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(54) **Clothes horse**

(57) Clothes horse (1) comprising
 - a plurality of blanket supports (12, 22, 21, 25,13) each comprising a tubular frame (12) forming a closed loop around a horizontal axis and arranged to in use transfer heat to an blanket (100) hanging over the blanket support; characterized by
 - a support bar (2) arranged to rotably support each blan-

ket support at a unique horizontal location; wherein each tubular frame (12) is supported by the support bar using support means (13, 20) and
 - a plurality of heating means (17) arranged such that each blanket support comprises a unique heating means for individually heating the corresponding tubular frame.

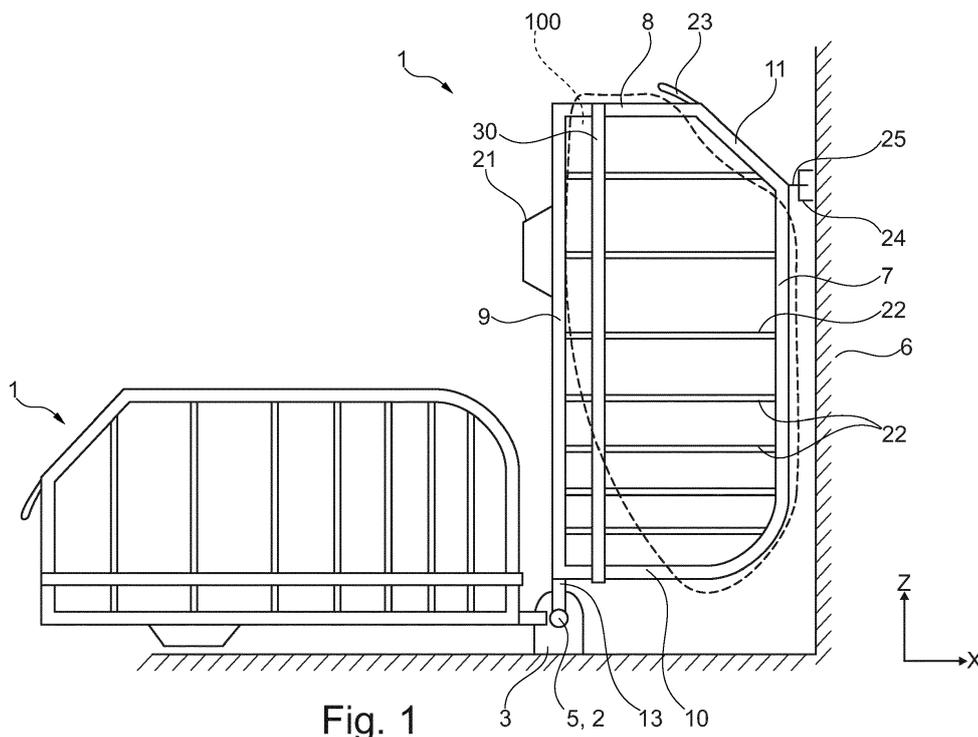


Fig. 1

Description

Technical field

[0001] The invention relates to a clothes horse, in particular a heated drying rack for drying blankets, saddle pads, horseshoes and so on.

Background

[0002] A horse blanket is a blanket intended for keeping a horse warm or to protect it from wind or rain. It is tailored to fit around a horse's body. It typically runs from its chest where it is strapped together. It is long enough to cover the horses back until the horses tail.

[0003] During use, the horse blanket becomes wet for instance from sweat or from rain. Therefore after use, the horse blanket has to be dried to extend the number of times it can be used and also to make sure the horse for which the horse blanket is used next time doesn't get a cold.

[0004] For this a clothes horse is used with a plurality of coat supports which each are rectangular frames which are higher than wide. Each frame has a top tube, a front side tube, a back side tube and a bottom tube. The tubes are in open connection to each other to form a closed loop. In use the straps of horse blanket are used to hang the horse blanket on the top tube such that the part of the horse blanket which in use is over the spine of the horse is in contact with the front side tube.

[0005] A hollow connecting bar of the clothes horse near the ground connects the back side tubes to the bottom tubes in an open connection in order to establish the closed loop. Parallel to the connecting bar there is a second bar to support the coat supports further away from the ground.

[0006] In the hollow connecting bar there is an electrical heating means. The heating means heats a fluid which freely flows through the connecting bar and the coat supports. The heating means is long enough to pass the connection of each coat support to the connecting bar so that buoyancy can transport heat through the closed loop of the rectangular frame of the coat supports. After heating the fluid first flows upward through the back side tube, than through the top tube, down through the front side tube and finally back into the connecting bar and passed the heating means via the bottom tube.

[0007] These racks are typically used in a riding school or stud farm. In a riding school or stud farm it is convenient that many horse blankets can be dried simultaneously so that less horse blankets have to be present. To save space, the frames are close together. To speed up the process, the racks are heated. Drying the horse coats by heating them is also preferred to prevent unnecessary wear of the horse coats.

[0008] Because the horse blankets are heavy and long and because the space between the frames is small, it is difficult for any person to hang the horse blankets on

the frames especially without dislocating a horse blanket which already hangs on a frame next to the frame the person is using.

[0009] It is an object of the invention to provide a clothes horse which is easier in use when loading it with a horse blanket.

[0010] According to the invention there is provided a clothes horse comprising

- 10 - a plurality of blanket supports each comprising a tubular frame forming a closed loop around a horizontal axis and arranged to in use transfer heat to a blanket hanging over the blanket support;
- 15 - a support bar arranged to rotatably support each blanket support at a unique horizontal location wherein each tubular frame is supported by the support bar using support means; and
- 20 - a plurality of heating means arranged such that each blanket support comprises a unique heating means for individually heating the corresponding tubular frame.

[0011] As the closed loop tubular frames extend vertically by looping around the horizontal axis, they can be placed side by side in horizontal direction. Because the blanket supports have unique locations and are rotatably supported, easy access to the tubular frames is provided by rotating away those tubular frames which are in the way when hanging a blanket over one of the hollow tubular frames. Because each blanket support comprises a heating means for individually heating the blanket support there is no need to provide energy to the heating means of the support bar and transport heat from such a heating means of the support bar over the support means which is unreliable. Therefore the clothes horse according to the invention is more reliable.

[0012] According to an embodiment,

- 40 - each tubular frame comprises an individual hollow space separated from the support bar and arranged to be filled with a fluid; and
- each heating means is arranged to heat the fluid of the corresponding hollow tubular frame.

[0013] As the frames form vertical closed loops and are tubular, they extend in vertical direction which means that the plurality of tubular frames can be placed side by side in horizontal direction.

[0014] As the frames form a closed loop and are tubular, the hollow space also forms a closed loop. Therefore, the fluid in the hollow space can circulate along the vertical closed loop by buoyancy and heat delivered to the fluid by the heating means distributes automatically over the hollow tubular frame without the need for additional means. The hollow spaces are not in fluid connection, but are individual hollow spaces and the vertical closed loops are separated from the support bar. Therefore, the clothes horse can easily be made leak tight even though

the vertical closed loop is rotatable, because there is no rotating connection through which fluid needs to be able to flow.

[0015] The fluid could be water, but would be preferably a coolant or oil, as it is preferred to use the clothes horse outdoors or in non-heated rooms. If the ambient temperature drops below zero, water could freeze and damage the tubular frame. A coolant or oil will not freeze at regular ambient temperatures.

[0016] It is furthermore preferred to use an animal and environment friendly fluid. If the tubular frame would leak, than the leaked fluid will do no harm to the animals.

[0017] According to an embodiment of the invention wherein the tubular frames each comprise a first tube arranged to be, in use, in direct contact to the blanket, the first tube being parallel to the largest dimension of the tubular frame, and each hollow tubular frame is rotatable around an axis parallel to the horizontal axis between a loading position for placing an removing a blanket and a drying position wherein the angle between the direction of the largest dimension and the direction of the force of gravity is larger at the loading position than in the drying position.

[0018] Because the hollow tubular frames are rotatable around an axis parallel to the horizontal axis, heat transport in the hollow space by buoyancy remains possible for different rotational positions. At the same the clothes horse efficiently uses the three-dimensional space in which it is placed. This is because the largest dimension of the frame can be rotated to be more or less horizontal as desired. In the less horizontal (i.e. when the angle is smaller, for example vertical position) position the clothes horse requires less floor space than when the largest dimension is more horizontal. When the angle is larger a blanket with an elongated shape can be placed on the first tube more easily, as the first tube will also be at a larger angle with the force of gravity.

[0019] According to an embodiment of the invention, the plurality of heating means comprises a first set of heating means and a second set of heating means and the clothes horse comprises means to switch the first set and the second set individually on and off.

[0020] By being able to switch the first set and the second set of heating means, heating means of unused blanket supports can be switched off, which reduces energy consumption.

[0021] According to an embodiment of the invention wherein the first tube is arranged to be in contact with the back part of a horse blanket and each frame comprises a second tube arranged to be in contact in a contact area with a chest part of the horse blanket, the frame comprising a protrusion arranged between the contact area and the first tube.

[0022] The protrusion prevents the chest area to slide in the direction of the first tube. With the protrusion, there is an increased freedom to rotate the frame to a drying position, because the risk that the blankets weight will cause the chest area to slide off the frame is reduced.

[0023] According to a further embodiment of the clothes horse according to the invention, the tubular frame is substantially rectangular, wherein a third tube is parallel to the first tube, wherein the second tube extends between the ends of the first and third tube, and wherein a plurality of bar shaped tubes extend between the first and third tube, parallel to the second tube.

[0024] The bar shaped tubes provide additional strength to the tubular frame and provide a more even distribution of heat for drying the blankets.

[0025] The bar shaped tubes can also be used for hanging other items, like horse boots and saddle pads.

[0026] In a further preferred embodiment of the clothes horse according to the invention, the spacing between the bar shaped tubes decreases towards the axis (5).

[0027] When a blanket is arranged on a blanket support, the blanket support is rotated to a vertical position. The moist and water in the blanket will sink down, such that the top of the blanket will dry faster than the bottom of the blanket. By providing more bar shaped tubes near the bottom, more heat is provided near the bottom, such that despite the additional moist at the bottom of the blanket, the blanket will dry more evenly.

[0028] In yet another embodiment of the clothes horse according to the invention, the blanket support further comprises retaining means for retaining free edges of a blanket in close contact with the blanket support.

[0029] When the blanket support with a blanket arranged thereon, is rotated to the vertical position, the free edges of the blanket could fold away from the tubular frame as a result of the gravity. The retaining means will keep these parts of the blanket retained and in close contact with the tubular frame.

[0030] Preferably, the retaining means comprise an elastic band arranged around the tubular frame.

[0031] Examples of embodiments the invention will now be described with reference to the accompanying schematic drawings. Corresponding reference symbols in the schematic drawings indicate corresponding parts. The schematic drawings are not necessarily to scale and certain features may be exaggerated to better illustrate and explain the present invention. Further, the examples are not intended to be exhaustive or otherwise limit or restrict the invention to the precise configurations shown in the drawings and disclosed in the following detailed description.

Figure 1 depicts a cross section of the clothes horse according to the invention with a tubular frame in the drying position

Figure 2 depicts an enlarged view of the support means and the heating means

Detailed description

[0032] A drying room of a riding school comprises one or more air dryers to remove water content from the air. A clothes horse (1) is positioned in the drying room (figure

1). The clothes horse comprises a horizontal support bar (2) that is supported by two feet (3) mounted on the floor (4) of the drying room by bolts. The support bar is a cylindrical bar with an axis of symmetry (5) parallel to the y-direction. The support bar is parallel to a nearby wall (6) of the drying room.

[0033] The clothes horse (1) comprises a plurality of identical blanket supports (12, 22, 21, 25, 13), for instance 5 blanket supports. Each blanket support comprises a tubular frame (12). A tubular frame (12) comprises a first tube (7), a second tube (8), a third tube (9), a fourth tube (10) and a fifth tube (11). These five tubes are hollow, made from a metal such as steel and they are welded together such that the hollow space (15) forms a closed loop around a horizontal axis extending in the y-direction. As the tubes are tubular, the five tubes themselves also form a closed loop around that horizontal axis. The tubular frame (12) has an elongated shape as the distance between the first tube (7) and the third tube (9) is smaller than the distance between the second tube (8) and the fourth tube (10). This is because the horse blanket (100) (indicated by a dashed line) to be fitted over the tubular frame (12) also has an elongated shape. The tubular frame (12) is attached to the support bar (2) by a connection part (13) of the blanket support. The connection part may be cylindrical and has a blind bore (16) in which a section of the third tube (9) is mounted. The section of the third tube (9) mounted in the connection part houses an electrical heating means (14). The heating means comprises an end part (17) and a heating part (18) which extends through the fourth tube (10) passed the connection with the third tube (9). The end part (17) is fitted in the third tube with a watertight fit for instance by using O-rings and a threaded bushing (31). A power supply cable 19 is attached to the heating element 14.

[0034] The hollow space (15) is filled with a heating fluid, such as water, a coolant or oil. The fluid may comprise a compound to lower the freezing point of the fluid.

[0035] The connection part of the blanket support comprises a cylindrical hollow section (20) for being mounted on the support bar (2). The cylindrical hollow section is welded to the connection part (13). The cylindrical hollow section (20) can be rotated around the axis of symmetry (5) such that the first tube (7) can reach a vertical inclination (shown in figure 1) or a horizontal inclination. The horizontal axis of the closed loop is parallel to the axis of symmetry (5). While rotating the tubular frame, the horizontal axis of the closed loop remains horizontal. The vertical inclination is intended for drying and the vertical inclination is intended for loading the tubular frame (12). The cylindrical hollow section has a length in the direction of the axis of symmetry (5) and the connection part (13) is positioned in the middle of the cylindrical hollow section along the direction of the axis of symmetry. This means that neighbouring hollow tubular frames are separated in the y-direction by at least the length of the cylindrical hollow section.

[0036] The clothes horse is for instance used by ar-

ranging that the first tube (7) of all tubular frames but one has a vertical inclination, i.e. is parallel to the force of gravity (the z-direction). The first tube of the other tubular frame, herein the first tubular frame, has a horizontal inclination (i.e. it is parallel to an x-direction). The x, y and z directions are perpendicular. This is the loading position of the first tubular frame (12). The first tubular frame is supported by the support bar (2) via the connection part (13) and via a foot (21) comprised by the blanket support. The foot is mounted on the third tube (9) at a distance from the support bar (2).

[0037] A horse blanket is placed on the first tubular frame such that the area of the horse blanket arranged to face the spine of a horse, rests on the first tube (7). The horse blanket also comprises a chest area (i.e. an area arranged to face the chest of a horse). This chest area is placed against the second tube (8) below a handle (23).

[0038] Then the first tubular frame (12) is tilted by pulling the handle (23) such that the first tube (7) obtains a vertical inclination. This is the drying position of the tubular frame (12). During rotation and in the drying position the handle (23) prevents the chest area from slipping towards the first tube (7) and functions as catching means. The position of the first tubular frame (12) is secured by fastening the first tubular frame (12) to the wall. For fastening, the blanket support comprises a latch (25) attached to the first tube (7) which can be secured in a wall mount (24).

[0039] The blanket support comprises additional heating tubes (22) between the first tube (7) and the third tube (9). The additional heating tubes extend in horizontal direction when the blanket support is in drying position. The additional heating tubes (22) have a first end connected to the first tube (7) and a second end connected to the third tube (9). The additional heating tubes (22) are hollow and are connected to the hollow space (15) both at the first end and the second end.

[0040] A saddle cloth may be placed over each additional heating tube.

[0041] A strap of elastic material (30) is placed over the horse blanket. The strap (30) loops around the chest area and the fourth tube (10) to keep the horse blanket and the saddle cloth in place and pressed against the first tubular frame (12).

[0042] Each blanket support can individually be switched on and off by a button (not shown) on the corresponding connection part (13). The heating means corresponding to the first tubular frame (12) is switched on using the button on the connection part (13). Because the horizontal axis of the closed loop of the hollow space (15) remains horizontal, the fluid in the hollow space may freely circulate under the influence of buoyancy. Warmer fluid will thereby circulate through the closed loop and heat the first tubular frame (12).

[0043] When the horse coat is dry, the first tubular frame (12) is tilted back, the strap is removed, the horse coat and the saddle cloth are removed and the heating

means is switched off.

[0044] For loading and unloading the other tubular frames, the same steps are followed.

[0045] It will be appreciated by the person skilled in the art, that the invention can also be used to dry blankets for other animals than horses.

[0046] The tubular frame may be from other materials but advantageously conduct heat well.

Claims

1. Clothes horse (1) comprising

- a plurality of blanket supports (12, 22, 21, 25,13) each comprising a tubular frame (12) forming a closed loop around a horizontal axis and arranged to in use transfer heat to an blanket (100) hanging over the blanket support;

characterized by

- a support bar (2) arranged to rotatably support each blanket support at a unique horizontal location; wherein each tubular frame (12) is supported by the support bar using support means (13, 20) and
 - a plurality of heating means (17) arranged such that each blanket support comprises a unique heating means for individually heating the corresponding tubular frame.

2. Clothes horse according to claim 1, wherein

- each tubular frame (12) comprises an individual hollow space (15) separated from the support bar (2) and arranged to be filled with a fluid; and
 - each heating means (17) is arranged to heat the fluid of the corresponding hollow tubular frame.

3. Clothes horse according to claim 2, wherein the tubular frames (12) each comprise a first tube (7) arranged to in use be in direct contact to the blanket (100), the first tube being parallel to the largest dimension of the tubular frame, and each tubular frame is rotatable around an axis (5) parallel to the horizontal axis between a loading position for placing and removing a blanket and a drying position wherein the angle between the direction of the largest dimension and the direction of the force of gravity is larger at the loading position than in the drying position.

4. Clothes horse according to claim 3, wherein the plurality of heating means (17) comprises a first set of heating means and a second set of heating means

and the clothes horse comprises means to switch the first set and the second set individually on and off.

5. Clothes horse according to claims 3 or 4, wherein the first tube (7) is arranged to be in contact with the back part of a horse blanket (100) and each frame comprises a second tube (8) arranged to be in contact in a contact area with a chest part of the horse blanket, the frame comprising catching means (23) arranged between the contact area and the first tube.

6. Clothes horse according to claim 3 - 5, wherein the tubular frame is substantially rectangular, wherein a third tube is parallel to the first tube, wherein the second tube extends between the ends of the first and third tube, and wherein a plurality of bar shaped tubes extend between the first and third tube, parallel to the second tube.

7. Clothes horse according to claim 6, wherein the spacing between the bar shaped tubes decreases towards the axis (5).

8. Clothes horse according to any of the preceding claims, wherein the blanket support further comprises retaining means for retaining free edges of a blanket in close contact with the blanket support.

9. Clothes horse according to claim 8, wherein the retaining means comprise an elastic band arranged around the tubular frame.

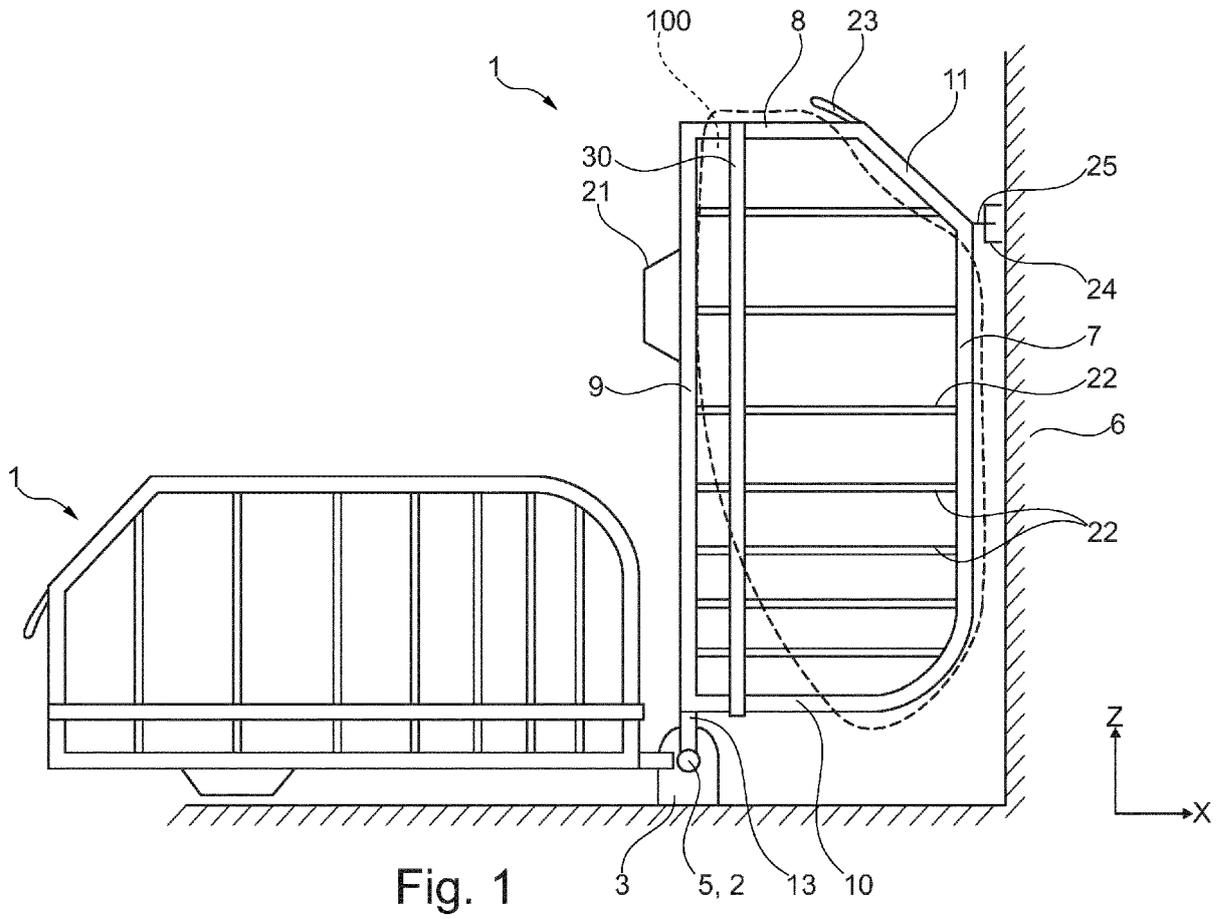


Fig. 1

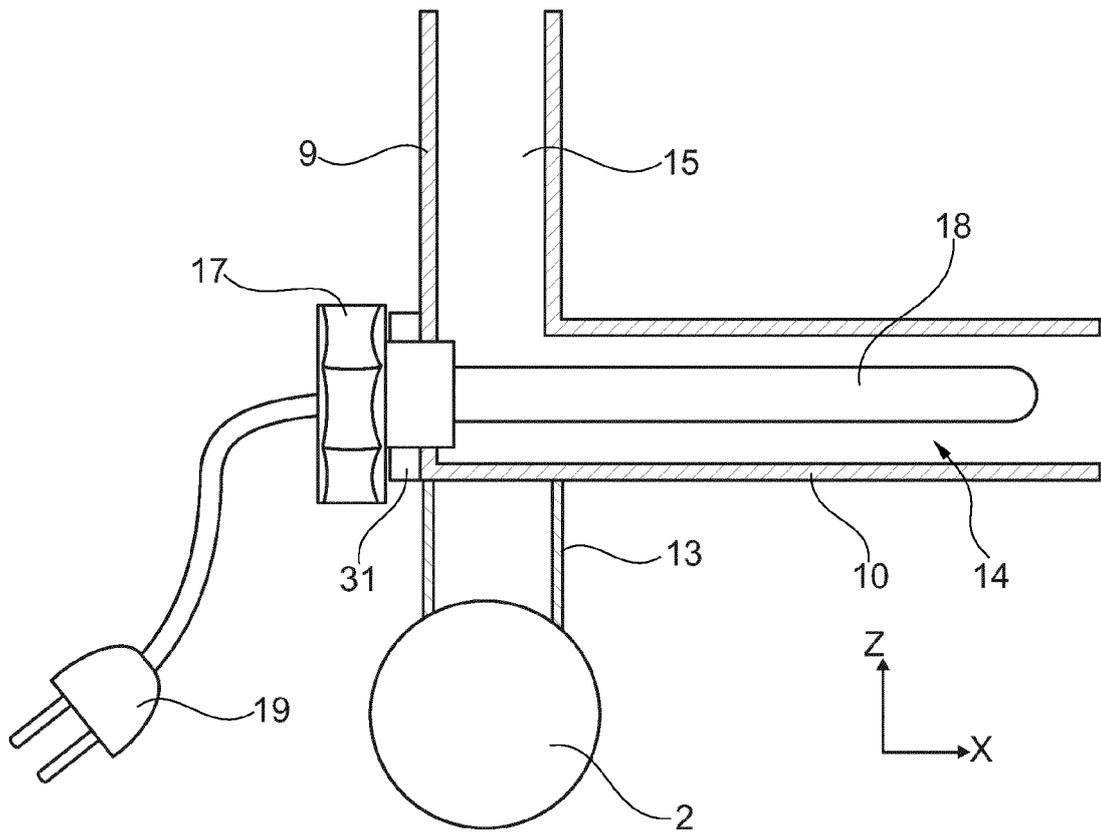


Fig. 2



EUROPEAN SEARCH REPORT

Application Number
EP 14 17 5642

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			D06F F26B B68C
Place of search		Date of completion of the search	Examiner
Munich		28 October 2014	Westermayer, Wilhelm
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28-10-2014

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