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- (71) Applicant: AIRBUS OPERATIONS GMBH [DE/DE];
Kreetslag 10, 21129 Hamburg (DE).
- (72) Inventors: SCHLIWA, Ralf; c/o AIRBUS OPERATIONS
GMBH, Kreetslag 10, 21129 Hamburg (DE). SPILLE,
Marc; c/o AIRBUS OPERATIONS GMBH, Kreetslag 10,
21129 Hamburg (DE).
- (74) Agent: KOPF WESTENBERGER WACHENHAUSEN
PATENTANWÄLTE PARTG MBB; Brienner Str. 11,
80333 Munich (DE).
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(54) Title: SYSTEM AND METHOD FOR DISPOSING WASTE PRODUCTS IN A MEANS OF TRANSPORTATION

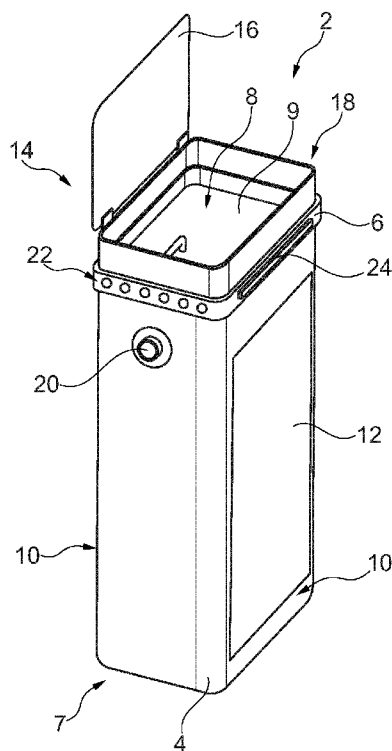


Fig. 1

(57) Abstract: A waste compaction system for a vehicle comprises a receptacle (2) for collecting waste products and at least one check valve (20), wherein the receptacle (2) comprises at least one opening (9) for introducing waste products, a vacuum compaction mechanism and a first suction port (36) that is accessible from outside the receptacle (2) and is couplable to the vacuum compaction mechanism, wherein the vacuum compaction mechanism comprises a compaction sheath (4) that is sealable in a fluid-tight fashion and filled through the at least one opening (9), with said compaction sheath being compactible into a state, in which it is sealed in a fluid-tight fashion, by evacuating air through the first suction port (36), and with a rigid plate (12) being arranged on or in at least one lateral surface (10) of the compaction sheath (4) and moving together with the compaction sheath (4) during the evacuation thereof. The vacuum compaction mechanism is couplable to a second suction port that is connectable to a suction line in the vehicle. The check valve (20) is fluidically connected to an interior formed in the compaction sheath (4) and prevents air from flowing back into the interior after the compaction sheath (4) has been compacted.

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System and Method for Disposing Waste Products in a Means of Transportation

REFERENCE TO RELATED APPLICATIONS

15 This application claims priority of German Patent Application 10 2015 108 443.0, filed 28 May 2015, the disclosure of which application is herewith incorporated herein by reference in its entirety.

TECHNICAL FIELD

20 The invention pertains to a system for disposing waste products in a means of transportation, a method for disposing waste products in a means of transportation, as well as a means of transportation, particularly an aircraft, that comprises a cabin and at least one system for disposing waste products.

25 BACKGROUND OF THE INVENTION

Foods and beverages are frequently consumed aboard means of transportation that serve for transporting passengers and result in waste products. Aboard passenger aircraft, in particular, these waste products are predominantly collected by the cabin personnel and have to be disposed after the end of the flight. Since the disposal at
30 random destinations is respectively associated with disposal fees, waste products are frequently stored aboard the aircraft and subsequently disposed at a home airport.

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In means of transportation intended for traveling short distances, in particular, the cabins are designed for a large number of passenger seats and only have a negligible capacity for the storage of foods and beverages and for the storage of waste products.

- 5 EP 1 132 293 B1 discloses passenger seats for aircraft that are equipped with adapters allowing the integration of waste receptacles. Although the personal storage of waste products does not require any storage options for storing the waste products produced in the entire cabin, these personal waste receptacles have to be successively emptied by cabin or cleaning personnel after the flight and the waste products
10 subsequently have to be disposed or stored.

Receptacles for aircraft galleys, which can accommodate trash and, for example, compact the trash in order to increase the storage volume, are also known, for example, from DE 10 129 905 B4.

15

SUMMARY OF THE INVENTION

- It is therefore an object of the invention to propose a collection device or the like which simplifies the handling of waste products in a cabin and preferably allows the
20 temporary storage of waste products and/or the sorting of waste products, wherein neither the weight nor the complexity of the collection device is increased.

- This object is met by means of a waste compaction system with the features of independent claim 1. Advantageous improvements and preferred embodiments can
25 be gathered from the dependent claims and the following description.

- It is proposed a waste compaction system for a vehicle that comprises a receptacle for collecting waste products and at least one check valve, wherein the receptacle comprises at least one opening for introducing waste products, a vacuum compaction
30 mechanism and a first suction port that is accessible from outside the receptacle and

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is couplable to the vacuum compaction mechanism. According to the invention, the vacuum compaction mechanism comprises a compaction sheath that is sealable in a fluid-tight fashion and filled through the at least one opening, wherein said compaction sheath is compactable into a state, in which it is sealed in a fluid-tight
5 fashion, by evacuating air through the first suction port, and wherein a rigid plate is arranged on or in at least one lateral surface of the compaction sheath and moves together with the compaction sheath during the evacuation thereof. The vacuum compaction mechanism is couplable to a second suction port that is connectable to a suction line in the vehicle. The check valve is fluidically connected to an interior
10 formed in the compaction sheath and prevents air from flowing back into the interior after the compaction sheath has been compacted.

The waste compaction system has a construction that, depending on the design of the receptacle, makes it possible to collect waste products along an aisle in the cabin or
15 at a stationary location in a particularly convenient fashion, as well as to carry out an efficient compaction process, wherein the space required for the system according to the invention within the cabin can at the same time be considerably restricted. For example, the receptacle may be realized in the form of a trolley that is movable within the cabin, in the form of a stationary compartment in a cabin monument or in
20 the form of a suspendable and compactible bag. If the trolley is designed for use in aircraft, in particular, it may have a standard size for trolleys and accordingly be realized in the form of a "full size" trolley or a "half size" trolley, wherein said trolley may comprise one or more chambers for accommodating waste products that are respectively equipped with a vacuum compaction mechanism.

25
A peculiarity of the receptacle is that it comprises or forms an integrated vacuum compaction mechanism that compacts the waste products collected in the receptacle in a particularly effective fashion by applying a vacuum such that these waste products are compressed to a fraction of their original volume in the compaction
30 sheath. The compression effect caused by the vacuum is also significantly intensified

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due to the use of the at least one rigid plate because a deformation thereof during the compaction process can practically be ruled out such that the compaction sheath does not form any local bulges and the compressive force is very evenly applied to the waste products.

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The compaction sheath consists of a bag of sorts that is made of a surface-like, flexible sheet-type material and can form a closed or selectively sealable fluid-tight space. The compaction sheath is preferably sealed in the region of its bottom. In this way, the compaction sheath respectively may be freely held on or freely suspended
10 from a retaining means or the like. During a compaction of the compaction sheath, its sealed bottom is able to move freely in order to compensate the shrinking volume. A separate retention of the underside of the compaction sheath, e.g. by means of a frame or the like arranged on the bottom, it is therefore not required. Such a compaction sheath has the purpose of efficiently reducing the size of a fluid-tight
15 space by applying a vacuum such that the compaction sheath contracts and thereby compresses the waste products located therein. The at least one opening consequently also extends into the compaction sheath that is sealable by means of a cover or a different type of seal in order to form a fluid-tight space.

20 The compaction sheath therefore is an integral component of the vacuum compaction mechanism and should be respectively dimensioned for accommodating a sufficiently large waste disposal bag for collecting waste products in the chamber or for providing sufficient space for accommodating waste products.

25 The compaction sheath may comprise the at least one rigid plate on its outer side, on its inner side or in the form of an integral component in order to promote the compaction process and, in particular, the compression effect upon the waste products. The integration of the rigid plate is particularly simple on an inner side of the compaction sheath because it merely has to be fixed in its intended position at
30 this location, but is otherwise completely enclosed by the compaction sheath. The

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integration into the compaction sheath, i.e. directly into its material, is also a feasible alternative, particularly when relatively thin-walled rigid plates are used. However, a particularly stable and durable connection is required if a rigid plate is bonded or laminated on an outer side of the compaction sheath in order to prevent the plate
5 from separating on its own.

The check valve is a device that only allows a fluid the freely flow in one direction, but prevents such a fluid flow in the opposite direction. The check valve has the purpose of preserving an already achieved compaction by preventing the backflow of
10 air such that compacted waste products may be at least temporarily stored in a space-saving fashion. The check valve therefore is the only device that respectively allows an outflow from the interior and prevents an inflow into the interior. It goes without saying that the interior, to which the check valve is fluidically connected, is sealed in a fluid-tight fashion in order to fully ensure the function of the check valve.

15

It is conceivable to realize several different embodiments, in which the check valve is arranged at a different location or coupled to a different device.

It is furthermore advantageous that the compaction sheath forms an integral part of
20 the receptacle. The waste compaction system therefore may essentially also consist of a bag that is compactible and comprises at least one rigid plate. In this case, it would be particularly advantageous to use two rigid plates because these plates allow a smooth compaction of waste products without any additional devices. It would also be conceivable to directly connect the compaction sheath in the form of the bag to a
25 vacuum system by means of a hose. In this case, the hose could be located, e.g., in a monument and directly connected to the check valve. In this variation, the hose may also be coiled and accommodated in a compartment of a monument or another device in order to be uncoiled and used as needed.

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On the other hand, the receptacle may also comprise a housing, in which the compaction sheath is fixable. The housing may be realized stationarily in a monument, in the form of an independent, stand-alone component in a vehicle cabin or movably. The design of the housing may be adapted to the respective type of
5 vehicle, wherein a frame of aluminum and laminar components of a sandwich material are particularly suitable in aircraft.

In an advantageous embodiment, the check valve is arranged in or on the compaction sheath. After the volume formed in the interior of the compaction sheath has been
10 sealed in a fluid-tight fashion and air has been evacuated from this volume through the check valve, the compaction sheath therefore can remain in its compacted form as long as neither the fluid-tight seal nor the check valve is opened. For example, the check valve may be arranged on a lateral or bottom surface, wherein it should be taken into consideration that it is particularly sensible to evacuate air from the
15 interior of the compaction sheath through the check valve via the first suction port. It is accordingly preferred that the check valve is accessible from outside and is connectable to the second suction port.

The compaction sheath can remain in its compacted form after it has been removed
20 from the receptacle or another device carrying the compaction sheath and stored in a space-saving fashion in a compartment, storage space or the like provided for this purpose. In order to remove the compacted waste products, it is advisable to gently admit air into the interior before the fluid-tight seal is opened, wherein this may be achieved, for example, with the aid of a screw-on cap that may be realized separately
25 or in combination with the check valve. The fluid-tight seal may be easily opened after the dissipation of the remaining vacuum in the compaction sheath, which in the case of an aircraft is even intensified after the flight due to the higher ambient pressure on the ground. The collected waste products may be swiftly transported to a recycling facility, in particular, if a separate bag located in the compaction sheath is
30 used.

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In another advantageous embodiment, the check valve is arranged in a separate bag that is suspendable in the compaction sheath and sealed in a fluid-tight fashion. In this way, conventional vacuum compaction mechanisms comprising a compaction
5 sheath, in particular, may be very easily retrofitted and provided with a check valve without requiring a modification the mechanism itself. Due to the evacuation of air from the compaction sheath, the compaction sheath exerts compressive forces upon the bag located in the compaction sheath, which has to be sealed in a fluid-tight fashion prior to the compaction process. Air is pressed out of the bag through its
10 check valve during the compaction process. In this case, the position of the check valve needs to be chosen such that a smooth evacuation of air from the bag can also be ensured if the bag tightly clings to the compaction sheath. In this respect, it is particularly sensible to arrange the check valve on an upper side of the bag or the receptacle and/or to provide a spacer, to which the check valve is connected, at least
15 at one location on the inner side of the compaction sheath. The particular advantage of this embodiment may be seen in that, after the compaction process, the bag with the waste products located therein also remains compacted after the compaction sheath is opened and therefore can also be stored in a space-saving fashion for prolonged periods of time.

20

The compaction sheath may extend from the bottom of the receptacle to a retaining means arranged opposite of the bottom. The retaining means makes it possible to easily and efficiently store the compaction sheath on a device within the vehicle or in a housing. The invention is not limited to any specific type of retaining means
25 because numerous variations of retaining means allowing the retention of a bag-like enclosure exist. The compaction sheath preferably should be suspended as evenly as possible and with the largest possible opening such that its volume may be optimally utilized without readjustment of the external shape of the compaction sheath, e.g. in the form of creasing. However, it would also be conceivable to merely realize an
30 opening edge such that it may be easily held with one hand in the open or closed

state of the compaction sheath, namely with or without a handle hole, a holding edge or the like. A vehicle attendant therefore can also collect waste products with a handheld compaction sheath and subsequently either deposit the enclosure prior to the compaction process or keep holding the enclosure during the compaction process.

5

The receptacle may comprise a frame, on which the compaction sheath is retainable. This may be achieved, for example, with a retaining means arranged thereon. The frame may furthermore comprise an opening and be designed for suspending a bag protruding through the opening such that the bag opening corresponds to the opening of the frame. The frame consists of an element that preferably is dimensionally stable and encloses the at least one opening, through which the bag extends vertically downward during its use, i.e. such that it is suspended from the frame and is fillable through the opening. The frame therefore forms the spatial base of the waste compaction system.

15

In an advantageous embodiment, the check valve is arranged in the frame of the receptacle and designed for producing a fluidic connection with a bag suspended in the frame and the surroundings of the receptacle. A separate bag accommodating the waste products may be arranged on an inner circumference of the frame such that, depending on the thickness of the frame, an edge is formed between the outer and the inner circumference of the frame, wherein one or more openings of the check valves may be distributed in said edge. The bag being compacted therefore can discharge air outward into the surroundings through the check valve.

20

25

The receptacle may furthermore be realized in the form of a stowage compartment in a cabin monument and designed for storing the compaction sheath. It would be particularly sensible to use a cabin monument in the form of a galley monument, a lavatory monument or a combination thereof because an air line connected to a vacuum system may already be installed at these locations. This air line can also be readily used for the waste compaction system according to the invention. The

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stowage compartment may be realized such that it is completely closable with a door containing an infill opening that in turn is closable with an optionally spring-loaded flap.

- 5 A vacuum compaction mechanism preferably is completely removable from the receptacle as needed. In this way, the available waste product volume may be increased prior to the use of the trolley, but it would at the same time also be conceivable to store compacted waste products in the compaction sheath.
- 10 In another advantageous embodiment, the receptacle may be realized in the form of a trolley that is movable within the cabin, wherein said trolley comprises an infill opening, for example, on its upper side and is designed for storing the compaction sheath. In this way, waste products may be collected in the cabin in a particularly convenient fashion.
- 15 The receptacle may alternatively be realized in the form of a compartment in a monument that comprises a retaining device for accommodating the vacuum compaction mechanism. Such a stationary device for collecting waste product may be used, for example, in addition to movable devices such that larger cabin
- 20 monuments, in particular, comprise a waste receptacle for accommodating waste products of persons located in its vicinity. In order to reduce the required size of such a stationary waste receptacle, the waste products may be compacted as needed, e.g. manually by actuating a corresponding control button when a certain filling level is reached or within regular time intervals under the control of a corresponding control
- 25 unit. The stationary arrangement makes it possible to eliminate a detachable coupling to the first suction port such that the complexity of the system is reduced and the weight and the manufacturing costs are at the same time lowered. The stationary arrangement is particularly sensible in cabin monuments, in which a vacuum system exists or a vacuum system extends through the corresponding cabin monument,

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All in all, the invention proposes a particularly simple, compact and lightweight waste compaction system that also provides the greatest convenience possible when it is used within a very confined space and even allows the trash separation or temporary trash storage in half size trolleys, as well as the collection of additional
5 waste products in practically unchanged form. The weight and the complexity may be drastically reduced in comparison with conventional compaction systems in that the suction line is connected to a vacuum system of the vehicle that supplies, for example, lavatories or devices producing wastewater with a vacuum.

10 The invention furthermore pertains to a cabin monument with a suction line and such a waste compaction system.

The cabin monument may furthermore comprise at least one lavatory that is coupled to the suction line. In an aircraft, in particular, the lavatory is connected to a vacuum
15 system that can dispose liquids and waste products in a particularly reliable and mechanically simple fashion.

The invention ultimately also pertains to an aircraft that comprises a vacuum system with a suction line, as well as a waste compaction system and a cabin monument,
20 into which the suction line extends.

BRIEF DESCRIPTION OF THE FIGURES

Other characteristics, advantages and potential applications of the present invention
25 result from the following description of exemplary embodiments and the figures. In this respect, all described and/or graphically illustrated characteristics form the object of the invention individually and in arbitrary combination, namely regardless of their composition in the individual claims or their references to other claims. In the figures, identical or similar objects are furthermore identified by the same reference
30 symbols.

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Figure 1 shows a waste receptacle for a waste compaction system in the form of a three-dimensional view.

Figure 2 shows a waste compaction system in the form of a three-dimensional
5 representation.

Figure 3 shows a waste receptacle of Figure 1 that is integrated into a waste compaction system.

10 DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

Figure 1 shows a simplified three-dimensional representation of a receptacle for collecting waste products that is referred to as waste receptacle 2 below. This waste receptacle 2 respectively has to be fixed or retained in a not-shown device for its
15 operation. This device may be realized in the form of a movable trolley, as well as in the form of a stationary stowage compartment or the like. The type of its accommodation is initially irrelevant to the function of the waste receptacle 2.

The waste receptacle 2 comprises a compaction sheath 4 that is retained in an upper
20 frame 6 and during the operation extends vertically downward from this frame to a bottom 7 such that it defines an interior 8 capable of accommodating waste products introduced through an opening 9. The compaction sheath 4 is sealed on its bottom 7 and on its lateral surfaces 10 respectively comprises a rigid plate 12 that is fixed, for example, on an inner side of the respective lateral surface 10. The compaction sheath
25 4 is made of an elastic, flexible and fluid-tight material and therefore has a slightly variable geometric shape.

A sealing mechanism 14 with a shutter 16 and a seal seat 18 accommodating the shutter 16 is arranged on an upper side of the frame 6, wherein the seal 14 is
30 designed for respectively sealing the compaction sheath 4 or its opening 9 in a fluid-

tight fashion. This may be realized with a corresponding material selection and/or a corresponding construction of the type normally used for such seals.

5 The compaction sheath 4 additionally comprises a first check valve 20 whereas a second check valve 22 may alternatively or optionally be arranged in the upper frame 6 depending on the utilization of the waste receptacle. Air may be evacuated from the interior of the compaction sheath 4 through the first check valve 20 that is designed such that air can only flow out of the compaction sheath 4. The first check valve 20 therefore can fulfill the function of a first suction port.

10

Any waste product located in the compaction sheath 4 may be compacted by evacuating air from the compaction sheath 4 while the seal 14 is closed such that the compaction sheath 4 contracts and thereby exerts a force upon the waste products with the aid of the two rigid plates 12. A backflow of air into the compaction sheath 15 4 may be prevented by means of the check valve 20 and the closed seal 14 such that the compaction sheath 4 can remain in its compact shape as long as the seal 14 remains closed.

As mentioned above, the second check valve 22 can alternatively be used for 20 discharging air from the compaction sheath 4 if this simplifies the arrangement of a corresponding (not-shown) second suction port in a position near the upper frame 6. The second check valve 22 shown is particularly relevant to the example illustrated in Figure 2, in which a bag is arranged in the compaction sheath 4.

25 The frame 6 particularly serves for being accommodated in a trolley such that the waste receptacle 2 may be realized in the form of a slide-in module into the trolley. On the other hand, it would also be possible to use a suitable compartment in a monument for accommodating the waste receptacle 2.

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For example, the frame 6 comprises a retaining means in the form of two elongate, rail-like projections 24 for its insertion into a not-shown retaining device, wherein said projections can, for example, be pushed onto correspondingly shaped profiles or inserted into an elongate recess. The waste receptacle 2 is securable by being locked
5 in the retaining device, for example, with the aid of a band that is at least sectionally wrapped around the waste receptacle 2, a locking device on the projections 24 or the like.

Figure 2 shows a waste receptacle 26 that is based on the same fundamental
10 principle, but in which a certain functional separation is realized. This figure shows a compaction sheath 28 that is made of a flexible, fluid-tight material and comprises rigid plates 30 integrated into opposite lateral surfaces 31 thereof, as well as an exemplary screen 34 that is arranged on a bottom 32 and serves for retaining waste products and draining liquids. The compaction sheath 28 may be evacuated via a not-
15 shown first suction port 36 that is arranged, for example, on an underside of the bottom 32.

The compaction sheath 28 furthermore comprises an upper frame 38 that carries the compaction sheath 28 and can also act as a retaining means. A bag 40 therefore may
20 be arranged in the compaction sheath 28, wherein said bag is equipped with a bag frame 42 and an opening 43 that is arranged therein and may correspond to the frame 6 of Figure 1. The bag 40 comprises a seal 44 with a shutter 46 and a seal seat 48 that is positioned on the bag frame 42 and can tightly accommodate the shutter 46 such that the bag 40 and the opening 43 are respectively sealed in a fluid-tight fashion.
25 One or more check valves 50 are arranged in the bag frame 42 and allow air to flow out of the interior of the bag 40.

When the compaction sheath 28 is compacted by evacuating air through the first suction port 36, the two rigid plates 30 approach one another and compress the bag
30 40 arranged in between. If this bag is sealed in an air-tight fashion, air can only

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escape into the interior of the compaction sheath 28 through the check valves 50 and then flow into the first suction port 36, through which it is evacuated. As a result, the waste products located in the bag 40 are compressed, wherein the bag 40 maintains its compacted shape after the compaction process and is removable from the
5 compaction sheath 28 in the form of a compact package.

The first suction port 36 may be arranged at any location of the compaction sheath 28 depending on the location of a (not-shown) second suction port that is connectable thereto. The screen 34 on the bottom 32 serves for extracting potentially
10 accumulating liquids from the compaction sheath 28 without removing waste products or other objects from the compaction sheath 28.

In order to retain the bag 40, the frame 38 of the compaction sheath 28 may be equipped with a receptacle device 52 that can receive corresponding pin-shaped
15 projections 54 on the bag frame 42 of the waste disposal bag 40. In this case, the projections 54 may correspond to the projections 24 in Figure 1.

Figure 3 ultimately shows a third variation in the form of a waste receptacle 54 that is integrated into a stowage compartment 56 of a (not-shown) cabin monument. To
20 this end, the stowage compartment 56 comprises a guiding device with two guides 58 that extend parallel to one another and at the same height, wherein the frame 6 of a compaction sheath 4 of Figure 1 is insertable into said guides. Consequently, the waste receptacle 54 comprises a housing that is formed by the stowage compartment 56 and otherwise encloses a device of the type illustrated in Figure 1, which is in this
25 context referred to as receptacle insert 60. Consequently, air may be evacuated from the check valve 20 via a second suction port 62. It is preferred that a connection between the first check valve 20 and the second suction port 62 may be automatically or at least quickly produced after the insertion of the receptacle insert 60.

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The stowage compartment 56 preferably comprises a door 64 that is indicated with broken lines and contains a cutout 68, through which waste products may be introduced into the receptacle insert 60, above an opening 66 of the waste receptacle 54.

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As a supplement, it should be noted that "comprising" does not exclude any other elements or steps, and that "a" or "an" does not exclude a plurality. It should furthermore be noted that characteristics or steps that were described with reference to one of the above exemplary embodiments can also be used in combination with
10 other characteristics or steps of other above-described exemplary embodiments.
Reference symbols in the claims should not be interpreted in a restrictive sense.

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CLAIMS

1. A waste compaction system for a vehicle, comprising
 - a receptacle (2, 26, 54) for collecting waste products and
 - 5 - at least one check valve (20, 22, 50),wherein the receptacle (2, 26, 54) comprises at least one opening (9, 43, 66) for introducing waste products, a vacuum compaction mechanism and a first suction port (36) that is accessible from outside the receptacle (2, 26, 54) and is couplable to the vacuum compaction mechanism,
10 wherein the vacuum compaction mechanism comprises a compaction sheath (4, 28) that is sealable in a fluid-tight fashion and filled through the at least one opening (9, 43 66), with said compaction sheath being compactible into a state, in which it is sealed in a fluid-tight fashion, by evacuating air through the first suction port (36), and with a rigid plate (12, 30) being arranged on or in at least one lateral
15 surface (10, 31) of the compaction sheath (4, 28) and moving together with the compaction sheath (4, 28) during the evacuation thereof,
wherein the vacuum compaction mechanism is couplable to a second suction port (62) that is connectable to a suction line in the vehicle, and
wherein the check valve (20, 22, 50) is fluidically connected to an interior
20 formed in the compaction sheath (4, 28) and prevents air from flowing back into the interior after the compaction sheath (4, 28) has been compacted.
2. The waste compaction system of claim 1,
wherein the compaction sheath (4, 28) is an integral part of the receptacle (2,
25 26, 54).
3. The waste compaction system of claim 1,
wherein the receptacle (2, 26, 54) comprises a housing, in which the
compaction sheath (4, 28) is fixable.

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4. The waste compaction system of one of the preceding claims,
wherein the check valve (20, 22, 50) is arranged in the compaction sheath (4,
28).
- 5 5. The waste compaction system of one of claims 1-3,
wherein the check valve (20, 22, 50) is arranged in a separate bag (40) that is
suspendable in the compaction sheath (4, 28) and sealed in a fluid-tight fashion.
6. The waste compaction system of one of the preceding claims,
10 wherein the compaction sheath (4, 28) extends from a bottom (7, 32) of the
receptacle (2, 26, 54) to a retaining means (24) arranged opposite of the bottom (7,
32).
7. The waste compaction system of one of the preceding claims,
15 wherein the receptacle (2, 26, 54) comprises a frame (6, 38), on which the
compaction sheath (4, 28) is retainable, and
wherein the frame (6, 38) comprises an opening and is designed for
suspending a bag (40) that protrudes through the opening.
- 20 8. The waste compaction system of claim 7,
wherein the check valve (20, 22, 50) is arranged in the frame (6, 38) and
designed for producing a fluidic connection with a bag (40) suspended in the frame
(6, 38) and the surroundings of the receptacle (2, 26, 54).
- 25 9. The waste compaction system of one of the preceding claims, wherein the
receptacle (2, 26, 54) is realized in the form of a stowage compartment in a cabin
monument and designed for storing the compaction sheath (4, 28).

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10. The waste compaction system of one of the preceding claims, wherein the receptacle (2, 26, 54) is realized in the form of a trolley that is movable within the cabin of the vehicle and is designed for retaining the compaction sheath (4, 28).

5 11. The waste compaction system of one of the preceding claims, wherein a vacuum compaction mechanism is completely removable from the receptacle (2, 26, 54) as needed.

12. A cabin monument comprising a suction line and a waste compaction system
10 of one of claims 1-11, wherein the second suction port (62) of the waste compaction system is couplable to the suction line.

13. The cabin monument of claim 12, furthermore comprising at least one lavatory that is coupled to the suction line.

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14. An aircraft comprising a vacuum system with a suction line, furthermore comprising a waste compaction system of one of claims 1-11, as well as a cabin monument, into which the suction line extends, wherein the second suction port (62) of the waste compaction system is couplable to the suction line.

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15. The aircraft of claim 14, wherein the cabin monument comprises a lavatory.

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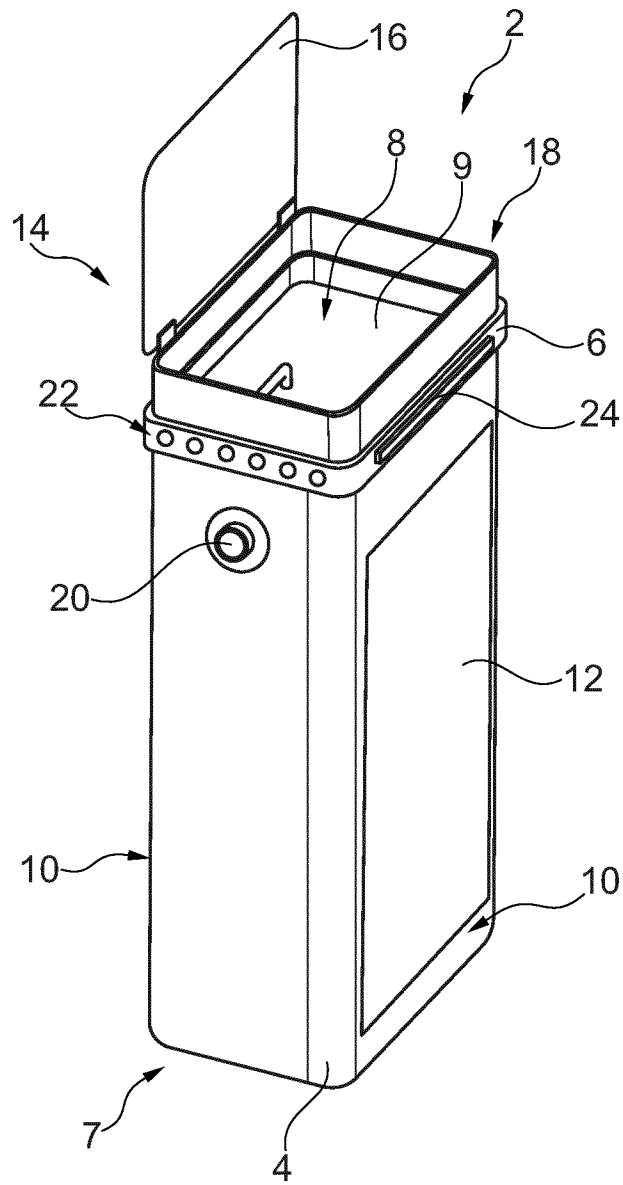


Fig. 1

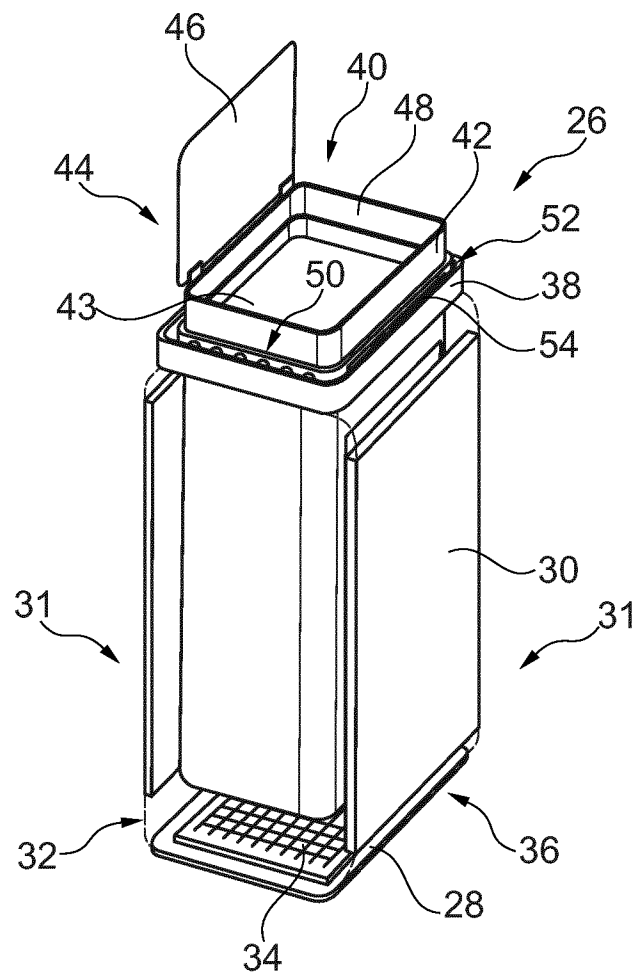


Fig. 2

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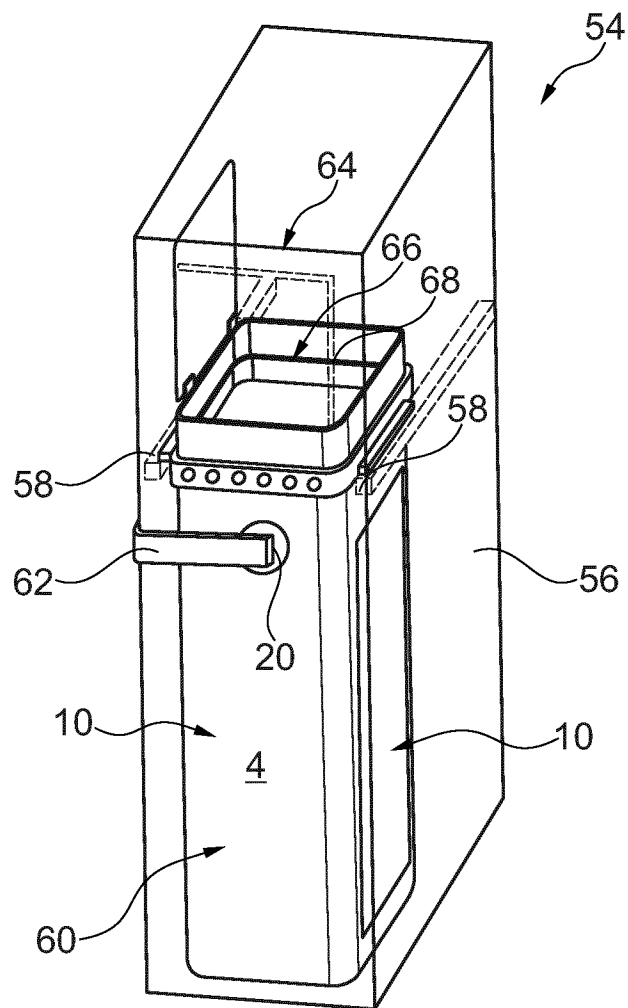


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2016/062026

A. CLASSIFICATION OF SUBJECT MATTER

INV. B64D11/00 B64D11/04 B65F1/14
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)

B64D B65F

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.
X	US 2008/034987 A1 (CLAFLIN SHAWN A [US] ET AL) 14 February 2008 (2008-02-14) paragraph [0016] - paragraph [0029]; figures	1-15
Y	----- EP 0 931 720 A2 (BOEING CO [US]) 28 July 1999 (1999-07-28) paragraph [0014] - paragraph [0021]; figures	1-15
Y	----- US 2007/034098 A1 (LABEILLE FREDERIC [FR] ET AL) 15 February 2007 (2007-02-15) paragraph [0035] - paragraph [0043]; figures 1-10	1-15
X,P	----- EP 2 949 459 A1 (AIRBUS OPERATIONS GMBH [DE]) 2 December 2015 (2015-12-02) paragraph [0033] - paragraph [0054]; figures	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

22 July 2016

Date of mailing of the international search report

12/08/2016

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Silva d'Oliveira, M

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2016/062026

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