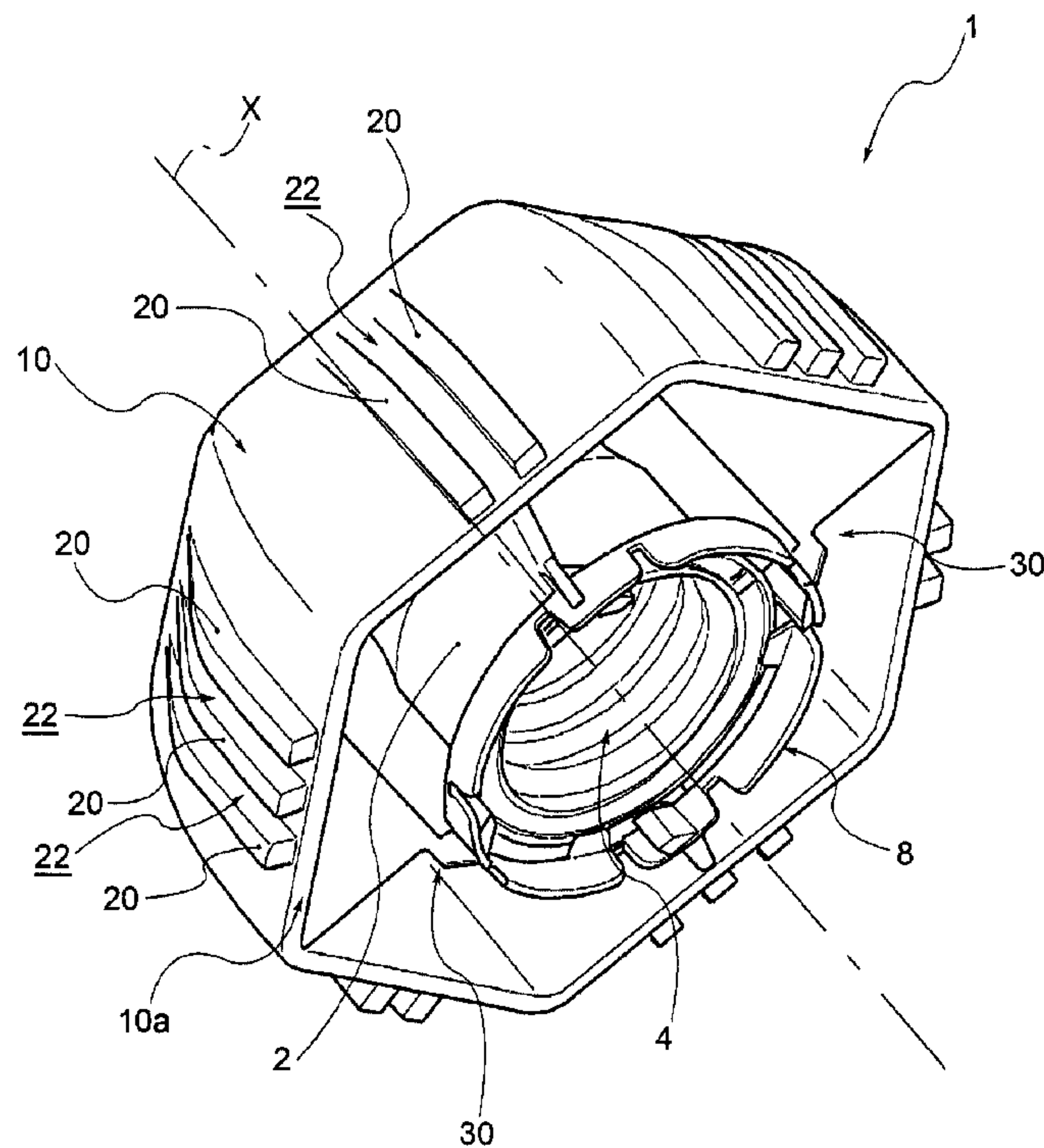




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(54) Title: CAP FOR CONTAINERS



(57) Abrégé/Abstract:

A plastic cap (1) for a container, such as a bottle or flexible package, in particular for liquid foods for children, comprising projecting ribs (20) for attaching to a similar, laterally adjacent cap and axial teeth (30) for attaching to a similar axially overlapping cap.

ABSTRACT

A plastic cap (1) for a container, such as a bottle or flexible package, in particular for liquid foods for children, comprising projecting ribs (20) for attaching to a similar, laterally adjacent cap and axial teeth (30) for attaching to a similar axially overlapping cap.

Cap for containers

[0001] The present invention relates to a plastic cap for containers, in particular a cap for containers of liquid foods, especially for children, such as fruit juices and the like.

5 [0002] Known in the art is International Application WO 2008/050361 in the Applicant's name, which describes a cap for container with guarantee seal, that is, a cap provided with a seal which upon the first opening, undergoes breakage, thus indicating the occurrence of the opening or tampering of the
10 container.

[0003] The purpose of the present invention is to catch the attention and incentivize the purchase of a bottle or container, especially in the eyes of a child, in that the relative cap, once separated from the bottle, can be used as a toy.

15 [0004] Such purpose is achieved by a cap as disclosed herein.

[0005] In accordance with an aspect, there is provided a cap for a container, comprising:

[0006] attachment means configured to mechanically attach the cap in a releasable manner to at least one further cap, the
20 at least one further cap comprising a first adjacent cap axially overlapping the cap;

[0007] wherein the attachment means comprise axial attachment means configured for attachment with the first adjacent cap, and

25 [0008] wherein the axial attachment means comprise at least one axially projecting tooth configured to engage with a skirt

of the first adjacent cap, the cap further comprising:

[0009] a central body extending along a central axis, the central body having a top, a base closing the top, and a lower end opposite the base, the central body being provided with a
5 threading on an inside thereof, the threading being configured for connection with the container;

[0010] a skirt annularly surrounding and joined to the central body, the skirt having a top surface,

[0011] wherein the skirt is radially spaced from the central
10 body to form a passage open to passage of an air flow at least by the skirt having an upper free edge which defines the passage in the top surface, and the skirt has a lower free edge, at the lower end of the central body.

[0012] In accordance with another aspect, there is provided a cap
15 for a container, comprising:

[0013] a central body extending along a central axis and having a cylindrical shape, the central body having with a lower end that is open, a top, and a base closing the top, the central body including internal threads configured to engage external
20 threads on a neck of the container;

[0014] an annular skirt that extends around the central axis to surround the central body, and is radially spaced from the central body, the skirt including a continuous wall having a lower free edge adjacent to the lower end of the central body
25 and an upper free edge adjacent to the base of the central body;
and

[0015] a plurality of tabs projecting radially outwardly from the central body and joining the central body to the skirt, wherein the skirt is radially spaced from the central body to form a passage open to passage of an air flow at least by the skirt having a top surface with the upper free edge that defines the passage for the passage of the air flow and the skirt has the lower free edge, at the lower end of the central body on a side opposite the base; and

[0016] a plurality of teeth projecting axially from the tabs along the central axis of the central body in a direction away from the base of the central body, the teeth being configured to engage by interference with an upper free edge of a skirt of a similar cap to connect the cap and the similar cap together.

[0017] The characteristics and advantages of the cap according to the present invention will be evident from the following description, made by way of a non-limiting example, with reference to the attached drawings, wherein:

[0018] - figure 1 shows a cap according to the present invention, according to one embodiment;

[0019] - figure 2 shows the cap in figure 1, according to another view;

[0020] - figure 3 shows a further view of the cap in figure 1;

[0021] - figure 4 shows a group of caps according to figure 1, laterally engaged with each other;

[0022] - figure 5 shows a group of caps according to figure 1, laterally engaged and overlapping each other, partially in

cross-section.

[0023] With reference to the appended drawings, reference numeral 1 globally denotes a cap, preferably made of plastic, for containers of liquids, especially for children, such as fruit
5 juices and other drinks.

[0024] The cap 1 comprises a central body 2, which extends along a central axis X.

[0025] The central body 2 is preferably a cylindrical shape on the outside and is provided with a threading 4 on the inside
10 for screwing to the neck of the container or to a straw of a flexible package.

[0026] The central body is closed on the top by a base 6.

[0027] Preferably moreover, the central body comprises a guarantee seal 8 suitable for breaking when the cap is unscrewed
15 from the container, for example positioned at the lower end of the central body 2, on the side opposite the base 6.

[0028] The construction and functional details of the guarantee seal 8 are described, for example, in the International Application WO 2008/050361 in the Applicant's name.

[0029] The cap 1 further comprises an annular skirt 10 which
20 extends around said central axis, outside the central body 2, surrounding it annularly.

[0030] Preferably the skirt 10 is made from a continuous wall, having a lower free edge 10a and an upper free edge 10b, at the
25 base 6 of the central body 2.

[0031] According to a preferred embodiment, an imaginary plane

orthogonal to the central axis X is defined for the cap 1, a top surface 11 defining the top of the skirt 10 lying on said plane.

5 [0032] The upper free edge 10b preferably presents itself as a circumference which defines an aperture 14 in said top surface 11.

[0033] Preferably the skirt 10 comprises a plurality of sides 12 which succeed in annular series around the central body, connecting to each other, preferably with rounded edges.

10 [0034] The series of said sides preferably forms a polygonal shape, for example hexagonal. As a result, the lower free edge 10a is a polygonal shape, for example hexagonal.

15 [0035] Preferably moreover, from the lower free edge 10a to the upper free edge 10b, the sides 12 are arched, convex towards the outside.

[0036] The central body 2 is joined to the skirt 10.

[0037] For example, the cap 1 comprises a plurality of tabs 16 projecting radially outwards from the central body 2, which join said central body to the skirt 10.

20 [0038] Preferably the tabs 16 are four in number, angularly equidistant.

25 [0039] The skirt is radially spaced from the central body, so that, thanks to the angularly spaced tabs, a passage open to passage of the air is created to prevent suffocation accidents due for example to the accidental swallowing of the cap by a child.

[0040] The cap 1 comprises releasable lateral attachment means suitable for laterally attaching a first cap 1 with a further similar cap 1', in a releasable manner. Said lateral means of attachment are suitable, in particular, for attaching the skirt 10 of the first cap 1 to the skirt of the second cap 1' alongside it laterally.

[0041] According to a preferred embodiment, said lateral attachment means are snap or interference operated.

[0042] For example, said lateral attachment means comprise a plurality of ribs 20 projecting outwards from the same side 12 of the skirt 10 of the first cap 1, in such a way that between two adjacent ribs 20 a seat 22 is formed for a rib projecting from the skirt of the further cap 1'.

[0043] Preferably the ribs 20 on the same side 12 are parallel to each other.

[0044] Preferably the rib 20 is of variable thickness from the lower free edge 10a towards the upper free edge 10b, for example of decreasing thickness, so as to form an arched outer surface without any sharp corners.

[0045] Preferably the adjacent sides 12 of the same cap 1 have a different number of ribs so as to engage with each other.

[0046] For example, according to a preferred embodiment, sides 12 with three or four ribs alternate annularly.

[0047] This way the two further ribs of the further cap 1' can be housed in the two seats 22 between the three ribs 20 of the first cap 1.

[0048] In other words, the ribs are divided in annularly separate groups, wherein one group of ribs contains a different number of ribs to the adjacent group.

5 [0049] Preferably moreover, the cap 1 comprises releasable axial attachment means, suitable for attaching a first cap 1 to a further similar cap 1'', axially overlapping the first, in a releasable manner.

10 [0050] Preferably said axial means of attachment are suitable for attaching the tabs 16 of the first cap 1 to the skirt of the further cap 1''.

[0051] According to a preferred embodiment, said axial attachment means are snap or interference operated.

[0052] For example, said axial attachment means comprise at least one tooth 30 projecting axially from the tab 16.

15 [0053] Preferably two teeth 30 projecting from diametrically opposite tabs 16 are provided.

[0054] In one embodiment, four teeth 30 projecting from respective tabs are provided.

20 [0055] The two teeth 30 are suitable for engaging by interference with the skirt of the further cap 1'', inserting themselves in the upper free edge 10b of said skirt.

[0056] Preferably said tooth 30 has an inclined outer surface, which acts as a guide to the insertion of the tooth in the upper free edge 10a.

25 [0057] According to the invention therefore, the cap 1 comprises

attachment means suitable for mechanically attaching said cap 1 in a releasable manner to at least one further similar cap 1', 1''.

5 [0058] Preferably moreover, the cap is made in one piece in plastic material, for example by moulding.

[0059] Innovatively, the cap according to the present invention makes a container or bottle eye-catching, especially in the eyes of a child, in that the caps can be used as a toy by connecting them together.

10 [0060] It is clear that a person skilled in the art may make modifications to the cap described above so as to satisfy contingent requirements.

[0061] For example, according to one embodiment variation (not shown), the skirt comprises a plurality of separate portions 15 which succeed each other annularly around the central body.

[0062] According to a further embodiment variation, the skirt has a circular or elliptical lower free edge.

[0063] According to yet a further embodiment, the skirt is the shape of a spherical cap.

20 [0064] For example, moreover, according to one embodiment variation, the ribs are convergent or divergent to/from each other.

[0065] Such variations are also included within the sphere of protection as defined by the following claims.

25

Claims

1. A cap for a container, comprising:

attachment means configured to mechanically attach the cap
5 in a releasable manner to at least one further cap, the at least
one further cap comprising a first adjacent cap axially
overlapping the cap;

wherein the attachment means comprise axial attachment
means configured for attachment with the first adjacent cap,
10 and

wherein the axial attachment means comprise at least one
axially projecting tooth configured to engage with a skirt of
the first adjacent cap, the cap further comprising:

a central body extending along a central axis, the central
15 body having a top, a base closing the top, and a lower end
opposite the base, the central body being provided with a
threading on an inside thereof, the threading being configured
for connection with the container;

a skirt annularly surrounding and joined to the central
20 body, the skirt having a top surface,

wherein the skirt is radially spaced from the central body
to form a passage open to passage of an air flow at least by
the skirt having an upper free edge which defines the passage
in the top surface, and the skirt has a lower free edge, at the
25 lower end of the central body.

2. The cap according to claim 1, wherein the at least one
further cap comprises a second adjacent cap, wherein the skirt
has a main axis, and wherein the skirt comprises a lateral

attachment means configured for lateral attachment with a skirt of the second adjacent cap.

3. The cap according to claim 2, wherein the lateral attachment means comprises a first plurality of spaced-apart ribs projecting outwardly from the skirt and forming respective seats between adjacent ones of the first plurality of ribs, each of the seats is configured to receive a respective one of a second plurality of ribs of the second adjacent cap.

4. The cap according to claim 3, wherein the first plurality of ribs are divided in annularly separated groups, wherein a first one of the groups of ribs contains a different number of ribs than an adjacent one of the groups of ribs.

5. The cap according to claim 4, wherein the first group of ribs comprises two or three ribs.

6. The cap according to any one of claims 2 to 5, wherein the skirt comprises a plurality of sides forming a polygonal shape.

7. The cap according to claim 4 or 5,
wherein the skirt comprises a plurality of sides forming a polygonal shape, and
wherein one of the first and second groups of ribs projects from one of the sides.

8. The cap according to claim 3, wherein the first plurality of ribs have an axial pattern.

9. The cap according to claim 8, wherein the first plurality of ribs are parallel to each other.

5 10. The cap according to claim 3, wherein each of the first plurality of ribs decreases in radial thickness axially, from the lower free edge towards the upper free edge of the skirt.

10 11. The cap according to claim 3, wherein the cap comprises angularly spaced tabs which extend radially to join the central body to the skirt.

12. The cap according to claim 11,
wherein each of the first plurality of ribs decreases in
15 radial thickness axially, from the lower free edge towards the upper free edge of the skirt, and

wherein the passage annularly surrounds the central body and is delimited by the upper free edge, wherein the at least one axially projecting tooth is configured to engage an upper
20 free edge of the skirt of the first adjacent cap.

13. The cap according to claim 12, wherein the at least one axially projecting tooth has an inclined guide surface for insertion on the skirt of the first adjacent cap.

25

14. The cap according to any one of claims 1 to 13, wherein the central body comprises a guarantee seal.

15. The cap according to any one of claims 1 to 14, comprising

a single piece of plastic material.

16. An assembly comprising a plurality of caps, each of the caps according to any one of claims 1 to 15, each of the caps positioned alongside adjacent ones of the caps, axially overlapping and attached to each other in a releasable manner.

17. The assembly according to claim 16, wherein a first passage defined by a first one of the caps is in communication with a second passage defined by a second one of the caps.

18. A cap for a container, comprising:

a central body extending along a central axis and having a cylindrical shape, the central body having with a lower end that is open, a top, and a base closing the top, the central body including internal threads configured to engage external threads on a neck of the container;

an annular skirt that extends around the central axis to surround the central body, and is radially spaced from the central body, the skirt including a continuous wall having a lower free edge adjacent to the lower end of the central body and an upper free edge adjacent to the base of the central body; and

a plurality of tabs projecting radially outwardly from the central body and joining the central body to the skirt, wherein the skirt is radially spaced from the central body to form a passage open to passage of an air flow at least by the skirt having a top surface with the upper free edge that defines the passage for the passage of the air flow and the skirt has the

lower free edge, at the lower end of the central body on a side opposite the base; and

5 a plurality of teeth projecting axially from the tabs along the central axis of the central body in a direction away from the base of the central body, the teeth being configured to engage by interference with an upper free edge of a skirt of a similar cap to connect the cap and the similar cap together.

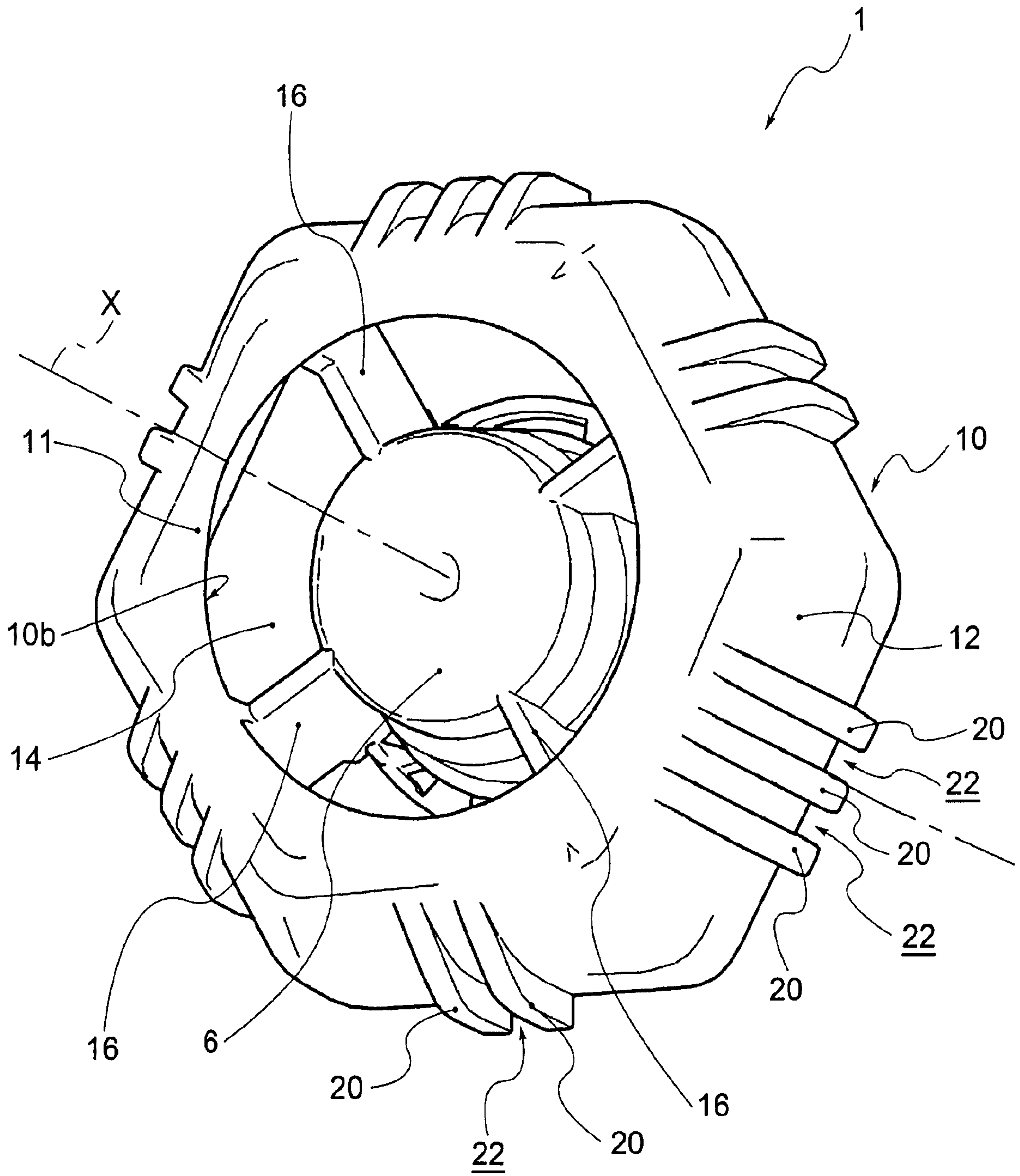


Fig. 1

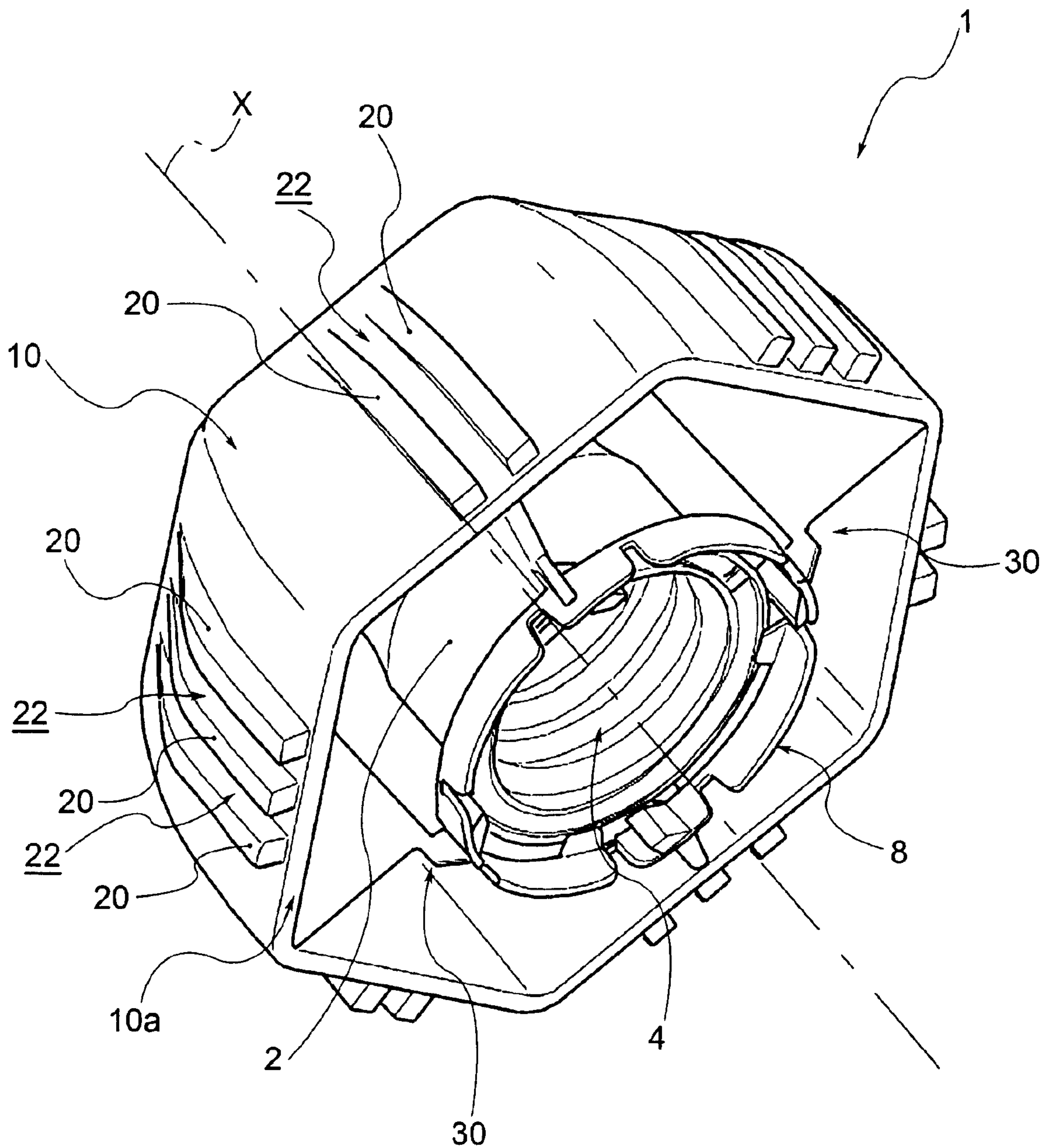


Fig. 2

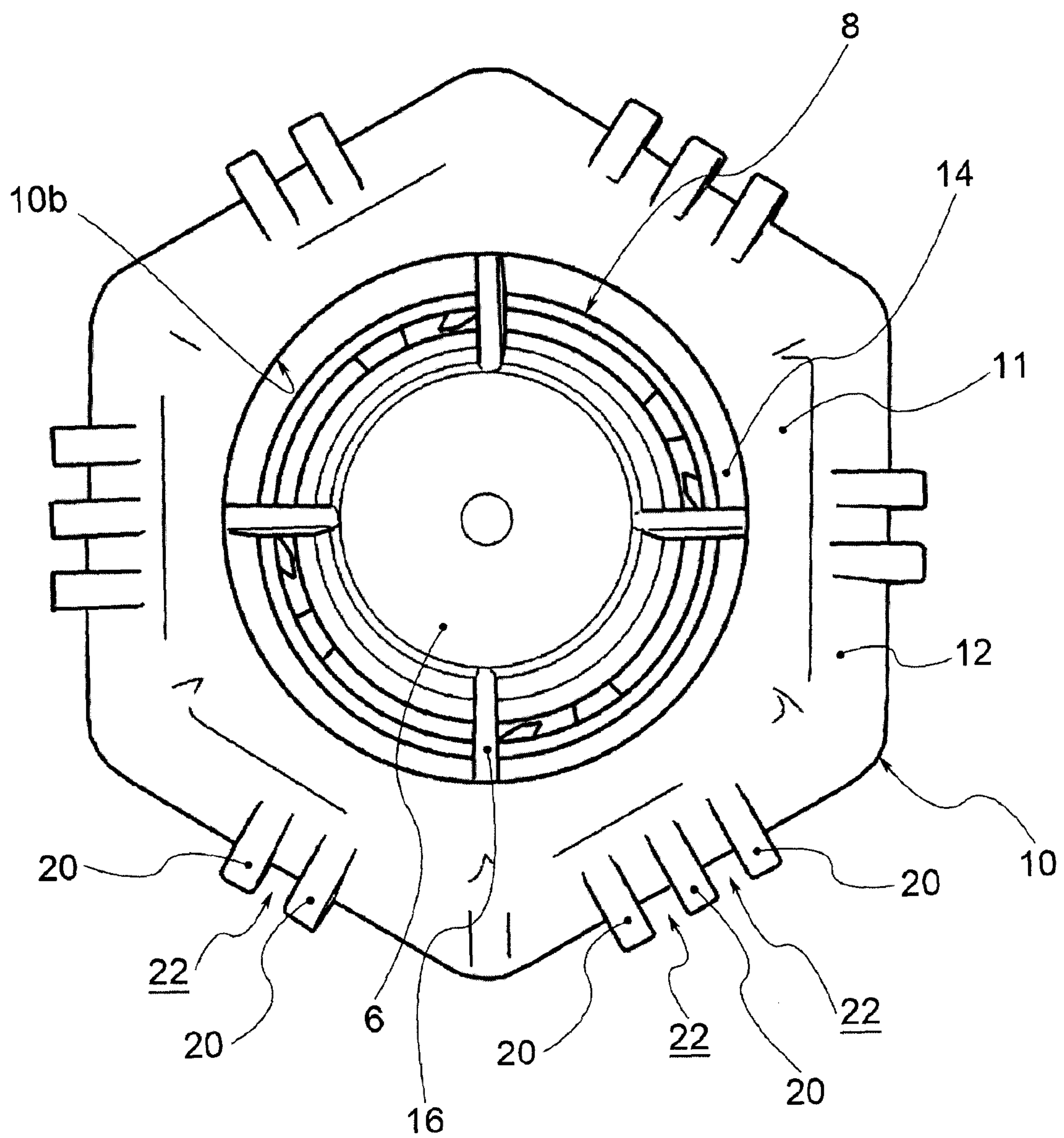


Fig.3

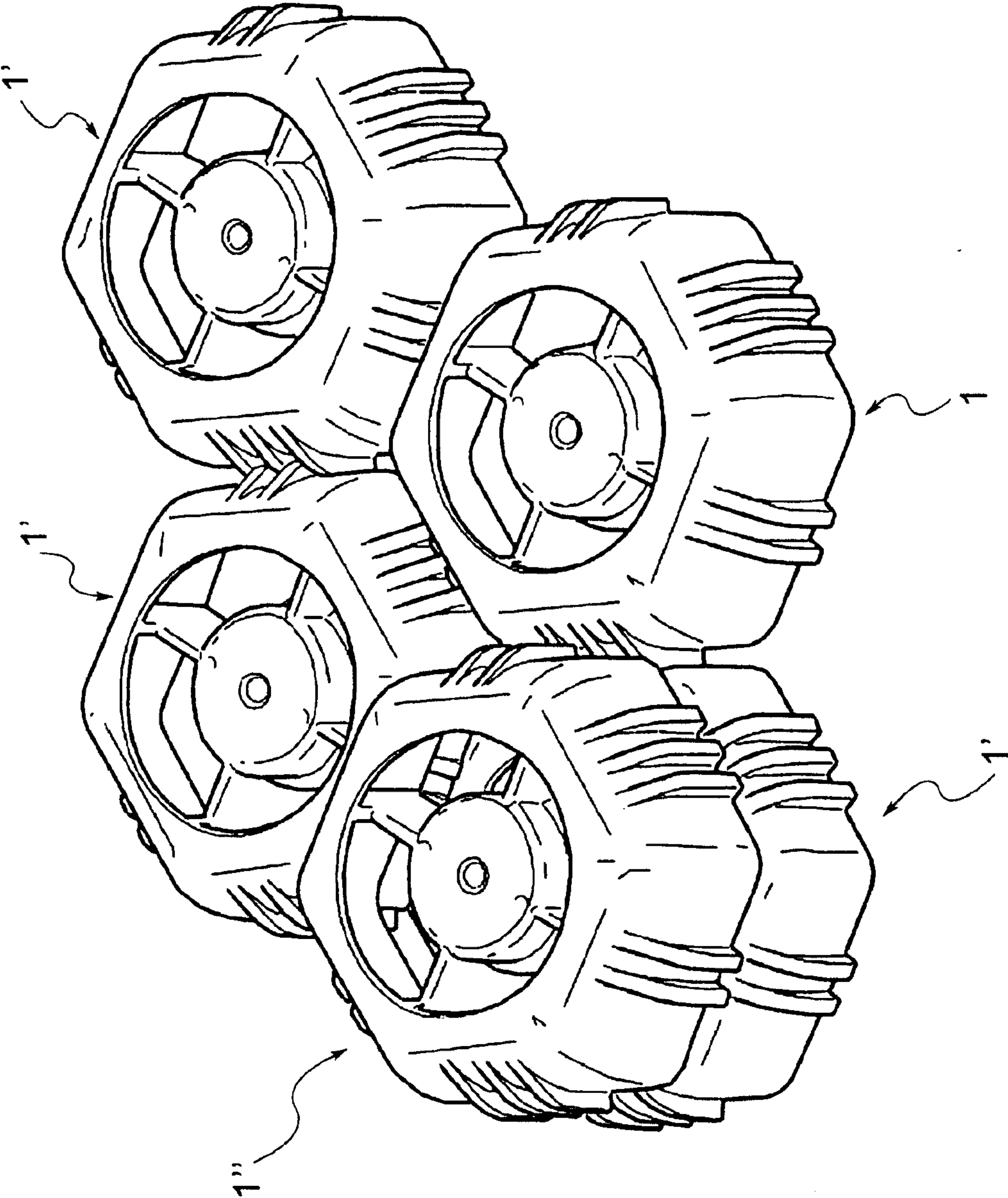


Fig. 4

