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(54) **A LANTERN CONSTRUCTION**
LANTERNEUANORDNUNG
STRUCTURE POUR LANTERNE

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Description

[0001] The present invention relates to a portable lighting device including a body adapted to contain dry cells for power in the device, at least one elongated generally tubular translucent lens through which light generated by the device will emit, at least one incandescent globe or LED located at least one end of the elongated tubular lens, said elongated tubular lens extending a significant distance past the globe or LED. Such a portable lighting device is known from GB 2 071 300 A.

[0002] This invention relates to the technical field of portable lighting devices of the type which includes a housing which contains dry cell batteries and which includes a light source which will operate both as a standing light and a light which can be carried. Such lighting devices have a rotatable lighting component and self-supporting body allowing multipurpose usage.

[0003] Lights of the aforementioned type are known and are generally considered advantageous in that the light will have more applications than would a conventional torch.

[0004] However, portable lights of the aforementioned type and as disclosed in GB 2 071 300 A need to be relatively robust since by their very nature they tend to be knocked and dropped and are frequently used in outdoor environments. In addition, the lighting device should be relatively easy to carry and, when so carried, the light transmitted by the device should be projected forwardly whilst the light is being held in a comfortable carrying orientation.

[0005] Prior art lanterns of the type to which this invention relate tend to be relatively long and slender and have equilibrium difficulties when the lighting portion of the lantern is swung to various positions of use. The stability problems tend to be exacerbated when the lantern is in a generally upside down L-shaped configuration.

[0006] The above also applies to the safety lighting device disclosed in US 5,595,441 which does also not provide a robust lantern which is at the same time comfortable to use.

[0007] US 4,231,077 describes a light toy which may be used as a science fiction light ray, comprising a light tube, a light source which is outside the tube, a light tunnel post which is an interference fit inside the light tube, a light bulb, a first reflector co-located with the light bulb which produces a substantially parallel beam of light which is directed through the light tunnel post to the light tube, and a second reflector in form of a reflective cap at the distal end of the light tube to reflect light back into the tube and onto the walls of the light tube. Also this arrangement does not provide a lighting device which may be used in a comfortable way in outdoor environments.

[0008] It is an object of the present invention to provide a robust and easy to handle lighting device with an optimum light distribution.

[0009] According to the present invention the above object is solved by a portable lighting device including a

body adapted to contain dry cells for power in the device, at least one elongated generally tubular translucent lens through which light generated by the device will emit, at least one incandescent globe or LED located at at least one end of the elongated tubular lens, said elongated tubular lens extending a significant distance past the globe or LED, and circuitry which in use connects the dry cells to said at least one globe or LED, the globe or LED being located within the end of the tubular transparent lens, the globe or LED being a close fit within the tubular transparent lens, whereby light generated by said globe or LED will be emitted through said elongated tubular lens so as to have an appearance similar to that of a fluorescent lamp.

[0010] The portable lighting device according to the present invention comprises light bulbs or LEDs, thereby providing a lighting device which is relatively robust and easy to handle. The light bulbs or LEDs are arranged relative to the tubular lens in such a way that an appearance similar to that of a fluorescent lamp is provided, thereby providing a lighting device with an optimum light distribution.

[0011] Embodiments of the lighting device according to the present invention are defined in the dependent claims.

[0012] It should be noted that where the word "comprising" or "comprised" is used in this specification that term should be interpreted inclusively rather than exclusively. Also, the terms "upper" and "lower" are used to assist in the description of the invention and are not intended to define the orientation in which the lighting device must be used or is used.

[0013] These and further features of the invention will be made apparent from the description of an embodiment thereof, given below by way of example. In the description references are made to the accompanying drawings, but the specific features shown in the drawings should not be construed limiting on the invention.

[0014] Embodiments of the invention will now be described, by way of example only, with reference to accompanying drawings in which:

Figure 1 illustrates a side view of a portable lighting device according to the present invention;

Figure 2 illustrates a perspective view of the portable lighting device of Figure 1;

Figure 3 illustrates a rear end view of the portable lighting device of Figure 1 ;

Figure 4 illustrates a front end view of the portable lighting device of Figure 1;

Figure 5 illustrates a top plan view of the portable lighting device of Figure 1 ;

Figure 6 illustrates a cross section of the portable

lighting device sectioned through plane VI-VI of Figure 1;

Figure 7 illustrates a cross section of the portable lighting device sectioned through the plane VII-VII of Figure 4;

Figure 8 illustrates a cross section of the portable lighting device sectioned through the plane XIII-XIII of Figure 4;

Figure 9 illustrates a perspective view of the portable lighting device of Figure 1 with the light housing rotated away from the body;

Figure 10 illustrates a perspective view of a different embodiment of a lantern being not part of the present invention;

Figure 11 illustrates a rear perspective view of the lantern of Figure 10;

Figure 12 illustrates a perspective view of the lantern for Figure 10 in a folded down retracted position;

Figure 13 illustrates a side view of the lantern of Figure 12;

Figure 14 illustrates a front view of the lantern of Figure 10;

Figure 15 illustrates a cross section of the lantern of Figure 12;

Figure 16 illustrates a view similar to Figure 10 with the light housing shown in its position of furthest rotation;

Figure 17A illustrates a perspective view of Figure 16;

Figure 18 illustrates a side view of the lantern of Figures 10 to 16 in a different orientation;

Figure 19 illustrates a perspective view of the lantern of Figure 10 with a rotatable reflector;

Figure 20 shows the rotatable reflector at the limit of its rotation; and

Figure 21 illustrates a cross section similar to Figure 15, with the fluorescent lamp replaced by a tubular lens and one LED.

[0015] As shown in the drawings, a portable lighting device 10 has a body 12 of generally elongate rectilinear form. As will be noted for example, from figures 5 and 6, the body is generally rectangular in the plan view. The

body 12 has a base 14 which is flat and on which the lighting device 10 is adapted to be stood whilst in use as a table top lantern or the like. A battery cover moulding 16 forms part of the base and is removable to replace a battery cartridge indicated by dotted lines at 18. It is envisaged that the cartridge will contain 6"D cell" dry cell batteries.

[0016] The body 12 has a light housing 20 connected thereto by a pivotal connection 22 located at the upper end of the body. The pivotal connection 22 will be described in more detailed here below. The light housing 20 is made from a translucent central portion 24 which is formed of a front cover 26 and a rear cover 28 which are welded together along weld line 30.

[0017] An elongate light source 32 is provided in the form of a tubular translucent lens 32 mounted within the light housing 20 and a pair of incandescent lamps 34 located in opposite ends of the tubular lens 32. The tubular lens 32 thus has the appearance of a longitudinal fluorescent lamp but, in fact, lighting is provided by the two incandescent lamps 34.

[0018] The light housing 20 also includes a lower end portion 36 and an upper end portion 38 which houses the pivotal connection 22. If desired, the tubular lens 32 and incandescent lamps 34 of light source 32 can be replaced by a fluorescent lamp, providing appropriate lamp holders are installed. Alternatively the incandescent lamps 24 can be replaced by one or more LEDs.

[0019] A handle 40 is integrally formed with body 12 and is located on the operative upper end of the lighting device. The handle 40, as is clear from Figure 3 is narrower than the rest of the body 12, and defines an opening 42 into which a user's fingers are received when carrying the lighting device 10. The handle 40 is inclined upwardly from the rear of the lighting device 10 towards the front thereof, the angle of inclination being approximately 40°.

[0020] When held by the handle 40, the light emitted by the lamp 34 will project forwardly, and slightly downwardly, thereby providing a forwardly projecting light source 32 when the lighting device 10 is being carried in a comfortable position.

[0021] The batteries used to power the lighting device 10 can be of considerable weight, therefore in order to make carrying the lighting device 10 more comfortable the handle 40 protrudes slightly from the back of the body 12. In combination with the acute angle of the handle the centre of mass of the lighting device 10 hangs beneath the hand of the carrier when the lighting device 10 is carried in a normal manner. Clearly, the angle of the handle 40 can differ from 40° and an angle of between 30° and 60° is considered to provide the same characteristics.

[0022] A switch 44 is located in the upper side of the handle 40 and is easily accessible by user's thumb for switching on and off the light source 32. Optionally the switch 44 can be a three position slide switch, where there is provided two light sources, so that in a first position only one light source is in the closed circuit, and in a second position both light sources are in the closed

circuit. The third position being an off position.

[0023] The front face 48 of the front cover member 26 is of convex shape when viewed in side elevation, that is, the Figure 1 view. This curved form of the cover 26 adds significantly to the strength of the light housing 20 and also serves to distribute light from the light source 32 in a more diffused manner. It should be noted that the curvature of the face 48 is arcuate, and the radius of curvature is relatively large, that is, significantly greater than the overall length of the body. The arcuate form of the cover 26 also serves to provide an aesthetically pleasing appearance to the lighting device 10.

[0024] The pivotal connection 22 is shown in detail in figures 7 and 8. The body 12 includes a shaft 50 which spans across opposite sides thereof and provides a relatively rigid mounting axle to which the light housing 20 can connect. The light housing 20 is provided with a pair of straps 52 which passes around the shaft 50, as shown in Figure 8. and are clamped around the shaft 50 by means of screws 54. The tightness of the grip of straps 52 around the shaft 50 can be varied by adjusting the screws 54. Further, by appropriately sizing the straps 52 and shaft 50, the straps 52 and shaft 50 will yield a relatively similar magnitude of friction when assembled in the lighting device 10 on a production or assembly line. It is desirable that the light housing 20 is able to pivot to any selected position through an arc of approximately 270°. This allows the lighting device 10 to be stood on its base 14 and the light housing 20 can be pivoted away from the body 12 to any selected position.

[0025] Since the cover 24 is translucent around its entire periphery, the light housing 20, when standing vertically up away from the body 12 will distribute light in the substantially 360 arc, much in the manner of a candle. Also, the light housing 20 can be positioned at right angles to the length of the body 12 so that the light serves as a reading light or the like. It is envisaged that during assembly the screws 54 will be adjusted so that the frictional grip of the straps 52 around the shaft 50 will be optimised to allow for relatively easy pivoting of the light housing 20 relative to the body 12, yet the light housing 20 will maintain its position relative to the body 12 in any selected position of arc to which it is pivoted.

[0026] If desired, the lighting device 10 need not take the overall form as has been disclosed herein although the form with a device depicted in the drawings is considered advantageous for the reasons outlined above. It is envisaged that the lighting device 10 will be relatively simple to manufacture, and therefore relatively inexpensive and yet will be not only robust but also able to be used in a number of different ways which adds significantly to the versatility of the lighting device 10.

[0027] While a friction device in the form of straps 52 and shaft 50 is preferably utilised, a rotating engagement means which will allow indexed rotational motion such as a ratchet device could be used.

[0028] Illustrated in Figure 9 is the light housing 26 shown in an elevated position relative to the body 12. In

this position, the side 12A of body 12 is visible and the presence of a rectangular reflector 12B is noted.

[0029] When the light housing 20 is adjacent the side 12A the reflector 12B ensures that the full visible spectrum of light generated from the light source 32 in the light housing 20 will be reflected off the body side 12A ensuring maximum usable light by preventing a substantial amount of visible light being absorbed by the body side 12A.

[0030] The reflector 12B can be a highly polished sheet material, silvered, white or other highly reflective sheet material which can be a metal plastic or coated plastic.

[0031] The sheet material is preferably captured between the left and right halves of the body 12, or it can be adhered to the side 12A, or otherwise attached thereto. In its most basic form the reflector 12B can be a white plastic sticker.

[0032] Another feature of the light housing 26 is that a side 26A (see figures 7 & 9) being that side which is outwardly directed when the light housing 20 is adjacent the body side 12A, is constructed from a frosted or translucent lens, while the opposite side 26B is constructed from a clear or transparent lens. This ensures that when the light source 32 in light housing 20 is switched on the reflector 12B will, due to the transparent nature of side 26B, receive a greater degree of light, which when reflected will pass back through side 26B, thus resulting in a more efficient transmission of light through side 26A. This can be particularly helpful if the lighting device 10 is being used for reading purposes. While the frosted and clear finishes cannot be illustrated, it will be seen from Figure 7 that 26A & 26B have different cross hatching in cross section illustrated.

[0033] Illustrated in Figures 10 to 21 is a lighting device, which is not part of the present invention, in the form of a lantern 102 which has a generally rectangular lens assembly or light housing 104 which is rotatably connected to a generally rectangular body 106 by a pivot assembly 108. The lantern 102 of Figure 10 illustrates the light housing 104 in an extended position whilst Figures 12, 13 and 15 illustrate the light housing in retracted position relative to the body 106.

[0034] In the view of Figure 10 the body 106 is of a generally rectangular construction having a front face 110, a rear face 112 and left and right sides 114 and 116. The pivot assembly 108 is formed by two angled extensions 118 and 120 which extend away from the body 106 at approximately 45° to the vertical but an angle in the range of 15 to 60° can be utilised.

[0035] In Figure 10 the light housing 104 is illustrated in a vertical orientation which together with the assistance of a foot 122 ensures that the centre of gravity of light housing 104 is located between the forward extremity 122A of the foot 122 and the rearward extremity 122D of the base 122D. This results in the lantern 102, when in the configuration illustrated in Figures 10 and 11 being in a stable position even though the centre of gravity of the light housing 104 is positioned away from a longitu-

dinal axis passing through the centre of gravity of the body 106.

[0036] Whereas when the light housing 104 is rotated to its furthest point of rotation as illustrated in Figure 16 the centre of gravity is actually closer to the centre of gravity of body 106.

[0037] The mass of the dry cells and the body 106 being greater than the mass of the light housing 104 ensures that tipping will not occur.

[0038] A rotatable handle 123 is captured between half 106A and other half 106B of the body 106 and can rotate from a position adjacent the side 112, until it engages the light housing 104. Thus the position of the light housing 104 determines the limits of rotation of handle 123.

[0039] The pivot assembly 108 cooperates with the forward extremity 122A of the foot 122 so that when the light housing 104 is rotated to its furthest most rotational position as illustrated in Figure 16, the lantern 102 can be placed on a surface of a table or other horizontal surface (generally represented by the axis 130) forming a three leg arrangement which will maintain the body 106 in a stable orientation with the light housing 104 being at an angle above the axis 130 (the axis 130 being representative of a generally horizontal surface).

[0040] Further, the handle 123 can cooperate with the rearward extremity 122D as illustrated in Figure 18 so as to rest the body 106 on rearward extremity 122D and edge 123A of handle 123 onto a surface generally represented by phantom line 130. As the body 106 generally houses four D cell size batteries the lantern 102 will have sufficient mass in body 106 to produce a moment of greater magnitude around 123A of handle 123 by comparison to the moment produced by the light housing 104 and the upper body portions including pivot assembly 108 around the same point. This arrangement allows a highly flexible and variable arrangement which can be utilised to obtain high degrees of stability for a user.

[0041] The lantern 102 includes an on/off switch 124 on the body 106 while the light housing 104 includes an access panel 104A which utilises a screw 104B to secure the lens on the light housing 104 to the lens carrier 126.

[0042] Alternatively a cover 104C as illustrated in Figure 17 which is comprised of 5 sides can provide the terminus of the light housing 104.

[0043] In the retracted orientation as illustrated in Figure 12, the lantern 102 has the lens housing 104 adjacent to the body 106. As can be seen from Figure 14 an access panel 128 is provided on the forward face 110 of the body 106 so that a user of the lantern 102 can gain access to the battery compartment for replacement or installation of dry cell batteries. A feature of the lantern 102 is that the access panel 128 is manufactured from a highly reflective material such as silvered polymeric material, reflective metal or plastic material, or white painted or white coloured material. This ensures that when the lantern 102 has the light housing 104 in the retracted position of Figure 12 and the light source is switched on, light generated from the light housing 102 emitted in the direction

of the body 106 will be reflected, in the main by panel 128 back out through the light housing 104. This ensures that in the retracted orientation the lantern 102 can be stood on a table and generate sufficient light to enable reading or other activity.

[0044] Another feature of the lantern 102 is that the light housing 104, when rotated to a vertical or over centre position as illustrated in Figure 16, generates light in a 360 circle around the longitudinal axis of the light housing 104 and acting in much the same manner as a candle.

[0045] As illustrated in Figure 15 the cross section through the lantern 102 shows that the pivot assembly 108 includes a pivot clamp 108A which is secured to the body 106 by means of a friction screw 108B. The torque applied to friction screw 108B will determine the level of friction that the pivot clamp 108A will exert onto the spigot or shaft 108C which is integrally formed with or secured to the lens housing 126 in the reduced portion 126A. The pivot clamp 108A allows the lens carrier 126 and light housing 104 to be positioned at any location between the limits of travel of the lens carrier 126, and to hold the lens carrier 126 in that position without any outside assistance. The pivot clamp 108A is able to do this by means of the friction generated with the spigot or shaft 108C.

[0046] The lens carrier 126 includes a fluorescent tube and electrical connection support 135 while the cover plate 104A or cover 104C has appropriate sockets to receive the terminals 137 of the fluorescent lamps and to electrically connect these ends so that current will flow through both fluorescent tubes.

[0047] Between the body halves 106A and 106B is sufficient space to house four D size dry cell batteries 139 and a printed circuit board 141 is included at the top of the body 106 with suitable wires and controls to the on/off switch 124 on the upper surface of the body 106 in the vicinity of the pivot assembly 108.

[0048] Illustrated in figures 19 and 20 is an additional feature which can be utilised to provide greater efficiency of the light housing 104 and provide a greater range of options available to the user.

[0049] A rotating reflector plate 128A, which if used removes the need to provide access panel 128 with the ability to reflect white light. That is, the panel 128 will not need to reflect white light.

[0050] The rotating reflector 128A is manufactured from a sheet material which has a face 128B capable of reflecting the visible light spectrum. The reflective material can be anyone of the currently available range of reflective material such as polished, silvered, coated or white sheet materials which can be of metal or plastic as desired.

[0051] The other side 128C can have the same reflective preparation, but is not preferred.

[0052] The reflector 128A has two mounting limbs 128D and 128E bent or attached to right angles to the face 128B. The limbs 128D and 128E have coaxial apertures therethrough which are captured in the pivot assembly 108. This mounting arrangement allows the re-

flector 128A to be rotated simultaneously with the light housing 104 or at any time after if desired.

[0053] Thus when the light housing 104 is rotated to its limit of rotation as in Figure 20, the reflector 128A can be rotated so as to lie adjacent thereto, thus ensuring greater efficiency of light housing 104 to emit light in the downward and rearward direction relative to the body 106. A similar effect results when the light housing 104 and the reflector 128 are both in the retracted position.

[0054] Illustrated in Figure 21 is a cross section similar to that of Figure 15, with like parts being similar to that described above with respect to Figures 1 and 4. Another alternative light source which could be utilised is a cold cathode fluorescent lamp being approximately 3 to 6 mm in diameter.

Claims

1. A portable lighting device including:

a body adapted to contain dry cells for power in the device;
 at least one elongated generally tubular translucent lens through which light generated by the device will emit;
 at least one incandescent globe or LED located at at least one end of the elongated tubular lens, said elongated tubular lens extending a significant distance past the globe or LED;
 and circuitry which in use connects the dry cells to said at least one globe or LED;
 the globe or LED being located within the end of the tubular transparent lens;
 the globe or LED being a close fit within the tubular transparent lens;
characterized in that the light generated by said globe or LED will be emitted through said elongated tubular lens so as to have an appearance similar to that of a fluorescent lamp.

2. A portable lighting device as claimed in claim 1, wherein said tubular lens is a diffuser so that light emitted by said at least one globe or LED is diffused.

3. A portable lighting device as claimed in any one of claims 1 or 2, wherein when two globes, or two LEDs or a globe and an LED are used, one is located at either end of said tubular lens.

4. A portable lighting device as claimed in any one of claims 1 to 3, wherein said lighting device includes two light sources each being formed from at least one tubular translucent lens and at least one incandescent globe or LED.

5. A portable lighting device as claimed in one of the preceding claims, wherein said body is generally rectilinear elongate shape with the lens straight and aligned longitudinally with the body.

6. A portable lighting device as claimed in any one of the preceding claims, wherein said lens is mounted within a light housing which is connected to the body via a pivotal connection which allows the light housing to be pivoted through an arc relative to the body.

7. A portable lighting device as claimed in any one of the preceding claims, wherein a pivot axis is horizontal and the light housing is adapted to pivot through an arc of at least 180°.

Patentansprüche

1. Tragbare Beleuchtungsvorrichtung, enthaltend:

einen zur Aufnahme von Trockenzellen zur Stromversorgung in der Vorrichtung ausgelegten Körper;
 mindestens ein längliches, allgemein rohrförmiges, durchscheinendes Leuchtenglas, durch welches von der Vorrichtung erzeugtes Licht austritt;
 mindestens eine Glühlampe oder LED, die an mindestens einem Ende des länglichen rohrförmigen Leuchtenglases angeordnet ist, wobei sich das längliche rohrförmige Leuchtenglas eine beträchtliche Strecke über die Lampe oder LED hinaus erstreckt;
 und einen Schaltkreis, welcher im Betrieb die Trockenzellen mit der mindestens einen Lampe oder LED verbindet;
 wobei die Lampe oder LED innerhalb des Endes des rohrförmigen transparenten Leuchtenglases angeordnet ist;
 wobei die Lampe oder LED in einer engen Passung innerhalb des rohrförmigen transparenten Leuchtenglases sitzt;
dadurch gekennzeichnet, dass von der Glühlampe oder LED erzeugtes Licht durch das längliche rohrförmige Leuchtenglas dergestalt ausgestrahlt wird, dass es ein Erscheinungsbild ähnlich dem einer Leuchtstofflampe hat.

2. Tragbare Beleuchtungsvorrichtung nach Anspruch 1, wobei das rohrförmige Leuchtenglas eine Streuscheibe ist, so dass von der mindestens einen Lampe oder LED ausgestrahltes Licht gestreut wird.

3. Tragbare Beleuchtungsvorrichtung nach einem der Ansprüche 1 oder 2, wobei dann, wenn zwei Lampen oder zwei LEDs oder eine Lampe und eine LED verwendet werden, an beiden Enden des rohrförmigen

Leuchtenglasses eine angeordnet ist.

4. Tragbare Beleuchtungsanordnung nach einem der Ansprüche 1 bis 3, wobei die Beleuchtungsanordnung zwei Lichtquellen umfasst, die jeweils aus mindestens einem rohrförmigen durchscheinenden Leuchtenglas und mindestens einer Glühlampe oder LED gebildet sind.
5. Tragbare Beleuchtungsanordnung nach einem der vorhergehenden Ansprüche, wobei der Körper eine allgemein geradlinige längliche Form hat, wobei das Leuchtenglas gerade und in Längsrichtung mit dem Körper ausgerichtet ist.
6. Tragbare Beleuchtungsanordnung nach einem der vorhergehenden Ansprüche, wobei das Leuchtenglas innerhalb eines Leuchtengehäuses angebracht ist, welches mit dem Körper über eine Gelenkverbindung verbunden ist, welche das Schwenken des Leuchtengehäuses in einem Bogen relativ zu dem Körper erlaubt.
7. Tragbare Beleuchtungsanordnung nach einem der vorhergehenden Ansprüche, wobei eine Schwenkachse horizontal ist und das Leuchtengehäuse zum Schwenken über einen Bogen von mindestens 180° ausgelegt ist.

Revendications

1. Appareil d'éclairage portable comportant :

- un corps conçu pour renfermer des piles sèches fournissant l'énergie à l'intérieur de l'appareil,
- au moins une lentille translucide allongée, généralement de forme tubulaire, à travers laquelle la lumière produite par l'appareil est émise,
- au moins un globe ou une DEL à incandescence situé(e) à au moins une extrémité de la lentille tubulaire allongée, ladite lentille tubulaire allongée s'étendant sur une distance importante le long du globe ou de la DEL,
- et des circuits qui, pendant l'utilisation, relient les piles sèches au dit/aux dits globe(s) ou à ladite/aux dites DEL,
- le globe ou la DEL étant situé(e) à l'intérieur de l'extrémité de la lentille transparente tubulaire,
- le globe ou la DEL s'emboîtant parfaitement à l'intérieur de la lentille transparente tubulaire,
- caractérisé en ce que** la lumière produite par ledit globe ou ladite DEL est émise à travers ladite lentille tubulaire allongée de manière à prendre une apparence similaire à celle d'une lampe fluorescente.

2. Appareil d'éclairage portable selon la revendication 1, dans lequel ladite lentille tubulaire est un diffuseur si bien que la lumière émise par ledit/lesdits globes ou à ladite/lesdites DEL est diffusée.
3. Appareil d'éclairage portable selon l'une quelconque des revendications 1 ou 2, dans lequel lorsqu'on utilise deux globes ou deux DEL ou un globe et une DEL, l'un(e) d'entre eux est situé(e) de chaque côté de ladite lentille tubulaire.
4. Appareil d'éclairage portable selon l'une quelconque des revendications 1 à 3, dans lequel ledit appareil d'éclairage comprend deux sources lumineuses, chacune d'entre elles étant constituée d'au moins une lentille translucide tubulaire et d'au moins un globe ou une DEL à incandescence.
5. Appareil d'éclairage portable selon l'une quelconque des revendications précédentes, dans lequel ledit corps a généralement une forme allongée rectiligne, la lentille étant droite et en alignement avec le corps dans le sens longitudinal.
6. Appareil d'éclairage portable selon l'une quelconque des revendications précédentes, dans lequel ladite lentille est fixée à l'intérieur d'un boîtier d'éclairage qui est relié au corps par le biais d'une liaison pivotante qui permet au boîtier d'éclairage d'être pivoté suivant un arc par rapport au corps.
7. Appareil d'éclairage portable selon l'une quelconque des revendications précédentes, dans lequel un axe de pivotement est horizontal et le boîtier d'éclairage est conçu pour pivoter suivant un arc d'au moins 180°.

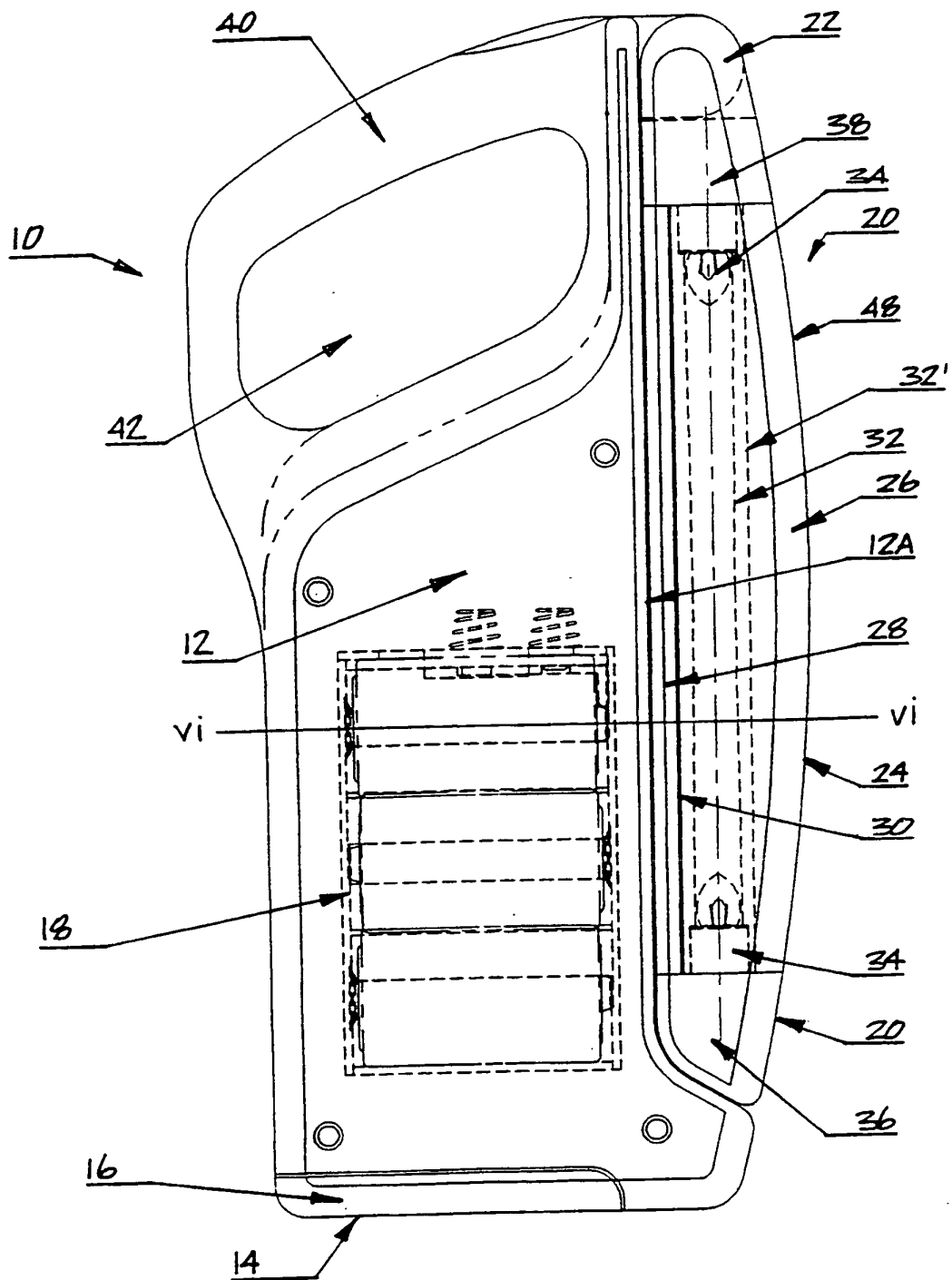


FIGURE: 1

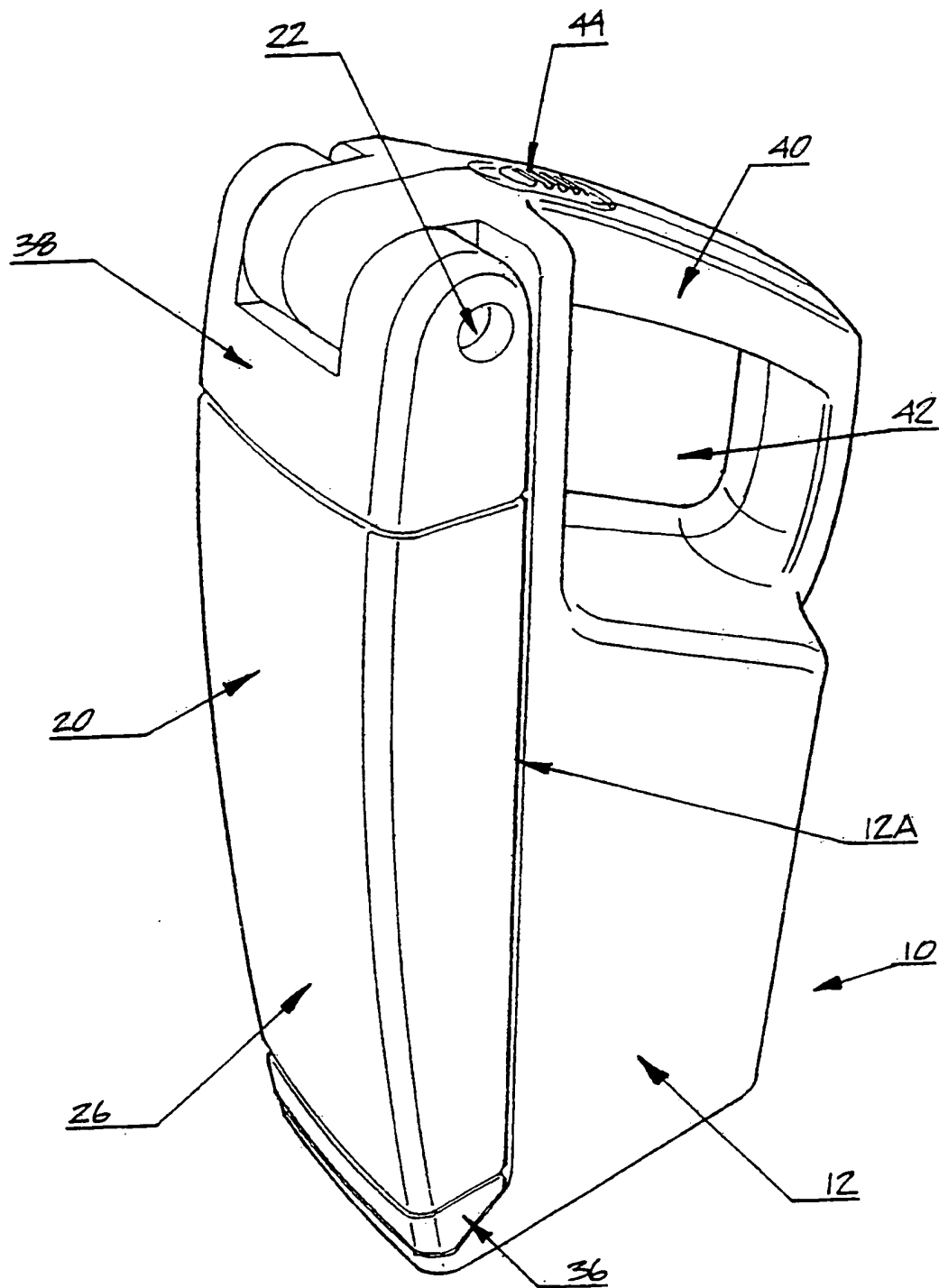


FIGURE 2

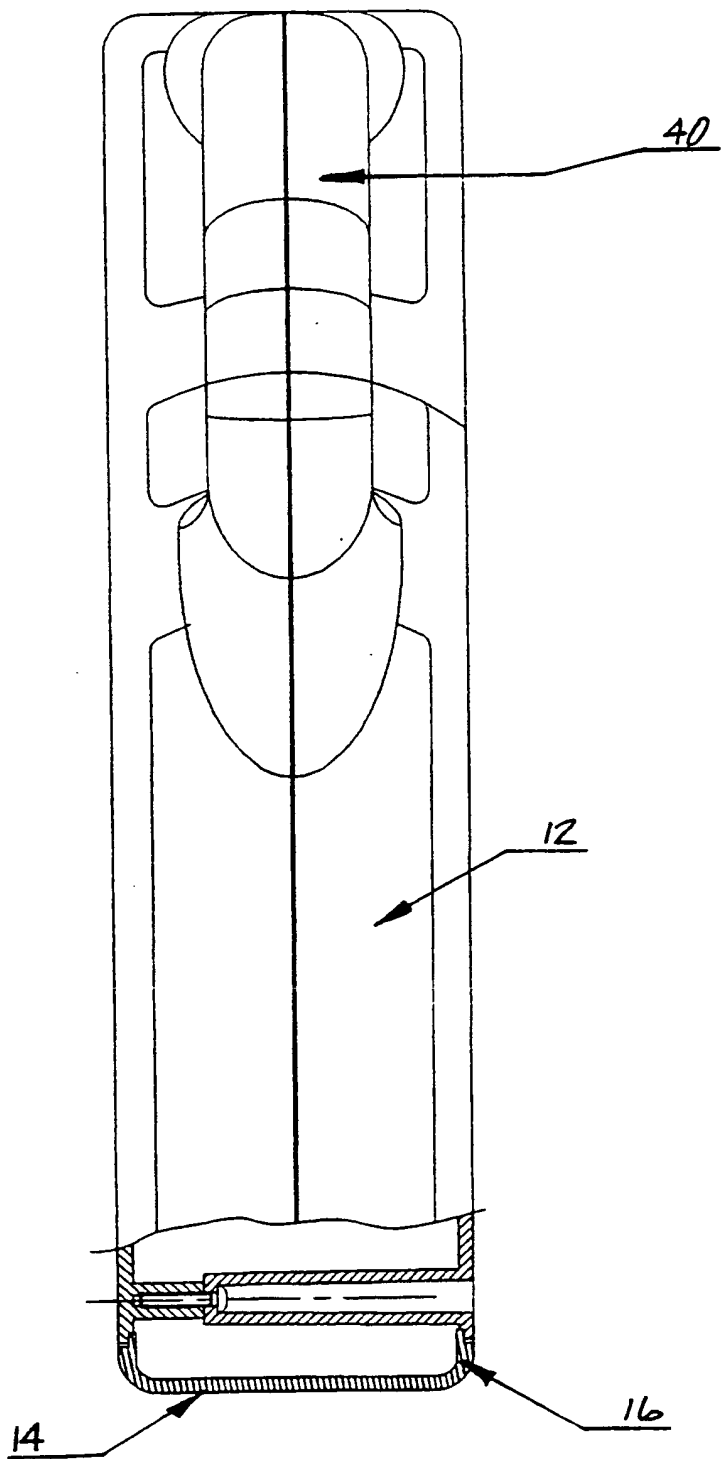


FIGURE: 3

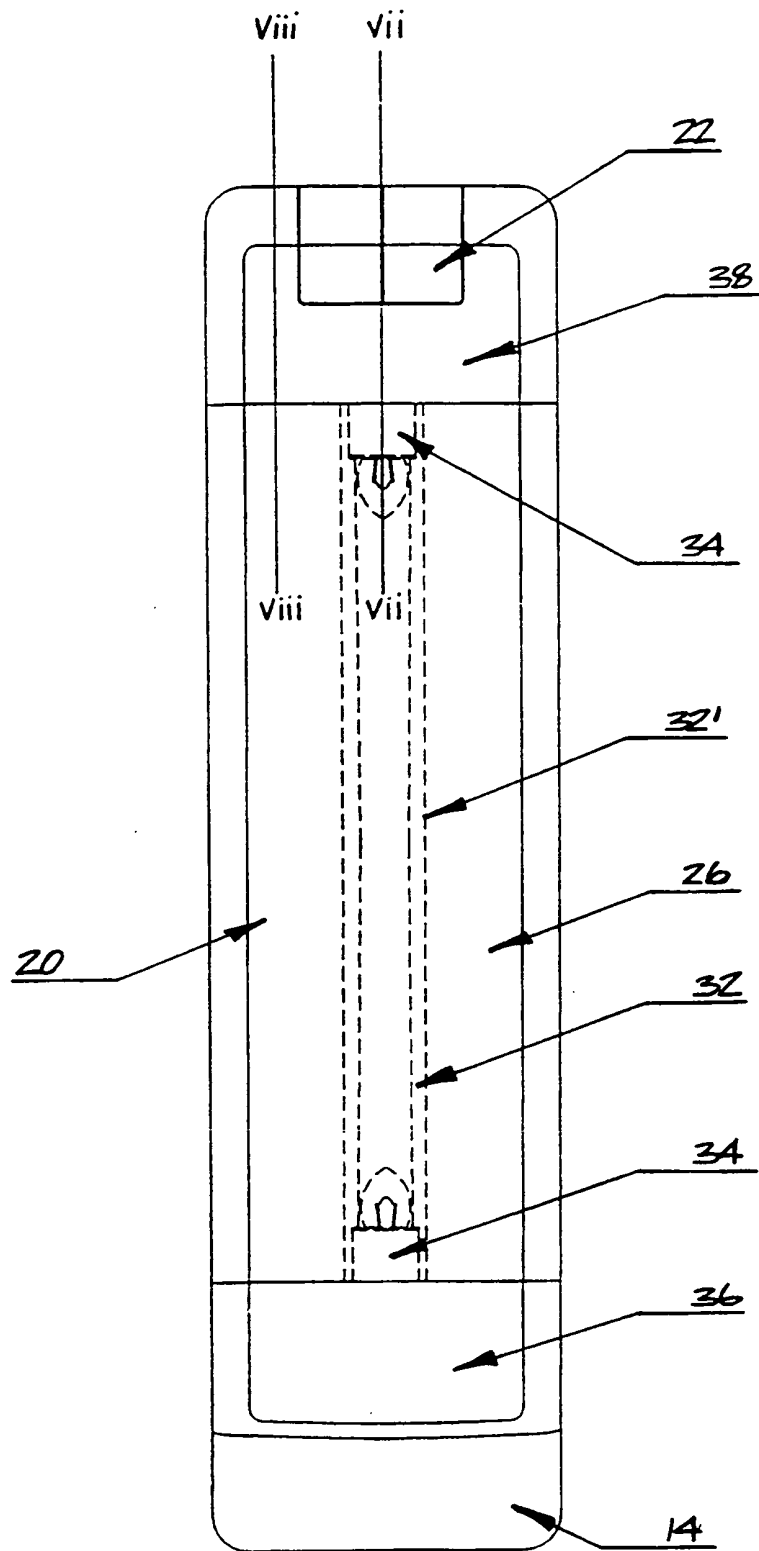


FIGURE: 4

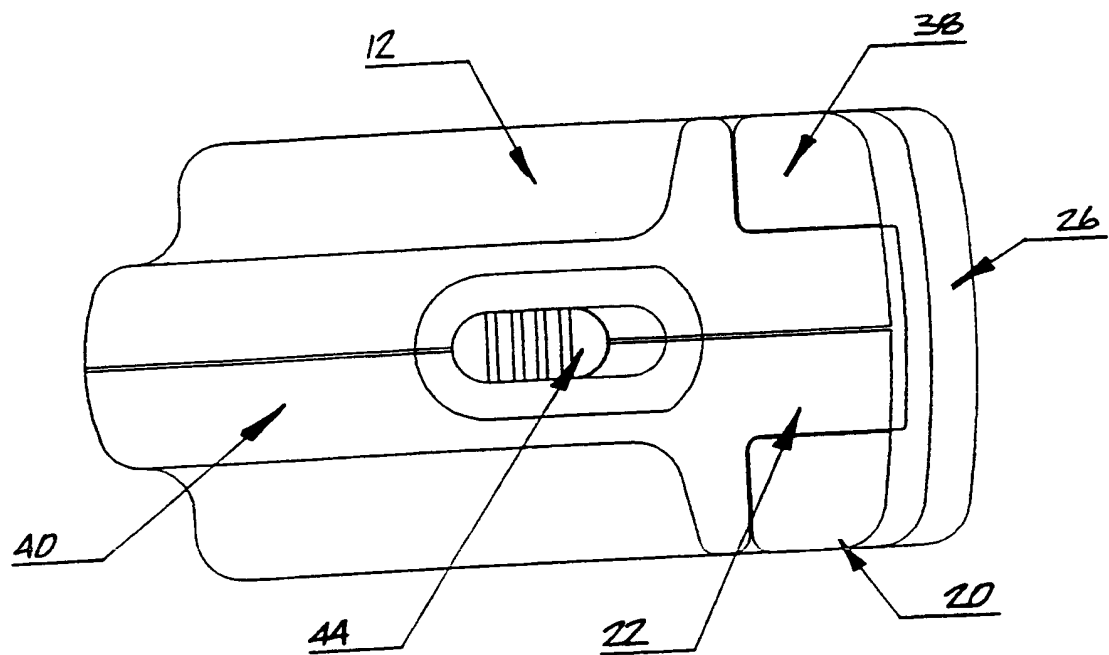


FIGURE: 5

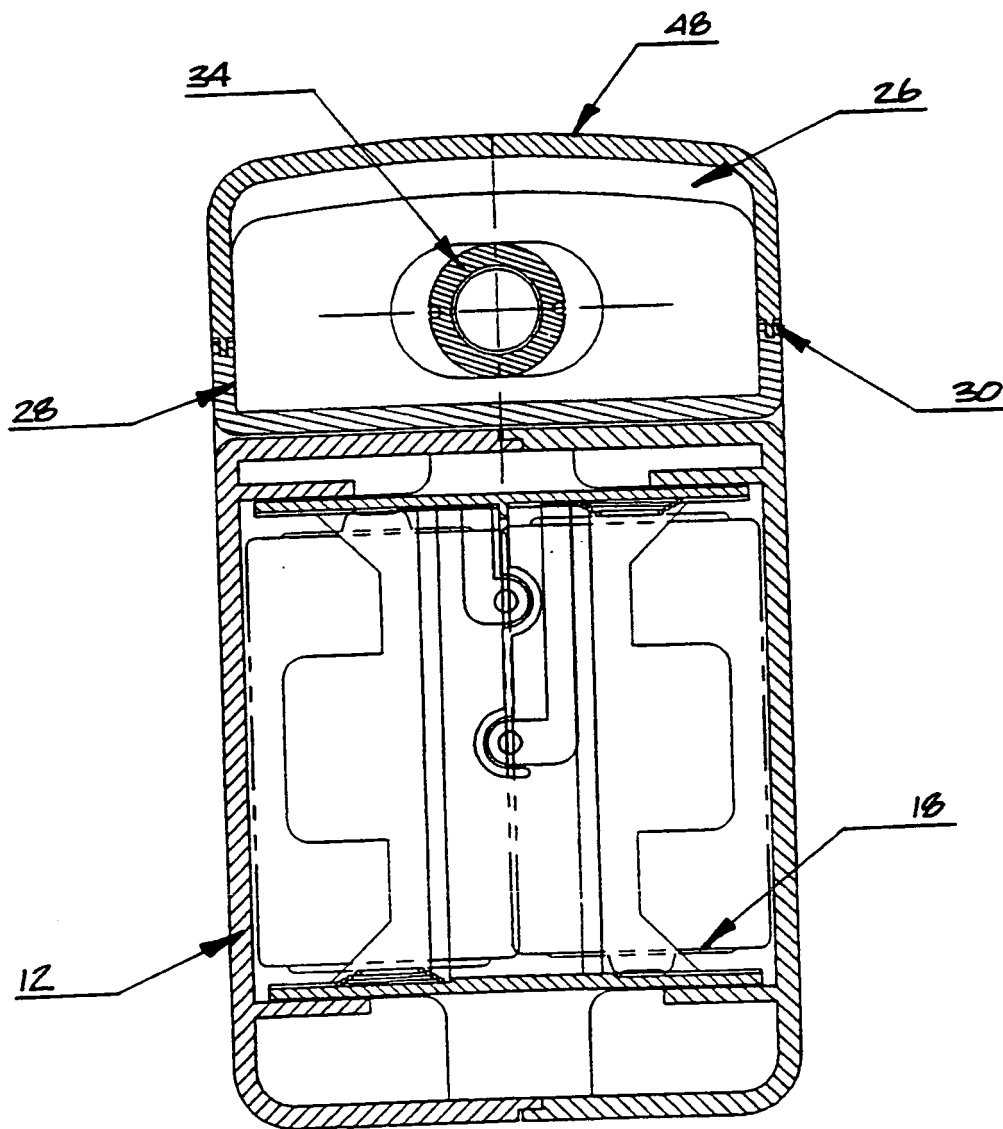


FIGURE: 6

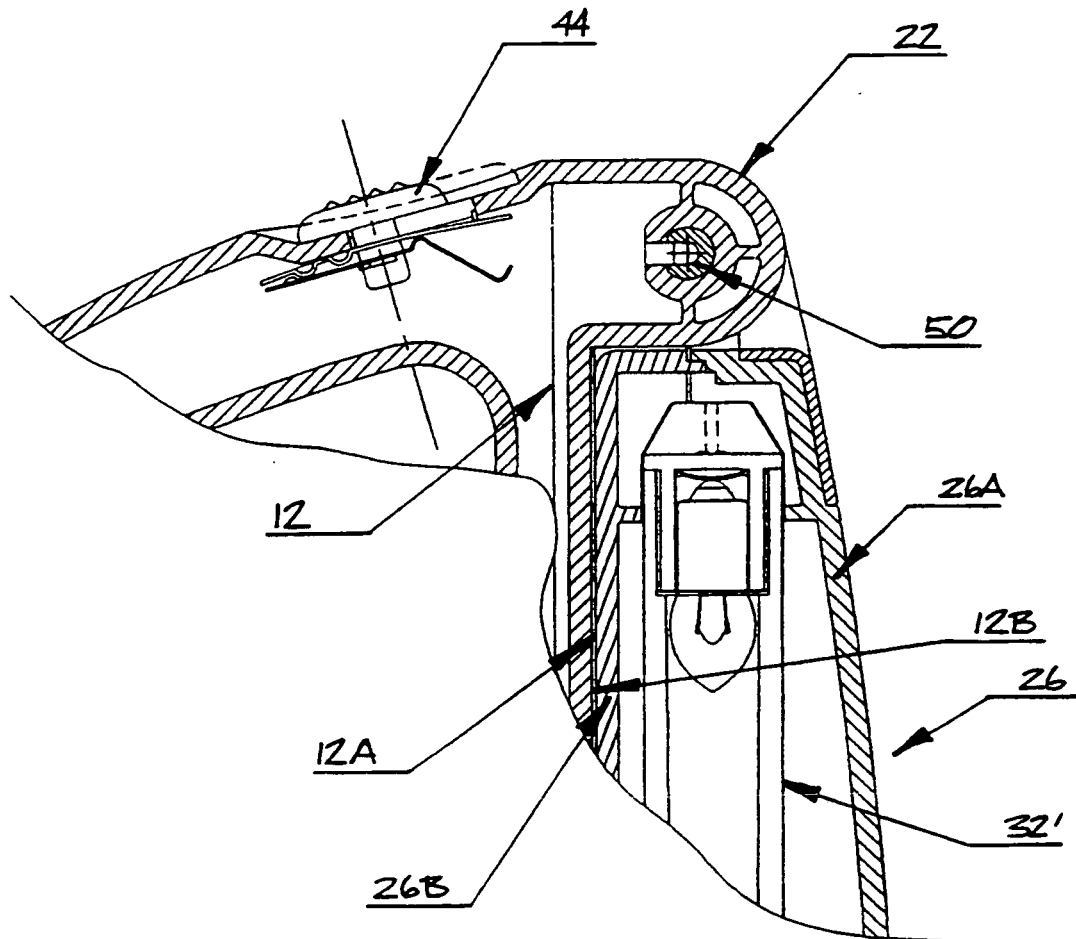


FIGURE: 7

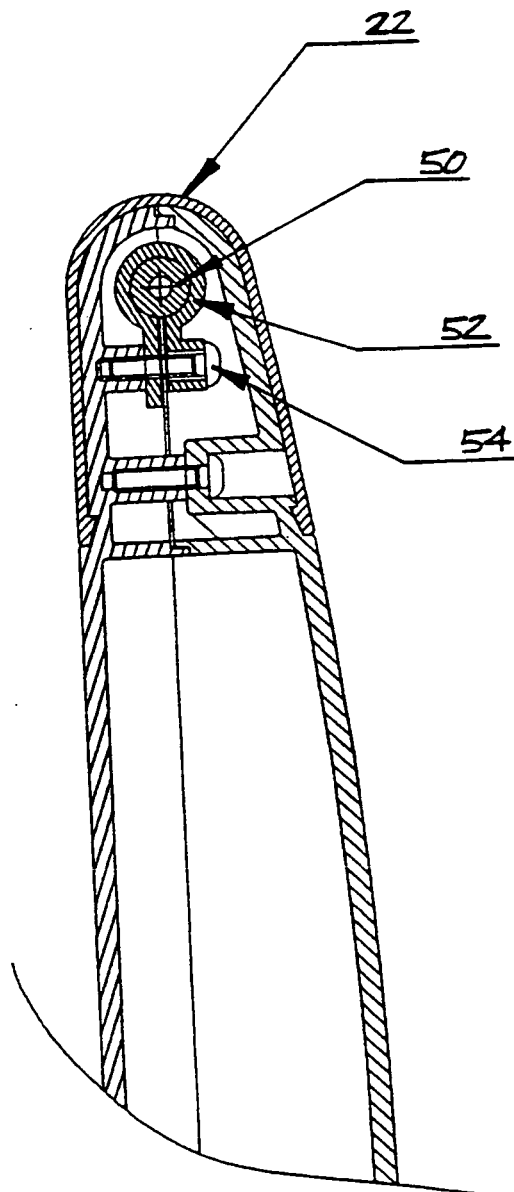


FIGURE: 8

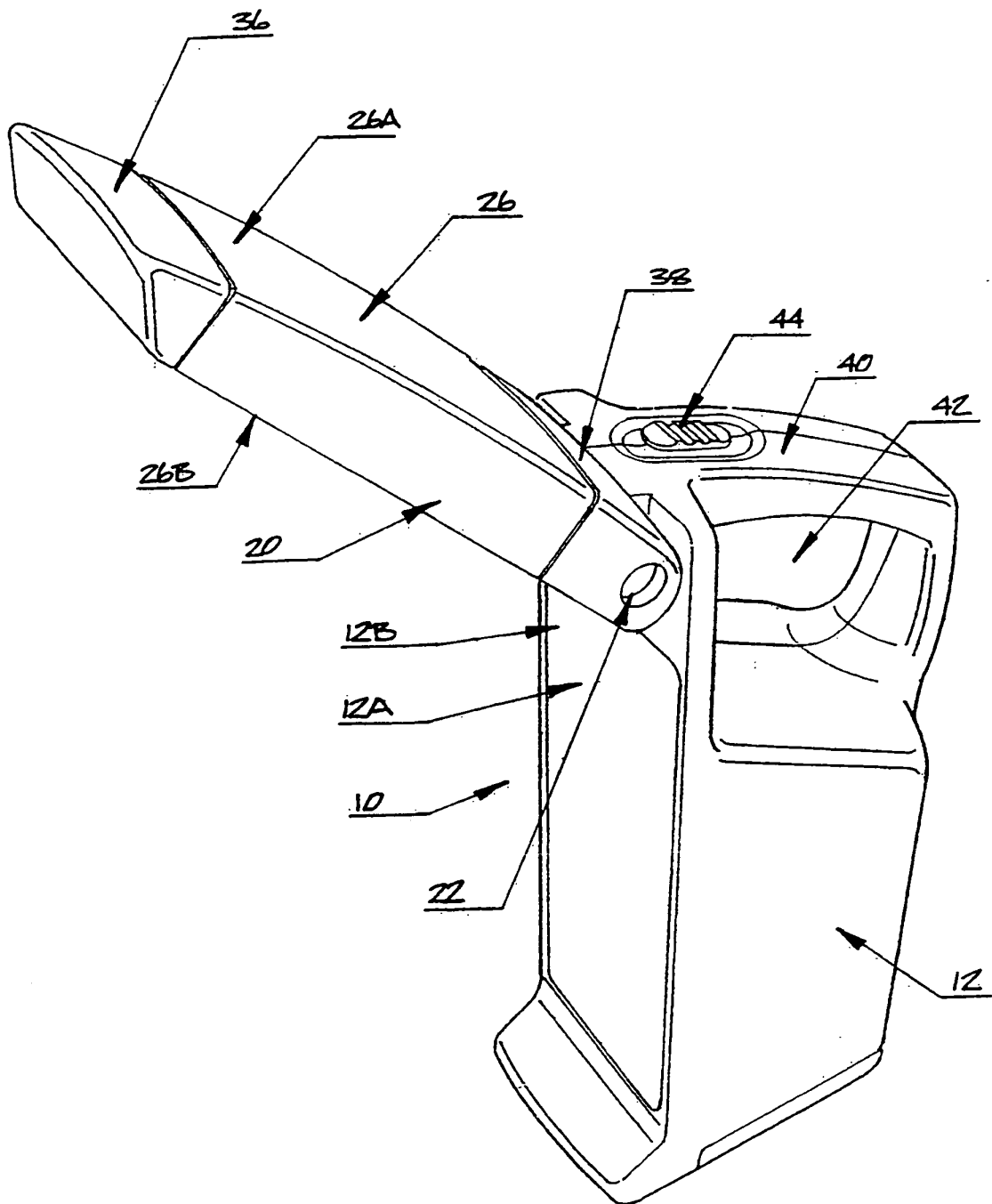


FIGURE: 9

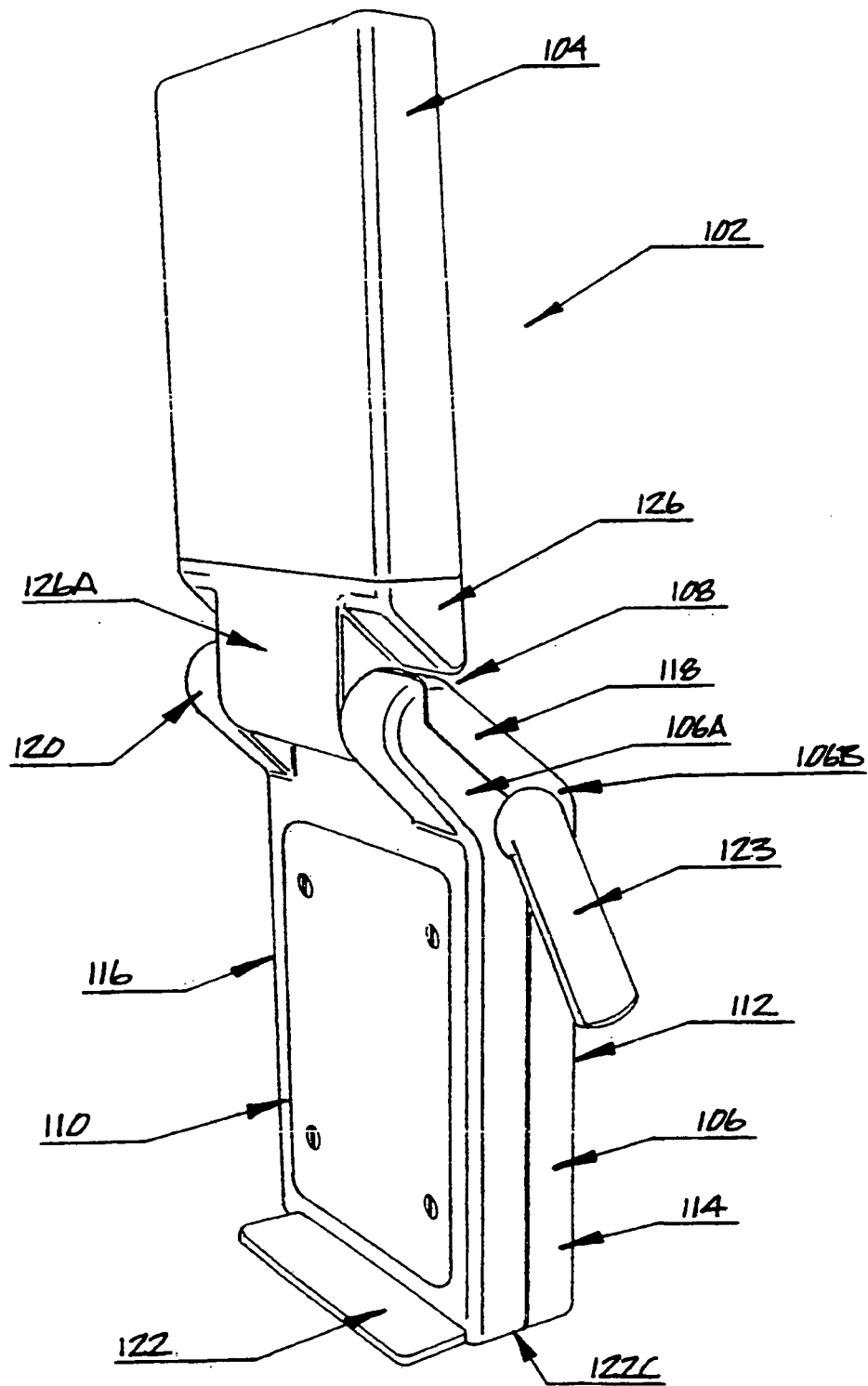


FIGURE:10

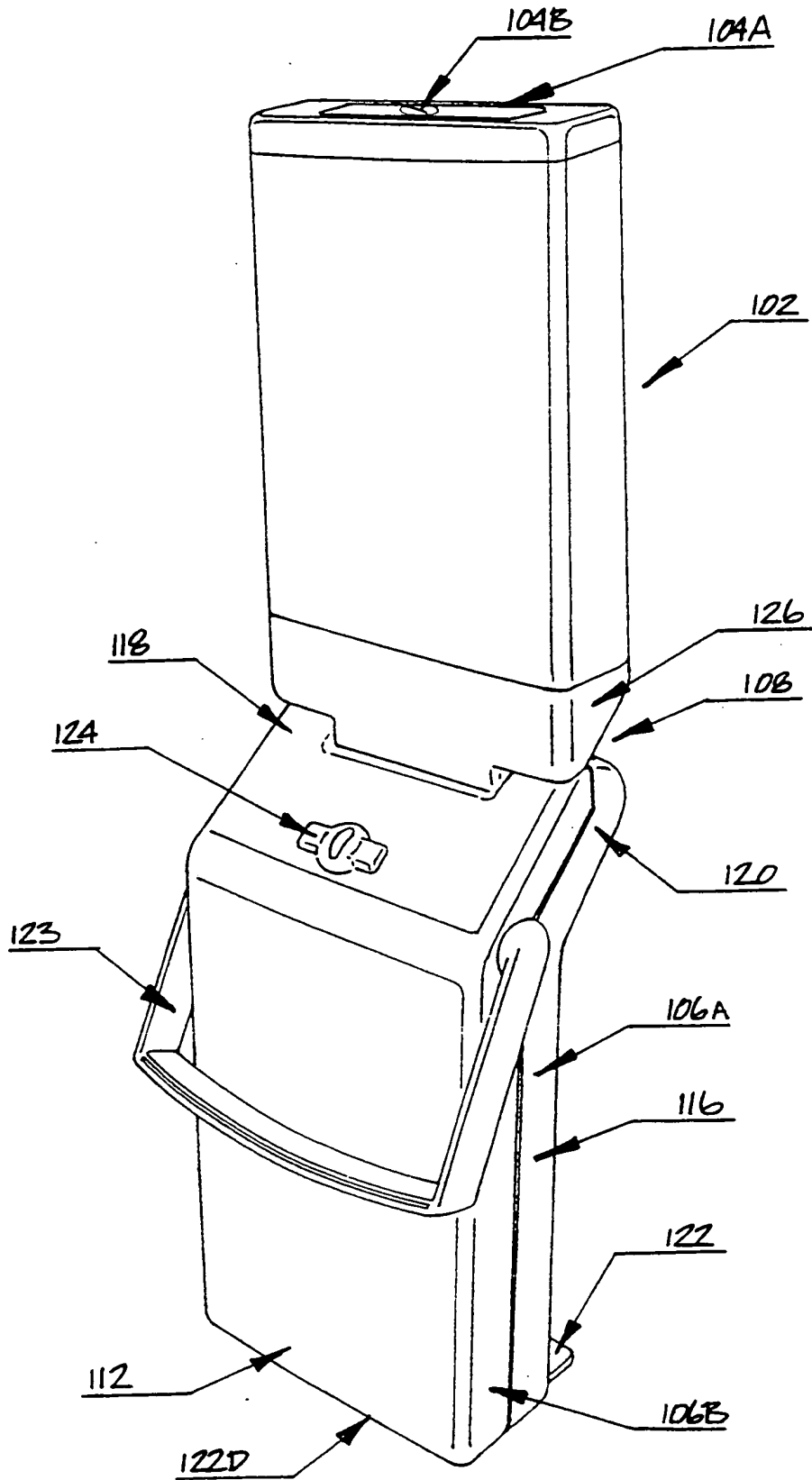


FIGURE: 11

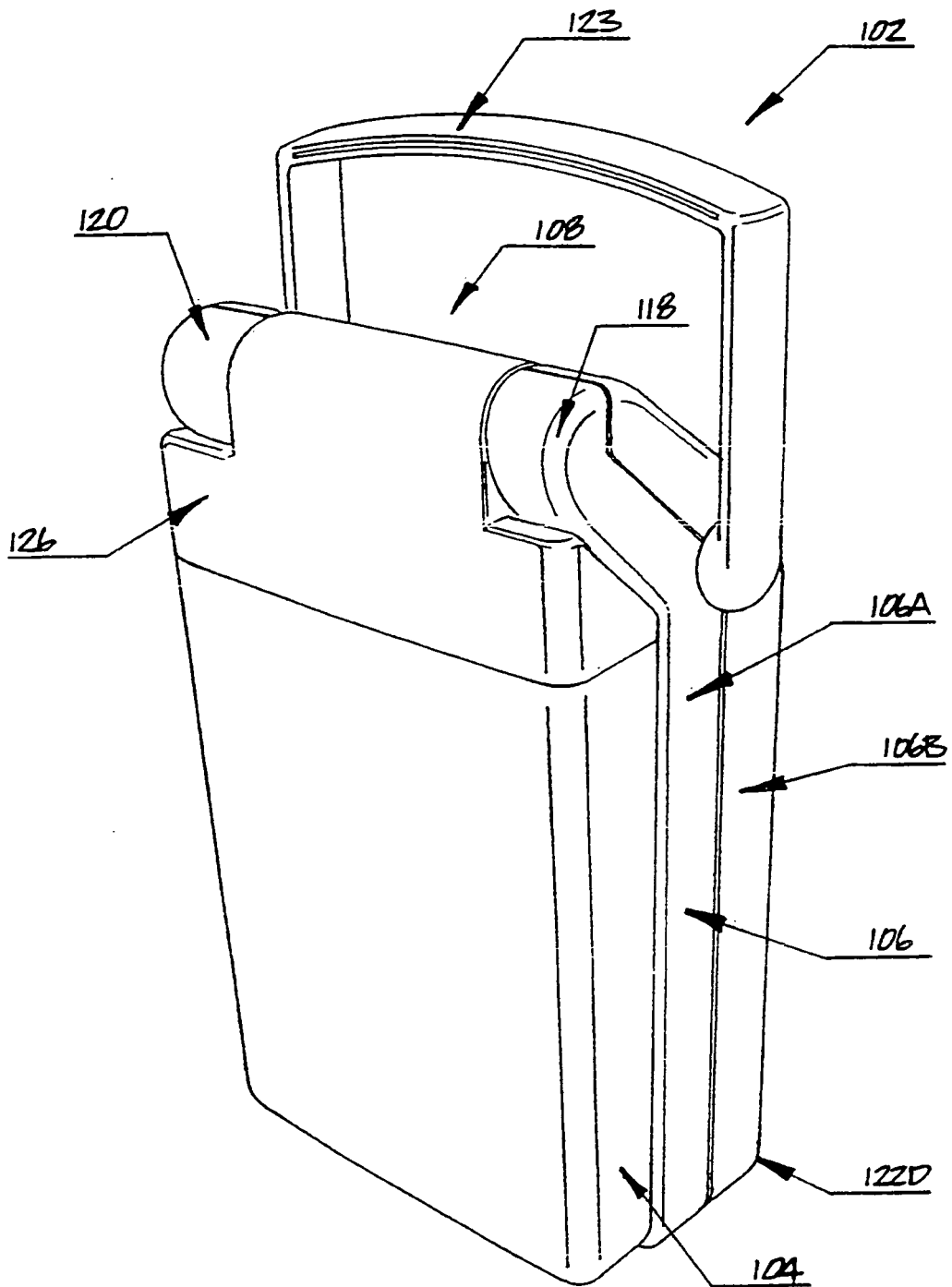


FIGURE: 12

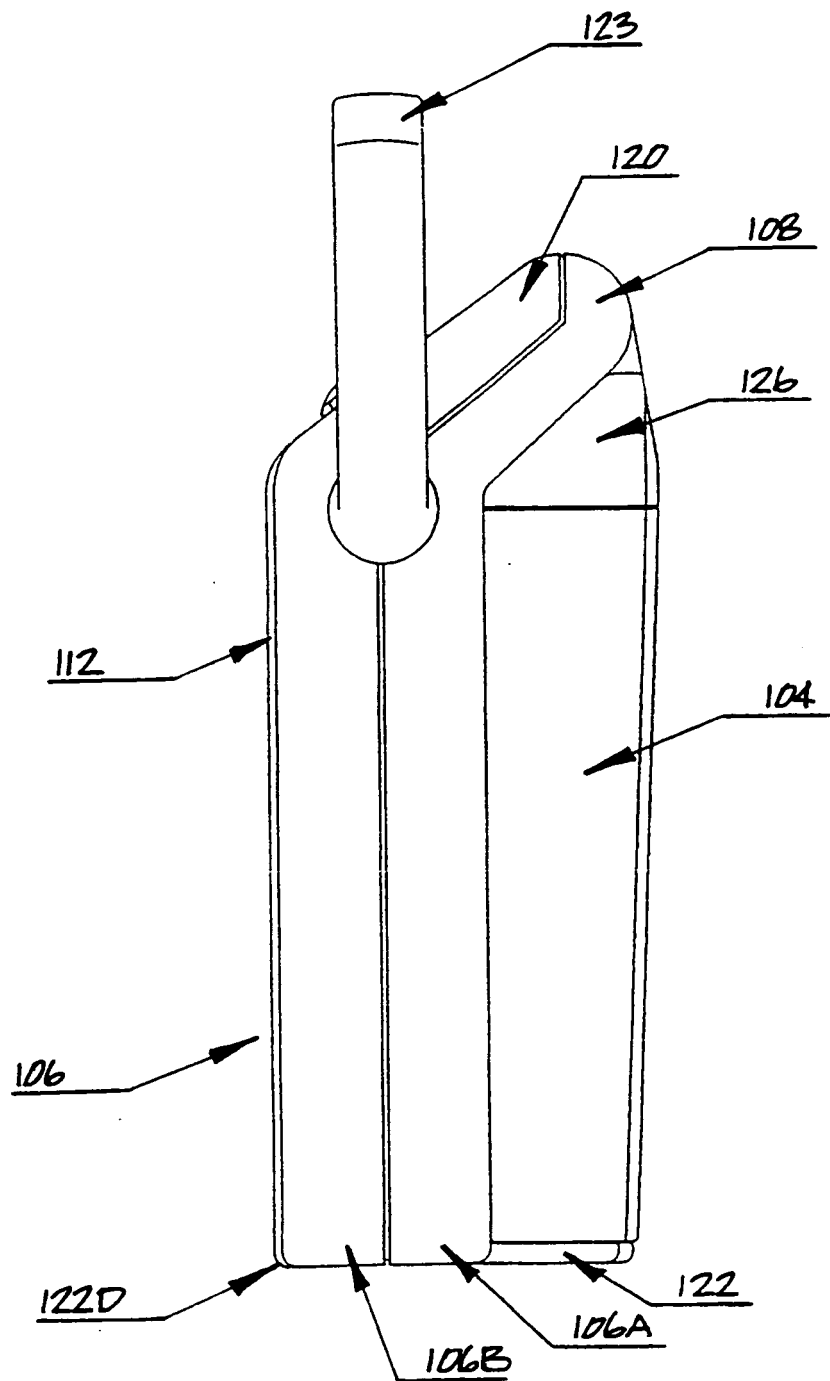


FIGURE: 13

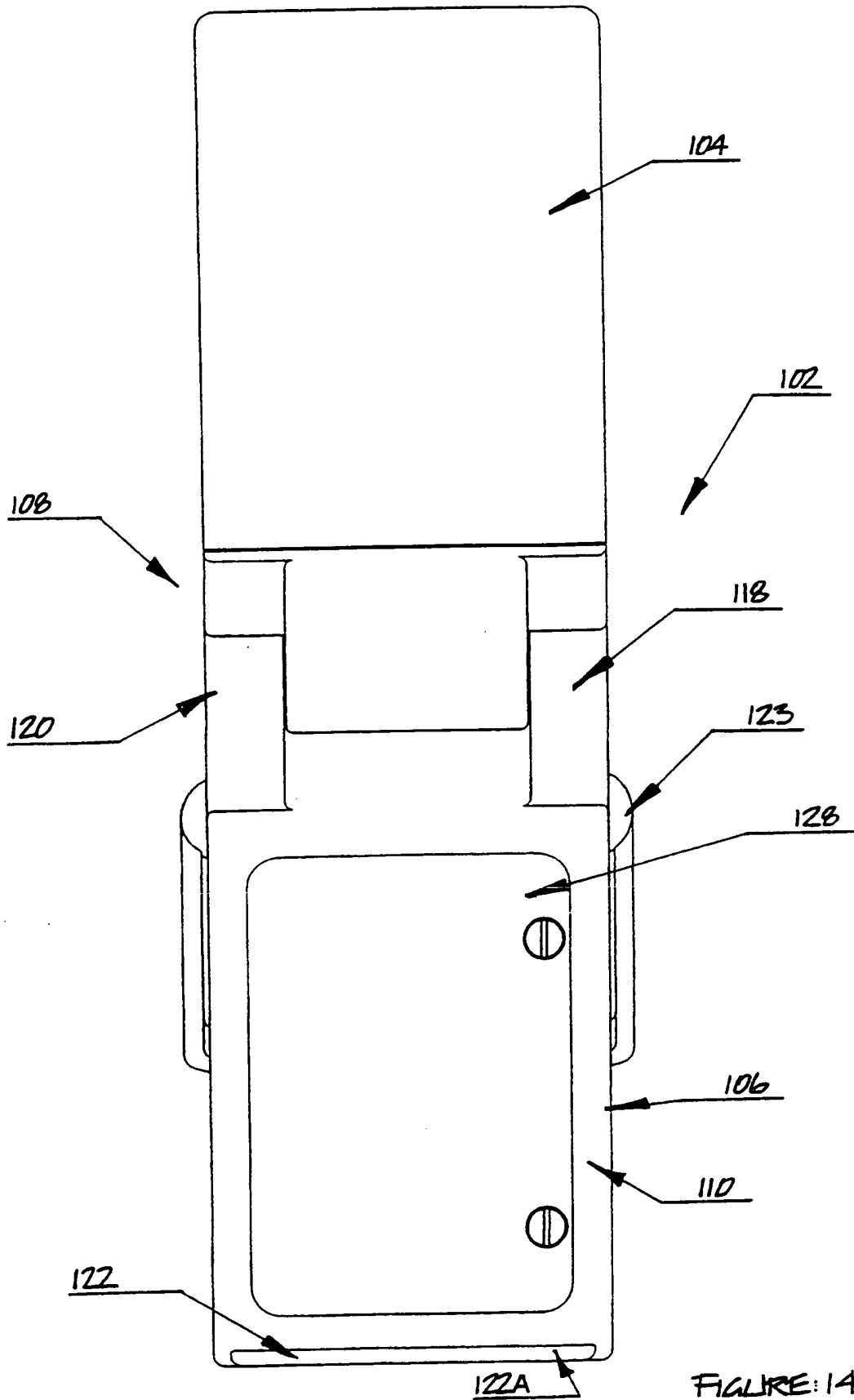


FIGURE 14

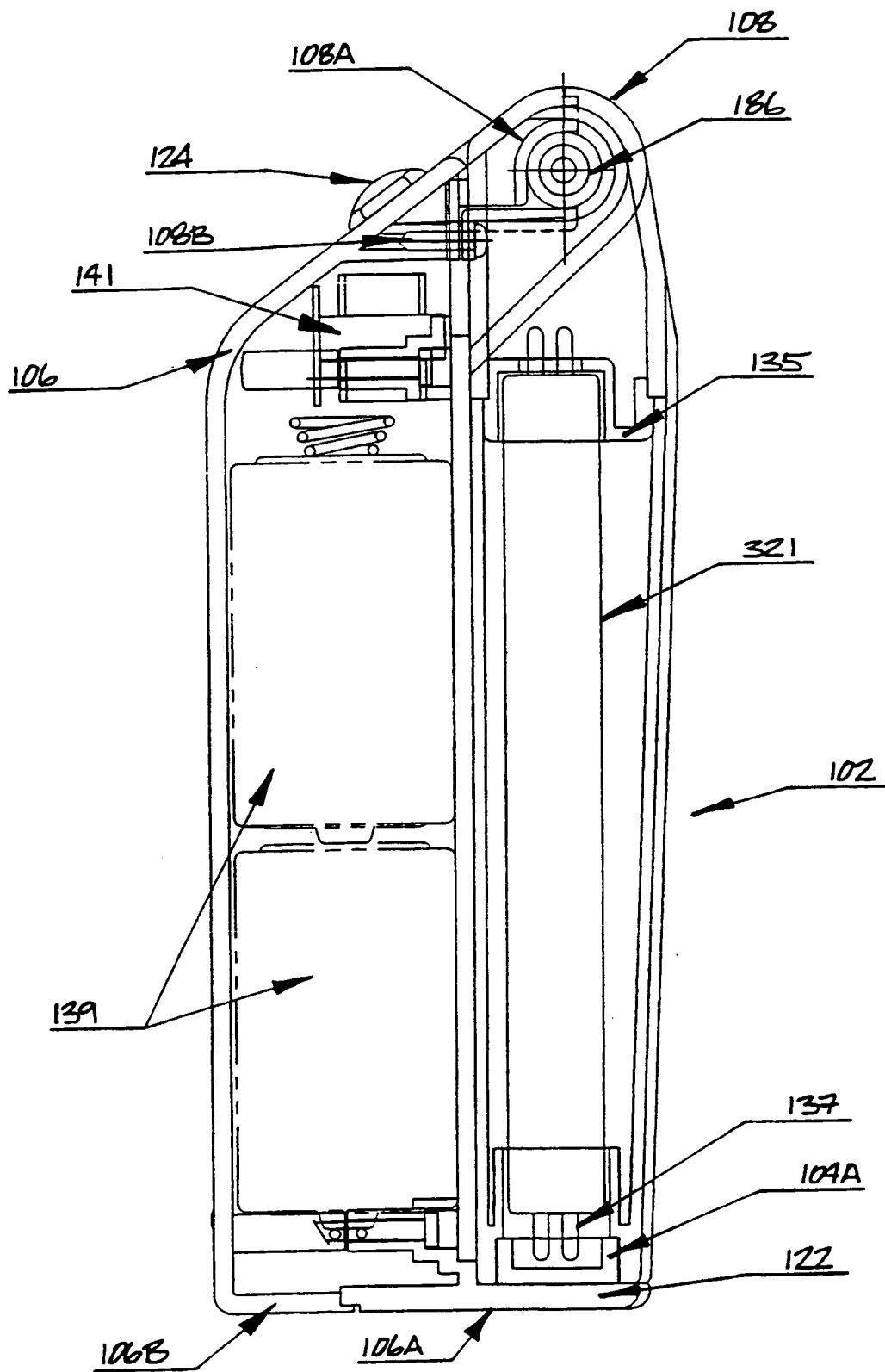
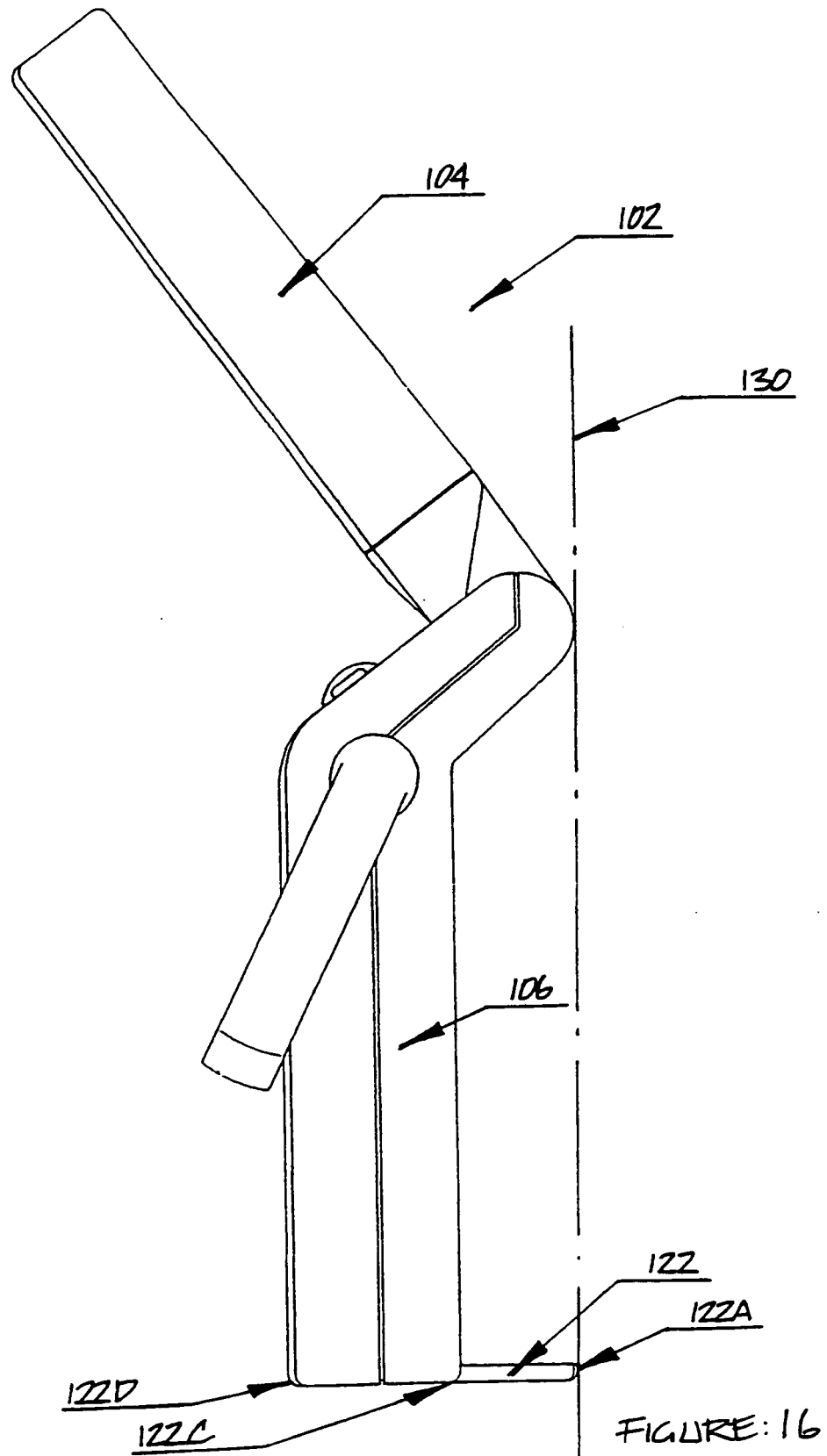


FIGURE: 15



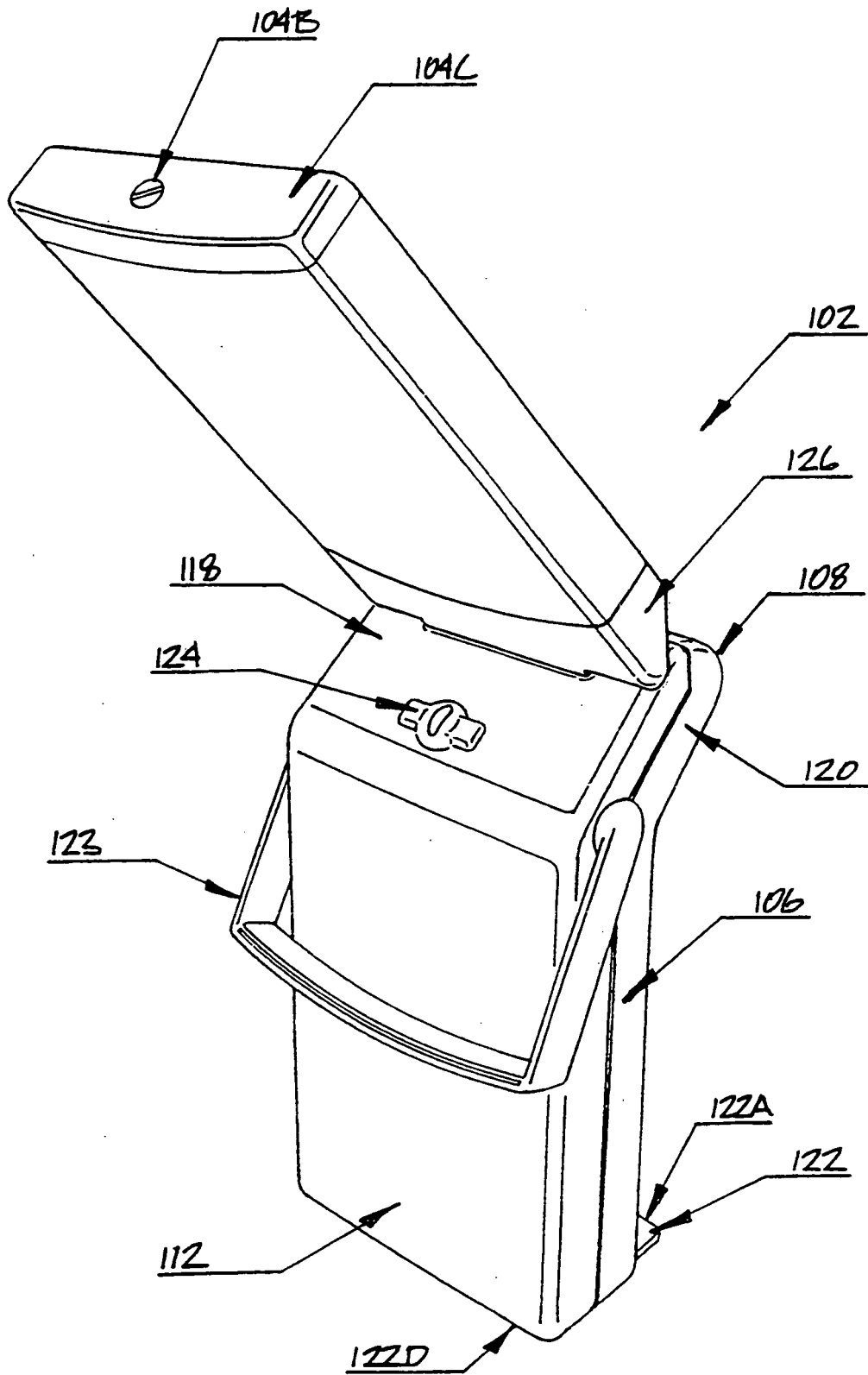


FIGURE: 17

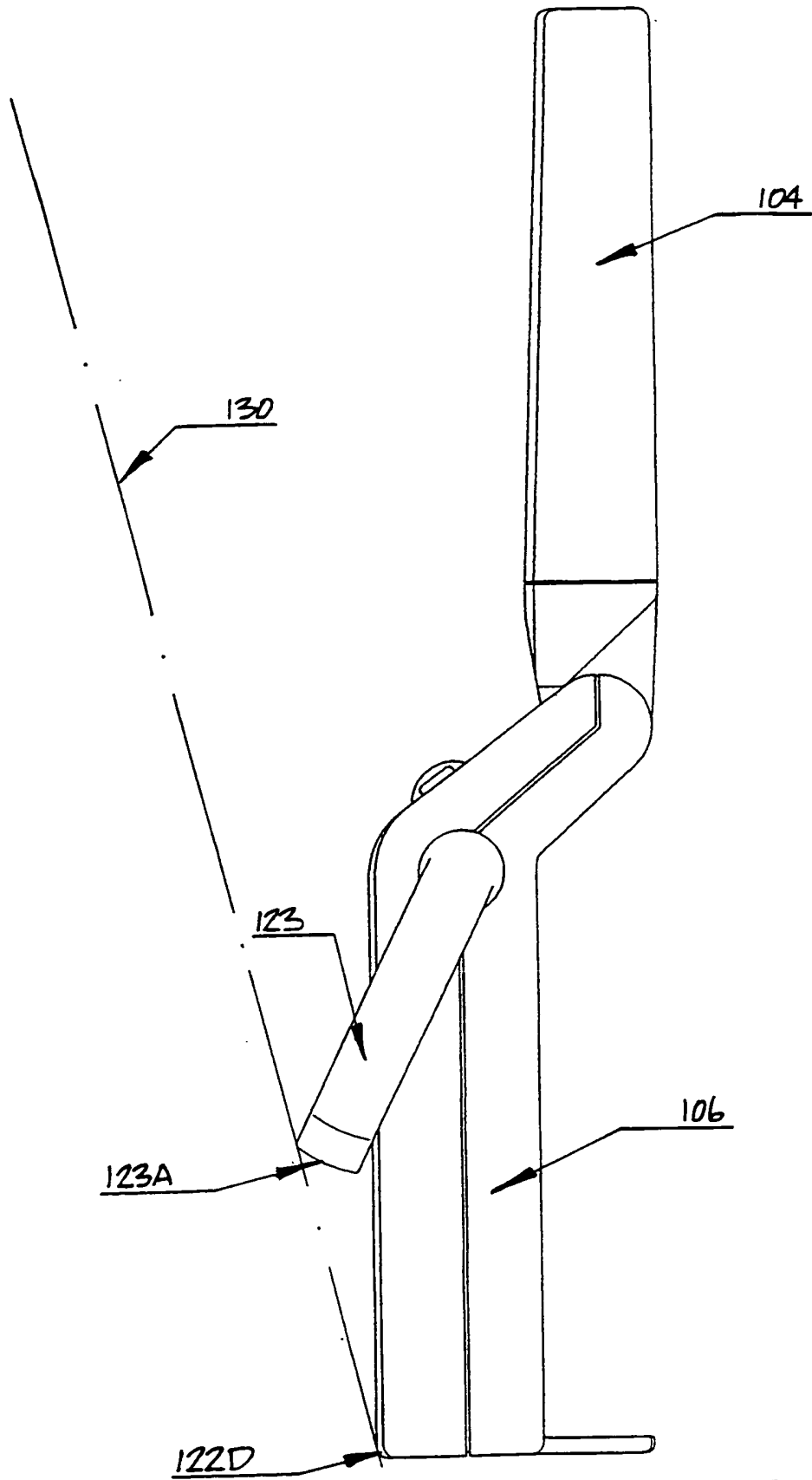
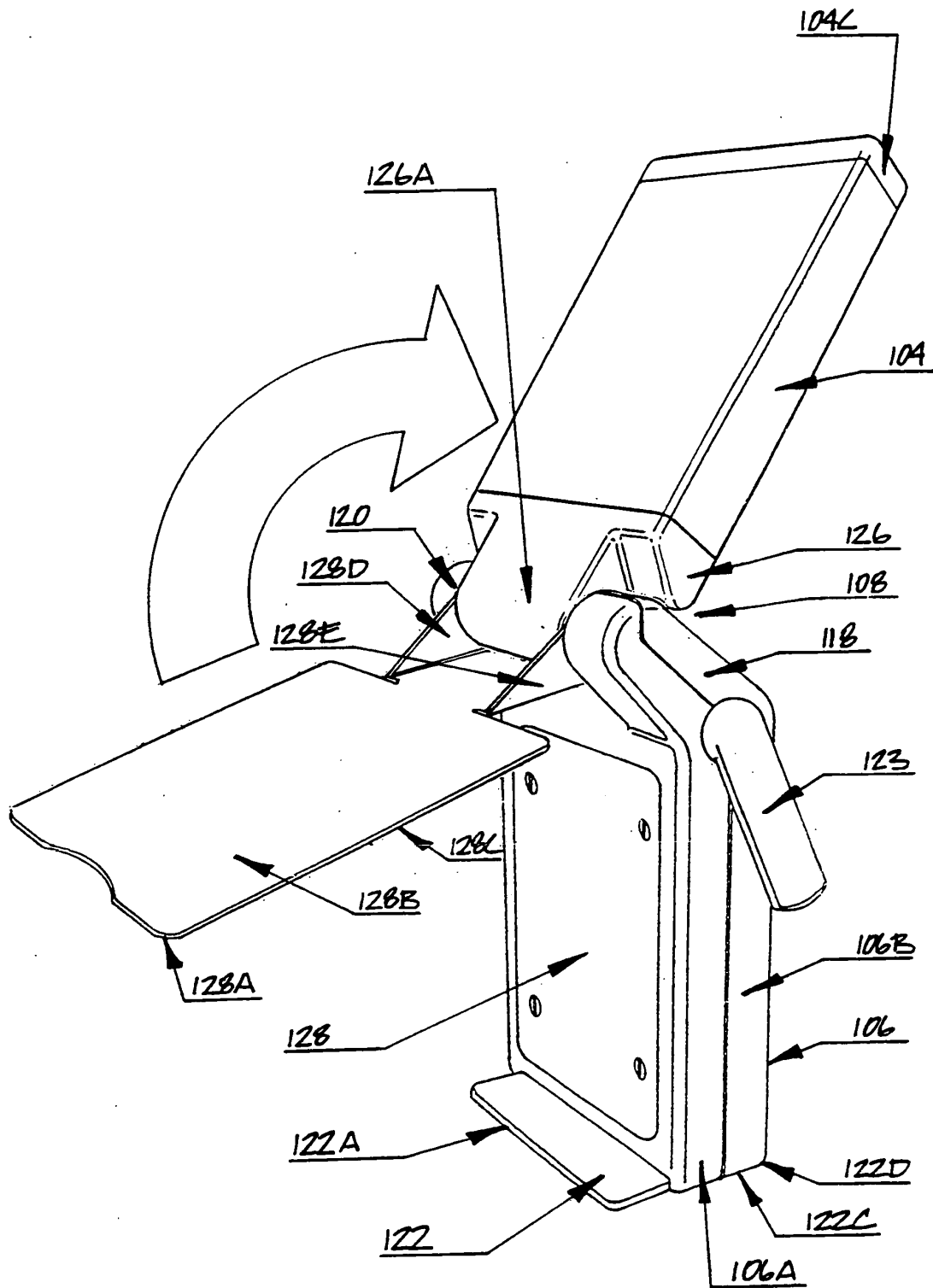


FIGURE: 18



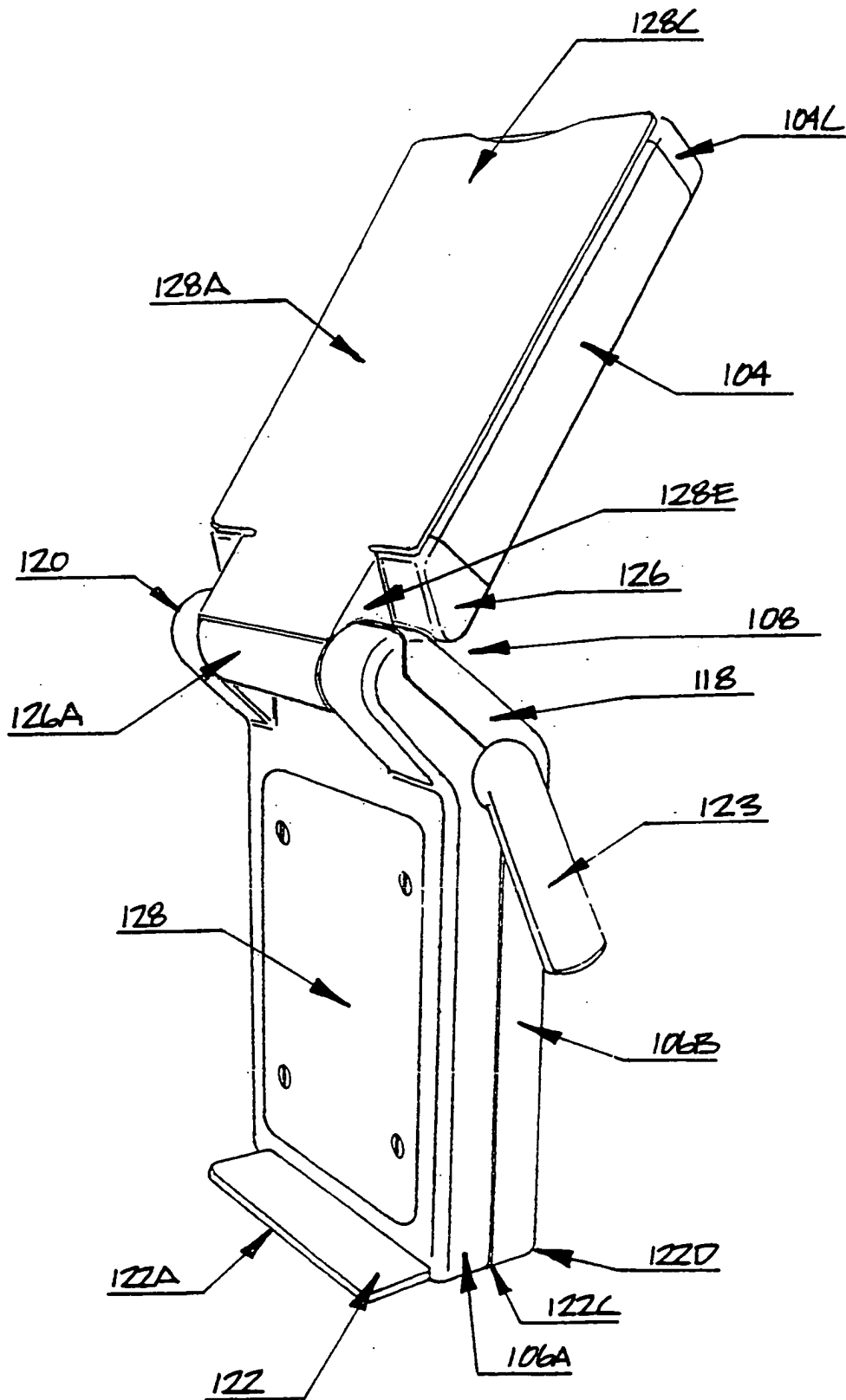


FIGURE 20

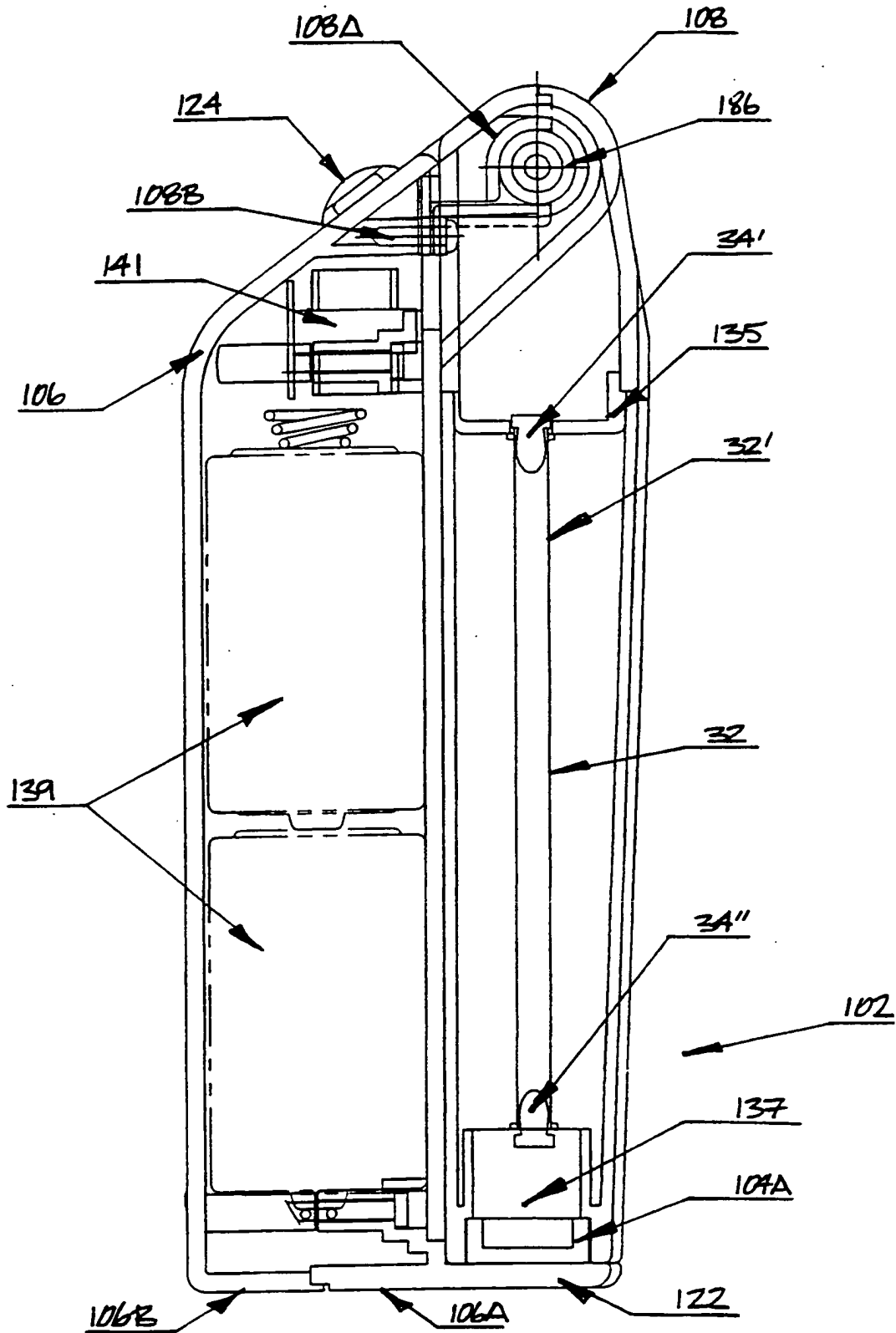


FIGURE: 21

REFERENCES CITED IN THE DESCRIPTION

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