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# DEVICE FOR EQUIPPING A SUPPORTING SURFACE

## Description

[0001] The invention relates to a device for equipping a supporting surface comprising a separator.

[0002] Separators are used in biogas plants, in agriculture and biowaste management for separating solids and liquids of a biomass, for example also liquid manure. The separated solid can be brought to a fermenter of a biogas plant for fermentation, or for fertilization, to obtain a dry fertilizer, or for other further processing. The liquid portion is used predominantly as fertilizer or is taken for further processing.

[0003] Separators are known that are set up close to the floor at the biogas plant, wherein the solid content is pumped into a fermenter by means of a pumping device. Both in the case of this application, as well as when the separation is not performed directly at the biogas plant, it is advantageous to attach the separator at a certain height, so that the solid content can, by its own weight, fall onto the supporting surface or on or into a transport device or into a fermentation residue container.

[0004] To this end, the separator according to the state of the art (e.g., as in DE2614588B1 and US2009/314715A1) is fixed on a steel frame. These steel frames are for example designed such that they are arranged on both sides or only on one side of the supporting surface and form a platform above the supporting surface, upon which the separator is fixed. These steel frames are, on the one hand very cost–intensive, on the other hand, relatively immobile, because they must be fixed on the floor on a regular basis and can only be moved to a different location with expensive disassembly, in case the location of the supporting surface changes. A further disadvantage is that a building permit is required for the firmly mounted steel frames and they must be removed due to the ladders to be provided by the employer's liability insurance association. Moreover, a collision protection guard is routinely required to protect the steel frame from damage.

[0005] Therefore, the invention addresses the problem of creating a device for equipping a supporting surface with biomass with a separator at a predefined height that can be manufactured economically, which in addition can be moved relatively easily to a different location and can be built at different heights.

[0006] This problem is solved by the features of the main claim, wherein the supporting surface can also be a means of transport, for example a container or the loading area of a truck, etc.

[0007] An exemplary embodiment of the invention will be described with the aid of the figures. In the process

Figure 1 shows a device according to the invention in front view,

Figure 2 shows a device according to the invention in lateral view

[0008] The representation according to Fig. 1 shows a framework with a separator PS, wherein the separator is fixed on a steel base frame SG. The entire framework consists of the steel base frame SG and a plurality of concrete blocks BQ. The steel base frame SG is configured such that with its legs B, it perfectly fits the upper concrete block BQ. It can be fixed thereon for example with bolts or other securing means. However, normally it is held by its own weight and the weight of the separators without additional fixing means on the concrete block or concrete blocks BQ. Furthermore, it has forklift pockets P, so that it can be gripped with the pallet fork of a forklift from all sides.

[0009] A control cabinet SR is fixed on the steel base frame SG. For logical reasons, the control cabinet SR is fixed on the legs B of the steel base frame SG, so that the operator can reach it more easily. Furthermore, attachments for the hose sections S1–S3 can be provided on the steel base frame SG, specifically for the feed hose for the biomass S1, the drain hose for the liquid content S2, and the overflow hose S3. This way, the mentioned connections can be easily established and disconnected again, when the framework should be set up at another location.

[0010] For example, the concrete blocks have dimensions of 160x80x40 and/or 160x80x80. They can be configured such that their upper and lower sides comprise latching means, which prevent the blocks from displacement relative to one another during setup. For example, so–called Legioblocks® can be used. Another example of appropriate latching means are cylinder butt joints, tongue/groove joints or truncated cone joints, as shown for example at https://betonblock–demmar.de/vorteile–von–betonbloecken/demmel–multibloc–system/. In particular, the DEMMEL MULTIBLOC–System® also shown on this home page can be used, into which pipes are introduced such that they connect two blocks.

[0011] As can be seen, in particular in Fig. 2, the concrete blocks BQ are arranged such that they form a platform, upon which an operator can stand, so that said operator can

reach the control cabinet and the hose couplings. The reference numerals in Fig. 2 are not listed here, since it is only a lateral view.

[0012] The concrete block can for example be gripped with forklift tongs. However, removable lugs can also be provided, so that loops can be fixed on the respective concrete block BQ for its handling. The modular structure of the entire framework makes it possible to easily take it apart and set it up elsewhere without expensive disassembly work. Varying the height of the device is also easy, since only correspondingly large concrete blocks can be inserted or removed. To this end, the concrete block dimensions can also deviate from the above–mentioned dimensions, for example by using only blocks that are half or a third as high or by using blocks of any predefined height.

[0013] Since the concrete blocks have large dimensions, ordinarily no collision protection guard is to be provided. If a concrete block is damaged, it can be replaced relatively easily.

[0014] Due to the slanted chute R at the outlet of the separator PS, which in the exemplary embodiment is a screw press separator, the solid content of the biomass, for example of liquid manure, is discharged and falls onto the supporting surface, which in the exemplary embodiment is a container C, but can also be the tipper of a truck. The solid content can also easily fall to the supporting surface, that is, to the floor beneath the chute R. The supporting surface can be advantageously separated by a wall or other type of divider relative to the concrete blocks.

**Patentkrav**

1. Indretning til udstyring af en lagerplads med

1.1 en separator (PS)

1.2 en stålramme (SG) til fastgørelse af separatoren

1.3 mindst én betonblok (BQ), hvor

1.4 separatoren er fastgjort til stålrammen (SG), og stålrammen (SG) er anbragt på en betonblok (BQ) på en sådan måde, at stålrammens (SG) ben (B) omfatter mindst én betonblok (BQ) på begge sider, hvor der er fastgjort et kontaktskab (SR) til stålrammen (SG), og hvor stålrammen (SG) har gaffeltrucklommer (P) til håndtering med en pallegaffel.

2. Indretning ifølge krav 1, hvor lagerpladsen er et transportmiddel (C).

3. Indretning ifølge et af de foregående krav, hvor betonblokkene (BQ) er udformet således, at deres over- og undersider har låseorganer, der griber ind i hinanden.

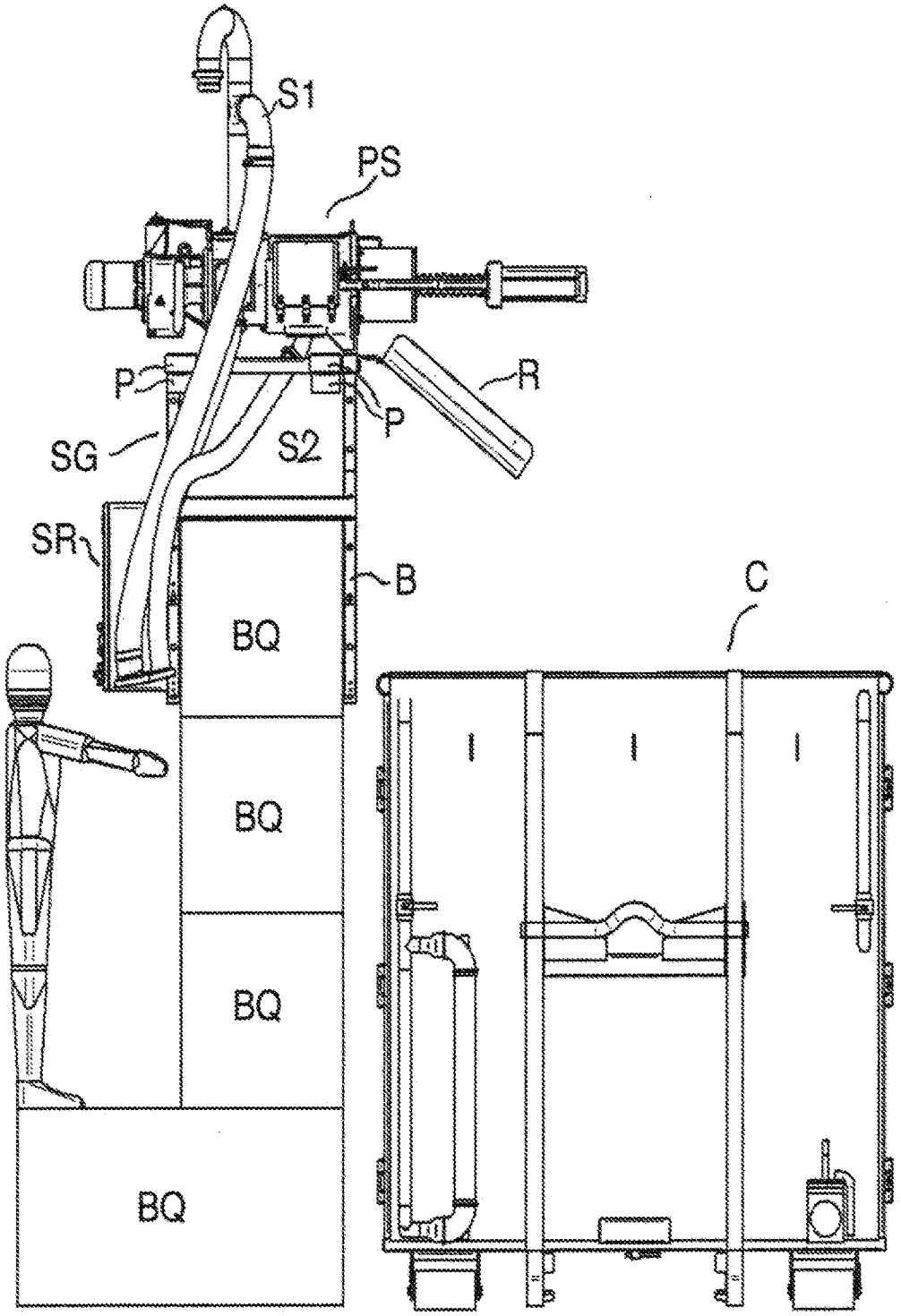



Figure 1

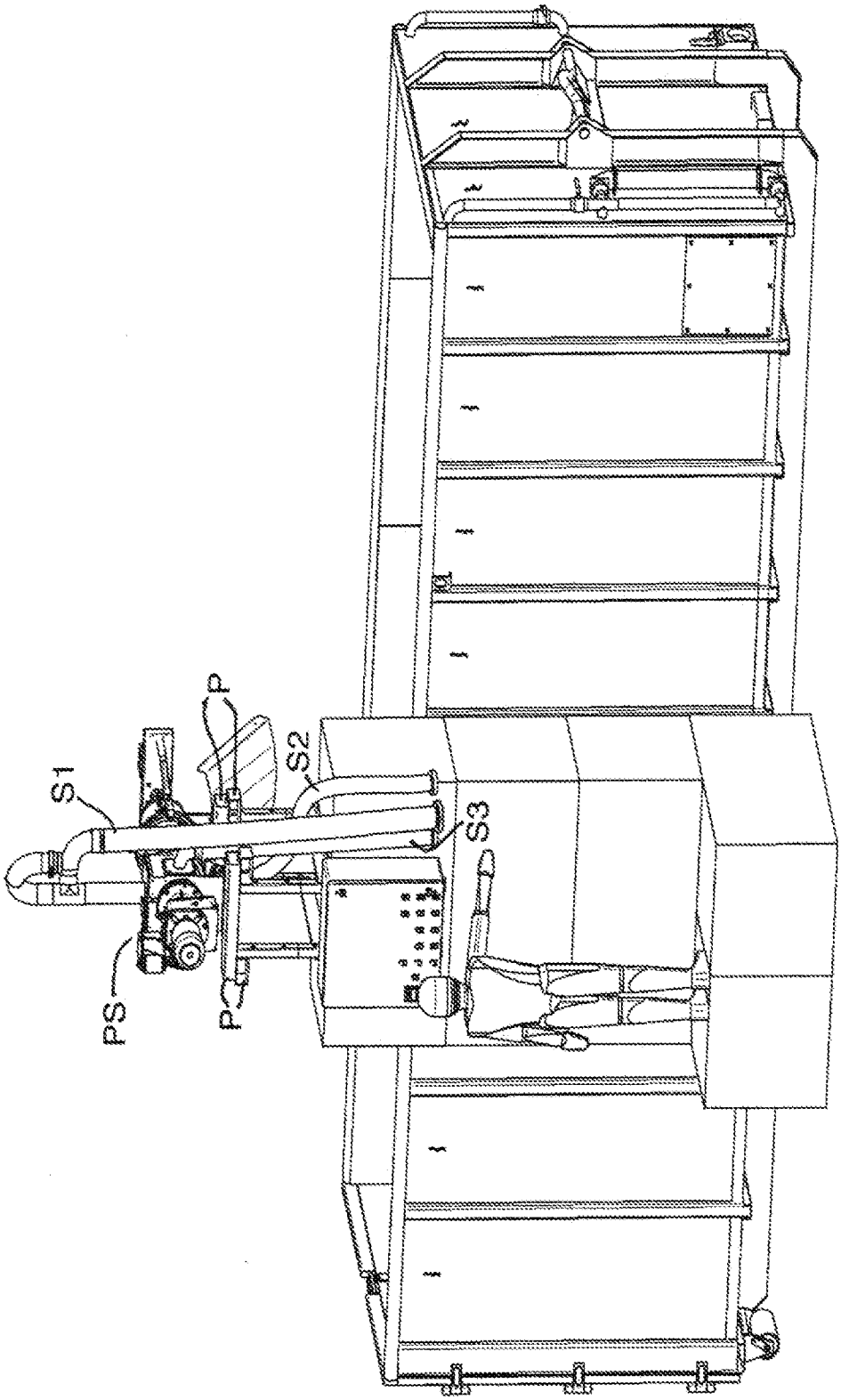



Figure 2