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(54) **Tumbler for carcasses of furred animals or for treating pelts**

(57) The invention relates to an apparatus for treating carcasses or pelts. The apparatus comprises a rotary drum. A first chamber is intended for treating carcasses or pelts with sawdust or other dry granular matter, and a second chamber is intended for containing at least part of the dry granular matter. The first chamber and the sec-

ond chamber are divided by a screen. The screen has a mesh size allowing the dry granular matter to pass through the screen from the first chamber to the second chamber, and not allowing carcasses or pelts to pass through the screen from the first chamber to the second chamber.

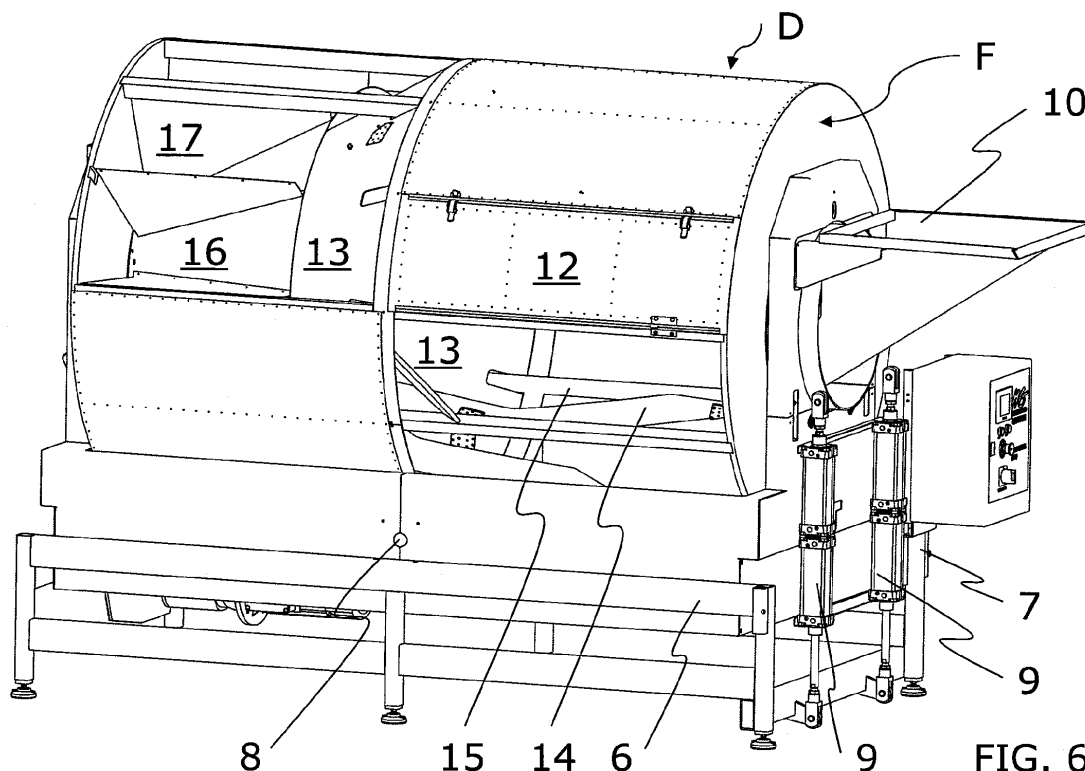


FIG. 6

Description

FIELD OF THE INVENTION

[0001] The invention relates to an apparatus for treating carcasses of furred animals or for treating pelts in general, however preferably of furred animals. The apparatus comprises a rotary drum having at least one opening, and support means supporting the drum for rotation about a rotary axis, and where the rotary drum has at least a first chamber in one end of the rotary drum and a second chamber in another end of the rotary drum. Said first chamber is intended for treating pelts with sawdust or other dry granular matter, and said second chamber being intended for containing at least part of the dry granular matter.

BACKGROUND OF THE INVENTION

[0002] Treating carcasses of furred animals or treating pelts of preferably furred animals both manually and automatically in order to soak up any faecal matter or dirt before skinning an animal or in order to soak up any blood and fat residues after skinning an animal are known using sawdust or other dry granular matter. Sawdust or other dry granular matter has the advantage that the dry matter has a large surface in relation to the amount of dry matter, and that the dry matter is readily available and relative cheap to buy or produce.

[0003] WO 2008/101505 discloses an apparatus for tumbling bodies of dead animals. The tumbler is characterised in that between the filling opening and the delivery opening, the cavity in the tumbler is divided into a number of sections to which the bodies are transferred by a conveyor unit which extends through the tumbler, combined with a discharge/recycling arrangement for individual and controlled discharge of the bodies from the tumbler. The conveyor unit also comprises a bottom section with a worm conveyor for recirculation of the supply of sawdust to the respective sections.

[0004] However, it is great inconvenience that sawdust or other dry granular matter is present on the pelts after the pelts have been treated. The sawdust or other dry granular matter makes it difficult to further handle the pelts and sawdust and other dry granular matter must not be present when the pelts are to be sold.

SUMMARY OF THE INVENTION

[0005] It is an object of the invention to provide an apparatus and a method still making it possible to treat carcasses of furred animals or pelts of preferably furred animals with sawdust or other dry granular matter, but limiting the amount of matter being present on the carcasses or pelts after having been treated.

[0006] This object is obtained by an apparatus, where the first chamber and the second chamber are divided by a screen, said screen having a mesh size allowing the

dry granular matter to pass through the screen from the first chamber to the second chamber, and said screen having a mesh size not allowing pelts to pass through the screen from the first chamber to the second chamber, and where the drum is capable of taking up a position for emptying the drum of pelts having been treated, and in which position for emptying the drum, dry granular matter in the first chamber is forced to pass from the first chamber, through the screen, and to the second chamber, at least during rotation of the drum.

[0007] Dividing the first chamber and the second chamber by a screen and having the dry granular matter being forced from the first chamber to the second chamber after the carcasses or pelts have been treated, has the advantage that fur of the carcasses or pelts will be freed from most of, if not all, dry granular matter clinging to the fur of the carcasses or pelts.

[0008] The dry granular matter will be forced, by gravity and by a superposed mechanical force, out of the fur of the carcasses or pelts and into the second chamber, into which the carcasses or pelts cannot pass. Thus, the carcasses or pelts are ready for further handling without having to free the fur of the carcasses or pelts from dry granular matter, either manually or by using another apparatus, into which the carcasses or pelts must be loaded and discharged.

[0009] Also, an apparatus according to the invention, with a first chamber having at least one section for treating carcasses or pelts and another section for accumulating sawdust or other dry granular matter during transfer of the carcasses or pelts out of the apparatus, and where the sawdust is transferred from the first section to the second section by the same motion as that transferring the carcasses or pelts out of the apparatus, reduces the amount of dry granular matter on the fur of the carcasses or pelts and furthermore limits the mechanical complexity of the apparatus, thereby making the apparatus more durable and less prone to breakdowns and making the treating process faster.

[0010] The advantages mentioned, also in combination, are very important because the season is very limited of fleshing the animals and afterwards treating the pelts.

[0011] In a preferred embodiment of the apparatus according to the invention, the screen extends from an inner circumference of the drum to an outer boundary of the at least one outlet opening. Such extension of the screen provides a complete boundary by the screen between the first chamber and the second chamber. The first chamber has at least one opening, and the at least one opening must not be blocked by the screen, therefore, the screen extends to an outer boundary of the at least one opening.

[0012] In a possible further preferred embodiment, the mesh size of the screen is between 25 mm² and 10.000 mm², preferably between 100 mm² and 5.000 mm², possibly between 100 mm² and 2.500 mm². It is important that the mesh size allows dry granular matter, even if the

dry granular matter clots into small bowls, to pass from the first chamber to the second chamber. However, at the same time the mesh size must not be so large than the carcasses or pelts may pass and not even so large that tails, paws or other parts of the carcasses or pelts can be stuck on the mesh of the screen.

[0013] In an even further preferred embodiment, the screen is made of one or more plates being provided by holes being punched in the one or more plates. By making the screen by a plate, the screen may be manufactured cheaply and with the possibility to easily size the holes according to the dry granular matter used and/or for optimizing the transfer of dry granular matter from the first chamber to the second chamber, and vice versa, during rotation of the drum.

[0014] In an alternative embodiment, the screen is made by rods having being mutually joined to make a screen having the preferred mesh size. By making the screen by rods being mutually joined, contrary to making the screen by a plate with perforations, passing of the dry granular matter from the first chamber to the second chamber is not obstructed by plate material between perforations.

[0015] In a preferred embodiment of the apparatus according to the invention, the apparatus comprises a plate leading to the at least one opening is positioned along at least part of the extension of the screen, said plate being impervious to the dry granular matter and said plate not allowing the dry granular matter to pass from the second chamber to the first chamber.

[0016] A plate positioned along the screen, on the outside of the screen in relation to the first chamber and on the inside of the screen in relation to the second chamber, prevents dry granular matter which is present in the second chamber from passing to the second section of the first chamber, at least during discharge of the carcasses or pelts.

[0017] In one preferred aspect of the invention, the screen is frusto-conical, and preferably also the plate if the plate is provided as part of the apparatus according to the invention, with an outer boundary of the base of the frustum extending along the inner circumference of the drum and with an outer boundary of the top of the frustum extending along the boundary of the at least one opening of the drum.

[0018] A frusto-conical screen, and preferably also the plate if the plate is provided, has the advantage, that the drum may be tilted during discharge of the carcasses or pelts in such a way that the discharge opening of the drum is tilted more downwards in order to ease discharge of the carcasses or pelts. However, the screen being frusto-conical and extending as disclosed, will result in the screen still being tilted in a downwards direction as seen from the second section to the first section of the first chamber. The downwards direction of the screen and the preferred plate, safeguards that the dry granular matter is not discharged trough the discharge opening, even if the drum is tilted so that the discharge opening is tilted

more downwards.

[0019] The frusto-conical top angle of the plate extends symmetrically around a longitudinal axis of the drum, said angle being between 10° and 180°, preferably between 30° and 120°, possibly between 30° and 90°, preferably approximately 60°. The larger the top angle, the more the drum may be tilted without risk of the dry granular matter being discharged when discharging the carcasses or pelts from the drum. However, a top angle of approximately 60° result in a possibility of tilting the drum, and thus the discharge opening, sufficiently downwards to be able to easily discharge the carcasses or pelts, while still having space enough in the second chamber behind the screen and the plate for holding a certain amount of the dry granular matter.

[0020] In another aspect of the invention, a possible embodiment of the screen extends along a funnel with a frustum-shaped inlet section leading to a pipe-shaped outlet section, and the plate is pipe-shaped if the plate is provided as part of the apparatus according to the invention, and with the screen extending from an outer boundary of the frustum-shaped inlet section extending along the inner circumference of the drum, and with a distant end of the pipe-shaped outlet section extending along the boundary of the at least one opening of the drum.

[0021] A funnel-shaped screen, and a pipe-shaped plate if the plate is provided, has the advantage, that the drum may better be tilted completely vertically during discharge of the carcasses or pelts in such a way that the discharge opening of the drum is tilted completely downwards in order to ease discharge of the carcasses or pelts as much as possible. However, the screen being funnel-shaped and extending as disclosed, will result in the screen extending vertically downwards as seen from the first section to the second section of the first chamber.

[0022] The downwards extension of the screen and thus of the pipe-shaped plate, requires the dry granular matter to have passed from the first chamber to the second chamber before starting discharging the carcasses or pelts through the discharge opening. This requirement is contrary to when the screen is frusto-conical, where dry granular matter always will pass to the second chamber, and not through the discharge opening, also during discharge of the carcasses or pelts through the discharge opening.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023]

Fig. 1-4 are plane views of an embodiment of the apparatus according to the invention, seen in different directional views,

Fig. 5 is a perspective view of an apparatus according to the invention, shown in a situation of loading pelts into the apparatus,

Fig. 6 is a perspective view of the apparatus according to the invention, shown in a situation of tumbling

carcasses or pelts in the apparatus, and Fig. 7 is a perspective view of the apparatus according to the invention, shown in a situation of unloading carcasses or pelts from the apparatus.

DETAILED DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

[0024] Fig. 1-4 are plane views of an embodiment of an apparatus for tumbling carcasses or pelts. In the following, carcasses only will be used for the detailed description of an embodiment of the invention. However, using carcasses as example is not to be construed as limiting the invention to carcasses only, pelts may also be treated in the embodiment described in the detailed description of the invention.

[0025] The apparatus comprises a drum D divided into a first chamber 1 and a second chamber 2. The drum D is suspended in bearings 3,4 at a front end F and a rear end R of the drum D. The bearings 3,4 may be any kind of bearings. In the embodiment shown, the bearings are roller bearings with rollers mounted in a portal-like suspension being part of a fixed chassis, and said rollers engaging an outer circumference of a corresponding liner being part of the drum D.

[0026] The drum D may be rotated in the bearings by a motor M, preferably an electric motor, said motor driving a gear wheel 5 mounted on the drum D. The electric motor M is situated beneath the drum D, thereby taking up only little space and also lowering the gravity centre of the apparatus as a whole. In other embodiments, the motor may be another type of motor, e.g., a pneumatic motor, and the motor may be situated at another location of the apparatus, possibly situated in prolongation of the drum. In still an alternative embodiment, the drum may be rotated manually by a circular hand-wheel or the like of the drum.

[0027] The drum D is suspended from a chassis, said chassis being divided into two sections, a first chassis section 6 intended for being supported on a floor, and a second chassis section 7 supported on the first section. Suspension of the second chassis section 7 on the first chassis section 6 is provided along a tilt-table bearing 8, with the second chassis section 7 being able to tilt around the bearing 8 provided between the first chassis section 6 and the second chassis section 7.

[0028] Tilting of the second chassis section 7 in relation to the first chassis section 6 results in a longitudinal axis A of the drum D tilting in relation to a horizontal orientation, around an axis B traverse to the longitudinal axis A (see Fig. 6-8).

[0029] Tilting of the second chassis section 7 in relation to the first chassis section 6 is performed by two hydraulic cylinders 9 provided between the first chassis section 6 and the second chassis section 7, at the front end F of the drum D. Extension of the hydraulic cylinders 9 will tilt the front end F of the drum D upwards, while retraction of the hydraulic cylinders 9 will tilt the front end F of the

drum D downwards. Other actuators than hydraulic actuators, and another number of actuators than two, for tilting the second chassis section 7, and thus for tilting the drum D, in relation to the first chassis section 6, may be provided, e.g., one or more pneumatic cylinders. Even in the alternative, tilting of the second chassis section 7, and thus tilting the drum D, in relation to the first chassis section 6 may be performed manually, possibly with means for maintaining a tilting position.

[0030] The front end F of the drum D is provided with an inlet opening 10 (not shown, see Fig. 6-8) for loading carcasses into the drum D, and the rear end R of the drum D is provided with an outlet opening 11 for discharging carcasses from the drum D. The drum D is also provided with a hatch 12 along the side wall of the drum D. The hatch 12 may be used for possible access to an interior of the drum D in case anything gets stuck and has to be freed manually. The hatch 12 may also be used for loading sawdust or other dry granular matter into the drum D. However, the hatch 12 is not essential to the operation of the apparatus. Thus, sawdust or other dry granular matter may also, or instead, be loaded through the inlet opening 10 at the front end F of the drum D or through the outlet opening 11 at the rear end R of the drum D.

[0031] The interior of the drum D is, as mentioned, divided into a first chamber 1 and a second chamber 2. The first chamber 1 has a shape where a front section 1A of the first chamber 1 is cylindrical, and a rear section 1B of the first chamber 1 is, in the embodiment shown, frusto-conical. The frusto-conical rear section 1B is formed by a screen 13, see also the following for more detailed description of the screen and its function in relation to the technical effect of the apparatus.

[0032] In an alternative embodiment, the first chamber has a shape where a front section of the first chamber is cylindrical, and a rear section of the first chamber is funnel-shaped. A funnel-shaped rear section may also be formed by a screen.

[0033] The funnel-shape may be partly frusto-conical, partly pipe-shaped, i.e., an inlet part of the rear section of the first chamber being frusto-conical and an outlet part of the rear section of the first chamber being pipe-shaped, e.g., cylindrical. Alternatively, the funnel-shape may be fully pipe-shaped, i.e. the entire rear section of the first chamber having the shape of a pipe, e.g., cylindrical.

[0034] The second chamber 2 has a shape being complementary to the frusto-conical shape of the rear section 1B of the first chamber 1. The second chamber 2 is formed by a cavity between the frusto-conical rear section 1B of the first chamber 1 and a rear cylindrical section of the drum D. Thus, the first chamber 1 and the second chamber 2 is encompassed within an outer cylindrical cover of the drum D together with the front cover 3 and a rear cover 4 of the drum D.

[0035] The first chamber 1 and the second chamber 2 are, as mentioned above, mutually divided by a screen

13 having a frusto-conical shape and forming the rear frusto-conical section of the first chamber 1. The screen 13 has a mesh size being large enough to allow sawdust or other dry granular matter to pass from the first chamber 1 to the second chamber 2, and vice versa, but the mesh size of the screen 13 is not so large as to allow carcasses from passing from the first chamber 1 to the second chamber 2.

[0036] The first chamber 1 is provided with a plurality of agitating fins 14 extending along at least part of the first chamber 1 and extending obliquely, i.e. in an angle different from 0 degrees, to the longitudinal axis A of the drum D. In the embodiment shown, the agitating fins 14 extend primarily along the frusto-conical screen 13. Furthermore, the first chamber 1, and in the embodiment shown also the second chamber 2, is provided with ribs 15 extending parallel with, and thus not obliquely to, the longitudinal axis A of the drum D.

[0037] During rotation of the drum D and depending on the rotational direction of the drum, the agitating fins 14 will force carcasses in the first chamber 1 either towards the cylindrical first section 1A of the first chamber 1 or force the carcasses towards and along the frusto-conical screen 13 of the second section 1B of the first chamber 1, and thus force the carcasses towards the outlet opening at the rear end R of the drum D.

[0038] If the drum is rotated clock-wise, i.e., clockwise when viewed from the inlet opening 10, the agitating fins 14 will force the carcasses towards the cylindrical section 1A of the first chamber 1.

[0039] If the drum is rotated counter clock-wise, i.e., counter clock-wise when viewed from the inlet opening 10, the agitating fins 14 will force the carcasses towards and along the frusto-conical section 1B of the first chamber 1, and thus force the carcasses along the screen 13, and force the carcasses further on towards the outlet opening 11 at the rear end R of the drum D.

[0040] When the drum D is rotated counter clock-wise, and carcasses in the first chamber 1 is forced towards and along the frusto-conical section 1B of the first chamber 1 and further on towards the outlet opening 11 at the rear end R of the drum D, most of the sawdust or other dry granular matter on the carcasses will be loosened from the fur of the carcasses, possibly by the sliding action between the carcasses and the frusto-conical screen 13, but at least by the tumbling action of the carcasses, before the carcasses reach the outlet opening 11 at the rear end R of the drum D. Thus, the carcasses will be free from most of the sawdust when being discharged from the drum D.

[0041] In the embodiment shown, apart from the frusto-conical screen 13, a frusto-conical plate 16 is provided. The frusto-conical plate 16 is almost flush with the frusto-conical screen 13, apart from a small distance between the frusto-conical screen 13 and the frusto-conical plate 16. The distance between the frusto-conical screen 13 and the frusto-conical plate 16 is approximately 50 mm, but the distance may be less or more. The technical effect

of the small distance is that sawdust or other dry granular matter may be accommodated on the frusto-conical plate 16 during unloading of the carcasses through the outlet opening 11 at the rear end R of the drum D. The frusto-conical plate 16 introduces a further partition, apart from the frusto-conical screen 13, between the first chamber 1 and the second chamber 2.

[0042] The frusto-conical plate 16 extends from a distance d16 from the interior surface of the drum D and to the outer boundary D11, within the interior of the drum D, of the outlet opening 11 at the rear end R of the drum. Thus, when the drum D is rotating counter clock-wise for discharging carcasses, and the drum D at the same time is tilted backwards as shown in Fig. 8, sawdust or other dry granular matter is in the first chamber 1 will pass through the frusto-conical screen 13 to the second chamber. The sawdust or other dry granular matter will pass along the distance D16 provided between the interior surface of the drum D and the plate 16.

[0043] The sawdust or other dry granular matter will accumulate in the smaller chambers 17 of the second chamber 2. The sawdust or other dry granular matter will stay in the second chamber as long as the drum is tilted backwards as shown in Fig. 8.

[0044] In the embodiment shown, division walls 17 are provided in the second chamber 2. The division walls 17 divide the second chamber 2 into several smaller chambers. The division walls 17 extend in the longitudinal direction of the drum D and extend between the inner circumference of the drum, the frusto-conical plate 16 and the rear cover 4 of the drum. Thereby, several smaller chambers are obtained for accumulating sawdust or other dry granular matter. The smaller chambers have a wedge-like shape. The several smaller chambers allow the second chamber 2 as a whole to accumulate more sawdust or other dry granular matter, during rotation of the drum D and when the drum is tilted backwards as shown in fig. 8, than if the second chamber 2 was not divided into several smaller chambers, i.e., if the second chamber constituted one single, large chamber only.

[0045] Fig. 6 is a perspective view of the apparatus during operation and in a situation where carcasses are intended for being loaded into the drum of the apparatus.

[0046] The drum is tilted so that the front end of the drum is lowered and so that the longitudinal axis of the drum is tilted in relation to a horizontal level. The opening for loading of carcasses is thus more accessible, but furthermore, during rotation of the drum in the tilted position shown in Fig. 6, sawdust or other dry granular matter will accumulate on the first chamber, where the carcasses are to be treated. When loading the carcasses, the rotational direction of the drum will be clockwise, resulting in an agitating action of the carcasses towards the cylindrical section of the first chamber and furthermore an agitating action of sawdust or other dry granular matter towards the cylindrical section of the first chamber.

[0047] Fig. 7 is a perspective view of the apparatus during operation and in a situation where pelts have been

loaded and are treated in the drum of the apparatus. The drum not tilted, thus, the longitudinal axis of the drum is substantially horizontal.

[0048] Fig. 8 is a perspective view of the apparatus during operation and in a situation where pelts are intended for being unloaded from the drum of the apparatus. The drum is tilted so that the rear end of the drum is lowered and so that the longitudinal axis of the drum is tilted in relation to a horizontal level. The opening for unloading of carcasses is thus more accessible, but furthermore, during rotation of the drum in the tilted position shown in Fig. 8, sawdust or other dry granular matter will accumulate in the second chamber, which the carcasses cannot enter. When unloading the carcasses, the rotational direction of the drum will be counter clockwise, resulting in an agitating action of the carcasses towards the frusto-conical section of the first chamber and furthermore an agitating action of sawdust or other dry granular matter towards the second chamber, the sawdust or other dry granular matter passing through the screen between the first chamber and the second chamber.

Claims

1. An apparatus for treating carcasses or pelts, said apparatus comprising a rotary drum having

- at least one opening, and support means supporting the drum for rotation about a rotary axis, and where the rotary drum has at least a first chamber in one end of the rotary drum and a second chamber in another end of the rotary drum,
- said first chamber intended for treating carcasses or pelts with sawdust or other dry granular matter, and
- said second chamber being intended for containing at least part of the dry granular matter,
- where the first chamber and the second chamber are divided by a screen,
- said screen having a mesh size allowing the dry granular matter to pass through the screen from the first chamber to the second chamber, and
- said screen having a mesh size not allowing carcasses or pelts to pass through the screen from the first chamber to the second chamber, and
- where the drum is capable of taking up a position for emptying the drum of carcasses or pelts having been treated, and in which position for emptying the drum, dry granular matter in the first chamber is forced to pass from the first chamber, through the screen, and to the second chamber, at least during rotation of the drum.

2. An apparatus according to claim 1, where the screen

extends from an inner circumference of the drum to an outer boundary of the at least one outlet opening.

3. An apparatus according to claim 1 or claim 2, where the mesh size of the screen is between 25 mm² and 10.000 mm², preferably between 100 mm² and 5.000 mm², possibly between 100 mm² and 2.500 mm².
4. An apparatus according to claim 3, where the screen is made of one of the following elements: one or more plates being provided with holes to make the screen or rods having being mutually joined to make the screen.
5. An apparatus according to any of the preceding claims, where a plate leading to the at least one opening is positioned along at least part of the extension of the screen, said plate being impervious to the dry granular matter and said plate not allowing the dry granular matter to pass from the second chamber to the first chamber.
6. An apparatus according to any of claims 1-5, where the screen is frusto-conical, with an outer boundary of the base of the frustum extending along the inner circumference of the drum and with an outer boundary of the top of the frustum extending along the boundary of the at least one opening of the drum.
7. An apparatus according to claim 5 and 6, where the plate is frusto-conical, with an outer boundary of the base of the frustum extending in a distance from the inner circumference of the drum and with an outer boundary of the top of the frustum extending along the boundary of the at least one opening of the drum.
8. An apparatus according to claim 7, where a frusto-conical top angle of the plate extends symmetrically around a longitudinal axis of the drum, said angle being between 10° and 180°, preferably between 30° and 120°, possibly between 30° and 90°, preferably approximately 60°.
9. An apparatus according to any of claims 1-5, where the screen extends along a funnel with a frustum-shaped inlet section leading to a pipe-shaped outlet section, and with an outer boundary of the frustum-shaped inlet section extending along the inner circumference of the drum, and with a distant end of the pipe-shaped outlet section extending along the boundary of the at least one opening of the drum.
10. An apparatus according to claim 5 and 8, where the plate extends along a pipe-shape, with a proximate one end of the pipe-shape extending in a distance from the inner circumference of the drum and with a distant end of the pipe-shape extending along the

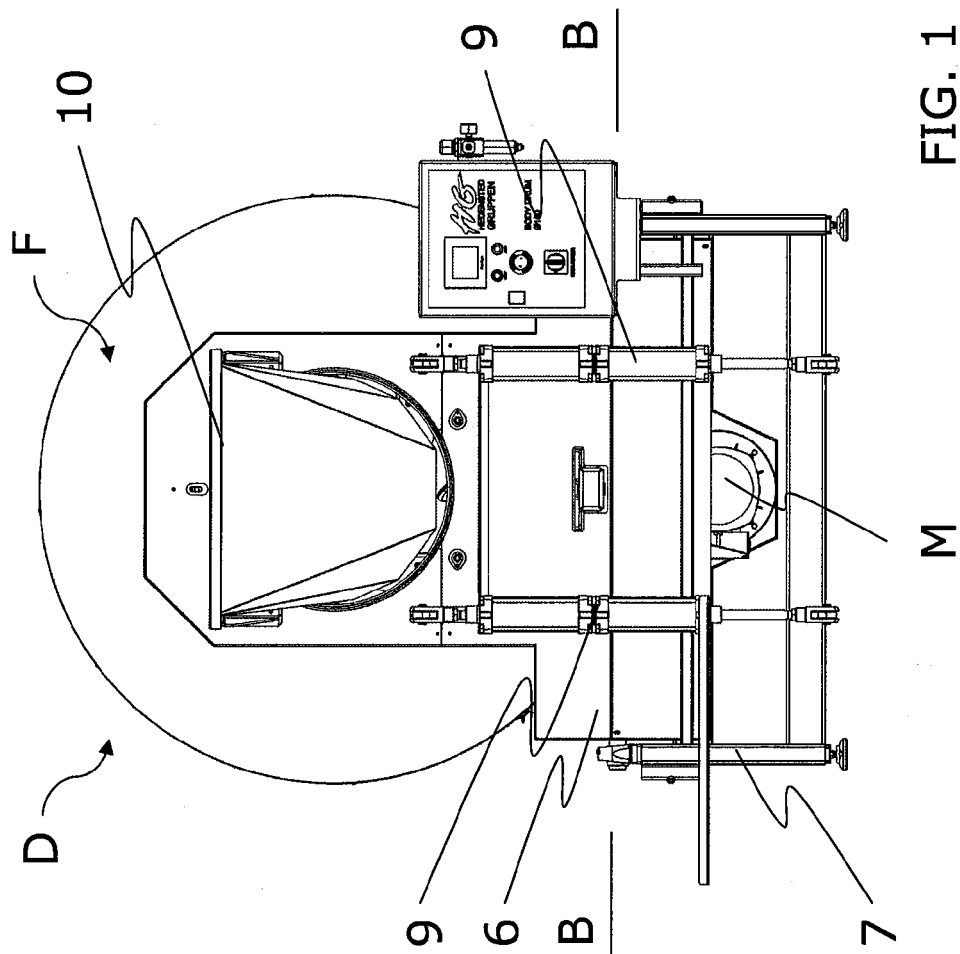
boundary of the at least one opening of the drum.

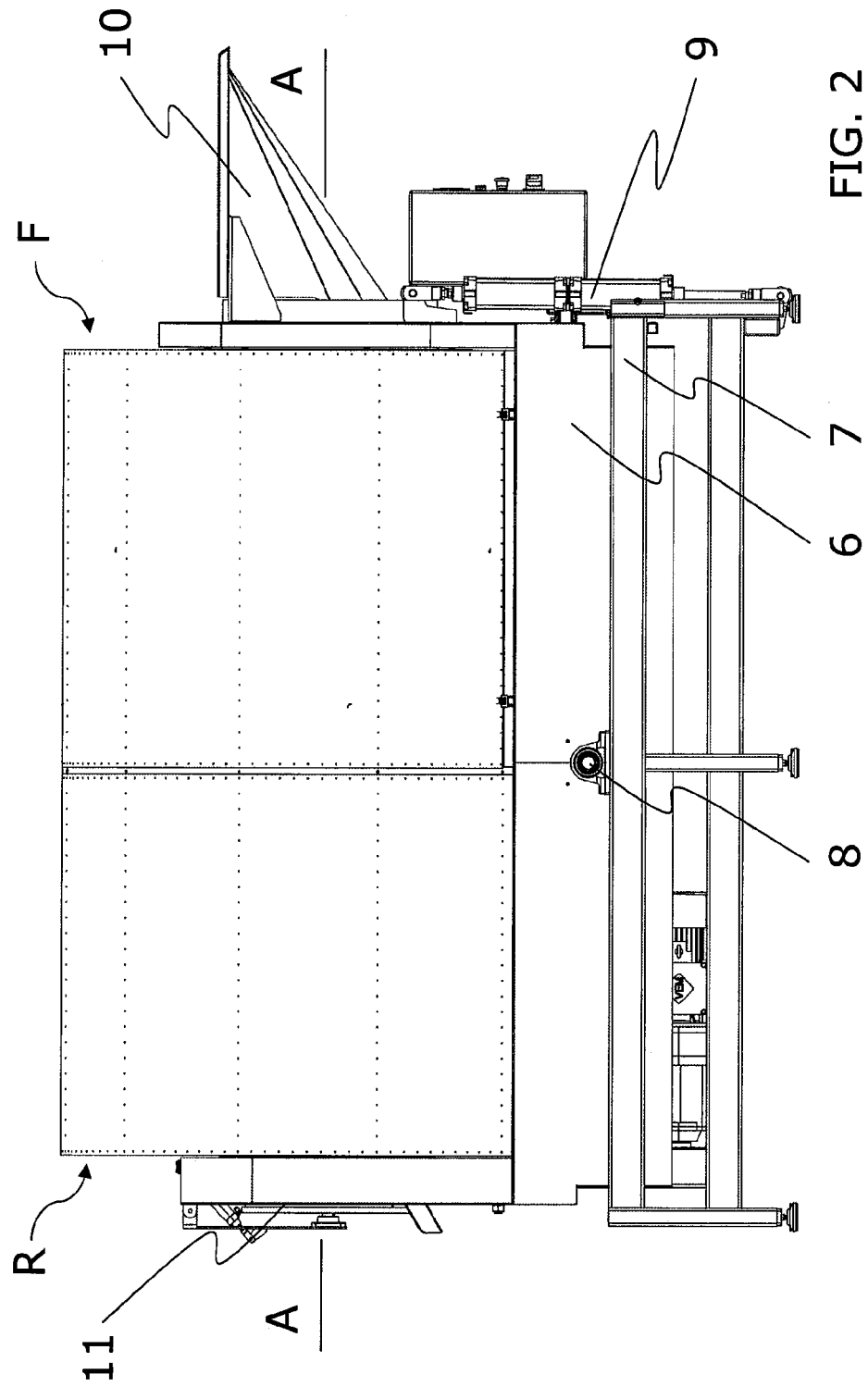
11. An apparatus according to any of the preceding claims, where the second chamber is divided into at least two sub-chambers, and where the sub-chambers are individually divided by a division wall being impervious to the dry granular matter. 5
12. An apparatus according to any of the preceding claims, where the drum has at least one inlet opening at a front end of the first chamber, and at least one outlet opening at an opposite rear end of the first chamber, where the at least one inlet opening leads to a first section of the first chamber, and where the at least one outlet opening leads from a second section of the first chamber, said second section being defined by the extension of outer boundary of the screen along the inner circumference of the drum and by the extension of the screen along an outer boundary of the outlet opening. 10 15 20
13. An apparatus according to any of the preceding claims, where an interior of the drum comprises a plurality of agitating members disposed in the first chamber and secured for rotation with the drum, each of said agitating members defining a plane which extends obliquely to a rotational axis of the drum, with an agitating action of carcasses or pelts in one direction along the rotational axis of the drum, when the drum is rotated in a first direction, and with an agitating action of the carcasses or pelts in a second direction along the rotational axis of the drum, said second direction being opposite to the first direction, when the drum is rotated in a second direction opposite to the first direction. 25 30 35
14. A method for treating carcasses or pelts, said method being performed by an apparatus according to any of claims 1-13, said method comprising the steps of: 40
 - introducing sawdust or other dry granular matter to the front section of the first chamber,
 - loading carcasses or pelts through the at least one inlet opening into the front section of the first chamber, 45
 - rotating the drum in one rotational direction with the sawdust or other dry granular matter and the carcasses or pelts in the first chamber,
 - tilting the drum so that a longitudinal axis of the drum is tilted relation to a horizontal level, with the at least one outlet opening thereby being lowered, 50
 - rotating the drum in a rotational direction being opposite to the first rotational direction, 55
 - forcing carcasses or pelts along the screen in the rear section of the first chamber towards the at least one outlet opening at the rear end of the

drum, while at the same time

- passing sawdust or other dry granular matter from the first chamber, through the screen, to the second chamber.

15. A method according to claim 14, where the steps of introducing sawdust or other dry granular matter to the front section of the first chamber, and loading carcasses or pelts through the at least one inlet opening into the front section of the first chamber, is performed during tilting of the drum so that a longitudinal axis of the drum is tilted relation to a horizontal level, with the at least one inlet opening thereby being lowered.
16. Use of an apparatus according to any of claims 1-13 for treating carcasses or pelts.





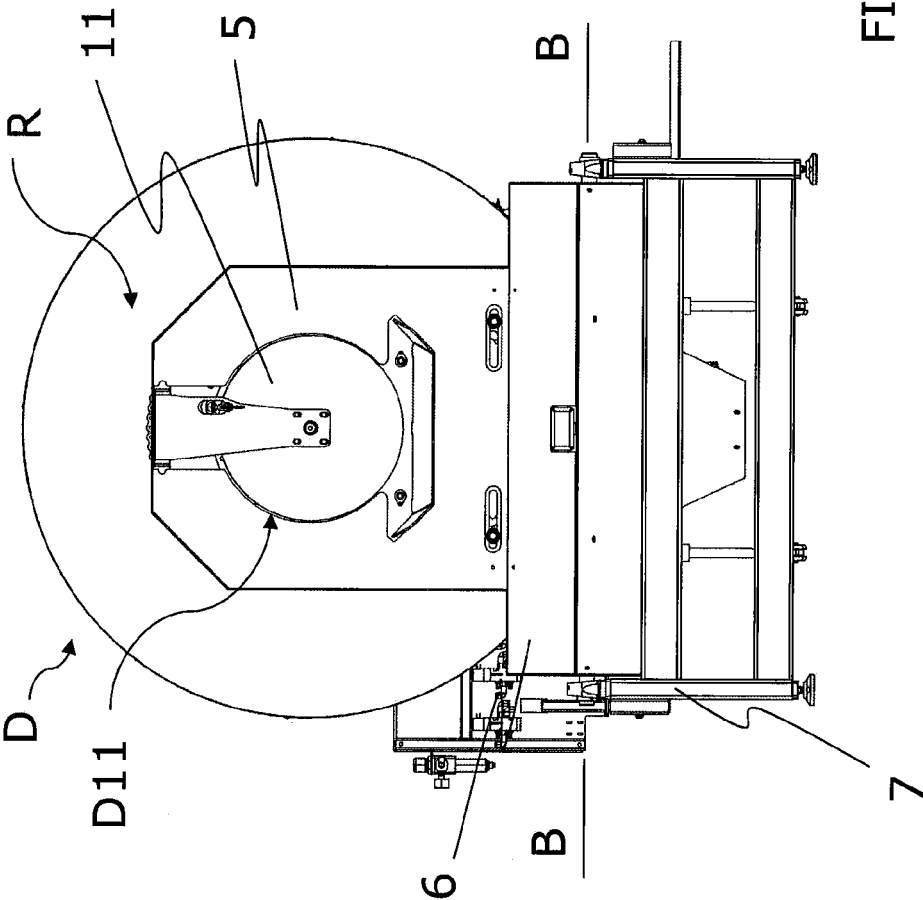
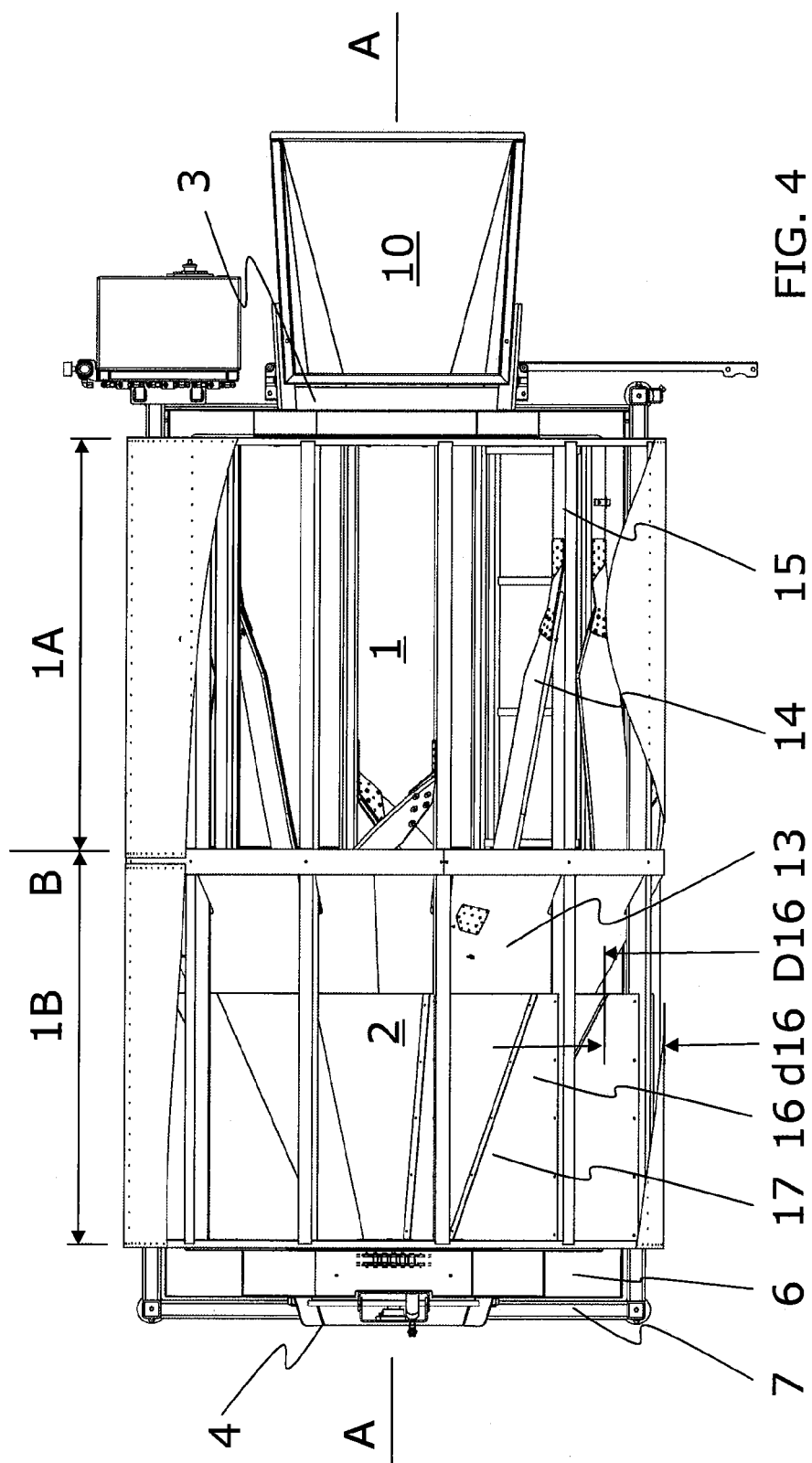
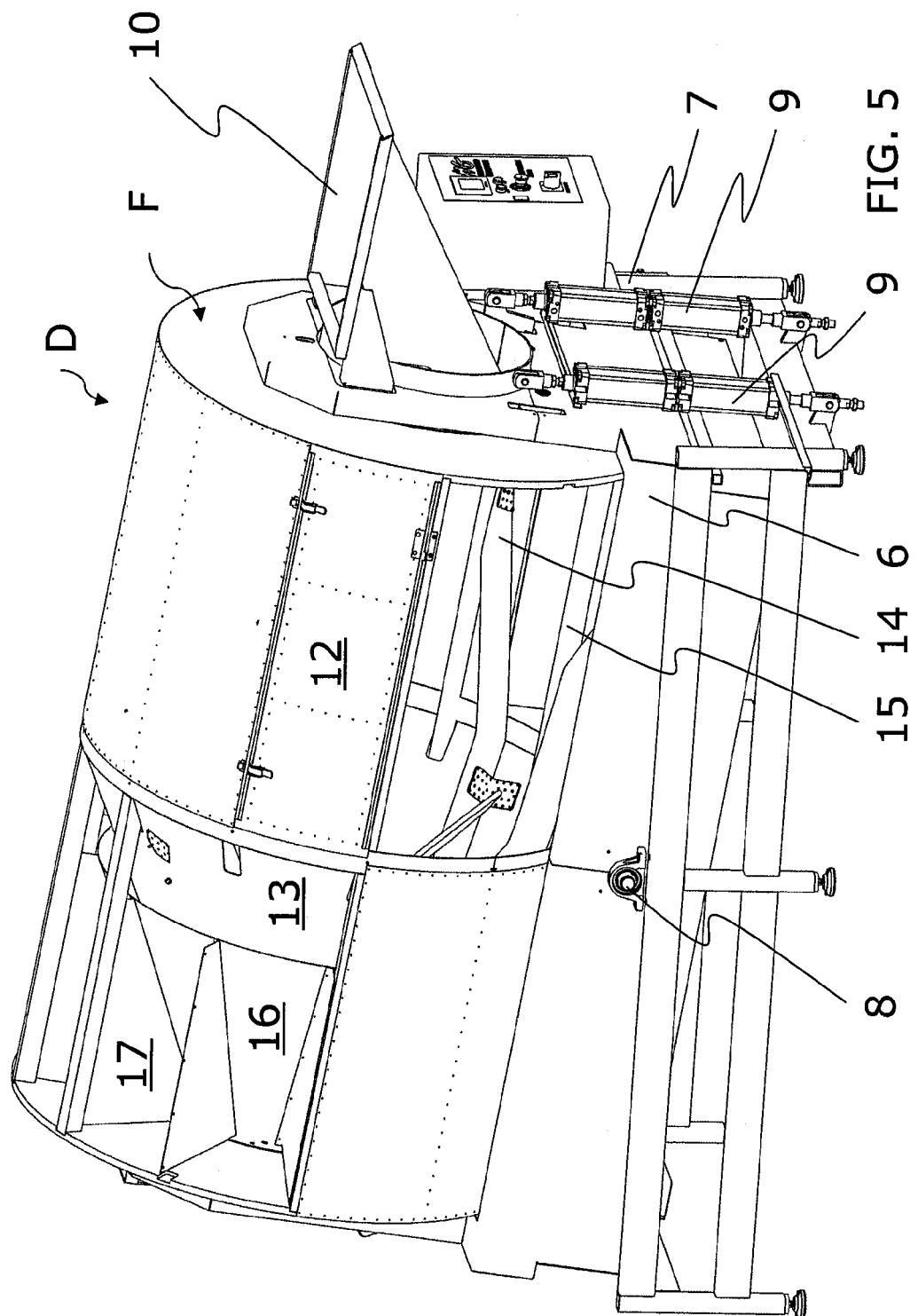


FIG. 3





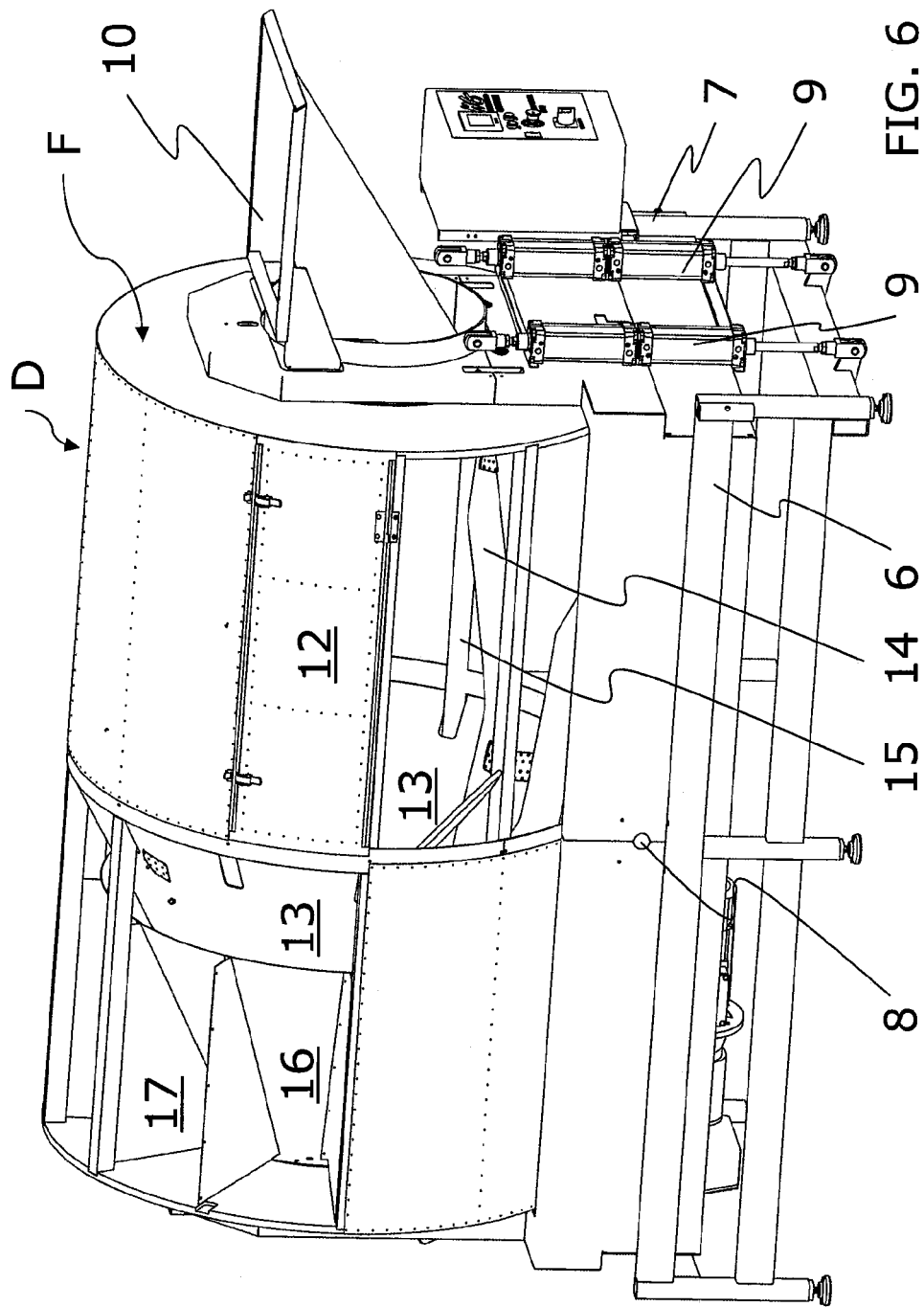
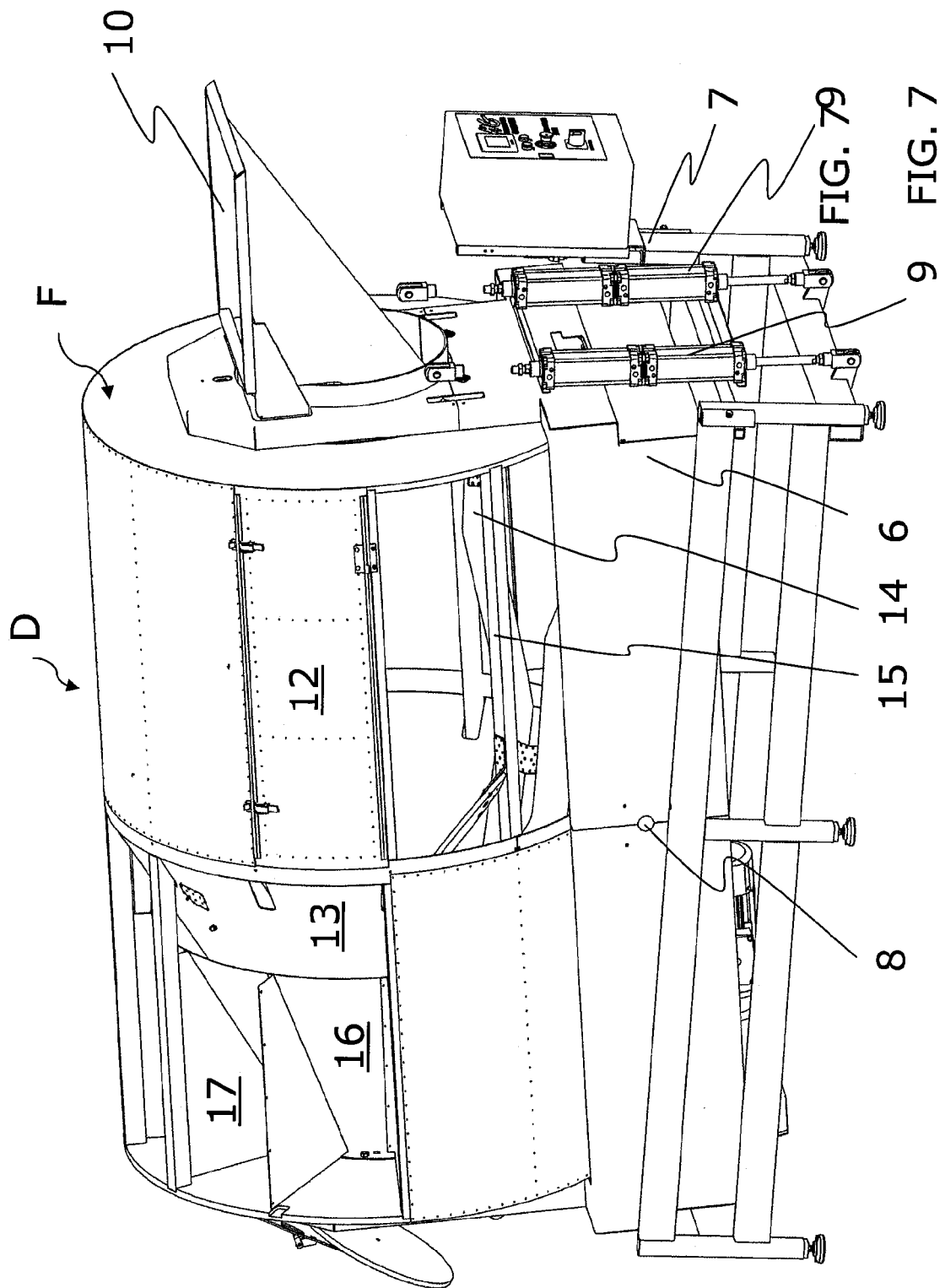


FIG. 6





EUROPEAN SEARCH REPORT

Application Number
EP 10 15 6354

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|--|---|---|---|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
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| Place of search Munich | | Date of completion of the search 4 August 2010 | Examiner Bichi, Marco |
| 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 | |

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REFERENCES CITED IN THE DESCRIPTION

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