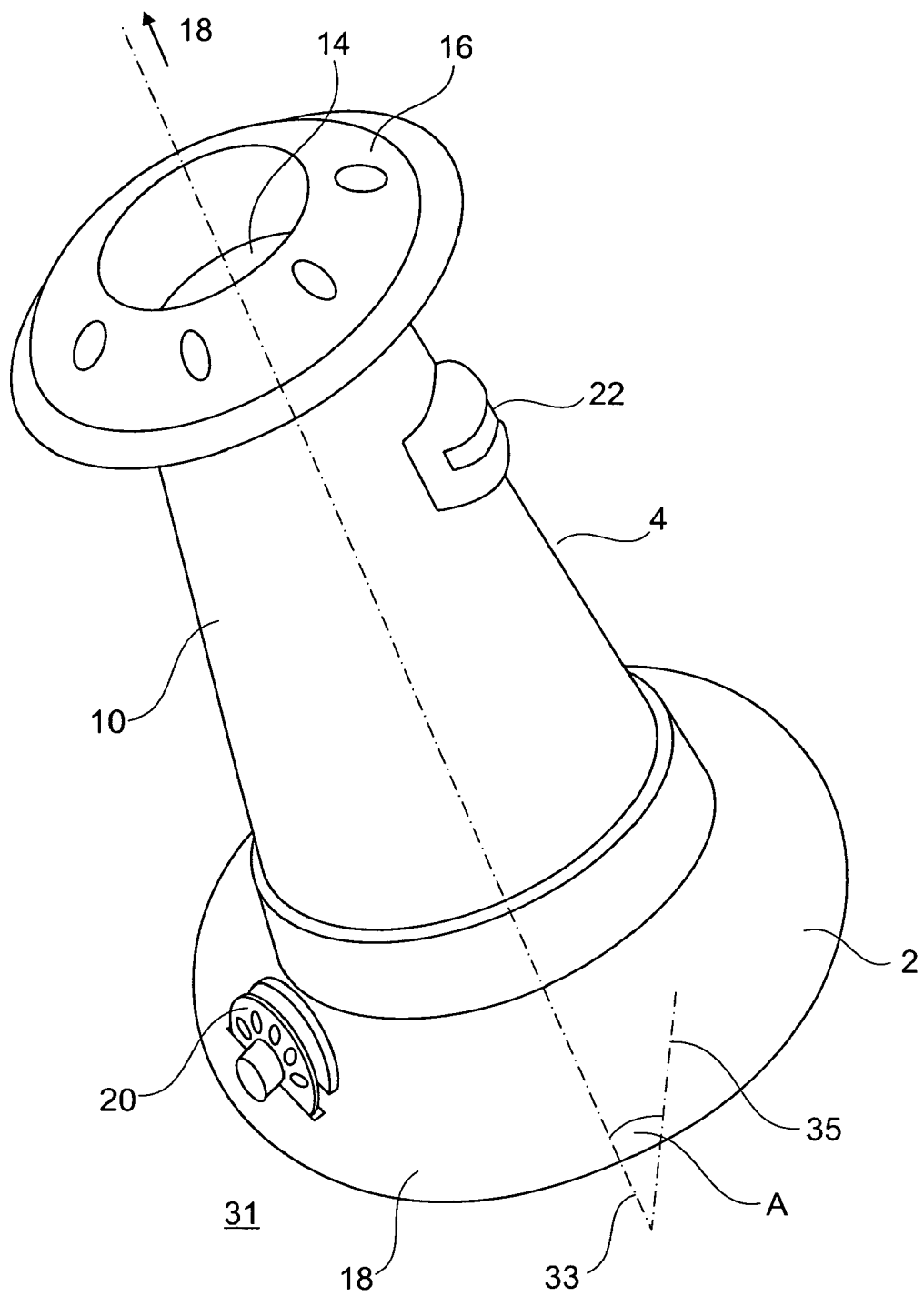


Fig. 4

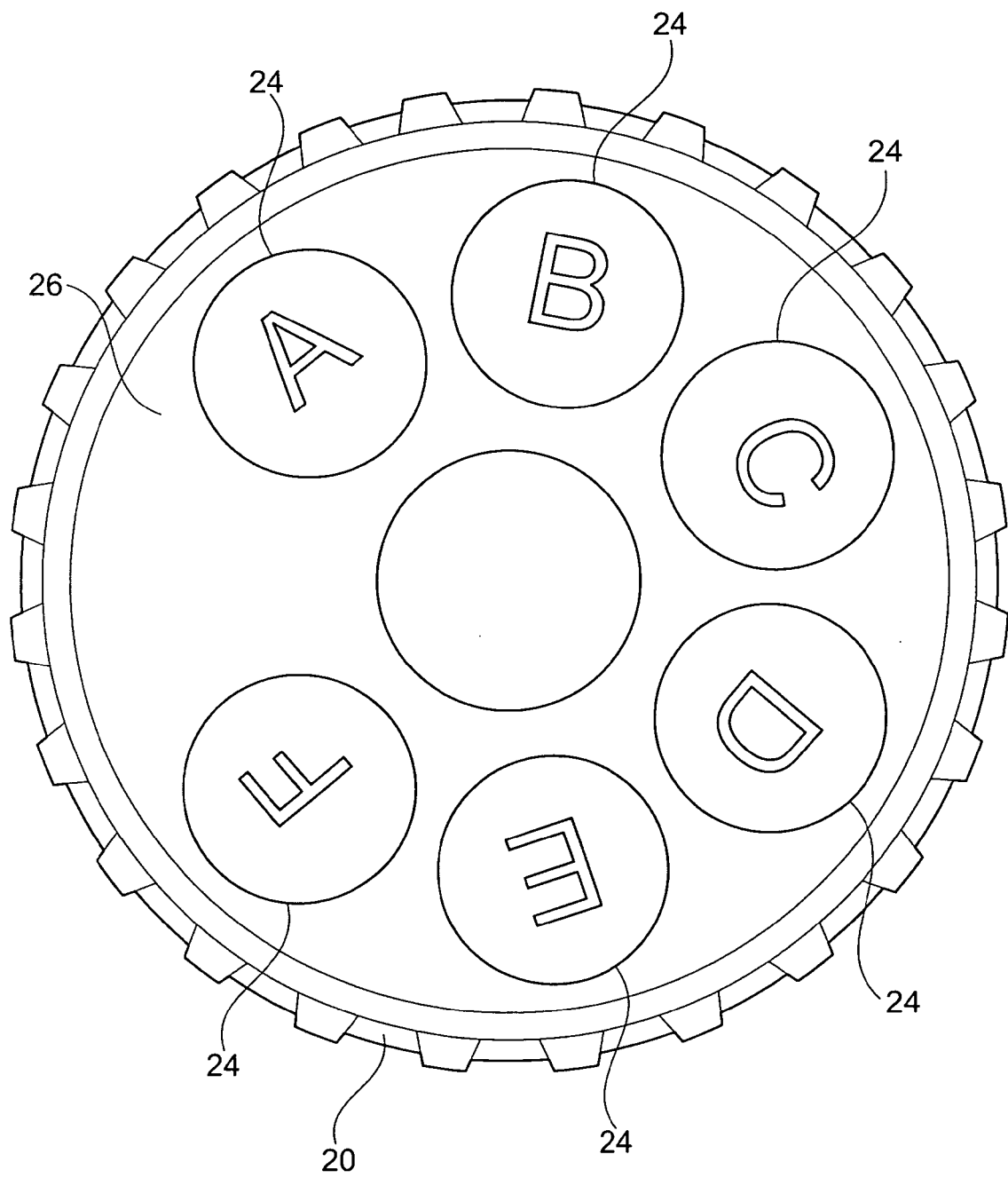


Fig. 5

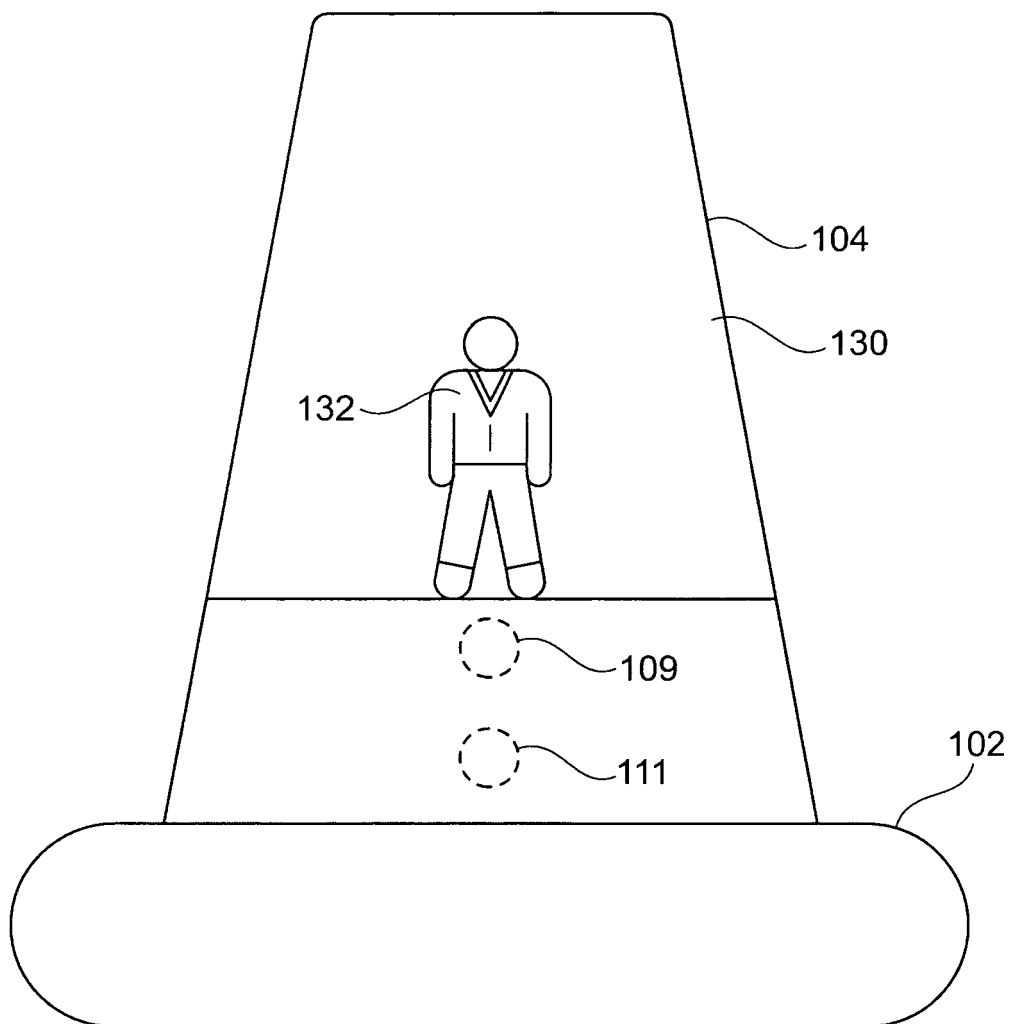
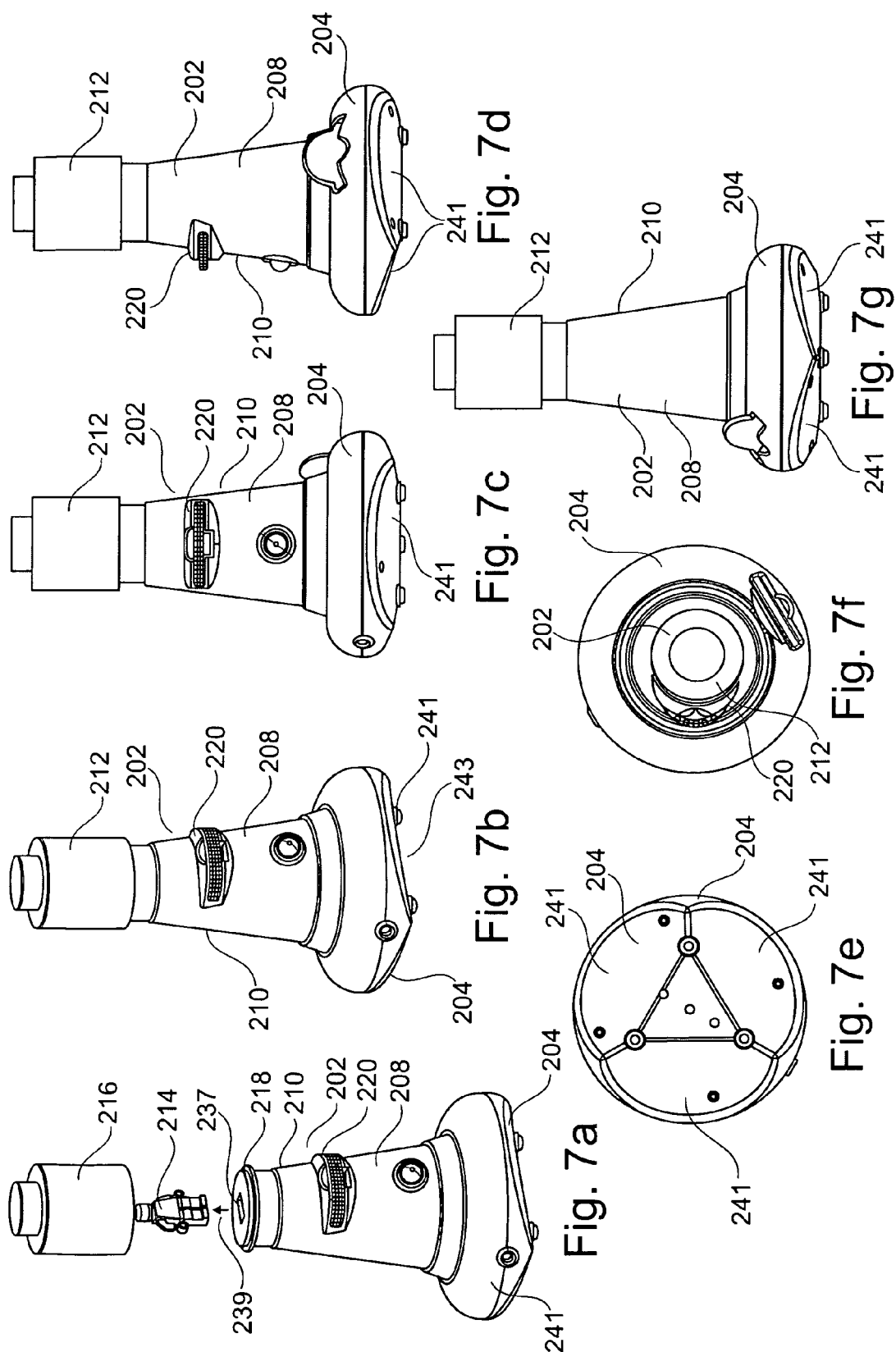
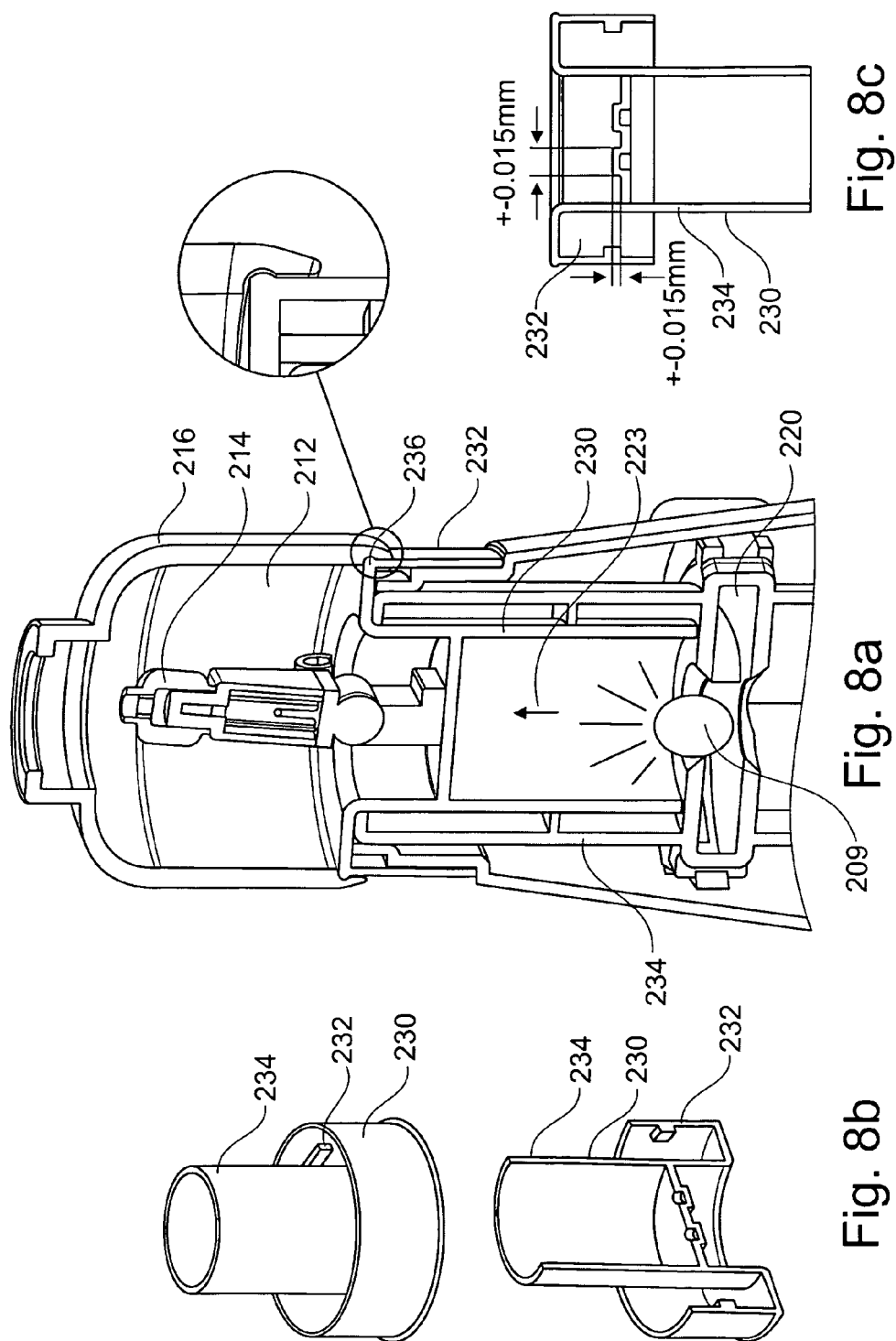


Fig. 6





REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1811226 A [0002]