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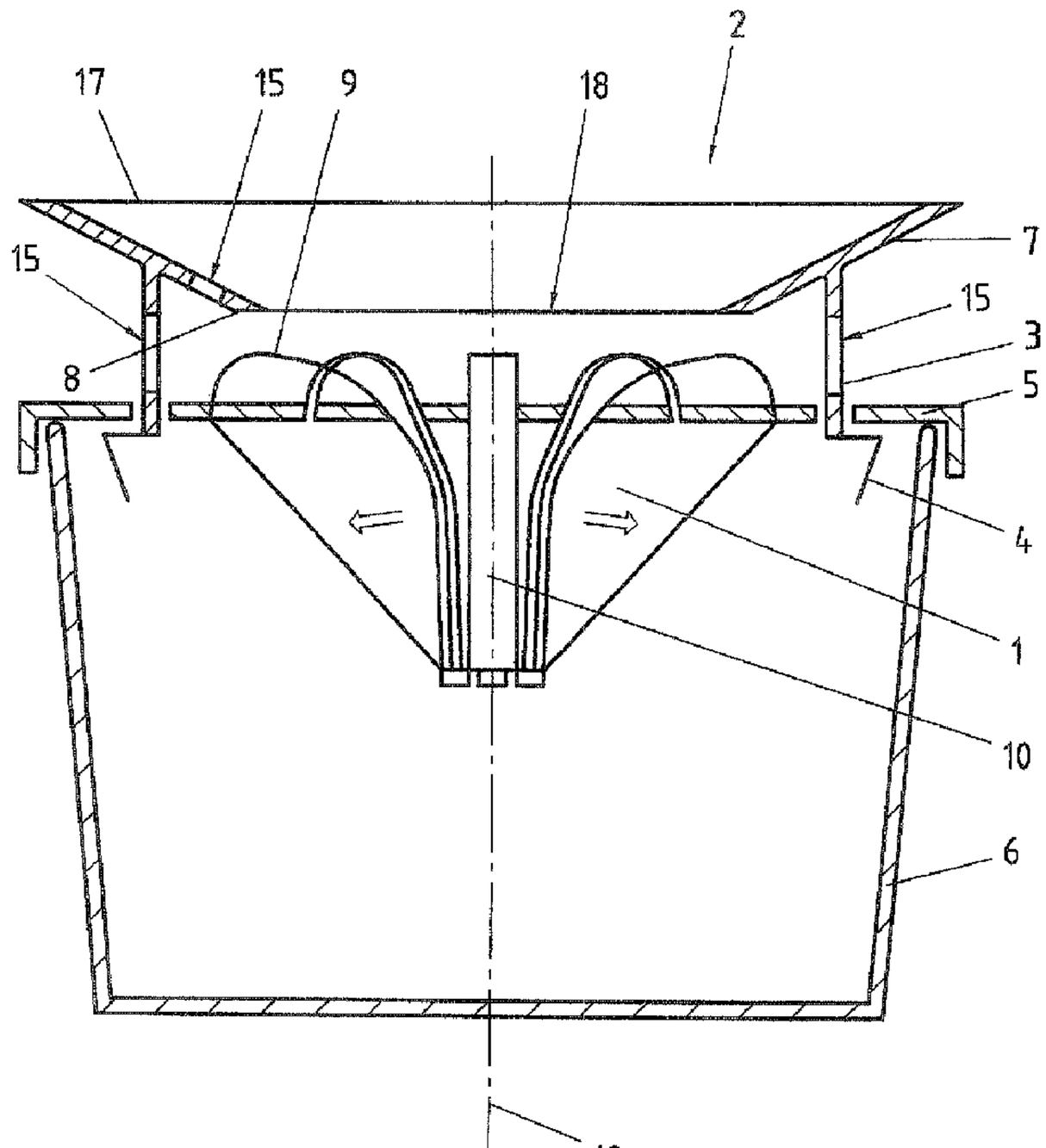


(57) Abrégé/Abstract:
A wringer for cleaning elements of wet or damp cleaning apparatus, including a liquid permeable receptacle which is fastenable by a holding frame to a container and in which a cleaning element can be wrung out by inserting it thereinto, whereby a cleaning element can be guided to the receptacle by an insertion funnel separate from the receptacle and fastenable to the mounting frame.

ABSTRACT

A wringer for cleaning elements of wet or damp cleaning apparatus, including a liquid permeable receptacle which is fastenable by a holding frame to a container and in which a cleaning element can be wrung out by inserting it thereinto, whereby a cleaning element can be guided to the receptacle by an insertion funnel separate from the receptacle and fastenable to the mounting frame.

MOP WRINGER

Field of the Invention

The invention relates to a wringer for cleaning elements of wet and damp mops with a liquid permeable receiver member which is fastened to a container by a mounting frame and in which a cleaning element can be wrung out by pressing it thereinto.

Background Art

Such wringers are widely used for the cleaning of floors in the household. So-called wiping mops are common which are wet or damp wiping apparatus in which a cleaning element, for example, absorbent strips, frays or tufts of a textile material are bundled into a mop head at the end of a handle. For removal of the wetness, the cleaning element must be wrung out or pressed out in the device. Wringers are common in which the mop head is inserted from above with a vertically downwardly hanging cleaning element and into an upwardly open wringing space. The liquid absorbed by the cleaning element is removed by pressing, squishing and/or wringing. The wringing space is liquid permeable and the soiled water drains into a container positioned under the wringer. Wringers used in the household are mostly mountable at the rim of a cleaning bucket and the mop is wrung out by pressing into a basket type receptacle.

Such a wringer is known, for example, from EP 0 489 237. The receiving member is a funnel shaped pressing basket with flexible, evenly spaced apart wire portions. These wire portions form bow shaped spring legs which merge at the one end into the holding frame and at the other end into a floor part. The holding frame is mounted at the upper edge of a cleaning bucket. For the wringing out of the mop, the latter is inserted from above into the pressing basket. The pressing out is carried out by forcing the mop thereinto. Liquid can thereby only be removed from those strips which are located in the pressing basket. Mop strips, which during the insertion come to lie between, or outside of the flexible wall portions are not squished out. Especially when the mop head is not mushroom shape but as is the case with flat wiping mops, is about the shape of an ellipsoid, the

wringing out result is unsatisfactory. Soiled water taken up during the previous wiping process is at least partly returned to the floor. If one wants to avoid this and press out even outwardly located textile strips, an exact insertion of the strips into the basket is required. The mop possibly has to be repeatedly pressed into the pressing out basket. This requires skill and patience and makes it harder to achieve an efficient floor cleaning.

Summary of the Invention

The present invention may advantageously provide a wringer device so that the insertion of the cleaning element and the wringing out is better possible than previously, but is nevertheless cost efficient.

An aspect of the present invention provides a wringer wherein the cleaning element is guided to the receptacle by an insertion funnel, which is separate from the receptacle and fastened to the holding frame. Separate parts are thereby provided for the insertion and for the pressing of the mop. The separate parts are now provided with a large diameter for insertion and a small diameter for the wringing out in the pressing basket. By separating these tasks, the construction of the wringing out basket and the insertion aid is uncoupled.

Another aspect of the invention provides a wringer for cleaning elements of wet and damp mops, comprising a liquid permeable receptacle for the wringing out of the cleaning element therein by pressing, a holding frame for fastening the receptacle to a container, and an insertion funnel separate from the receptacle for guiding the cleaning element to the receptacle, the insertion funnel being fastenable to the holding frame.

This adjusted insertion funnel provides a centering for the vertically downwardly hanging tufts or strips of the mop. The unperforated, first or conical surface of the insertion funnel guides the mop bundle completely into the wringing out basket. Only few cleaning elements remain outside the wringing out basket because of this bundling. Upon pressing, the whole soiled water absorbed during the preceding wiping process is removed from the textile strips. Absorbed soiled water no longer returns to the floor. By using the insertion funnel as a preceding auxiliary device, the

insertion and therefore the wringing out of the cleaning element is improved. The cleaning of the floor is faster and more efficient.

The receptacle or the insertion funnel can be cost efficiently manufactured as separate components. They can be stacked at high density when suitably shaped, whereby transport and storage costs are reduced.

For the fastening of the insertion funnel at the holding frame, a series of connecting possibilities are available to a person skilled in the art. For example, the insertion funnel can be fastened to the holding frame by a clamping device or by a snap lock.

It is advantageous when the insertion funnel includes a conical wall part and an integrally formed supporting frame, which can be rigidly connected with the holding frame. The receptacle and the insertion funnel can thereby be manufactured as separate components and stored and transported at low cost. Only before the delivery to the customer are the components rigidly connected. They are thereby permanently assembled during use.

With respect to the manufacturing costs, it is very advantageous when the conical mantle part and the supporting frame are integrally formed of a polymeric material. The connection between receptacle and insertion funnel is preferably equivalent adhesive or snap connection that can also be a welded or adhesive connection.

The wringer device is an article of mass manufacture used in the household. It is advantageous when the mantle part and/or the supporting frame have perforations so that a lower weight is achieved. These perforations are dimensioned in shape and size in such a way that the tufts or strips do not entangle therein. The geometric shape of the perforations in the mantle part and in the supporting frame can advantageously be adapted to the shape of the wiping mop used. The aesthetic shape of the wiping mop is in this manner mirrored in the wringer device, which can be positively received by the user.

A conical mantle part is preferred which encloses an angle between 15° and 70° with a horizontal plane. It achieves thereby a good guidance and a good drainage of dripping of water into the wringing basket.

A very good bundling effect is achieved by the conical mounted part especially when a lower one defines a lower passing through surface which is congruent or smaller to an upper edge of the receptacle. With these at least congruent pass-through surfaces one achieves that the tufts of the cleaning element do not get entangled between the pressing out basket and the insertion funnel. During a long use, the apparatus of the receptacle can lower because of the classic deformation of the individual spring legs of the receptacle. As long as the lower pass through surface is smaller than

the surface defined by the upper edge of the receptacle, the centering effect of the funnel remains in tact. It has proven advantageous under the aspect of lower manufacturing costs when the conical mantle part and its supporting frame are shaped rotation symmetrical above an axis and that the diameter of the upper edge of the mantle part is about 1.2 to 2 times larger than the diameter of the lower pass-through surface.

The wringer can be manufactured at low cost from plastic with injection molding technology. An efficient floor cleaning is provided especially when the receptacle is formed with flexible, permeable lower portions, which reduce or enlarge in inside width upon insertion of the cleaning element.

Brief Description of the Drawings

The invention will be further described by way of example only and with reference to the drawings including figures, which illustrate two preferred embodiments of the invention wherein the receptacle is respectively formed with a passing out basket with formable wall portions.

Figure 1 shows in cross-section a preferred embodiment of the wringing out device in accordance with the invention; and

Figure 2 is a cross-section through a second preferred embodiment of the wringing out device in accordance with the invention.

Detailed Description of the Preferred Embodiments

Figure 2 shows a cross-sectional illustration of a first embodiment of the wringing out device in accordance with the invention, wherein the receptacle 1 is formed as the wringing out basket and fastened by a holding frame 5 to a container 6 positioned thereunder. An insertion funnel 2 is positioned ahead of the wringing out or pressing out basket 1 and fastened by a supporting frame 3 to the holding frame 5. Figure 2 shows a preferred connection between the insertion funnel and the holding frame in the form of a clamping or adhesive connection between the shoulder on the holding frame 5 and the supporting frame 3. However, the connection can also be formed by a welded or a permanent snap connection. The one-piece integral model is also conceivable. A conical

mantel part 7 is easily apparent which is positioned ahead of the wringing out basket 1 at a distance 11 from the peak of the spring elements 10. During the cleaning of the floor, the wiping mop not further illustrated in Figure 1 is inserted from above with relatively downwardly hanging frays or tufts into the wringer device. The cleaning element thereby passes the pass-through surface defined by the upper edge 17 and is first centered by the conical mantle part 7 in direction towards the pressing out basket 1. The downwardly directed pressing force thereby in the further course leads in this first embodiment to a displacement of the peak points of the spring elements 10 at the upper edge 9 of the receptacle 1 in direction of the axis of symmetry 12. The spring elements 10 press against the strips of the cleaning element. The pressing out is schematically illustrated in Figure 1 by arrows, one pointing downward and two pointing in the direction of the axis of symmetry 12, pointing towards the interior of the wringing out basket. The soiled water squished out during the pressing flows between the spring elements 10 into the bucket 6. The conical mantle part 7 has perforations 15 the size and shape of which is selected so that the tufts or frays of the wiper mop are reliably guided to the centre of the wringing out container and not entangled. Dripping off soiled water is drained through holes 16 in the holding frame 5 into the bucket 6. As is easily apparent from Figure 1, the lower pass-through surface 18 defined by the lower edge 8 is congruent to the entry surface of the wringing out basket and is described by the peak points of the spring elements 10 at the upper edge 9. The funnel part 7 encloses an angle 14 with a horizontal 13, which is preferably between 15 and 70°. Of course, the frusto-conical funnel part 7 can be adapted to the shape of the wiper mop, which means it can be either shaped like a circular cone, or oval, rectangular, square, or have the shape of a polygon. However, it is also conceivable that the mantle surface of the part 7 is convexly or concavely curved towards the axis 12.

A second preferred embodiment of the wringing out device in accordance with the invention is shown in cross-section of Figure 2. The mop easily can be inserted from above into the wringing out device and pressed through the pass-through surfaces 17 and 18, the base surfaces of the insertion funnel 2. In contrast to the embodiment illustrated in Figure 1, the wringing out of the cleaning element is caused in this construction by an enlargement of the inside width of the spring elements 10 of the receiving basket 1. As indicated in Figure 2 by two arrows pointing away from

the axis of symmetry 12, the downwardly directed pressing out movement causes a lateral avoidance of the tulip shaped spring elements 10 of the wringing out basket 1. The pressed out soiled water is here also collected in a cleaning bucket 6 positioned thereunder at the upper edge of which the holding frame 5 is fastened, for example, by not illustrated holding claws. According to the invention, the insertion funnel 2 is spaced apart from the peak 9 of the wringing out basket 1. The insertion funnel 2 and the holding frame 5 are preferably set apart. Figure 2 shows a snap-in connection 4, which fastens the supporting frame 3 to the holding frame 5. The insertion funnel 2 is thereby rigidly connected with the receptacle 1. The snap-in connection can be constructed to be separable or permanent. It is advantageous with respect to cost that both components can be manufactured in simple tools and are very well stackable during delivery and intermediate storage. The transport and storage costs are thereby low. The insertion funnel 2 is mounted to the holding frame 5 only after delivery to the customer. A permanent snap-in connection has the advantage that the insertion funnel is permanently mounted on the receptacle. Of course, in place of the permanent snap-in connection, a plug-in connection can be used when a permanent fit is achieved by heat.

For reasons of material savings and weight reduction, perforations 15 are preferably provided in the conical mantle part 7 and/or the supporting frame 3. The perforations 15 preferably show a company or product logo or mirror the shape of the mantle.

The conical mantle part 7 of the insertion funnel 2 is here also in no way limited to a rotation symmetrical mantle surface of a cone. For example, as mentioned above, the upper edge 17 and/or the lower edge 8 can be formed by a polygon or the nozzle surface can be convexly or concavely curved for guidance of the mop during insertion. As is described in the embodiment of Figure 1, the upper edge 9 of the pressing out basket 1 formed by the peaks of the spring elements 10 is spaced apart from the lower edge 8 of the conical mantle part 7, whereby in accordance with the invention due to this construction of the device the tasks of pressing out and improved guidance of the cleaning element are uncoupled.

The invention is in no way limited to receptacles with elastic wall elements in the pressing space, but includes also receptacles within a space which is formed, for example, by a sieve cup. In accordance with the invention, the sieve cup can be dimensioned separately from the insertion

funnel for an efficient cleaning out on the one hand and an optimized guiding effect on the other hand.

CLAIMS

1. Wringer for cleaning elements of wet and damp mops, comprising a liquid permeable receptacle for the wringing out of the cleaning element therein by pressing, a holding frame for fastening the receptacle to a container, and an insertion funnel separate from the receptacle for guiding the cleaning element to the receptacle, the insertion funnel being fastenable to the holding frame.

2. Device according to claim 1, wherein the insertion funnel includes a conical mantle part and an integrally formed supporting frame for rigid connection with the holding frame.

3. Device according to claim 2, wherein the conical mantle part and the supporting frame are integrally formed of polymeric material.

4. Device according to claim 3, wherein at least one of the conical mantle part and the supporting frame includes perforations.

5. Device according to one of claims 2-4, wherein the conical mantle part encloses an angle between 15° and 70° with a horizontal plane.

6. Device according to one of claims 2-5, wherein a lower edge of the conical mantle part defines a lower pass-through surface which is congruent to or smaller than an upper edge of the receptacle.

7. Device according to claim 6, wherein the conical mantle part and the supporting frame are shaped rotation symmetrical about an axis and the diameter of the upper edge of the mantle part is 1.2 – 2 times larger than the diameter of the lower pass-through surface.

8. Device according to any one of claims 1 to 7, wherein the receptacle includes formable wall parts, the inside width at which is enlarged or reduced upon forcing of the cleaning elements thereinto.

9. Device according to claim 8, when the wall parts are formed as spring elements with convex curvature.

Fig.1

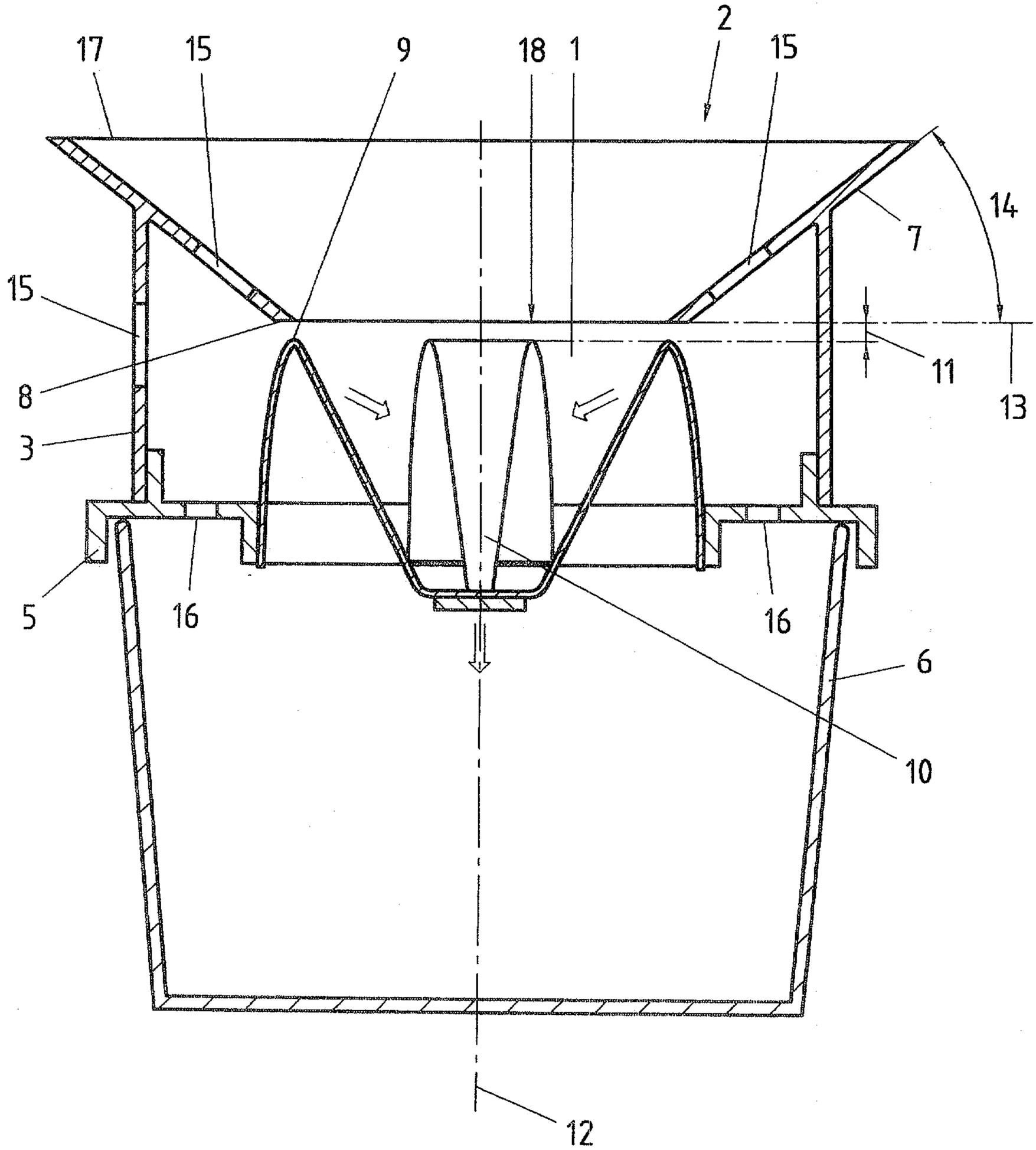
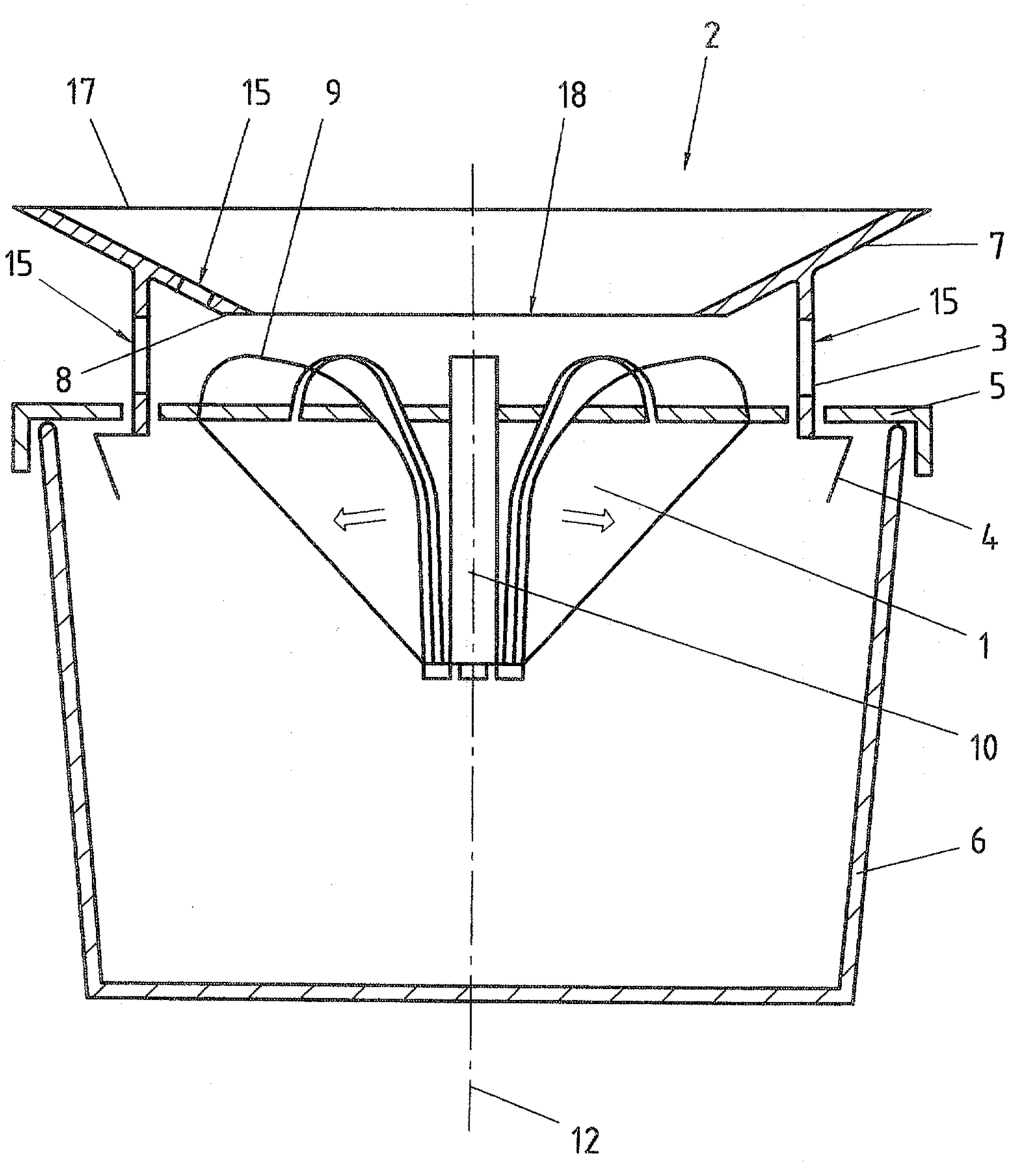
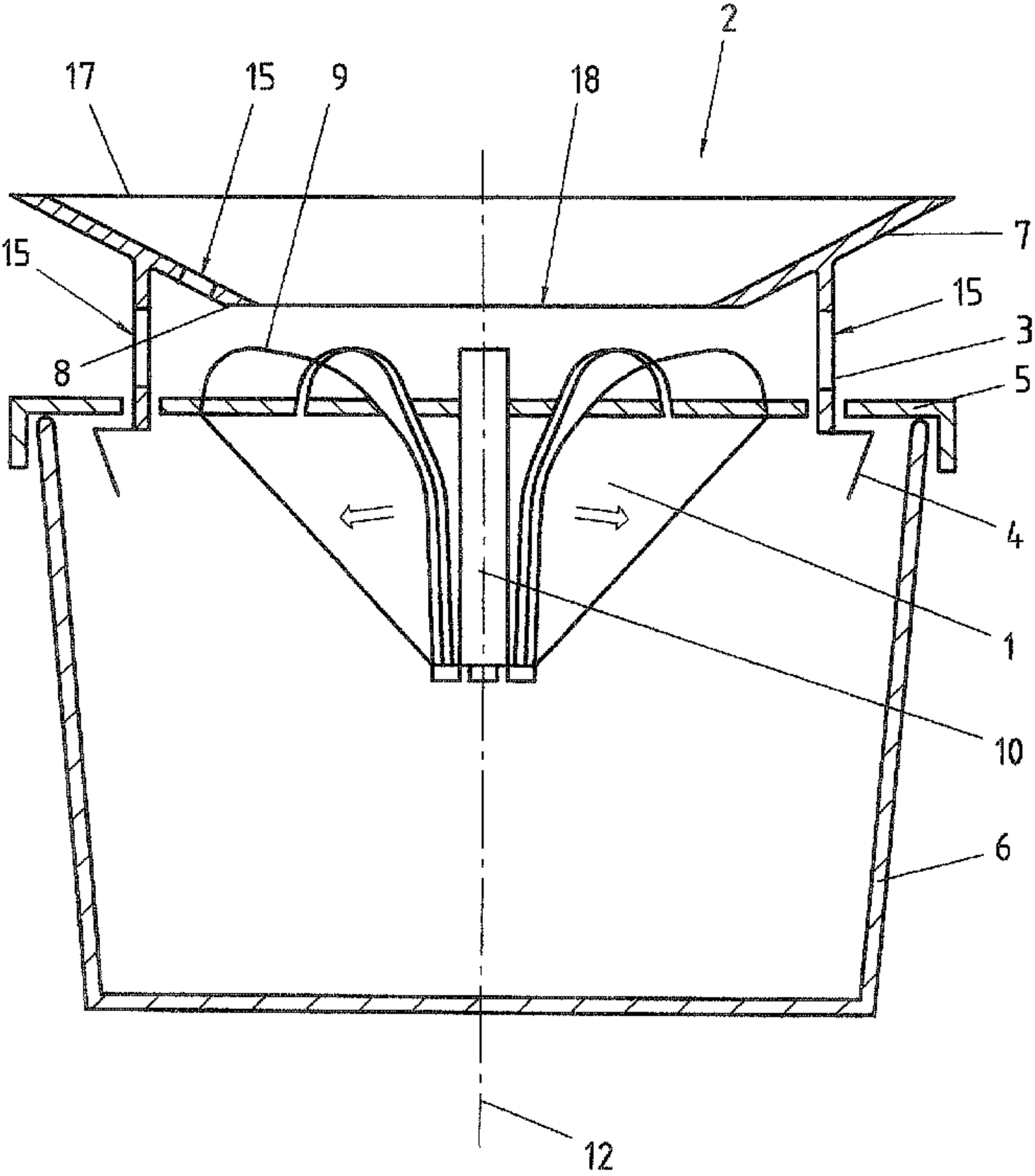


Fig.2

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