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(71) Applicant: **Contenur Espana, S.L.**
28906 Getafe (Madrid) (ES)

(72) Inventor: **De la Serna Jimenez, José Antonio**
28906 Getafe (Madrid) (ES)

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(74) Representative: **Gonzalez Palmero, Fé**
Calle Sagasta, 4
28004 Madrid (ES)

(54) **Sound dampener for container lids**

(57) The invention has the object, as indicated in the title, of a sound dampener for container lids (1), especially those used to collect urban waste. Said dampener has the function of preventing the noise pollution caused

by the opening and abrupt closing of the lids of said containers. Said dampener is materialised in the type of strip (3) forming a single piece with the lid, whose strip is produced with the same material of the latter and during the injection moulding phase thereof.

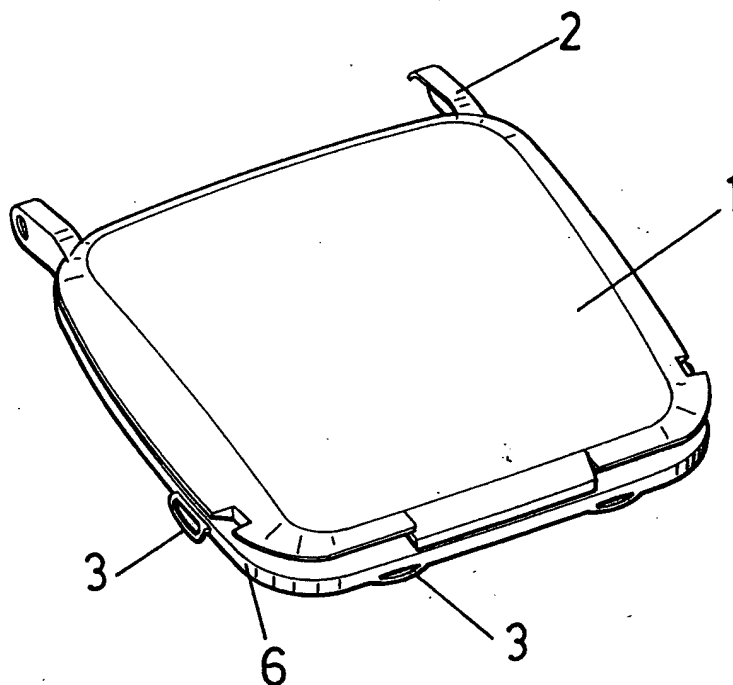


FIG.1

EP 1 584 576 A1

Description

OBJECT OF THE INVENTION

[0001] The present invention, relates to a sound dampener device, which has been especially conceived for lids of bins and containers, especially those used in the field of the urban waste collection, provided with a container body to which the complementary closing lid is suitably hinged.

[0002] The object of the invention is to achieve that, when the lid closes abruptly, the noise pollution effect caused by the impact between both elements is substantially dampened or minimised.

BACKGROUND OF THE INVENTION

[0003] In the aforementioned type of containers, both when the waste is deposited therein, and when they are subsequently emptied into the refuse collection vehicles, the lid normally abruptly hits against the opening of the body, being a very noisy manoeuvre, with considerable noise pollution, whose effects are increased when the manoeuvre is performed in the silence of the night.

[0004] To try to get round this problem, providing the lids of this type of containers with a dampening device is known, in some cases metal springs and in others rubber blocks, solutions which are largely unsatisfactory, due to the greater or lesser structural complexity of the dampening device, with the consequent negative impact on costs, or the little durability of said elements.

DESCRIPTION OF THE INVENTION

[0005] The sound dampener proposed by the invention resolves in a fully satisfactorily manner the aforementioned problem, being a solution of maximum structural simplicity and minimum cost, which offers optimal functional features, which are maintained with time.

[0006] To do this, and more specifically, said dampener is materialized in a type of strip forming a single piece with the lid, i.e. produced on the plastic material of the latter and during the injection moulding phase thereof, a strip materialized in an arc with reduced section, which protrudes below with respect to the support line of the lid on the container body opening, which is repeated and distributed on suitably distributed points to boost the dampening effect and which may be included in the plane corresponding to the edge of the lid, or positioned immediately outside or inside said plane.

[0007] In any case, during the lid-closing manoeuvre, it hits against the opening of the container body via the midpoint of each one of said arcs or strips, causing an elastic deformation therein which dampens the impact and which, consequently, also dampens the noise pollution.

DESCRIPTION OF THE DRAWINGS

[0008] To complement the description being provided and with the aim of helping towards a better understanding of the characteristics of the invention, in accordance with a preferred example of practical embodiment thereof, a set of drawings is attached, being an integral part of said description, wherein the following is represented with an illustrative, non-limiting character.

Figure 1. It shows, according to a perspective view, a conventional container lid, provided with the sound dampener object of the invention, in accordance with a first variant of embodiment thereof, wherein the lid incorporates a pair of dampeners, and they are positioned outside the imaginary plane corresponding to the support edge thereof.

Figure 2. It shows an enlargement, also in perspective, of the above figure, at the level of said dampener.

Figure 3. It shows a perspective close-up of a lid for a container also provided with the dampener of the invention, but wherein the dampeners are positioned on the plane corresponding to the edge of the lid.

Figure 4. It shows, finally, another perspective close-up of a container lid, in this case on its inner side and corresponding to the third variant of embodiment, i.e. to that wherein the dampener is positioned inside the plane corresponding to the edge of the lid.

PREFERRED EMBODIMENT OF THE INVENTION

[0009] In view of said figures, it can be observed how the sound dampener proposed by the invention, which can be repeated as many times as desired throughout the contour of the lid (1), but logically opposite its hinging means (2) to the body, not represented in the drawings, is materialized in a strip (3), produced as a single piece with the lid (1), i.e. from the material of the latter and integrated therein.

[0010] Said strip (3) consists of a type of arc of reduced section, with convexity oriented towards the container body, for which purpose, a window (4) is formed immediately thereabove, which permits elastic deformation, said strip (3) being connected to a bent external side projection (5) of the lid (1), as in the example of embodiment shown in figures 1 and 2, and can be integrated in the lid edge plane (6), as in the case of figure 3, wherein the window (4) is boosted by a small curve concave notch (7) of the edge (6), or can be positioned within said edge (6) of the lid, as in the case of figure 4, wherein it is established on an internal reinforcement or thickening (8), rigidized by means of a rib (9), in this case the window (4) consisting of a groove parallel to the strip or arc (3).

[0011] Evidently, the solutions shown in the figures are only some of the possibilities existing to that effect, obvious for someone skilled in the art, all of them having the common denominator of the existence of said strip (3) in the form of an arc, forming a single piece with the lid (1) and able to deform elastically, absorbing the impact, when this occurs. 5

Claims 10

1. Sound dampener for container lids, which, having the aim of absorbing or dampening the noise generated by the lid hitting against the container body, in the closing manoeuvre thereof, is **characterized in that** it consists of a type of strip by way of an arc, with convexity oriented towards the container body, forming a single piece with the lid and which appreciably protrudes with respect to the lower support edge of said lid with respect to the container body, said arc having a sufficiently reduced section to permit it elastically deforming on impact. 15 20
2. Sound dampener for container lids, according to claim 1, **characterized in that** said strip or arc is positioned in a plurality of suitably distributed points on the lid, opposite its hinging edge. 25
3. Sound dampener for container lids, according to preceding claims, **characterized in that** a groove or window is established immediately above said arc which permits the elastic deformation thereof upon impact. 30
4. Sound dampener for container lids, according to preceding claims, **characterized in that** said arc or strip is outwardly out of step with respect to the imaginary plane corresponding to the lid edge. 35
5. Sound dampener for container lids, according to claims 1 to 3, **characterized in that** said arc or strip is included in the plane corresponding to the lid edge. 40
6. Sound dampener for container lids, according to claims 1 to 3, **characterized in that** said strip or arc is positioned within the imaginary plane corresponding to the lid edge. 45

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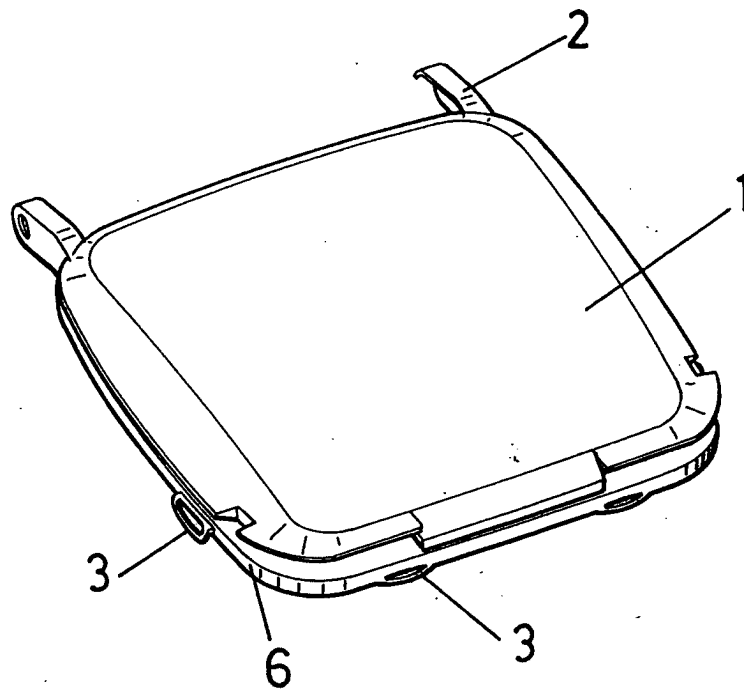


FIG. 1

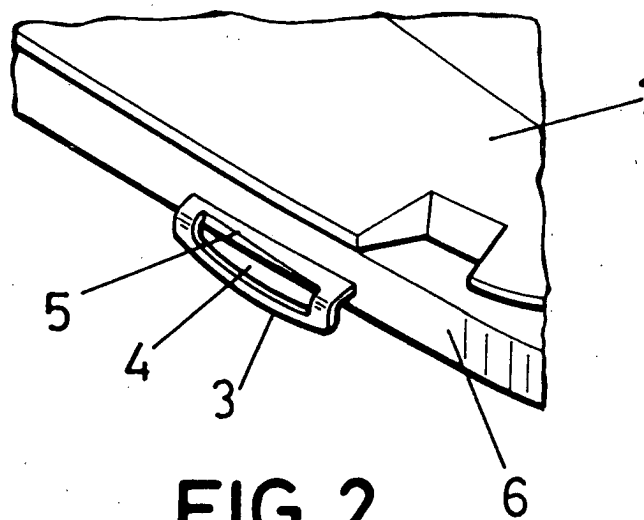


FIG. 2

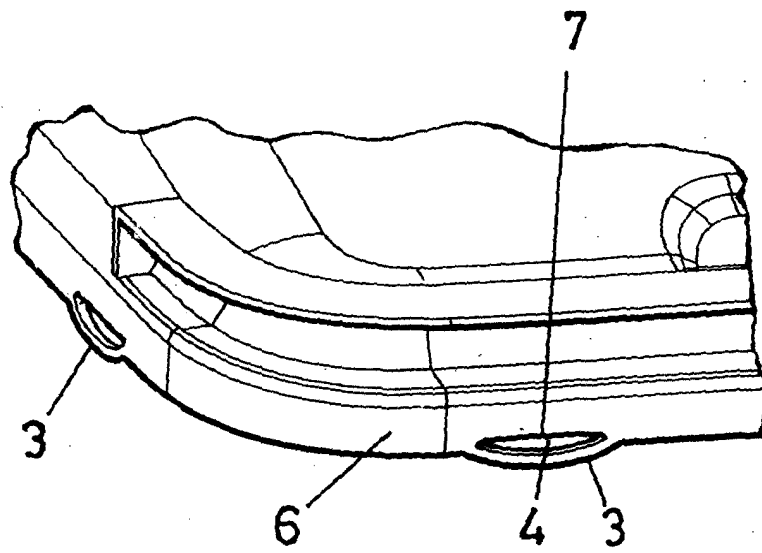


FIG. 3

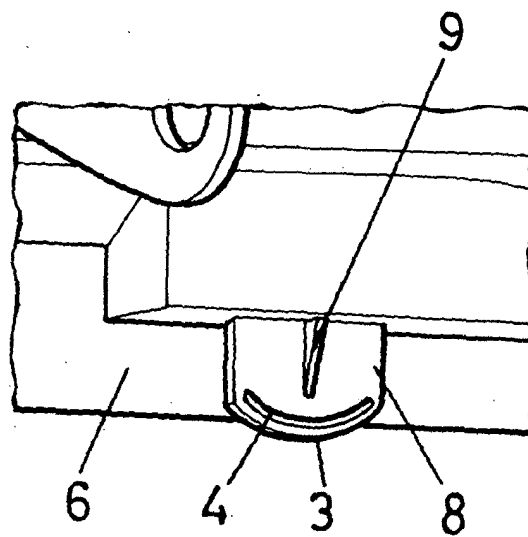


FIG. 4



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 05 38 0051

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	DE 43 15 554 A (GEBR. OTTO KG) 17 November 1994 (1994-11-17) * column 1, line 38 - line 59 * * figure * -----	1	B65F1/16
A	EP 0 774 424 A (CITEC ENVIRONNEMENT SA) 21 May 1997 (1997-05-21) * column 4, line 14 - line 51 * * figures 1,5 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 8 August 2005	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 05 38 0051

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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