

(19)



(11)

EP 3 323 757 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
29.12.2021 Bulletin 2021/52

(51) Int Cl.:
B65F 1/12 (2006.01) B65F 5/00 (2006.01)

(21) Application number: **17202541.3**

(22) Date of filing: **20.11.2017**

(54) WASTE MANAGING ASSEMBLY

ANORDNUNG ZUM ENTSORGEN VON MÜLL
ENSEMBLE POUR LA GESTION DE DÉCHETS

(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 MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **21.11.2016 SE 1651519**

(43) Date of publication of application:
23.05.2018 Bulletin 2018/21

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Description

TECHNICAL FIELD

[0001] The present invention relates to a waste managing assembly for the collection, temporary storage and discharge of waste of various kinds in association with a pneumatic material collection and transport system, according to the preamble of claim 1.

BACKGROUND

[0002] Vacuum operated waste collection systems are presently used in many parts of the world and are employed for managing different fractions of waste and refuse. In such systems, waste has traditionally been introduced into the system at fixed insertion points. Normally, said insertion points have some type of integrated temporary waste storage facility in order to provide better waste discharge control. The insertion points or their temporary waste storage facilities are connected through a waste transport pipe system to a stationary central waste collection facility with a likewise stationary vacuum source.

[0003] A development of the above briefly described "stationary type" vacuum operated waste collection system involves the use of movable vacuum sources mounted on trucks having a waste tank of considerable volume. The vacuum pressure generated by the movable vacuum sources is selectively connected to docking points positioned in the vicinity of one or more temporary waste storage tanks. The tank or tanks are in turn connected through discharge pipes to associated docking points and a major advantage of these "mobile type" vacuum operated waste collection systems is that they do not require any extended transport pipe systems connecting insertion points or their temporary waste storage facilities with the central waste collection facility.

[0004] Both of the above described types of vacuum operated waste collection system variants have served their intended purpose well. However, both variants lack an extended versatility that would be beneficial also in areas of waste collection other than in residential and office environments.

[0005] US 4 768 670 A discloses a waste managing assembly according to the preamble of claim 1, comprising a combined dump container consisting of an upper minor garbage collection container and a lower major dump container. The minor garbage collection container has a bottom with an automatically operated discharge outlet consisting of a double-layer cover with two mutually slidable cover parts. When the minor garbage collection container is lowered onto the major dump container the discharge outlet is opened by the interaction of spring actuated push rods of said discharge outlet with V-shaped troughs at raised walls serving as an interface for docking the minor garbage collection container with the major dump container.

SUMMARY

[0006] It is a general object of the present technology to improve the versatility of a pneumatic material collection and transport system.

[0007] In particular it is an object of the technology to suggest an improved waste managing assembly for use in association with a pneumatic material collection and transport system.

10 [0008] This and other objects are met by the technology as defined by the accompanying claims.

[0009] The present invention provides a waste managing assembly according to claim 1 for the collection, storage and discharge of waste in association with a pneumatic material collection and transport system. The waste managing assembly comprises a waste tank and the pneumatic material collection and transport system (100) uses air flow through a pipe to transport collected material from the waste tank at one or more waste deposit and discharge points of the system. The waste tank includes a bottom waste storage and discharge tank section for supporting the waste managing assembly at a waste deposit and discharge point; a relocatable top waste receiving tank section having at least one waste introduction opening for introducing waste into the top waste receiving tank section; an interface for docking a lower part of the top waste receiving tank section on an open upper part of the bottom waste storage and discharge tank section; and bottom walls at the lower part of the top waste receiving tank section and operable to open and close communication of waste between the top and bottom tank sections of the waste managing assembly. According to the invention arcuate guide grooves are formed in associated end walls of the top waste receiving tank section, the bottom walls at the lower part of each top waste receiving tank section are swingably and slidably supported in the guide grooves in the opposite end walls of each top waste receiving tank section and are provided with guide members that extend externally of the associated end wall and cooperate with a first pair of guide formations of the interface as well as with said guide grooves to control operation of the bottom walls between a closed position blocking open waste communication between the top waste receiving tank section and the bottom tank section and a position opening communication between a top waste receiving tank section and the bottom waste storage and discharge tank section.

50 [0010] Preferred further embodiments are specified in the dependent claims.

[0011] Advantages offered by the present technology, in addition to those described above, will be readily appreciated upon reading the below detailed description of embodiments thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

55 [0012] The invention and its further objects and advantages

tages will be best understood by reference to the following description taken together with the accompanying drawings, in which:

- Fig. 1 is a schematical top perspective view of a waste managing assembly of the present invention, in assembled condition;
- Fig. 2 is a schematical top perspective view of a dismantled top tank section of the waste managing assembly of the present invention;
- Fig. 3 is a schematical side view of the dismantled top tank section of Fig. 2;
- Fig. 4 is a schematical end view of the dismantled top tank section of Fig. 2;
- Figs. 5A-B are detailed perspective views of outer and inner sides, respectively, of one of the bottom walls of the top tank section of Figs. 2-4; and
- Figs. 6A-B are schematical perspective views illustrating operation of the bottom walls by docking of the top and bottom tank sections of the waste managing assembly.

DETAILED DESCRIPTION

[0013] The invention will be explained with reference to exemplifying embodiments of a waste managing assembly that are illustrated in accompanying drawing figures. The embodiments serve to exemplify the use of the invention in an application for managing waste material in association with a pneumatic material collection and transport system using vacuum or suction air flow through a waste transport pipe to discharge the waste material. It shall be emphasized that the illustrations serve the purpose of describing preferred embodiments of the invention and are not intended to limit the invention to details or to any specific field of application thereof.

[0014] To overcome shortcomings and problems normally encountered within this technical field and briefly discussed in the introduction, the present invention now suggests a novel approach for optimizing the versatility of a pneumatic waste material collection and transport system. This is done by providing a waste managing assembly for independent collection and temporary storage and then discharge of waste in association with a pneumatic material collection and transport system. More specifically, the waste managing assembly proposed by the present technology may also be defined as a composite waste material container or tank including mutually docking upper and lower container/tank sections. Thereby it enables the use of a quite unique two-stage waste collection approach where the two tank sections may be

located at separate appropriate locations and may at intervals be docked for waste discharge.

[0015] The tank/container will throughout the rest of the specification be referred to as a tank, but it will be clear that it may take the form of any appropriate container. It is preferably a so called screw tank type having a feed screw provided adjacent a bottom section of the tank for enabling quick and secure waste discharge from the assembly. By combining a bottom discharge tank section with an optional number of separate relocatable top waste receiving temporary storage tank sections said assembly enables optimized and problem-free collection of waste from several locations. With the invention this is in essence achieved by decentralizing the collection of larger amounts of waste without requiring any additional fixed or stationary installations, apart from the single bottom assembly tank section. This unique design of the proposed configuration provides several essential advantages that will especially present solutions to problems existing in areas such as in the hospital sector, by commercial properties, larger construction sites etc.

[0016] Fig. 1 illustrates an exemplary embodiment of the waste managing assembly 1. The waste managing assembly 1 is intended for the collection, temporary storage and discharge of waste in association with pneumatic material collection and transport systems 100. Such systems use air flow through a waste transport pipe 101 to transport collected waste material from a waste tank 2, 4 at one or more waste deposit and discharge points 102 of the pneumatic material collection and transport system. The waste tank 2, 4 of each waste managing assembly 1 basically includes a bottom waste storage and discharge tank section 2 and at least one relocatable top waste receiving tank section 4 associated therewith. In embodiments where the assembly 1 includes more than one top waste receiving tank section 4 these are, apart from being relocatable, also mutually exchangeable, meaning that they may all be connected to the same or to different bottom waste storage and discharge tank sections 2. The bottom waste storage and discharge tank section 2 is stationary at a designated waste deposit and discharge point 102 of the pneumatic material collection and transport system 100. Thus, one or more relocatable top waste receiving tank sections 4 may be associated with each stationary bottom waste storage and discharge tank section 2 and may be located at a designated, later described waste introduction point 103 for receiving waste. The bottom waste storage and discharge tank section 2 has a base 3 with a number of support legs 3A for supporting the bottom waste storage and discharge tank section 2 at a waste deposit and discharge point 102 from where collected waste is discharged by vacuum pressure to any type of waste collection facility, such as a stationary type central storage or a mobile type storage (not specifically shown). This waste discharge is performed from a tapered outlet section 2A of the bottom waste storage and discharge tank section 2, through a controlled discharge valve DV and then to said waste

transport pipe 101 of a pneumatic material collection and transport system 100, as schematically indicated in Fig. 1. The relocatable top waste receiving tank section 4 has at least one waste introduction opening 5 for introducing waste into said top waste receiving tank section at appropriate waste introduction points or waste receiving locations 103 of a waste collection application. At the side or sides thereof that contain the at least one waste introduction opening 5 the top waste receiving tank section 4 is also preferably provided with a step or platform 25 for facilitating the introduction of waste. The top waste receiving tank section 4 also has a base 6 including a number of support legs 6A for independent placement thereof at a waste introduction point 103 where waste is to be introduced into it. The support legs 6A are separated so as to be positioned outside a later described interface 7 as well as outside the bottom waste storage and discharge tank section 2 when docking the lower part 10 of the top waste receiving tank section 4 on the open upper part 9 of the bottom waste storage and discharge tank section 2. The top waste receiving tank section 4 may be lowered onto and lifted from the bottom waste storage and discharge tank section 2 by means of a truck mounted crane (not specifically shown) or other lifting equipment that is hooked to a lifting eye 17 in a lifting beam 16 provided on an upper part of the top waste receiving tank section 4. Alternatively a number of lifting eye bolts 17', secured to and distributed on the upper part of the top waste receiving tank section (as indicated in Fig. 2), could be used as lifting means.

[0017] In practical use of the waste managing assembly 1 the bottom waste storage and discharge tank section 2 of the waste tank 2, 4 is located at its designated waste deposit and discharge point 102 and the top waste receiving tank section 4 is relocatable between waste introduction points 103 and a waste deposit and discharge point 102. The bottom waste storage and discharge tank section 2 has the above briefly mentioned open upper part 9 and an interface 7 for docking a lower part 10 of the top waste receiving tank section 4 on said open upper part 9 of the bottom waste storage and discharge tank section 2. Bottom walls 11A, 11B (see especially Figs. 5A-5B) are provided at the lower part 10 of the top waste receiving tank section 4 and are operable to selectively open and close communication of waste between said top and bottom tank sections 4 and 2, respectively, of the waste managing assembly 1. The bottom walls 11A, 11B are movably supported in opposite end walls 4A, 4B of the top waste receiving tank section 4 and are extended along opposite sides of said lower part 10 thereof.

[0018] To enable selective release of introduced waste from the top waste receiving tank section 4 the bottom walls 11A, 11B are each associated with a support assembly 18 that in cooperation with the interface 7 automatically initiates a swinging-sliding movement of the bottom walls 11A, 11B between open and closed positions II and I, respectively. This automatic opening and

closing movement of the bottom walls 11A, 11B is caused by interactive cooperation of parts of the bottom wall 11A, 11B support assemblies 18 and the interface 7 as the top waste receiving tank section 4 is lowered onto and lifted from, respectively, the bottom waste storage and discharge tank section 2, as will be described in detail below.

[0019] The interface 7 includes a docking adapter 8 (see Figs 6A-6B) fixed to the open upper part 9 of the bottom waste storage and discharge tank section 2. The docking adapter 8 has first 8A, 8B and second 8D, 8E pairs of guide formations controlling operation of the bottom walls 11A, 11B at the top waste receiving tank section 4 between open II and closed I positions and back. As mentioned above, the bottom walls 11A, 11B of the top waste receiving tank section 4 are swingably-slidably supported in opposite end walls 4A, 4B of the top waste receiving tank section 4. In the respective end faces of the bottom walls 11A, 11B are provided guide members 20A, 20B of the support assemblies 18. The guide members 20A, 20B extend from the respective end faces of the bottom walls 11A, 11B, through arcuate guide grooves 12, 13 formed in associated end walls 4A, 4B of the top waste receiving tank section 4.

[0020] Extending externally of the associated end wall 4A, 4B the guide members 20A, 20B cooperate with a first pair 8A, 8B of docking adapter 8 guide formations as well as with said guide grooves 12, 13 to control bottom wall 11A, 11B operation. This operation of the bottom walls 11A, 11B involves their movement between the closed position I blocking an otherwise open waste communication between the top waste receiving tank section 4 and the bottom waste storage and discharge tank section 2 and the open emptying position II opening said communication. The bottom walls 11A, 11B are thus guided in the guide grooves 12, 13 in the swinging-sliding movement between the open II and closed I positions. Specifically, the guide grooves 12, 13 each accommodate a guide member 20A, 20B of the bottom walls 11A, 11B for guiding their swinging and sliding movement between the closed waste blocking position I and the open emptying position II. In order to secure smooth and undisturbed movement of the bottom walls 11A, 11B each of them is also provided with a guide block 26 at the end faces thereof, spaced from the associated guide member 20A, 20B, as well as a distributed set of slide rails 27. Said slide rails 27 are secured to an outer, curved side of the bottom walls 11A, 11B, facing a side wall of the top waste receiving tank section 4.

[0021] The support assemblies 18 further include a pair of locking arms 18A, 18B (see especially Fig. 4) that are pivotally supported in the end walls 4A, 4B. The locking arms 18A, 18B are provided with a hook-shaped outer free end that in the closed position I of the bottom walls 11A, 11B is pivoted down to grip a free end of an associated guide member 20A, 20B. This serves to maintain the bottom walls 11A, 11B in a closed and locked position I blocking waste communication between the lower part

10 of the top waste receiving tank section 4 and the bottom waste storage and discharge tank section 2. Adjacent the hook-shaped outer free end each locking arm 18A, 18B carries a guide pin 19A, 19B that in use cooperates with an associated one of a pair of second guide formations 8D, 8E formed by opposite sides of a cutout 8C in a middle part of the docking adapter 8. During lowering of the top waste receiving tank section 4 onto the bottom waste storage and discharge tank section 2 said guide pins 19A, 19B cooperate with the associated pair of second guide formations 8D, 8E to lift the hook-shaped free outer ends of the locking arms 18A, 18B from the guide members 20A, 20B. As was mentioned above the docking adapter 8 also has a pair of first guide formations 8A, 8B in the shape of grooves 8A and 8B that extend at an angle from an open end at a top edge of the docking adapter 8 and to a closed end adjacent a respective side edge thereof. Said first guide formations 8A, 8B serve to receive outer free ends of the associated guide member 20A, 20B as the top waste receiving tank section 4 is lowered onto the bottom waste storage and discharge tank section 2. The angled configuration of the grooves of the first guide formations 8A, 8B and their cooperation with the associated guide member 20A, 20B will effectively maintain the bottom walls 11A, 11B in their open emptying position II.

[0022] In use of the waste managing assembly 1 outer ends of the guide members 20A, 20B cooperate with the docking adapter 8 first guide formations 8A, 8B to control bottom wall operation between the blocking position I closing the waste communication between the lower part 10 of the top waste receiving tank section 4 and the bottom waste storage and discharge tank section 2 and the open emptying position II opening said waste communication. In said open emptying position II introduced waste is released to fall from the top waste receiving tank section 4 into the bottom waste storage and discharge tank section 2, through its open upper part 9. In the basic embodiment the bottom walls 11A, 11B are automatically moved by gravity from their open emptying position II to their closed and locked position I. This is initiated as soon as the top waste receiving tank section 4 is lifted up from the bottom waste storage and discharge tank section 2 to disengage the bottom wall 11A, 11B support assemblies 18 from the interface 7 adapter 8. Only one end of the waste managing assembly 1 is shown in the drawings but it should be understood that in a preferred embodiment the opposite ends of the waste managing assembly 1, including the top waste receiving tank section 4 with its bottom walls 11A, 11B, the bottom waste storage and discharge tank section 2 and the interface 7, are identical but mirror images of each other.

[0023] In further development of the waste managing assembly 1 sensors (not shown) may be provided in association with the lower part 10 of the top waste receiving tank section 4 and/or in association with the docking adapter 8 at the upper part 9 of the bottom waste storage and discharge tank section 2. The sensors that are i.e.

of the contact or proximity type serve to initiate, immediately or alternatively with a set delay, the application of air flow through the waste transport pipe 101 and to the bottom waste storage and discharge section 2 of the tank 2, 4 when the top waste receiving tank section 4 has been removed. Sequential steps of a waste managing method will be generally described with reference to the drawings. In a first step the top waste receiving tank section 4 of the composite waste material tank 2, 4 of the waste managing assembly 1 is positioned with the bottom walls 11A, 11B closed and locked at a waste introduction point 103. The waste introduction point 103 is normally separate from a waste deposit and discharge point 102 where an associated bottom waste storage and discharge tank section 2 of the composite waste material tank 2, 4 is positioned and supported. Waste is introduced through the at least one waste introduction opening 5 and is received and collected in the top waste receiving tank section 4. At an appropriate time, such as when the top waste receiving tank section 4 is full or when construction work is finished at a site forming the waste introduction point 103 the top waste receiving tank section 4 with introduced waste is transported to a designated waste deposit and discharge point 102 of the pneumatic material collection and transport system 100. In the next step the top waste receiving tank section 4 is positioned above the associated bottom waste storage and discharge tank section 2 and is lowered onto the interface 7 to dock the lower part 10 of the top waste receiving tank section 4 on the open upper part 9 of the bottom waste storage and discharge tank section 2. This docking action causes swinging and sliding of the bottom walls 11A, 11B of the top waste receiving tank section 4 from the closed blocking position I to the open emptying position II, releasing communication between the lower part 10 of the top waste receiving tank section 4 and the open upper part 9 of the bottom waste storage and discharge tank section 2.

[0024] When appropriately emptied, prior to or subsequent to pneumatic discharge of waste material from the bottom waste storage and discharge tank section 2, the top waste receiving tank section 4 may be lifted off from the bottom waste storage and discharge tank section 2 and its interface 7. By such action, the guide pins 19A, 19B of the locking arms 18A, 18B of the support assembly 18 cooperate with the associated pair of second guide formations 8D, 8E of the docking adapter 8 to maintain the hook-shaped free outer ends of the locking arms 18A, 18B in their position. Simultaneously the outer ends of the guide members 20A, 20B cooperate with the first guide formations 8A, 8B to cause the bottom walls 11A, 11B to swing and slide back to their closed position I. This occurs prior to the release of the locking arms 18A, 18B of the support assembly 18 as soon as the guide pins 19A, 19B leave the second guide formations 8D, 8E. This allows the locking arms 18A, 18B to swing down into locking engagement of their free outer ends with the outer ends of the bottom wall 11A, 11B guide members 20A, 20B. The bottom walls 11A, 11B are thus closed

and locked and the top waste receiving tank section 4 may be returned to its designated waste introduction point 103.

[0025] In a further step air flow may be manually or automatically initiated through a waste transport pipe 101 of the pneumatic material collection and transport system 100 and to the bottom waste storage and discharge section 2 of the tank 2, 4. This air flow serves to transport collected material from the waste tank 2, 4, when the lower part 10 of the top waste receiving tank section 4 has docked on the open upper part 9 of the bottom waste storage and discharge tank section 2. In further development of the method application of waste transport air flow to the bottom waste storage and discharge section 2 of the tank 2, 4 may be initiated by opening a discharge valve DV, provided downstream of the tank 2, 4, in response to signals generated by sensors, such as contact or proximity sensors, provided in association with the lower part 10 of the top waste receiving tank section 4 and/or in association with the docking adapter 8 fixed to the open upper part 9 of the bottom waste storage and discharge tank section 2.

[0026] Thus, the invention includes the bottom tank section 2 resembling the screw part of a screw tank type and being connected to a pneumatic material collection and transport system 100. It includes the at least one top tank section 4 that is "portable" and may be placed at optional waste introduction points 103 without being connected to any pneumatic waste material collection and transport system 100. Users introduce waste into said top tank section 4 and when it is full it is transported to the bottom tank section 2 and is automatically emptied into the pneumatic waste material collection and transport system 100. The interface 7 and its docking adapter 8 serve to control the bottom walls 11A, 11B of the top tank section 4 and also to secure said bottom walls in a locked state during transport of the top tank section 4.

[0027] In alternative, but not specifically illustrated embodiments of the invention variations of the different illustrated parts of the suggested units may be employed without departing from the scope of the invention. It shall be emphasized that although the invention has been described and illustrated with specific reference to an application in a vacuum operated waste collection and transport system, the invention is in no way restricted to such applications. The invention may be applied to other pneumatic transport fields.

[0028] The invention has been described in connection with what is presently considered the most practical and preferred embodiments but it is to be understood that it is not limited to the disclosed embodiments. The invention is therefore intended to cover various modifications and equivalent arrangements included within the scope of the appended claims.

Claims

1. A waste managing assembly (1) for the collection, temporary storage and discharge of waste, the waste managing assembly (1) comprising a waste tank (2,4), said waste tank (2,4) including:

- a bottom waste storage and discharge tank section (2) with a base (3) for supporting the assembly ;
- at least one relocatable top waste receiving tank section (4) having at least one waste introduction opening (5) for introducing waste into said top waste receiving tank section;
- an interface (7) for docking a lower part (10) of each top waste receiving tank section on an open upper part (9) of the bottom waste storage and discharge tank section; and
- bottom walls (11A, 11B) supported at the lower part of each top waste receiving tank section and operable to selectively open and close communication of waste between said top and bottom tank sections of the waste managing assembly;

said bottom walls are provided with guide members (20A, 20B) that extending externally of the associated end wall, cooperate with a first pair of guide formations (8A, 8B) of a docking adapter (8) included in the interface (7) to control operation of the bottom walls between a closed position (I) blocking an otherwise open waste communication between the lower part (10) of a top waste receiving tank section (4) and the bottom waste storage and discharge tank section (2) and an open emptying position (II) opening said communication between a top waste receiving tank section and the bottom waste storage and discharge tank section (2), **characterized in that**

the waste managing assembly (1) is for the collection, temporary storage and discharge of waste in association with a pneumatic material collection and transport system (100), wherein the pneumatic material collection and transport system (100) using air flow through a waste transport pipe (101) to transport collected material from the waste tank (2, 4) at one or more waste deposit and discharge points (102) of the pneumatic material collection and transport system,

wherein the base (3) supports the assembly at a waste deposit and discharge point; and **in that** arcuate guide grooves (12, 13) are formed in associated end walls (4A, 4B) of each top waste receiving tank section (4),

in that the bottom walls (11A, 11B) at the lower part (10) of each top waste receiving tank section (4) are swingably and slidably supported in

the guide grooves in the opposite end walls (4A, 4B) of each top waste receiving tank section and **in that** the guide members (20A, 20B) cooperate with said guide grooves (12, 13), as well, for said control of said operation of the bottom walls.

2. A waste managing assembly (1) according to claim 1, **characterized in that** the docking adapter (8) of the interface (7) is fixed to the open upper part (9) of the bottom waste storage and discharge tank section (2) of the waste managing assembly and having first and second pairs of guide formations (8A, 8B; 8D, 8E) for controlling operation of the bottom walls (11A, 11B) at each top waste receiving tank section (4), between the open and closed positions (II and I, respectively).
3. A waste managing assembly (1) according to claims 1 or 2, **characterized in that** the guide members (20A, 20B) of the bottom walls (11A, 11B) are included in support assemblies (18) that further include a pair of locking arms (18A, 18B) that are freely pivotally supported in the end walls (4A, 4B) and that are provided with a hook-shaped outer free end that in the closed position I of the bottom walls (11A, 11B) grip a free end of an associated guide member (20A, 20B) to thereby maintain the bottom walls in the closed and locked position I blocking waste communication between a top waste receiving tank section 4 and the bottom waste storage and discharge tank section 2.
4. A waste managing assembly (1) according to any of claims 1-3, **characterized by** sensors provided in association with the lower part (10) of a top waste receiving tank section (4) and/or in association with the docking adapter (8) fixed to the open upper part (9) of the bottom waste storage and discharge tank section (2), for initiating the application of air flow through the waste transport pipe (101) and to the bottom waste storage and discharge section (2) of the waste tank (2, 4).
5. A waste managing assembly (1) according to any of claims 1-4, **characterized in that** each top waste receiving tank section (4) has support legs (6A) for independent placement thereof at a waste introduction point (103).
6. A waste managing assembly (1) according to claim 5, **characterized in that** the support legs (6A) are separated so as to be positioned outside the interface (7) as well as outside the bottom waste storage and discharge tank section (2) when docking the lower part (10) of a top waste receiving tank section (4) on the open upper part (9) of the bottom waste storage and discharge tank section.

Patentansprüche

1. Anordnung zum Entsorgen von Müll (1) zum Sammeln, vorübergehenden Lagern und Entladen von Müll, wobei die Anordnung zum Entsorgen von Müll (1) einen Müllbehälter (2, 4) umfasst, wobei der Müllbehälter (2, 4) Folgendes umfasst:

- einen unteren Mülllager- und Müllentladebehälterabschnitt (2) mit einem Sockel (3) zum Stützen der Anordnung;
- mindestens einen repositionierbaren oberen Müllaufnahmebehälterabschnitt (4) mit mindestens einer Mülleinführungsöffnung (5) zum Einführen von Müll in den oberen Müllaufnahmebehälterabschnitt;
- eine Schnittstelle (7) zum Andocken eines unteren Teils (10) jedes oberen Müllaufnahmebehälterabschnitts an einen offenen oberen Teil (9) des unteren Mülllager- und Müllentladebehälterabschnitts; und
- Bodenwände (11A, 11B), die am unteren Teil jedes oberen Müllaufnahmebehälterabschnitts abgestützt sind und betätigt werden können, um den Übergang von Müll zwischen dem oberen und dem unteren Behälterabschnitt der Anordnung zum Entsorgen vom Müll selektiv zu öffnen und zu schließen;

wobei die Bodenwände mit Führungselementen (20A, 20B) versehen sind, die sich außerhalb der zugehörigen Endwand erstrecken und mit einem ersten Paar von Führungsausbildungen (8A, 8B) eines Andockadapters (8), der in der Schnittstelle (7) enthalten ist, zusammenwirken, um die Bewegung der Bodenwände zwischen einer geschlossenen Position (I), die einen ansonsten offenen Müllübergang zwischen dem unteren Teil (10) eines oberen Müllaufnahmebehälterabschnitts (4) und dem unteren Mülllager- und Müllentladebehälterabschnitt (2) blockiert, und einer offenen Entleerungsposition (II), die die Verbindung zwischen einem oberen Müllaufnahmebehälterabschnitt und dem unteren Mülllager- und Müllentladebehälterabschnitt (2) öffnet, zu steuern,

dadurch gekennzeichnet, dass

die Anordnung zum Entsorgen von Müll (1) dem Sammeln, vorübergehenden Lagern und Entladen von Müll in Verbindung mit einem pneumatischen Materialsammel- und Materialtransportsystem (100) dient, wobei das pneumatische Materialsammel- und Materialtransportsystem (100) einen Luftstrom durch ein Mülltransportrohr (101) verwendet, um gesammeltes Material aus

- dem Müllbehälter (2, 4) an einem oder mehreren Müllablagerungs- und Müllentladepunkten (102) des pneumatischen Materialsammel- und Materialtransportsystems zu transportieren, wobei der Sockel (3) die Anordnung an einer Abfallablagerungs- und Abfallentladestelle stützt; und dadurch, dass bogenförmige Führungsnuten (12, 13) in den zugehörigen Endwänden (4A, 4B) jedes oberen Müllaufnahmebehälterabschnitts (4) ausgebildet sind, dass die Bodenwände (11A, 11B) am unteren Teil (10) jedes oberen Müllaufnahmebehälterabschnitts (4) schwenkbar und verschiebbar in den Führungsnuten in den gegenüberliegenden Endwänden (4A, 4B) jedes oberen Müllaufnahmebehälterabschnitts gelagert sind und dass die Führungselemente (20A, 20B) ebenfalls mit den Führungsnuten (12, 13) zusammenwirken, um die Bewegung der Bodenwände zu steuern.
2. Anordnung zum Entsorgen von Müll (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Andockadapter (8) der Schnittstelle (7) an dem offenen oberen Teil (9) des unteren Mülllager- und Müllentladebehälterabschnitts (2) der Anordnung zum Entsorgen von Müll befestigt ist und ein erstes und ein zweites Paar von Führungsausbildungen (8A, 8B; 8D, 8E) zur Steuerung der Bewegung der Bodenwände (11A, 11B) an jedem oberen Müllaufnahmebehälterabschnitt (4) zwischen der offenen und der geschlossenen Position (II bzw. I) aufweist.
3. Anordnung zum Entsorgen von Müll (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Führungselemente (20A, 20B) der Bodenwände (11A, 11B) in Stützanzordnungen (18) enthalten sind, die ferner ein Paar von Verriegelungsarmen (18A, 18B) umfassen, die frei schwenkbar in den Endwänden (4A, 4B) gelagert sind und die mit einem hakenförmigen äußeren freien Ende versehen sind, das in der geschlossenen Position I der Bodenwände (11A, 11B) ein freies Ende eines zugehörigen Führungselements (20A, 20B) ergreifen, um dadurch die Bodenwände in der geschlossenen und verriegelten Position I zu halten, die den Müllübergang zwischen einem oberen Müllaufnahmebehälterabschnitt 4 und dem unteren Mülllager- und - Müllentladebehälterabschnitt 2 blockiert.
4. Anordnung zum Entsorgen von Müll (1) nach einem der Ansprüche 1-3, **dadurch gekennzeichnet, dass** Sensoren, die in Verbindung mit dem unteren Teil (10) eines oberen Müllaufnahmebehälterabschnitts (4) und/oder in Verbindung mit dem An-

dockadapter (8) vorgesehen sind, der an dem offenen oberen Teil (9) des unteren Mülllager- und Müllentladebehälterabschnitts (2) befestigt ist, um das Einbringen eines Luftstroms durch das Mülltransportrohr (101) und den unteren Mülllager- und Müllentladeabschnitt (2) des Müllbehälters (2, 4) einzuleiten.

5. Anordnung zum Entsorgen von Müll (1) nach einem der Ansprüche 1-4, **dadurch gekennzeichnet, dass** jeder obere Müllaufnahmebehälterabschnitt (4) Stützbeine (6A) aufweist, um ihn unabhängig an einem Mülleinführungspunkt (103) zu platzieren.
6. Anordnung zum Entsorgen von Müll (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** die Stützbeine (6A) so getrennt sind, dass sie sowohl außerhalb der Schnittstelle (7) als auch außerhalb des unteren Mülllager- und Müllentladebehälterabschnitts (2) positioniert werden, wenn der untere Teil (10) eines oberen Müllaufnahmebehälterabschnitts (4) an den offenen oberen Teil (9) des unteren Mülllager- und -Müllentladebehälterabschnitts ange-dockt wird.

Revendications

1. Ensemble de gestion de déchets (1) pour la collecte, le stockage temporaire et la décharge des déchets, l'ensemble de gestions de déchets (1) comprenant un réservoir à déchets (2, 4), ledit réservoir à déchets (2, 4) comprenant :
- une partie inférieure du réservoir de stockage et de décharge des déchets (2) équipée d'une base (3) destinée au support de l'ensemble ;
 - au moins une section supérieure amovible du réservoir de réception des déchets (4) ayant au moins une ouverture d'introduction des déchets (5) pour introduire des déchets dans ladite section supérieure de réservoir de réception de déchets ;
 - une interface (7) pour amarrer une partie inférieure (10) de chaque section supérieure de réservoir de réception de déchets sur une partie supérieure ouverte (9) de la partie inférieure du réservoir de stockage et de décharge des déchets ; et
 - des parois inférieures (11A, 11B) supportées au niveau de la partie inférieure de chaque section supérieure de réservoir de réception de déchets et utilisables pour ouvrir et fermer sélectivement la communication des déchets entre lesdites sections de réservoir supérieure et inférieure de l'ensemble de gestion de déchets ;

lesdites parois inférieures sont équipées

- d'élément de guidage (20A, 20B) qui s'étendent de manière externe à partir de la paroi d'extrémité associée, coopèrent avec une première paire de formations de guidage (8A, 8B) d'un adaptateur d'accueil (8) inclut dans l'interface (7) pour contrôler le fonctionnement des parois inférieures entre une position fermée (I) bloquant une communication de déchets autrement ouverte entre la partie inférieure (10) d'une section supérieure de réservoir de réception de déchets (4) et la partie inférieure du réservoir de stockage et de décharge des déchets (2) et une position de vidage ouverte (II) ouvrant ladite communication entre une section supérieure de réservoir de réception de déchets et la partie inférieure du réservoir de stockage et de décharge des déchets (2), **caractérisé en ce que** l'ensemble de gestion de déchets (1) est destiné à la collecte, au stockage temporaire et à la décharge de déchets en association avec un système pneumatique de collecte et de transport de matériaux (100), dans lequel le système pneumatique de collecte et de transport de matériaux (100) utilisant le flux d'air à travers un tuyau de transport des déchets (101) pour transporter de la matière collectée provenant du réservoir à déchets (2, 4) au niveau d'un ou de plusieurs points de dépôt et de décharge des déchets (102) du système pneumatique de collecte et de transport de matériaux, dans lequel la base (3) supporte l'ensemble au niveau d'un point de dépôt et de décharge des déchets ; et **en ce que** des rainures de guidage arquées (12, 13) sont formées dans des parois d'extrémité associées (4A, 4B) de chaque section supérieure du réservoir de réception des déchets (4), **en ce que** les parois inférieures (11A, 11B) au niveau de la partie inférieure (10) de chaque section supérieure du réservoir de réception des déchets (4) sont supportées de manière pivotante et coulissante dans les rainures de guidage des parois d'extrémité opposées (4A, 4B) de chaque section supérieure du réservoir de réception des déchets et **en ce que** les éléments de guidage (20A, 20B) coopèrent avec lesdites rainures de guidage (12, 13), ainsi que, pour ledit contrôle dudit fonctionnement des parois inférieures.
2. Ensemble de gestion de déchets (1) selon la revendication 1, **caractérisé en ce que** l'adaptateur d'accueil (8) de l'interface (7) est attaché à la partie supérieure ouverte (9) de la partie inférieure du réservoir de stockage et de décharge des déchets (2) de l'ensemble de gestion de déchets et ayant une première paire et une seconde paire de formation de guidage (8A, 8B ; 8D, 8E) destinées au contrôle du fonctionnement des parois inférieures (11A, 11B) au niveau de chaque section supérieure du réservoir de réception des déchets (4), entre les positions ouvertes et fermées (II et I, respectivement).
3. Ensemble de gestion de déchets (1) selon la revendication 1 ou la revendication 2, **caractérisé en ce que** les éléments de guidage (20A, 20B) des parois inférieures (11A, 11B) sont inclus dans les ensembles de support (18) qui incluent en outre une paire de bras de verrouillage (18A, 18B) qui sont librement supportés de manière pivotante dans les parois d'extrémité (4A, 4B) et qui sont équipés d'une extrémité libre extérieure en forme de crochet qui est dans la position fermée I des parois inférieures (11A, 11B) saisissent une extrémité libre d'un élément de guidage associé (20A, 20B) pour ainsi maintenir les parois inférieures dans la position fermée et verrouillée I bloquant une communication de déchets entre une section supérieure de réservoir de réception de déchets 4 et la partie inférieure du réservoir de stockage et de décharge des déchets 2.
4. Ensemble de gestion de déchets (1) selon l'une quelconque des revendications 1 à 3, **caractérisé par** des capteurs prévus en association avec la partie inférieure (10) d'une section supérieure de réservoir de réception de déchets (4) et/ou en association avec l'adaptateur d'accueil (8) attaché à la partie supérieure ouverte (9) de la partie inférieure du réservoir de stockage et de décharge des déchets (2), destiné à l'initiation de l'application d'un courant d'air à travers le tuyau de transport de déchets (101) et vers la section inférieure de stockage et de décharge des déchets (2) du réservoir à déchets (2, 4).
5. Ensemble de gestion de déchets (1) selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** chaque section supérieure du réservoir de réception des déchets (4) a des pieds de support (6A) pour son placement indépendant à un point d'introduction des déchets (103).
6. Ensemble de gestion de déchets (1) selon la revendication 5, **caractérisé en ce que** les pieds de support (6A) sont séparés de manière à être positionnés à l'extérieur de l'interface (7) ainsi qu'à l'extérieur de la partie inférieure du réservoir de stockage et de décharge des déchets (2) lors de l'amarrage de la partie inférieure (10) d'une section supérieure de réservoir de réception de déchets (4) sur la partie supérieure ouverte (9) de la partie inférieure du réservoir de stockage et de décharge des déchets (2).

voir de stockage et de décharge des déchets.

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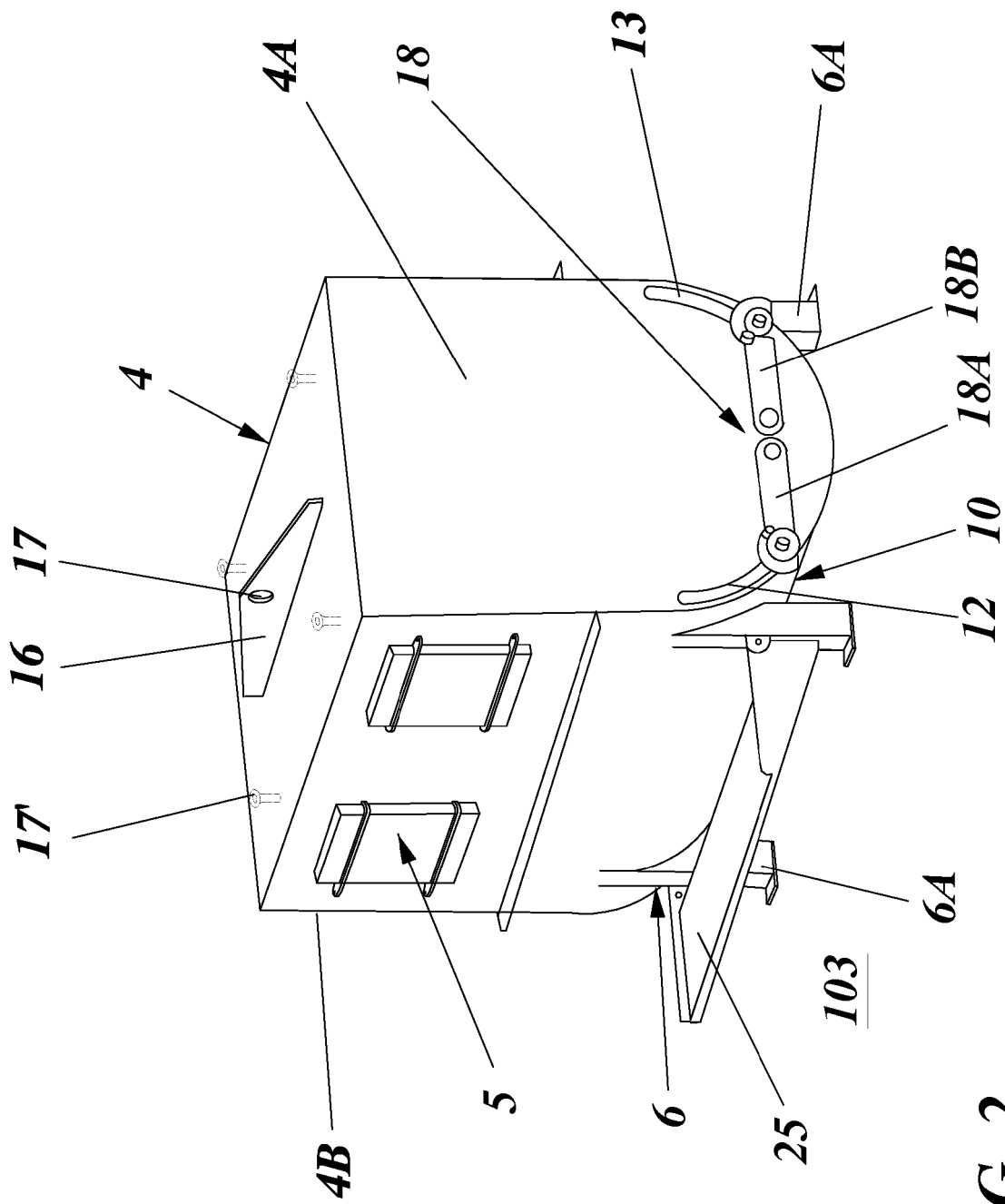


FIG. 2
Position I

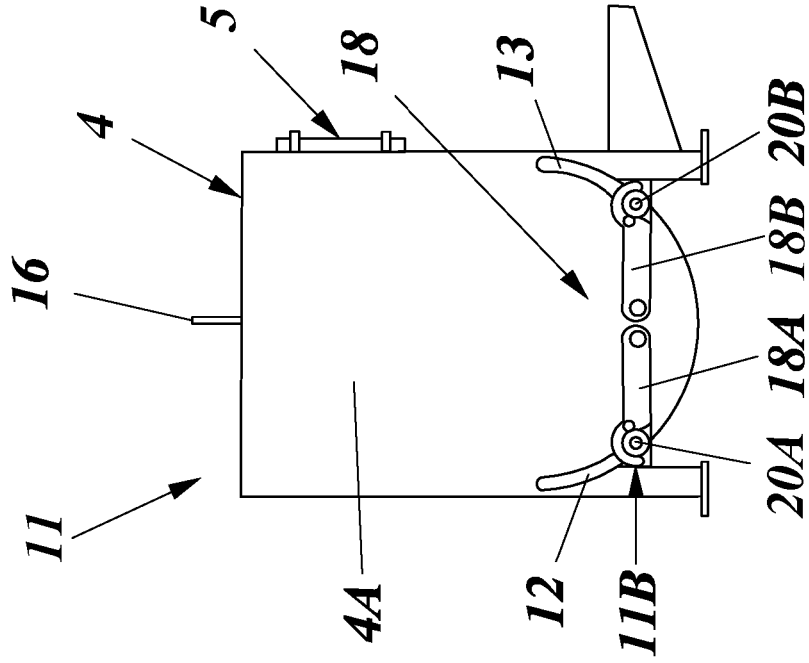


FIG. 4
Position I

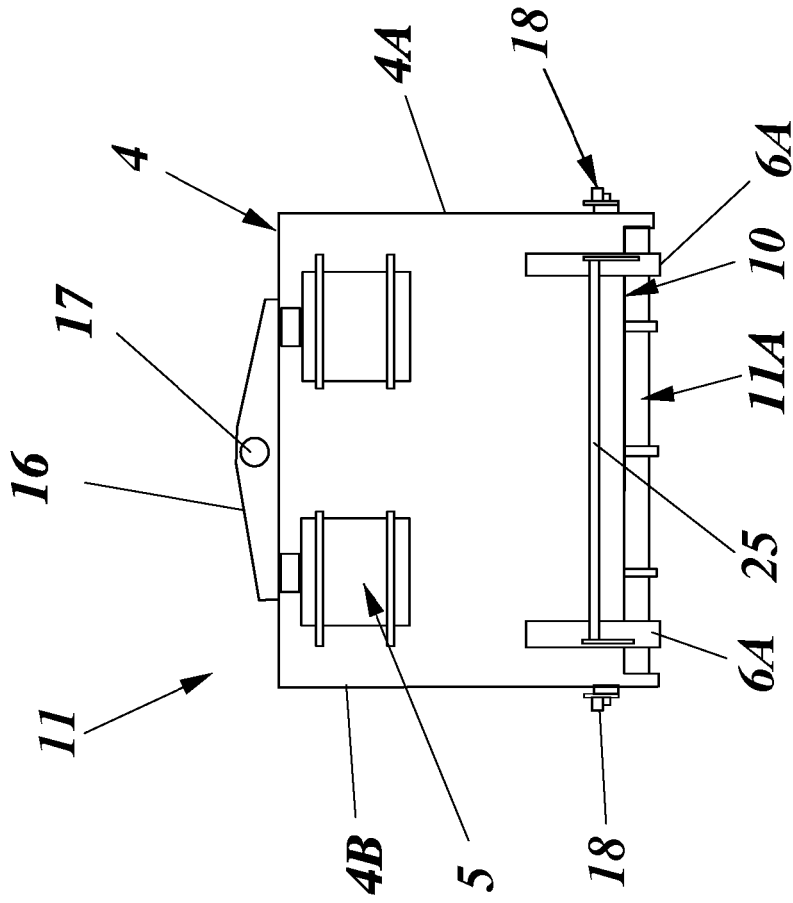


FIG. 3
Position I

FIG. 5A

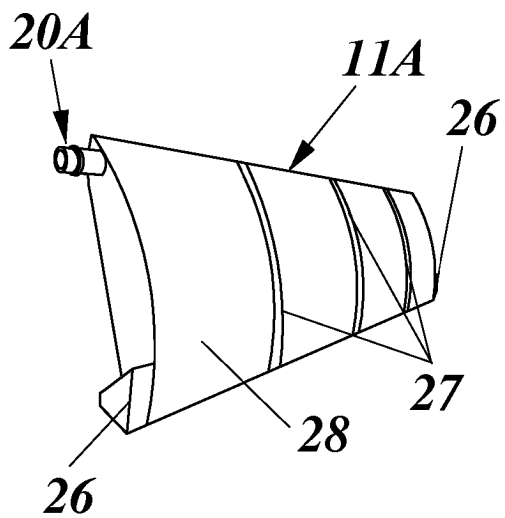


FIG. 5B

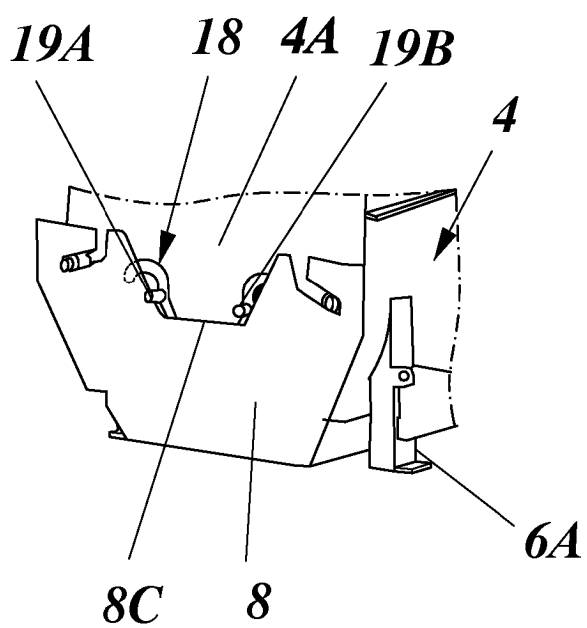
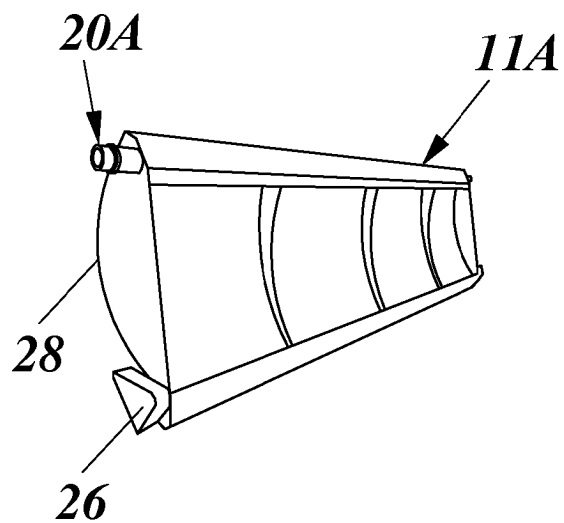


FIG. 6B
Position II

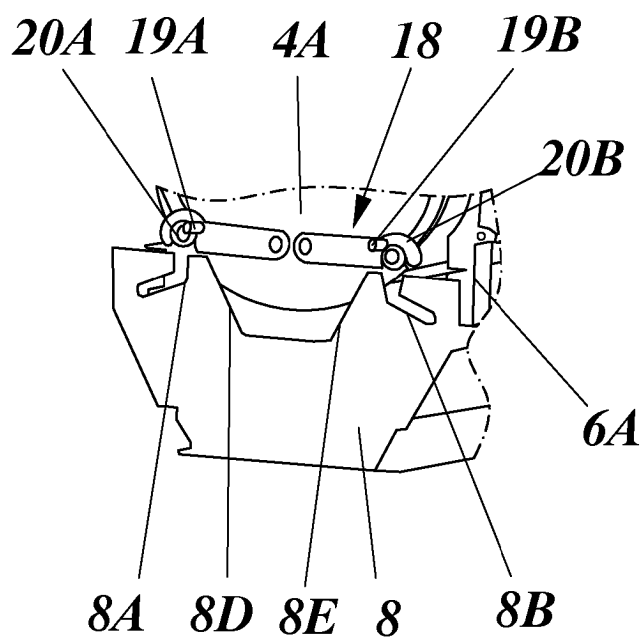


FIG. 6A

REFERENCES CITED IN THE DESCRIPTION

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