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(54) DOCTOR VENTILATOR BEAM FOR A DOCTOR IN A DRYER SECTION OF A FIBER WEB MACHINE, AND INSTALLATION KIT FOR THE FORMING OF A DOCTOR VENTILATOR FROM A DOCTOR BEAM IN A DRYER SECTION OF A FIBER WEB MACHINE

(57) The invention relates to a doctor ventilator beam for a doctor in a dryer section of a fiber web machine, including:
- a hollow body (12),
- support equipment to support the body by its ends to a fiber web machine,
- air feeding equipment adapted in connection with one end of said body (12),
- air guide equipment adapted inside the body (12) to guide air essentially evenly over the entire length of the body (12),
- an equalizing chamber (22) to equalize air,
- openings (24) formed in the wall (11) of the body (12) to feed the air flow out of the body (12).

The doctor ventilator beam (10) further includes an air guide (28) adapted to be fastened on the wall (11) outside the body (12) at said openings (24), inside which air guide (28) an equalizing chamber (22) has been formed, and which air guide (28) includes feed openings (30) for feeding air from the equalizing chamber (22) to the dryer section (101) of a fiber web machine.

The invention also relates to a corresponding installation kit.

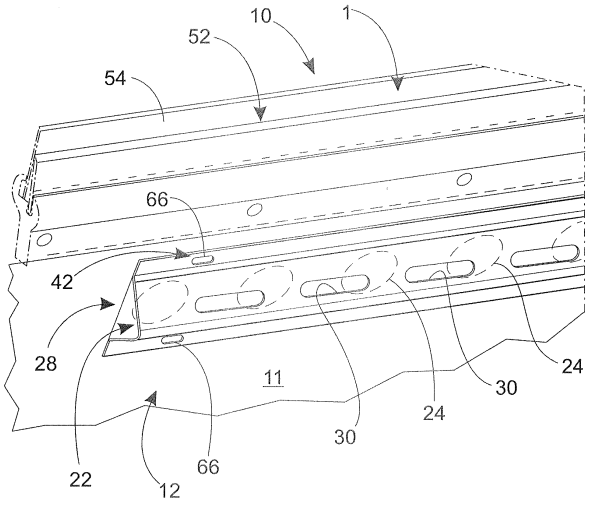

Fig. 5a

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Description

[0001] The present invention relates to a doctor ventilator beam for a doctor in a dryer section of a fiber web machine, including:

- a hollow body comprising two ends and a wall between the ends,
- support equipment adapted at the ends of the body to support the body by its ends to a fiber web machine,
- air feeding equipment adapted in connection with one end of the body to bring air into the body,
- air guide equipment adapted inside the body to guide the air fed by the air feeding equipment essentially evenly over the entire length of the body,
- an equalizing chamber to equalize the air coming from the air guide equipment,
- openings formed in the wall of the body to feed the air flow out of the body.

The invention also relates to an installation kit for the forming of a doctor ventilator from a doctor beam in a dryer section of a fiber web machine.

[0002] One prior art solution is disclosed in publication FIU 20050012, where a doctor ventilator 1 has been installed in the dryer section 101 of a fiber web machine in accordance with Figure 1a. The purpose of the doctor ventilator 1 is to feed dry replacement air 62 in the dryer section 101 of a fiber web machine into a throat 60 formed by a fiber web 50, which is supported by a fabric, and a drying cylinder 102. Some air exits the throat 60 with the moving surfaces of said fiber web 50 and drying cylinder 102, and moisture vaporizes in the throat from the web, which situation is corrected by means of replacement air 62. The doctor ventilator 1 also includes a doctor 55, which doctors impurities from the surface of the drying cylinder 102. In the solution according to the publication, the doctor ventilator 1 includes a specially-made doctor ventilator beam with a high structure, and replacement air is fed from the upper part of the doctor ventilator beam into the throat 60 in accordance with Figure 1a. In accordance with Figure 1b, replacement air 62 is fed into a hollow body 12 from the end 14 of the body 12, from its lower part, by means of air feeding equipment 18, from where air is divided evenly using air guide equipment 20 into an equalizing chamber 22 located inside the body 12 and from there further through holes 24 in the body 12 to the dryer section of the fiber web machine.

[0003] However, a problem with such a structure is that it is poorly suited to different applications, and the doctor ventilator beam of the doctor ventilator according to the publication must be re-designed on the basis of the application. The high structure of the body restricts the applications, and a specific doctor ventilator beam must be designed for the doctor ventilator. Potential changes in the direction of the fed air also require internal changes in the doctor ventilator beam. Doctor ventilators are used in connection with drying cylinders and turn rolls both in the upper and lower positions, in which case the structure must always be designed on the basis of the specific application.

[0004] The purpose of the present invention is to accomplish a doctor ventilator beam that is more multipurpose than prior art doctor ventilator beams, which doctor ventilator beam can be used in different applications with smaller changes than what prior art doctor ventilator beams require. The characteristic features of this invention will be more fully understood from the enclosed patent claims 1. The purpose of the present invention is to accomplish an installation kit for converting prior art doctor beams into doctor ventilator beams according to the present invention, which doctor ventilator beams can be used for doctor ventilation. The characteristic features of this invention will be more fully understood from the enclosed patent claims 10.

[0005] This purpose can be accomplished by means of a doctor ventilator beam for a doctor in a dryer section of a fiber web machine, including a hollow body that comprises two ends and a wall between these, support equipment adapted at the ends of the body to support the body by its ends to the fiber web machine, and air feeding equipment adapted in connection with one end of the body to feed air into the body. Moreover, the doctor ventilator beam includes air guide equipment adapted inside the body to guide the air fed by the air feeding equipment essentially evenly over the entire length of the body, an equalizing chamber to equalize the air coming from the air guide equipment, openings formed in the wall of the body to feed the air flow out of the body, and an air guide adapted to be fastened at the openings on the wall on the outside of the body. The equalizing chamber has been formed inside the air guide, and the air guide includes feed openings for feeding air from the equalizing chamber to the dryer section of the fiber web machine. The structure according to the invention, where the doctor ventilator beam includes an air guide outside the body and equipped with an equalizing chamber, enables the alignment of the doctor ventilator in different applications simply by changing the location and/or alignment of the air guide. The internal structure of the doctor ventilator beam remains unchanged irrespective of the application, in which case the only changes are made to the air guide and its location. This enables the use of doctor beams of unventilated doctors, which are quite common in fiber web machines, as the body of the doctor ventilator beam, in which case the doctor ventilator does not require a specifically designed body. In the doctor ventilator beam according to the invention, the equalizing and directing of air take place outside the body in the air guide, in which case the structure and alignment of the air guide are the determining factors in air feeding.

[0006] The air guide is advantageously fastenable in a detachable manner to the doctor ventilator beam. This enables the use of the same doctor ventilator beam in different applications by detaching the air guide and by

directing it appropriately on the basis of the application. On the other hand, this enables the use of different kinds of air guides in order to achieve different air feeding characteristics.

[0007] The feed openings have advantageously been formed in a line in the longitudinal direction of the body, in which case their distance to the throat is the same, and the air guide can be reasonably small in size when the feed openings are divided over a small surface area.

[0008] According to one embodiment, the air feeding equipment includes a feed connection and bellows hose formed on the outer surface of the wall between the ends of the body, in connection with one end of the body, to guide air through the feed connection to the inside of the body. Such a placement and implementation of the air feeding equipment enables an easier fastening of the doctor ventilator beam by its ends to the fiber web machine, and the support equipment can be simpler. At the same time, symmetrical supporting is accomplished for the body in its longitudinal direction.

[0009] The support equipment is advantageously bearing housings, which have been equipped with hole circumferences for mounting the body on bearings in an eccentric manner. Eccentric mounting of the bearing enables the gravitational pressing of the doctor blade of the doctor ventilator, which uses the doctor ventilator beam, against the drying cylinder to be doctored, by using the weight of the doctor ventilator. Moreover, the hole circumferences enable the use of gravitational loading also in different applications by fastening the body to different locations on the hole circumference. Eccentric support equipment allows the movement of the doctor ventilator beam from one position to another over dozens, even hundreds of degrees, which is considerably more than the gravitational loading movement of a few degrees known from prior art.

[0010] The feed openings of the air guide can overlap the openings in the body in order to equalize the air flow. The overlapping prevents the direct travel of the fed air through the equalizing chamber, which would impair the functioning of the equalizing chamber. Now the air has to make a bend, in which case the air is equalized in the equalizing chamber before it discharges out of the air guide.

[0011] The cross section of the body can be essentially an isosceles triangle. Cross section means the section in the direction of travel of the fiber web. A triangular structure is simple to manufacture, it is suited for use in several different applications and enables the use of the same body both in the upper and lower positions.

[0012] According to one embodiment, the air guide includes an adjustment plate for covering the openings in the body partially in order to adjust the flow. The direction and magnitude of the flow can be changed as necessary by means of the adjustment plate.

[0013] The body advantageously includes locking stoppers for fastening the air guide to the external surface belonging to the wall of the body, on its side. By means of the locking stoppers, a separate air guide can be fastened in a detachable manner to the side surface belonging to the wall of the body.

[0014] According to one embodiment, said locking stoppers are form-locked. The use of form-locked locking devices expedites and facilitates the fastening and detaching of the air guide.

[0015] According to another embodiment, said locking stoppers are oval holes. Oval holes enable the adjustment of the air guide by moving the location of the fastening bolts of the air guide in the oval hole.

[0016] The air guide can be a metallic structure bent from sheet metal, which together with the wall of the body forms the equalizing chamber, the cross section of which is essentially a triangle. The structure of the air guide made from sheet metal is inexpensive to manufacture and easy to change when necessary. Moreover, air feeding can be adjusted by changing the bending.

[0017] The air guide can be a piece formed in an approximately perpendicular angle, where the fold runs in the longitudinal direction of the air guide in the longitudinal direction of the body. In this case, it is possible to guide the air flow essentially in the direction of the surface of the wall of the doctor ventilator beam.

[0018] According to one embodiment, the feed openings in the air guide are slot-like. By means of slot-like feed openings, it is possible to direct air effectively.

[0019] Doctor equipment is advantageously used in connection with the doctor ventilator beam according to the invention, where the doctor equipment comprises a blade holder and a doctor blade adapted in the blade holder in order to doctor a drying cylinder of the dryer section. In this case, the doctor ventilator and doctor equipment together form the doctor ventilator.

[0020] The purpose of the installation kit according to the invention can be accomplished by means of the installation kit for the forming of a doctor ventilator from the doctor beam of a drying section of a fiber web machine, which installation kit includes air feeding equipment adapted to be installed in connection with one end of the body to bring air into the body, air guide equipment adapted to be installed on the inside of the body to guide the air fed by the air feeding equipment essentially evenly over the entire length of the body, and an air guide adapted to be installed on the outside of the body at openings to be formed in the wall. The openings are intended to feed the air flow out of the body. An equalizing chamber is formed inside the air guide to equalize the air coming from the air guide equipment. The air guide includes feed openings for feeding air from the equalizing chamber to the dryer section of the fiber web machine. The installation kit according to the invention is used for the doctor beam, which includes a hollow body comprising two ends and a wall between these as well as support equipment adapted at the ends of the body to support the body by its ends to the fiber web machine.

[0021] More specifically, it is characteristic of the doctor ventilator beam according to the invention that the

doctor ventilator beam further includes an air guide adapted to be fastened on the wall of the body at the openings, inside which air guide an equalizing chamber has been formed, and which air guide includes feed openings for feeding air from the equalizing chamber to the dryer section of a fiber web machine.

[0022] More specifically, it is characteristic of the installation kit according to the invention that the installation kit further includes an air guide adapted to be installed on the outside of the body at the openings to be formed in the wall, which openings are intended for feeding the air flow out of the body, inside which air guide an equalizing chamber is formed to equalize the air coming from the air guide equipment, and which air guide includes feed openings for feeding air from the equalizing chamber to the dryer section of a fiber web machine.

[0023] The invention is described below in detail by making reference to the enclosed drawings that illustrate some embodiments of the invention, in which:

Figure 1a	shows a body of a prior art doctor ventilator in the longitudinal direction illustrated from the end as a figure in principle,
Figure 1b	shows a prior art doctor ventilator in accordance with Figure 1a in cross section relative to the longitudinal direction,
Figure 2	shows a doctor ventilator and doctor ventilator beam according to the invention in an axonometric view,
Figure 3	shows a doctor ventilator and doctor ventilator beam according to the invention illustrated in the longitudinal direction from an end,
Figure 4	shows an axonometric view of the air feeding equipment and air guide equipment of the doctor ventilator beam according to the invention when the body is in cross section,
Figure 5a	shows an air guide of the doctor ventilator beam according to the invention in an axonometric view,
Figure 5b	shows one embodiment of the air guide of the doctor ventilator beam according to the invention as a cross-sectional image seen in the longitudinal direction of the doctor ventilator beam,
Figures 6a - 6b	show alternative locations of the air guide of the doctor ventilator according to the invention illustrated from an end,
Figures 7a - 7b	show alternative applications of the doctor ventilator according to the invention illustrated from an end.

[0024] Doctor ventilator beam 10 according to the invention shown in Figure 2 is intended for the doctoring of a drying cylinder 102 of a dryer section 101 of a fiber web machine presented in Figure 1a and for the feeding of replacement air 62 into a pocket space, advantageously a throat 60, formed by the drying cylinder 102, turn cylinders 103 and fiber web 50, which is supported by a fabric run. The doctor ventilator beam 10 includes a hollow body 12 comprising two ends 14 and 15 and a wall 11 between the ends 14 and 15, by which the body 12 is fastened by means of support equipment 16 to the frame (not illustrated) of the fiber web machine in accordance with prior art. The support equipment 16 can include bearing housings 36 to be fastened to the frame of the fiber web machine, to which bearing housings 36 the body 12 has been mounted on bearings in an eccentric manner by means of hole circumferences or series 38 better illustrated in Figures 3, 6a and 6b. The air fed using the doctor ventilator is brought inside the body 12 of the doctor ventilator beam 10 by means of air feeding equipment 18. In accordance with Figure 2, the air feeding equipment 18 is advantageously located on the wall 11 on the side of the body 12, in which case the bearing housings 36 can be similar at both ends 14 and 15 of the body 12. In this case, the bearing unit is symmetrical, which facilitates the supporting of the doctor ventilator and cylinder. This also simplifies the structure of the support equipment, because in this case the feeding of air does not need to be arranged through the end of the body. Even though Figure 2 does not present the drying cylinder for reasons of clarity, it is to be understood that the drying cylinder is directly above the doctor ventilator in contact with the doctor blade 54.

[0025] Figure 3 presents the structure of the support equipment 16 in the longitudinal direction of the body 12. In accordance with Figure 3, a doctor ventilator 1 utilizing a doctor ventilator beam 10 according to the invention includes a doctor ventilator beam 10 according to the invention, a blade holder 52 fastened to the doctor ventilator beam 10 and a doctor blade 54 adapted in the blade holder 52 for the doctoring of a drying cylinder 102 in a dryer section 101. By means of a hole circumference 38, the bearing unit of the doctor ventilator beam 10 can be implemented in an eccentric manner, which enables the gravitational pressing of the doctor blade 54 of the doctor ventilator 1 against the surface of the drying cylinder 102, by utilizing the mass of the doctor ventilator beam 10. In this case, the center of gravity of the doctor ventilator is eccentric in relation to the points of support with which the doctor ventilator is supported to the frame of the fiber web machine.

[0026] Figure 4 presents in more detail the air feeding equipment 18 of the doctor ventilator beam 10 according to the invention when the body 12 is in cross section. In accordance with Figure 4, the air feeding equipment 18 is connected to the body 12 at its side through the side surface 26 of the body 12, through the feed connection 32. That part of the air feeding equipment 18 that is outside the body 12 can consist of a bellows hose 34, which

enables the movements of the doctor ventilator 1 between the operating and maintenance positions. Air guide equipment 20 has been fastened to the edge of the feed connection 32 of the air feeding equipment 18 on the inside of the body 12, which air guide equipment 20 can be an air guide plate 21 in accordance with Figure 4, which air guide plate 21 turns at least partially the flow of feed air in the cross direction of the body 12 essentially into the longitudinal direction of the body 12. The purpose of the air guide equipment 20 is to equalize the air flow inside the body 12 so that no great pressure variations remain inside the body. If there were no air guide equipment, air pressure at that end of the doctor ventilator beam, to which air is fed, would remain greater than at the other end. If necessary, the air guide equipment can be adjustable, in which case they can be for example articulated to the body. The position of an articulated air guide plate can be changed for example by means of an electric actuator.

[0027] In accordance with Figure 5a, the doctor ventilator beam 10 according to the invention also includes an air guide 28, which has been fastened to the side surface 26 of the wall 11 of the body 12. The equalizing chamber 22 of the doctor ventilator has been formed inside the air guide 28 to the outside of the body 12 at openings 24 formed on the outer surface 26 of the wall 11 of the body 12 (illustrated in the figures with broken lines). The structure according to the invention no longer uses an equalizing chamber inside the doctor ventilator and doctor ventilator beam in accordance with prior art, but the equalizing chamber has been formed on the outside of the body. In the doctor ventilator beam according to the invention, the air guide performs two functions: it turns the air flow to the selected direction towards the throat of the dryer section and equalizes the flow before the feeding of air from the air guide to the throat.

[0028] The air guide 28 includes feed openings 30, through which air is fed from the equalizing chamber 22 to the dryer section of the fiber web machine. So that the air led into the equalizing chamber 22 cannot travel directly through the equalizing chamber from the feed openings 30, the openings 24 and the feed openings 30 have been overlapped with respect to each other in order to form a meandering travel route for air. In accordance with Figure 5a, the feed openings 30 can be elongated in shape in order to guide the air fed, but the shape can also be oval, circle or other shape suited to the purpose.

[0029] The air guide has advantageously been fastened to the side surface of the wall of the body by means of locking stoppers 42 (Figure 5b), such as for example bolts, which can be fastened to the oval holes 66 shown in Figure 5a. The oval holes enable a small shift of the air guide in the longitudinal direction of the doctor ventilator, in which case the travel route of air and thereby the direction of the air fed change. According to one embodiment, the oval holes can alternatively also be oval in the cross direction of the body, unlike the holes that are oval in the longitudinal direction of the body in Figure 5a. In this case, the angle of bending of the air guide can be changed. This means that those parts of the air guide that are parallel with the side surface of the body, in other words parts where the oval holes are located, are pushed closer to each other in the cross direction of the body, in which case the cross section of the air guide changes.

[0030] As an alternative to the oval holes, a claw 70 in the longitudinal direction of the body 12, as shown in Figure 5b, can also be formed as locking stoppers 42 on the side surface of the wall of the body, which claw 70 forms a structure that is transversal in relation to the perpendicular of the side surface 26 of the body 12, which structure prevents a movement in the direction of the perpendicular of the side surface 26 of the body 12 of the air guide 28, but enables the installation of the air guide 28 into place by means of the longitudinal movement of the body 12. There can be one or two claws 70, and adhesive can also be used in the fastening to secure the locking. The claws 70 form a form-locked joint between the air guide 28 and the body 12, which joint is durable and enables the easy detachment of the air guide 28 for service. The claws can be formed in an integrated manner as part of the side surface of the body 12, or they can be retrofitted by means of separate fasteners.

[0031] Alternatively, the air guide 28 can be fastened by a kind of bayonet fastening, where locking stoppers have been formed on the side surface of the body 12, into which locking stoppers the air guide 28 is pushed first in the cross direction of the body and finally locked using a longitudinal movement of the body. The locking stoppers 42 are advantageously symmetrical, in which case they enable the installation of the air guide 28 to the body 12 also the other way around, in which case the direction of the feed openings of the air guide 28 changes approximately 90°.

[0032] The air guide 28 can be a structure in accordance with Figure 5b with an essentially triangular 72 cross section, which structure can be bent for example from stainless steel. The cross section of the air guide 28 can also have some other shape, but a triangle is inexpensive to manufacture by just bending. Alternatively, the air guide 28 can also be an item manufactured by casting for example from plastic. The feed openings 30 of the air guide 28 can be formed in the air guide 28 as early as during manufacture or they can also be drilled afterwards before the installation of the air guide 28. The air guide 28 can be composed of one section the length of the body beam 12 or it can be assembled from shorter sections. According to one embodiment, there can be a separate adjustment plate on the inside of the air guide 28, into which adjustment plate adjustment openings that correspond to the feed openings 30 or openings 24 have been formed. The adjustment plate can be placed in front of the feed openings 30 inside the equalizing chamber 22, in which case, by changing the location of the adjustment plate in the longitudinal direction of the body beam 12, the adjustment openings of the adjustment plate coincide entirely or partly with the locations of the feed open-

ings 40, restricting the flow of air.

[0033] In accordance with Figures 6a and 6b, the location of the air guide 28 can vary on the side surface 26 of the body 12 on the basis of the application. The openings 24 in the body 12, shown in Figure 5a, are formed on the basis of the application to the correct direction on the side surface 26 of the wall 11 of the body 12. In the case of Figure 6a, the openings 24 have been formed for the air guide 28 on the opposite side of the body 12 in respect of the doctor blade 54. In Figure 6b, in turn, the air guide 28 has been installed essentially on the same side of the body 12 as the doctor blade 54. In accordance with Figures 6a and 6b, the cross section of the body 12 can be essentially triangular in shape. Such a shape of the body 12 enables the use of the doctor ventilator beam in several different applications, because the shape of the body does not restrict the applications unlike with prior art narrow and high doctor ventilator beams.

[0034] The bearing 56 of the body 12 has been fastened in these embodiments to the hole circumference 38, to the right edge of the hole circumference 38, in which case the center of gravity of the doctor ventilator beam 10 settles on the left side of the bearing 56 and tends to turn the doctor ventilator beam 10 counter-clockwise around the bearing 56. Such a bearing unit can be used if the drying cylinder 102 to be doctored has been placed above the doctor ventilator 1. The mutual distance between the center of gravity of the bearing and the doctor ventilator 1 from each other determines how long a lever arm is created for the weight caused by the doctor ventilator and at how great a force the doctor blade 54 presses against the drying cylinder 102 to be doctored. Due to the hole circumference, this distance is selectable between several different alternatives. Figures 7a and 7b present the use of the doctor ventilator beam 10 according to the invention in so-called upper and lower positions.

[0035] Alternatively, instead of the hole circumference, an ordinary bearing unit from the middle can be used for the supporting of the doctor ventilator beam, where the weighting of the doctor blade of the doctor ventilator 1 is taken care of for example by means hose loading.

[0036] In the doctor ventilator beam according to the invention, the feeding of air can be adjusted easily by changing the air guide completely or by changing the size or direction of the feed openings. This eliminates fully the need for internal changes in the body.

[0037] By means of the installation kit according to the invention, an existing hollow doctor beam can be converted into a doctor ventilator beam according to the invention by adding air guide equipment inside the hollow doctor beam and by adding air feed equipment to the end of the doctor beam. In addition to this, an air guide is attached to the outer surface of the doctor beam, which air guide forms an equalizing chamber and directs the air flow suitably.

The invention relates to a doctor ventilator beam for a doctor in a dryer section of a fiber web machine, including:

- a hollow body (12),
- support equipment (16) to support the body (12) by its ends to a fiber web machine,
- air feeding equipment (18) adapted in connection with one end (14, 15) of said body (12),
- air guide equipment (20) adapted inside the body (12) to guide air essentially evenly over the entire length of the body (12),
- an equalizing chamber (22) to equalize air,
- openings (24) formed in the wall (11) of the body (12) to feed the air flow out of the body (12).

The doctor ventilator beam (10) further includes an air guide (28) adapted to be fastened on the wall (11) outside the body (12) at said openings (24), inside which air guide (28) an equalizing chamber (22) has been formed, and which air guide (28) includes feed openings (30) for feeding air from the equalizing chamber (22) to the dryer section (101) of a fiber web machine.

The invention also relates to a corresponding installation kit.

Claims

1. A doctor ventilator beam for a doctor in a dryer section of a fiber web machine, including:

- a hollow body (12) comprising two ends (14, 15) and a wall (11) between these,
- support equipment (16) adapted at the ends (14, 15) of said body (12) to support the body (12) by its ends to a fiber web machine,
- air feeding equipment (18) adapted in connection with one end (14, 15) of the body (12) to bring air into the body (12),
- air guide equipment (20) adapted inside the body (12) to guide the air fed by said air feeding equipment (18) essentially evenly over the entire length of the body (12),
- an equalizing chamber (22) to equalize the air coming from said air guide equipment (20),
- openings (24) formed in the wall (11) of the body (12) to feed the air flow out of the body (12), **characterized in that** the doctor ventilator beam (10) further includes an air guide (28) adapted to be fastened on the wall (11) outside the body (12) at said openings (24), inside which air guide (28) said equalizing chamber (22) has been formed, and which air guide (28) includes feed openings (30) for feeding air from the equalizing chamber (22) to the dryer section (101) of a fiber web machine.

2. A doctor ventilator beam according to claim 1, **characterized in that** said air feeding equipment (18)

includes a feed connection (32) and bellows hose (34) formed on the side surface of the wall (11) between the ends (14, 15) of the body (12), in connection with one end (14, 15), to guide air through the feed connection (32) to the inside of the body (12).

3. A doctor ventilator beam according to claim 1 or 2, **characterized in that** said support equipment (16) is bearing housings (36), which have been equipped with hole circumferences (38) for mounting the body (12) on bearings in an eccentric manner.

4. A doctor ventilator beam according to any one of claims 1 - 3, **characterized in that** the body (12) includes locking stoppers (42) for fastening said air guide (28) to the external surface (26) belonging to the wall (11) of the body (12).

5. A doctor ventilator beam according to claim 4, **characterized in that** said locking stoppers (42) are form-locked.

6. A doctor ventilator beam according to any one of claims 1 - 5, **characterized in that** said feed openings (30) of the air guide (28) overlap the openings (24) in the body (12) in order to equalize the air flow.

7. A doctor ventilator beam according to any one of claims 1 - 6, **characterized in that** the cross section of said body (12) is essentially an isosceles triangle.

8. A doctor ventilator beam according to any one of claims 1 - 7, **characterized in that** said air guide (28) includes an adjustment plate for covering the openings (24) in the body (12) partially in order to adjust the flow.

9. A doctor ventilator beam according to any one of claims 1 - 8, **characterized in that** said air guide (28) is a structure bent from sheet metal, which together with the side surface (26) belonging to the wall (11) of the body (12) forms the equalizing chamber (22), the cross section of which is essentially a triangle.

10. An installation kit for the forming of a doctor ventilator from a doctor beam in a dryer section of a fiber web machine, which doctor beam includes:

- a hollow body (12) comprising two ends (14, 15) and a wall (11) between these,
- support equipment (16) adapted at the ends (14, 15) of said body (12) to support the body (12) by its ends to a fiber web machine, and

which installation kit includes:

- air feeding equipment (18) adapted to be installed in connection with one end (14, 15) of the body (12) to bring air into the body (12),
- air guide equipment (20) adapted to be installed inside the body (12) to guide the air fed by said air feeding equipment (18) essentially evenly over the entire length of the body (12),

characterized in that the installation kit further includes an air guide (28) adapted to be installed on the outside of the body (12) at the openings (24) to be formed in the wall (11), which openings (24) are intended for feeding the air flow out of the body (12), inside which air guide (28) an equalizing chamber (22) is formed to equalize the air coming from said air guide equipment (20), and which air guide (28) includes feed openings (30) for feeding air from the equalizing chamber (22) to the dryer section (101) of a fiber web machine.

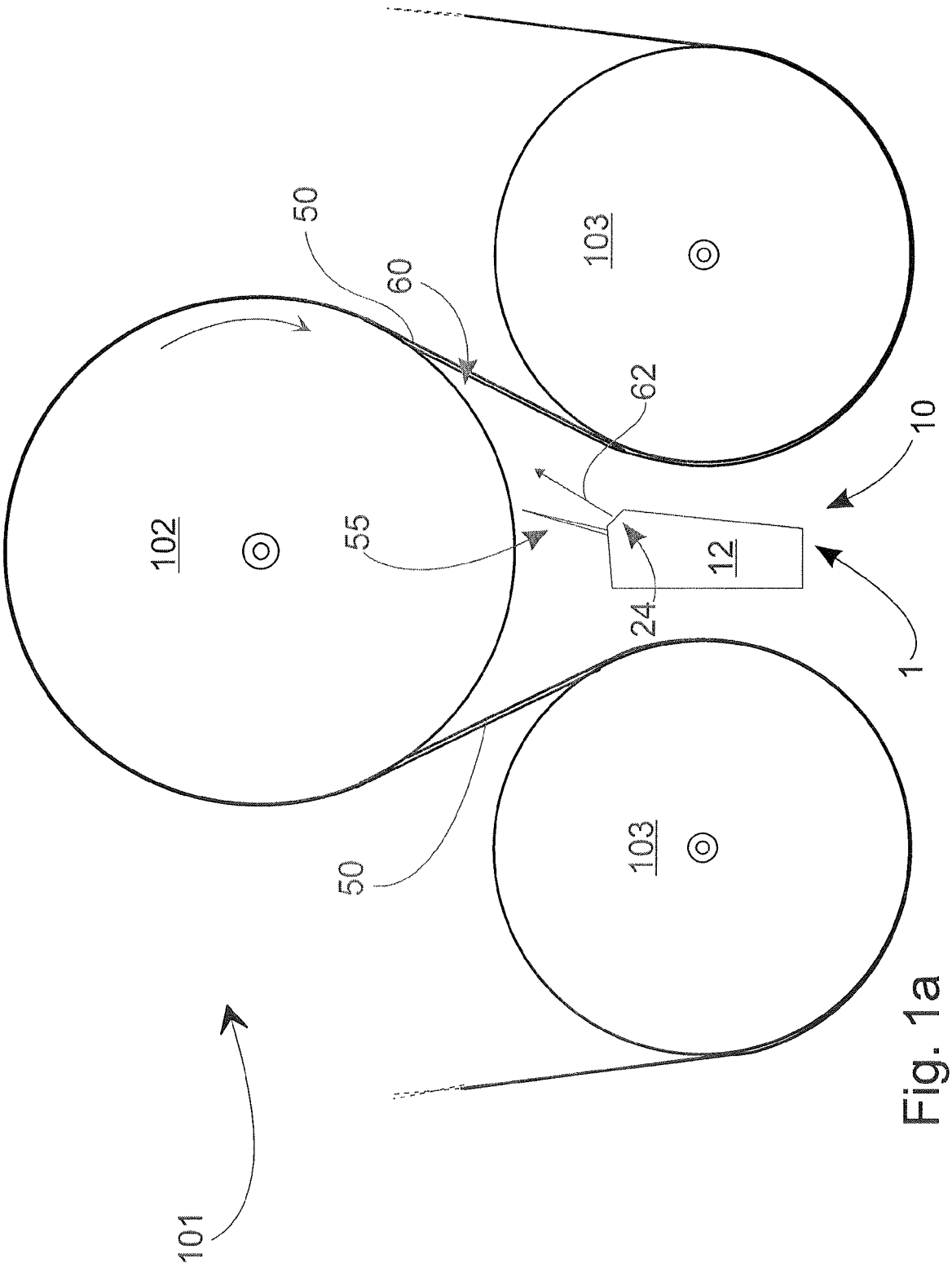

Fig. 1a

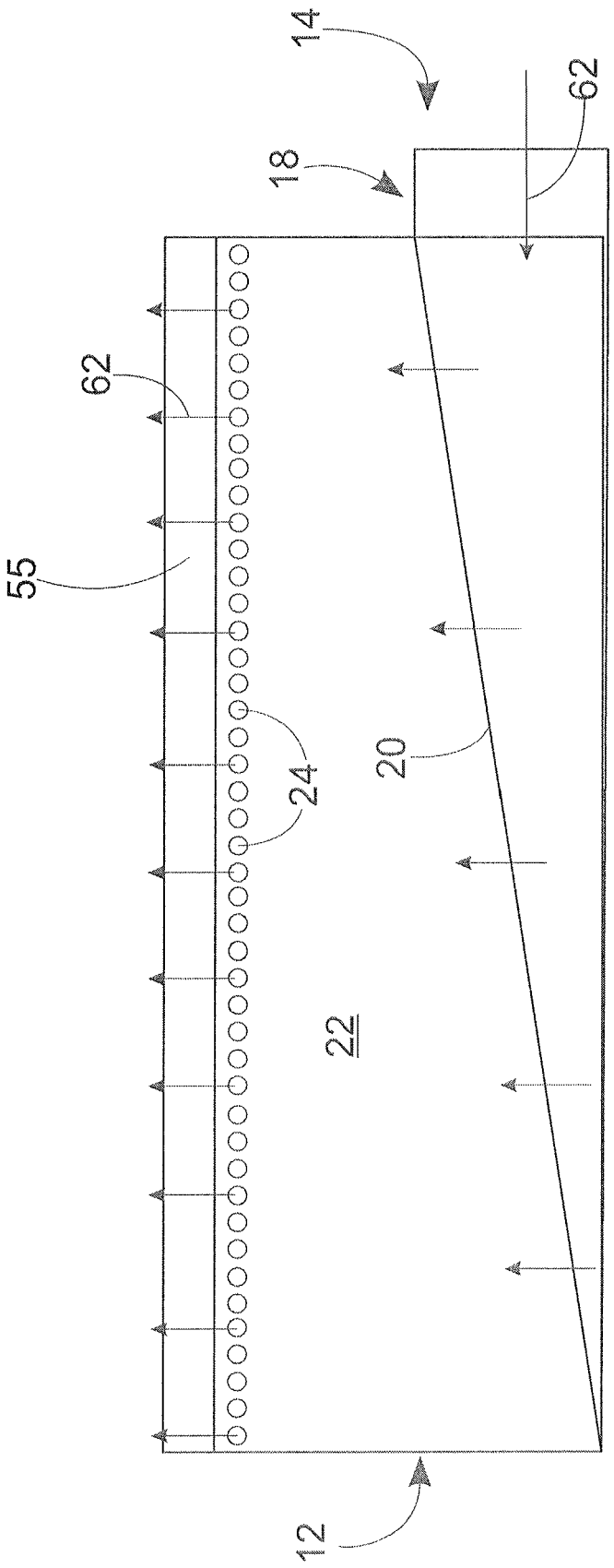

Fig. 1b

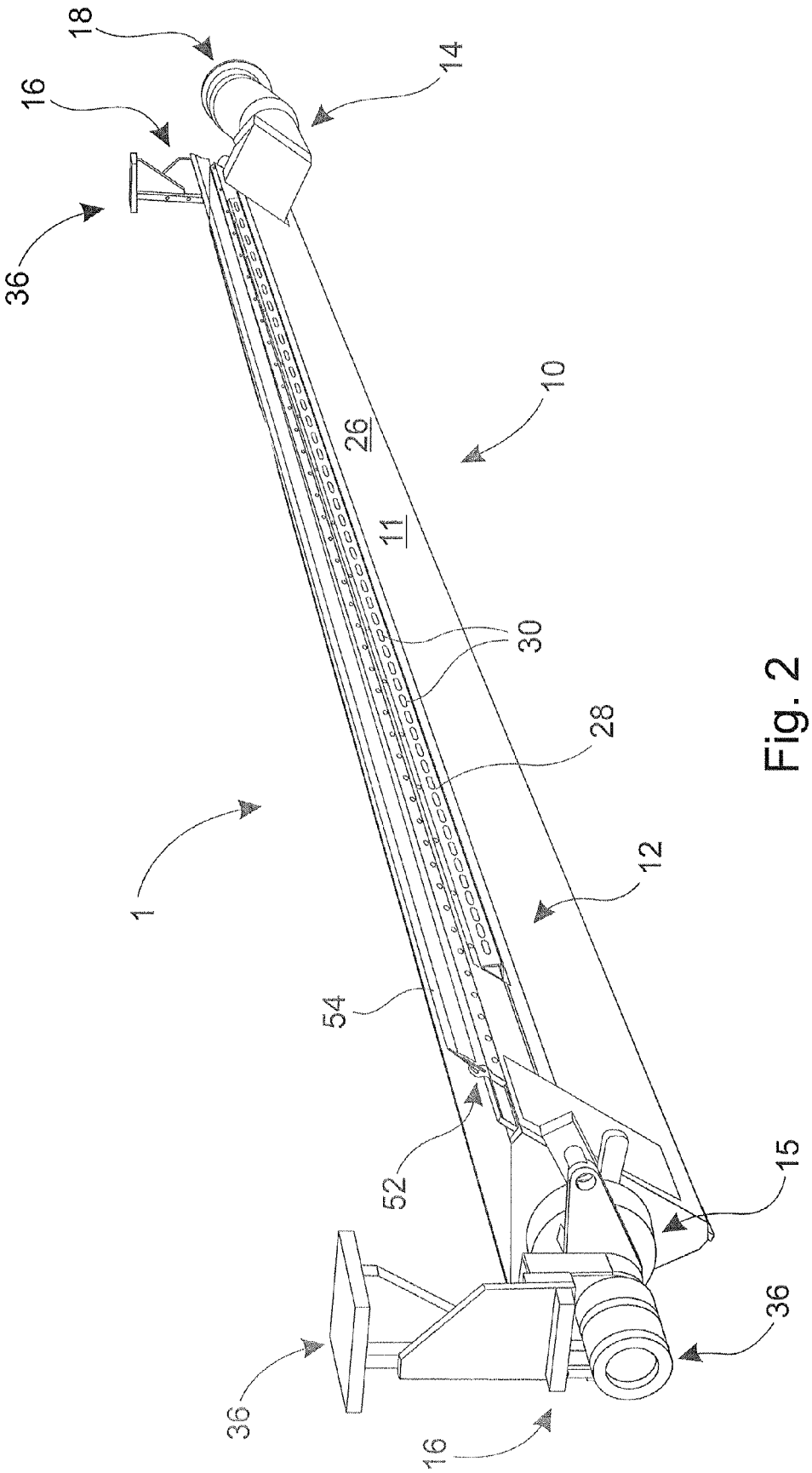

Fig. 2

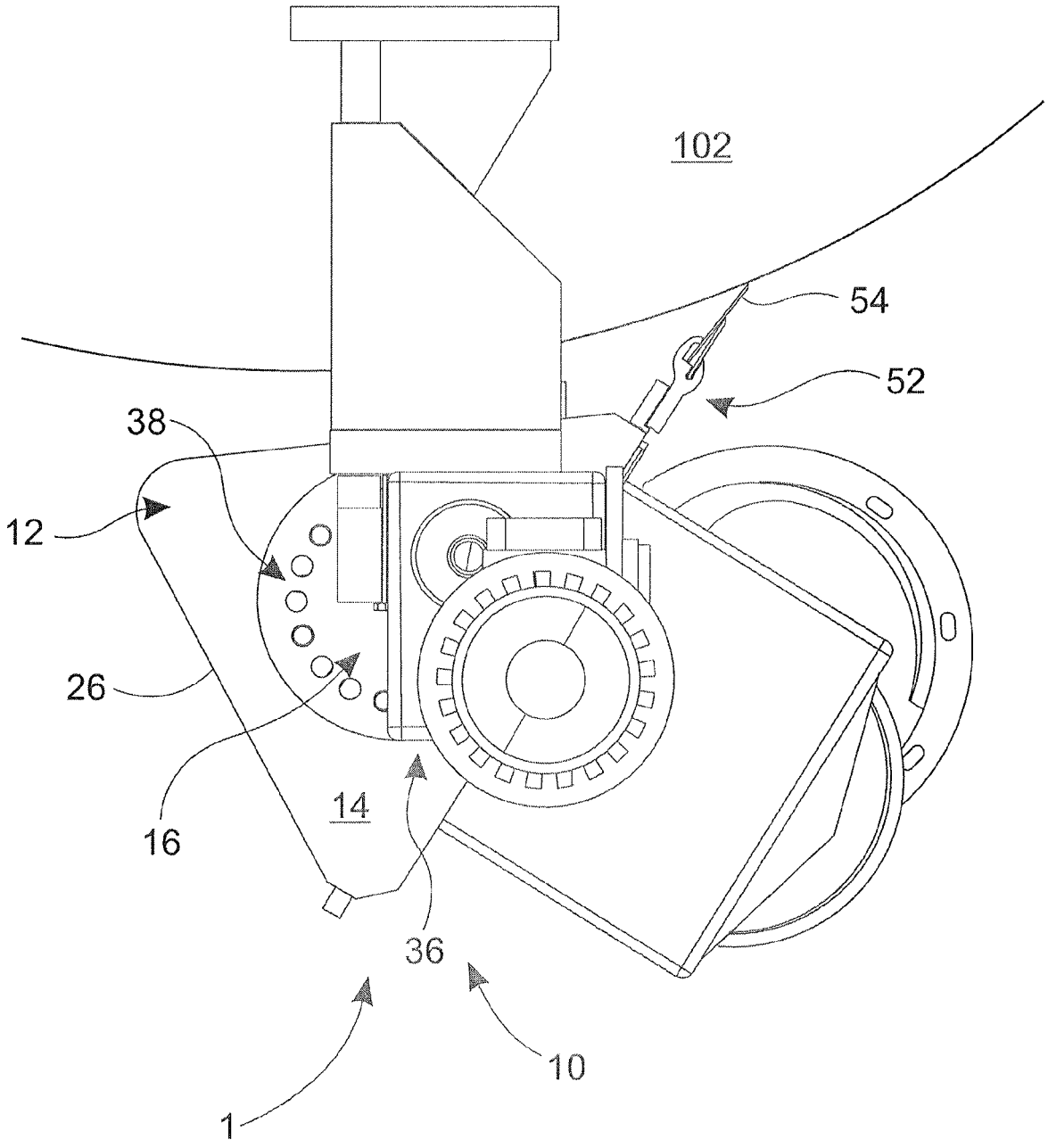

Fig. 3

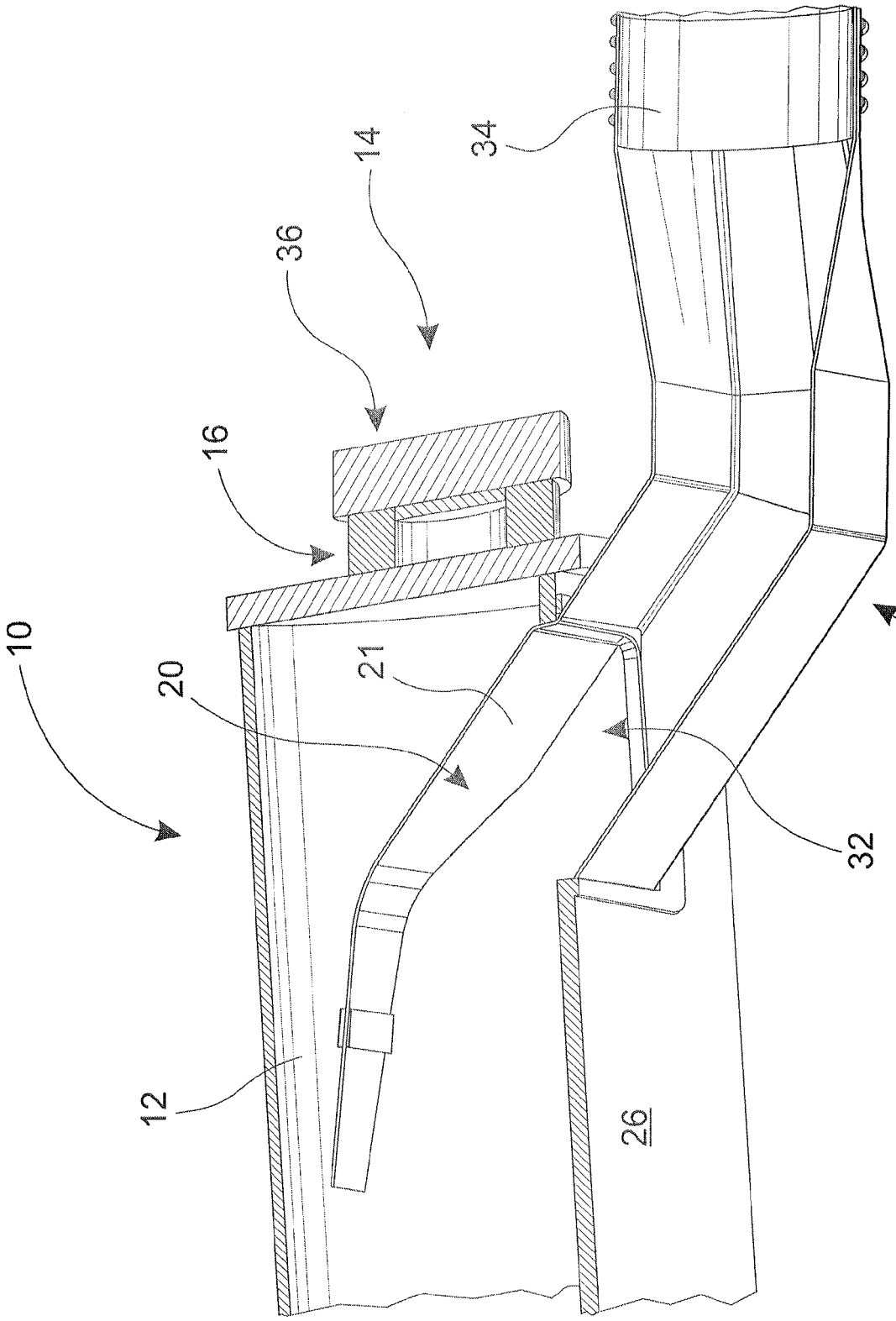

Fig. 4

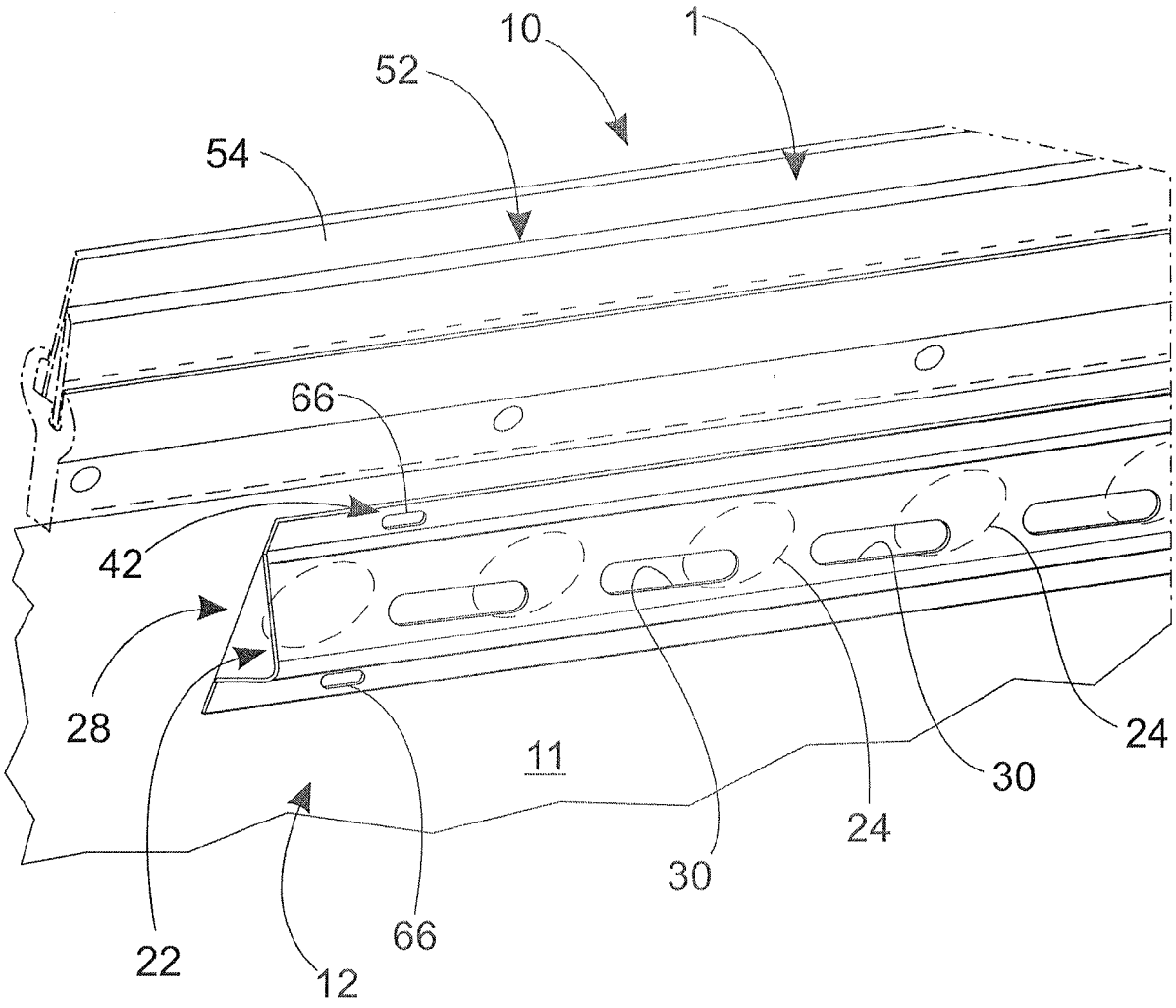

Fig. 5a

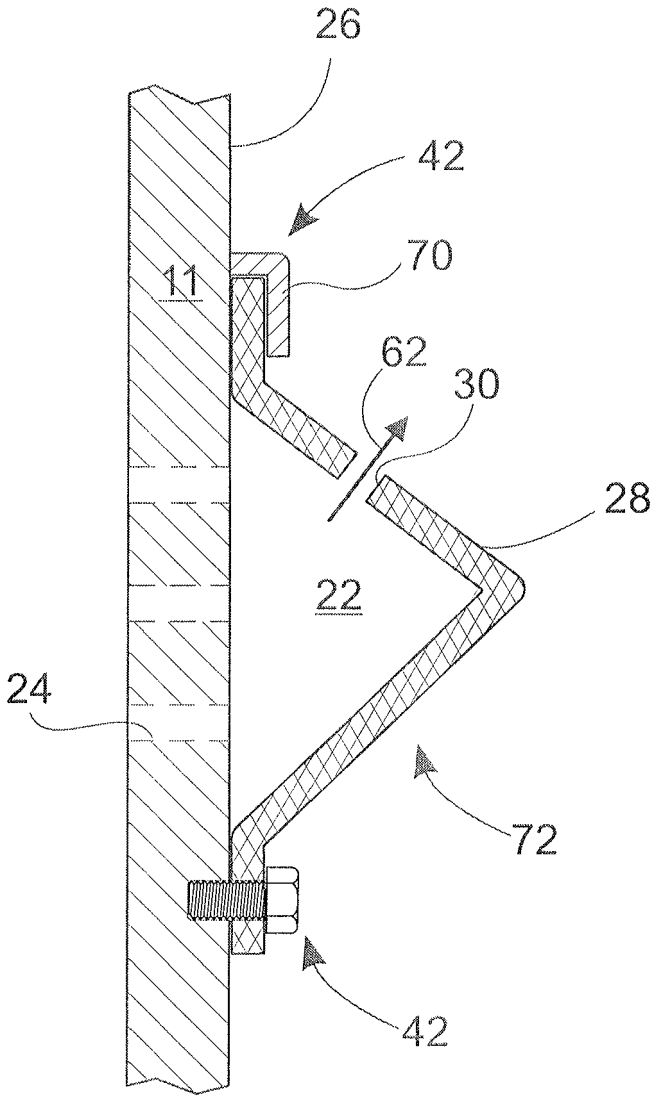

Fig. 5b

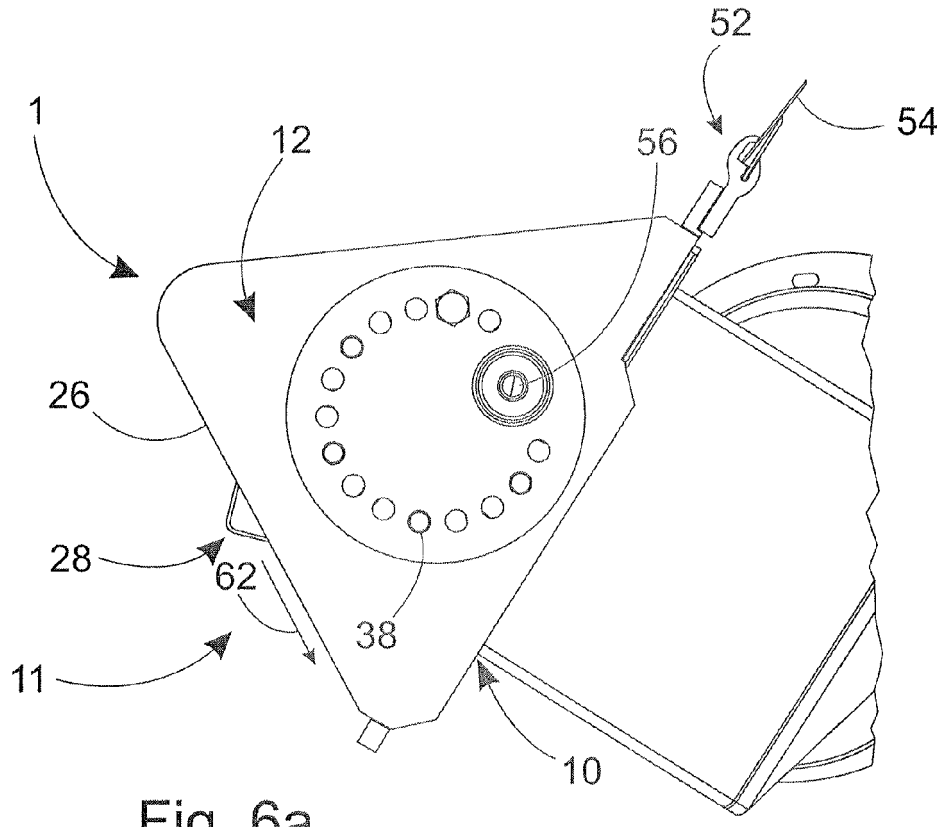

Fig. 6a

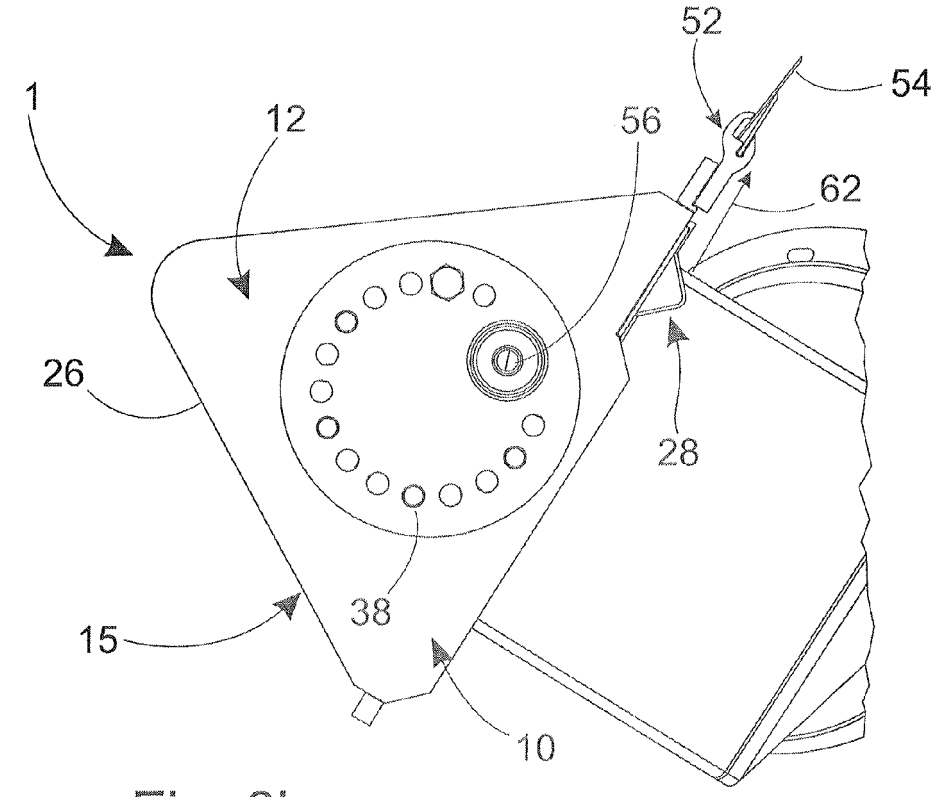

Fig. 6b

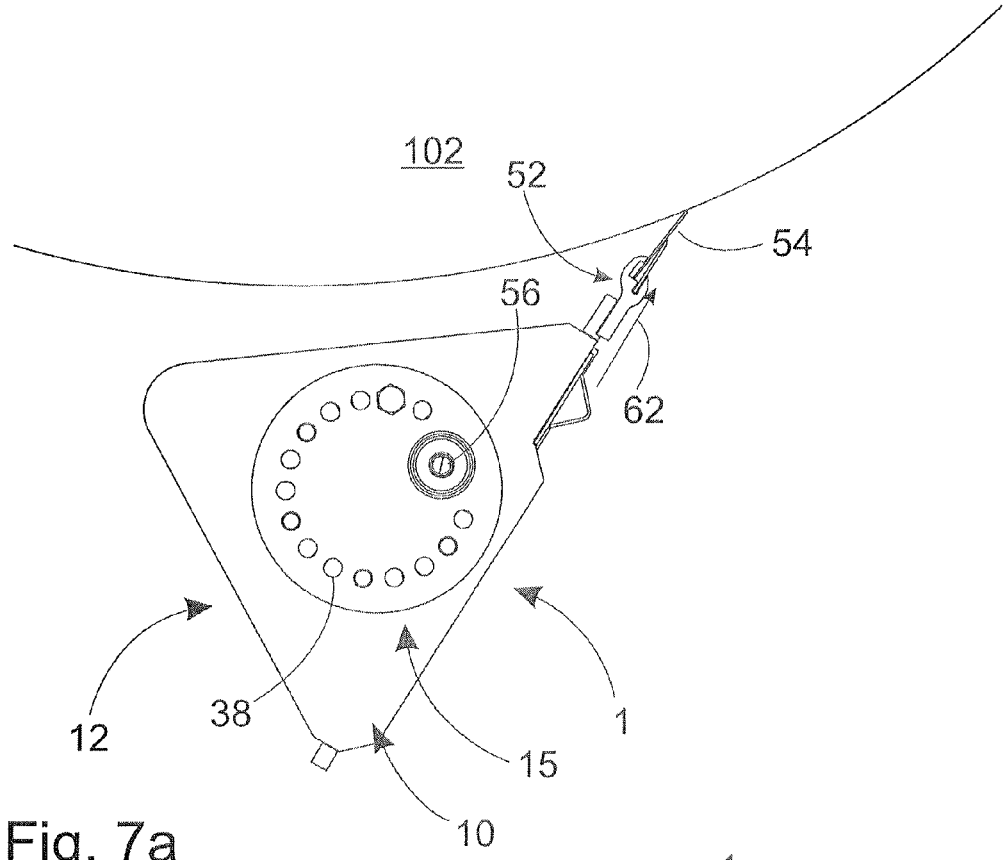

Fig. 7a

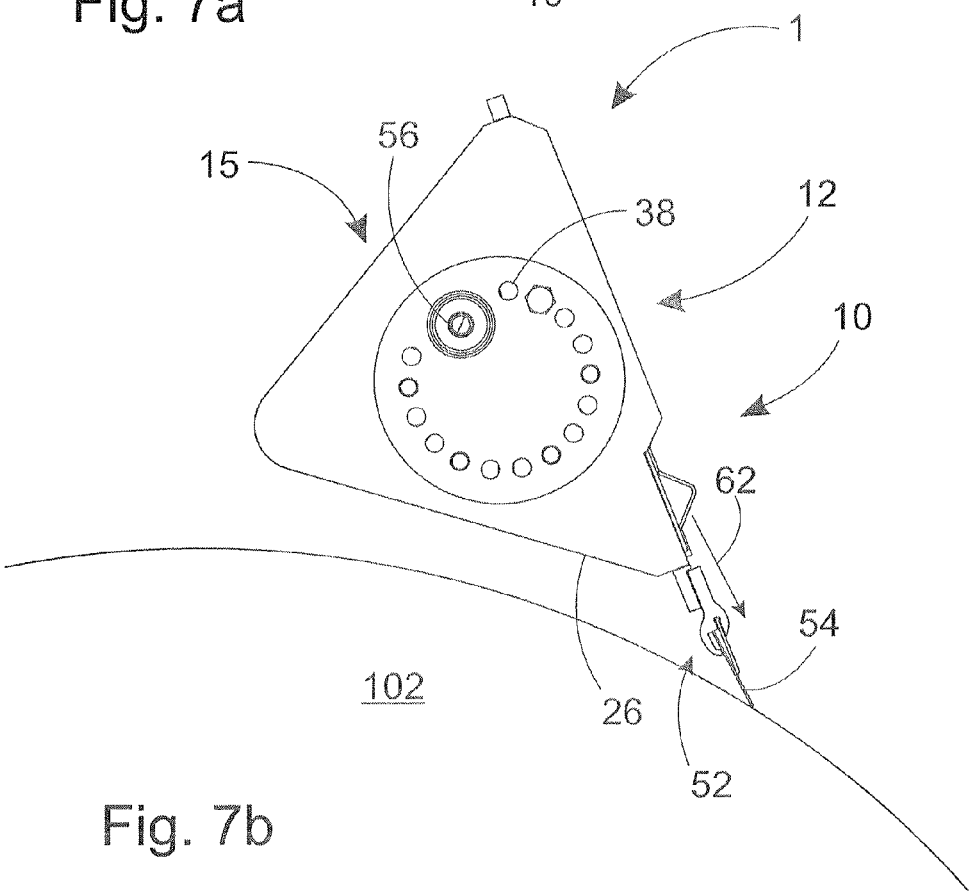

Fig. 7b

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EUROPEAN SEARCH REPORT

Application Number
EP 16 18 8895

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D21F
D21G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	24 January 2017	Pregetter, Mario

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