(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 100 220**
A1

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **83304269.0**

(51) Int. Cl.³: **F 21 L 11/00**

(22) Date of filing: **22.07.83**

(30) Priority: **23.07.82 ES 266571U**

(43) Date of publication of application: **08.02.84 Bulletin 84/6**

(84) Designated Contracting States: **AT BE CH DE FR GB IT LI NL SE**

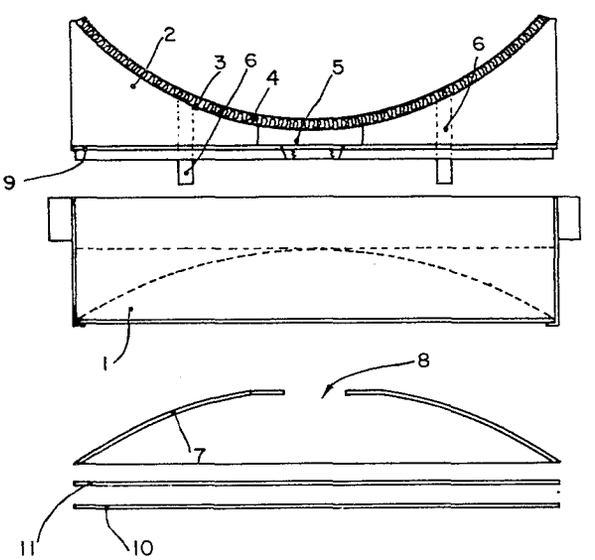
(71) Applicant: **Lopez Montes, Marcelo, Cirilo Montero 3, Torrijos (Toledo) (ES)**

(72) Inventor: **Lopez Montes, Marcelo, Cirilo Montero 3, Torrijos (Toledo) (ES)**

(74) Representative: **Burford, Anthony Frederick et al, W.H. Beck, Greener & Co. 7 Stone Buildings Lincoln's Inn, London WC2A 3SZ (GB)**

(54) Improved lantern.

(57) A lantern, intended for wearing on the head against the forehead, has a hollow rectangular body in three portions (7, 1, 2) from front to rear secured together in watertight manner with the interpolation of sealing means (9, 11). The rear portion (2) has a rear wall (3) of part-cylindrical shape and concave so as to fit against the forehead. A parabolic reflector (7) is secured at the front opening of an intermediate portion (1). A lampholder (5) projects forwardly from the concave rear wall (3), and a lamp (13) in the holder (5) projects through a central hole (8) of the reflector (7). Stops (6) for positioning the reflector (7) project forwardly from the concave rear wall (3) and abut the rear face of the reflector (7). The intermediate portion (11) has at each side a fastener (15) for a preferably resiliently extensible head band (16) to be passed about the back of the user's head to hold the lantern in position on the head.



EP 0 100 220 A1

IMPROVED LANTERN

The present invention relates to a lantern which has been substantially improved in order to better its functionality and usefulness.

More particularly the lantern of this invention has been especially conceived to fulfil its function as an instrument for illumination, leaving the hands of the user completely free so that with them the latter can carry out with greater facility the manipulations required in each case. For this purpose, the lantern provided is shaped in the manner of an eyeshade which can be adapted to the head of the user so that, as well as ensuring the object mentioned above of leaving free the hands of the user, it ensures at all times that the luminous beam is orientated in the same direction as the vision of the user.

Another feature of the lantern of this invention is the fact that it is completly watertight, which permits its use under water.

The relatively low weight and volume in conjunction with its ease of manipulation makes the lantern of the invention an instrument which is both useful and convenient.

More particularly the lantern of the invention is constituted by a body based on three fundamental

pieces which can be coupled together with the interpolation of watertight joints which ensure the watertightness referred to earlier, and in which are secured the various structural elements of the same. In the said body there is defined a rear wall of part cylindrical shape for fitting to the user's forehead whilst at its front face there is a transparent wall, preferably a plastics sheet, which covers and protects a parabola which is likewise of part cylindrical shape but of curvature opposite to that of the rear wall.

In a preferred embodiment, there is positioned in the interior of the body a lampholder for the illumination lamp, as well as a set of supply cells for the same, with the inclusion of an operating switch which, suitably waterproofed, is placed in the upper part of the body.

With the lateral parts of the abovementioned body there is associated an elastic strap for fixing around the head and provided with means for altering its length. Preferably in correspondence with the front upper vertices of the said lateral faces there is pivotably connected to the said body an eyeshade capable of adopting a horizontal position, as a projection from the upper wall of the said body, or of being lowered onto the transparent front wall which protects the parabola, thus protecting in its turn

the said transparent wall during periods of non-use of the lantern.

There will now be given a complete description of the said improved lantern, with reference to the accompanying drawings in which there is shown, by way of simple example and in no limiting sense, a preferred form of construction to which can be applied all those modifications of detail which do not alter fundamentally its essential features as defined in the Claims hereof.

In the said drawings:

Figure 1 is an exploded view of the body of the improved lantern of the present invention;

Figure 2 is a front elevation of the lantern of Figure 1 with its parabola removed so that there can be clearly seen the positioning of the housing for the lampholder and the supply cells;

Figure 3 is a plan view of the lantern of Figure 1 with the upper wall of the body removed to reveal its internal structure;

Figure 4 is a lateral elevation of the lantern of Figure 1 in section and revealing its internal structure;

Figure 5 is a lateral elevation of the lantern of Figure 1 in which the eyeshade appears in the extended condition and, shown in broken lines, in the folded

condition in which it protects the lantern; and

Figure 6 is a perspective view of the improved lantern of Figure 1.

Referring to the Figures it can be seen how the lantern of the invention is constituted starting from a body having three parts (1,2,7). An intermediate part (1) of prismatic-rectangular shape is open at the front and rear, as can be seen in Figure 1, and at its rear opening receives a rear part (2) of the body, whose rear wall (3) is curved according to an imaginary cylindrical sector and is covered by a layer (4) of nylon foam to adapt to the forehead of the user.

In this rear part (2) of the body there is seated a lampholder (5), as well as lateral stops (6) for holding in place a parabola (7) which is chromed and constitutes the third part (i.e. front part) of the body provided with a corresponding central opening (8) positioned operatively in front of the lampholder (5).

The rear part (2) is connected to the intermediate part (1) with the interpolation of a watertight seal (9), whilst after the positioning of the parabola (7) in the said intermediate part (1), there is attached to the same a rectangular sheet of transparent plastic (10), to act as a glass, again

with the interpolation of a watertight seal (11).

The lateral zones of the rear part (2), as can be seen in either of Figures 2 and 3, are intended for the positioning of the supply cells (12) for a lamp (13). Preferably the cells are four in number and of 1.5 volts, said cells being duly connected to the lamp (13) through a switch (14) constituted by a tumbler with two positions.

As can be seen in Figure 3, the lamp (13) is fixed in the lampholder (5) and in this position emerges substantially towards the concave zone of the parabola (7).

On the lateral walls of the intermediate part (1) are two bridge pieces (15) intended for securing, with the aid of respective fasteners, an elastic holding band (16) which passes about the head of the user and which is provided with a ring (17) for adjustment of its length.

Likewise on the lateral walls of the intermediate part (1), corresponding with its front upper vertices, there are situated respective studs (18) which provide an imaginary axis of pivoting for a foldable eyeshade (19) the height of which coincides with that of the front transparent plastic (10) which it has to cover and protect during periods of inoperation of the lantern. The eyeshield (19) contains abutments (20)

near to its free corners capable of keying under pressure on small studs (21) provided in the lower lateral zones of the said intermediate part (1), when the eyeshade adopts the position shown by reference -19'- in Figure 5.

Thus, the various integral parts of the body are coupled together hermetically by reason of the water-tight joints (9 & 11), at the same time as the switch (14) is duly sealed, so that the lantern can be submerged without the least problem.

The small eyeshade (19) acts as an element of protection for the transparent plastic sheet (10), when the lantern is not used as such. Further, the said lantern is easily fitted to the forehead of the user by means of the elastic positioning strap (16), being extremely convenient as a result of the anatomical shaping of the rear wall (3) of its body and of the layer of nylon foam (4) with which said fitting wall is covered.

The stops (6) provide proper fixing for the parabola (7), whilst the cells (12) occupy dead spaces of the said body without requiring an increased volume for the same.

The abovementioned cells (12) can be used in pairs, independently or together.

Finally and as a functional feature of the lantern, from the operational point of view, it can be fixed to the head of the user by means of the elastic positioning band (16), in the manner of an eyeshade, leaving free the two hands of the user for any type of operation which has to be carried out.

The shape, dimensions and materials could be varied and, in general, they shall be accessory or secondary provided always that they do not alter, change or modify the invention as defined in the following claims.

CLAIMS

1. A lantern characterised in that it comprises a hollow body including an intermediate body portion (1) of rectangular section and open at its front and rear ends, a rear body portion (2) of corresponding rectangular section closing the open rear end of the intermediate body portion (1) and having a rear wall (3) of part-cylindrical shape to seat against the forehead of a user of the lantern, a parabolic reflector (7) positioned within the open front end of the intermediate body portion (1), a transparent front wall (10) secured over the front end of the intermediate body portion (1), respective watertight sealing means (9,11) positioned between the rear body portion (2) and the intermediate body portion (1), and positioned between the transparent front wall (10) and the intermediate body portion (1), strap fastening means (15) on said intermediate body portion (1), and a strap (16) secured to said fastening means for passing about the back of the user's head to hold the lantern in position on the head.

2. A lantern, as claimed in Claim 1, characterised in that stop means (16) project forwardly from said rear wall (3) and abut said reflector (7).

3. A lantern, as claimed in Claim 1 or Claim 2, characterised in that a lampholder (5) projects

forwardly from said rear wall (3), and a lamp (13) in said lampholder (5) projects through an opening (8) in said reflector (7).

4. A lantern, as claimed in any one of the preceding claims, characterised in that an eyeshade (19) is pivoted on said intermediate body portion (1) and is movable into and between a raised position in which it projects forwardly from the hollow body, and a lowered position in which it overlies said front wall (10).

5. Improved lantern, characterised in that it is constituted by means of the functional combination of three pieces (1,2,7) integral to its body, the intermediate piece (1) being prismatic-rectangular, open at the front and rear, and intended to receive by its rear opening the second piece (2) which, retaining the general prismatic shaping, has an arcuate shaping for its rear wall (3), in accordance with an imaginary cylindrical sector, determining the zone of fitting of the lantern to the forehead of the user, whilst the front piece of the body is constituted by a chromed parabola (7) which seats into the intermediate piece (1) and which is duly protected by a rectangular sheet of transparent plastic (10), the fixing of these pieces being obtained with the interpolation of water-tight joints (9,11) which assure complete hermeticity for the body, with the feature that on the lateral

walls of the intermediate piece (1) there are provided respective bridge elements (15) for the fastening of an elastic band or belt (16) for fastening of the said body to the head of the user, said elastic band being provided with a ring for adjusting its length.

6. Improved lantern, according to Claim 5, characterised in that the rear piece (2) of the body has its wall (3), for fitting to the forehead of the user, provided with a resilient layer (4), preferably based on nylon foam, on its external face, whilst from its internal face there extend stops (6) for positioning of the parabola (7), and externally thereof there are provided zones for the positioning of the supply cells of the lantern, whilst centrally there is made fast to said rear piece (2) of the body a lampholder housing (5) such that the lamp (13) disposed therein passes through a central opening (8) existing in the parabola (7), it being provided furthermore that the feeding of the said lamp, from the set of cells, is obtained through a two-position switch (14) installed in the upper zone of this rear piece of the body and duly sealed.

7. Improved lantern, as claimed in Claim 5 or Claim 6, characterised in that on the lateral faces of the intermediate piece (1) of the body, and in correspondence with its front upper vertices, there

are provided respective studs (21) for the pivotal connection of a small eyeshade (19), capable of being lowered onto the front transparent plastic sheet (10), forming a protective element for this latter during periods of non-use of the lantern, with the feature that, corresponding with the free vertices of the said eyeshade, there are incorporated abutments (20) capable of keying with studs (21) provided on the body which retain the said eyeshade in the closed position.

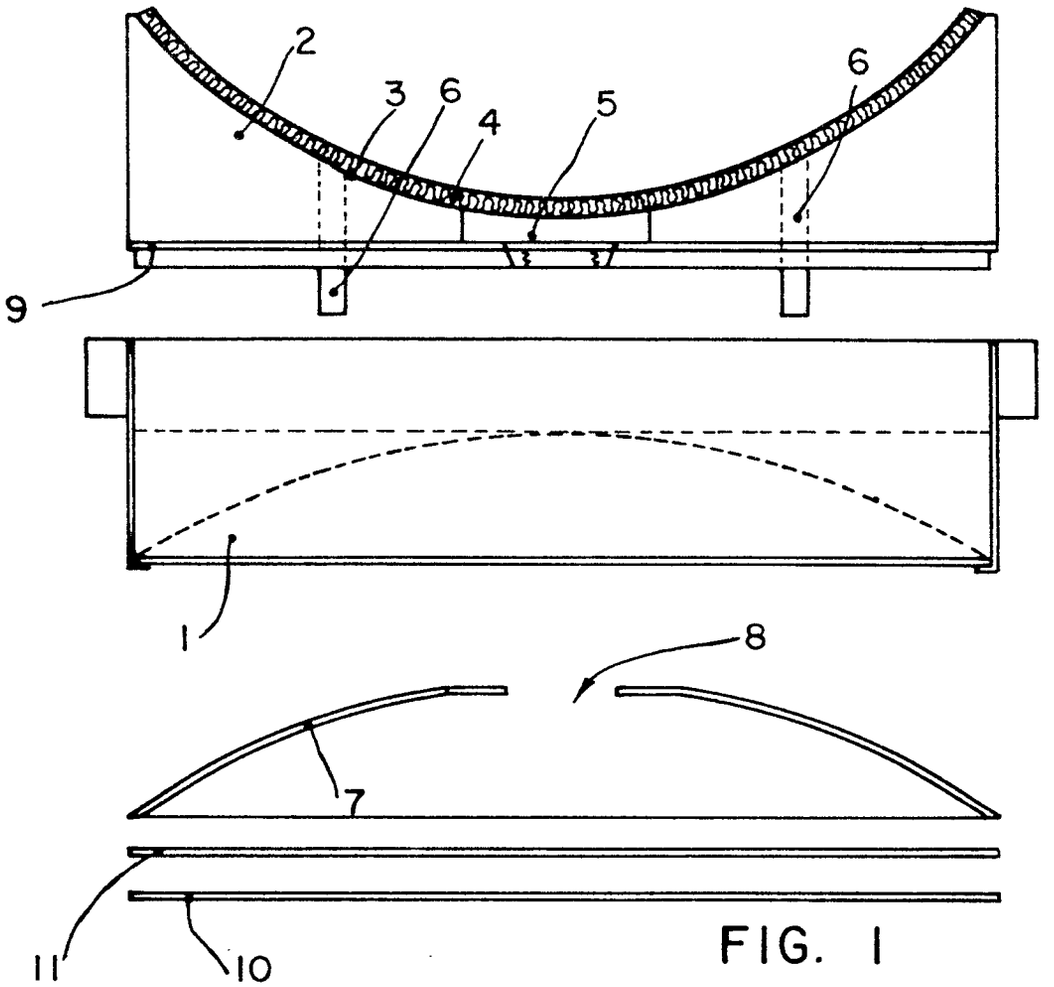


FIG. 1

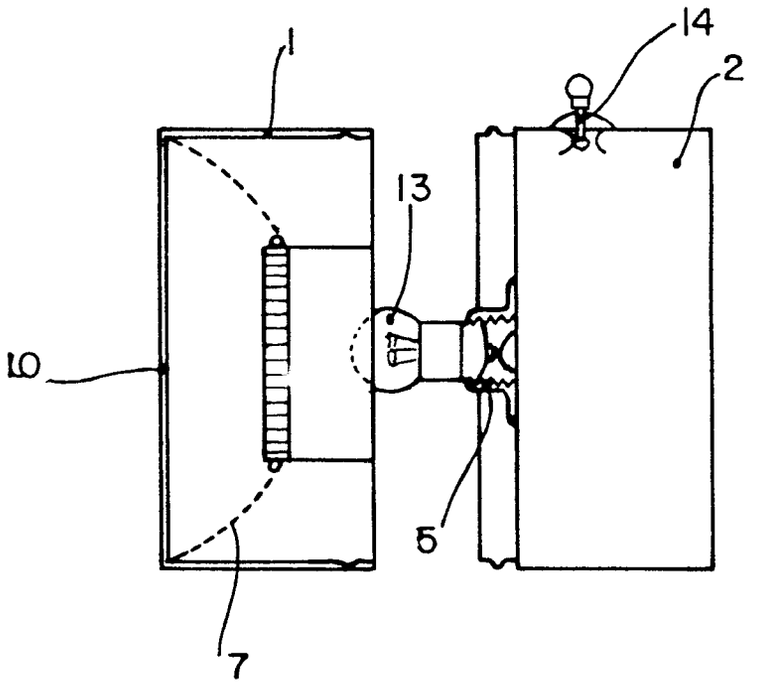


FIG. 4

FIG. 2

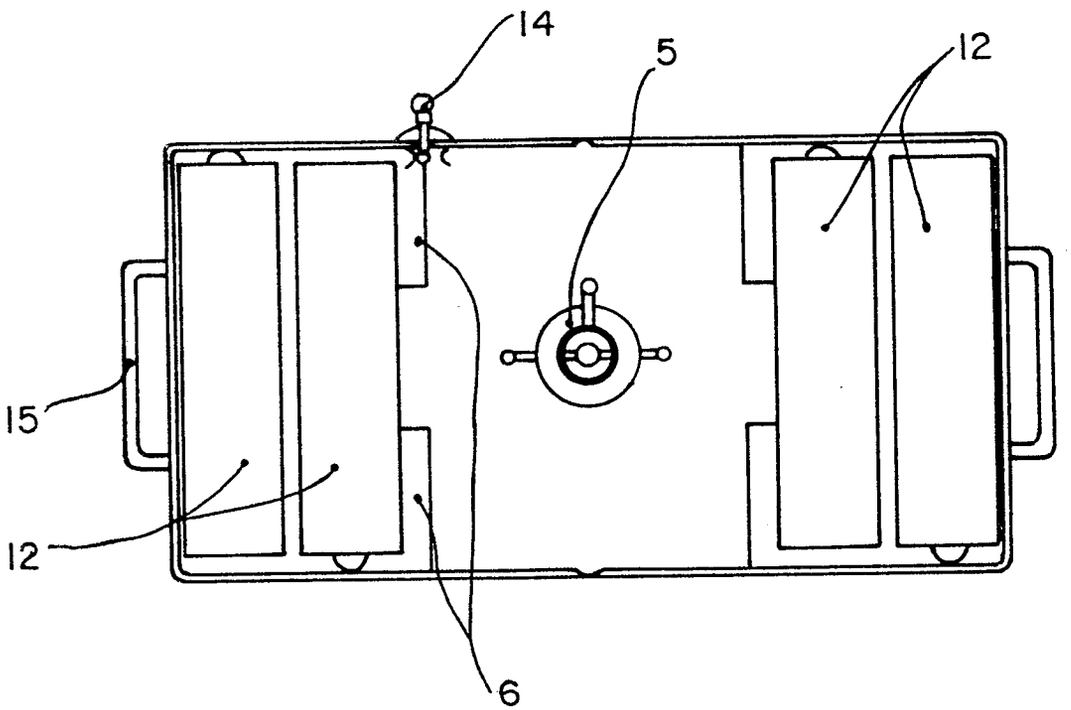


FIG. 3

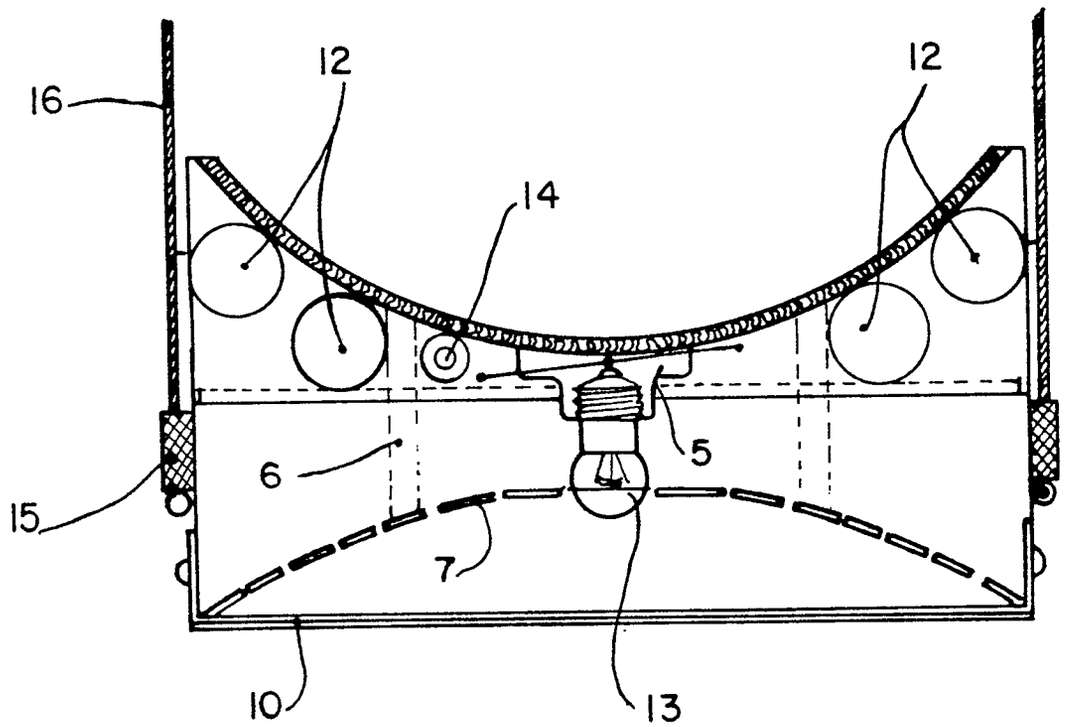


FIG. 5

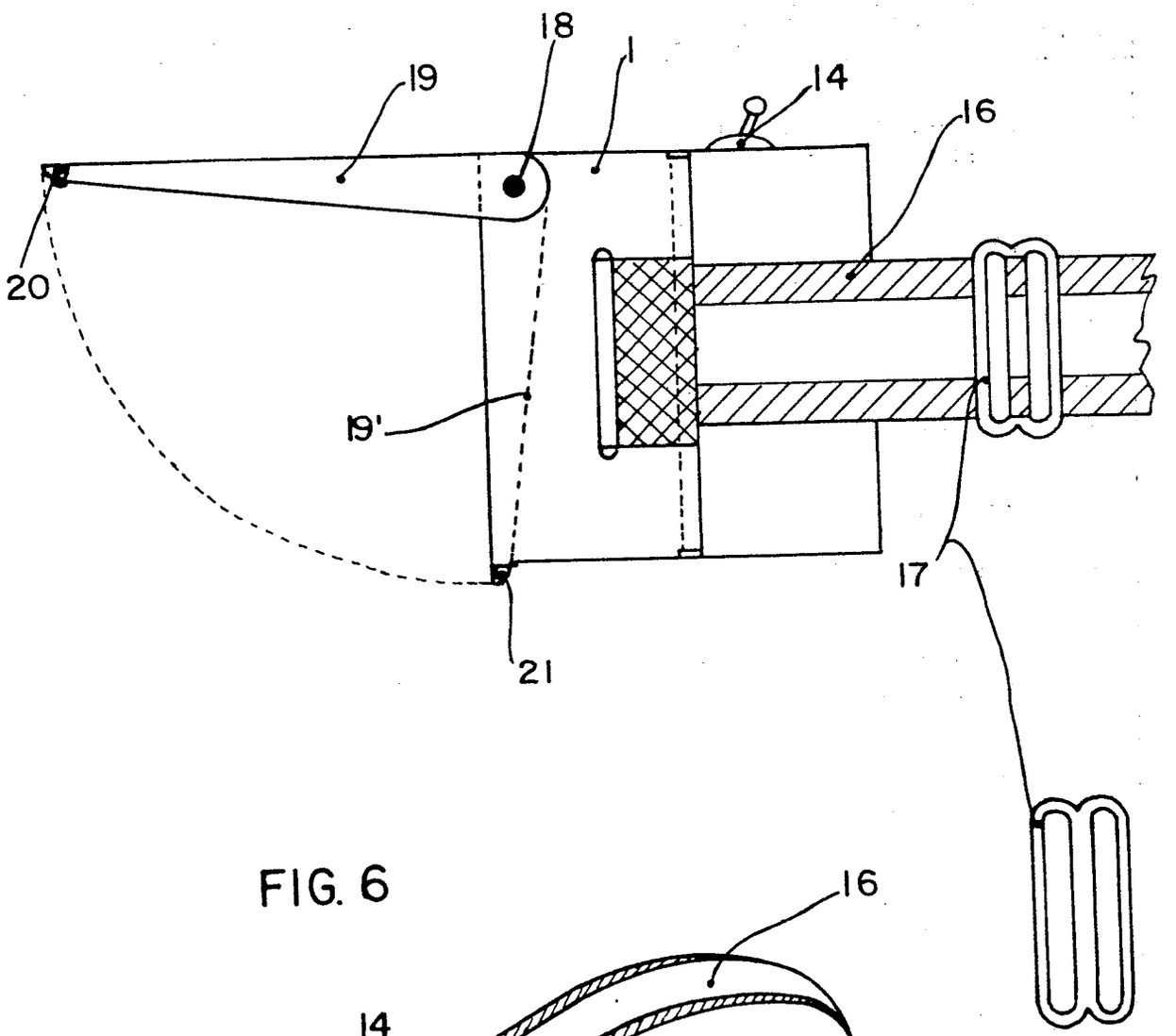
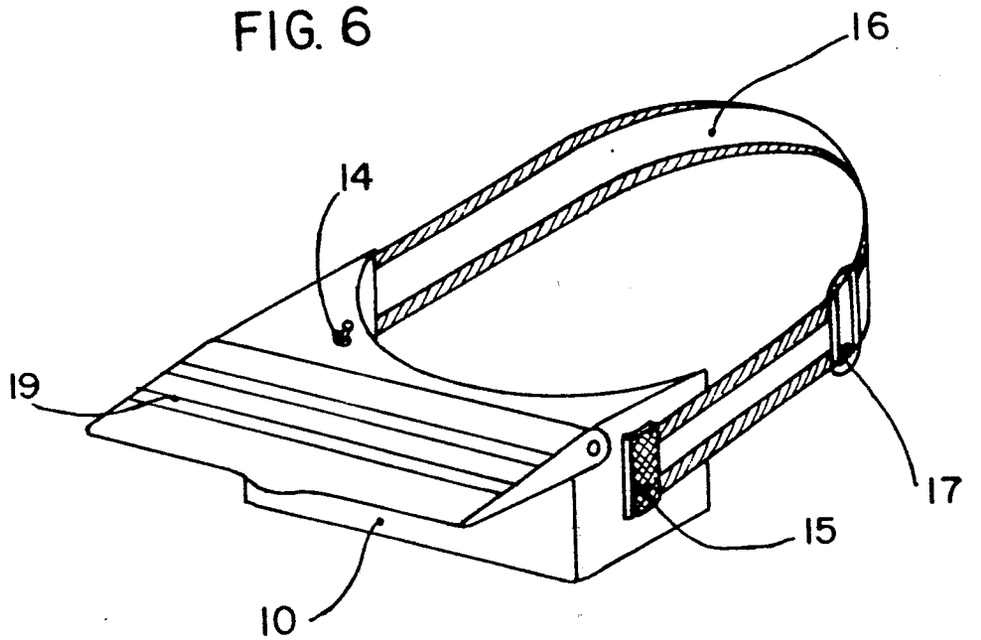


FIG. 6



European Patent Office

EUROPEAN SEARCH REPORT

Application number

EP 83 30 4269

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Y	GB-A-1 447 514 (ERIKSSON) * Figures 1-4 *	1,5	F 21 L 11/00
Y	DE-A-3 003 622 (BRAUN) * Page 10, lines 22-29; figure 2 *	1	
A	US-A-4 002 895 (KETLER) * Column 2, lines 35-38 *	2	
A	GB-A-1 203 199 (CHUNG MEI METAL) * Figures 14-16 *	3,6	
A	FR-A-1 368 329 (PICARD) * Figures 1,2,5 *	4,7	TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
A	CH-A- 264 124 (FREHNER) * Figures 2-4 *	5	F 21 L
A	BE-A- 514 082 (HUPPERTS) * Page 2, lines 4-5 *	5,6	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	31-10-1983	FOUCRAY R.B.F.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO Form 1503. 03 82