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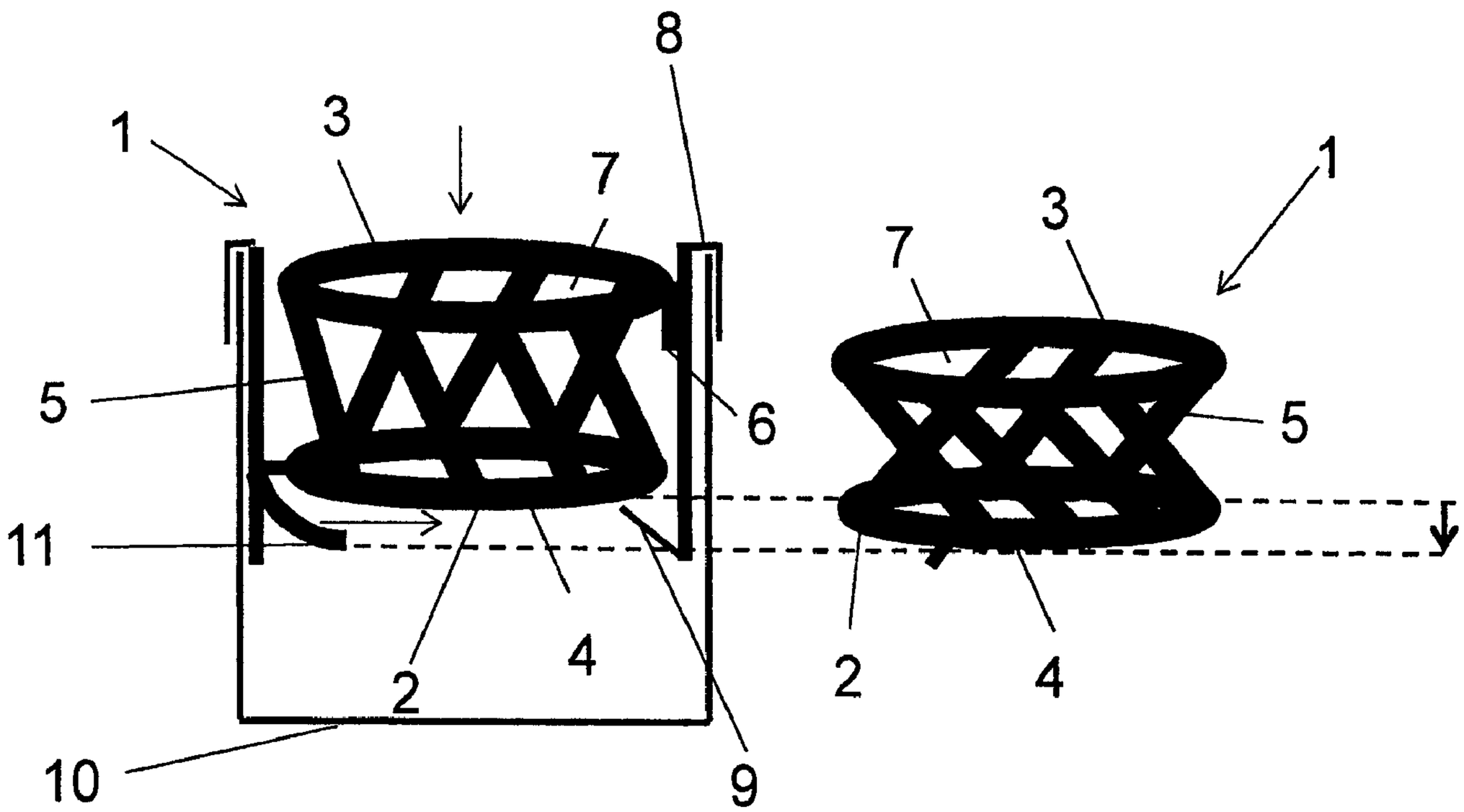
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(54) **Titre : ESSOREUR A TORSION**
(54) **Title: TORSION WRINGER**



(57) **Abrégé/Abstract:**
The invention relates to a torsion wringer (1,1') comprising a receiving device (2, 2') for receiving the head of a mop. Said receiving device (2, 2') comprises an upper part (3, 3') and a lower part (4, 4') which can be interconnected by elements (5, 5'). The aim of the invention is to design and to further develop a torsion wringer of the mentioned type such that the mop can be freed from liquid in a problem-free manner using said device. Said torsion wringer is characterised in that the elements (5, 5') are designed in such a manner and/or are articulated on the parts (3, 3', 4, 4') of the container such that said parts (3, 3', 4, 4') can be rotated with respect to each other.

ABSTRACT

The invention relates to a torsion wringer (1,1') comprising a receiving device (2, 2') for receiving the head of a mop. Said receiving device (2, 2') comprises an upper part (3, 3') and a lower part (4, 4') which can be interconnected by elements (5, 5'). The aim of the invention is to design and to further develop a torsion wringer of the mentioned type such that the mop can be freed from liquid in a problem-free manner using said device. Said torsion wringer is characterized in that the elements (5, 5') are designed in such a manner and/or are articulated on the parts (3, 3', 4, 4') of the container such that said parts (3, 3', 4, 4') can be rotated with respect to each other.

Torsion wringer

Description

Technical field

The invention relates to a torsion wringer including a receiving device for receiving a mop head of a mop, which receiving device has an upper part connected by connecting elements to a lower part.

Prior art

It is already known from the prior art to expel liquid from a mop by squeezing it out.

The mop head of a mop is received in a receiving device, for example in a sieve on a bucket, and is freed from liquid by being squeezed out.

Here, the user exerts a downwardly directed linear force on the receiving device. The user can achieve this most easily by shifting their weight onto the handle of the mop.

A wringer which operates in accordance with this principle is known from DE 10 2006 045 615 B3. When the base of the receiving device is pressed downward by the mop head of the mop, the receiving device contracts. The mop head is wrung out in this way.

The expulsion of water from the mop head by way of a linearly directed squeezing-out action however necessitates high expenditure of force, and generally leads to unsatisfactory results.

Presentation of the invention

The invention is therefore based on the object of designing and further developing a torsion wringer of the type mentioned in the introduction such that, by means of said torsion wringer, a mop can be more easily freed from liquid.

The present invention achieves the above-stated object by way of connecting elements between the upper and lower parts of the receiving device, which elements are designed, and/or articulated on the upper and lower parts such that the upper and lower parts are rotatable relative to one another.

A torsion wringer according to the invention comprises a receiving device for receiving a mop head of a mop, wherein the receiving device has an upper part and a lower part which upper and lower parts are connected to one another by connecting elements, wherein the connecting elements are designed, and/or articulated on the upper and lower parts, such that the upper and lower parts are rotatable relative to one another.

According to the invention, it has been recognized that a linear movement of a mop can be utilized to rotate two parts of a mop receiving device relative to one another. Said rotation is utilized according to the invention to rid the mop of liquid.

According to the invention, it has also been recognized that the connecting elements can form lateral abutment surfaces for the mop. In this respect, a torsion wringer is designed such that, by means thereof, a mop can be more easily freed of liquid.

The object mentioned in the introduction is consequently achieved.

The receiving device may be assigned a guide which, during linear insertion of the mop into the receiving device, rotates one of the parts relative to the other. It is thus possible for a predominantly non-rotational pressure force of the mop onto a receiving device to be converted, by way of suitable guidance of the pressure force, into a rotational movement of one part of the receiving device relative to another part of the receiving device.

Against this background, both parts of the receiving device may be rotatable, and in this case rotatable in directions opposite to one another. In this way, the receiving device can be contracted by being guided over only a relatively short distance of travel.

The receiving device may be displaced axially by insertion of the mop, wherein the lower part is rotated relative to the upper part as a result of the displacement of the receiving device. In this way, the receiving device as a whole is displaceable in an axial direction, specifically in the direction of a handle of a mop. The upper part is guided linearly, wherein the lower part is rotated, that is to say has a rotation forcibly imparted to it, by way of a thread arc. Also conceivable is a configuration in which the upper part is, by way of a thread turn, guided in a direction opposite to the lower thread turn.

The upper part may be guided linearly in rotationally fixed fashion, while the lower part is guided linearly and is simultaneously rotatable.

The connecting elements may be of flexible construction. In this way, in the presence of a decreasing action of force, the connecting elements always move the parts of the receiving device back into a starting position. The connecting elements may be composed of an elastomer or of a thermoplastic material.

The connecting elements may be formed in one piece and integral with the material of the parts of the receiving device. This permits cost efficient manufacture. Thermoplastic materials or elastomers may be used for the manufacture of the connecting elements and/or the receiving device as a whole.

The connecting elements may be of lamellar form. Lamellae can be easily deformed.

Against this background, the connecting elements may serve as restoring springs, by means of which the parts of the receiving device can be at least partially returned to their starting position. By means of this specific embodiment, no separate restoring element is necessary in order to move the parts of the receiving device back to their original spacing when the mop is removed from the receiving device.

At least one connecting element may have at least two sections which transition into one another, or are connected to one another, at a bend point. In this way, the wringing action of the receiving device can be improved.

Against this background, at least one connecting element may have two sections which are inclined in each case at a different angle with respect to the horizontal or with respect to the parts of the receiving device. By means of this specific refinement, it is possible for one region of the receiving device to impart a more intense wringing action than another.

The mop may be rotated by way of the receiving device. The rotation of the parts of the receiving device advantageously also generates torsion in the mop itself. This has an additional positive effect on the expulsion of water from the mop.

Against this background, the receiving device may define a space which can be reduced in size as a result of rotation of the parts relative to one another. The rotation of the two parts relative to one another results in a decrease in volume of the

receiving device, which forces the mop into a space that is decreasing in size. This leads to an effective squeezing action. The space need not be closed off, but rather may have walls with apertures. The walls are preferably formed by the connecting elements.

The receiving device may also be of conical shape. In this way, it takes on a funnel shape into which a mop can be easily inserted.

The receiving device may be returned into a starting position by way of a restoring element. It would be possible for the restoring element to be integrated into a main body of the torsion wringer for coupling to a bucket, and/or into the receiving device. It would be possible for the restoring element to be elastically deformable. It would preferably be possible for the restoring element to be in the form of a spring, in particular a metallic spring or plastics spring. By means of the restoring element, the receiving device is automatically returned into initial starting position when the pressure on the mop decreases.

In one embodiment, the invention provides a set including a torsion wringer of the type described here, a mop, in particular a strip mop, and a bucket. A strip mop can be surrounded, and wrung out, by the connecting elements in a particularly effective manner.

The invention described here may be used by consumers or by professional cleaning personnel.

Brief description of the drawings

In the drawings:

Figure 1 shows, in the left-hand view, a receiving device for a mop head of a mop, and in the right-hand view, a state of the receiving device in which a lower part has been rotated relative to an upper part,

Figure 2 shows a sectional view of the torsion wringer in which the upper part of the receiving device is guided linearly in rotationally fixed fashion and the lower part is guided linearly and rotatably,

Figure 3 shows a side view of a basket-like receiving device in which the upper part and the lower part are connected to one another by connecting elements which have in each case three inclined sections, and

Figure 4 shows a plan view from above of the receiving device as per figure 3.

Embodiment of the invention

Figure 1 shows a torsion wringer 1 comprising a receiving device 2 for receiving a mop head of a mop, wherein the receiving device 2 has an upper part 3 and a lower part 4 which are connected to one another by connecting elements 5.

The connecting elements 5 are designed, and/or articulated on the upper and lower parts 3, 4, such that the upper and lower parts 3, 4 are rotatable relative to one another.

The connecting elements 5 are movably articulated on the upper and lower parts 3, 4 and can be pivoted and inclined.

The torsion wringer 1 has a main body 8 which is provided for coupling to a bucket 10. The receiving device 2 is movable relative to the main body 8.

The receiving device 2 can be displaced axially by insertion of the mop, wherein the lower part 4 can be rotated relative to the upper part 3 as a result of the displacement of the receiving device 2.

The receiving device 2 is assigned a guide 6, 11 which, during linear insertion of the mop into the receiving device 2, rotates lower part 4 relative to upper part 3.

The upper part 3 is guided linearly by a linear guide 6 and is not rotated, whereas the lower part 4 is rotated by way of a thread arc 11 and specifically has a rotation forcibly imparted to it as it slides on the thread arc 11.

Here, the receiving device 2 is moved downward as a whole by an offset. The offset is schematically indicated by the downwardly directed arrow between the two dashed lines.

In this respect, the guide 6, 11 comprises a linear guide 6 and a thread arc 11.

The connecting elements 5 are of flexible construction. The connecting elements 5 are formed in one piece and integral with the material of the upper and lower parts 3, 4. The connecting elements 5 are of lamellar shape.

A mop (not shown) can be rotated by way of the receiving device 2.

The receiving device 2 defines a space 7 which can be reduced in size as a result of rotation of the upper and lower parts 3, 4 relative to one another.

The receiving device 2 can be returned into a starting position by way of a restoring element 9.

Figure 2 shows a torsion wringer 1' including a receiving device 2' for receiving a mop head of a mop, wherein the receiving device 2' has an upper part 3' and a lower part 4' which are connected to one another by connecting elements 5', as shown in figures 3 and 4.

The connecting elements 5' are designed, and/or articulated on the upper and lower parts 3', 4', such that the upper and lower parts 3', 4' are rotatable relative to one another. The connecting elements 5' are movably articulated on the upper and lower parts 3', 4' and can be bent and inclined.

The torsion wringer 1' has a main body 8' which is provided for coupling to a bucket 10'. The receiving device 2' is axially movable relative to the main body 8'.

The receiving device 2' can be displaced axially by insertion of the mop, wherein the lower part 4' can be rotated relative to the upper part 3' as a result of the displacement of the receiving device 2'.

The receiving device 2' is assigned a guide 6', 11' which, during linear insertion of the mop into the receiving device 2', rotates the lower part 4' relative to the upper part 3'.

The upper part 3' is guided linearly in rotationally fixed fashion, wherein the lower part 4' is guided linearly and is simultaneously rotatable. The upper part 3' is guided linearly and in rotationally fixed fashion by way of a linear guide 6', is not rotated, and moves downward, wherein the lower part 4' is rotated by way of the rotary guide 11' and is guided linearly downward, specifically has a rotation forcibly imparted to it, which rotation is combined with a linear downward movement.

Here, the receiving device 2' as a whole is moved downward, wherein the space 7' is reduced in size as a result of the simultaneous rotation of the upper and lower parts 3', 4' relative to one another. A mop (not shown) can therefore be rotated, and wrung out, by way of the receiving device 2.

Figure 3 shows the basket-like receiving device 2', the upper part 3' of which is in the form of an edge, and the lower part 4' of which is in the form of a base element. The connecting elements 5' are of flexible construction. The connecting elements 5' are formed in one piece with and integral with the material of the upper and lower parts 3', 4'. The connecting elements 5' are of lamellar shape.

The connecting elements 5' serve as restoring springs by means of which the upper and lower parts 3', 4' can be at least partially returned into their starting position.

At least one connecting element 5' has at least two sections 5'a, 5'b which transition into one another, or are connected to one another, at a bend point 5'd. At least one connecting element 5' has two sections 5'a, 5'b which are inclined in each case at a different angle with respect to the horizontal or with respect to the upper and lower parts 3', 4'.

Specifically, a connecting element 5' is composed of three sections 5'a, 5'b, 5'c, of which, in the initial rest state, each is inclined at a different angle with respect to the upper part 3' or the lower part 4'.

A first section 5'a, which is articulated on the lower part 4', is the longest, a second, central section 5'b is the second longest, and a third section 5'c, which is articulated on the upper part 3', is the shortest. The first section 5'a tapers in the direction of the lower part 4'.

Figure 4 shows a plan view of the receiving device 2' as per figure 3.

CLAIMS:

1. A torsion wringer, comprising a receiving device for receiving a mop head of a mop, the receiving device having an upper part and a lower part and connecting elements for connecting the upper and lower parts the connecting elements are constructed, and/or articulated on the upper and lower parts for rotation of the upper and lower parts relative to one another, wherein the receiving device is provided with a guide for rotating one of the upper and lower parts relative to one another during linear insertion of the mop head into the receiving device.

2. The torsion wringer as defined in claim 1, wherein the upper and lower parts are both rotatable, and in directions opposite to one another.

3. The torsion wringer as defined in claim 1 or 2, wherein the receiving device is axially displaceable by insertion of the mop head, wherein the lower part is rotated relative to the upper part upon displacement of the receiving device.

4. The torsion wringer as defined in any one of claims 1 or 3, the upper part is guided linearly in rotationally fixed fashion, wherein the lower part is guided linearly and is simultaneously rotatable.

5. The torsion wringer as defined in any one of claims 1 to 4, wherein the connecting elements are of flexible construction.

6. The torsion wringer as defined in any one of claims 1 to 5, wherein the connecting elements are formed integrally with and of the same material as the upper and lower parts.

7. The torsion wringer as defined in any one of claims 1 to 6, the connecting elements are of lamellar shape.

8. The torsion wringer as defined in any one of claims 1 to 7, wherein the connecting elements serve as restoring springs for returning the upper and lower parts at least partially to a starting position.

9. The torsion wringer as defined in any one of claims 1 to 8, wherein at least one connecting element has at least two sections which transition into one another at a bend point.

10. The torsion wringer as defined in any one of claims 1 to 8, wherein at least one connecting element has at least two sections which are connected to one another at a bend point.

11. The torsion wringer as defined in any one of claims 1 to 8, wherein at least one connecting element has two sections which are inclined in each case at a different angle with respect to the horizontal or with respect to the upper and lower parts.

12. The torsion wringer as defined in claim 9 or 10, wherein at least one connecting element has two sections which are inclined in each case at a different angle with respect to the horizontal or with respect to the upper and lower parts.

13. The torsion wringer as defined in any one of claims 1 to 12, wherein the mop head is rotated by way of the receiving device.

14. The torsion wringer as defined in any one of claims 1 to 13, wherein the receiving device defines a space which is reduced in size upon rotation of the upper and lower parts relative to one another.

15. The torsion wringer as defined in any one of claims 1 to 14, wherein the receiving device is of conical shape.

16. The torsion wringer as defined in any one of claims 1 to 15, wherein the receiving device is returned to a starting position by way of a restoring element.

17. A set comprising a mop with a mop head, a torsion wringer as defined in any one of claims 1 to 16 for wringing out of the mop head and a bucket for connection with the torsion wringer and capturing water wrung from the mop head.

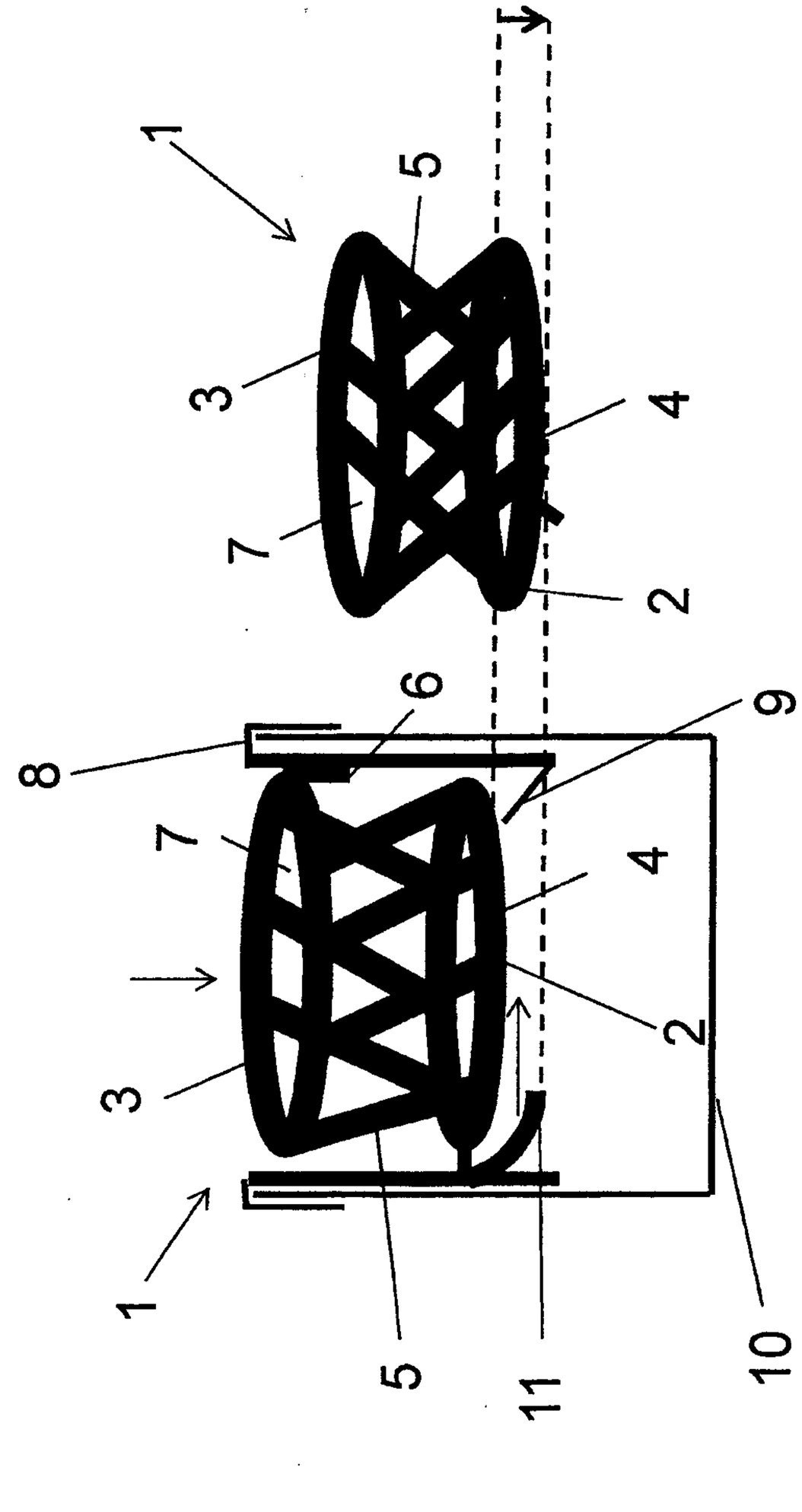


Fig. 1

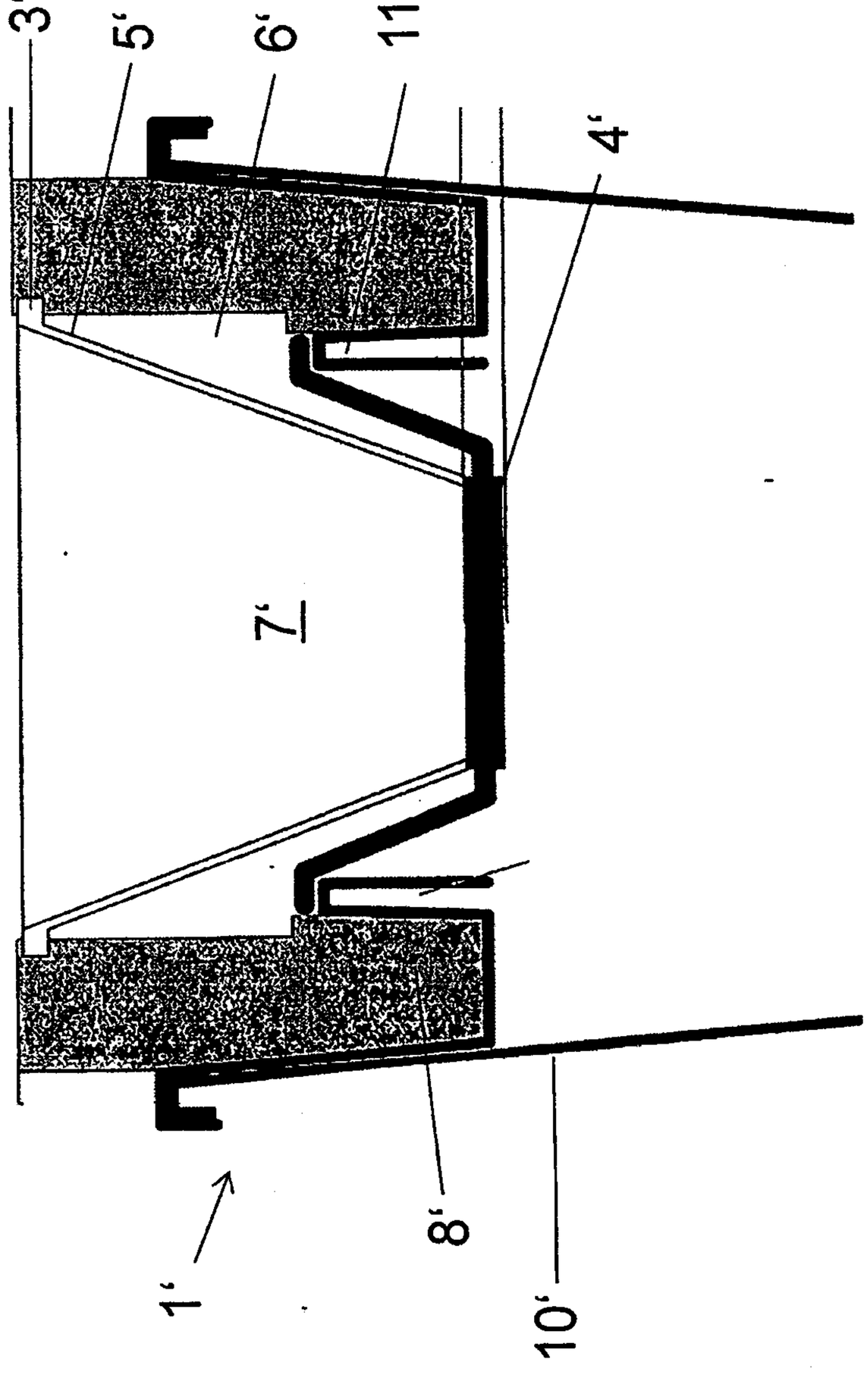


Fig. 2

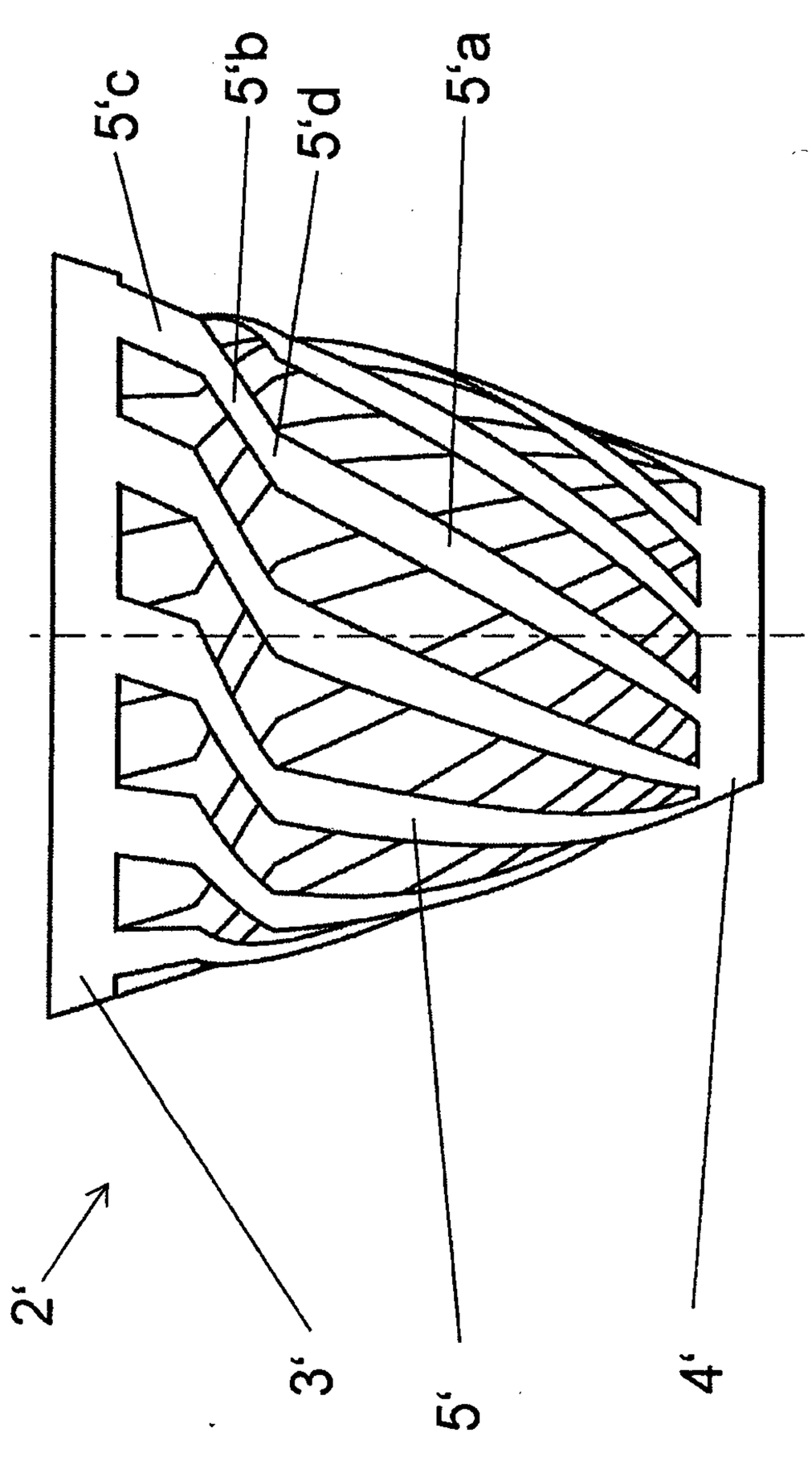


Fig. 3

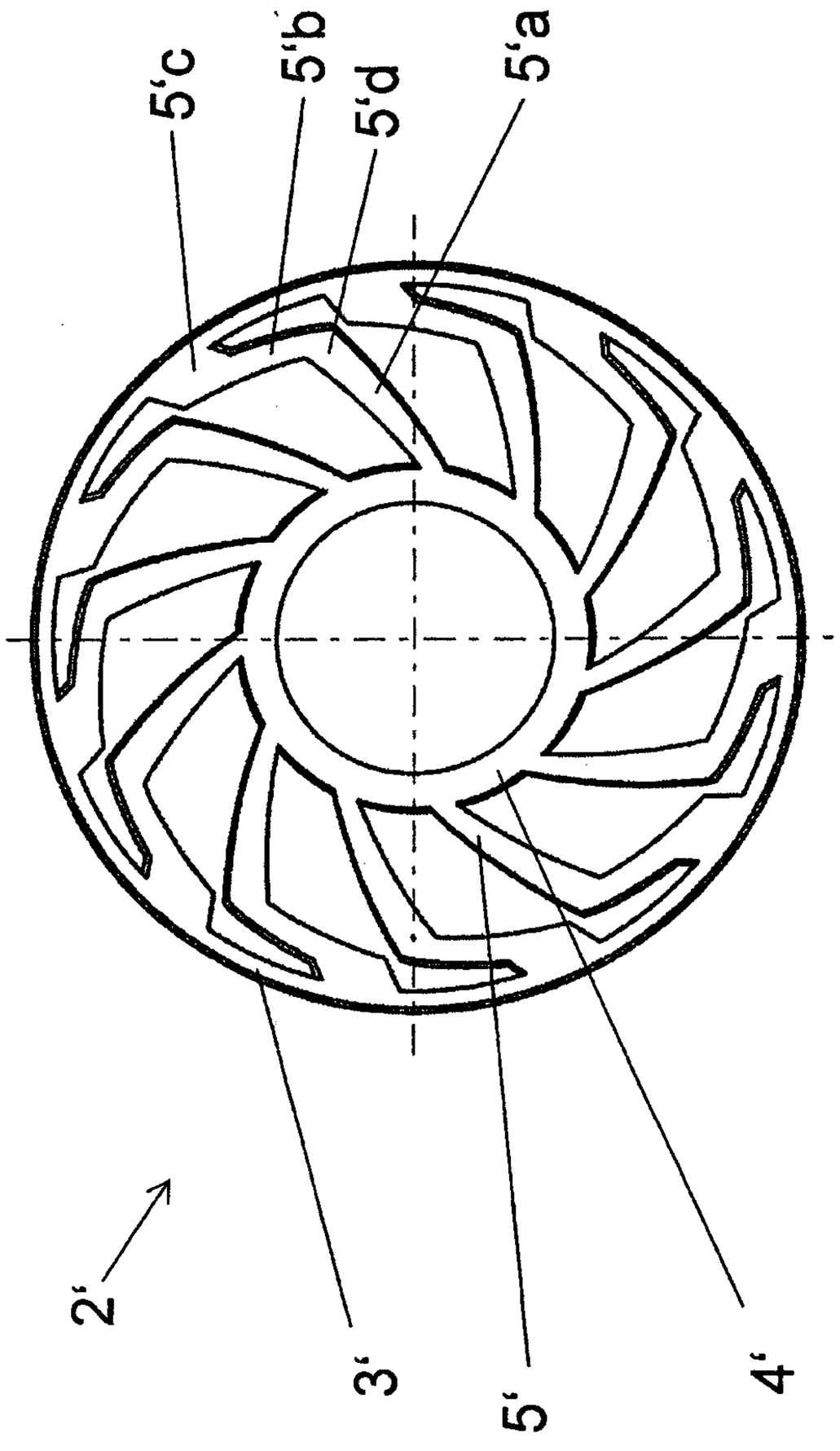
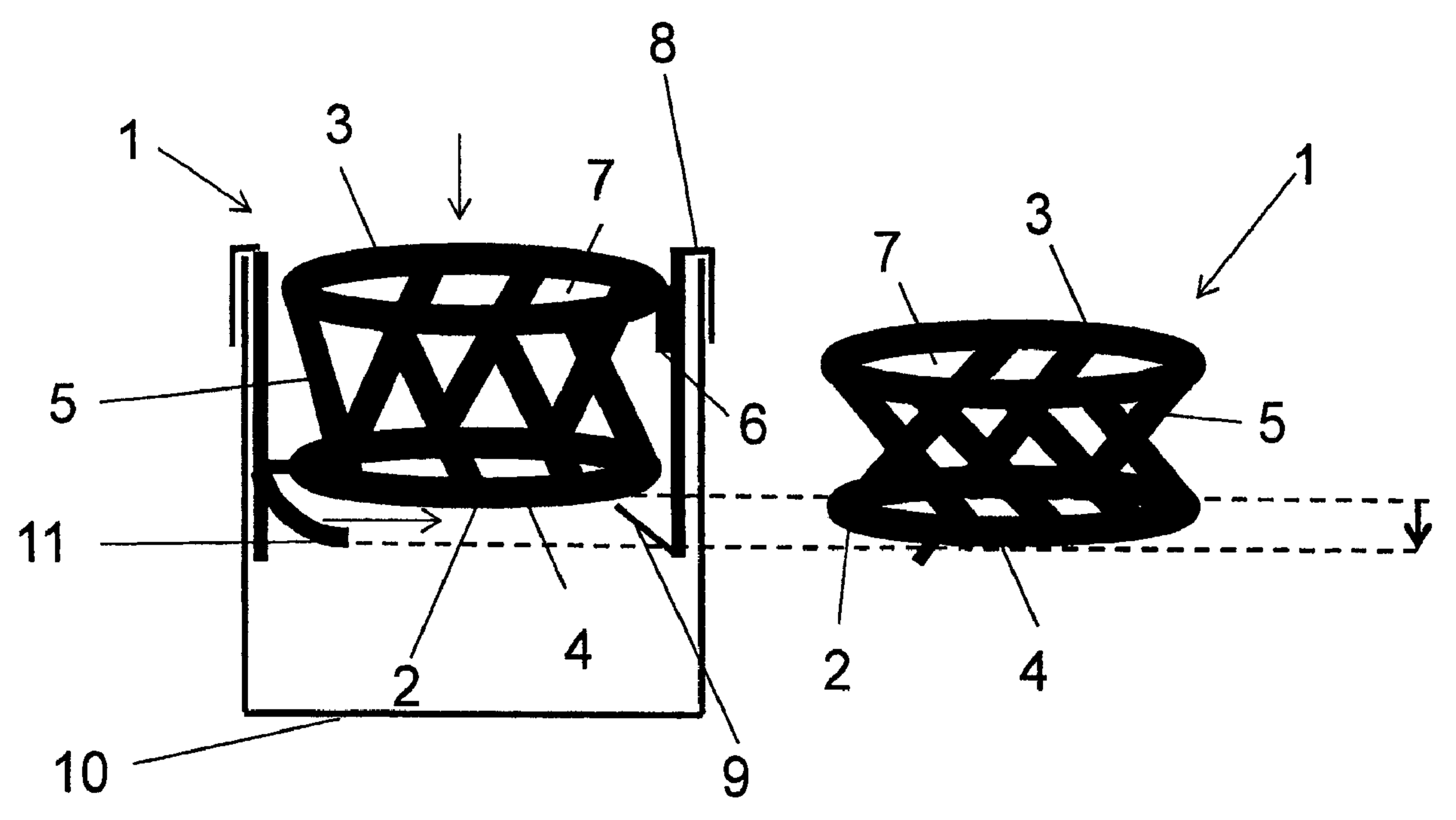


Fig. 4


8
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