FORM 1

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

APPLICATION FOR A STANDARD PATENT

I\We,

HELLA KG HUECK & CO.

of POSTFACH 2840
LIPPSTADT 4780
GERMANY

624171

hereby apply for the grant of a standard patent for an invention entitled:

FASTENING INCANDESCENT GLOBE IN MOTOR VEHICLE HEADLIGHT.

which is described in the accompanying complete specification

Details of basic application(s):

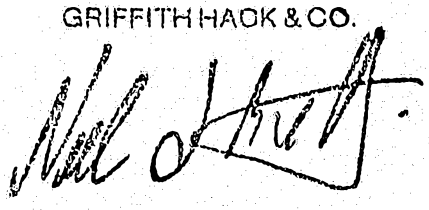
Number of basic application	Name of Convention country in which basic application was filed	Date of basic application
P3831372.3	DE	15 SEP 88

My/our address for service is care of GRIFFITH HACK & CO., Patent Attorneys, 601 St. Kilda Road, Melbourne 3004, Victoria, Australia.

DATED this 23rd day of August 1989

HELLA KG HUECK & CO.

GRIFFITH HACK & CO.



TO: The Commissioner of Patents.

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GRIFFITH HACK & CO.

Australia Patent Declaration Form

Forms 7 and 8

AUSTRALIA

Patents Act 1952

DECLARATION IN SUPPORT OF A CONVENTION OR NON-CONVENTION APPLICATION FOR A PATENT OR PATENT OF ADDITION

no. 40156/89

Name(s) of Applicant(s)

In support of the application/made by Hella KG Hueck & Co.

Title

for a patent for an invention entitled FASTENING INCANDESCENT GLOBE IN MOTOR VEHICLE HEADLIGHT

Name(s) and address(es) of person(s) making declaration

I/We, Wilhelm Berghoff of Am Eichenhügel 11, 4780 Lippstadt and Dr. Gerhard Nebe of Nerzweg 8, 4600 Dortmund 30

do solemnly and sincerely declare as follows:-

1. I/we am/are authorised by the abovementioned applicant to make this declaration on its behalf.

2. The basic application(s) as defined by Section 141 of the Act was/were made in the following country or countries on the following date(s) by the following applicant(s) namely:-

Country, filing date and name of Applicant(s) for the or each basic application

in Fed. Rep. of Germany on 15th September 19 88
by Hella KG Hueck & Co.
in _____ on _____ 19 _____
by _____

3. The said basic application(s) was/were the first application(s) made in a Convention country in respect of the invention the subject of the application.

Name(s) and address(es) of the or each actual inventor

4. The actual inventor(s) of the said invention is/are Reinhold Brummel of Am Mühlenberg 4, 4783 Anröchte and Klaus Mohsakowski of Schultenstraße 44, 4780 Lippstadt 12

See reverse side of this

5. The facts upon which the applicant(s) is/are entitled to make this application are as follows:-

...actual inventors.

(12) PATENT ABRIDGMENT (11) Document No. AU-B-40156/89
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 624171

(54) Title
FASTENING INCANDESCENT GLOBE IN MOTOR VEHICLE HEADLIGHT

International Patent Classification(s)
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(56) Prior Art Documents
DE 3606538
EP 145556

(57) Claim

1. Fastening means for an incandescent globe in the opening of a reflector of a motor vehicle headlight, with the following features:

- the incandescent globe which is inserted from the rear of a reflector fabricated from sheet metal has an outwardly projecting radial flange of its base seated against a surface of the rim of the opening of the reflector which lies in a single plane,
- the incandescent globe is prevented from turning by tongues which are cut out from the rim of the opening and are bent back towards the rear of the reflector so that they can engage in a radial direction in recesses around the rim of the radial flange,
- a retaining spring which bridges over the radial flange is pre-tensioned against the radial flange and forces it against the rim of the opening,
- the retaining spring is connected to the reflector on opposite sides of the opening,

characterized in that

- the retaining spring is secured to the tongues cut directly from the rim of the opening of the

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reflector and protruding from it and the tongues have undercuts provided in their lateral edges for securing the retaining spring.

AUSTRALIA

PATENTS ACT 1952

Form 10

COMPLETE SPECIFICATION

(ORIGINAL)

FOR OFFICE USE

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Complete Specification-Lodged:
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Related Art:

TO BE COMPLETED BY APPLICANT

Name of Applicant: HELLA KG HUECK & CO.

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Actual Inventor:

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Complete Specification for the invention entitled:
FASTENING INCANDESCENT GLOBE IN MOTOR VEHICLE HEADLIGHT.

The following statement is a full description of this invention including the best method of performing it known to me:-

The present invention relates to means for fastening an incandescent globe in the opening of a reflector of a motor vehicle headlight, with the following features:

- The incandescent globe which is inserted from the rear of a reflector fabricated from sheet metal has the outwardly projecting radial flange of its base seated against the surface of the rim of the opening of the reflector which lies in a single plane,

- the incandescent globe is prevented from turning by tongues which are cut out from the rim of the opening and are bent back towards the rear of the reflector so that they can engage in the radial direction in recesses around the rim of the base flange,

- a spring which bridges over the base flange is under tension against the base flange and forces it against the rim of the opening,

- the retaining spring is connected to the reflector on opposite sides of the opening.

Such a means of fastening an incandescent globe in the opening of a reflector of a motor vehicle headlight is already known from the German Patent DE-PS 36 06 538. In this instance the retaining spring is fabricated from a strip of sheet metal and is mounted in a self-seating manner in openings on opposite sides of the opening in the reflector. The retaining spring is pivotally mounted in one of the openings and is detachably fastened into the other opening on the opposite side. Not only is the area of reflecting surface of the reflector decreased by the openings for the fastening of the retaining spring, but it is also possible for the portions of the retaining spring which project into the interior of the reflector cavity to cause light interference which can dazzle the oncoming traffic. In addition to this, when the incandescent globe is being changed, that is

to say, when the retaining spring is pulled out of one opening and it is pivoted around in the other opening, damage can be done to the corrosion-protection lacquer and to the reflecting coating of the reflector. Furthermore, the fastening positions of the retaining spring are relatively far apart from each other, so that the retaining spring must be constructed to be very stiff so that it can force the base flange of the incandescent globe against the rim of the opening in the reflector with a sufficient amount of pressure.

From EP 0 145 556 a ring-shaped mounting of an incandescent lamp is known which has on one side projections on which the securing spring for the incandescent lamp is pivotably mounted, and which has on the other side a tongue directed towards the rear side of the headlight and serving as a detachable fastening for the securing spring. So that the incandescent lamp will be secured radially and against twisting, recesses are additionally incorporated into the ring-shaped mounting and serve to receive vanes of the incandescent lamp. Thus the ring-shaped mounting does not have any exposed tongues, cut directly from the rim of the reflector, which engage in recesses at the edge of the base flange of the incandescent lamp and to which the retaining spring is secured.

The objective of the present invention is the further development of the means of fastening an incandescent globe in the opening of a reflector of a motor vehicle headlight as described in the preamble to Patent Claim 1 in such a manner that the positions for fastening the retaining spring lie outside the reflection surface and are arranged to be as close as possible to each other. In addition, the positions for fastening the retaining spring should be located in such a way that, during the releasing and fastening of the retaining spring, the quality of the

reflection surface of the reflector and the corrosion-protection lacquer will not be adversely affected.

This objective is achieved in accordance with the present invention by having the retaining spring fastened to the tongues which are provided with undercuttings in their side borders for fastening the retaining spring in position. With the adoption of this feature, there is no reduction of the area of the bearing surface around the rim of the opening in the reflector for supporting the base flange of the incandescent globe, so that the danger does not arise of the incandescent globe being able to fall through the opening into the interior of the reflector when the globe is being inserted from the rear.

It is an additional advantage for the retaining spring to be pivotally mounted on one of the tongues and detachably fastened to the other tongue. This enables the incandescent globe to be changed easily and rapidly. In this connection it is a further

advantage if the undercutting of the tongue for the detachable fastening of the retaining spring is in the form of a cut out hook-shaped free end section of the tongue. Because of this, after the pivoting of the end of the retaining spring into the undercutting of the tongue, the retaining spring is securely anchored to the reflector. It is an additional advantage in this situation when the tongue which serves for the pivotal fastening of the retaining spring is cut out in a T-shape where the cross-bar of the T-shape is at the tip of the tongue and the free end section of strip of metal from which the retaining spring is fabricated and which serves for its pivotal fastening is stamped into a U-shape and the shanks of the U-shape are rolled up transversely to its longitudinal direction to form loops into which the free end sections of the cross-bar of the T-shaped tongue can be inserted with a certain amount of play. Such an arrangement is not only simple and inexpensive to fabricate, but the retaining spring can be pivoted around smoothly even when it is very securely seated in its bearing.

Under these conditions it is an additional advantage for the free shanks of the U-shape of the retaining spring to be rolled in only to such an extent that a gap remains which is slightly narrower than the thickness of the metal of the T-shaped tongue. In this case it is important, before the mounting of the retaining spring, that the gap should be easily bent out so that, during the mounting of the retaining spring, the cross-bar of the T-shaped tongue can easily pass through the gap. After squeezing the loops together, the retaining spring is securely attached to the reflector so that there is no danger of it becoming detached and being lost.

It is an additional advantage if the free end section of the retaining spring which is detachably fastened to one tongue has a locating aperture for engaging with the hook-shaped tongue. With such an arrangement it is expedient for a lug which is cut out from the rim of the locating aperture, which acts in conjunction with the hook-shaped tongue, to be bent back at an

angle opposite to the closing direction of the retaining spring so that its end surface is pressed under tension against the undercutting of the hook-shaped tongue. This ensures that, when the fastening of the retaining spring is released, a simple pushing down of the retaining spring is not sufficient to dislodge it from its detention location because an additional lateral pressure component would be required for this purpose.

In an especially advantageous further development of the present invention, the rim of the opening in the reflector is formed by the base of a cup-shaped depression extending into the interior of the reflector. Because of this, for all sizes of reflectors, the filament of the incandescent globe is situated approximately at the focal point of the reflector, without having to relinquish the single-piece fabrication of the tongues which arrest the incandescent globe in the radial direction and prevent it from turning and which act as the fastening elements for the retaining spring.

An embodiment of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a section along the centre line of the reflector in the region where the incandescent globe is located,

Fig. 2 is an elevation in the direction of arrow X of the region of the reflector where the incandescent globe is located, without the incandescent globe and retaining spring,

Fig. 3 is a section along line B - B through a fastening position of the reflector at which the retaining spring can be detachably affixed,

Fig. 4 is a section along line C - C through a fastening position of the reflector at which the retaining spring can be pivotally affixed,

Fig. 5 is a section along line A - A through the retaining spring depicted in Fig. 6 and

Fig. 6 is the single-piece retaining spring shown in Fig. 1.

Substantially what is shown in the drawings is the opening (2) in the vertex region of the reflector (1) to receive the incandescent globe (3) and the fastening means (9) for the incandescent globe. The opening (2) is located in the base (4) of a deep-drawn cup-shaped depression (5) extending into the interior of the reflector. The incandescent globe (3) which is inserted from the rear of the reflector (1) has the outwardly projecting radial flange (6) of its base seated against the surface of the rim (7) of the opening of the reflector which lies in a single plane. Two tongues (8 and 9), which are depicted with broken lines in Fig. 2, are cut out from the opposite edges of the rectangular opening (2). The tongue (8) has an undercutting (10) along one of its edges which is formed by its hook-shaped end section, whereas the tongue (9) has a T-shaped configuration. The cross-bar (11) of the T-shape is the tip of the tongue (9) and its underside on the side edges of the tongue (9) defines the undercutting (12). After the two tongues (8 and 9) have been cut to shape, they are bent back towards the rear of the reflector in which case the standing beam (13) of the tongue (9), before being bent back is bent into a curve transverse to its longitudinal extension in relation to the reflector. The tongue (9) engages with the protruding side of this curved portion in a correspondingly dimensioned semi-circular recess in the border of the base flange, whereas the tongue (8) engages in a corresponding rectangular-shaped recess in the border of the base flange (6). The region of the reflector (1) which receives the incandescent globe (3) extends so far into the interior of the reflector so that the filament (15) of the incandescent globe (3) is situated at the focal point of the reflector (1).

The retaining spring (17) which is fastened to the tongues (8 and 9) is fabricated from a strip of metal and it bridges over the outwardly projecting portion (16) of the base of the incandescent globe (3) without coming into contact with it. On both sides of the base section (16), the retaining spring, with the tongues (18) which are cut free from the middle region of the spring and are bent in towards the base flange (6), presses said flange with prestressing against the border (7) of the opening. One free end section of the retaining spring (17) is cut out to form a U-shape of which the shanks (19) lie parallel to the longitudinal direction of the retaining spring. The free ends (20) of the shanks (19) are rolled up to form loops. However, this still leaves a gap (21) which, after mounting the retaining spring (17) is slightly narrower than the thickness of the metal of the T-shaped tongue (9). The free end sections of the cross-bar (11) of the T-shaped tongue (9) are inserted into the loops with a certain amount of play, so that the retaining spring (17) can be pivoted around the axle formed by the cross-bar (11). The retaining spring (17), with the border of the opening of the locating opening (23), is hooked into the hook-shaped end section of the tongue (8). The border of the opening which is hooked into tongue (8) is provided with a cut-out lug (24) which is bent back at an angle opposite to the closing direction of the retaining spring (17) so that its end surface is pressed under tension against the undercutting (10) of the hook-shaped tongue (8). The free end section of the retaining spring (17) which is adjacent to the locating opening (23) has a free end section (25) which serves as a handgrip for the retaining spring (17). The region of the retaining spring (17), which bridges over the projecting base section (16) at a small distance away from it, has a strip (26) extending transversely to the longitudinal direction of the retaining spring (17) which is configured as a flat plug.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. Fastening means for an incandescent globe in the opening of a reflector of a motor vehicle headlight, with the following features:

- the incandescent globe which is inserted from the rear of a reflector fabricated from sheet metal has an outwardly projecting radial flange of its base seated against a surface of the rim of the opening of the reflector which lies in a single plane,
- the incandescent globe is prevented from turning by tongues which are cut out from the rim of the opening and are bent back towards the rear of the reflector so that they can engage in a radial direction in recesses around the rim of the radial flange,
- a retaining spring which bridges over the radial flange is pre-tensioned against the radial flange and forces it against the rim of the opening,
- the retaining spring is connected to the reflector on opposite sides of the opening,

characterized in that

- the retaining spring is secured to the tongues cut directly from the rim of the opening of the reflector and protruding from it and the tongues have undercuts provided in their lateral edges for securing the retaining spring.

2. The fastening means according to Claim 1, wherein the retaining spring is pivotally mounted on one tongue and is detachably fastened to the other tongue.

3. The fastening means according to Claim 2, wherein the detachable fastening for the retaining spring is formed by an undercutting in one border region of the tongue against which the retaining spring is pre-tensioned.

4. The fastening means according to Claim 3, wherein the undercutting of the tongue is formed by a cut-out hook-shaped free end section of said tongue.

5. The fastening means according to Claim 2, wherein the tongue which serves for the pivotal fastening of the retaining spring is cut out in a T-shape and the cross-bar of the T-shape is at the tip of the tongue.

6. The fastening means according to any one of Claims 1 to 5, wherein a free end section of the strip of metal from which the retaining spring is fabricated and which serves for its pivotal fastening is stamped into a U-shape and the shanks of the U-shape are rolled up parallel to its longitudinal direction to form loops into which the free end sections of the cross-bar of the T-shaped tongue can be inserted with a certain amount of play.

7. The fastening means according to Claim 6, wherein the shanks of the U-shape of the retaining spring are rolled in only to such an extent that a gap remains which is slightly narrower than the thickness of the metal of the T-shaped tongue.

8. The fastening means according to any one of Claims 1 to 7, wherein the free end section of the retaining spring which is detachably fastened to the tongue has a locating aperture for engaging with said hook-shaped tongue.

9. The fastening means according to Claim 8, wherein a lug which is cut out from the rim of the locating aperture, which acts in conjunction with the hook-shaped tongue, is bent back at an angle towards the rear of the reflector so that its end surface is pressed under tension against the undercutting of the hook-shaped tongue.

10. The fastening means according to any one of Claims 1 to 9, wherein the rim of the opening in the reflector is formed by the base of a cup-shaped depression extending into the interior of the reflector.

DATED THIS 23RD DAY OF AUGUST 1989

HELLA KG HUECK & CO.
By its Patent Attorneys:

GRIFFITH HACK & CO.
Fellows Institute of Patent
Attorneys of Australia.

FIG 5

Section A-A

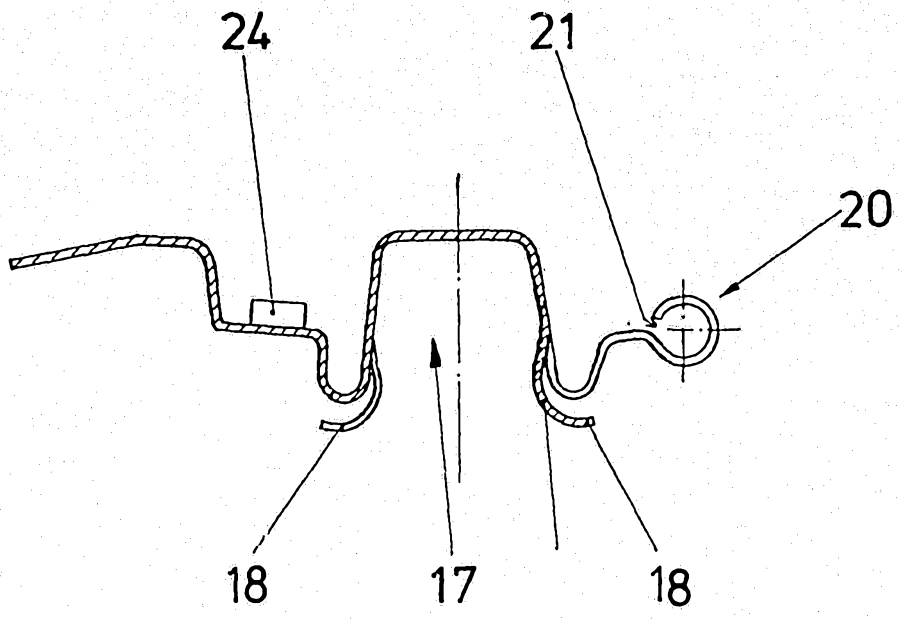

FIG 6

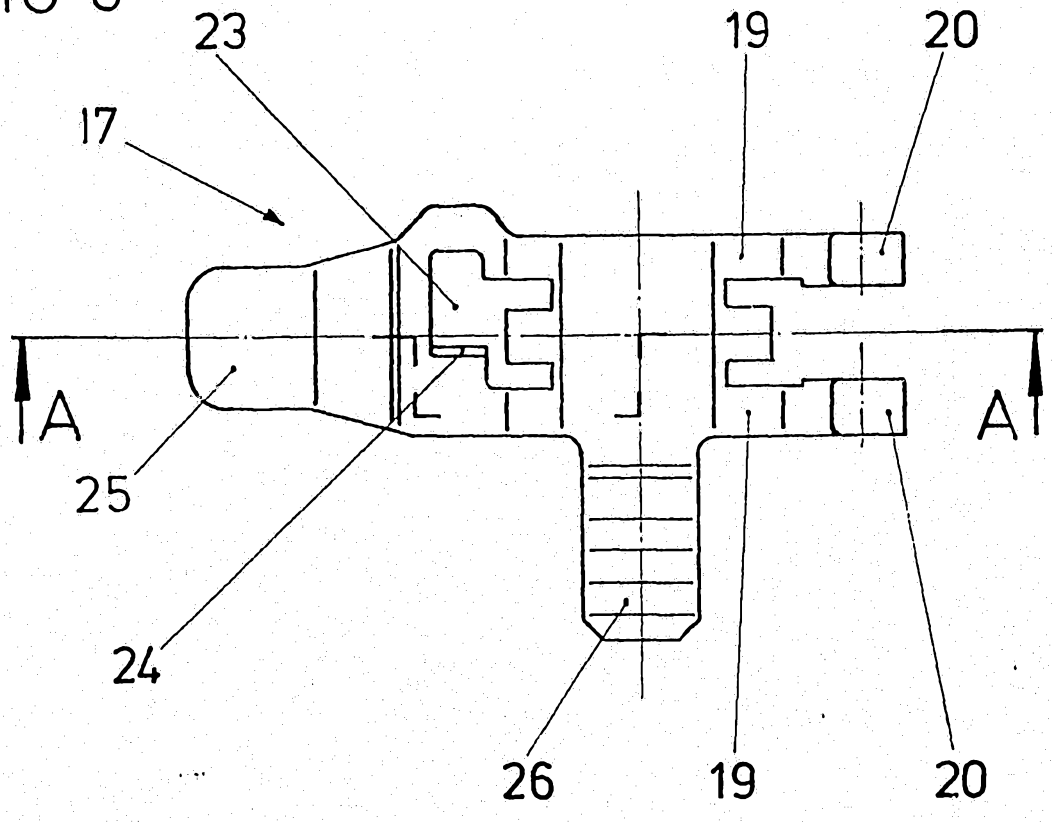

FIG 2

Elevation X

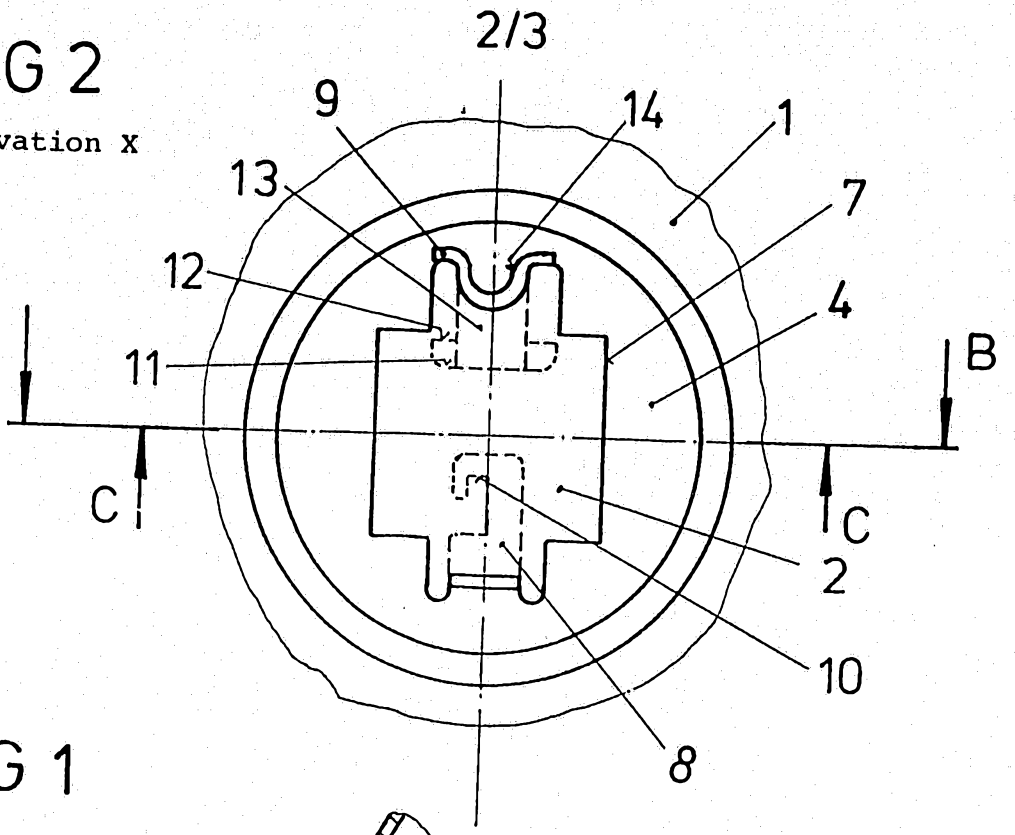

FIG 1

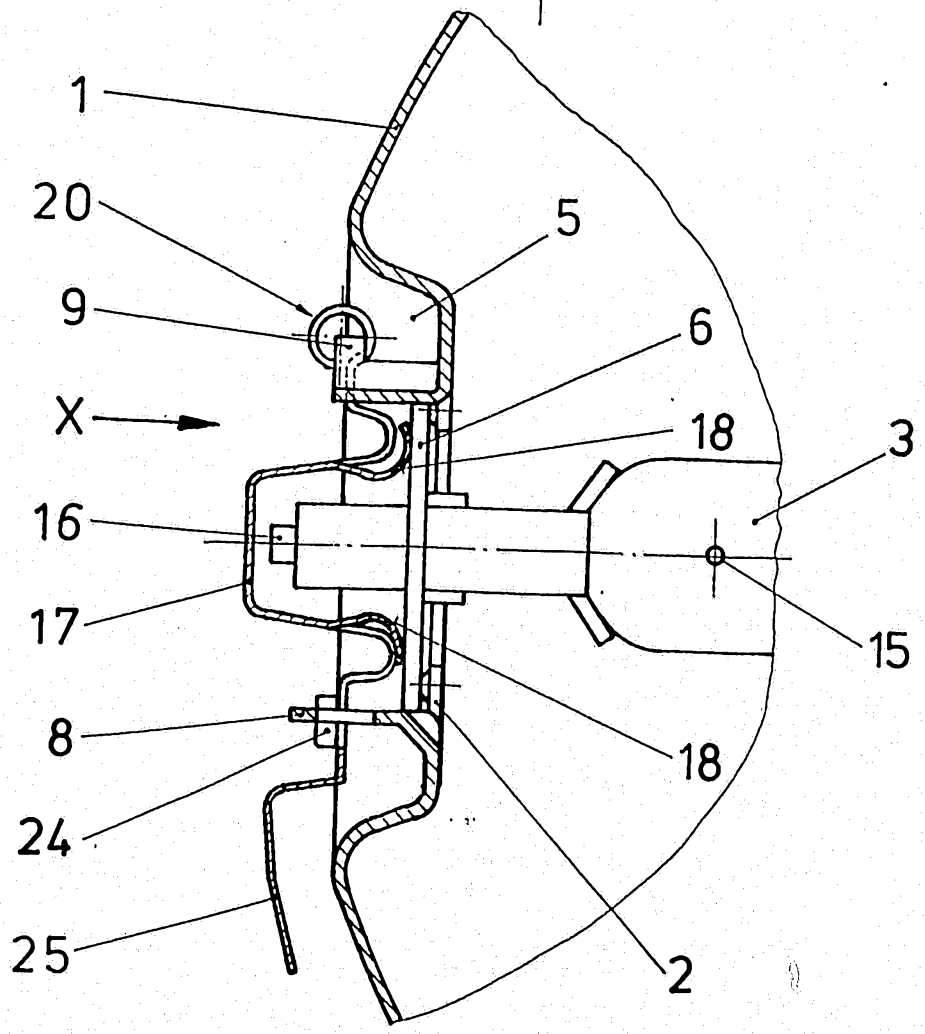

FIG 4

Section C-C

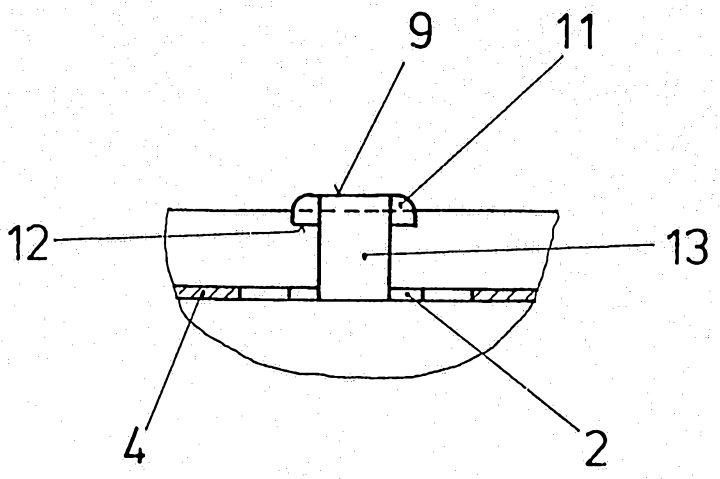

FIG 3

Section B-B