



(12)

EUROPEAN PATENT APPLICATION

(43)

Date of publication:
17.04.2024 Bulletin 2024/16

(51)

International Patent Classification (IPC):
B65D 88/30 (2006.01) B65D 90/62 (2006.01)
B65G 65/40 (2006.01)

(21)

Application number: 22200997.9

(52)

Cooperative Patent Classification (CPC):
B65D 88/30; B65D 90/623

(22)

Date of filing: 12.10.2022

(84)

Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

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SILO, DOCKING STATION THEREFOR AND SYSTEM THEREWITH

(57)

A silo (100) for mounting on a docking station (200). The silo comprises a funnel shaped container (110) and a supporting structure (120). When positioned in the upright position, an area of the funnel shaped container (110) decreases with decreasing height towards an outlet, and an upper region (122) of the supporting structure (120) is providing support for the funnel shaped container (110). A lower region of the supporting struc-

ture has sloped inner walls (121) wherein a distance between the sloped inner walls increases with decreasing height such that the inner walls (121) of the lower region can slide over the docking station (200) which has an upper region comprising primary walls with a sloped outside surface (251) which matches with the sloped inner walls (121) of the lower region of the supporting structure (120).

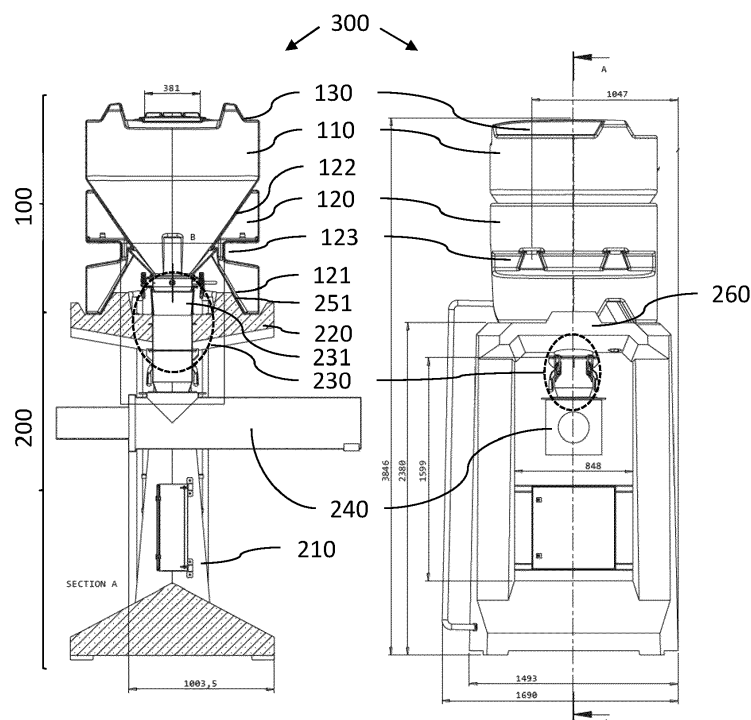


FIG. 1

Description

Field of the invention

[0001] The invention relates to the field of silo systems. More specifically it relates to a silo system for use at a construction site.

Background of the invention

[0002] At construction sites nowadays typically a plurality of bags comprising cement and sand are locally mixed in a mixer with water for creating a mortar product. Depending on the required product mixtures of different materials may be made.

[0003] Other applications may require the preparation of a plaster mixture. The plaster may for example also be provided in different bags.

[0004] The bags comprising the different dry powders, gypsum, cement, sand, stones, may for example be provided on pallets. It is understood that carrying these have bags in order to prepare the mixture poses a heavy load on the construction workers. There is therefore a need for improving the ergonomics for the construction workers.

[0005] US5339996A proposes a portable mini silo system for delivering dry mortar blends to batch mixers. This mini silo system comprises leg elements which support the silo at the construction site and which are telescopic to create free height. Such a silo, however, requires manual alignment and coupling with a batch mixer.

[0006] US10562702B2 discloses a portable silo system which is stackable. It can be transported using a forklift. Such a silo, however, requires manual alignment and coupling with a batch mixer. This alignment may be tedious for the construction worker and pose ergonomic issues.

[0007] There is, therefore, a need for good alternative solutions for a silo system to be used at a construction site.

Summary of the invention

[0008] It is an object of embodiments of the present invention to provide a good silo system to be used at a construction site.

[0009] The above objective is accomplished by a method and device according to the present invention.

[0010] In a first aspect embodiments of the present invention relate to a silo. The silo comprises a funnel shaped container and a supporting structure. When positioned in the upright position, an area of a horizontal cross-section of the funnel shaped container decreases with decreasing height towards an outlet. An upper region of the supporting structure is providing support for the funnel shaped container. A lower region of the supporting structure has sloped inner walls. A distance between the sloped inner walls increases with decreasing height such

that the inner walls of the lower region can slide over a docking station which has an upper region comprising primary walls with a sloped outside surface which matches with the sloped inner walls of the lower region of the supporting structure.

[0011] It is an advantage of a silo according to embodiments of the present invention that it can be mounted on a docking station with primary walls with a sloped outside surface which matches with the sloped surface of the inner side of a lower region of the supporting structure of the silo and that thus, when mounted, the silo and the docking station are, in at least a first direction, self-aligned.

[0012] It is an advantage of embodiments of the present invention that the funnel shaped container and the supporting structure are separate elements as this makes them more easy to manufacture.

[0013] In embodiments of the present invention recesses are provided in the supporting structure wherein forks of a forklift can be inserted for lifting the silo.

[0014] It is an advantage of embodiments of the present invention that the silo can easily be lifted with a forklift and placed on a docking station. This is enabled by the recesses in the silo. Due to the shape of the silo, self-alignment between the silo and the docking station is possible in at least a first direction.

[0015] In embodiments of the present invention the silo comprises a butterfly valve at the outlet, for opening and closing the funnel shaped container.

[0016] In embodiments of the present invention the silo comprises a flange at the outlet for connecting the outlet with a coupling system of the docking station.

[0017] In embodiments of the present invention sloped ridges are provided at a top of the funnel shaped container which match with the sloped inner walls of the lower region of the supporting structure. It is thereby an advantage that silos according to embodiments of the present invention can be stacked.

[0018] In embodiments of the present invention the funnel shaped container and the supporting structure are made of synthetic material.

[0019] In a second aspect embodiments of the present invention relate to a docking station for mounting a silo according to embodiments of the present invention. The docking station comprises a coupling system for connecting with the outlet of the funnel shaped container and a pedestal with at a top of the pedestal an upper region comprising primary walls with a sloped outside surface. The sloped outside surface is such that sloped inner walls of the lower region of the silo match with the sloped outside surface of the primary walls of the upper region of the pedestal. Thus, the sloped inner walls of the lower region of the silo can slide over these sloped outside surfaces of the primary walls. When positioned on top of each other, sloped inner walls of the lower region of the silo align with sloped outside surface of the primary walls of the upper region of the pedestal. It is an advantage of a docking station according to embodiments of the

present invention that when mounting a silo with matching walls, the silo outlet is at least in a first direction self-aligned with the coupling system.

[0020] A docking station, in accordance with embodiments of the present invention, may comprise secondary walls with a sloped inner surface such that gutters are formed between the primary walls and secondary walls.

[0021] In embodiments of the present invention an upper part of the coupling system is configured to be connected with the outlet of the funnel shaped container and a lower part of the coupling system is configured to be connected with an accessory. The accessory may for example be a mixer or a discharge tube. A butterfly valve may be present at the output of the funnel shaped container. The butterfly valve may be connected with the coupling system.

[0022] In embodiments of the present invention the coupling system comprises a double walled flexible tube.

[0023] In embodiments of the present invention the coupling system is cast into the upper platform.

[0024] In embodiments of the present invention lifting eyes are provided on a top side of the upper region of the pedestal.

[0025] In embodiments of the present invention the pedestal is made of concrete. It is an advantage of a docking station according to embodiments of the present invention that the weight of the docking station gives the docking station stability even when a silo is placed on top of the docking station. A lightweight silo (e.g. made of synthetic material) may for example be combined with a heavy weight docking station (e.g. made of concrete).

[0026] In embodiments of the present invention a height of the docking station is between 2 and 4 meters. It is an advantage of a docking station in accordance with embodiments of the present invention that it is high enough such that an accessory, such as a mixer, can be connected to the lower side of the coupling system.

[0027] In a third aspect embodiments of the present invention relate to a silo system. The silo system comprises a silo and a docking station, both in accordance with embodiments of the present invention. The funnel shape of the inner side of the lower region of the supporting structure of the silo matches with the funnel shaped exterior of an upper region of the docking station. It is an advantage of a silo system according to embodiments of the present invention that when a silo of the silo system is placed on top of a docking station of the silo system, the silo will, at least in a first direction, be self-aligned with the docking station. This facilitates a good connection between the outlet of the funnel shaped container and the upper part of the coupling system of the docking system.

[0028] Particular and preferred aspects of the invention are set out in the accompanying independent and dependent claims. Features from the dependent claims may be combined with features of the independent claims and with features of other dependent claims as appropriate and not merely as explicitly set out in the claims.

[0029] These and other aspects of the invention will be apparent from and elucidated with reference to the embodiment(s) described hereinafter.

5 Brief description of the drawings

[0030]

FIG. 1 shows a cross-section and a side view of a silo system, in accordance with embodiments of the present invention.

FIG. 2 shows a coupling system of a docking station, in accordance with embodiments of the present invention.

FIG. 3 shows side views of a silo system, in accordance with embodiments of the present invention.

FIG. 4 shows 3D-drawings of a silo, in accordance with embodiments of the present invention.

FIG. 5 shows a 3D-drawing of a docking station in accordance with embodiments of the present invention.

FIG. 6 shows a 3D-drawing of a sectioned silo and docking station, in accordance with embodiments of the present invention.

FIG. 7 shows a 3D-drawing which illustrates the coupling between a coupling system and an accessory, in accordance with embodiments of the present invention.

[0031] Any reference signs in the claims shall not be construed as limiting the scope. In the different drawings, the same reference signs refer to the same or analogous elements.

35 Detailed description of illustrative embodiments

[0032] The present invention will be described with respect to particular embodiments and with reference to certain drawings but the invention is not limited thereto but only by the claims. The drawings described are only schematic and are non-limiting. In the drawings, the size of some of the elements may be exaggerated and not drawn on scale for illustrative purposes. The dimensions and the relative dimensions do not correspond to actual reductions to practice of the invention.

[0033] The terms first, second and the like in the description and in the claims, are used for distinguishing between similar elements and not necessarily for describing a sequence, either temporally, spatially, in ranking or in any other manner. It is to be understood that the terms so used are interchangeable under appropriate circumstances and that the embodiments of the invention described herein are capable of operation in other sequences than described or illustrated herein.

[0034] It is to be noticed that the term "comprising", used in the claims, should not be interpreted as being restricted to the means listed thereafter; it does not exclude other elements or steps. It is thus to be interpreted

as specifying the presence of the stated features, integers, steps or components as referred to, but does not preclude the presence or addition of one or more other features, integers, steps or components, or groups thereof. Thus, the scope of the expression "a device comprising means A and B" should not be limited to devices consisting only of components A and B. It means that with respect to the present invention, the only relevant components of the device are A and B.

[0035] Reference throughout this specification to "one embodiment" or "an embodiment" means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases "in one embodiment" or "in an embodiment" in various places throughout this specification are not necessarily all referring to the same embodiment, but may. Furthermore, the particular features, structures or characteristics may be combined in any suitable manner, as would be apparent to one of ordinary skill in the art from this disclosure, in one or more embodiments.

[0036] Similarly it should be appreciated that in the description of exemplary embodiments of the invention, various features of the invention are sometimes grouped together in a single embodiment, figure, or description thereof for the purpose of streamlining the disclosure and aiding in the understanding of one or more of the various inventive aspects. This method of disclosure, however, is not to be interpreted as reflecting an intention that the claimed invention requires more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all features of a single foregoing disclosed embodiment. Thus, the claims following the detailed description are hereby expressly incorporated into this detailed description, with each claim standing on its own as a separate embodiment of this invention.

[0037] Furthermore, while some embodiments described herein include some but not other features included in other embodiments, combinations of features of different embodiments are meant to be within the scope of the invention, and form different embodiments, as would be understood by those in the art. For example, in the following claims, any of the claimed embodiments can be used in any combination.

[0038] In the description provided herein, numerous specific details are set forth. However, it is understood that embodiments of the invention may be practiced without these specific details. In other instances, well-known methods, structures and techniques have not been shown in detail in order not to obscure an understanding of this description.

[0039] In a first aspect embodiments of the present invention relate to a silo 100, in a second aspect embodiments of the present invention relate to a docking station 200, and in a third aspect embodiments of the present invention relate to a silo system 300 comprising a silo 100 and a docking station 200 according to embodiments

of the present invention. An exemplary silo, docking station, and silo system are shown in FIG. 1 and FIG. 3. In the following description it is assumed that the silo and the supporting structure are positioned in the upright position, which is applied during normal operation of the device.

[0040] In embodiments of the present invention the silo 100 comprises a funnel shaped container 110 and a supporting structure 120 for supporting the funnel shaped container 110.

[0041] When positioned in the upright position, an area of the funnel shaped container 110 decreases with decreasing height. At the bottom of the funnel shaped container an outlet is present which can be connected to a coupling system 230.

[0042] The supporting structure 120 comprises an upper region and a lower region. The upper region 122 is providing support for the funnel shaped container 110.

[0043] The lower region of the supporting structure has sloped inner walls 121. A distance between the sloped inner walls increases with decreasing height, such that the inner walls 121 of the lower region can slide over primary walls of a docking station 200. The primary walls are present on an upper region of the docking station. They have a sloped outside surface 251 which matches with the sloped inner walls 121 of the lower region of the supporting structure 120. Thus, when putting the silo 100 on the docking station 200 the sloped inner walls of the supporting structure slide over the sloped outside surface of the primary walls. As a result thereof the silo is aligned by the sloped walls of the silo and the docking station when putting the silo on the docking station and hence the relative position between the silo and the docking station is, in at least a first direction which is the direction orthogonal to the direction of the primary walls, unambiguously determined.

[0044] The funnel shaped container 110 may have a horizontal cross-section which is circular. The invention is, however, not limited thereto. For example also rectangular or square cross-sections are possible. These may have rounded corners. The volume of the funnel shaped container may for example range between 0.5 and 2 m³. The volume of the funnel shaped container may for example be 0.7 m³.

[0045] The silo may for example be used for delivering cement, gypsum, sand, or other materials.

[0046] A docking station 200 according to embodiments of the present invention is configured such that a silo according to embodiments of the present invention can be stacked on top of it. An example of such a docking station is shown in the drawings of FIG. 1, FIG. 3, and in more detail in FIG. 5.

[0047] In embodiments of the present invention the docking station 200 comprises a pedestal 210. At a top of the pedestal 210 an upper region is present. This upper region is an upper platform on which the silo 100 can be placed. The upper platform is supported by pillars or walls such that the platform is kept at a certain height. The

pillars or walls may be supported by a base platform which may increase the stability of the pedestal.

[0048] The height of the platform may for example be between 2 and 4 meter, for example between 2.5 and 3.5 meter, for example 3 meter. In FIG. 1 and 3 measures (expressed in mm) are present for heights and widths of an exemplary embodiment of the present invention. These measures are only exemplary and the invention is not limited thereto.

[0049] Primary walls with a sloped outside surface 251 are present on the upper platform 220. The outside surfaces of two opposing, parallel, primary walls are thereby the outer surfaces of the parallel walls (the inner surfaces are the neighboring surfaces of the opposing walls). These walls are arranged at opposite sides around an opening in the upper platform.

[0050] The docking station, moreover, comprises a coupling system 230 mounted in the opening in the upper platform. In embodiments of the present invention the coupling system may be cast into the upper platform. A detailed drawing of a coupling system 230 integrated in the upper platform 220 is shown in FIG. 2. This coupling system can on the upper side be connected with the outlet of the funnel shaped container 110 and on the lower side with an accessory such as a discharge tube 240 (see for example FIG. 3). For connecting the outlet of the funnel shaped container it is important that the outlet and the coupling system are well aligned. Therefore the coupling system is positioned such that, when the silo 100 is placed on the docking station 200 by sliding the sloped inner walls 121 of the lower region of the silo 100 over the sloped outside surface 251 of the primary walls of the upper region of the pedestal, the outlet of the funnel shaped container 110 is, in at least a first direction, aligned with the coupling system 230. The first direction is a direction orthogonal to the direction of the primary walls of the docking station.

[0051] A silo system 300 according to embodiments of the present invention comprises a silo 100 and a pedestal 200 in accordance with embodiments of the present invention. An example of such a silo system in which a silo 100 is mounted on a pedestal 200 is shown in FIG. 1. As can be seen in this figure the position of the silo with respect to the pedestal is, in at least a first direction, determined by the sloping surfaces of the primary walls and of the supporting structure. This significantly improves the positioning of the silo with respect to the pedestal. Additionally the primary walls may block the movement of the silo in a second direction different from the first direction. Thus, an adequate alignment in two directions can be achieved.

[0052] In embodiments of the present invention recesses 123 are provided in the supporting structure 120 for carrying the silo using a forklift.

[0053] In embodiments of the present invention the silo comprises a butterfly valve 112 at the outlet. This is for example illustrated in FIG. 4, and FIG. 6. Using a handle, the butterfly valve 112 can be opened and closed. The

butterfly valve can be connected with the coupling system of the docking station.

[0054] In embodiments of the present invention the silo comprises a flange at the outlet for connecting the outlet with the coupling system of the docking station. The outlet may comprise a butterfly valve which may for example be connected with the funnel shaped container using a flange. In that case the butterfly valve can be connected with the coupling system. This is for example illustrated in FIG. 6.

[0055] The coupling system may comprise a double walled flexible tube 231. Thus a better sealing between the outlet and the remainder of the coupling system can be obtained.

[0056] In the example of FIG. 6 the double walled flexible tube 231 is at the top connected to a flange that connects to the lower flange of a butterfly valve at the outlet of the funnel shaped container.

[0057] The double walled flexible tube 231 is at the bottom connected to the remainder of a tube 233 of the coupling system that is cast in the pedestal and protrudes through the top side of the pedestal. This tube 233 may for example be a steel tube.

[0058] It is an advantage of embodiments of the present invention that a better sealing between an outlet of the double walled flexible tube and the remainder of the tube 233 of the coupling system can be obtained. The inner wall may for example be connected at the inside of the tube 233 of the coupling system, and the outer wall at the outside of the tube 233 of the coupling system (see FIG. 6).

[0059] The coupling system 230 can on the lower side be connected with an accessory. This is illustrated in FIG. 7 wherein a flange 232 of the coupling system 230 is clamped against a flange 271 of the accessory 270.

[0060] In embodiments of the present invention sloped ridges 130 are provided at a top of the funnel shaped container which match with the sloped inner walls 121 of the lower region of the supporting structure 120. This allows to stack the silos on top of each other and thus to reduce the area required on the construction site for storing the silos with different materials. Blocking protrusions 131 may be present on the ridges 130 which block the movement of the silo in the second direction. The ridges and blocking protrusions 131 are shown in FIG. 4.

[0061] In embodiments of the present invention the funnel shaped container 110 and the supporting structure 120 are made of synthetic material. They may for example be made of polyethylene.

[0062] In embodiments of the present invention secondary walls 260 are present on the upper platform 220 which, together with the primary walls form gutters in which the supporting structure of the silo can be positioned.

[0063] In embodiments of the present invention the docking station is obtained by mould casting. Where in embodiments of the present invention the upper region 220 of the pedestal is obtained by mould casting, a

smooth surface of the sloped surfaces of the primary walls can be obtained and also smooth surfaces of the secondary walls and/or of the horizontal part between the sloped surface of the primary wall and the sloped surface of the secondary wall may be obtained. This is particularly advantageous for sliding the silo on the docking station.

[0064] In embodiments of the present invention lifting eyes 252 are provided on a top side of the upper platform. An example thereof is also illustrated in FIG. 5. It is thereby an advantage of embodiments of the present invention that the docking station can be lifted using a crane.

[0065] In embodiments of the present invention the docking station is made of concrete. Thus, a heavy weight docking station can be obtained which can be solidly positioned at the construction area.

Claims

1. A silo (100) the silo comprising a funnel shaped container (110) and a supporting structure (120), wherein, when positioned in the upright position, an area of the funnel shaped container (110) decreases with decreasing height towards an outlet and an upper region (122) of the supporting structure (120) is providing support for the funnel shaped container (110), and a lower region of the supporting structure has sloped inner walls (121) wherein a distance between the sloped inner walls increases with decreasing height such that the inner walls (121) of the lower region can slide over a docking station (200) which has an upper region comprising primary walls with a sloped outside surface (251) which matches with the sloped inner walls (121) of the lower region of the supporting structure (120).
2. A silo (100) according to claim 1, wherein recesses (123) are provided in the supporting structure wherein forks of a forklift can be inserted for lifting the silo.
3. A silo (100) according to any of the previous claims, the silo comprising a butterfly valve (112) at the outlet, for opening and closing the funnel shaped container (110).
4. A silo (100) according to any of the previous claims, the silo comprising a flange (114) at the outlet for connecting the outlet with a coupling system (230) of the docking station (200).
5. A silo (100) according to any of the previous claims wherein sloped ridges (130) are provided at a top of the funnel shaped container which match with the sloped inner walls (121) of the lower region of the supporting structure (120).
6. A silo (100) according to any of the previous claims wherein the funnel shaped container (110) and the supporting structure (120) are made of synthetic material.
7. A docking station (200) for mounting a silo (100) according to any of the claims 1 to 6, the docking station (200) comprising a coupling system (230) for connecting with the outlet of the funnel shaped container and comprising a pedestal (210) with at a top of the pedestal (210) an upper region (220) comprising primary walls with a sloped outside surface (251), such that the sloped inner walls (121) of the lower region of the silo (100) which match with the sloped outside surface (251) of the primary walls of the upper region of the pedestal, can slide over these sloped outside surfaces (251) of the primary walls.
8. A docking station (200) according to claim 7, comprising secondary walls (260) with a sloped inner surface such that gutters are formed between the primary walls and secondary walls.
9. A docking station (200) according to any of the claims 7 or 8 wherein an upper part of the coupling system (230) is configured to be connected with the outlet of the funnel shaped container (110) and a lower part of the coupling system (230) is configured to be connected with an accessory.
10. A docking station (200) according to any of the claims 7 to 9, wherein the coupling system (230) comprises a double walled flexible tube (231).
11. A docking station (200) according to any of the claims 7 to 10 wherein the coupling system is cast into the upper platform (220).
12. A docking station (200) according to any of the claims 7 to 11, wherein lifting eyes are provided on a top side of the upper region of the pedestal (210).
13. A docking station (200) according to any of the claims 7 to 12 wherein the pedestal is made of concrete.
14. A docking station (200) according to any of the claims 7 to 13 wherein a height of the docking station is between 2 and 4 meters.
15. A silo system (300), the silo system comprising a silo (100) according to any of the claims 1 to 7 and a docking station (200) according to any of the claims 8 to 13 wherein the funnel shape of the inner side (121) of the lower region of the supporting structure (120) of the silo (100) matches with the funnel shaped exterior (211) of an upper region of the docking station (200).

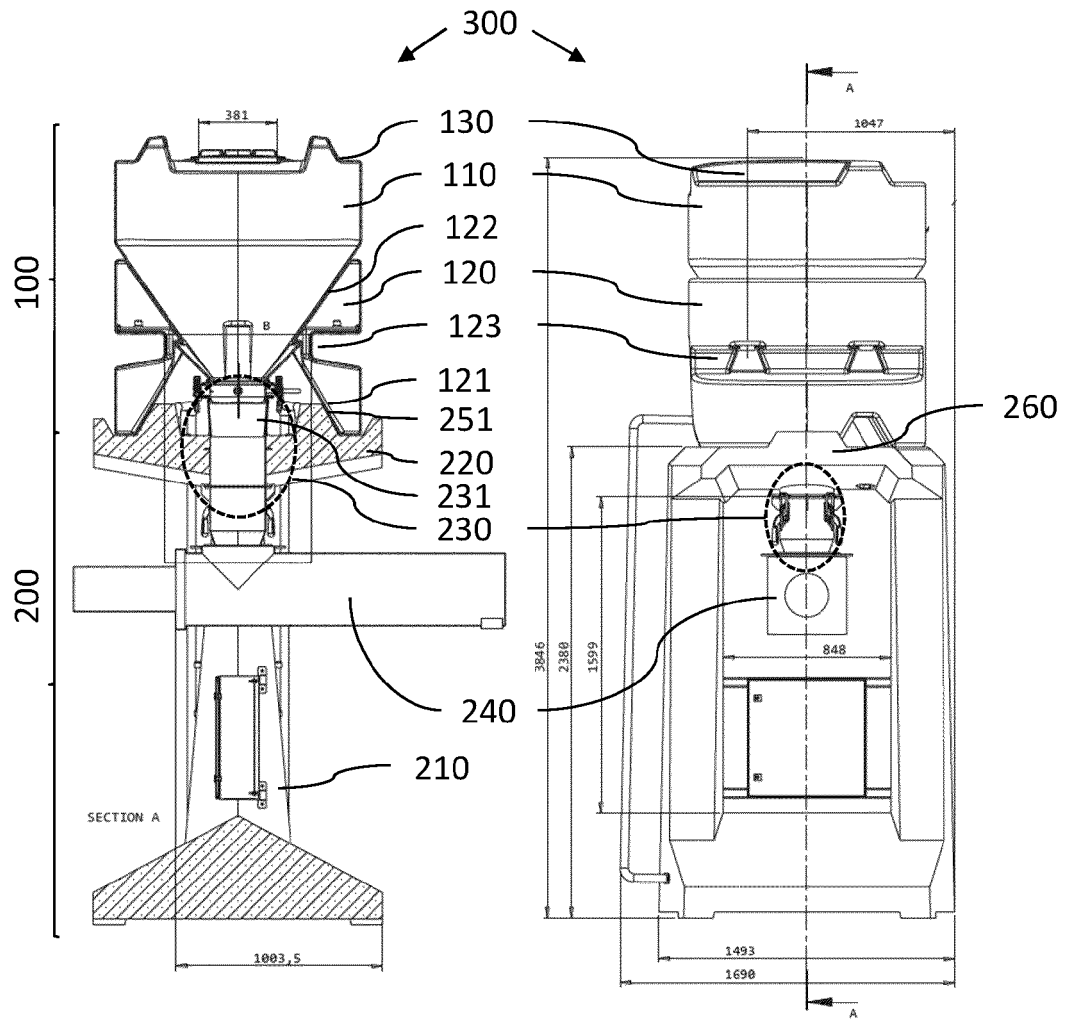


FIG. 1

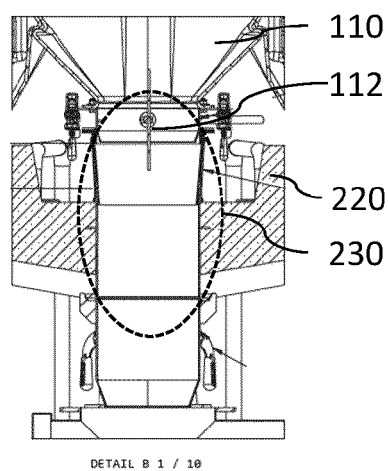


FIG. 2

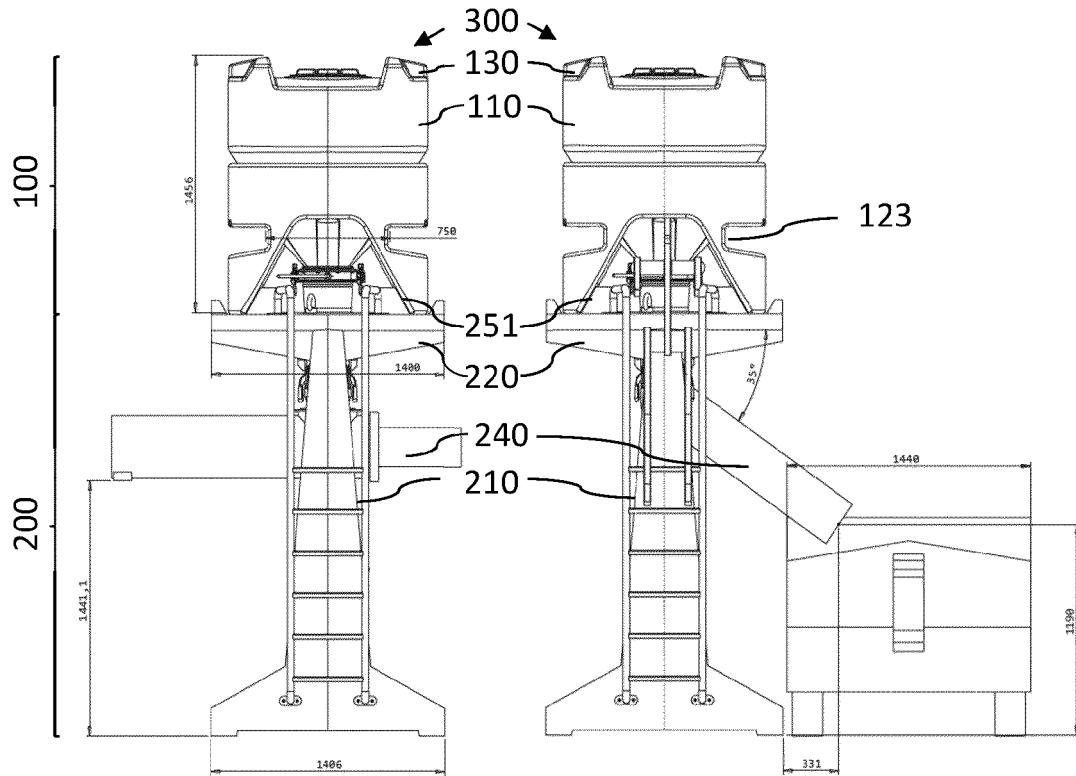


FIG. 3

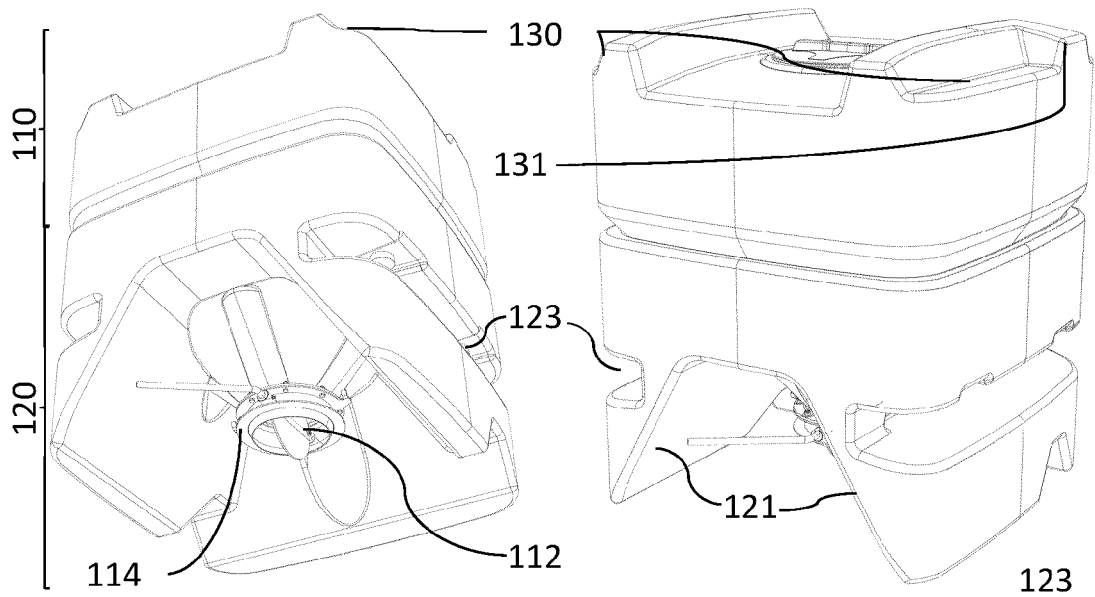


FIG. 4

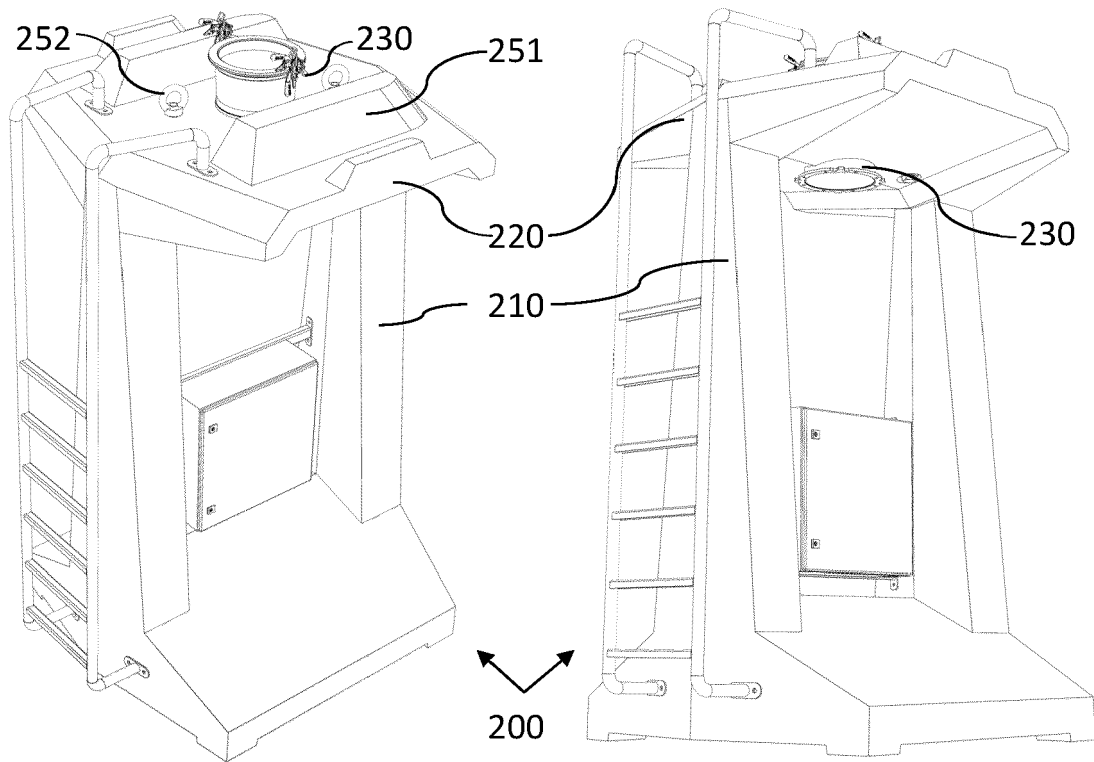


FIG. 5

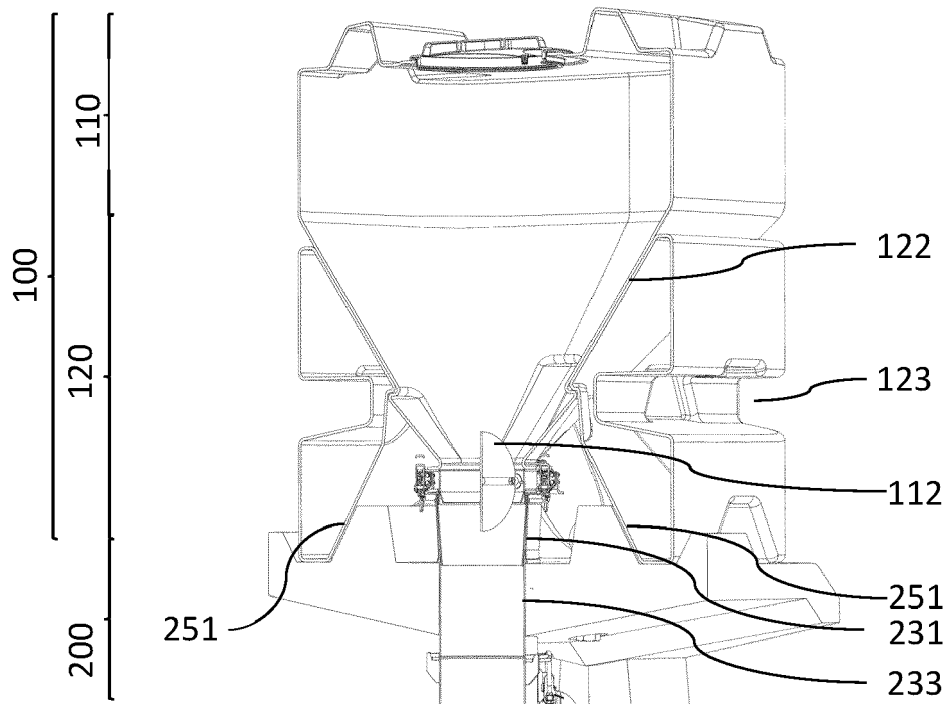


FIG. 6

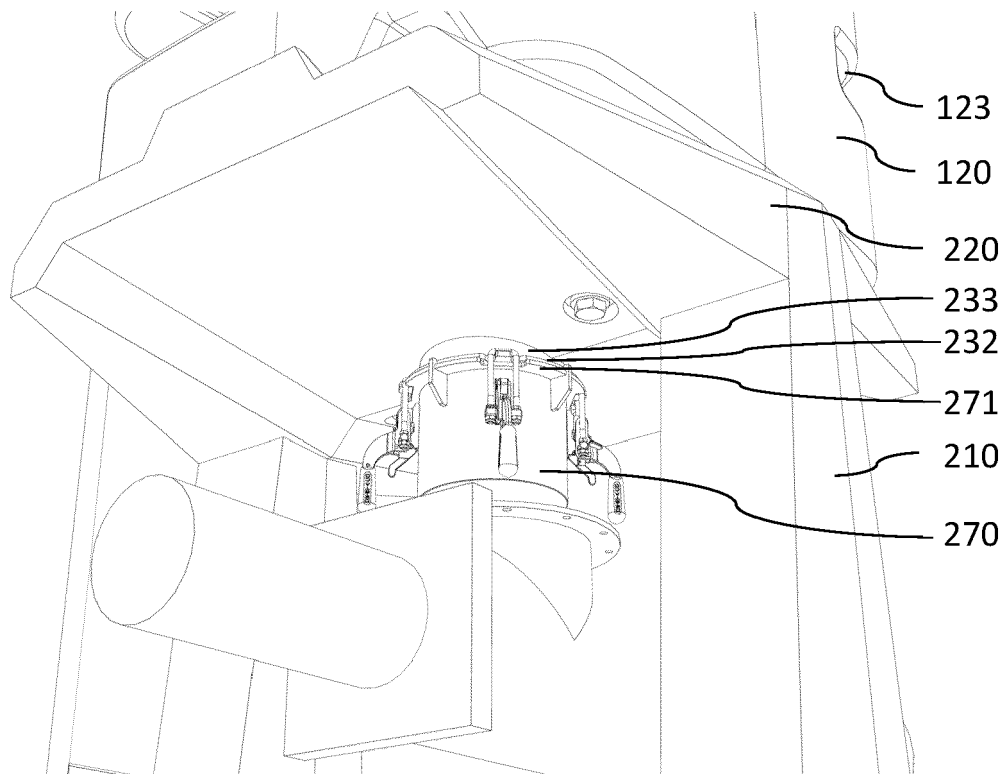


FIG. 7



EUROPEAN SEARCH REPORT

Application Number

EP 22 20 0997

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2006/277783 A1 (GARTON DARWIN [US]) 14 December 2006 (2006-12-14) * page 2, paragraph 16 - page 4, paragraph 23 * * figures 1-4 *	1-6	INV. B65D88/30 B65D90/62 B65G65/40
X	US 2022/289472 A1 (CONNORS TRACY L [US] ET AL) 15 September 2022 (2022-09-15) * page 1, paragraph 20 - page 3, paragraph 29 * * figures 1-13 *	1-6	
X	FR 2 124 556 A1 (ALCOA CONTAINER SYSTEMS) 22 September 1972 (1972-09-22) * page 2, line 16 - page 4, line 17 * * page 4, line 32 - page 5, line 2 * * figure 1 *	1-4, 6-15	
X	GB 1 420 344 A (SIMON BARRON LTD) 7 January 1976 (1976-01-07) * page 1, column 2, line 71 - page 2, column 1, line 62 * * figure 1 *	1, 4, 7-15	TECHNICAL FIELDS SEARCHED (IPC) B65D B65G
The present search report has been drawn up for all claims			

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EPO FORM 1503 03.82 (P04C01)

Place of search Munich	Date of completion of the search 20 June 2023	Examiner Piolat, Olivier
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		



Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 22 20 0997

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-6**Silo**

2. claims: 7-15**Docking station and system therewith**

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

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