

(19)



(11)

**EP 1 479 966 B1**

(12)

## EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention  
of the grant of the patent:  
**06.04.2011 Bulletin 2011/14**

(51) Int Cl.:  
**F21S 8/02** <sup>(2006.01)</sup> **F21V 15/01** <sup>(2006.01)</sup>  
**F21V 21/04** <sup>(2006.01)</sup> **F21V 19/04** <sup>(2006.01)</sup>

(21) Application number: **04102047.0**

(22) Date of filing: **12.05.2004**

### (54) **Support frame for flush-fit light fitting**

Tragrahmen für Einbauleuchte

Châssis-support pour luminaire encastré

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**

(30) Priority: **20.05.2003 IT MI20030994**

(43) Date of publication of application:  
**24.11.2004 Bulletin 2004/48**

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## Description

**[0001]** The present invention refers to a support frame for flush-fit light fitting.

**[0002]** Flush-fit light fittings in holes in false ceilings are known from the Italian patent no. 1312436, which are provided with a fastening and removal device. In addition to simplifying the installation of said light fittings, said device facilitates maintenance considerably. In fact the fittings can be removed without causing damage to the false ceiling.

**[0003]** Flush-fit light fittings are usually produced industrially in series according to the type of lamp that will be mounted. In particular the outside casing will have different openings, in terms of dimensions, number and shape, according to whether the lamp intended for it needs a single or a double fixture. A lamp-holder support is also needed to fasten the lamp, which obviously will vary in accordance with the lamp itself.

**[0004]** Therefore for each lamp, with different shape and dimension, it is necessary to have various types of external casings and lamp-holder supports.

**[0005]** EP-660036-A1 discloses a support frame for a single-capped lamp.

**[0006]** The object of the present invention is to industrially produce a support frame for flush-fit light fittings that is adaptable to different types of lamp, whether they are single-capped or dual-capped.

**[0007]** In accordance with the invention this object is achieved with a support frame as disclosed in claim 1.

**[0008]** The industrial production of the frame according to the present invention leads to considerable economic advantages, as the same frames can be used for different types of lamp.

**[0009]** These and other characteristics of the present invention will be made more evident by the following detailed description of two embodiments thereof, illustrated as non-limiting example in the enclosed drawings, in which:

Figure 1 shows a top plan view of a first frame according to the present invention that supports a light fitting fitted with a 70 Watt dual-capped iodide lamp; Figure 2 shows a section according to line II-II of Figure 1;

Figure 3 shows a top plan view of the same frame that supports a 150 W iodide lamp or dual-capped quartz-iodine lamp;

Figure 4 shows a section according to line IV-IV of Figure 3;

Figure 5 shows a top plan view of the same frame that supports a single-capped iodide lamp;

Figure 6 shows a section according to line VI-VI of Figure 5;

Figure 7 shows a top plan view of a second frame according to the present invention, that supports a 70 Watt iodide or dual-capped quartz-iodine lamp; Figure 8 shows a section according to line VIII-VIII

of Figure 7;

Figure 9 shows a top plan view of the second frame that supports a single-capped iodide lamp;

Figure 10 shows a section according to line X-X of Figure 9;

Figure 11 shows an axonometry of the frame of Figure 9.

**[0010]** In a first embodiment (Figures 1-6) a frame 1 comprises (Figures 1, 3 and 5) an external perimeter 2, two diametrical bridges 5 and a further diametrical bridge 6 which in the intersection zone show a single hole 18.

**[0011]** Said external perimeter 2, circular, not flat and of varied thickness, has holes 17 and supports a cavity 3, inside which a terminal block 4 is fitted. The external perimeter 2 can also be polygonal.

**[0012]** The diametrical bridges 5 and 6 have at one end, with angular distance of 120°, fixing devices 8 (Figures 2 and 4) made up of a body 9 having a hole 13 for a screw 14 for fixing the frame 1 to a base flange 16 of a light fitting 50, and an axial cavity 10 inside which a spring 11 is housed that elastically presses a fastening lever 12 downwards. The details of this fixing device are described in greater detail in the Italian patent no. 1312436.

**[0013]** The diametrical bridges 5 also have holes 15, jumpers 19, internally threaded holed protuberances 20 and hollow supports 22. Said hollow supports 22 house lamp holder fixtures 23 for a dual-capped lamp 31 (Figures 2 and 4) and are linked to the corresponding diametrical bridge 5 by means of a plate 24 which is integral part of the lamp-holder fixtures 23 and is fitted with holes 25 for fastening screws 26.

**[0014]** Said lamp holder fixtures 23 are inserted into windows 27 made in an external casing 28 of the light fitting 50, which is made integral with the base flange 16 by means of a screw fixing system 30.

**[0015]** One of the two diametrical bridges 5 can for example be used for lamp holder fixtures 23 of a 150 Watt iodide lamp (Figures 1 and 2), while the other can be used in a similar manner for a 70 Watt iodide lamp or quartz-iodine lamp (Figures 3 and 4).

**[0016]** The frame 1 can also be used for single-capped lamp (Figures 5-6), thanks to the presence of a plate 7 integral with the external perimeter 2, to which a single lamp holder fixture 21 for lamp 32 is fixed by means of screws 33.

**[0017]** A second embodiment (figure 7-11) of the frame 1 according to the present invention appears very similar to the first, with however one single diametrical bridge 5 (instead of the two of the previous one) and a thinner and more regular external perimeter 2.

**[0018]** These small differences are due to the smaller dimensions of the light fitting 50 and therefore of said second frame 1. In fact it is problematical to add the other diametrical bridges 5-6.

**[0019]** The methods of using the two embodiments of the frame 1 are quite simple. Once said frame 1 has been

produced by moulding in a plastic material the springs 11 are inserted, with respective levers 12, in the specific cavities 10 of the fixing devices 8.

**[0020]** When the lamp to be used has been chosen the lamp holder fixtures 23 and 21, the outside casing 28 and the base flange 16 are assembled, using mainly the screw-on fixing systems.

**[0021]** The wires (not shown in the figures) that connect the lamp holder fixtures 23 and 21 with the terminal block 4 are passed through the holes 15 and under the jumpers 19 thus enabling the wires themselves to remain together avoiding problems of excessive cluttering.

**[0022]** The terminal block 4 is finally inserted into the cavity 3.

**[0023]** The light fitting is now ready to be installed on any false-ceiling.

**[0024]** It is therefore easy to understand the great flexibility in the choice of the frame 1 (different embodiments), and above all the variety of the type of support to be used for the lamp holder fixtures 23 and 21 for each frame 1 in accordance with the type of lamp used.

## Claims

1. Support frame (1) for flush-fit light fitting made up of a reticular structure comprising an external perimeter (2) that holds up means (8) for fixing to a false-ceiling or similar and to an external casing (28) of the light fitting, and a plurality of bridges (5-6) connecting different zones of the external perimeter (2) and shaped so as to hold up support means for lamps (31-32) of various types, electric cables and terminal blocks (4),  
**characterised in that**  
it comprises a first bridge (5) fitted with hollow supports (22) for lamp holder fixtures (23) for dual-capped lamps (31), and **in that**  
said external perimeter (2) also supports a plate (7) for supporting a lamp holder fixture (21) for single-capped lamps (32).
2. Frame according to claim 1, **characterized in that** said first and second bridges (5,6) are straight connecting opposite zones of the perimeter (2).
3. Frame according to any of the preceding claims, **characterized in that** said first and second bridges (5, 6) are perpendicular to each other.
4. Frame according to any of the preceding claims, **characterised in that** said external perimeter (2) is circular.
5. Frame according to any of the preceding claims, **characterised in that** said external perimeter (2) is polygonal.

6. Frame according to any of the preceding claims, **characterised in that** it includes a further bridge (5) for supporting dual-capped lamps (31) of a different type with respect the one supported by said first bridge (5).

## Patentansprüche

1. Stützrahmen (1) für einen bündigen Leuchtkörper, der aus einer netzartigen Struktur besteht, die einen Außenumfang (2) aufweist, der eine Einrichtung (8) zur Befestigung an einer Zwischendecke oder Ähnlichem und an einem äußeren Gehäuse (28) des Beleuchtungskörpers hält, und viele Brücken (5-6), die verschiedene Zonen des Außenumfangs (2) verbinden und so geformt sind, dass sie eine Stützeinrichtung für Lampen (31-32) verschiedener Arten, elektrische Kabel und Anschlussblöcke (4) halten,  
**dadurch gekennzeichnet, dass**  
er eine erste Brücke (5) aufweist, die an hohlen Stützen (22) für Lampenhalterbefestigungen (23) für doppelt gekappte Lampen (31) angebracht ist, und dass  
der Außenumfang (2) außerdem eine Platte (7) zum Stützen einer Lampenhalterbefestigung (21) für einfach gekappte Lampen (32) stützt.
2. Rahmen gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die erste und die zweite Brücke (5,6) gegenüberliegende Zonen des Umfangs (2) gerade verbinden.
3. Rahmen gemäß einem der vorherigen Ansprüche, **dadurch gekennzeichnet, dass** die erste und die zweite Brücke (5,6) senkrecht zueinander stehen.
4. Rahmen gemäß einem der vorherigen Ansprüche, **dadurch gekennzeichnet, dass** der Außenumfang (2) kreisförmig ist.
5. Rahmen gemäß einem der vorherigen Ansprüche, **dadurch gekennzeichnet, dass** der Außenumfang (2) polygonal ist.
6. Rahmen gemäß einem der vorherigen Ansprüche, **dadurch gekennzeichnet, dass** er eine weitere Brücke (5) zum Stützen von doppelt gekappten Lampen (31) verschiedener Art hinsichtlich der einen aufweist, die durch die erste Brücke (5) gestützt ist.

## Revendications

1. Cadre de support (1) pour luminaire encastré fait d'une structure réticulaire comprenant un périmètre extérieur (2) qui maintient des moyens (8) pour fixer à un faux plafond ou quelque chose de similaire et

à un boîtier extérieur (28) du luminaire, et une pluralité de ponts (5-6) connectant différentes zones du périmètre extérieur (2) et formés de façon à maintenir des moyens de support pour des lampes (31-32) de types variés, des câbles électriques et des blocs de jonction (4),

**caractérisé en ce que**

il comprend un premier pont (5) équipé de supports creux (22) pour des fixations de lampe (23) pour des lampes à double culot (31), et **en ce que** ledit périmètre extérieur (2) supporte aussi une plaque (7) pour supporter une fixation de lampe (21) pour des lampes à simple culot (32).

2. Cadre selon la revendication 1, **caractérisé en ce que** lesdits premier et second ponts (5, 6) connectent en ligne droite des zones opposées du périmètre (2).
3. Cadre selon l'une quelconque des revendications précédentes, **caractérisé en ce que** lesdits premier et second ponts (5, 6) sont perpendiculaires l'un à l'autre.
4. Cadre selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit périmètre extérieur (2) est circulaire.
5. Cadre selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit périmètre extérieur (2) est polygonal.
6. Cadre selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'il** comprend un autre pont (5) pour supporter des lampes à double culot (31) d'un type différent par rapport à celui supporté par ledit premier pont (5).

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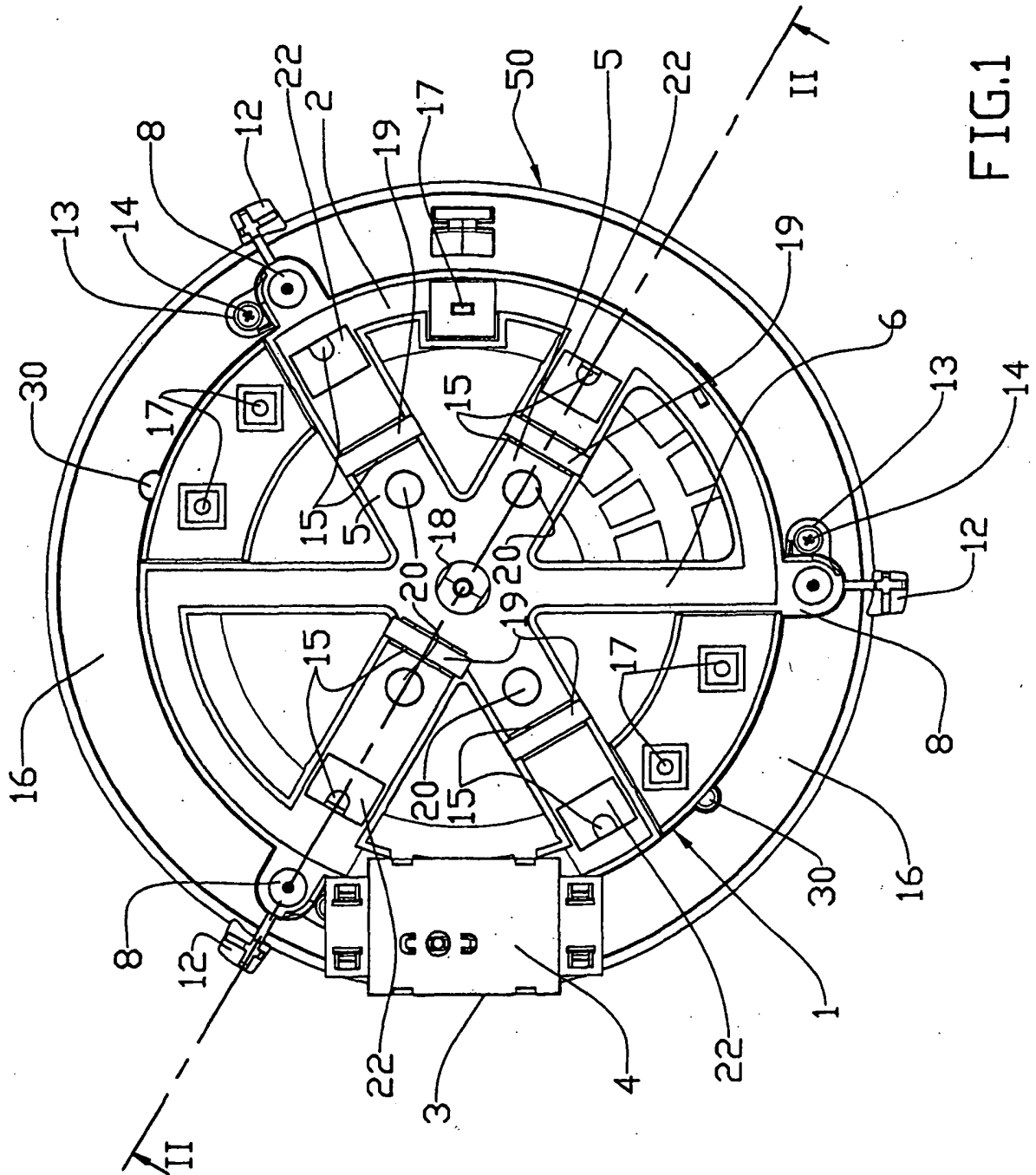


FIG.1

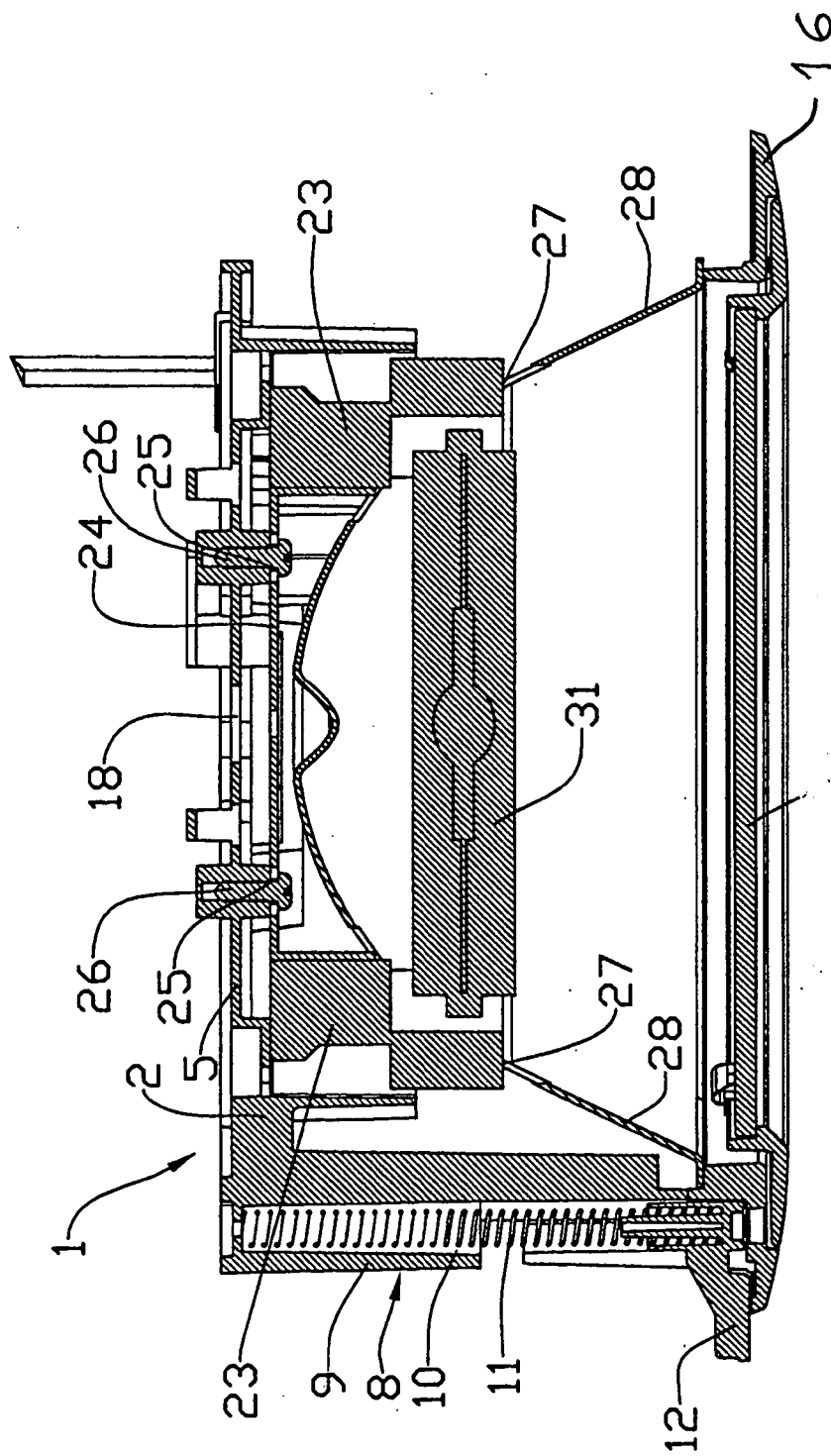


FIG. 2

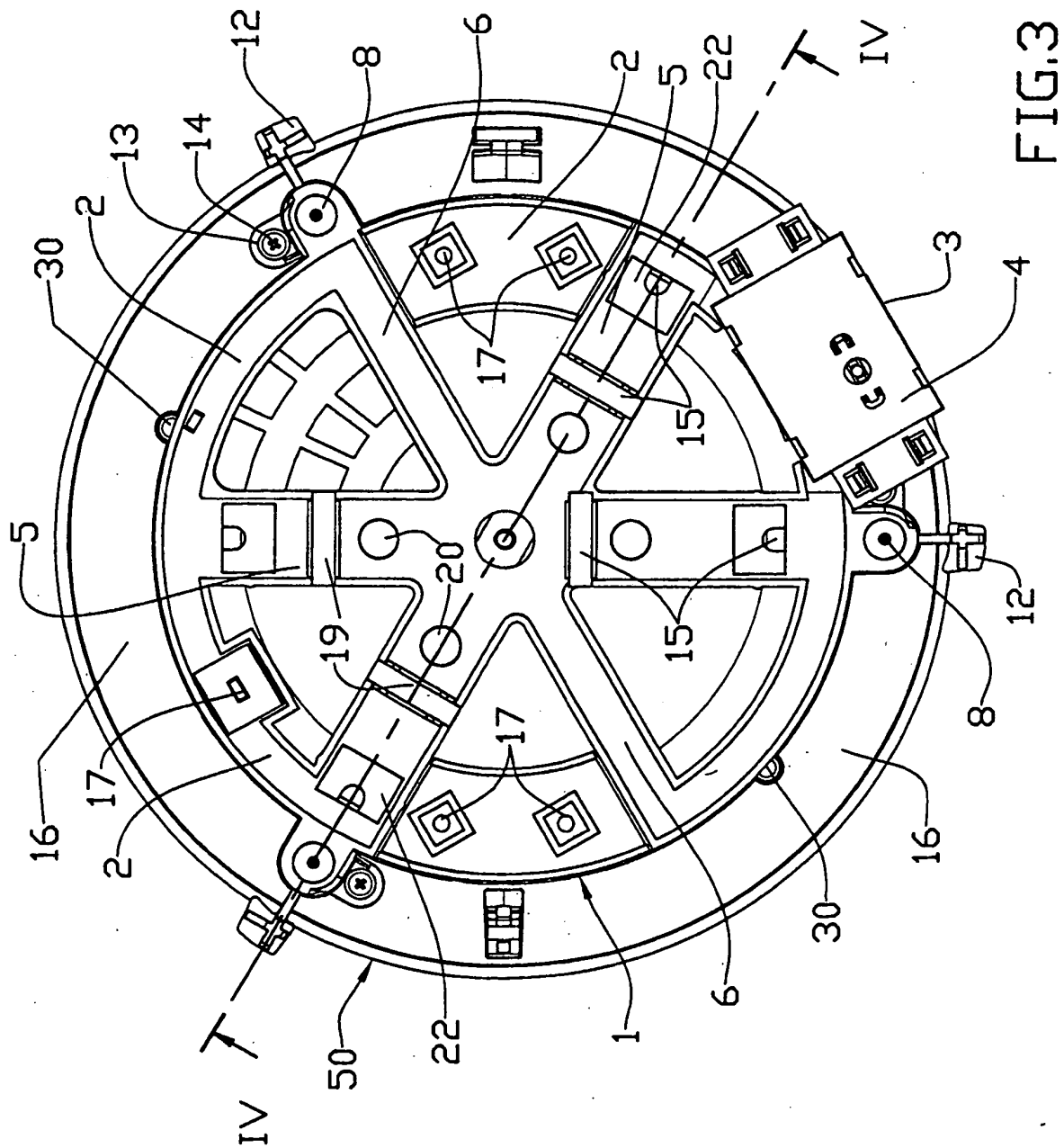


FIG. 3

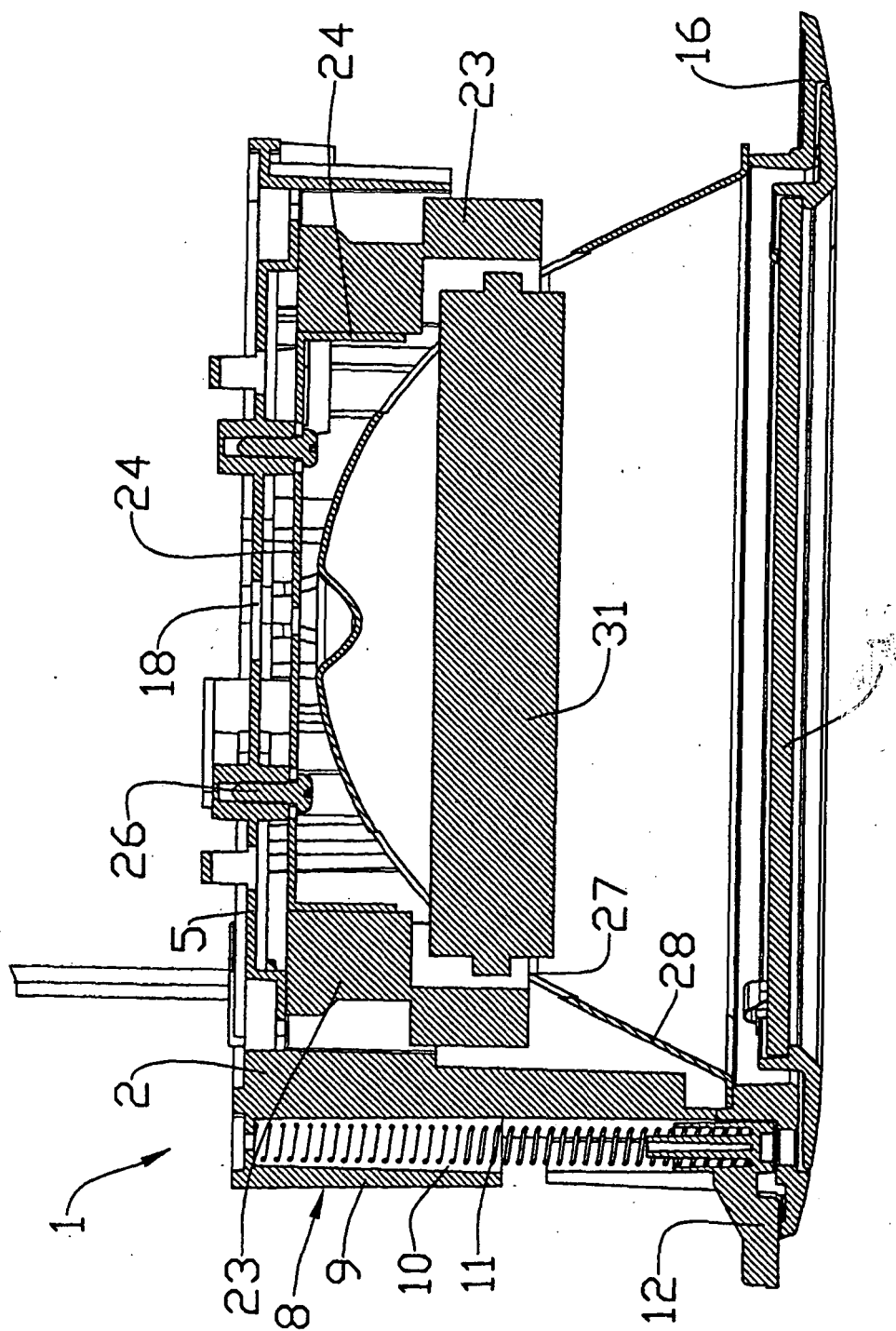


FIG.4



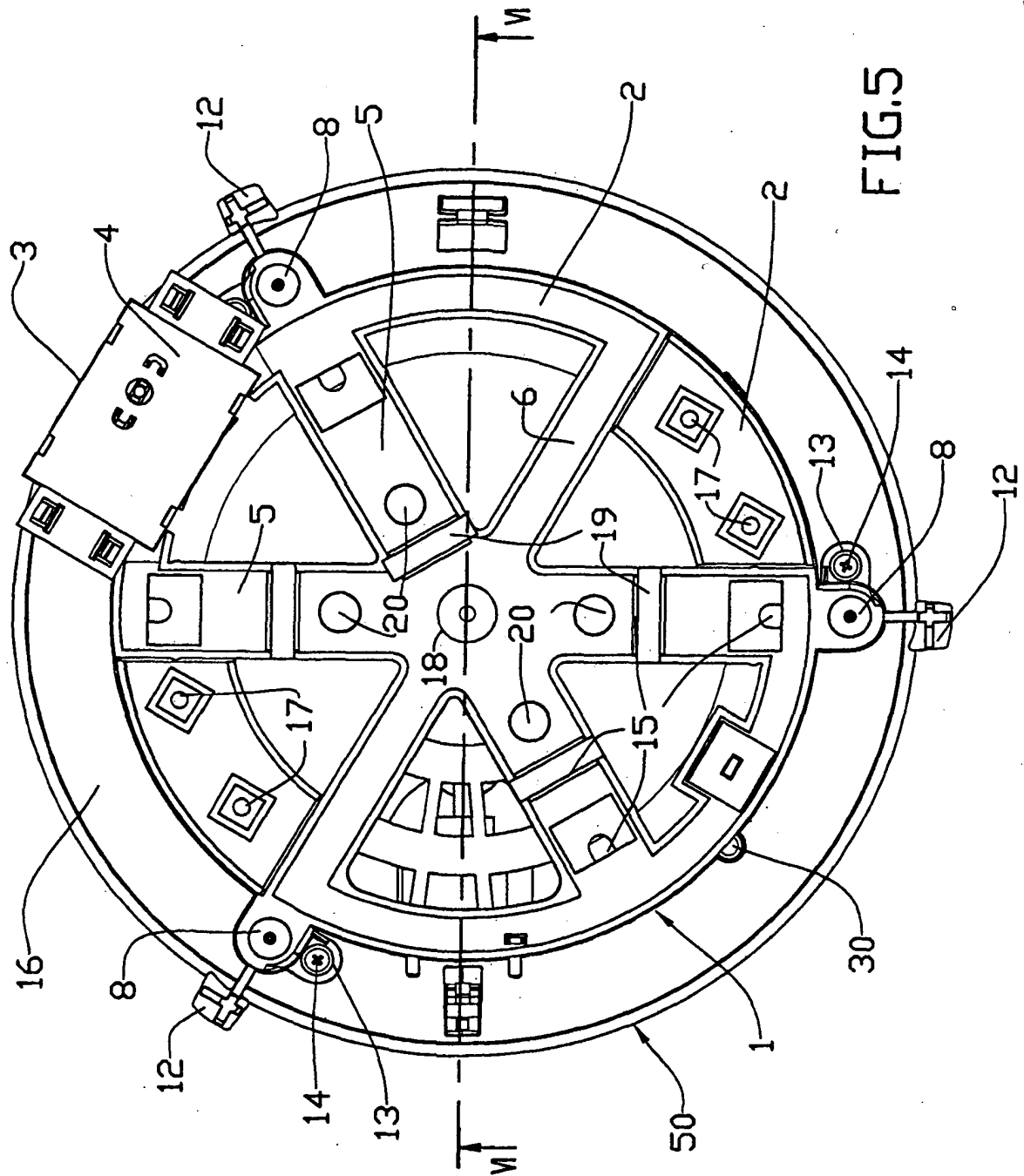


FIG. 5

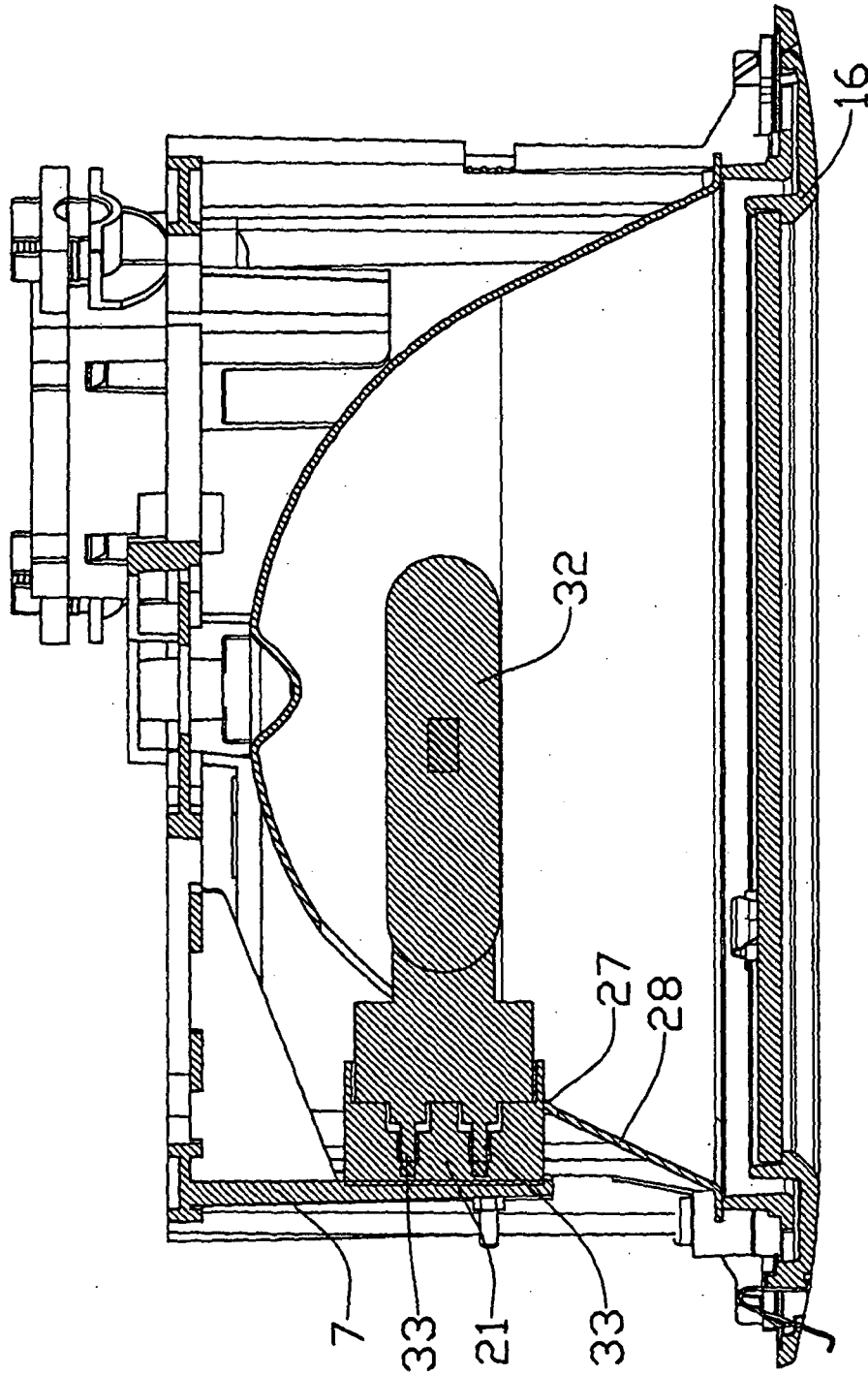


FIG.6

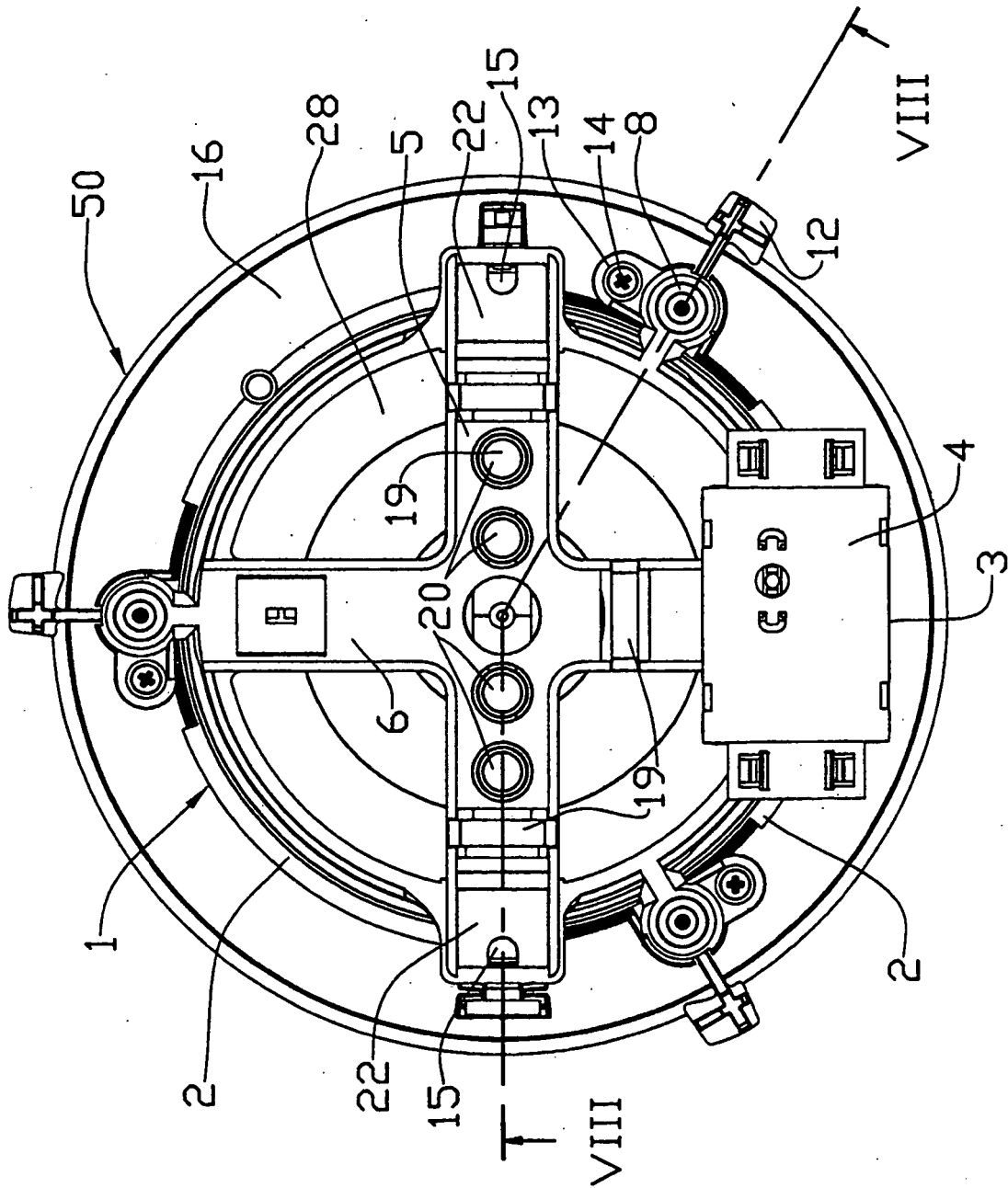


FIG. 7

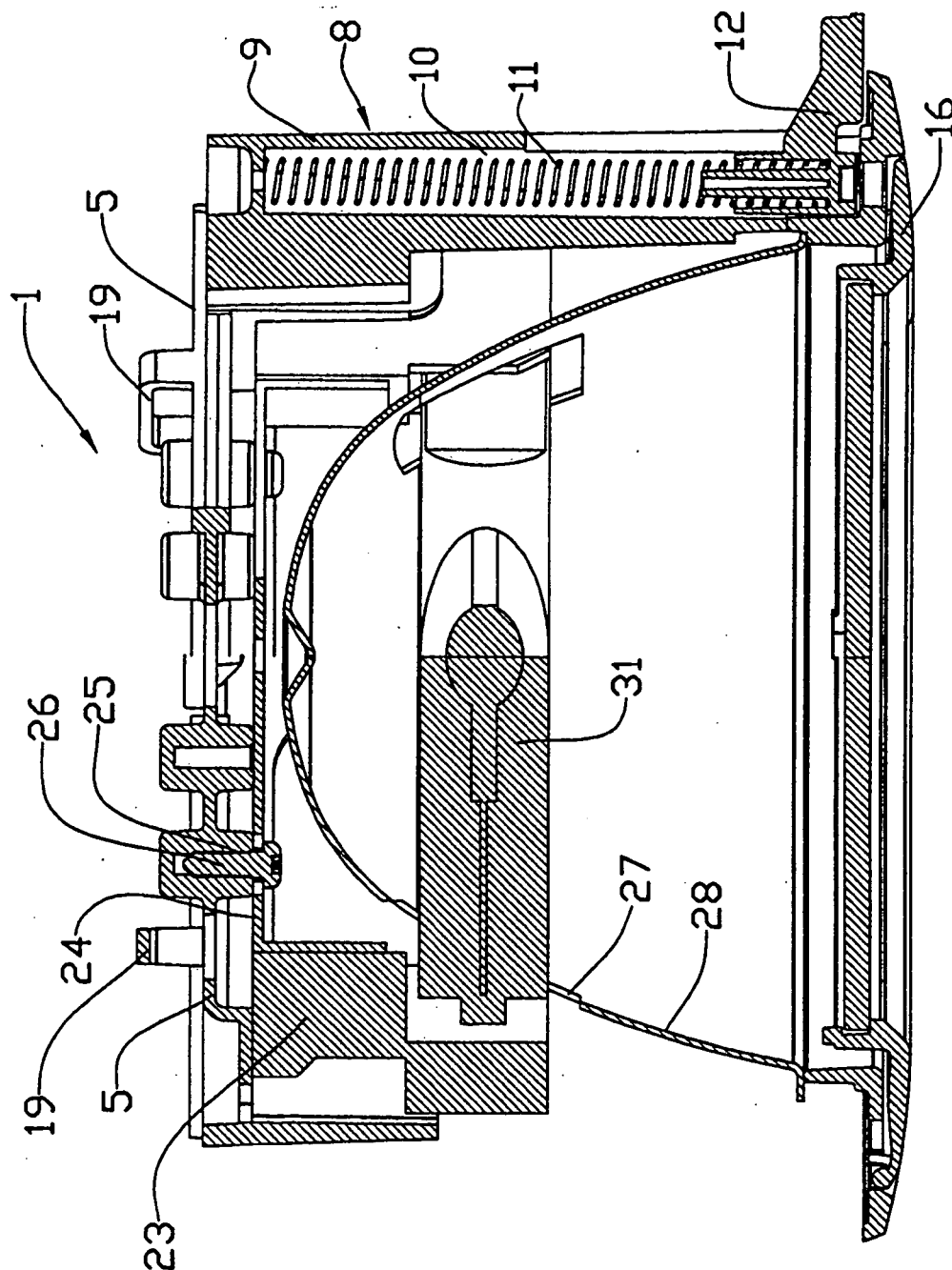


FIG. 8

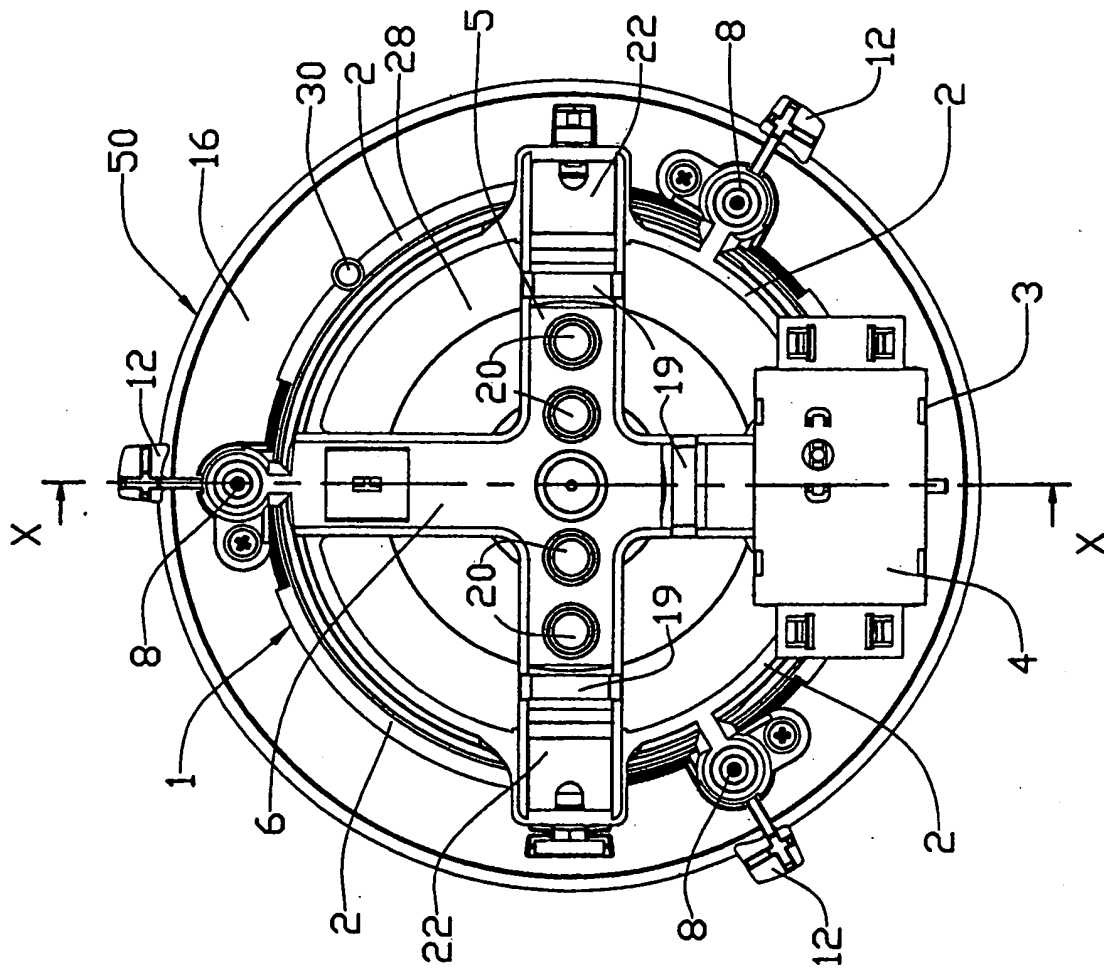


FIG. 9

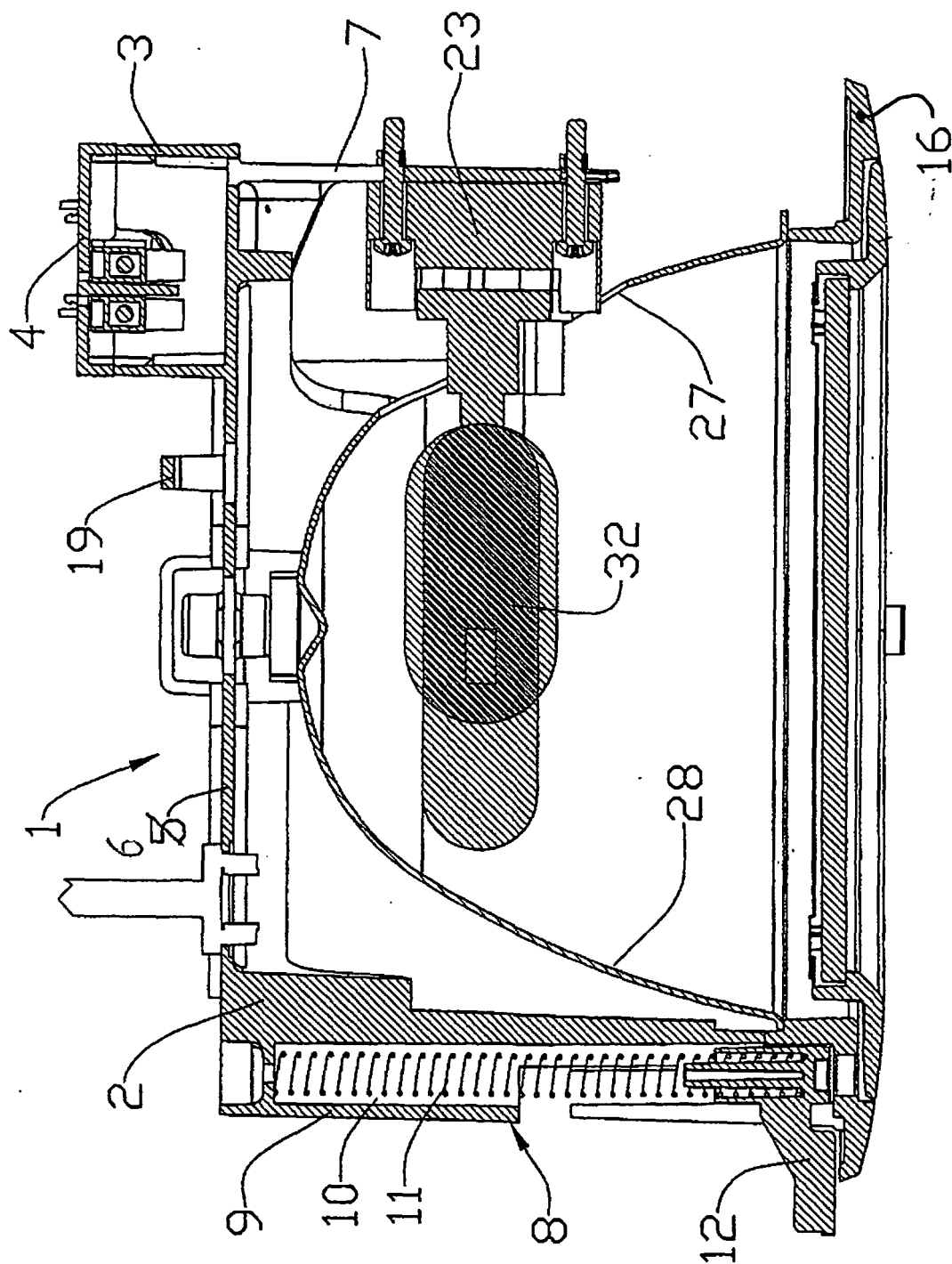


FIG.10

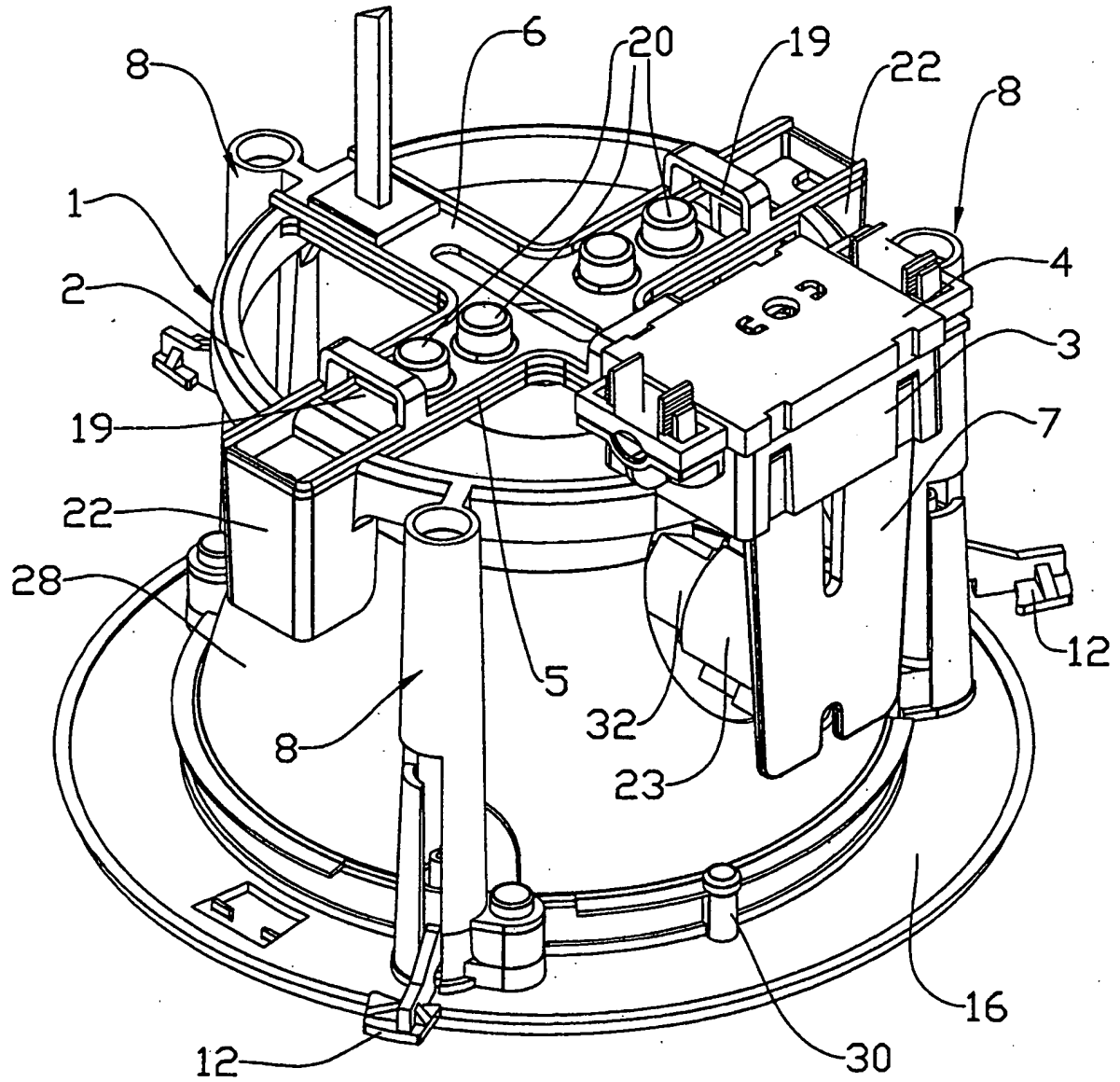


FIG.11

**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

- IT 1312436 [0002] [0012]
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