

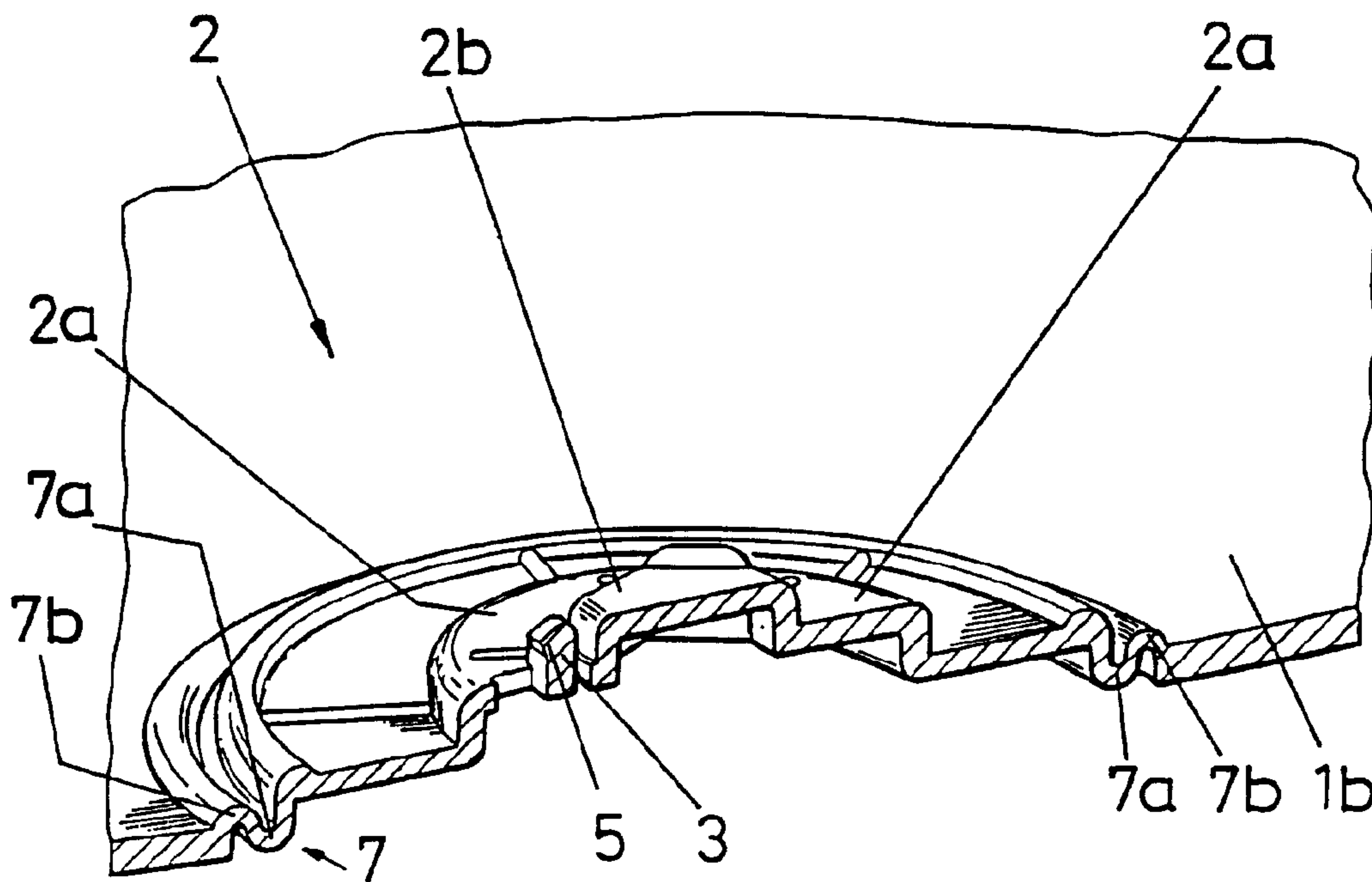


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(54) Titre : ETUI POUR SUPPORTS D'ENREGISTREMENT OPTIQUE SOUS FORME DE DISQUE, COMME PAR EXEMPLE DES CD, DVD OU AUTRES

(54) Title: CASE FOR DISC-SHAPED OPTICAL RECORDING MEDIUM SUCH AS CD, DVD OR THE LIKE



(57) Abrégé/Abstract:

Disclosed is a case (1) with a lid (1a), a portion of box or bottom (1b) hinged by a central portion of the back (1c), as well as circumferential protuberances bearing onto the external edge of the disc-shaped magnetic recording medium. For nesting-removing the disc central orifice, a device is provided which is comprised of a cylindrical platform (2) having a central formation (2a) which is also cylindrical and on which bears the lower surface of said disc. Around a prismatic-hexagonal protuberance (2b), pins or lugs (3) are concentrically conformed. Said lugs (3) have retention teeth (5) which are separated from the base of the central formation (2a) by a distance (H) which is equivalent to the thickness of the recording medium. In a preferred embodiment, an articulation or hinge seal (7) is configured around the cylindrical platform (2) and is integrally molded as a zone having a reduced wall thickness with a groove (7a) and a bead (7b).



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(54) Title: CASE FOR DISC-SHAPED OPTICAL RECORDING MEDIUM SUCH AS CD, DVD OR THE LIKE

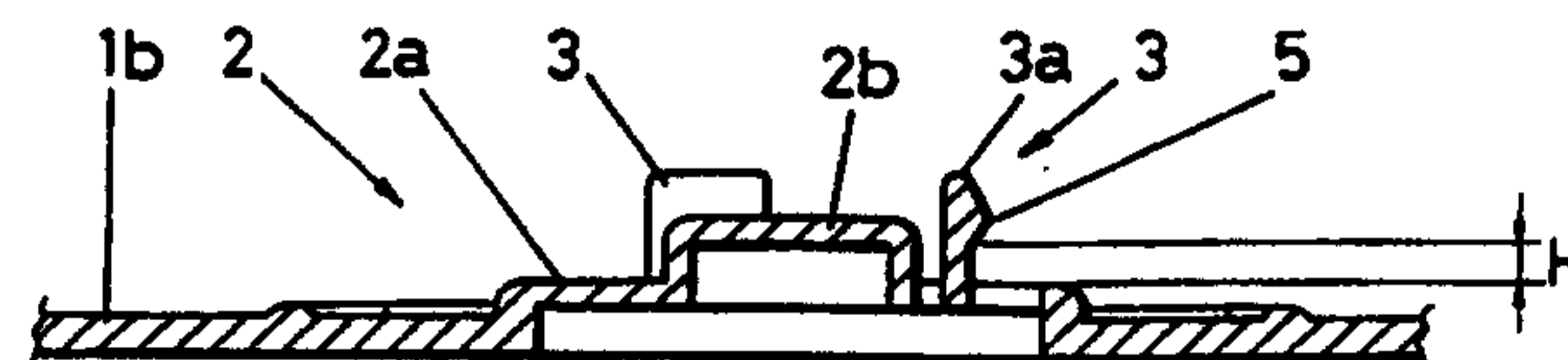
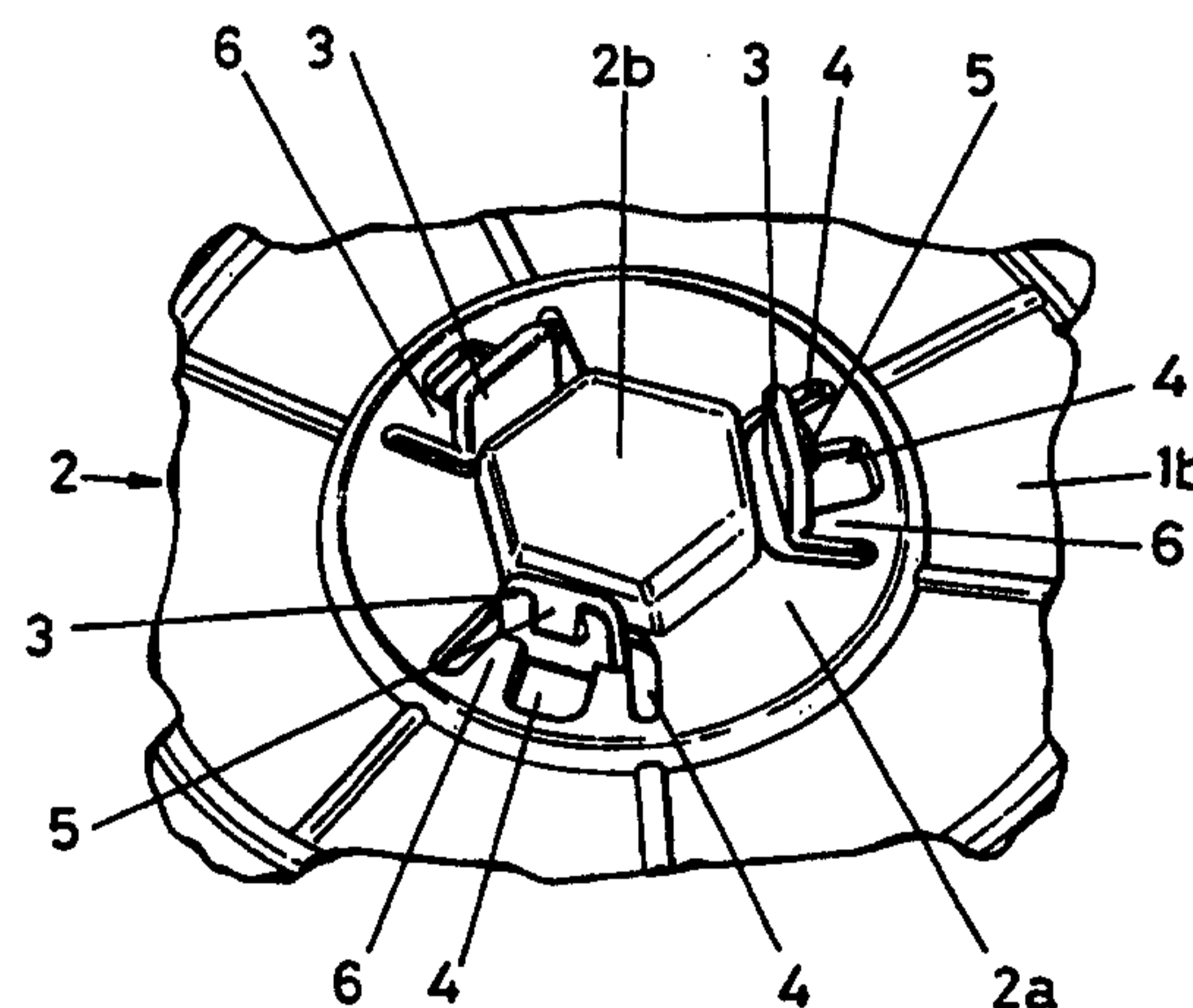
(54) Título: ESTUCHE PARA SOPORTES DE REGISTRO OPTICO EN FORMA DE DISCO, TALES COMO DC, DVD, Y SIMILARES

(57) Abstract

Disclosed is a case (1) with a lid (1a), a portion of box or bottom (1b) hinged by a central portion of the back (1c), as well as circumferential protuberances bearing onto the external edge of the disc-shaped magnetic recording medium. For nesting-removing the disc central orifice, a device is provided which is comprised of a cylindrical platform (2) having a central formation (2a) which is also cylindrical and on which bears the lower surface of said disc. Around a prismatic-hexagonal protuberance (2b), pins or lugs (3) are concentrically conformed. Said lugs (3) have retention teeth (5) which are separated from the base of the central formation (2a) by a distance (H) which is equivalent to the thickness of the recording medium. In a preferred embodiment, an articulation or hinge seal (7) is configured around the cylindrical platform (2) and is integrally molded as a zone having a reduced wall thickness with a groove (7a) and a bead (7b).

(57) Resumen

Se proporciona un estuche (1) con una tapa (1a), una porción de caja o pared de fondo (1b) articuladas mediante una porción central de lomo (1c), así como con resaltes circunferenciales para apoyo del borde exterior del soporte de registro magnético en forma de disco, estando previsto para encajamiento/liberación del orificio central del disco un dispositivo constituido por una plataforma cilíndrica (2) con una formación central (2a) también cilíndrica sobre la que apoya la superficie inferior de dicho disco en la que alrededor de una proyección prismático-hexagonal (2b) están concéntricamente conformados unos vástagos o espigas (3) con dientes de retención (5) separados de la base de la formación central (2a) en una distancia (H) equivalente al espesor del soporte de registro. Cuando alrededor de la plataforma cilíndrica (2) se configura una junta de articulación o de bisagra (7) circundante e integralmente moldeada como una zona con espesor de pared disminuido con una garganta (7a) y un cordón (7b), resulta una realización especialmente preferida.



DESCRIPTIONCASE FOR DISC-SHAPED MAGNETIC RECORDING CARRIERS, SUCH AS
CD, DVD AND LIKE

5

The present invention refers to a case for disc-shaped magnetic recording carriers in formats such as digital video discs, also known as digital versatile discs, (DVD) or compact discs (CD) and like, that have an improved device for the engagement and release of the disc.

Diverse cases of this type are known at the moment, the most mentioned up to now being the CD cases for audio and data and software.

15 According to the state of the art, these cases include in their central part a projecting formation for a fitted or firm engagement of the disc through its central hole. This projecting formation is biased by compression, so that the disc can be released from its
20 fitted engagement, exercising a pressure on the mentioned projection.

In particular, EPO patent EP1033719 A, is a known case of this type, where the mentioned central formation
25 is formed in a button-shape with elastics lateral branches, connected by their lower end with some tilted wings, all this from the material of the case wall, and where, also, the aforementioned elastic wings form an angle near the wall of the cover to guarantee a
30 "sinking" of this elastic portion in order to release the engagement in the central hole of the disc.

Also, according to this document relative to the prior art, it is revealed that the disc engaged in such portion is slightly flexed in a radial direction thanks
35 to circumferential projections provided in a bottom wall

of the case on which it is supported by its exterior edge.

These characteristics from the prior art make up part of the preamble of the independent claims 1 and 2 of the present invention.

SUMMARY OF THE INVENTION

It is the purpose of the present invention to develop a device of the previously mentioned type that results in easy manufacturing and safe use.

According to one embodiment of the present invention, a case for disc-shaped magnetic recording carriers such as CD, DVD and like, of the type that includes, joined to a central portion or body, a cover and a portion of a box or bottom wall with a central formation for the fitted engagement of the central hole of the disc-shaped magnetic recording carrier, as well as circumferential projections to sustain the external edge of such disc in a slightly flexed form in radial direction, characterized by, in the mentioned bottom wall is configured a cylindrical platform with a central formation also cylindrical, concentric to and surrounding a prismatic-hexagonal projection stems or spigots detach orthogonally upwards that are linked on their lower part through portions delimited by through notches performed in such cylindrical formation; and each one of these stems or spigots have in their upper end a retention cog in a pointed form directed outwards and whose lower part is distanced in a vertical direction in a magnitude (H) that approximately corresponds to the thickness of the recording carrier.

A further embodiment of the present invention provides for a case for disc-shaped magnetic recording carriers such as CD, DVD and like, of the type that includes, joined to a central portion or body, a cover and a portion of a box or bottom wall with a central

2a

formation for the fitted engagement of the central hole of the disc-shaped magnetic recording carrier, as well as circumferential projections to sustain the external edge of such disc in a slightly flexed form in radial direction, the characterized by in the mentioned bottom wall is configured a cylindrical platform with a central formation also cylindrical, concentric to and surrounding a prismatic-hexagonal projection stems or spigots detach orthogonally upwards that are linked on their lower part through portions delimited by through notches performed in such cylindrical formation; each one of these stems or spigots have in their upper end a retention cog in a pointed form directed outwards and whose lower part is distanced in a vertical direction in a magnitude (H) that approximately corresponds to the thickness of the recording carrier; and the cylindrical platform is joined to the bottom wall through a surrounding jointed hinge, molded integrally in such bottom wall as an area with a wall thickness reduced by a neck-shaped depressed portion and a raised portion in a cord form.

It is preferable, in the above embodiments of the present invention, at least, three jagged stems or spigots are provided.

A further embodiment of the present invention provides for a case for storing a disc-shaped magnetic recording carrier having upper and lower faces, an outer edge, and an inner edge defining a central circular opening, the case including a floor positioned within a frame, and a plurality of spaced-apart segments connected to the floor to form a cylindrical rim and cooperating with one another to engage the outer edge of the magnetic recording carrier, the improvement comprising:

(a) a first cylindrical raised seat positioned on a

2b

central location on the floor and adapted for receiving the recording carrier thereon; and

(b) a second cylindrical raised seat positioned in a central location on the first cylindrical raised seat and including:

- 5
- (i) a button positioned above the horizontal plane and on an upper face of the second cylindrical raised seat and including a polygonal sidewall having upper and lower
- 10 edges, and a face having an outer edge connected to the upper edge; and
- (ii) a plurality of spaced-apart tabs positioned adjacent the polygonal sidewall and movable toward the sidewall in response to
- 15 radially-directed inward pressure against the tabs, each of the tabs including a vertical face having a wedge-shaped notch thereon biased towards and engaging the inner edge of the
- 20 opening of the recording carrier in the absence of radially-directed inward pressure against the tab.

It is further preferred the above embodiments of the present invention wherein the polygonal sidewall

25 comprises an even number of sidewall segments, the tabs are positioned adjacent alternating sidewall segments and the polygonal sidewall comprises six sidewall segments.

In the above described embodiments, the plurality

30 of spaced-apart tabs comprises three spaced-apart tabs, the polygonal sidewall comprises three sidewall segments, the vertical face is carried on the second cylindrical raised seat by one arm having a first end formed with said upper face and a second free end

35 extending inwardly toward the button for supporting the

2c

lower face of the recording carrier.

Accordingly, it is a further preferred the above
embodiments include a flexible hinge connecting the
first cylindrical raised seat to the floor for
5 permitting the first and second cylindrical raised seats
and the button to be moved toward the floor in response
to downward pressure on the face of the button for
releasing the recording carrier from the tabs, the
polygonal sidewall comprises an even number of sidewall
10 segments and the tabs are positioned adjacent
alternating sidewall segments.

It is also desirable for the above mentioned
embodiments wherein said polygonal sidewall comprises
six sidewall segments, wherein the plurality of spaced-
15 apart tabs comprises three spaced-apart tabs, wherein
said polygonal sidewall comprises three sidewall
segments, wherein said vertical face is carried on the
second cylindrical raised seat by an arm having a first
end formed with said upper face and a second free end
20 extending inwardly toward the button for supporting the
lower face of the recording carrier.

In this case, the present invention derives from
the fact that results analogous to those previously
described may be obtained in what refers to the secure
25 fitted engagement of the disc that is also easy to
release, when on a platform for support of the disc
provided as forming an integral part of the bottom wall
of the case, configured concentrically around a
prismatic-hexagonal formation are stems or spigots that
30 detach orthogonally upwards from the upper face of this
platform for support of the disc and that each one of
them have a retention cog in pointed form, whose stems
or spigots can be biased by flexion through a lateral
pressure exercised towards the center of the same; and
35 where also, the lower part or surface of each retention

2d

cog is found at a vertical distance from the support platform of the disc that is of the same magnitude order as the thickness of the disc.

But a disposition such as this one may also
5 function according to the "sinking" principle explained in relation to the foregoing document EP 1033719 A. Indeed, only with forming around the cylindrical support platform of the disc a joint or hinge constituted by a surrounding area with a wall thickness reduced by a
10 neck-shaped depressed portion and a portion raised in a cord form, so that in this case it is an advantage with respect to the well-known cases, the elimination of openings to the exterior of the case that make possible the entry of dust and other harmful external influences,
15 such as moisture

20

and excessive heat.

Other characteristics and advantages of the invention will be clearer from the following description carried out with the help of the attached drawings applicable to non-limiting embodiment examples and where:

Figure 1 shows a view in perspective of a case for disc-shaped magnetic recording carriers according to the invention.

Figure 2, illustrates a view in perspective of a first embodiment of the device for engagement and release of the disc from the case according to the invention.

Figure 3 is a top view of the device according to figure 2.

Figure 4, shows a partial section view through the line A-A of figure 3.

Figure 5, illustrates a view in perspective of a second embodiment of the device for engagement and release of the disc from the case according to the invention.

Figure 6, is a view comparable to the previous one but divided according to a diameter of the device for engagement and release of the disc according to figure 5.

Figure 7, shows a top view of the device for engagement and release of the disc from figure 5.

With regards to figure 1 is observed that case 1 is shaped as is described, for example, in the mentioned EPO patent EP1033719 A, similarly to a well-known case for video tapes, that is to say with bindings or covers 1a, 1b joined around a central portion or body 1c, being, also configured in the cover 1b, before the bottom wall, circumferential projections 1d for support of the edge or external periphery of the disc (no represented) with the purpose thereby described.

In reference to the figures 2, 3 and 4 it can be observed that on the bottom wall 1b, preferably

integrally with it, conformed is a cylindrical platform 2 with an also cylindrical formation 2a but with a smaller diameter assigned for the support of a DVD disc type or like. Also, on such formation 2a concentrically 5 formed around a prismatic-hexagonal projection are stems or spigots 3 that detach ortogonally upwards, each one of which has a retention cog 5 in pointed form directed outwards.

These stems or spigots 3 are found to be delimited 10 on their lower part through notches 4 performed in the mentioned cylindrical formation 2a, so that they are integrally joined to this platform of support 2 through portions 6 of the material of this cylindrical formation 2a.

15 As the constituent material of the bottom wall 1b of case 1 is a rigid, but relatively elastic plastic material, from the above mentioned configuration ensues a capacity of the stems or spigots 3 for flexing through a force exercised perpendicularly on their free extremity 20 3a.

This way, a DVD type disc or like can be easily engaged through its central hole on the mentioned stems or spigots 3, remaining held there thanks to the retention cogs 5 in pointed form, lying supported on 25 platform 2, and it can be easily removed from this engagement, exercising a force "inwards" on the extremities 3a of, at least, two of these stems or spigots 3.

With regards to figures 5, 6 and 7, described now 30 will be a second embodiment of the invention, and in those figures for elements identical to those of the previous embodiment of the invention the same numerical references are utilized.

Here, as before, on the bottom wall 1b, of case 1, 35 is formed a cylindrical platform 2 with an also

cylindrical formation 2a with a smaller diameter assigned for the support of a DVD type disc or like; also, over such formation 2a and around a prismatic-hexagonal projection 2b, now with button or push-button functions, 5 concentrically formed are stems or spigots 3 that detach ortogonally upwards and each one of these has a retention cog 5 in pointed form directed outwards.

According to this second embodiment of the invention, the cylindrical platform 2, is connected 10 jointly with the bottom wall 1b through a jointed hinge 7 surrounding and molded integrally as an area with a thickness reduced by a neck-shaped depressed portion 7a and a raised portion 7b in a cord form.

In this embodiment, the DVD disc supported on the 15 cylindrical formation 2a and held there through the cogs 5 of the stems or spigots 3, may be released by pressing the prismatic-hexagonal button or push-button 2b, given that the cylindrical platform 2 will descend thanks to the surrounding jointed hinges 7.

20 According to the invention it is a preferred embodiment of the invention when up to three jagged stems or spigots 3 are provided.

As will be easily understood by the skilled in the art, this device has a structure that is specially 25 appropriate to be shaped in molding processes for plastic material integrally with the bottom wall of a case in a box shape. Also, when the device is shaped according to the second embodiment described, that is to say, according to the principle known as "sinking", the 30 existence of grooves that result according to the previous technique are eliminated, to therefore avoid the entrance of dust and undesirable external influences such as moisture, excessive heat, etc., in the case that may damage the integrity of the magnetic recording carrier.

35 As such object of the invention has been

sufficiently described, the only thing left is to indicate that the resulting embodiments of changes in material, structure, dimensions or like, as well as those derived from an application of routine from the 5 previously disclosed must be considered included in its boundary, so that the invention will only be limited by the scope of the following claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. Case for disc-shaped magnetic recording carriers
5 such as CD, DVD and like, of the type that includes, joined to a central portion or body, a cover and a portion of a box or bottom wall with a central formation for the fitted engagement of the central hole of the disc-shaped magnetic recording carrier, as well as
10 circumferential projections to sustain the external edge of such disc in a slightly flexed form in radial direction, characterized in that:

in the mentioned bottom wall is configured a cylindrical platform with a central formation also
15 cylindrical, concentric to and surrounding a prismatic-hexagonal projection stems or spigots detach orthogonally upwards that are linked on their lower part through portions delimited by through notches performed in such cylindrical formation; and

20 each one of these stems or spigots have in their upper end a retention cog in a pointed form directed outwards and whose lower part is distanced in a vertical direction in a magnitude (H) that approximately corresponds to the thickness of the recording carrier.

25 2. Case for disc-shaped magnetic recording carriers such as CD, DVD and like, of the type that includes, joined to a central portion or body, a cover and a portion of a box or bottom wall with a central formation for the fitted engagement of the central hole of the
30 disc-shaped magnetic recording carrier, as well as circumferential projections to sustain the external edge of such disc in a slightly flexed form in radial direction, characterized in that:

in the mentioned bottom wall is configured a
35 cylindrical platform with a central formation also

cylindrical, concentric to and surrounding a prismatic-hexagonal projection stems or spigots detach orthogonally upwards that are linked on their lower part through portions delimited by through notches performed
5 in such cylindrical formation;

each one of these stems or spigots have in their upper end a retention cog in a pointed form directed outwards and whose lower part is distanced in a vertical direction in a magnitude (H) that approximately
10 corresponds to the thickness of the recording carrier;
and

the cylindrical platform is joined to the bottom wall through a surrounding jointed hinge, molded integrally in such bottom wall as an area with a wall
15 thickness reduced by a neck-shaped depressed portion and a raised portion in a cord form.

3. Case according to claims 1 or 2, characterized in that at least, three jagged stems or spigots are provided.

20 4. In a case for storing a disc-shaped magnetic recording carrier having upper and lower faces, an outer edge, and an inner edge defining a central circular opening, the case including a floor positioned within a frame, and a plurality of spaced-apart segments
25 connected to the floor to form a cylindrical rim and cooperating with one another to engage the outer edge of the magnetic recording carrier, the improvement comprising:

(a) a first cylindrical raised seat positioned on a
30 central location on the floor and adapted for receiving the recording carrier thereon; and

(b) a second cylindrical raised seat positioned in a central location on said first cylindrical raised seat and including:

35 (i) a button positioned above the horizontal

plane and on an upper face of said second cylindrical raised seat and including a polygonal sidewall having upper and lower edges, and a face having an outer edge connected to said upper edge; and

5 (ii) a plurality of spaced-apart tabs positioned adjacent said polygonal sidewall and movable toward the sidewall in response to radially-directed inward pressure against said

10 tabs, each of the tabs including a vertical face having a wedge-shaped notch thereon biased towards and engaging the inner edge of the opening of the recording carrier in the absence of radially-directed inward pressure against

15 the tab.

5. Case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 4, wherein said polygonal sidewall comprises an even number

20 of sidewall segments.

6. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 5, wherein said tabs are positioned adjacent alternating sidewall segments.

25 7. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 6, wherein said polygonal sidewall comprises six sidewall segments.

8. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 7,

30 wherein the plurality of spaced-apart tabs comprises three spaced-apart tabs.

9. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 8,

35 wherein said polygonal sidewall comprises three sidewall

segments.

10. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 9, wherein said vertical face is carried on the second
5 cylindrical raised seat by one arm having a first end formed with said upper face and a second free end extending inwardly toward the button for supporting the lower face of the recording carrier.

11. In a case for storing a disc-shaped magnetic
10 recording carrier according to any one of claims 1 to 10, and including a flexible hinge connecting the first cylindrical raised seat to the floor for permitting the first and second cylindrical raised seats and the button to be moved toward the floor in response to downward
15 pressure on the face of the button for releasing the recording carrier from the tabs.

12. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 11, wherein said polygonal sidewall comprises an even
20 number of sidewall segments.

13. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 12, wherein said tabs are positioned adjacent alternating sidewall segments.

25 14. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 13, wherein said polygonal sidewall comprises six sidewall segments.

15. In a case for storing a disc-shaped magnetic
30 recording carrier according to any one of claims 1 to 14, wherein the plurality of spaced-apart tabs comprises three spaced-apart tabs.

16. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to
35 15, wherein said polygonal sidewall comprises three

sidewall segments.

17. In a case for storing a disc-shaped magnetic recording carrier according to any one of claims 1 to 16, wherein said vertical face is carried on the second
5 cylindrical raised seat by an arm having a first end formed with said upper face and a second free end extending inwardly toward the button for supporting the lower face of the recording carrier.

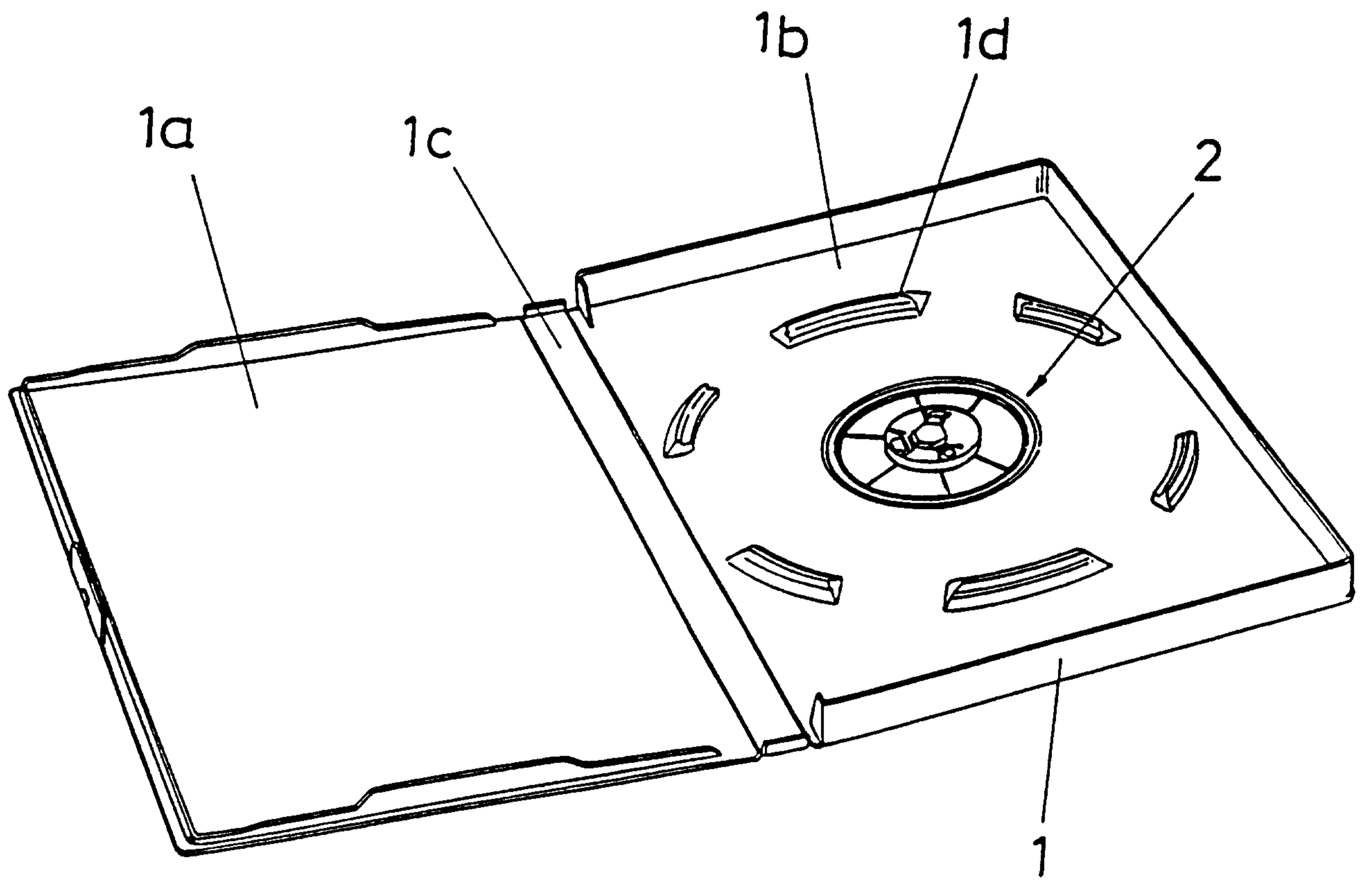


FIG.1

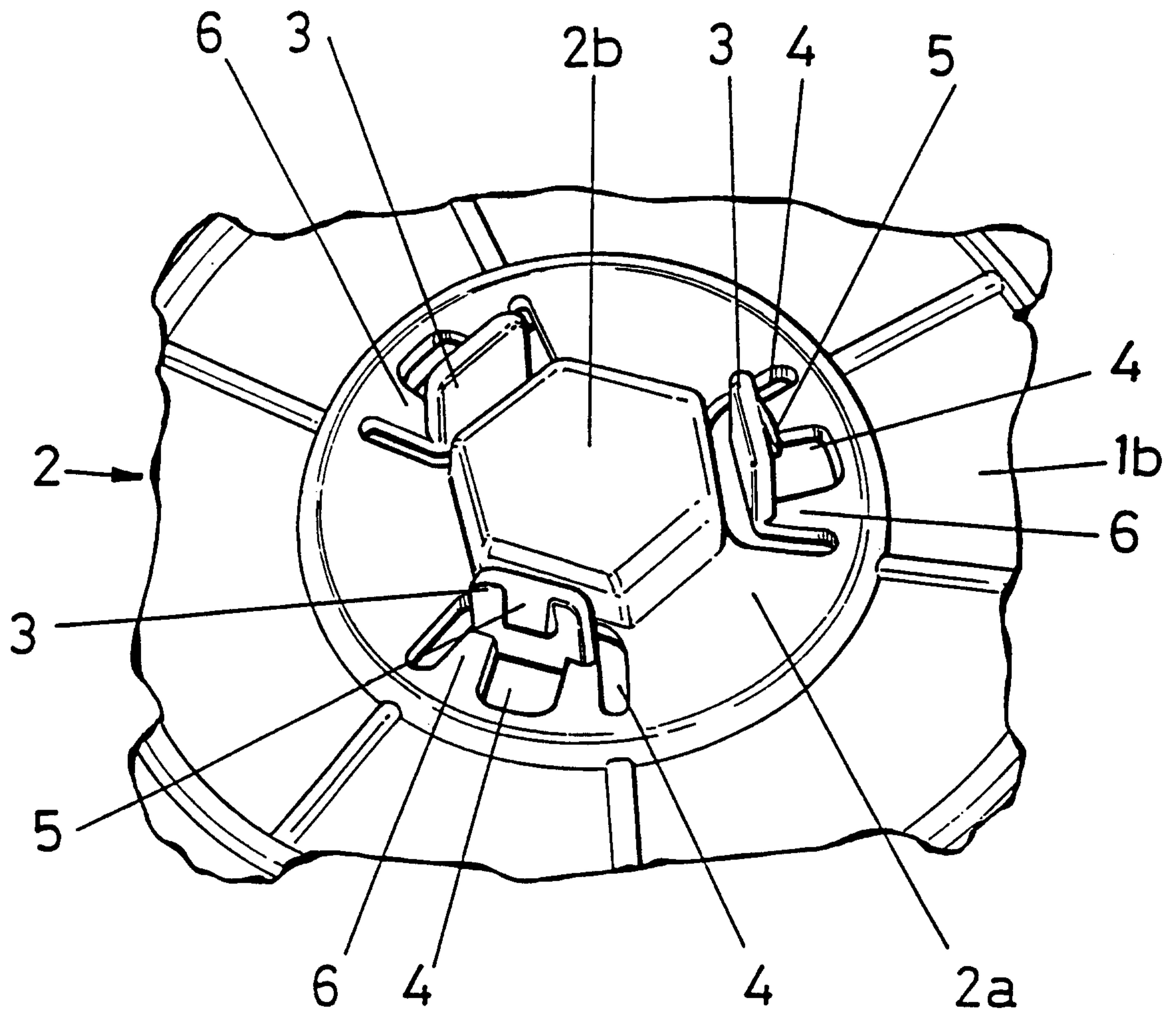


FIG. 2

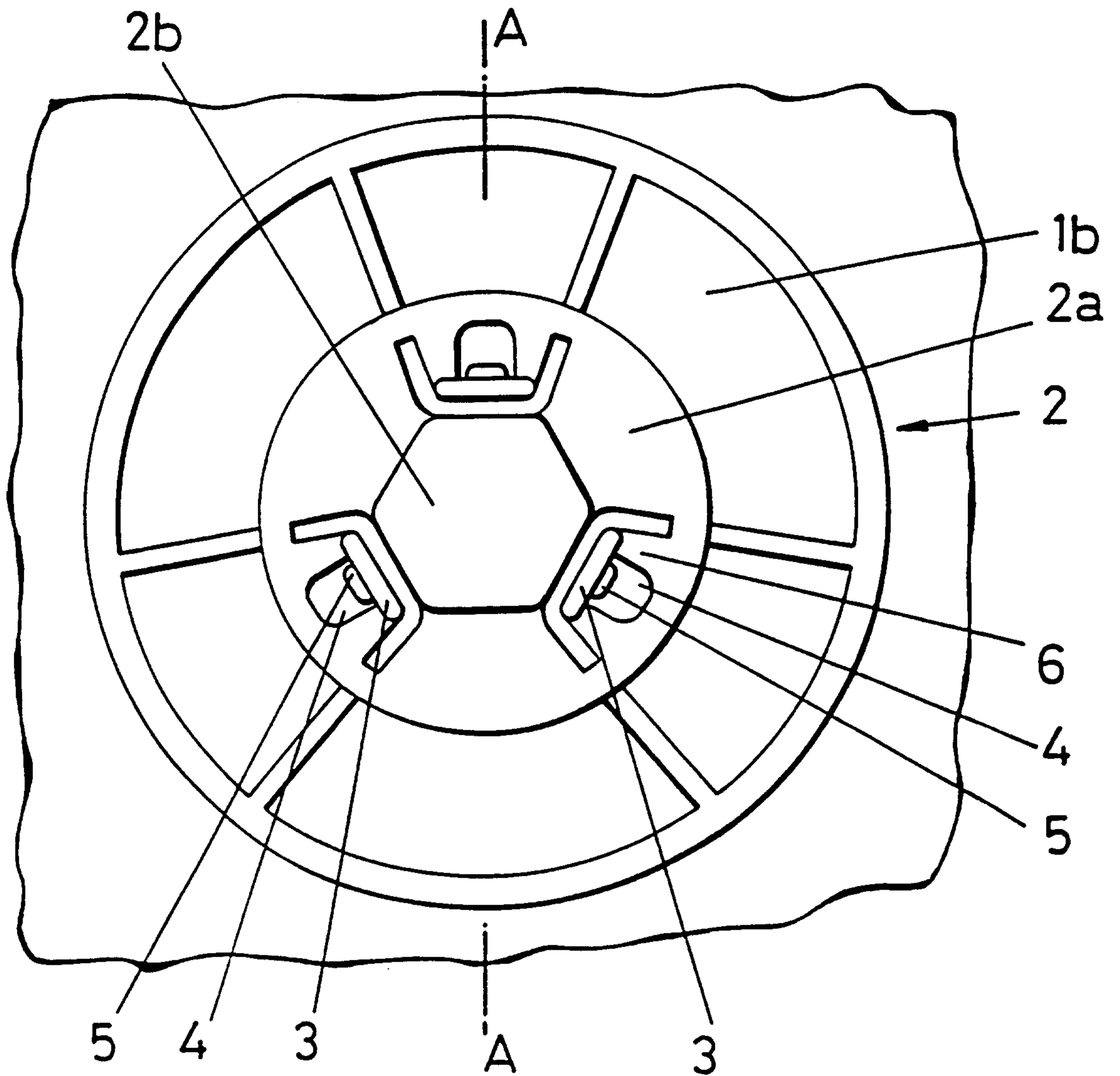


FIG. 3

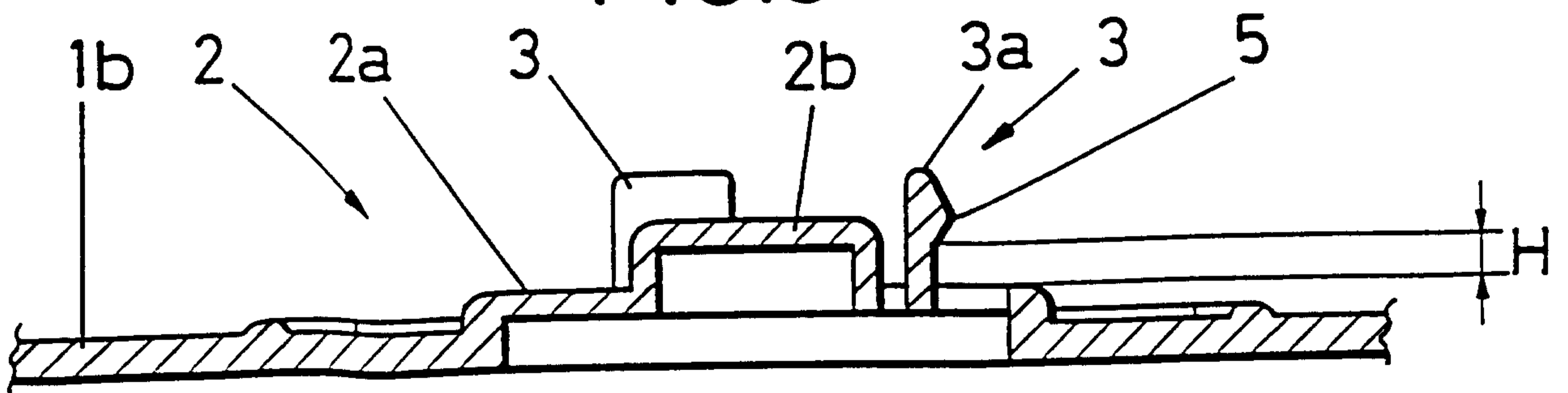


FIG. 4

A-A

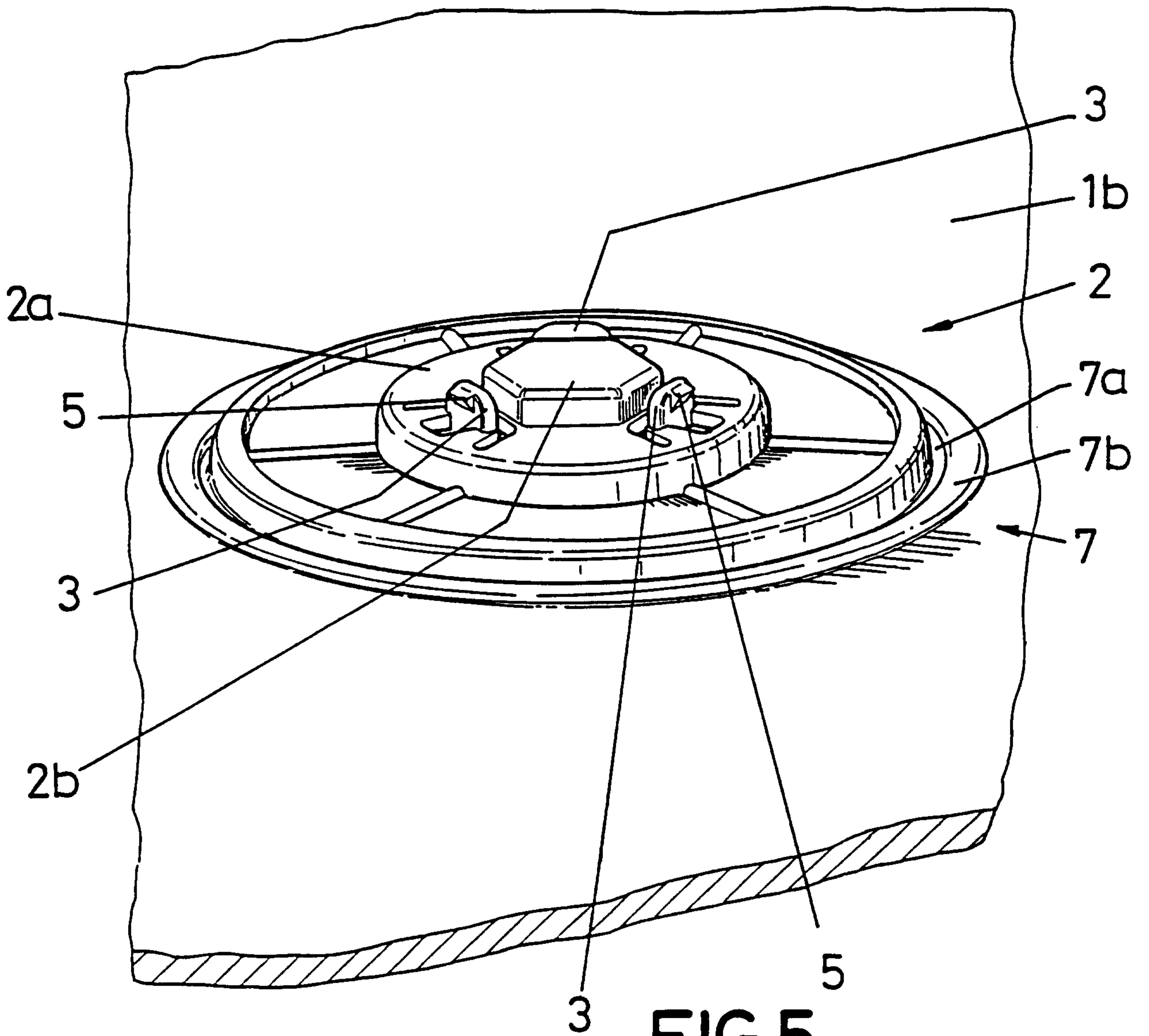


FIG. 5

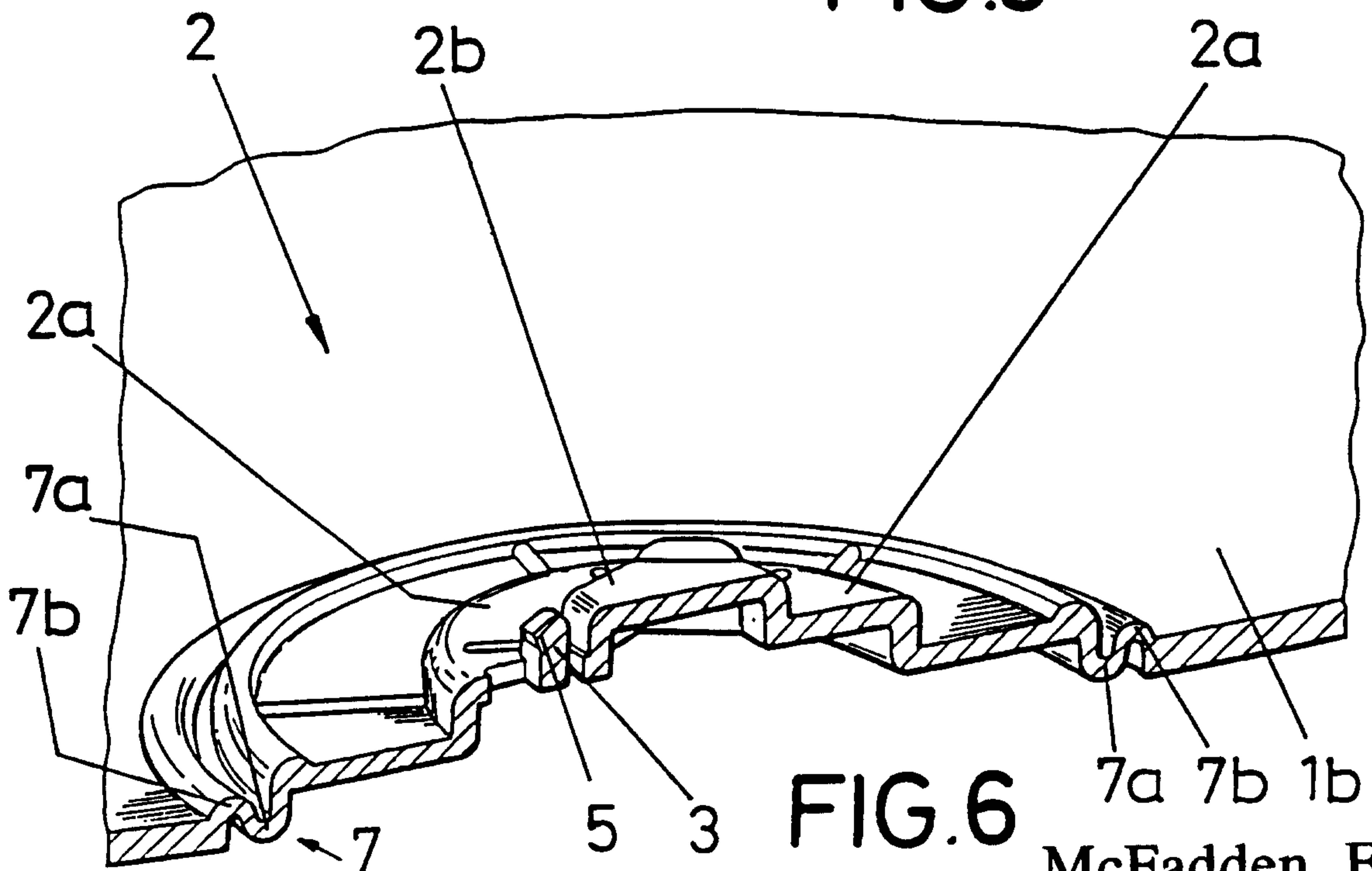


FIG. 6

McFadden, Fincham

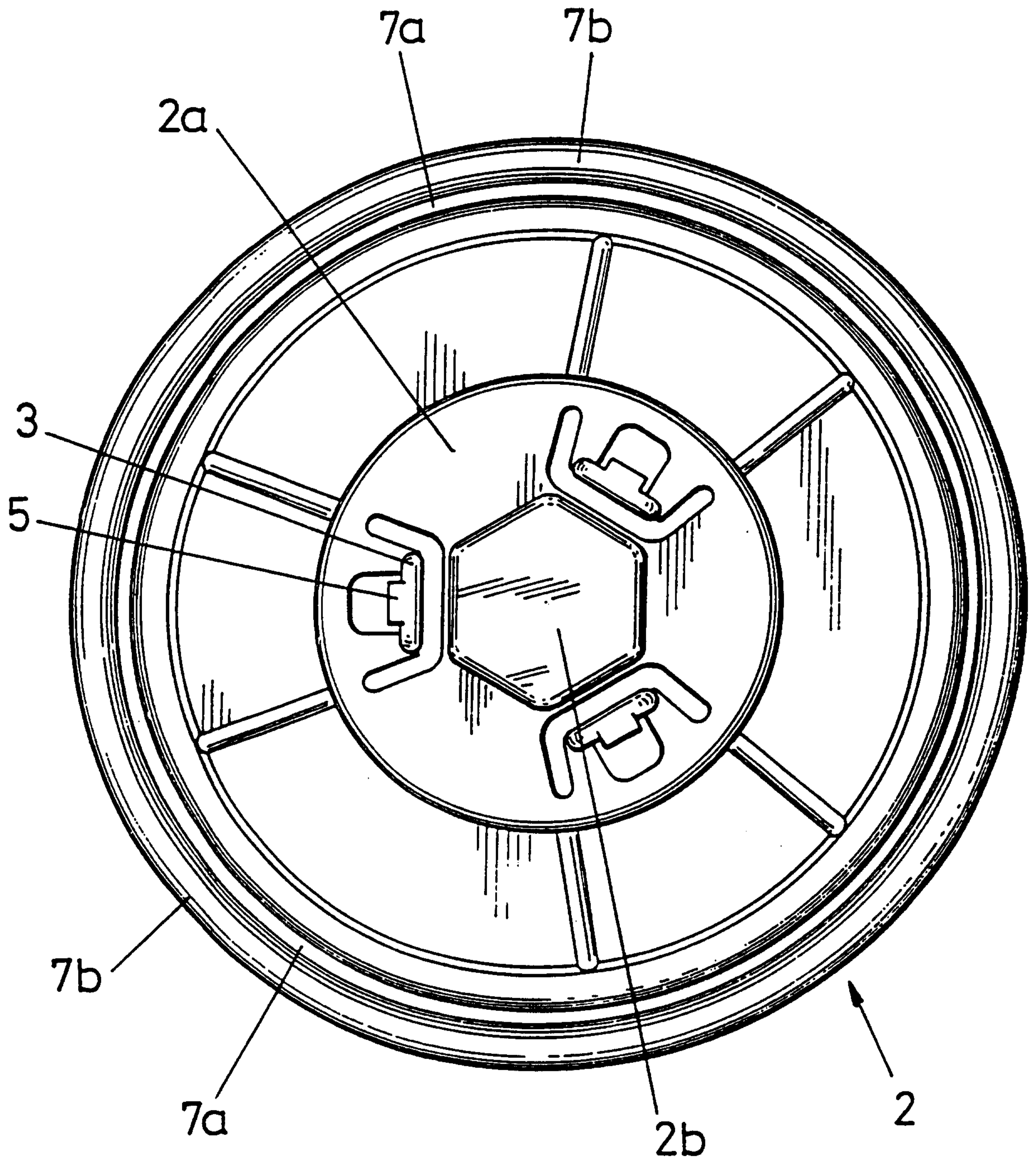


FIG. 7

