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(54) **Waste container with manually operated secondary lids**

(57) The invention relates to a waste container (1) for mechanical waste collection, which has a manually and mechanically openable main lid (2) equipped with at least one and preferably a pair of manually operated secondary lids (4), one at each side thereof, through which litter or waste bags are discharged into the container without opening the main lid itself, which remains closed and is mainly used during mechanical waste collection. The user may therefore discharge litter and/or

waste bags into the waste container without having to leave the pavement, thereby avoiding exposure to dangers associated with the opening/closing operation being conducted from the roadside, by merely opening the manually operated secondary lids whilst standing at the sides or at the rear of the container, without having to open the relatively heavy main lid and consequently be exposed to the bulk of the waste inside the container and undesirable odors deriving therefrom.

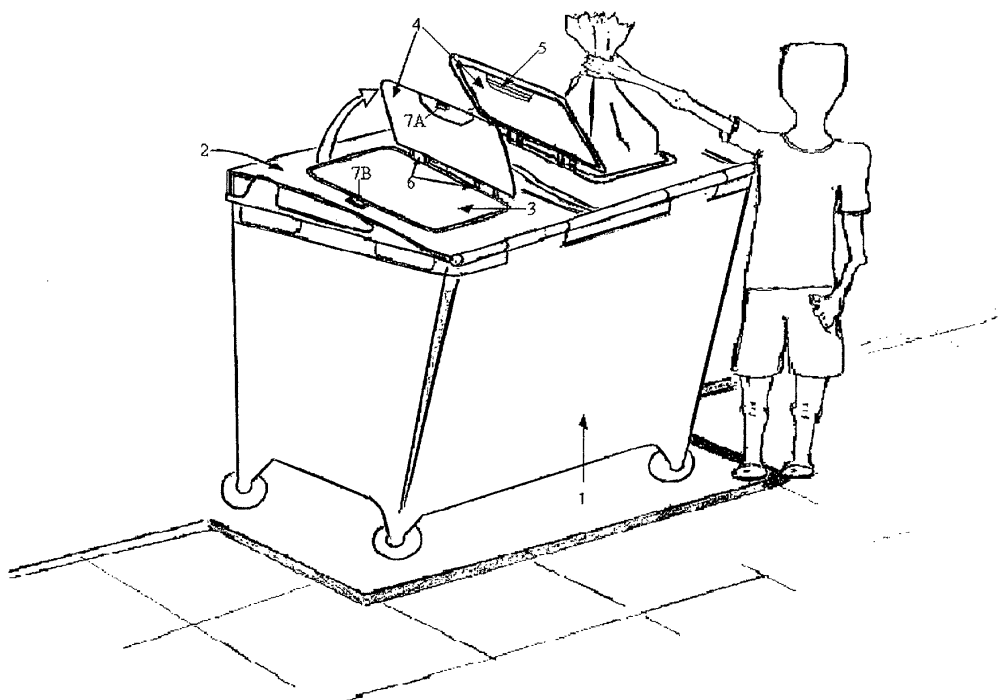


Figure 2

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Description

[0001] The invention relates to a waste container for mechanical waste collection, which has an openable lid equipped with at least one manually operated gate.

[0002] The waste containers of the prior art have a single lid, which practically opens only from one side and towards one direction.

[0003] There are two conventionally known ways of manually opening the lid of the already known waste containers; one way, applied in the domed lids of curved configuration operating by a swing type process, is pushing open the lid from the frontal side towards the rear side thereof and subsequently releasing the same and letting it return to closed condition, by means of swinging arms equipped with resilient spring means acting thereupon; another way, applied in substantially flat lids, is rotatably opening the lid from the frontal towards the rear side thereof, rotation being effected due to its pivotal connection at the rear side with hinges.

[0004] The waste container is normally oriented so as to expose a frontal openable side adapted to perform the above opening operation always at the roadside. The opening of such a container necessitates muscular power, whatever the material of the waste container or the lid may be. Furthermore, having opened the lid, the user is confronted with the undesirable bulk of waste.

[0005] The closing movement of the lid of the waste container is also quite inconvenient, not only because of the weight of the lid and the height of its handle, when it is open, but also because of the excessive volume of the waste that might hamper the closing of the lid, especially when the domed lid of the swing type opening process is employed.

[0006] Furthermore, due to the weight of the lid, repeated usage may result in malfunctioning of the hinges thereof in pivotally connected lids, or in the deterioration of the resilient springs and/or malfunctioning of the swinging arms thereof due to waste accumulated therein in swing type lids. Accordingly, the waste container is often left open, offensive odors spread out and an environmentally undesirable situation is created. Moreover, even when the springs in swing type openable lids are functioning properly, the user is exposed to possible accidents due to the return speed of the lid, such danger being particularly aggravated with respect to children, who might be fatally injured even during "playing" with such a container.

[0007] It is the object of the invention to effectively overcome drawbacks of the prior art and provide a waste container with a manually and mechanically openable lid, that is equipped with manually operated gates through which litter or waste bags are discharged into the container without opening the lid itself, which remains closed and is mainly used during mechanical waste collection.

[0008] It is a particularly advantageous object of the invention to allow the user to discharge litter and/or

waste bags into the waste container without having to leave the pavement, by merely opening the manually operated gates whilst standing at the sides or at the rear of the container, without having to open the lid by standing at the frontal openable side of the waste container normally oriented at the roadside and thereby avoid being exposed to dangers associated with the opening/closing operation being conducted from the roadside.

[0009] It is a further object of the invention to limit, through usage of the relatively small manually operated gates, exposure of the user to the bulk of the waste inside the container and undesirable odors deriving therefrom, thereby ensuring optimum hygienic conditions for both the user and the surroundings.

[0010] It is a further object of the invention to substantially reduce, through usage of the relatively small manually operated gates, the muscular power and body structure requirements for the opening / closing operation, thereby enabling children, elders and other disabled persons to use this waste container, whilst usage of the proposed container is easier, the risk of injuries is eliminated and children safety is enhanced even during children "playing" with the otherwise dangerous container of the swing type opening process.

[0011] Another object of the invention is to adapt the proposed waste container for usage with the already known mechanical waste collection systems and washers, since the design of the lid does not require any change on these systems.

[0012] Fig. 1 shows a rear perspective view of the waste container of the invention, with its basic parts, i. e. the generally rectangular housing, the lid and the manually operated gates.

[0013] Fig. 2 shows the same view of the waste container, as in Fig. 1, whilst a child is disposing of a household waste bag.

[0014] Fig. 3 shows a planar view of the top of the lid with the openings, whereupon the gates are mounted.

[0015] Fig. 4 shows a planar top view of a manually operated gate.

[0016] The waste container depicted in the drawings comprises a generally rectangular housing 1 with a pair of relatively longer sides and a pair of relatively shorter sides, a closed bottom end and an open upper end whereupon is rotatably mounted a correspondingly generally rectangular and substantially flat, manually and mechanically openable lid 2. It is also possible that a domed lid of curved configuration is employed and still be considered as "a generally rectangular lid".

[0017] In accordance with the invention at least one and preferably a pair of openings 3 (Fig. 3) are provided on the lid 2, whereupon manually operated gates 4 of the same size are correspondingly symmetrically mounted. It is also possible that a different number of gates 4, of different size and of different, non-symmetrical arrangement on the lid may be employed.

[0018] The basic parts of the waste container (housing, lid, gates, etc.) are independently injection moulded

plastic cast blocks. Polyethylene of high molecular weight with stabilizers against polymerization from infrareds is preferably used.

[0019] In this way, the lid 2 of the waste container embodies the openings 3 for the respective desired number of gates 4 right from the beginning, without changing its compact form. Thus, the unified lid, i.e. the lid 2 with the gates 4 mounted thereupon, remains stable without warping, which would be detrimental to its durability and utility after a period of time. Any of the parts of the container may alternatively be made from steel or other metal.

[0020] The gates 4 are mounted onto the corresponding openings 3 of the lid 2 of the waste container, each gate being provided with a handle means 5 and an arrangement of hinges 6, arranged in such a way that each handle means 5 is located at the proximity of each one of the relatively shorter sides of the container, whereas each one of the arrangement of hinges 6 is located transversely along the lid 2 and close to the middle thereof, so that the opening/closing operation of the gates 4 may be handily practiced with a pulling upwards and pushing downwards operation respectively, whilst the user stands at the sides or the rear of the waste container, opening operation being effected through rotation of the gate in the direction of the arrows (Fig. 1 or 2) towards the middle of the container.

[0021] The handle means 5 of each one of the gates 4 incorporates the male portion 7A and the rim of the corresponding opening 3 of the lid incorporates the female receiving portion 7B of a simple snapping mechanism, selected from a variety of snapping mechanisms known in the prior art, the said mechanism allowing safe closing and handy opening of the gate, without special muscular requirements. For opening the manually operated gate 4, the user only has to pull the handle means 5, whereby the snapping mechanism opens as the male portion 7A is disengaged from the female receiving portion 7B thereof. However the snapping mechanism allows mechanical opening operation of the lid 2 without the snapping mechanism being opened, thereby whilst the manually operated gates 4 are maintained at a closed condition.

Claims

1. Waste container for mechanical waste collection, comprising a generally rectangular housing (1) with a pair of relatively longer sides and a pair of relatively shorter sides, a closed bottom end and an open upper end, a generally rectangular lid (2) being mounted onto said open upper end, the container being normally oriented so as to expose a frontal openable side of said lid (2) at the roadside to facilitate gripping and emptying contents thereof during a mechanical waste collection operation, said waste container being **characterized by** that a pair

of openings (3) are provided onto said lid (2), a pair of manually operated gates (4) being rotatably mounted onto said pair of openings (3) of said lid (2), each one of said manually operated gates (4) being provided with a handle means (5) and an arrangement of hinges (6), each one of said handle means (5) being located at the proximity of each one of the relatively shorter sides of said container and each one of said arrangement of hinges (6) being located transversely along said lid (2) and close to the middle thereof, allowing opening/closing operation of said manually operated gates (4) with a pulling upwards and pushing downwards operation respectively and rotation thereof towards the middle of the container, whilst the user is preferably standing at the sides or at the rear of the waste container without being exposed to dangers associated with opening/closing operation being conducted from the roadside.

2. Waste container for mechanical waste collection as claimed in above claim 1, wherein any number of gates (4), of identical or different size and of symmetrical or non-symmetrical arrangement on the surface of said lid (2) is employed, said gates (4) being mounted onto correspondingly formed openings (3) on the surface of said lid (2).

3. Waste container for mechanical waste collection as claimed in above claim 1, said handle means (5) of each one of said manually operated gates (4) incorporating a male portion (7A) and the rim of the corresponding opening (3) of the lid incorporating a female receiving portion (7B) of a snapping mechanism, said mechanism allowing safe closing and handy opening of said gate (4), wherein manual opening of said gate (4) is effected by merely pulling said handle means (5) upwards, whereby said snapping mechanism opens as said male portion (7A) is disengaged from said female receiving portion (7B) thereof and manual closing of said gate (4) is effected by merely pushing said handle means (5) downwards, whereby said snapping mechanism closes as said male portion (7A) is engaged into said female receiving portion (7B) thereof, and wherein said snapping mechanism allows mechanical opening operation of the lid (2) without the snapping mechanism being opened, thereby whilst the manually operated gates (4) are maintained at a closed condition.

4. Waste container for mechanical waste collection as claimed in above claim 1, wherein anyone or each one of said housing (1), lid (2), gates (3) can be selectively manufactured either from independently injection moulded plastic cast blocks or from steel or other metal.

5. Waste container for mechanical waste collection as claimed in above claim 1, said waste container being provided for usage with the already known mechanical waste collection systems and washers without necessitating any modification thereof.

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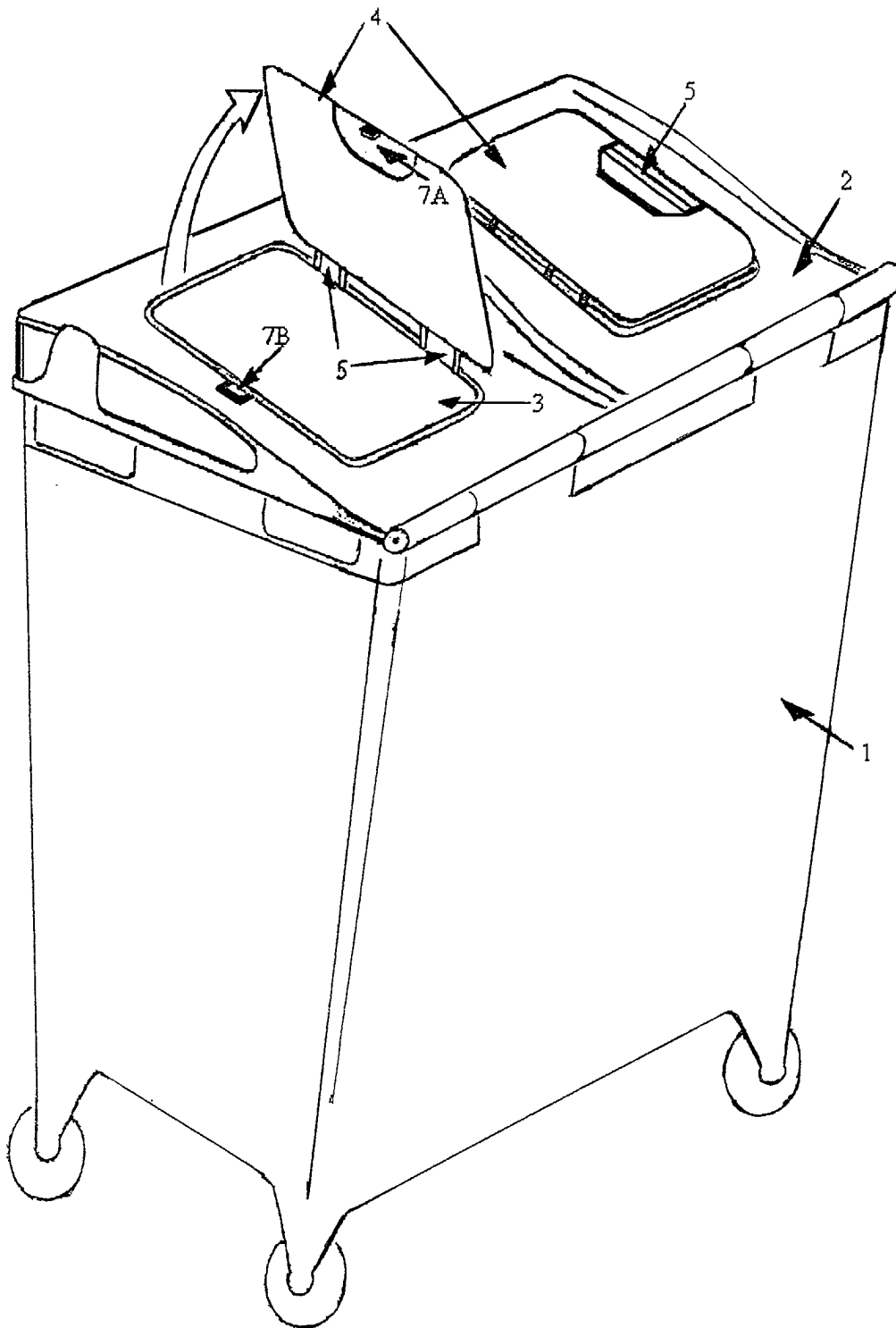


Figure 1

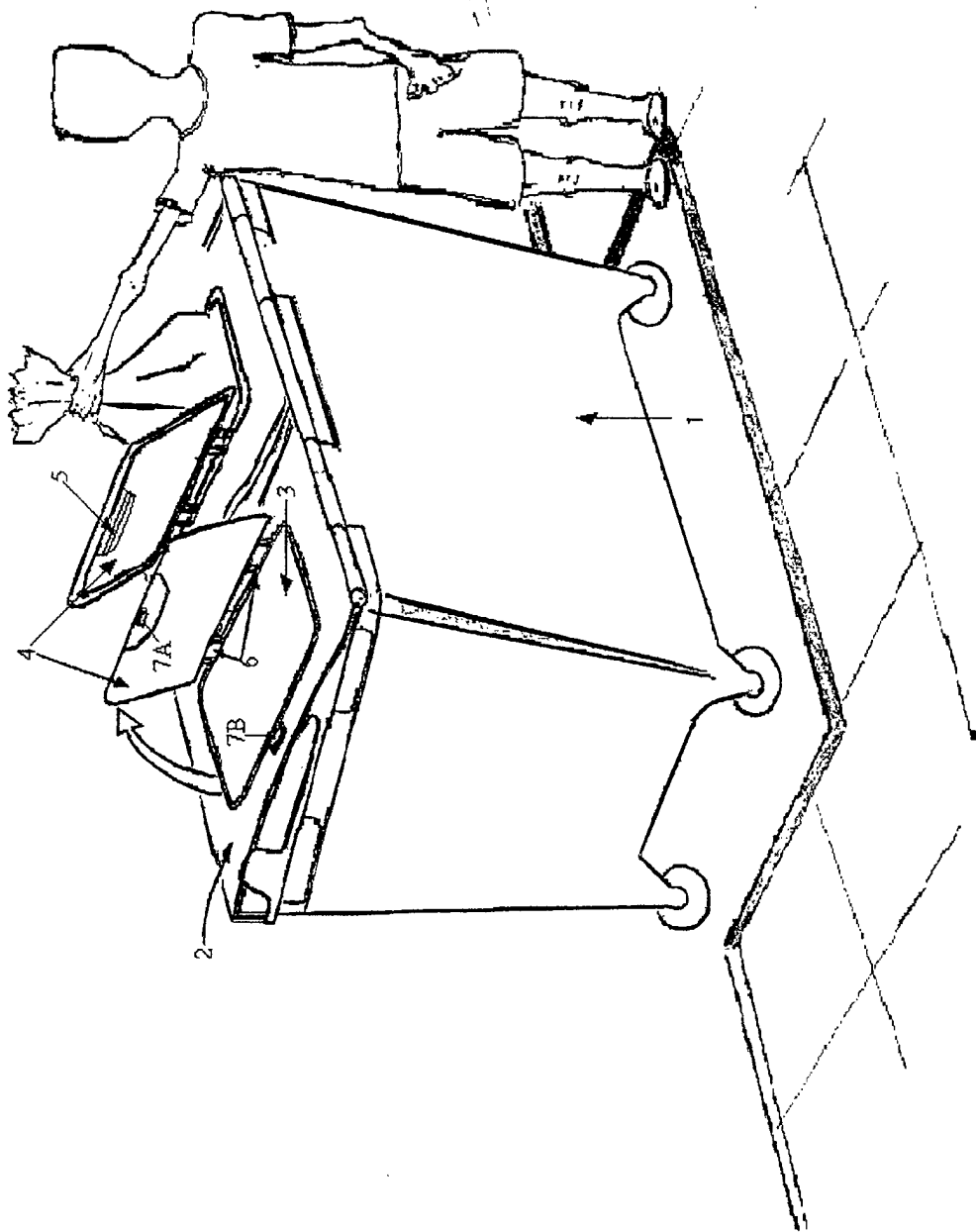


Figure 2

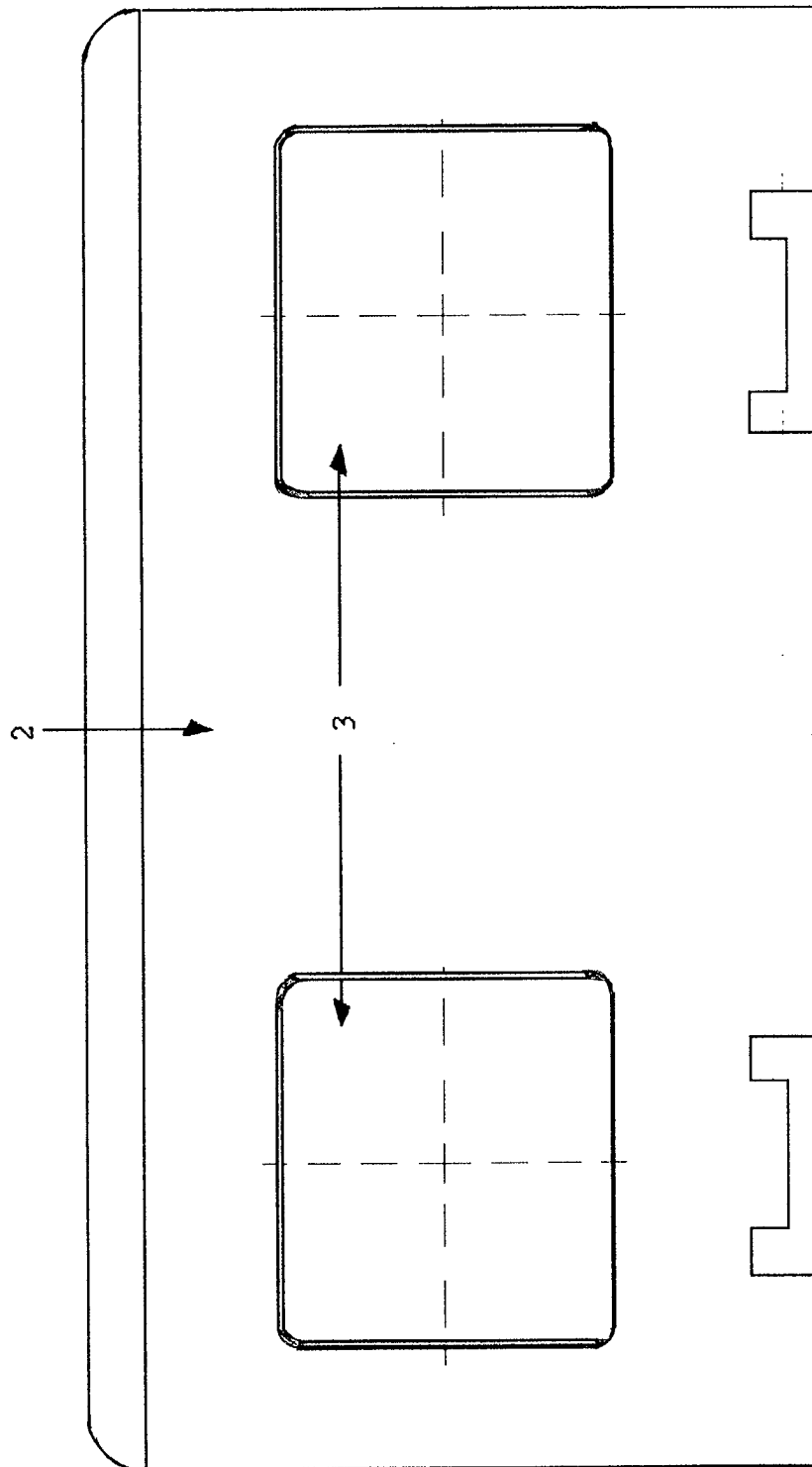


Figure 3

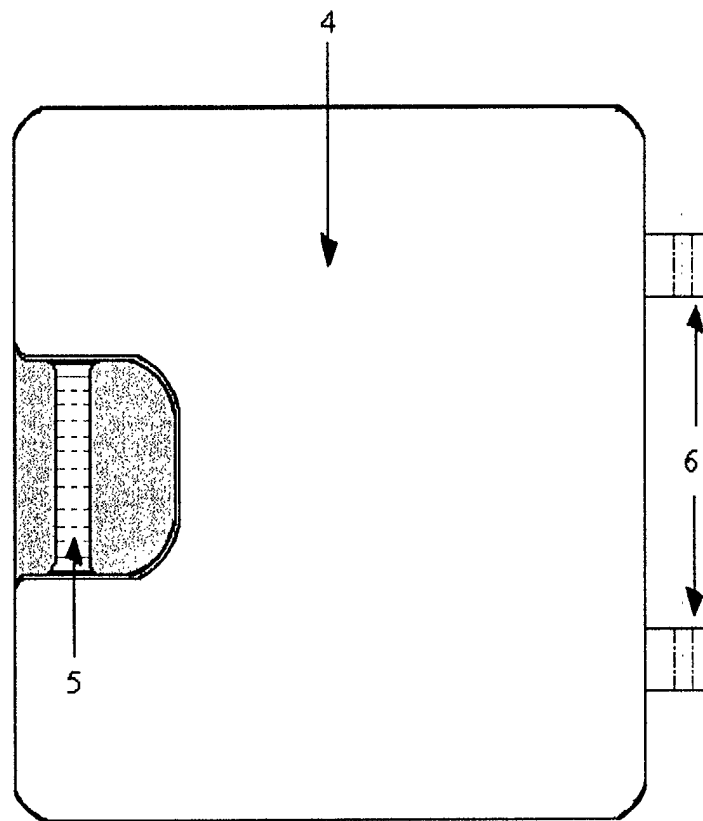


Figure 4



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EUROPEAN SEARCH REPORT

Application Number
EP 02 38 6009

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	The present search report has been drawn up for all claims		
Place of search THE HAGUE		Date of completion of the search 30 September 2002	Examiner Smolders, R
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 38 6009

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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