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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A63H 33/08, B65D 81/36

A1

(11) International Publication Number: **WO 99/48582**

(43) International Publication Date: 30 September 1999 (30.09.99)

(21) International Application Number: PCT/BE99/00039

(22) International Filing Date: 22 March 1999 (22.03.99)

(30) Priority Data:
PCT/BE98/00043 26 March 1998 (26.03.98) BE

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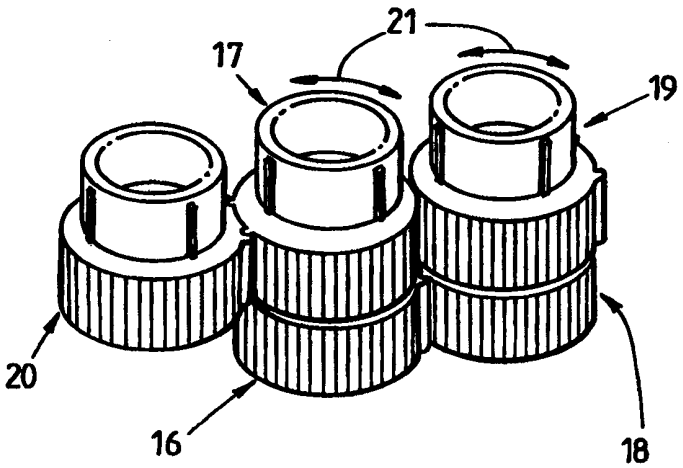
(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: A BODY FOR USE IN A TOY SET

(57) Abstract

The present invention relates to a toy set comprising at least a first, second, third and fourth body provided to be mated adjacent each other and on top of each other, enabling to build a construction wherein a large number of configurations of bodies with respect to each other is rendered possible. The present invention further relates to a body for use in a toy set and use of the body as a cap of a recipient or as a recipient.



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A BODY FOR USE IN A TOY SET

The present invention relates to a toy set comprising at least a first, second, third and fourth body, each body being substantially equally dimensioned, wherein :

- each of said bodies comprises a coupling portion applied on a base portion,
- each base portion has an outer surface delimiting a substantially cylindrical shaped cavity,
- said first and second bodies are provided for being stacked upon each other, wherein said coupling portion of said first body rotatably fits within said cavity of said second body,
- said third and fourth bodies are provided for being stacked upon each other, wherein said coupling portion of said third body rotatably fits within said cavity of said fourth body,
- each of said bodies further comprises at least a connecting member, wherein at least one of said connecting members forms a protrusion extending outwardly from said outer surface,
- said first and third bodies are provided for being assembled adjacent each other, wherein said connecting member of said first body fits within said connecting member of said third body, and
- said second and fourth bodies are provided for being assembled adjacent each other, wherein said connecting member of said second body fits within said connecting member of said fourth body.

Such a toy set is known from US patent number 5,361,919. In this toy set, the bodies have the same shape and may be used as a bottle cap as well as a toy. The coupling portion is formed by a circular protrusion provided on the base portion having the shape of a hollow polygon, in particular a hexagon. When two bodies are stacked on top of each other, the circular protrusion of one of the bodies rotatably fits into the cavity of the other body. Each body further comprises, on each external surface of the polygon, a detent extending from the surface or an indent provided in the surface, the detent extending from a surface of one body being provided for being fitted within an indent of a surface from another body. In this way, two bodies may be fitted adjacent each other wherein said surface with the detent from the one body is tangent to the surface with the indent from the other body.

Figure 1 illustrates schematically a construction performed with known bodies. Referring to Figure 1, when four of these known bodies are used, it is possible to fit them in such a manner that a second body 2 is stacked on a first body 1 and a third body 3 is assembled to said first body by mating a detent 5 on the first body with an indent 6 on the third body. If it is desired to stack the fourth body 4 on top of the third body 3 without assembling the fourth body 4 to the second body 2, care should be taken that the two tangent surfaces both comprise an indent 7, 8 so as to avoid mating of the fourth and second body. This limits the number of possible configurations of the bodies. In particular, if the bodies have an outer surface in the shape of an hexagon, wherein detents are provided every two sides, such as disclosed in US 5,361,919, only three configurations of the second body are allowed, i.e. when the indents of the second body are adjacent an indent on the fourth body. In addition, stepwise rotation will be obstructed by one of the detents (not shown) provided on the surfaces of the second or fourth body.

The object of the present invention is to provide a toy set enabling to build a construction wherein a first pair of bodies are assembled adjacent each other by mating the connecting members and two further bodies may each be provided adjacent one each other on top of said pair in such a manner that a large number of configurations are possible.

It is a further object that at least a stepwise rotation of the further bodies with respect to each other, preferably over an angle of at least 180 degrees is rendered possible.

According to one aspect of the present invention, the toy set is characterised in that :

- each protrusion of said first and third bodies is only located within a space delimited, when said first and third bodies are assembled adjacent each other, by said outer surfaces of the first and third bodies and two common tangent planes, each of said common tangent planes being tangent to both of said outer surfaces of said first and third bodies, and
- each protrusion of said second and fourth bodies is only located within a space delimited, when said second and fourth bodies are assembled adjacent each other, between said outer surfaces of the second and fourth bodies and between two common tangent planes, each of said common tangent planes being tangent to both of said outer surfaces of said second and fourth bodies.

It is possible to build a construction wherein a first pair of bodies, for example the first and third bodies (or the second and fourth bodies), are mated adjacent each other, and two further bodies, for example the second and fourth bodies (or the first and third bodies), are provided adjacent each other on top of said pair without mating connecting members of the two further bodies to each other. By providing that each protrusion is only located within the defined limited

space, different configurations of the further bodies without mating the further bodies to each other are possible. For example, if the base portion of the bodies has a squared outer surface, three configurations of one of the further bodies is allowed without having to mate the second and fourth body with each other. In case of a hexagon, where protrusions are provided on one of the sides, five configurations are possible.

In particular, said outer surface is substantially polygonal at least outside said space and comprises at least three sides outside said space. This allows an at least stepwise rotation movement, in particular of at least 180 degrees without being obstructed by a protrusion.

In a first preferred embodiment of the toy set according to the invention, each connecting member comprises a male member and a female member; in each connecting member at least one of said male and female members from said protrusion extends outwardly from said outer surface; and when two of said bodies are assembled adjacent each other, said male member from one of the bodies is provided for mating within said female member of the other body and said female member of the one body is provided for mating within said male member of the other body.

This enables to mate two bodies adjacent each other without requiring two different types of bodies, i.e. female bodies and male bodies, since both bodies have a connecting member formed by a male member and a female member. When two bodies of this type are assembled adjacent each other, both the male and female members of the one body are connected to the female and male member of the other body.

In a second preferred embodiment of the toy set according to the invention, both said male and female members form said protrusion extending outwardly from said outer surface and said male and female members of one of the bodies are provided for being slidably

mated with said female and male members of another of said bodies. When two such bodies are mated adjacent each other, a tight connection of the two bodies is ensured. It will be difficult to disengage such a connection by pulling the two bodies apart from each other. The two bodies may easily be disengaged from each other by sliding them apart from each other.

In a third preferred embodiment of the toy set according to the invention, said male and female members are located on said outer surface within a segment not larger than 60 degrees of said outer surface. In this way, when a construction as set hereinabove is built, at least a stepwise rotation movement of relatively more than 180 degrees will be possible without being obstructed by a male or female member.

In a fourth preferred embodiment of the toy set according to the invention, said male and female members are located on said outer surface on a segment of at least 40 degrees of said outer surface. This guarantees that the male and female member are sufficiently spaced apart from each other, so that torsion of two such bodies mated adjacent each other is limited and a tight connection is ensured.

The present invention also relates to a body for use in a toy set and use of the body as a cap for a recipient, a recipient or a building block.

The invention will now be described further in detail referring to the annexed drawings, wherein :

Figure 1 illustrates in cross section a construction performed with a toy set according to the prior art.

Figure 2 shows, on an enlarged scale, a perspective view of a body according to the invention.

Figure 3 is a perspective view of two bodies according to Figure 2 when assembled adjacent each other.

Figure 4 is a perspective view of a construction performed with several bodies according to Figure 2.

Figure 5 illustrates schematically the space wherein the protrusions are located.

Figure 6 shows a detail of the male and female members according to a preferred embodiment.

Figures 7 to 13 show a number of alternatives for the shape of the coupling portion of the body according to the invention.

Figure 14 shows an alternative for the shape of the base portion of the body according to the invention.

Figure 15 shows a coupling member for coupling two coupling portions to each other.

Figures 16 and 17 show other accessories fitting in the coupling portions.

Figure 18 shows, on an enlarged scale, a perspective view of a further embodiment of a body according to the invention.

Figure 19 is a perspective view of a further embodiment of a body according to the invention.

Figure 20 illustrates several configurations of the clamping member in a body according to the invention.

Figures 21 and 22 are side views on two embodiments of the base portion having male and female members with a stopping member.

Figure 23 is a side view on a further embodiment of the base portion having male and female members with a stopping member.

Figure 24 is a cross section according to line XXIV-XXIV in Figure 23.

Figures 25 and 26 are top views on bodies according to further embodiments of the invention.

Figure 27 is a top view on a connection body provided for being mated between two bodies according to Figure 2.

Figure 28 is a side view on a further body according to the invention.

Figures 29 to 32 show a double shaped toy set or building block according to the invention.

Figures 33 and 34 show a coupling ring mounted on a body according to the invention.

Referring to Figure 2, there is shown a body 10 according to a preferred embodiment of the invention. The body 10 is formed by a base portion 11 having a substantially polygonal outer surface, in particular cylindrical, and comprising a cavity (not shown) of a substantially cylindrical shape. On the base portion 11, a coupling portion 12 is applied. The base portion is thus hollow, whereas the coupling portion may be a hollow piece or a plain piece of material. According to a preferred embodiment, the coupling portion is hollow, so that upon moulding such a body in a plastic material, the overall thickness of the body is kept as low as possible. In this manner "hot spots" are avoided as much as possible.

The coupling portion is dimensioned in such a manner that it enables a rotation movement when it is fitted within the cavity of the base portion of another body. In particular, the coupling portion has a substantially cylindrical shape with an external diameter 13 essentially equal to the internal diameter (not shown) of the cavity.

The body 10 further comprises a connection member 14, 15 provided on the base portion. In particular, the connection member is formed by a male member 14 and a female member 15. According to an alternative embodiment, the connection member could be formed by only a male member which is provided to be fitted in a corresponding female member of another body. The connection member may be formed by

protrusions extending outwardly from the outer surface of the base portion, but could also form an excavation in one body provided to fit within a protrusion of another body.

Two bodies according to the invention may thus be stacked upon each other by fitting the coupling portion of a first body into the cavity in the base portion of a second body.

Two bodies according to the invention may also be assembled adjacent each other by engaging the connection member of a first body into the connection member of a second body, as shown in Figure 3. Such a construction is called a "brick" hereinafter.

Figure 4 illustrates a further construction with a plurality of bodies according to the invention. It may for example be assembled as follows. A second body 17 is stacked on a first body 16 as explained hereinabove. Then, a third body 18 is assembled adjacent said first body as explained in connection with Figure 3. A fourth body 19 is then stacked on the third body 18 and optionally, a fifth body 20 may be assembled adjacent the second body 17 by engaging the male and female members of the fifth body into the female and male members of the second body. As indicated by the arrows 21, both bricks 17, 20 and the fourth body 19 may be rotated over an angle of at least 180 degrees, since the shape of the outer surface of the respective base portions is substantially cylindrical and thanks to the absence of protruding parts in the movement.

Figure 5 illustrates a simplified bottom view of the outer surfaces 22 of the base portion of two bodies according to Figure 3 mated adjacent each other. As described hereinabove, the base portion has a substantially polygonal outer surface, in particular cylindrical. The particular cylindrical shape is illustrated in Figure 5, but the same reasoning could be applied if the shape is different such as for example the shape illustrated in Figure 14. In Figure 5, the male and female

members have been omitted for the sake of clarity of the following explanation. The two circles 22 corresponding to the outer surface do not touch each other in this Figure. According to an alternative, the two outer surfaces touch each other so as to provide a tighter structure when the two bodies are assembled adjacent each other. The hatched part of Figure 5 indicates the space within which the protrusions must be located in order to enable the described rotation movement of at least 180 degrees. This space is delimited between the outer surfaces 22 and the two common tangent planes 23 and 24. The two common tangent planes are tangent to both outer surfaces 22 of the first and second body.

Figure 6 shows a detailed view of the male and female members of a first body when assembled with a female and a male member of a second body as illustrated in Figure 3. According to this preferred embodiment, both the male members 14 and the female members 15 form protrusions extending outwardly from the outer surface 22 of the base portion. In addition, the male and female members are shaped in such a manner that they are to be mated to each other by sliding the male member within the female member according to a direction essentially parallel to the central axis 26 of the base portion. An advantage of this preferred embodiment is that two bodies, when assembled adjacent each other by mating the connection members to each other, are tightly connected to each other and a relatively high force will be required for pulling the two bodies apart from each other.

The shape of the male and female members also determine the degree of tightness of the assemblage. It has been found that female members 15 which are substantially C-shaped and male members 14 having a corresponding complementary shape, as illustrated in Figure 6, contribute advantageously to the degree of tightness of the assemblage. -

Figures 21 to 24 show other embodiments of male and female members, wherein the female member 15 is provided with a stopping member 39 provided for avoiding or limiting sliding of two assembled bodies with respect to each other. Assembling two bodies according to these embodiments occurs by pressing them together instead of sliding them one into another. For this purpose, at least the female members should have a sufficient degree of elasticity. The male member could have the same length as the female members without the stopping member as illustrated in Figure 21. When two bodies according to this embodiment are mated to each other, a sliding movement is hindered by the stopping members provided on each of the female members. With the embodiment of Figure 22, a sliding movement is still allowed since the male member 14 has a shorter length than the female member, but two assembled bodies can not be disassembled by a sliding movement. The shorter length of male member 14 determines the distance of the sliding movement.

Figure 23 and 24 show an alternative of the stopping member 39. According to this embodiment, the stopping member protrudes from the base portion 11 of the body , as clearly illustrated in Figure 24, in such a manner that two bodies can slide with respect to each other when a determined force is applied. Thus, according to this embodiment, sliding is hampered by the stopping member but is still possible when applying sufficient force, which is advantageous for assembling and disassembling the bodies.

It should be noted that these stopping members are not limited to be applied on bodies according to the present invention comprising both a coupling portion and a base portion, but could also be provided on any type of bodies provided to be assembled to each other.

Spacing of the male and female members also determines the degree of rigidity of the assemblage. The more the male 14 and

female 15 members are spaced apart from each other, the more rigid will be the connection. It has been found that when said male and female members are spaced according to an angle α of at least 40 degrees, a relatively rigid connection is ensured.

The angle α is defined as the angle formed by the central axis 27 of the two male members 14 with respect to the central axis 26 of the base portion.

On the other hand, the smaller the angle α, the larger the angle of rotation of the described rotation movement will be. It has been found that the angle should preferably not exceed a maximum value of 60 degrees, so as to ensure a rotation movement of more than 180 degrees. Thus a compromise must be found between an angle which is large enough for ensuring a tight connection, but not too large for enabling a rotation movement larger than 180 degrees. If it is desired to limit the rotation movement to approximately 180 degrees, then the angle α should be as large as possible, as long as the protrusions, i.e. the male and/or the female members, are located within the defined space.

In order to limit hot spots as much as possible, the thickness of the entire body should be kept limited. In a preferred embodiment, the thickness of the body, except in the neighbourhood of the connecting members, should not exceed 2 mm and in particular 1 mm. In the neighbourhood of the male and female members, the thickness should preferably not exceed 3 mm.

In the preferred embodiment of the body 10 according to Figure 2, the coupling portion 12 has a substantially cylindrical shape, which is preferably hollow for keeping the thickness of the body as limited as possible. The coupling portions could have other shapes such as for example illustrated in Figures 7 to 13. Care should be taken that the coupling portion of a body 10 rotatably fits within the cavity 25 (Figure 6) of the base portion of another body 10. For this reason, the

shape of the coupling portion is delimited within a virtual cylinder 28 having a diameter essentially equal to said substantially cylindrical shaped cavity. As illustrated in Figure 7, the coupling portion could have the shape of a polygon, in particular an octagon. Figure 8 illustrates a coupling portion in the shape of a toothed wheel. In Figures 9 to 11, the coupling portion is formed by at least two posts preferably equally spaced apart from each other. The coupling portions could also for example have the shape of at least one protuberance 30 as illustrated in Figures 12 and 13. According to a further embodiment the cavity of the base portion could be provided with coupling means which are complementary to the one of the coupling portion, so as to provide a coupling within this cavity.

The outer surface of the base portion may also have different shapes. Generally, the outer surface of the respective base portions have the shape of a polygon. A cylindrical shape is considered in the present description and the appended claims as a particular polygon having an endless number of sides. According to an alternative, the polygon could have a determined number of sides. A combination of a rounded surface with a number of plane sides is also possible, such as illustrated in Figure 14, showing a possible cross sectional view of the base portion having the shape of halve a circle and halve a polygon with 16 sides. If two such bodies are located as the second 17 and fourth 19 bodies in Figure 4. The rotation movement of those two bodies will be a stepwise rotation movement, each step being equal to 22.5 degrees (360 degrees divided by 16).

Figures 15 to 17 show examples of accessories for use in connection with the body according to the invention. In Figure 15, a coupling member 31 is shown, formed by a base plate 32, at both sides of which a post 33, 34 extends. The posts 33, 34 are provided for fitting-within the cavity of the coupling portion and have therefore a diameter

substantially equal to the internal diameter of the coupling portion according to Figure 2. This coupling member enables thus to connect a coupling portion from a first body to a coupling portion of a second body.

Figure 16 shows another example of an accessory, having the shape of a cylinder and dimensioned for fitting in the cavity of the coupling portion according to Figure 2. On top of the cylinder, an object holder 35, may be fitted in. A further object holder (not shown) provided for fitting in the coupling portion could also form an accessory.

Still another accessory is illustrated in Figure 17, wherein the posts 33 and 34 are provided on a same side of the base plate 32. These posts are provided for fitting in two coupling members placed or assembled adjacent each other. A coupling post 36, having substantially the same shape and dimension as the coupling portion of Figure 2, is applied on the other side of the base plate 32, so as to fit within the cavity of the base portion of a body 10.

In a preferred embodiment, the body according to the invention may be used as a cap for a recipient, in particular a bottle, or as a recipient itself. When used as a cap, the base portion forms then the cap to be fitted on the recipient. According to an alternative, the coupling portion forms the cap provided to be fitted on the recipient. The cavity of the cap may advantageously comprise internal threads (not shown) provided for cooperating with threads of a bottle neck. Use of the body according to the invention as a cap for a recipient provides an added value to the recipient.

In the described embodiments a cover portion 37 is provided between the base portion and the coupling portion, as illustrated in Figure 2. Alternatively, the cover portion could be provided on top of the coupling portion (not shown). It is also conceivable to provide a body without cover portion. In that case, the body could not be used as a cap for a recipient, but can still be used as a toy.

The coupling portions 12 may advantageously be provided with clamping members 38, as illustrated in Figure 2, for partially clamping the free rotation of the coupling portion in the base portion of another body. According to a preferred embodiment, the clamping members could have a height which is approximately a halve of the coupling portion's height, as illustrated in Figure 18. With this embodiment, the user can choose between a clamped position whereby the coupling portion of the body is totally inserted in the base portion of another body. A loose position is obtained when only the top halve portion of the coupling portion is inserted in the base portion of another body. The clamping members can have the shape as illustrated in figures 2 and 18. According to another embodiment, the clamping members have an extended shape, as illustrated in Figure 19. Figure 20 shows several alternatives as to the height of the clamping members: they can be higher than the level of the coupling portion (Figure 20a), at the same level (Figure 20b) or lower (Figure 20c).

Two bodies, in particular bottle caps, according to the invention, which are assembled adjacent each other, as illustrated in Figure 2, form a building "brick". A plurality of such bricks may be assembled in different ways and still enable a rotation movement of one brick with respect to the other bodies or bricks. In such a manner, rounded wall structures may easily be formed by building a flat wall construction and rotating subsequently the bricks with respect to each other.

When used as a toy or building block, it forms thus an added value to the cap and contributes, due to its recuperation properties, to the preservation of the environment. Existing moulds for conventional caps may easily be adapted for moulding a body according to the invention instead of a conventional cap.

In the present description, a number of alternatives for the body according to the invention have been presented. It will be clear that when making a construction with bodies according to the invention, a combination of different bodies may be used, provided they may be mated to each other.

Figures 25 is a top view on an alternative embodiment of two bodies according to the invention. The coupling portion 12 is cylindrical. The base portion 11 is squared within the space as defined according to figure 5 and cylindrical outside said space. In Figure 26, a further embodiment is shown, wherein the base portion 11 is squared both within and outside the defined space. The bodies according to these alternatives do not allow stepwise rotation relative to each other, but allow a large number of configurations. Nevertheless they remain compatible with the other embodiments.

Two bodies according to Figure 2 can be mated with each other through the intermediary of one or several connection bodies according to Figure 27. This allows to form an elongated brick consisting of three or more bodies. Squared shaped connection bodies may be provided in connection with the bodies according to Figures 25 and 26.

As illustrated in Figure 28, the base portion may have a corrugated shape, facilitating gripping of the body, enhancing the thermal isolation and allowing to position the bodies with respect to each other at the desired angle.

Figures 29 to 32 show a double shaped toy set or building block according to the present invention. The body 50 comprises two coupling portions 52 adjacent to each other. In the embodiment of figure 30 the base portion forms two separate containers 51a and 51b whereas in figure 29 only a single container 53 is formed. The upper border of the base portion is bend near the mid-section 54 in order to reinforce the border and enable a positioning of a further body.

Figures 33 and 34 show an embodiment of a toy set or building block according to the invention wherein a coupling ring 55 is applied within the base portion 11. As shown in figure 34 the coupling ring couples two bodies through mating their base portions 11, in order to form a closed container or a box. This coupling ring can be used as a support for an encryption, thus showing the upper side of the container.

LIST OF REFERENCES

PRIOR ART (Figure 1)

1	first body
2	second body
3	third body
4	fourth body
5	detent
6	indent
7, 8	indents

INVENTION (Figures 2 to 34)

10	body
11	base portion
12	coupling portion
13	external diameter
14	male member
15	female member
16	first body
17	second body
18	third body
19	fourth body
20	fifth body
21	arrows
22	outer surface base portion
23	common tangent plane
24	common tangent plane
25	cavity
26	central axis of the base portion

27 central axis male member
28 virtual cylinder
29 post
30 protuberance
31 coupling member
32 base plate
33, 34 posts
35 object holder
36 coupling post
37 cover portion
38 clamping members
39 stopping member
50 body
51(a+b) containers
52 coupling portion
54 mid-section
55 coupling ring

CLAIMS

1. A toy set comprising at least a first, second, third and fourth body, each body being substantially equally dimensioned, wherein:

- each of said bodies comprises a coupling portion applied on a base portion,
- each base portion has an outer surface delimiting a substantially cylindrical shaped cavity,
- said first and second bodies are provided for being stacked upon each other, wherein said coupling portion of said first body rotatably fits within said cavity of said second body,
- said third and fourth bodies are provided for being stacked upon each other, wherein said coupling portion of said third body rotatably fits within said cavity of said fourth body,
- each of said bodies further comprises at least a connecting member, wherein at least one of said connecting members forms a protrusion extending outwardly from said outer surface,
- said first and third bodies are provided for being assembled adjacent each other, wherein said connecting member of said first body fits within said connecting member of said third body, and
- said second and fourth bodies are provided for being assembled adjacent each other, wherein said connecting member of said second body fits within said connecting member of said fourth body,

characterised in that

- each protrusion of said first and third bodies is only located within a space delimited, when said first and third bodies are assembled adjacent each other, by said outer surfaces of the first and third bodies and two common tangent planes, each of said common tangent planes being tangent to both of said outer surfaces of said first and third bodies, and

- each protrusion of said second and fourth bodies is only located within a space delimited, when said second and fourth bodies are assembled adjacent each other, between said outer surfaces of the second and fourth bodies and between two common tangent planes, each of said common tangent planes being tangent to both of said outer surfaces of said second and fourth bodies.

2. A toy set according to claim 1, wherein said outer surface is substantially polygonal at least outside said space and comprises at least three sides outside said space.

3. A toy set according to claim 1 or 2, wherein :

- each connecting member comprises a male member and a female member,
- in each connecting member at least one of said male and female members from said protrusion extends outwardly from said outer surface and
- when two of said bodies are assembled adjacent each other, said male member from one of the bodies is provided for mating within said female member of the other body and said female member of the one body is provided for mating within said male member of the other body.

4. A toy set according to claim 3, wherein both said male and female members form said protrusion extending outwardly from said outer surface and said male and female members of one of the bodies are provided for being slidably mated with said female and male members of another of said bodies.

5. A toy set according to claim 3, wherein said female member is provided with a stopping member.

6. A toy set according to any one of the preceding claims, wherein said outer surface comprises outside said space at least eight sides.

7. A toy set according to any one of the preceding claims, wherein said outer surface is essentially cylindrical.

8. A toy set according to any one of the preceding claims, wherein said male and female members are located on said outer surface within a segment not larger than 60 degrees of said outer surface.

9. A toy set according to any one of the preceding claims, wherein said male and female members are located on said outer surface on a segment of at least 40 degrees of said outer surface.

10. A body according to any one of the preceding claims for use in a toy set.

11. A body according to claim 10, further comprising a cover portion between said base portion and said coupling portion.

12. A body according to claim 10, further comprising a cover portion on top of said coupling portion.

13. A body according to claim 10 or 11, wherein said coupling portion is hollow.

14. A body according to any one of the claims 10 to 13, wherein said coupling portion of each of said body comprises clamping members extending outwardly from said coupling portion, and preferably equally spaced apart on the outer surface of the coupling portion.

15. A body according to any one of the claims 10 to 14, wherein said coupling portion is formed by at least two posts, said posts extending essentially parallel to said outer surface and being delimited within a virtual cylinder having a diameter essentially equal to said substantially cylindrical shaped cavity.

16. A body according to any one of the claims 10 to 14, wherein said coupling portion is formed by at least one elongated protuberance, said protuberances extending essentially parallel to said

outer surface and being delimited within a virtual cylinder having a diameter essentially equal to said substantially cylindrical shaped cavity.

17. Use of a body according to any one of the claims 10 to 16 as a cap for a recipient.

18. Use of a body according to claim 17, wherein said substantially cylindrical shaped cavity comprises internal threads provided for cooperating with external threads on said recipient.

19. Use of a body according to any one of the claims 10 to 16 as a recipient.

20. A building block comprising at least a first, second, third and fourth body, each body being substantially equally dimensioned, wherein:

- each of said bodies comprises a coupling portion applied on a base portion,
- each base portion has an outer surface delimiting a substantially cylindrical shaped cavity,
- said first and second bodies are provided for being stacked upon each other, wherein said coupling portion of said first body rotatably fits within said cavity of said second body,
- said third and fourth bodies are provided for being stacked upon each other, wherein said coupling portion of said third body rotatably fits within said cavity of said fourth body,
- each of said bodies further comprises at least a connecting member, wherein at least one of said connecting members forms a protrusion extending outwardly from said outer surface,
- said first and third bodies are provided for being assembled adjacent each other, wherein said connecting member of said first body fits within said connecting member of said third body, and

- said second and fourth bodies are provided for being assembled adjacent each other, wherein said connecting member of said second body fits within said connecting member of said fourth body,

characterised in that

- each protrusion of said first and third bodies is only located within a space delimited, when said first and third bodies are assembled adjacent each other, by said outer surfaces of the first and third bodies and two common tangent planes, each of said common tangent planes being tangent to both of said outer surfaces of said first and third bodies, and
- each protrusion of said second and fourth bodies is only located within a space delimited, when said second and fourth bodies are assembled adjacent each other, between said outer surfaces of the second and fourth bodies and between two common tangent planes, each of said common tangent planes being tangent to both of said outer surfaces of said second and fourth bodies.

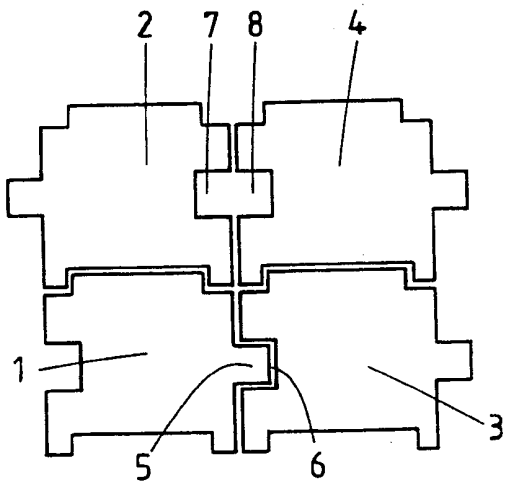


Fig. 1 (PRIOR ART)

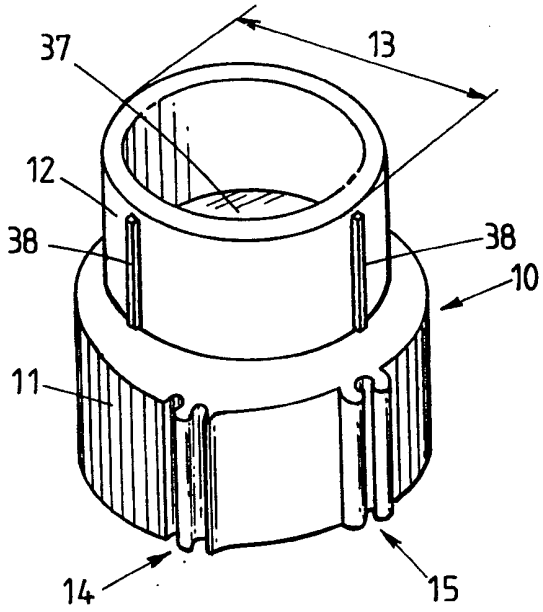


Fig. 2

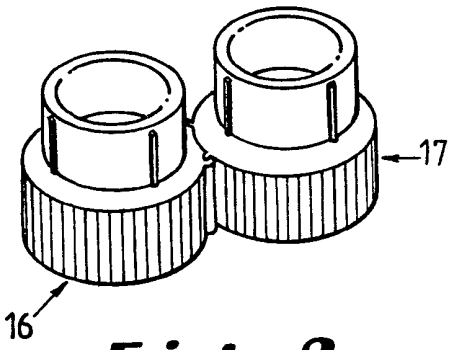


Fig. 3

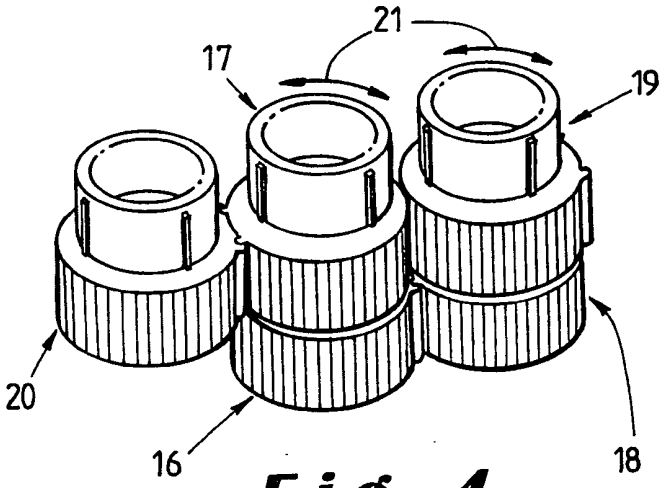


Fig. 4

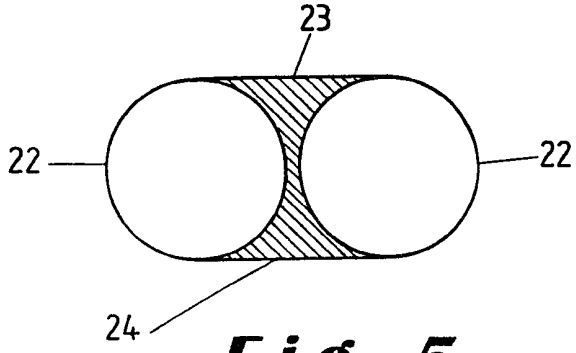
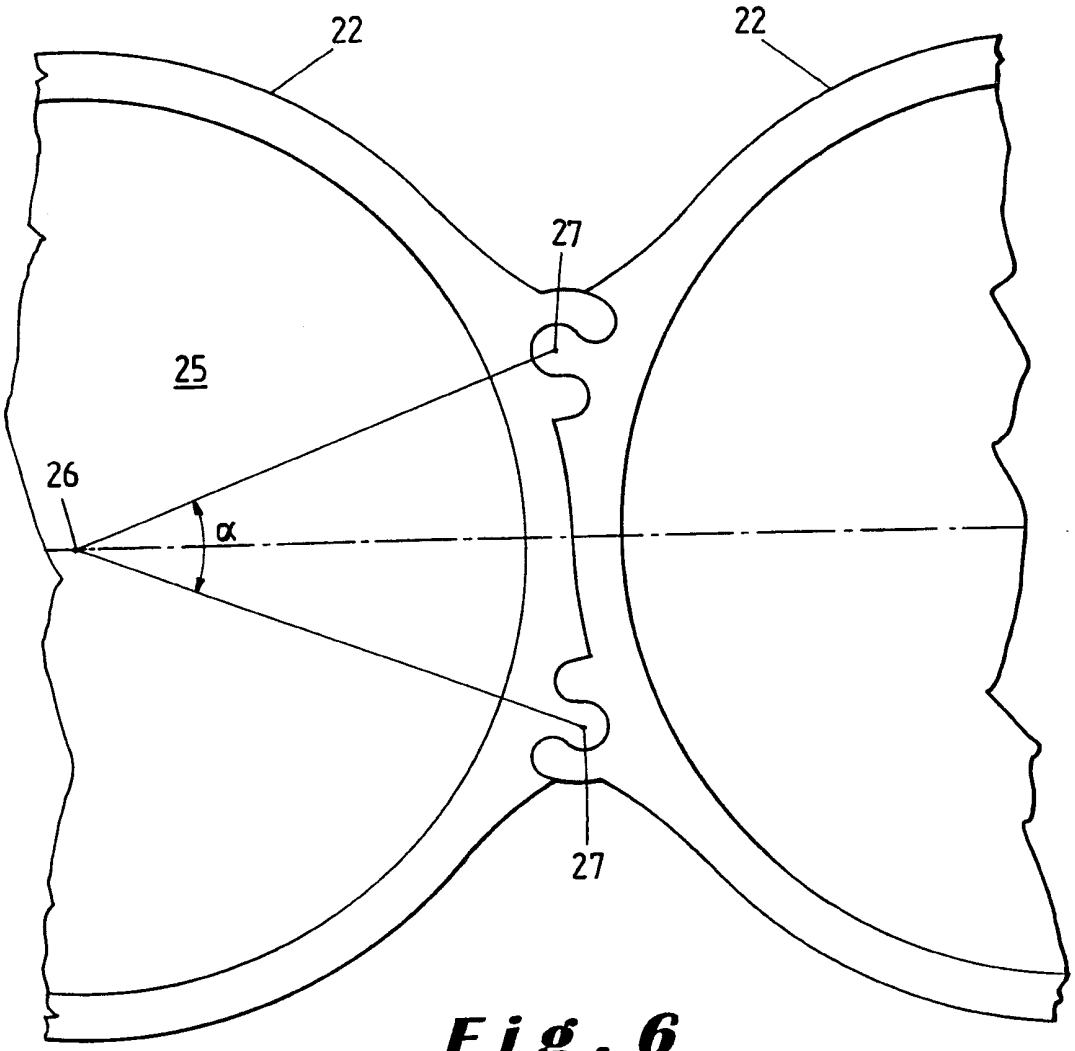


Fig. 5



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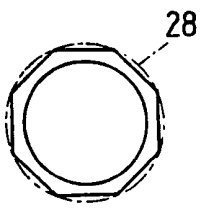
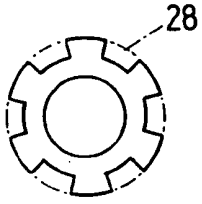


Fig. 7



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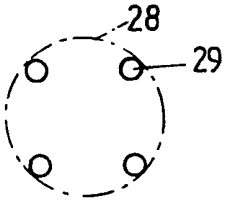

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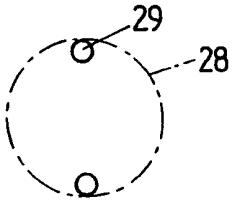
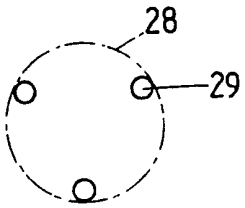


Fig. 10



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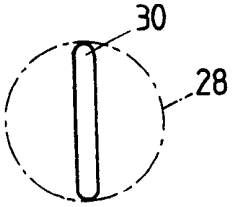

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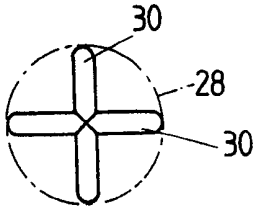


Fig. 13

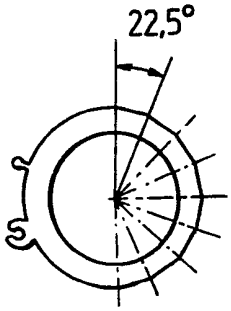


Fig. 14

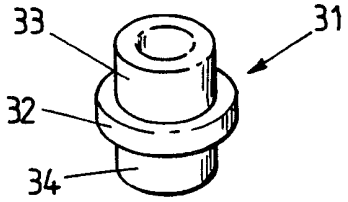
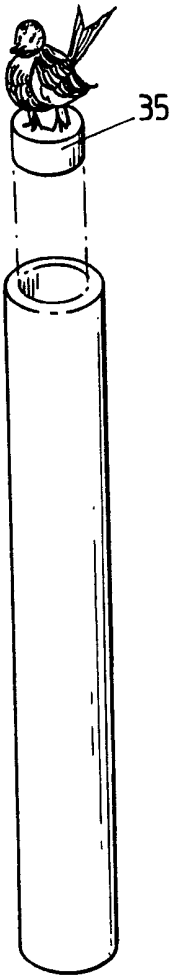


Fig. 15



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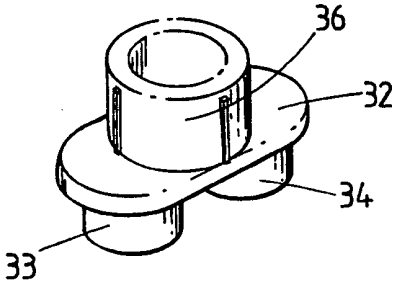
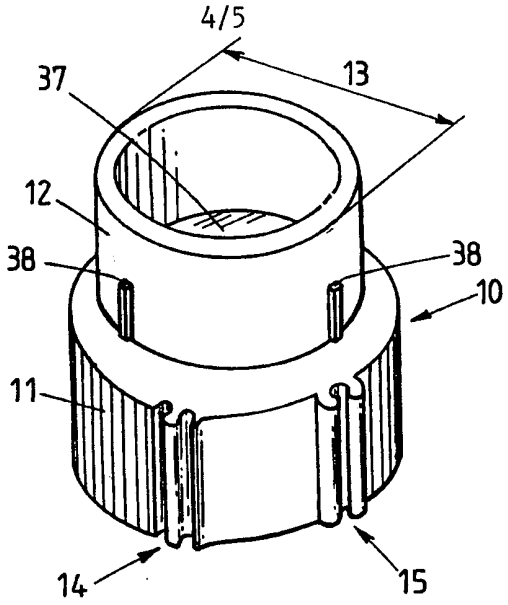


Fig. 17



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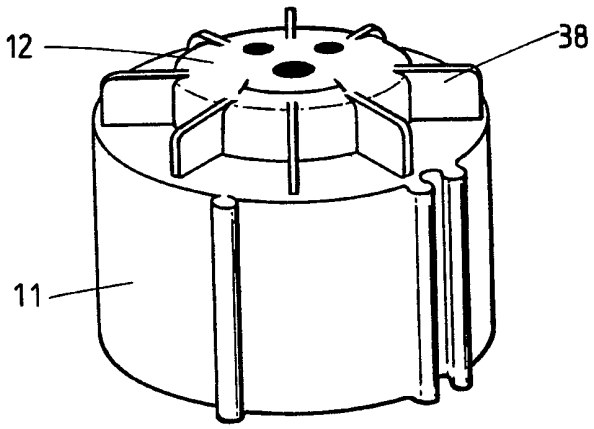

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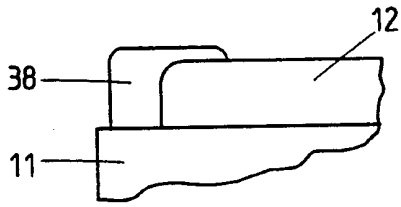


Fig. 20 a

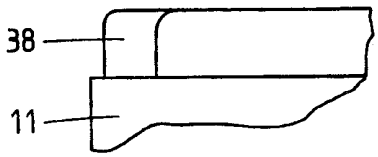


Fig. 20 b

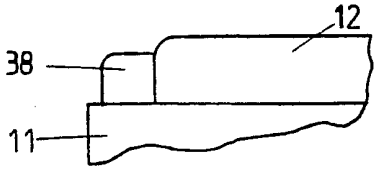
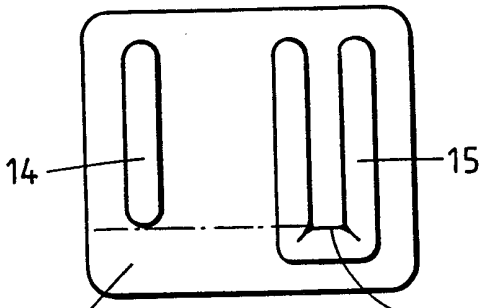


Fig. 20 c



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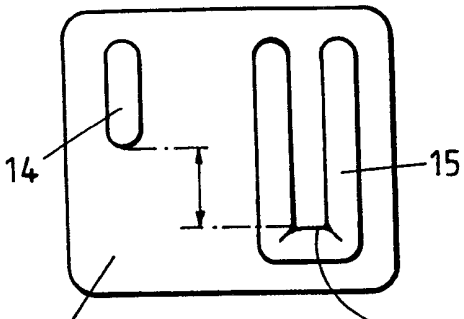

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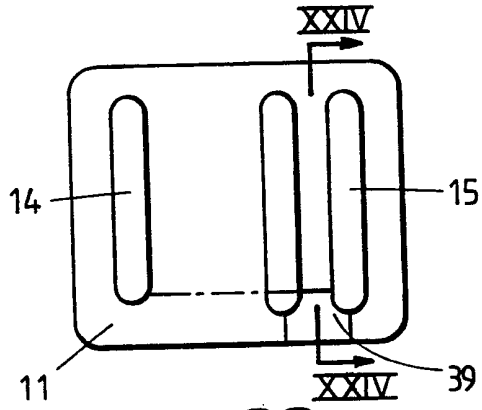

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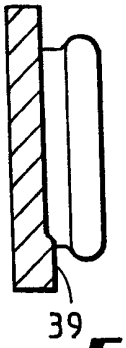

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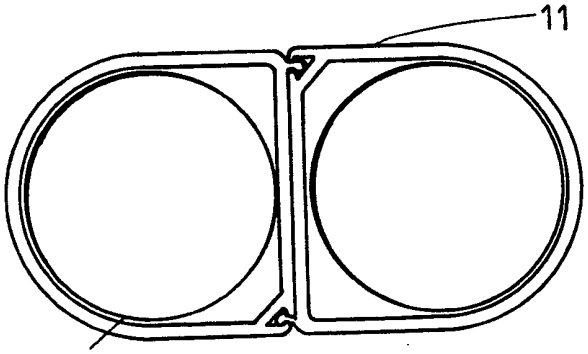

Fig. 25

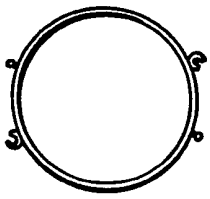

Fig. 27

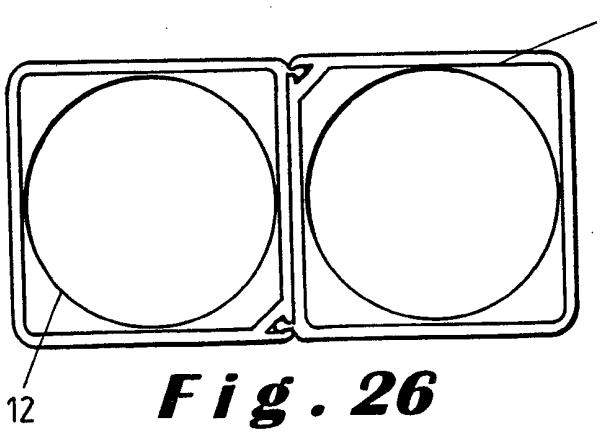

Fig. 26

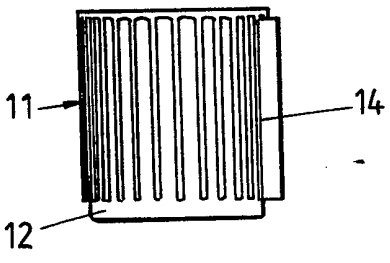

Fig. 28

INTERNATIONAL SEARCH REPORT

.ernational Application No
PCT/BE 99/00039

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A63H33/08 B65D81/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A63H B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 16 07 861 A (GLOWICKI) 5 February 1970 (1970-02-05) the whole document ---	1-4,7, 10-14, 16,17, 19,20
A	US 5 361 919 A (HULL) 8 November 1994 (1994-11-08) cited in the application the whole document -----	1-3,10, 17,18,20

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
26 July 1999	02/08/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Vanrunxt, J

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/BE 99/00039

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 1607861 A	05-02-1970	NONE	
US 5361919 A	08-11-1994	NONE	