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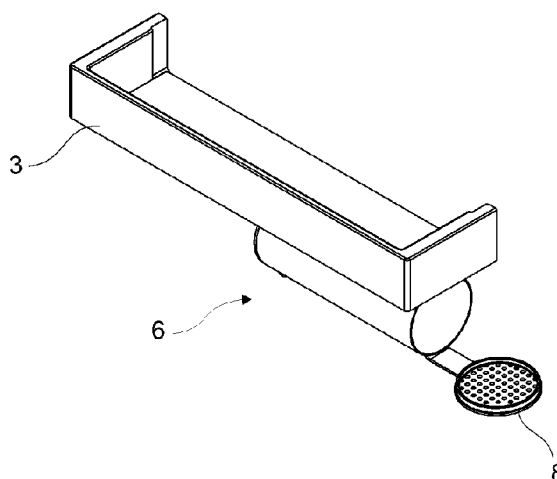
- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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(54) **Title:** REFRIGERATION APPLIANCE WITH AN EXTRACTABLE STORAGE CONTAINER

Fig. 7a



(57) **Abstract:** The present invention relates to a household appliance and more particularly a refrigeration appliance (1) having a storage container in the form of a foldable mat as an extractable unit stored relative to the inner compartment door of the refrigeration appliance (1). The present invention more particularly relates to a refrigeration appliance (1) having an interior refrigeration cabin for storing food items in a refrigerated manner, the interior refrigeration cabin being enclosed by a heat-insulating housing, the refrigeration appliance (1) further having an inner compartment door (2) opening and closing a front side of the refrigeration cabin and having at least one side shelf (3) on the inner compartment door (2) for storing food.



Description**REFRIGERATION APPLIANCE WITH AN EXTRACTABLE STORAGE
CONTAINER**

- [0001] The present invention relates to a household appliance and more particularly a refrigeration appliance having a storage container in the form of a foldable mat as an extractable unit stored relative to the inner compartment door of the refrigeration appliance.
- [0002] A refrigeration appliance has a plurality of shelves and containers for preserving food items. A withdrawable container may typically be arranged in the manner that its base extends in parallel with the base of the appliance so as to be movable out of the internal space of the appliance in order for allowing users to reach stored food items therein.
- [0003] Other than conventional extractable storage containers generally serving to the purpose of storing fruits and vegetables, another special extractable container can be a container generally designated as a practical food storage container particularly advantageous for its convenience to allow children to easily reach food items. Therefore, a more efficient and practical storage of certain food items for children is desirable so as to provide a storage container effecting hygienically preservation of food items while at the same time making use of the normally non-used inner side region of the the inner compartment door of the refrigeration appliance. Therefore, a storage container releasably attachable to the inner compartment wall of the refrigeration appliance provides a practical solution for parents allowing their children to easily reach to the stored food items.
- [0004] A prior art publication in the technical field of the present invention may be referred to as CN104374151 among others, the document disclosing a suspension type refrigerator magnetic attraction storage rack and a refrigerator, and belongs to the field of refrigerator manufacturing. The suspension type refrigerator magnetic attraction storage rack comprises a plastic slot; a plurality of evenly-arranged magnet slots are formed in the plastic slot and strong magnets are arranged in the magnet slots. The magnetic slots coat the peripheries of the strong magnets, and the middles

of the strong magnets protrude out of the magnetic slots. The strong magnets are square-shaped and 0 beverages, beer, cans and other objects with iron covers can be attracted through the strong magnets and such containers are suspended and hung in the refrigerator.

[0005] The present invention provides a refrigeration appliance having at least one extractable container releasably attachable to a compartment door or shelf wall portion of the refrigeration appliance as defined by the characterizing features as defined in Claim 1.

[0006] Primary object of the present invention is hence to provide a refrigeration appliance with an extractable storage container releasably attachable to the inner compartment door's wall and practically reachable by children.

[0007] The present invention proposes a refrigeration appliance with at least one releasably attachable storage container as a foldable structure attachable when folded. It is mounted to a non-used portion of a shelf wall parallel to the surface of the base portion thereof while two cover elements close two opposite openings of the folded structure creating a closed storage volume.

[0008] A first and second enclosure strips are releasably attachable to each other opening and closing the storage container when the latter is folded. The storage container is attached to the shelf wall through one of the two enclosure strips, either magnetically or through mechanical means such as hooking and hanging elements or hook and loop fastening elements.

[0009] Accompanying drawings are given solely for the purpose of exemplifying a refrigeration appliance storage container, whose advantages over prior art were outlined above and will be explained hereinafter in brief.

[0010] The drawings are not meant to delimit the scope of protection as identified in the claims nor should they be referred to alone in an effort to interpret the scope identified in the claims without recourse to the technical disclosure in the description of the present invention.

[0011] Fig. 1a and Fig 1b demonstrate general perspective views of an extractable storage container according to the present invention.

[0012] Fig. 2 demonstrates a general perspective view of a cover element of the storage container according to the present invention.

- [0013] Fig. 3 demonstrates a perspective view of an inner compartment door with the storage container being attached to a shelf wall according to the present invention.
- [0014] Fig. 4 demonstrates a closer perspective view of the storage container attached to the shelf wall of the inner compartment door according to the present invention.
- [0015] Fig. 5 demonstrates a general view of the storage container in an opened state serving as a service mat according to the present invention.
- [0016] Fig. 6a and Fig 6b demonstrate front and side views of the storage container in opened condition serving as a service mat according to the present invention.
- [0017] Fig. 7a and Fig 7b demonstrate general perspective views of the cover element of the storage container in opened state according to the present invention.
- [0018] Fig. 8a demonstrates a general view of the storage container and Fig. 8b demonstrates inner view of the storage container in folded state according to the present invention.
- [0019] Fig. 9a and Fig 9b demonstrate front and perspective views of the storage container in fully opened state enabling usage as a service mat according to the present invention.
- [0020] The following numerals are assigned to different parts demonstrated in the drawings:
1. Refrigeration appliance
 2. Inner compartment door
 3. Shelf
 4. Lateral wall
 5. Shelf wall
 6. Storage container
 7. Attachment element
 8. Cover element
 9. First surface
 10. Second surface
 11. First enclosure strip

12. Second enclosure strip
13. Semipermeable membrane
14. Film receiving area
15. Aeration openings

[0021] The present invention relates to a household appliance and more particularly a refrigeration appliance (1) having an interior refrigeration cabin, an inner compartment door (2) opening and closing a front side of the refrigeration cabin and at least one side shelf (3) on the inner compartment door (2) for storing food items in a refrigerated manner.

[0022] The refrigeration appliance (1) may typically have a main body with a multitude of storage chambers and the inner compartment door (2) opening and closing the front side of the main body. A refrigerating compartment as well as a freezing compartment may be disposed so as to provide separate divisions within the inside of the main body. The inner compartment door (2) typically comprises a plurality of shelves (3). The inner compartment door (2) of the invention further comprises at least one releasably attachable storage container (6) generally designated as a practically removable storage means for food items such as sandwiches and/or fruits. Therefore, the storage container (6) of the invention can be taken out from the inner compartment and as such continues to fulfil food preservation function until it is opened outside the refrigeration appliance (1). The storage container (6) is particularly useful in that it allows easy removal by children and it can also serve as a daily routine storage container for children, for example in a bag, and also serves to the purpose of creating a practical service mat when needed, which can prove to be advantageous for parents and children, thereby providing a quickly available service mat especially for little children.

[0023] As mentioned above, the storage container (6) is a foldable mat having an elastomeric structure thereby enabling practical folding and unfolding operations by way of holding the two opposite longitudinal edges and attaching them to each other. In other words, the storage container (6) serves as a food preservation box with a foldable structure while the food is stored therein.

- [0024] The storage container (6) comprises a first and second surface (9, 10) as planar surfaces in the opened state and a pair of cover elements (8) to be attached to two opposite openings of the folded, generally cylindrical container providing isolation for the food articles stored inside. A first and second enclosure strips (11, 12) interacting with each other for effectuating opening and closing of the storage container (6) are provided.
- [0025] The refrigeration appliance (1) may conventionally have a certain number of storage containers (6), each one connected to the inner compartment door (2) through an attachment element (7). The attachment element (7) can be joined to a lateral wall (4) portion parallel to the surface of the inner compartment door (2) or to a shelf wall (5) parallel to the surface of the base portion thereof. In both cases, the storage container (6) will occupy a normally non-used space region within the refrigeration compartment. On the other hand, use of the base surface of a shelf (3) is more advantageous as it involves use of a space region extending in parallel with the inner compartment door (2), therefore not extending into the inner compartment.
- [0026] The attachment element (7) effects carrying of the storage container (6) by any suitable means for instance through mutually cooperating releasable mechanical connection elements such as hooking and hanging elements or alternatively by means of mechanical fastening elements in the form of hook and loop fastening elements generally used in diapers and sold under the registered trademark Velcro (not shown). The releasable connection of the storage container (6) with the attachment element (7) is however preferably effectuated magnetically as delineated below.
- [0027] The first surface (9) of the storage container (6) comprises a first and second enclosure strips (11, 12) disposed along opposite edges in the opened state and the two are attached to each other when the storage container (6) is folded. The releasable attachment of the first and second enclosure strips (11, 12) is preferably effectuated magnetically in the manner that one of the first or second enclosure strips (11, 12) being made of a material producing a magnetic field (typically a magnetized ferromagnetic material) while the other one of the first and second

enclosure strips (11, 12) is a magnetically responsive material such as a metal strip.

[0028] The attachment element (7) can alternatively be provided as an integrated part of the lateral wall (4) of the inner compartment door (2). The storage container (6) is preferably made from an elastomeric material such as silicon.

[0029] Semipermeable membranes (13) are mounted to respective film receiving areas (14) of each cover element (8) to impart long lasting freshness to stored food articles due to the decelerating airflow through the aeration openings (15) of the cover elements (8) thanks to the semipermeable membranes (13). Therefore, the semipermeable membranes (13) help preserving humidity within the storage container (6).

[0030] In summary, the present invention proposes a refrigeration appliance (1) having an interior refrigeration cabin for storing food items in a refrigerated manner, the interior refrigeration cabin being enclosed by a heat-insulating housing, the refrigeration appliance (1) further having an inner compartment door (2) opening and closing a front side of the refrigeration cabin and having at least one side shelf (3) on the inner compartment door (2) for storing food articles.

[0031] In one embodiment of the present invention, at least one releasably attachable storage container (6) in the form of a foldable structure attachable in folded state and comprising a first and second surface (9, 10) as planar surfaces in the opened state is attached to a lateral wall (4) portion of the inner compartment door (2) parallel to the surface of the door or to a shelf wall (5) parallel to the surface of the base portion of the side shelf (3), a pair of cover elements (8) being attachable to two opposite openings of the folded structure to define a closed volume storage container (6).

[0032] In a further embodiment of the present invention, the storage container (6) is foldable mat having a substantially flexible structure.

[0033] In a further embodiment of the present invention, the storage container (6) has in the opened state two opposite edges attachable to each other to form a closed volume storage space.

- [0034] In a further embodiment of the present invention, the storage container's (6) two opposite edges in the opened state are formed as a first and second enclosure strips (11, 12) interacting with each other for effectuating opening and closing of the storage container (6) such that the first and second enclosure strips (11, 12) disposed along opposite edges in the opened state are attached to each other when the storage container (6) is folded.
- [0035] In a further embodiment of the present invention, the first and second enclosure strips (11, 12) are attached to each other magnetically in the manner that one of the first or second enclosure strips (11, 12) is made of a magnetized material and the other one of the first and second enclosure strips (11, 12) is a metallic strip.
- [0036] In a further embodiment of the present invention, the storage container (6) is connected to the inner compartment door (2) through an attachment element (7), the attachment element (7) being made of a metallic element to which the storage container (6) is magnetically attachable through the magnetized one of the first or second enclosure strips (11, 12).
- [0037] In a further embodiment of the present invention, the attachment element (7) is disposed on the outside of the base of an inner compartment door (2) shelf (3).
- [0038] In a further embodiment of the present invention, the storage container (6) is connected to the inner compartment door (2) through an attachment element (7), the storage container (6) and the attachment element (7) having mutually cooperating releasable mechanical connection elements in the form of hooking and hanging elements or mechanical fastening elements in the form of hook and loop elements.
- [0039] In a further embodiment of the present invention, the cover elements (8) have aeration openings (15).
- [0040] In a further embodiment of the present invention, the cover elements (8) have film receiving areas (14) into which semipermeable membranes (13) are secured.
- [0041] In a further embodiment of the present invention, the storage container (6) is made from an elastomeric material and preferably from silicon.

[0042] The storage container is particularly useful in that it allows easy removal by children and it also fulfils the function of providing a daily routine storage container for children. It further serves to the purpose of creating a practical service mat when needed, which is advantageous for parents and children thereby providing a quickly available service mat especially for little children.

Claims

1. A refrigeration appliance (1) having an interior refrigeration cabin for storing food items in a refrigerated manner, the interior refrigeration cabin being enclosed by a heat-insulating housing, the refrigeration appliance (1) further having an inner compartment door (2) opening and closing a front side of the refrigeration cabin and having at least one side shelf (3) on the inner compartment door (2) for storing food items, **characterized in that** at least one releasably attachable storage container (6) in the form of a foldable structure attachable in folded state and comprising a first and second surface (9, 10) as planar surfaces in the opened state is attached to a lateral wall (4) portion of the inner compartment door (2) parallel to the surface of the door or to a shelf wall (5) parallel to the surface of the base portion of the side shelf (3), a pair of cover elements (8) being attachable to two opposite openings of the folded structure to define a closed volume storage container (6).
2. A refrigeration appliance (1) as in Claim 1, **characterized in that** the storage container (6) is foldable mat having a substantially flexible structure.
3. A refrigeration appliance (1) as in Claim 1 or 2, **characterized in that** the storage container (6) has in the opened state two opposite edges attachable to each other to form a closed volume storage space.
4. A refrigeration appliance (1) as in Claim 3, **characterized in that** the storage container's (6) two opposite edges in the opened state are formed as a first and second enclosure strips (11, 12) interacting with each other for effectuating opening and closing of the storage container (6) such that the first and second enclosure strips (11, 12) disposed along opposite edges in the opened state are attached to each other when the storage container (6) is folded.
5. A refrigeration appliance (1) as in Claim 4, **characterized in that** the first and second enclosure strips (11, 12) are attached to each other magnetically in the manner that one of the first or second enclosure strips (11, 12) is made of a magnetized material and the other one of the first and second enclosure strips (11, 12) is a metallic strip.
6. A refrigeration appliance (1) as in Claim 5, **characterized in that** the storage

container (6) is connected to the inner compartment door (2) through an attachment element (7), the attachment element (7) being made of a metallic element to which the storage container (6) is magnetically attachable through the magnetized one of the first or second enclosure strips (11, 12).

7. A refrigeration appliance (1) as in Claim 6, **characterized in that** the attachment element (7) is disposed on the outside of the base of an inner compartment door (2) shelf (3).
8. A refrigeration appliance (1) as in Claim 5, **characterized in that** the storage container (6) is connected to the inner compartment door (2) through an attachment element (7), the storage container (6) and the attachment element (7) having mutually cooperating releasable mechanical connection elements in the form of hooking and hanging elements or mechanical fastening elements in the form of hook and loop elements.
9. A refrigeration appliance (1) as in Claim 1, **characterized in that** the cover elements (8) have aeration openings (15).
10. A refrigeration appliance (1) as in Claim 9, **characterized in that** the cover elements (8) have film receiving areas (14) into which semipermeable membranes (13) are secured.
11. A refrigeration appliance (1) as in Claim 2, **characterized in that** the storage container (6) is made from an elastomeric material and preferably from silicon.

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Fig. 1a

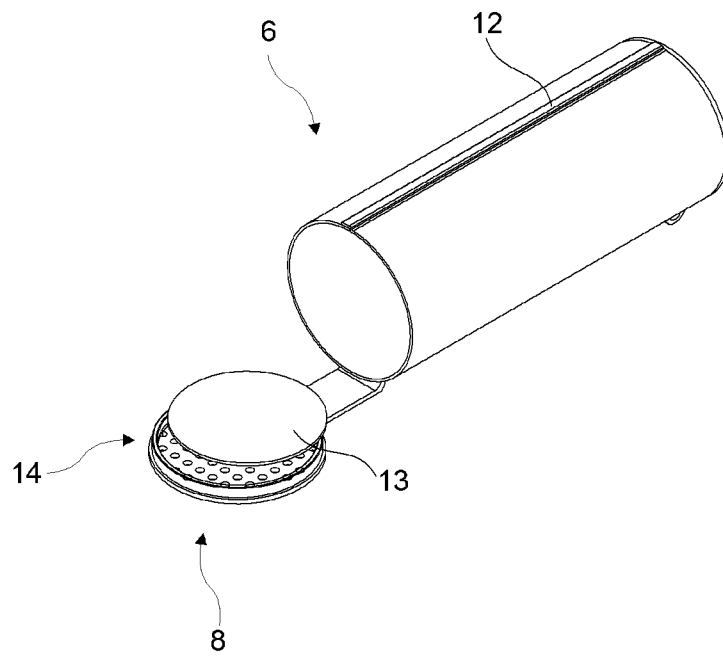


Fig. 1b

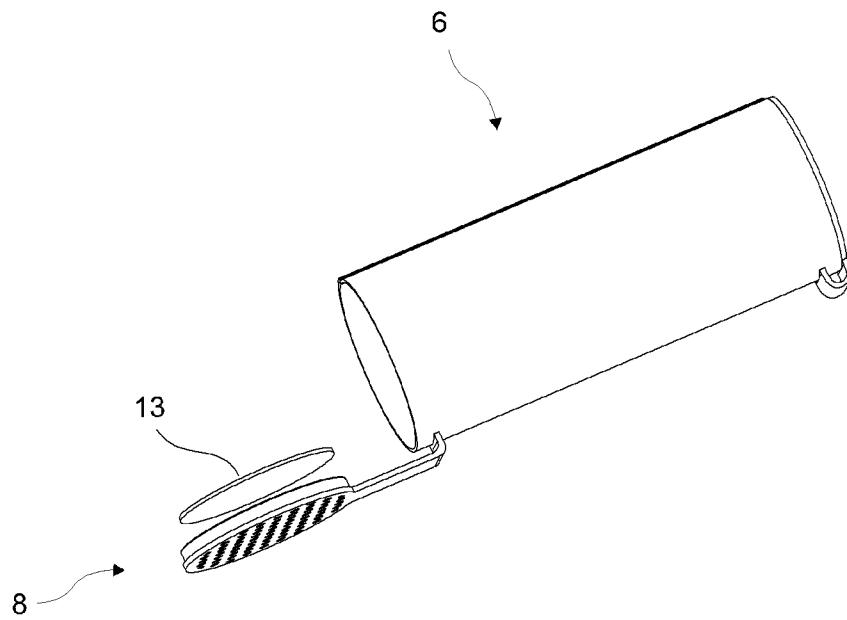


Fig. 2

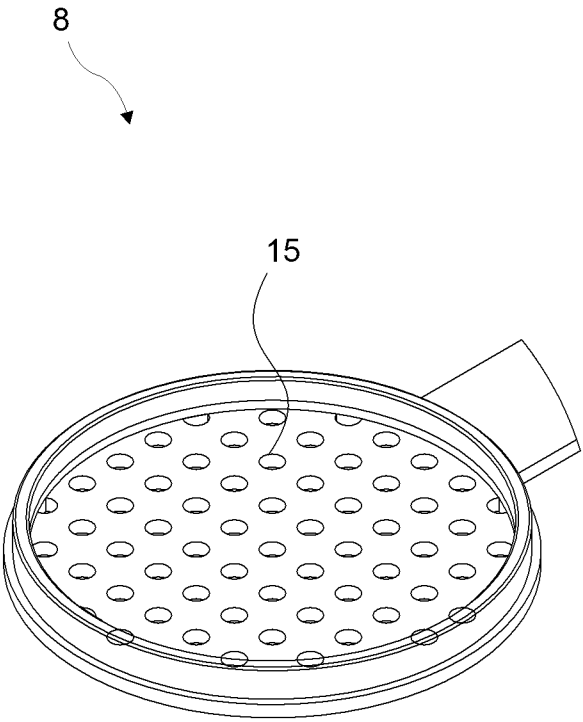


Fig. 3

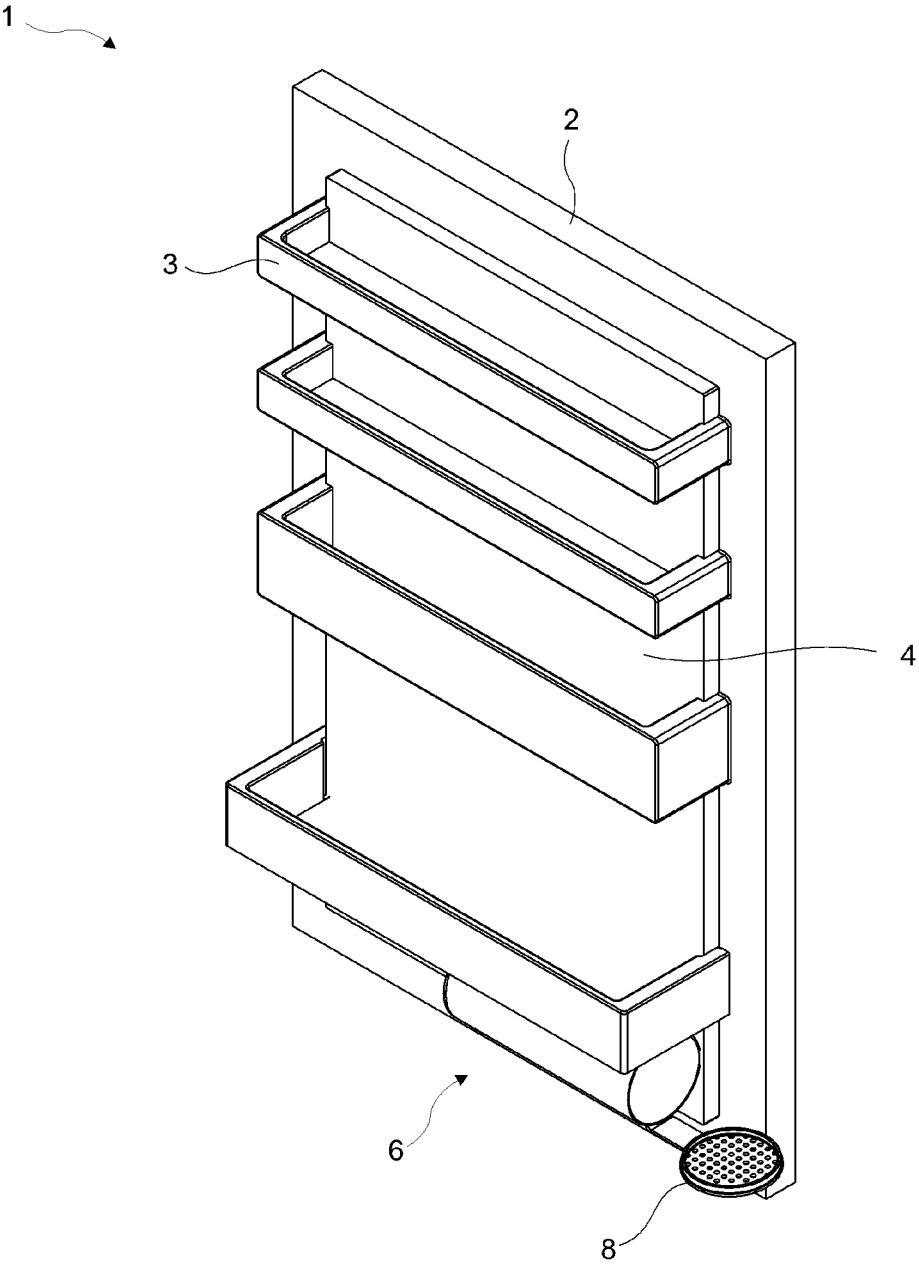


Fig. 4

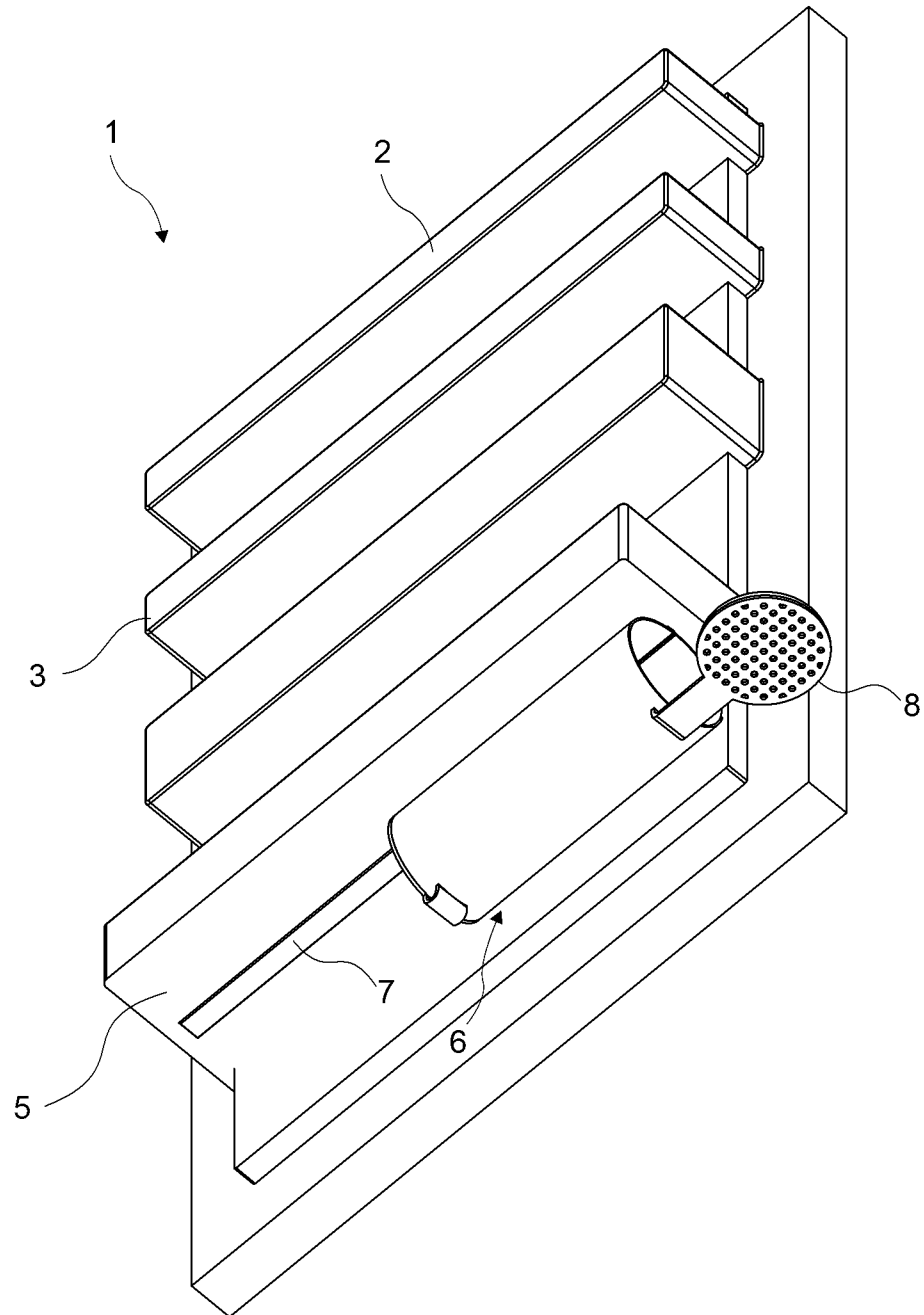


Fig. 5

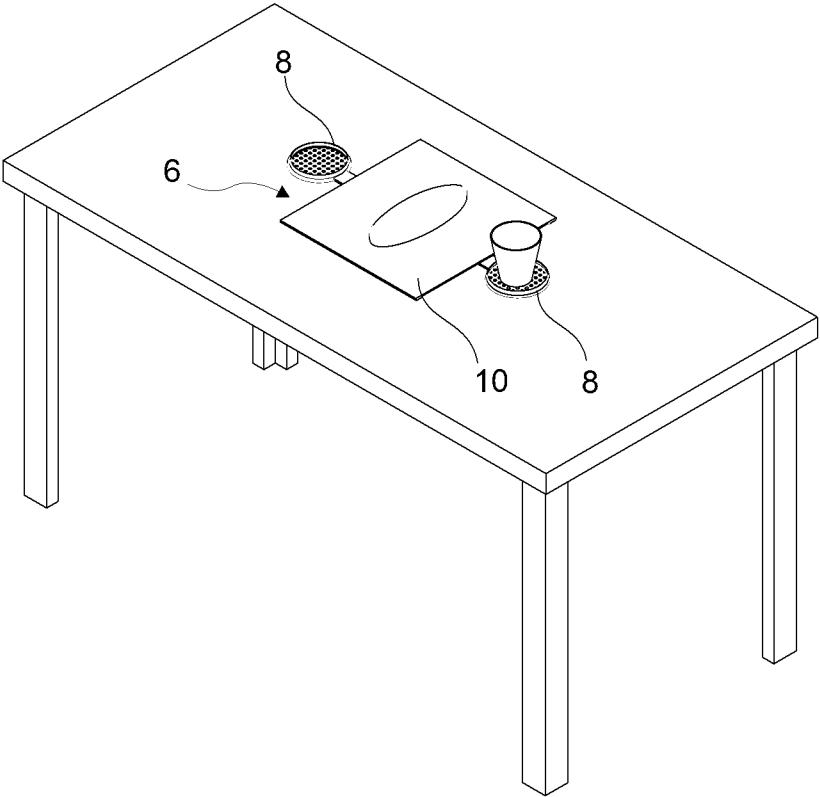


Fig. 6a

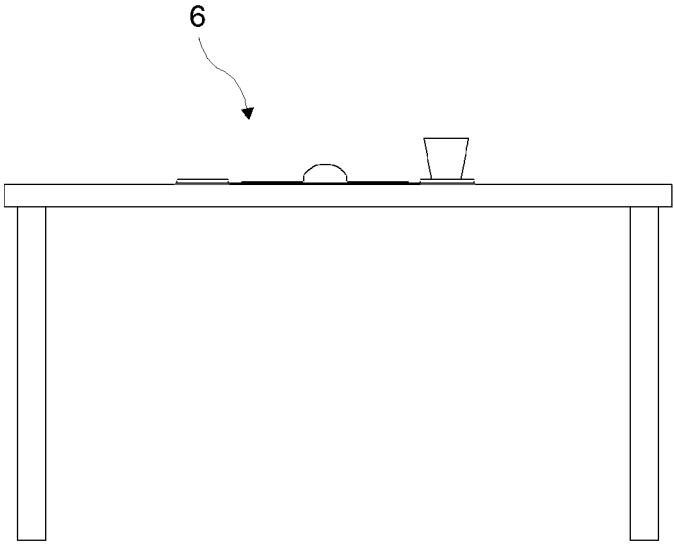


Fig. 6b

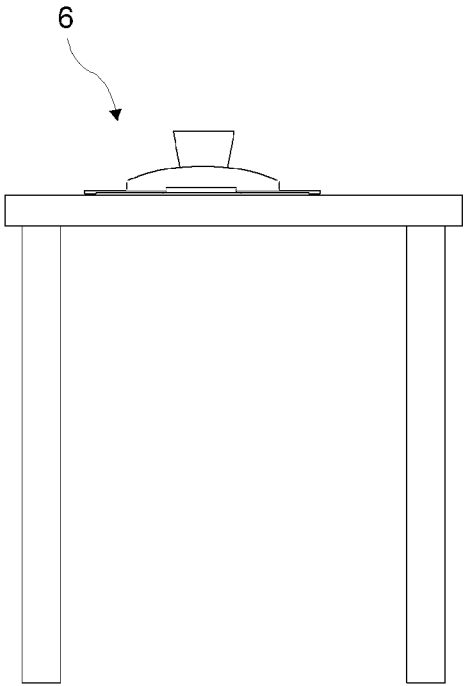


Fig. 7a

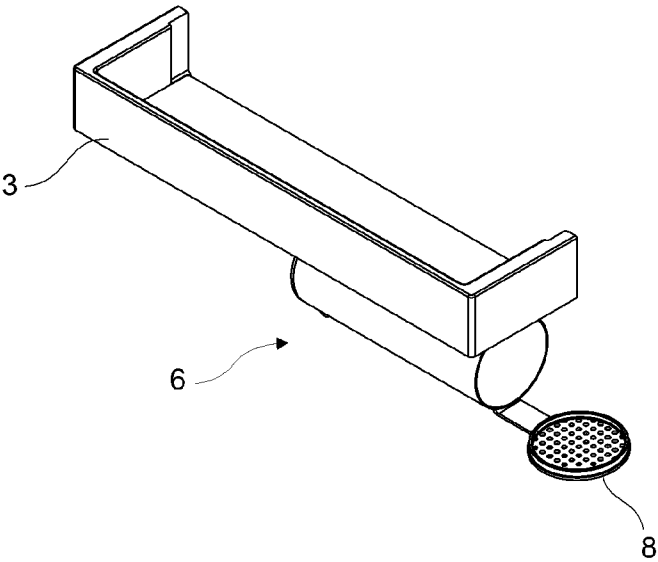
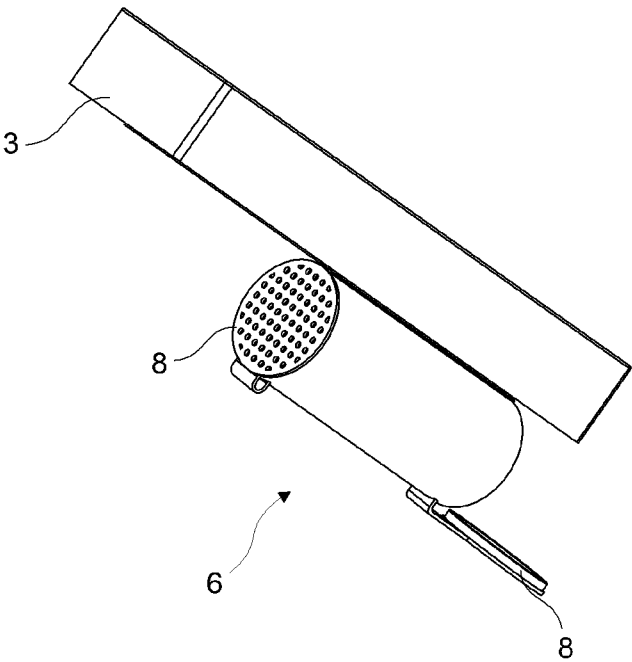


Fig. 7b



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Fig. 8a

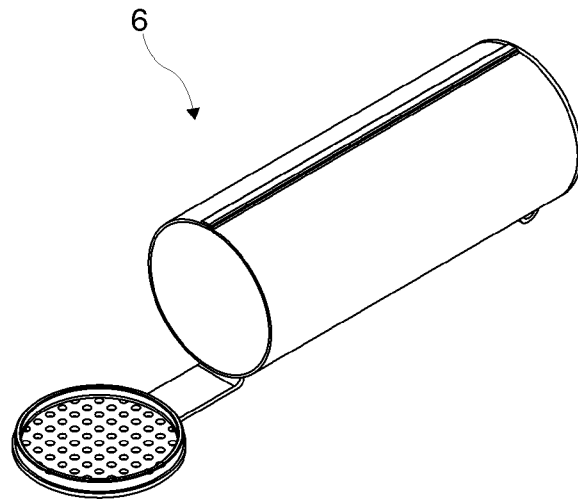


Fig. 8b

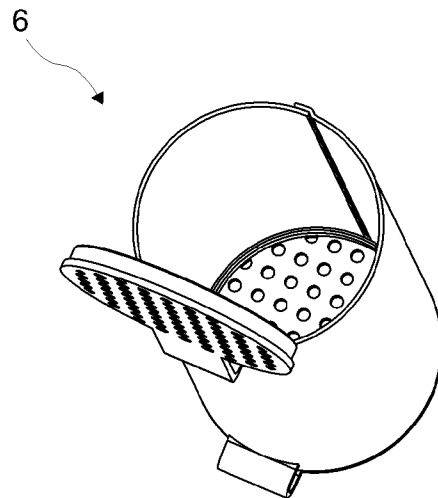


Fig. 9a

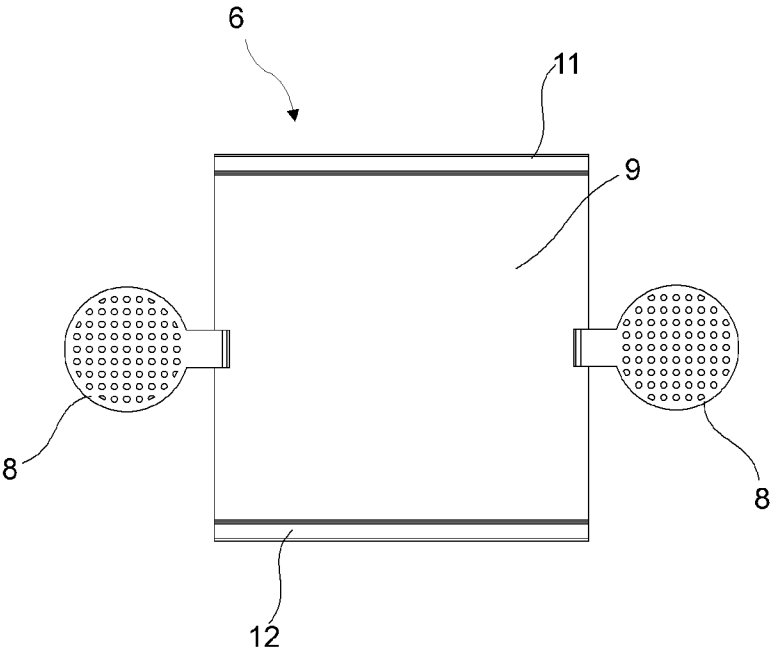
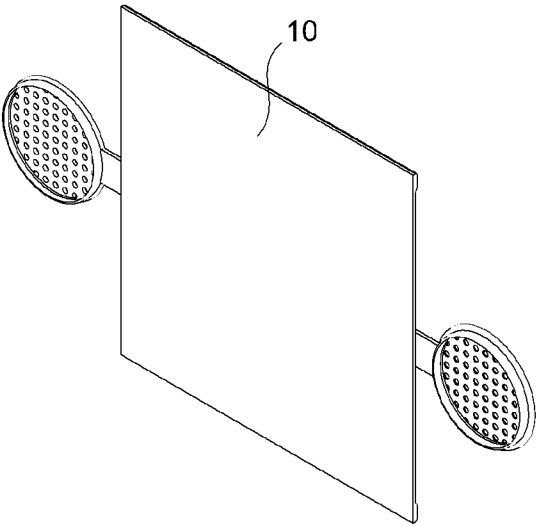


Fig. 9b



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/075955

A. CLASSIFICATION OF SUBJECT MATTER
INV. F25D23/04 A47G23/03
ADD.

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)
F25D A47G

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 practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 39 20 208 A1 (NOLDE SYLVIA [DE]) 17 January 1991 (1991-01-17)	1-5,8,11
A	the whole document	6,7,9,10
Y	US 5 445 452 A (KAUFFMAN MICHAEL S [US] ET AL) 29 August 1995 (1995-08-29) abstract; figures 1,3 column 1, line 12 - line 27	1-5,8,11



Further documents are listed in the continuation of Box C.



See patent family annex.

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"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

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Date of the actual completion of the international search

20 June 2016

Date of mailing of the international search report

29/06/2016

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Bidet, Sébastien

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2015/075955

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 3920208	A1	17-01-1991	NONE

US 5445452	A	29-08-1995	CA 2149562 A1 24-11-1995
		US 5445452 A	29-08-1995
