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(54) **IMPROVED PNEUMATIC PRESS**

(57) The efficiency of a pneumatic press for pressing a vegetable mass is improved. The press comprises a drum provided with its own central axis, a filtering baffle, for extracting liquid from the vegetable mass, installed inside the drum, and a membrane, mounted on the inner wall of the drum, which is inflatable for pressing the vegetable mass against the filtering baffle.

The filtering baffle is movably mounted in order to be moved with respect to said internal wall.

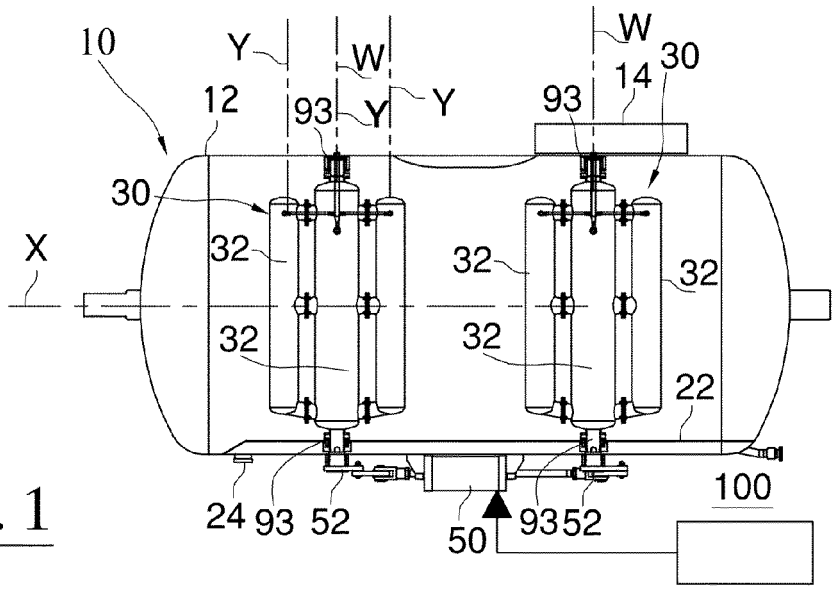

Fig. 1

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Description

[0001] The present invention refers to an improved closed pneumatic press for obtaining a vegetable juice, preferably for pressing whole grapes, grape destems or pomace from end of fermentation. The present invention also refers to an improved method for pressing pneumatically, preferably whole grapes, destemmed grape or pomace from end of fermentation.

[0002] The known pneumatic crushing presses consist of a drum rotating on its own central horizontal axis. If the drum is closed the press is defined as "closed". The known closed-type presses require filtering channels or baffles to separate the liquid juice from the peel.

[0003] Among the traditional types of closed presses there are those equipped with two membranes (or a single membrane occupying almost the entire internal surface) which each occupy approximately half of the internal surface of the drum. The filtering baffles are central, fixed and orthogonal to the rotation axis of the drum. As the membranes are inflated, they press the vegetable mass towards the center of the drum where the fixed filtering baffles are positioned. This type of press is used above all in the processing of grapes or destemmed material for white or rosé or red grapes but processed in white, where the loading-draining phase is fundamental; in fact, the central position of the fixed filtration baffles helps the drainage during the loading phase, while during the pressing phase each membrane pushes half the loaded vegetal mass, therefore the filtration action is faster given that the juice must pass through half the mass. During the unloading phase, however, the presence of fixed central baffles hinders the operation, creating many problems, especially in the presence of whole grapes where the stems tend to create tangled blocks that get caught in the filters.

[0004] This type of press, like other types of presses, has also the problem that the holes in the filtering means can become plugged. To try to overcome this problem, the loading of the press must be stopped, the hatch closed and the cylinder rotated in the hope that the resulting mechanical action between the loaded mass and the filters frees them from grapes and skins which block the drainage holes.

[0005] Obviously this action, in addition to lengthening the processing times, causes a notable organoleptic degradation of the product to be pressed since the violent impacts of the rotating mass on the filters cause the skins to degrade and therefore diffuse components with a herbaceous flavor into the juice which the winemaking process tends to avoid as much as possible (unpleasant flavors and aromas end up in the final wine).

[0006] The main object of the invention is to improve the present state of the art.

[0007] Another object of the invention is to improve the initial, and most delicate, phase of the pressing process, i.e. the loading phase and the draining phase of the product, so that the press is loaded as continuously as possible, draining the juice more delicately without destroying the peels and faster, distributing the mass in the cylinder more homogeneously.

[0008] Another object of the invention is to provide an improved pneumatic press and pressing method.

[0009] These and other objects are achieved by what is reported in the attached claims; advantageous technical characteristics are defined in the dependent claims.

[0010] A pneumatic press is proposed for pressing a vegetable mass comprising:

- a drum with its own central axis,
- a filtering baffle to extract liquid from the vegetal mass that is installed inside the drum,

  provided with a perforated surface for sifting the vegetable mass, and

  fluidly connected with the outside of the drum to convey juice extracted from the vegetable mass to the outside of the drum,
- a membrane, mounted on the internal wall of the drum, which is configured to remain, when deflated, adherent to the internal walls of the drum and is inflatable to press the vegetable mass against the filtering baffle,

wherein the filtering baffle is mounted movable inside the drum to be able to be moved with respect to said internal wall.

[0011] Another aspect of the invention is a method for managing a pneumatic press comprising a drum with inside a filtering baffle for extracting liquid from a vegetable mass, loaded inside the drum, under the action of an inflatable membrane mounted on the internal wall of the drum, with the step of moving the filtering baffle relative to the internal wall of the drum to apply a force to the vegetable mass.

[0012] The following refers in particular to a rotatable filtering baffle, but also applies to a movable and/or oscillating filtering baffle. In particular, the filtering baffle is rotatable and/or oscillating about a longitudinal axis thereof, and/or such axis is translatable.

[0013] The ability of the filtering baffle to move relative to the inner wall of the drum has many advantages. It allows a better distribution of the mass inside the drum (filtering baffle used as a blade) without activating the rotation of the drum, which causes the organoleptic degradation of the mass. And the geometry of the filtering baffle can be optimized for the operating phase of the press.

[0014] Other advantages of a movable filtering baffle are that by moving it can

reach areas of the press, and therefore of the mass to be filtered, which cannot be reached by the fixed

baffles, thus increasing the filtering capacity;

clean the filtering holes of its own perforated surface through the rubbing action of the mass without rotating the drum;

mix the vegetable mass, which in turn reduces the filtration time.

[0015] In general, the filtering baffle comprises an external filtering surface to sieve the vegetal mass and store the juice that comes out therefrom during the pressing. In particular, said external filtering surface may comprise

a perforated rigid surface or grid (e.g. made of metal, plastic, or composite materials), and/or

a flexible mesh or net or grid, e.g. made of synthetic material, supported by an internal support structure, which e.g. may be a spring, or tubes or beams of metal or plastic or composite material. The mesh or net or grid is mounted on the internal support structure, which holds the mesh or net or grid in position and/or taut, and e.g. prevents it from tearing during the pressing.

[0016] Preferably the press is equipped with two membranes, which each occupy at least 35% of the internal surface of the drum; or a single membrane that substantially occupies at least 70% of the internal surface of the drum.

[0017] Preferably the filtering baffle extends perpendicularly to said central axis, i.e. for example along a diameter of the drum cross-section, to cover a greater filtering surface and facilitate, with the symmetry of the structure, the use of two membranes.

[0018] An advantageous embodiment envisages that the filtering baffle extends cantilevered with respect to said wall, and/or is movable and/or rotatable.

[0019] A more advantageous embodiment, simple to construct but heralding of many advantages, envisages that the filtering baffle is rotatable, or only rotatable, about its own longitudinal axis. In particular, the filtering baffle is rotable about its own longitudinal axis by at least 90° and/or is orientable towards a loading/unloading hatch provided on the lateral surface of the drum.

[0020] The longitudinal axis of the filtering baffle lies e.g. in a plane orthogonal to the central axis of the drum or in a plane inclined to the central axis of the drum.

[0021] An advantageous embodiment envisages that the opposite ends of the filtering baffle are rotatably constrained to the internal wall of the drum, e.g. via a rotary joint configured to allow the rotation of the baffle itself.

[0022] In a more advantageous embodiment the joint is

- configured to allow the liquid/juice of the pressed vegetable mass to pass through it and to drain such liquid/juice; and/or
- configured for the insertion in it of washing tubes/bowls, and/or
- fluidly connected with a liquid discharge channel arranged inside the drum and communicating with a liquid drain towards the outside of the drum.

[0023] Another advantageous embodiment envisages that the filtering baffle is constrained only to a lower rotation and drainage joint.

[0024] An advantageous embodiment envisages that said perforated surface is for example

- cylindrical in shape, to receive juice from all directions; or
- the juxtaposition of cylindrical shapes or volumes (e.g. a plurality of cylindrical surfaces with parallel and offset axes) each equipped with a perforated surface; or
- substantially flat in shape (like a panel or a table or a plate or a tray or a parallelepiped or a prism with a narrow base).

[0025] The filtering baffle may be dynamically oriented according to the operating phase of the press to maximize its functionality and that of the press.

[0026] The rotation axis of the filtering baffle may pass through the geometric center of the baffle, through the barycenter of the baffle, or through an edge of the baffle.

[0027] Especially in the case in which, with respect to and orthogonally to its rotation axis, the filtering baffle develops more along a privileged radial direction (along one or more radii or diameters), or is asymmetrical with respect to its rotation axis, the filtering baffle can act as a shovel when moving and/or rotating.

[0028] In the method according to the invention, during the filling phase of the press, e.g. through a hatch in the drum and/or an axial loading valve, the rotation of the filtering baffle allows the loaded mass to be moved, distributing it more uniformly inside the drum without having to rotate it (the same also applies when unloading the pressed mass). Thus the organoleptic degradation of the vegetal mass caused by the rotation of the drum is avoided. Furthermore, the movement of the filtering baffle avoids or reduces the clogging of its perforated surface.

[0029] In the method according to the invention, during the pressing phase the baffle is oriented/orientable so as to offer the maximum perforated surface to the membrane and/or to limit or remove bulk inside the drum in areas other than the axis of the drum, destination towards which the membrane converges during pressing. It is understood that the reduction of interferences with the membrane translates into safer and more efficient pressing.

[0030] In the method according to the invention, during the crumbling phase of the pressed mass and during the

unloading phase of the pressed mass, therefore with rotation of the drum and one or each membrane adhering to the internal walls of the drum, the filtering baffle is orientable/rotatable, e.g. by 90°, with respect to the position assumed during the pressing phase, thus offering a minimum contact surface with the mass and less probability of clogging its perforated surface. A 45-degree positioning of the filtering baffle with respect to the axis of the drum can facilitate the discharge of the exhausted mass at the end of the pressing process.

[0031] If the baffle, as mentioned above, has a polarly asymmetric shape, in the method according to the invention during the pressing phase the baffle is orientable so as to offer the maximum perforated surface to the membrane, by rotating it to align its maximum radial dimension along the axis of the drum, in practice flattening it along the same axis.

[0032] In the method according to the invention, during the product draining phase or during the loading phase from a hatch or axial valve of the drum, with the drum still and one or each membrane adhering to the internal surface of the drum, the filtering baffle is rotatable/rotated, in order to distribute the mass more uniformly inside the drum, to increase the contact surface of the baffle with the mass, and to clean the external surface of the baffle itself.

[0033] The shape and number of filtering baffles may also differ from what is defined and illustrated here.

[0034] The means or drive for moving one or each filtering baffle may vary, being e.g. an electric motor, or a pneumatic or hydraulic piston. Preferably the means or the drive are mounted on the external surface of the drum, and preferably and advantageously (compactness of the system) coupled to the baffle through said joint.

[0035] If there are two or more baffles mounted in the drum, in a variant the press comprises a means or drive connected to all baffles for simultaneously moving all baffles. In a different variant the press comprises for each baffle a means or drive connected to said baffle to move said baffle independently of the others.

[0036] In the case of two or more baffles inside the drum, preferably the filtering baffles are placed in a row, and the rotation axis of each baffle belongs to the same imaginary plane, and/or

said means or drive are configured to simultaneously move all the baffles or a subset thereof, preferably so that all the baffles or the baffles of said subset move in the same way.

[0037] As variations, the central axis of the drum may be horizontal or vertical; and the drum may be fixed or rotatable about its central axis.

[0038] In a variant, the filtering baffle is mounted inside the drum extending substantially between two points of the internal wall of the drum perpendicularly or perpendicularly to a plane passing through the central axis of the drum.

[0039] In a variant, the filtering baffle is mounted in the drum such that the longitudinal axis of the filtering baffle extends along a diameter of the drum or along the central axis of the drum.

[0040] In a preferred step of the method, the filtering baffle is moved or rotated while filling the press.

[0041] In a preferred phase of the method, during pressing of the vegetal mass the baffle is oriented so as to offer the maximum perforated surface to the membrane and/or to limit or remove bulk inside the drum in areas other than the axis of the drum.

[0042] In a preferred phase of the method, during the crumbling of the pressed mass by rotation of the drum and/or during the unloading phase of the pressed mass, the filtering baffle is oriented differently, e.g. at 90°, compared to the position during the pressing phase, thus offering a minimum contact surface with the mass and less probability of clogging their perforated surface.

[0043] In a preferred phase of the method, during the pressing phase the baffle is oriented so as to offer the maximum perforated surface to the membrane by rotating it to align its maximum radial dimension along the axis of the drum.

[0044] In a preferred phase of the method, during the draining phase of the vegetal mass or during the loading phase into the drum, with the drum stationary and the membranes adhering to the internal surfaces of the drum, the filtering baffle is rotated to move the vegetal mass inside the drum.

[0045] In the method, the press shares one or each of the characteristics defined herein for the press subject of the invention.

[0046] Further advantages will be clear from the following description, which refers to examples of preferred embodiments of a pneumatic press in which:

- fig. 1 shows a side view of a press;
- fig. 2 shows a view from below of the press in fig. 1;
- fig. 3 shows a front view of the press in fig. 1;
- fig. 4 shows a side view of a second press;
- fig. 5 shows a view from below of the press in fig. 4;
- fig. 6 shows a side view of a third press;
- fig. 7 shows a view from below of the press in fig. 6;
- figs. 8-10 show a vertical axis press,
- figs. 11-12 show a second vertical axis press.

[0047] Equal numbers in the figures indicate equal or substantially equal parts.

[0048] A pneumatic press 10 is used to press a vegetable mass, and comprises a drum 12 rotatable about its central horizontal X axis. In the external lateral surface of the drum 12 there is a loading/unloading hatch 14 for

the vegetable mass and an outlet 24 for the juice extracted from the vegetable mass. The outlet 24 is fed by a channel 22 internal to the drum 12. Inside the drum 12 there is mounted a pair of filtering baffles 30 and two opposite membranes 18. In a known way each membrane 18 is mounted on the wall 16, so as to be adhering to the wall 16 when deflated, and is inflatable to press the vegetal mass contained inside the drum 12 against the filtering baffles 30. For simplicity, the membranes 18 are omitted in some figures.

[0049] Each filtering baffle 30 (and 80) extends along a diameter of the cross-section of the drum 12 between two diametrically opposite points of its internal wall 16. At each of such points a rotary joint 93 is mounted, at least one of which communicates fluidly with the channel 22 to convey the extracted juice into it.

[0050] In a variant, each filtering baffle 30 (fig. 1 and 2) is formed of three perforated and hollow cylindrical surfaces 32, configured to sieve the vegetable mass and extract juice from it. The surfaces 32 develop along longitudinal Y axes (only some indicated) which are rigidly parallel to each other, offset and lying on the same plane. The internal cavities of the cylindrical surfaces 32 of each filtering baffle 30 communicate fluidly with each other (e. g. via pipes) to convey the juice extracted from each one at one of said points. There the filtering baffle 30 fluidly communicates with a channel 22 which conveys the extracted juice towards the outlet 24.

[0051] The cylindrical surfaces 32 are

- preferably detachable from each other, to facilitate repairs, and compared to the example in fig. 6 have a larger draining surface; and/or

- equal to each other, or two are equal and the central one has a larger or smaller diameter and may only act as a load-bearing axis for the filtering baffle. In this case the central part may be a simple tube, even not perforated, which connects the rotary joints 93 and serves as a support for the baffles 32 and as a liquid drainage point from them toward the drainage channel 22.

[0052] In the illustrated example the filtering baffle 30 are not the same, but they may be.

[0053] In each filtering baffle 30 the number of perforated cylindrical surfaces 32 may also differ from what is illustrated. In each filtering baffle 30 the shape of the perforated surfaces 32 may also differ from the cylindrical one.

[0054] In a different variant of press 70, which is structurally simpler (see figs. 6-7), the filtering baffle 80 are one-piece and/or in the shape of a flat (or with more or less curved surfaces) and hollow parallelepiped panel. The parallelepiped has perforated walls to sieve the vegetable mass. The parallelepiped of each baffle 80 develops along a longitudinal W axis (the height) which extends along a diameter of the cross-section of the drum 12 (within a plane orthogonal to the X axis).

[0055] Each baffle 80 transports the juice outside the drum 12 as in the press 10.

[0056] The filtering baffles 80 may be equal, but not necessarily.

[0057] Each filtering baffle 30, 80 is

- mounted rotatable inside - and with respect to - the drum 12 about a or the W axis, which in the illustrated examples is also the polar symmetry axis of the baffle;

- e.g. operated by a pneumatic piston 50, connected to the outside of the drum 12, which can slide back and forth. Through lever systems 52 the reciprocating motion of the piston 50 is converted into an equal clockwise or anti-clockwise rotation for each filtering baffle 30, 80, so that the baffles rotate synchronously;

- rotatable with continuity, and can assume any angular position intermediate to those described here. The angular position of the filtering baffles 30, 80 visible in Figs. 4-5 and 1-2 is useful for the loading and unloading phase, when the rotation of the filtering baffles 30, 80 makes them act like blades to uniformly distribute the vegetable mass inside the drum 12 or to push it towards the hatch 14.

[0058] In particular, each filtering baffle 30, 80 can be oriented to assume a configuration of minimum radial bulk with respect to the X axis in order to offer the total maximum perforated surface toward the membranes 18. This angular position of the filtering baffles 30 is appropriate for the pressing phase. E.g. in figs. 1-3 the Y axes of the cylindrical surfaces 32 are aligned along the X axis (the Y axes all lie in a plane passing through the X axis). The filtering baffles 30, 80 thus oriented along the X axis facilitate the pressing phase by not interfering with the membranes 18. In this phase the drum 12 is normally still in an angular position such that the baffles 30, 80 discharge by gravity the extracted juice into the channel 22

[0059] In particular, each filtering baffle 30, 80 can be oriented to assume a configuration of maximum radial bulk with respect to the X axis and offer the minimum total perforated surface towards the membranes 18. For example, the baffle is oriented as in fig. 4-5, where the Y axes of the cylindrical surfaces 32 are aligned orthogonally to the X axis (they all lie in a plane orthogonal to the X axis). In this position, assumed during the unloading phase of the pressed mass through the door 14 at the end of the pressing, the baffles 30, 80 offer little resistance to the vegetable mass which will tend to roll and crumble inside the drum 12. This also applies during the crumbling phase of the pressed mass, when the drum 12 is rotated about the X axis.

[0060] The piston 50 is controlled e.g. by an electric/electronic circuit or a PLC 100, where preferably a

software manages the various operating phases of the press 10, therefore in particular the orientation of the baffles 30, the inflation or deflation of the membrane/s 18, and the rotation of the drum 12.

[0061] The drive provided by the piston 50 may also be used in the fixed drum vertical presses described below.

[0062] A variant of the press 100 is shown in Fig. 8 and comprises a fixed drum 102 with a vertical H axis. The press 100 could also be arranged to have the H axis horizontal.

[0063] The fixed-drum press represents an economical and simplified variant of the movable baffle press with rotating drum and, for certain applications, i.e. for the fast filtering and pressing especially of whole grapes and crushed grapes (juice, pulp and skin) white or rosé or red but vinified in white, is more efficient and costs less (all the mechanisms and motors for rotating the cylinder are absent).

[0064] Inside the drum 102 a filtering baffle 120 and one or more membranes 130 are mounted, which have the same function as the baffles 30, 80 and the membranes 18.

[0065] The filtering baffle 120 has planar shape like the baffle 80 (e.g. the shape of a panel or table or plate or tray), is equipped with an external filtering surface like the baffle 80, and extends along the axis H for at least 80% of the height of the drum 102.

[0066] The baffle 120 is mounted rotatable (arrow F2 in fig. 9) about its vertical longitudinal Q axis, e.g. coinciding with the H axis.

[0067] A motor 150, e.g. mounted externally on the drum 102 (conveniently on the roof of the drum 102) , can set the baffle 120 into rotation, placing it in the most effective position as a function of the phases of static filtering, self-cleaning of the filtering surface, pressing and unloading of the vegetable mass.

[0068] Fig. 10 shows as an example the baffle 120 rotated by 90° and the membranes 130 inflated.

[0069] Preferably the motor 150 has a shaft 152 connected to the baffle 120 to transmit rotary motion to it. The shaft 152, preferably coaxial to the H axis, is hollow and comprises an internal channel 154 fluidly connected to the internal cavity of the baffle 120 which collects the juice. The shaft 152 is connected to a liquid drain duct 160. Thus the extracted juice can easily be taken from the duct 160.

[0070] This system may also be used in the horizontal presses described above.

[0071] In order to facilitate the cleaning of the filtering baffle 120 from peels, grapes and solid residues which block the drainage holes, a variant comprises an electric vibrator configured to make the entire baffle 120 vibrate. In this case elastic joints or one or more gaskets (e.g. rubber) will be present in correspondence with the motor-vibrator and the connection to the baffle 120, so as to isolate the area of the baffle 120 subjected to vibration from the drum 102.

[0072] At the top of the drum 102 a hatch 180 is provided through which the vegetable mass can be loaded. The discharge of the pressed mass occurs through a lower hatch 182 in the drum 102, in which case the baffle 120 can also act as a blade to expel the exhausted mass from the drum 102.

[0073] Another variant of press 200 with fixed drum 202 and vertical H axis is illustrated in fig. 11 and 12. Inside the drum 202, (e.g. three) filtering baffles 220 are mounted positioned at increasing heights.

[0074] Each baffle 220 comprises an external filtering surface like the baffles 80, extends transversely to the H axis, and is rotatable (see arrows F3 in fig. 11) about a V axis thanks to the action of a motor 250 mounted on the external surface of the drum 202. The V axis may be horizontal or slightly inclined, and can pass through the center of the baffle 220 or at one of its ends.

[0075] Each baffle 220 comprises a duct 222, e.g. provided in its base, to collect the extracted juice. The duct 222 connects to the outside of the drum 202 via a common pipe 230 which collects the liquid from each baffle 220.

[0076] An optional motor 280 is mounted at the bottom of the drum 202 to move an optional blade 282, rotatably mounted inside the drum 202, to facilitate the evacuation of the pressed vegetable mass at the end of the cycle.

[0077] In the presses 10, 70, 100, 200 there may be means for injecting pressurized gas from the bottom of the drum or from the evacuation blade, in order to facilitate

the opening of the vegetable mass with consequent creation of drainage channels,

the crumbling of the vegetal mass, and

the inertization and/or oxygenation of the vegetable mass; in this case it is advantageous to provide a vent valve at the top of the fixed drum to discharge the pressurized gas inside the drum.

[0078] Each filtering baffle may generally be moved by an independent drive dedicated to it or by a common drive for multiple baffles for a synchronous movement of the baffles.

[0079] Preferably in vertical axis presses the drum is

- placed on the ground via vertical support legs; and/or
- equipped internally or externally with a coil or heat exchanger to cool the extracted liquid in order to limit its organoleptic degradation during the pressing phases.

[0080] In the presses 10, 70, 100, 200, preferably one or each filtering baffle is internally equipped with a coil or heat exchanger to cool the extracted liquid in order to limit its organoleptic degradation during the pressing

phases. This solution allows only the filtered liquid to be cooled and not the entire vegetable mass, resulting in significant energy savings.

[0081] The shape and number of the filtering baffles may also differ from what is illustrated.

[0082] The processing of grapes for white wines in the press takes place in three phases:

1) static loading and draining phase, in which the free-run must, or the best part of the grape juice, is extracted;

2) pressing-draining phase of the vegetal mass, in which the membranes are inflated at increasing pressures and as much juice as desired is extracted (the greater the pressure, the greater the quantity of must obtained but the worse the quality since the peels release herbaceous aromas and flavors); and

3) unloading phase, in which the pressed pomace is evacuated.

[0083] The processing of red wine pomace in the press also takes place in three phases: the first actually concerns only the loading of the wet pomace, followed by pressing with draining through the membranes and the unloading of the exhausted pomace.

[0084] According to a preferred pressing method, three vertical-fixed-drum presses as described above are used simultaneously.

[0085] The three presses work together and in synchronism but with processing phases delayed over time, with the advantage of creating a continuous pressing cycle overall.

[0086] That is, while the first press works in filling phase (is loaded) and collects the juice with static draining; the second press works in pressing phase (presses the loaded vegetable material to extract the liquid) and the third press works in unloading phase of the pressed material.

[0087] This solution is advantageous given that, during the harvest, carts normally arrive continuously with grapes to be destemmed or with crushed machine-harvested grapes: this organic living material needs to be pressed immediately otherwise the heat, the oxygen in the air and the yeasts immediately trigger rotting effects and/or unwanted acetic fermentation.

[0088] Since three vertical-fixed-drum presses cost less than one rotary-drum press of equivalent capacity, with the three vertical-fixed-drum presses not only it is possible to create a seamless pressing cycle that a single rotary-drum press cannot achieve, but the system is also economically advantageous.

Claims

1. Pneumatic press for pressing a vegetable mass comprising:

- a drum provided with its own central axis,
- a filtering baffle, for extracting liquid from the vegetable mass, which is installed inside the drum,

  provided with a perforated surface to sift the vegetable mass, and
  fluidly connected with the outside of the drum to drain the liquid towards the outside of the drum,

- a membrane, mounted on the inner wall of the drum, which is inflatable for pressing the vegetable mass against the filtering baffle,

wherein the filtering baffle is movably mounted in order to be moved with respect to said internal wall.

2. Press according to claim 1, wherein the filtering baffle is translatable with respect to said inner wall.

3. Press according to claim 1 or 2, wherein the filtering baffle is rotatable with respect to said inner wall.

4. Press according to claim 3, wherein the filtering baffle is rotatable about a longitudinal axis thereof which is perpendicular to a plane passing through the central axis.

5. Press according to claim 3 or 4, wherein the filtering baffle is rotatable about a longitudinal axis thereof which is parallel to the central axis.

6. Press according to any preceding claim, wherein the filtering baffle has opposite ends which are rotatably constrained to the inner wall of the drum by means of a rotary joint fluidically connected to a drain channel for liquid, the channel being arranged inside the drum and communicating with a liquid drain towards the outside of the drum.

7. Press according to any preceding claim, comprising means or a drive for moving the filtering baffle, the means or drive being mounted on the outer surface of the drum.

8. Press according to any preceding claim, wherein the drum is rotatable about its own central axis.

9. Press according to any preceding claim, wherein the central axis is horizontal or vertical.

10. Press according to any preceding claim, wherein the filtering baffle is mounted inside the drum extending substantially between two points of the inner wall of the drum perpendicularly to a plane passing through said central axis.

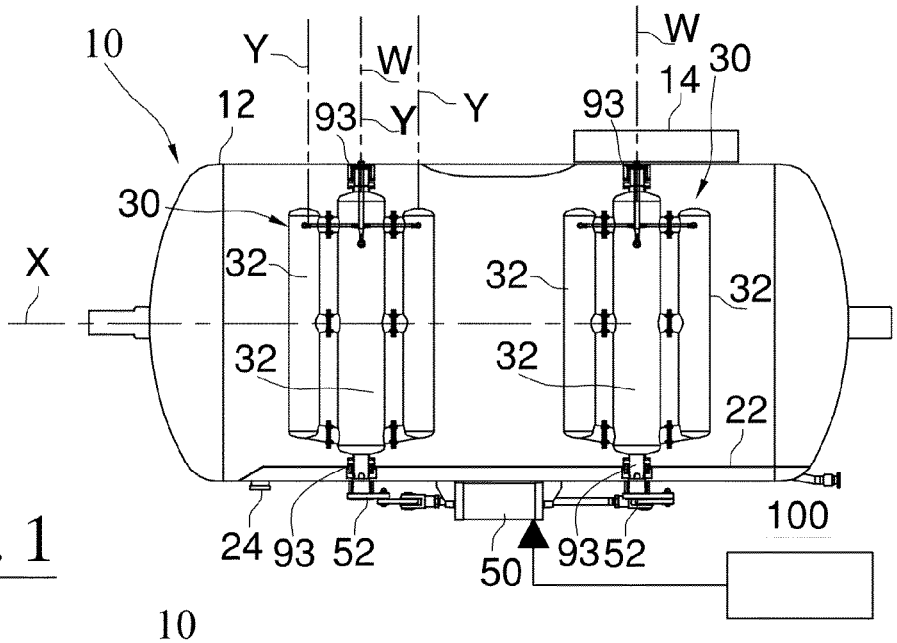

Fig. 1

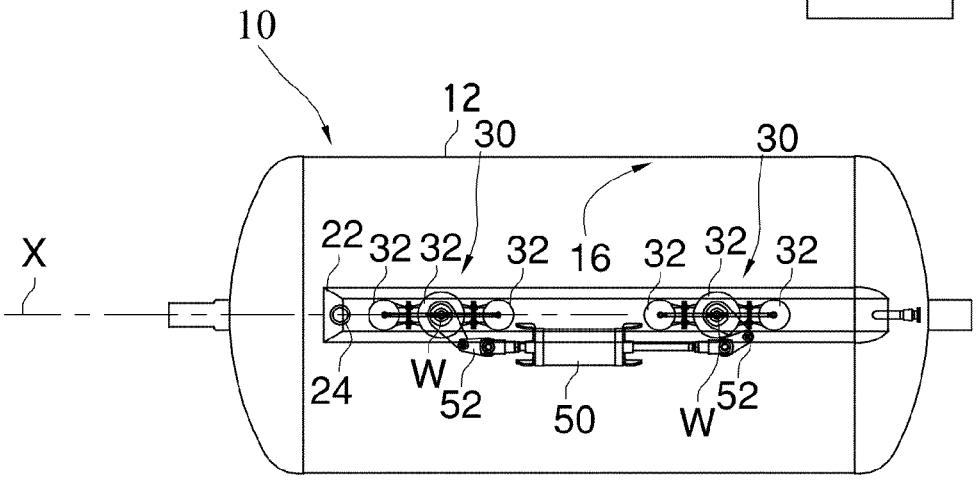

Fig. 2

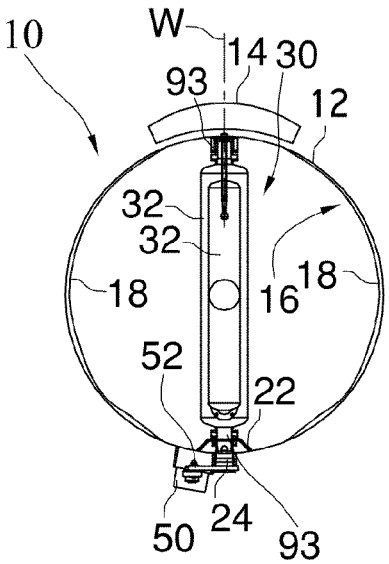

Fig. 3

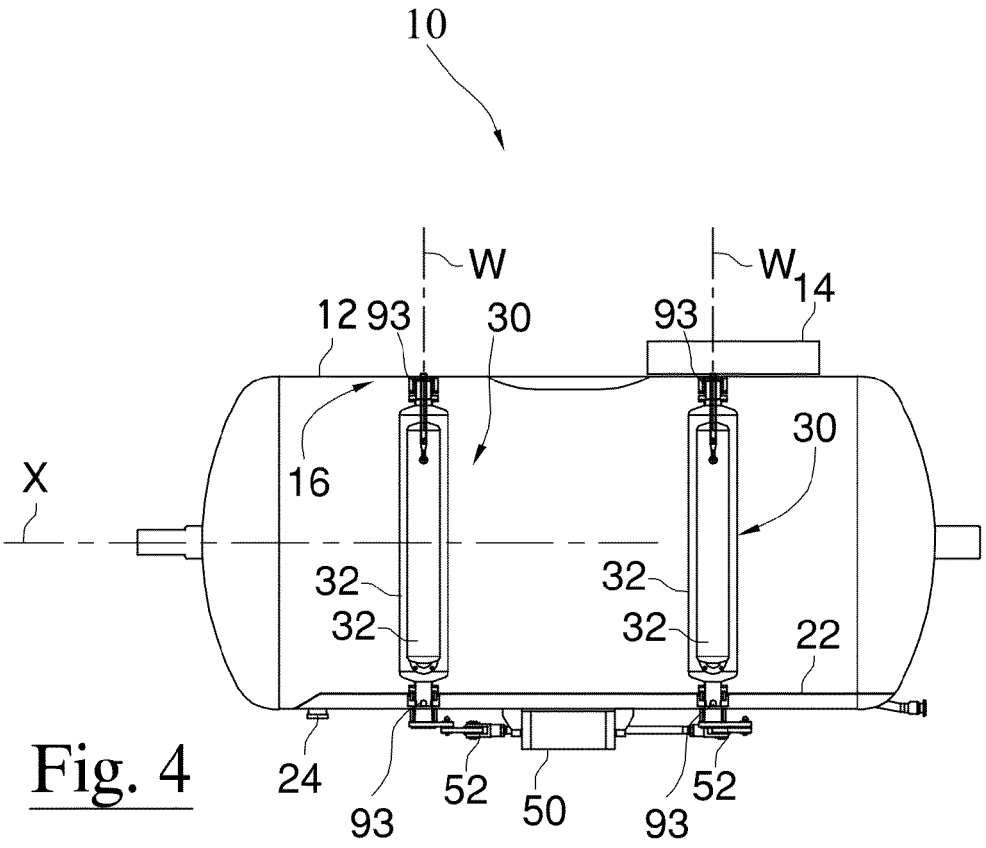
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Fig. 4

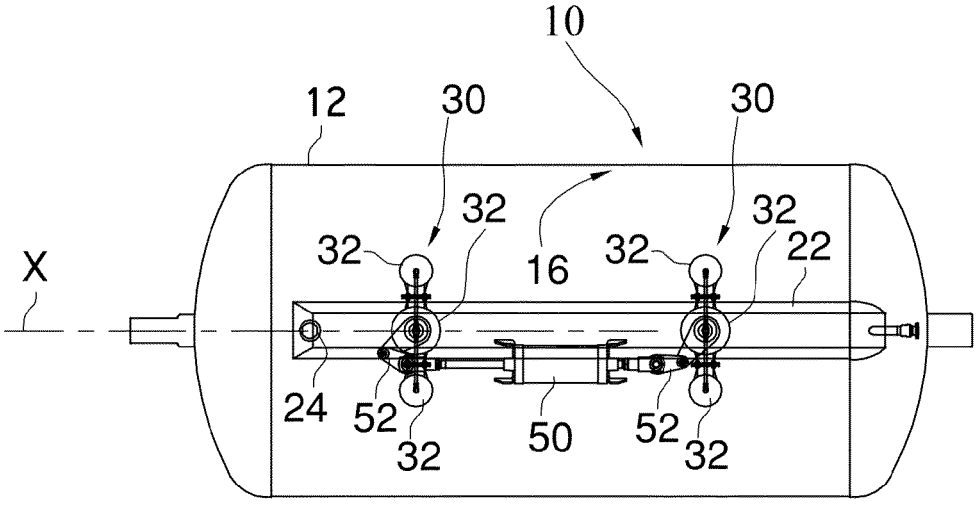
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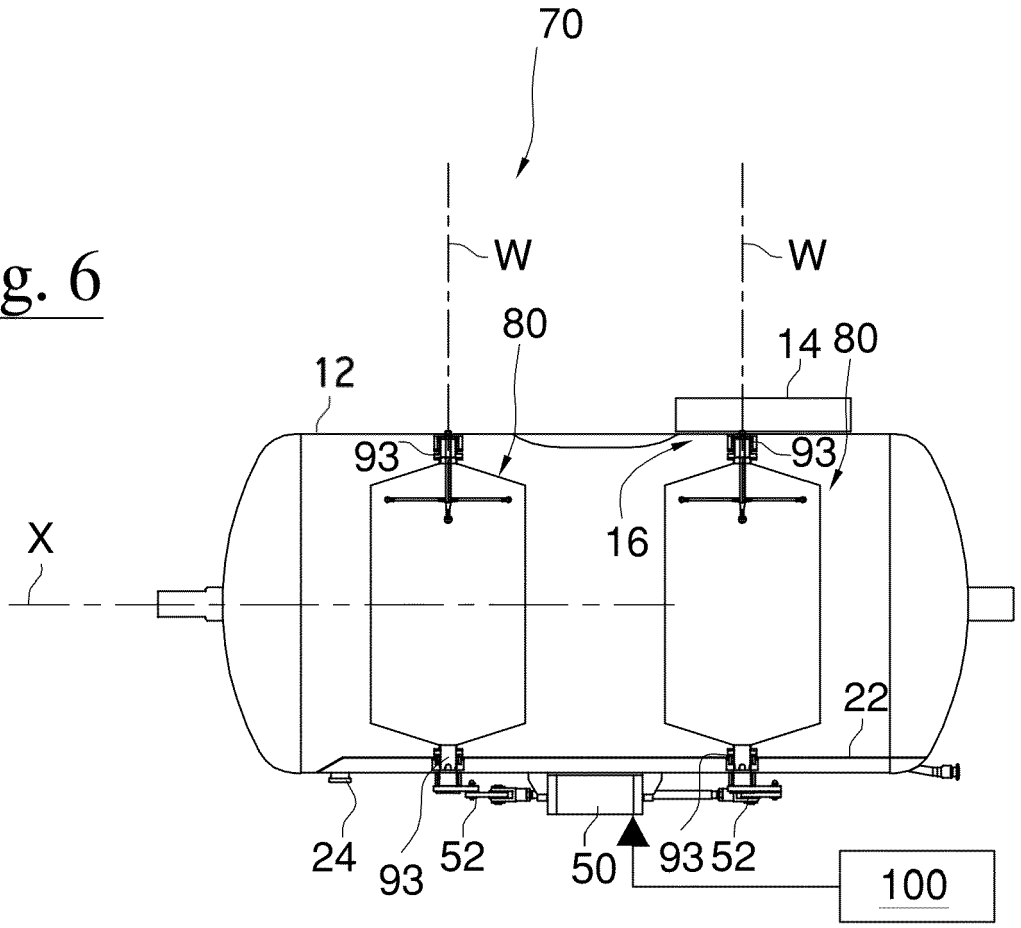
Fig. 5

Fig. 6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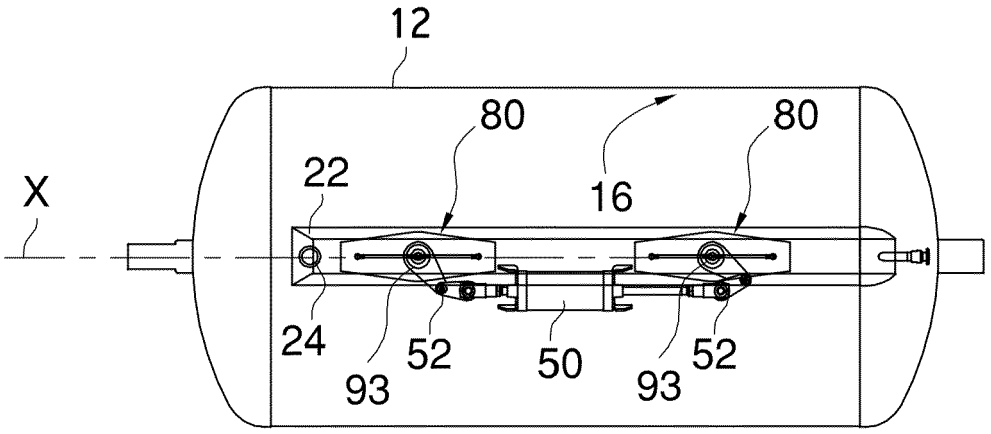
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Fig. 7

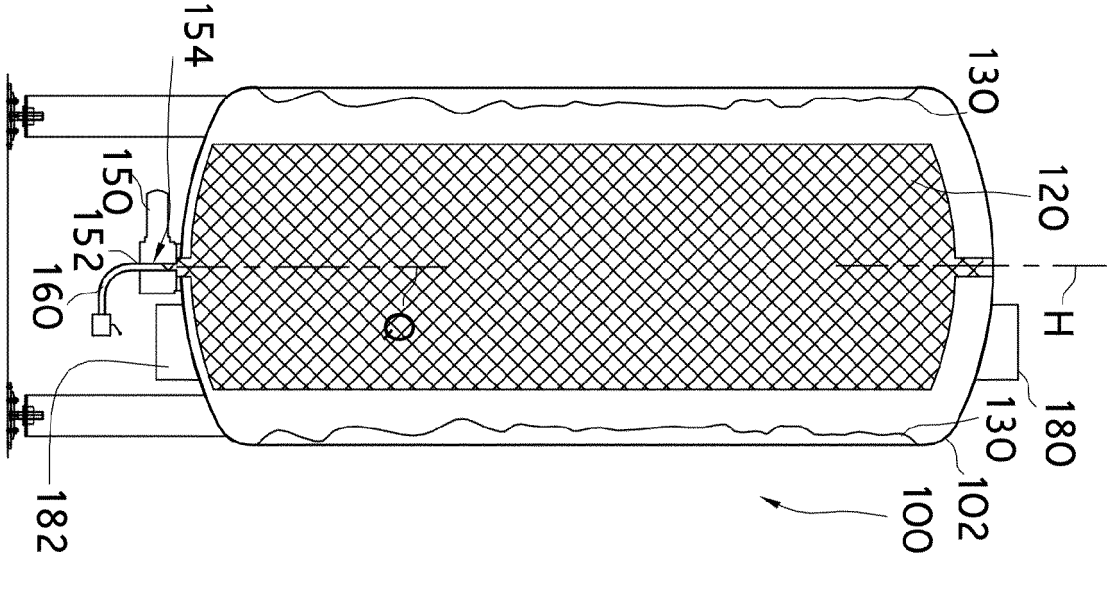

Fig. 8

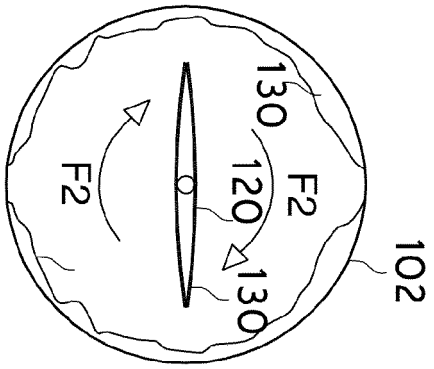

Fig. 9

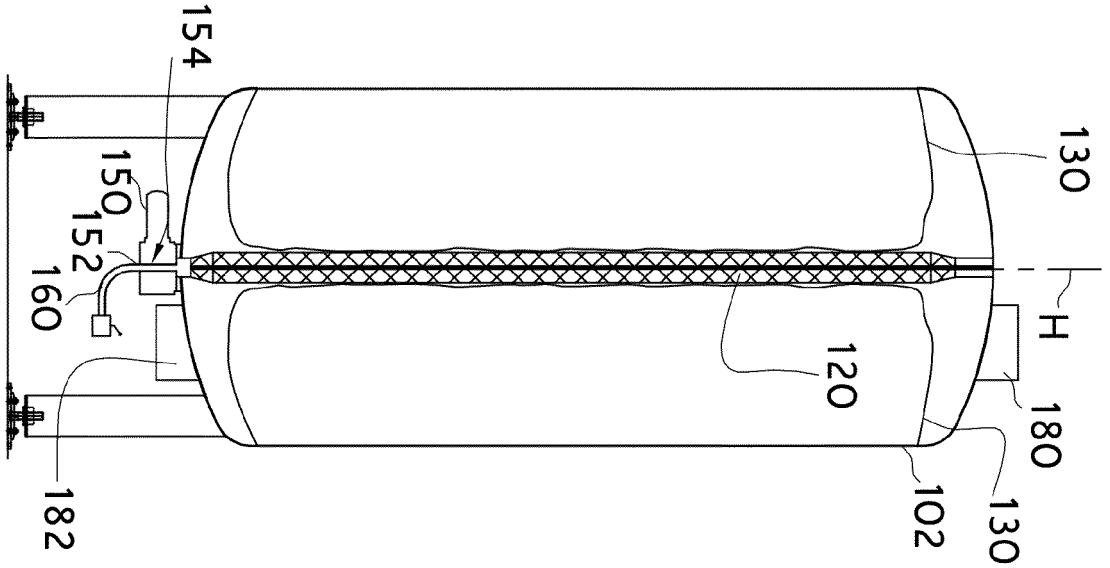

Fig. 10

Fig. 11

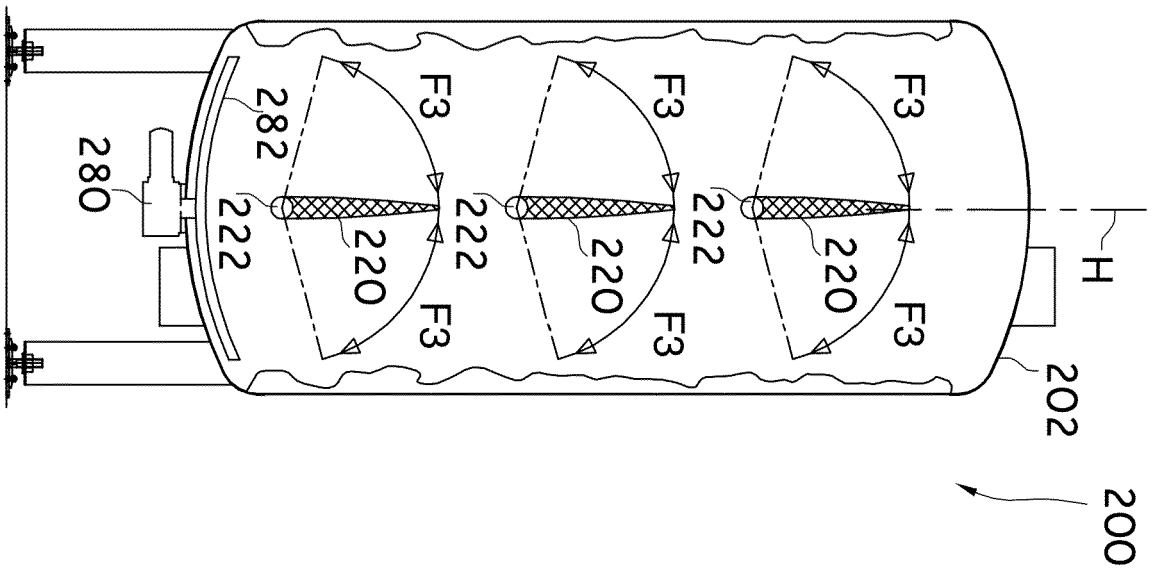
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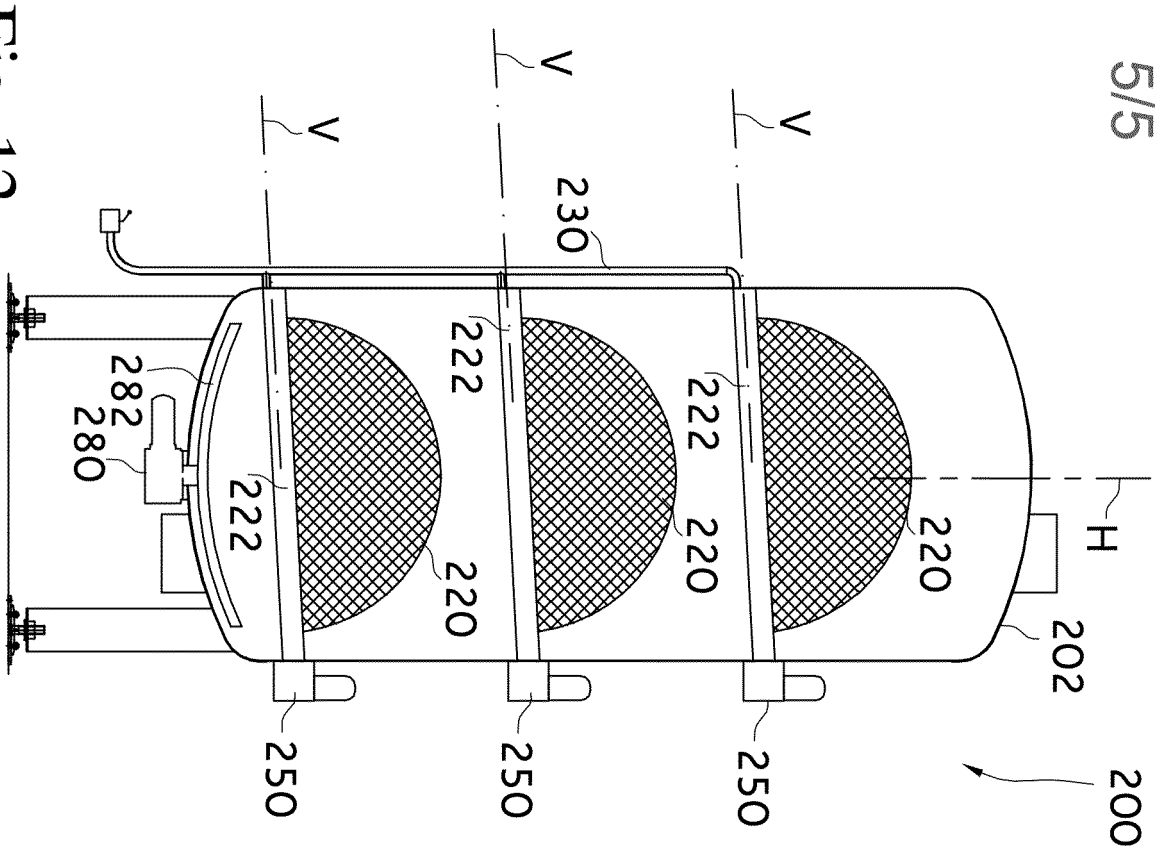
Fig. 12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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	31 January 2024	Labre, Arnaud

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