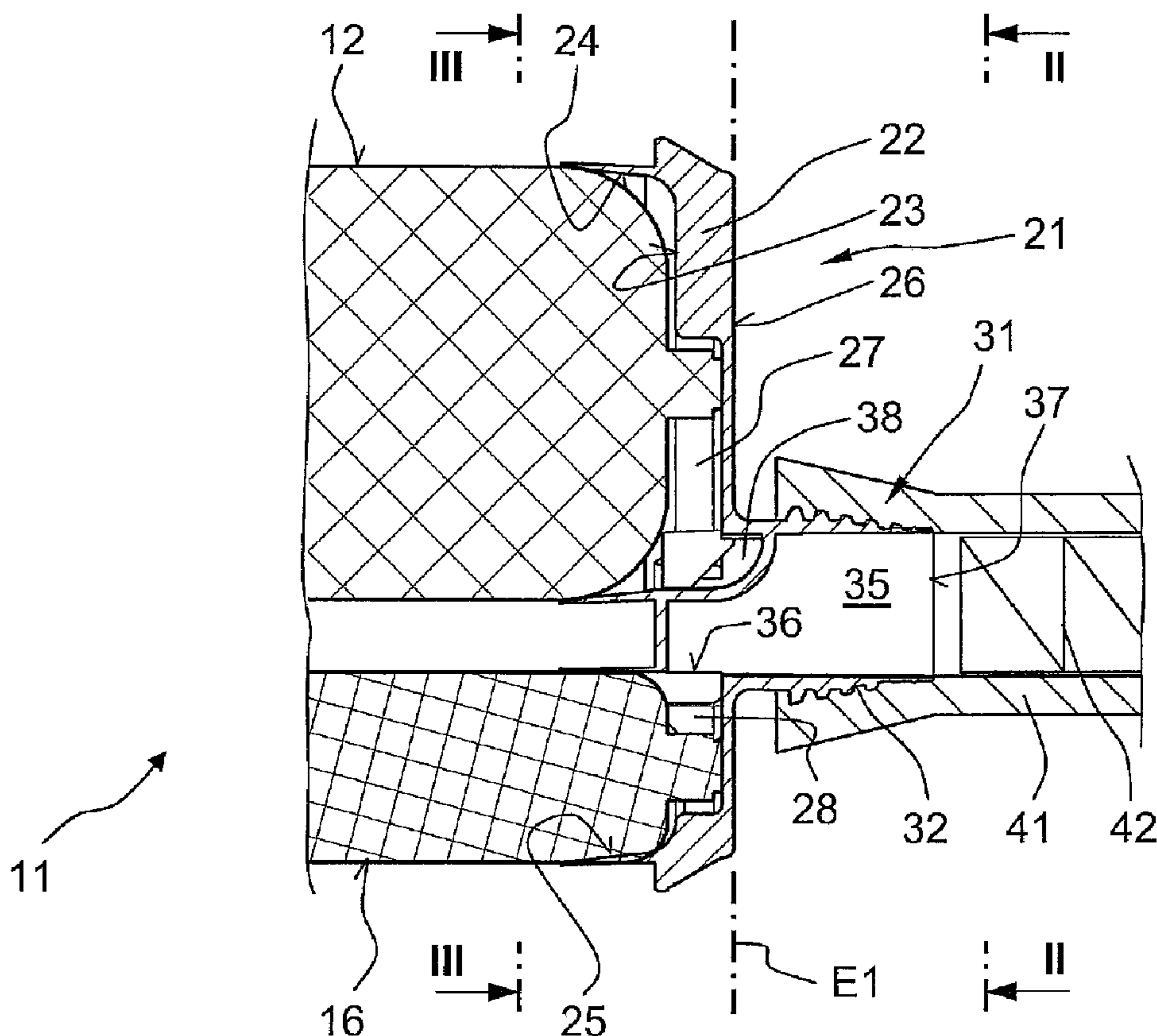




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(54) Titre : CONTENANT EN FUILLE METALLIQUE AVEC SACS SUCCESSIFS EN ALUMINIUM
(54) Title: FOIL CONTAINER WITH FOIL BAGS ARRANGED NEXT TO ONE ANOTHER



(57) **Abrégé/Abstract:**

A foil container (11) has two foil bags (12, 16) arranged next to one another for components of a multi-component compound which are stored separately from one another and has a one-piece head part (21), a head part (21) having a base plate (22) having

(57) **Abrégé(suite)/Abstract(continued):**

a contact side (23) at which a first receptacle portion (24) is provided for an end of the first foil bag (12) and a second receptacle portion (25) is provided for an end of the second foil bag (16), a mixer connection (31) projecting from a side (26) of the base plate opposite the contact side (23), the mixer connection (31) having a first outlet channel (38) with a first outlet opening at its free end (37) for one of the components of the multi-component compound and a second outlet channel (35) with a second outlet opening at its free end (37) for at least one additional component of the multi-component compound, with the first outlet channel (38) being divided at least in the area of the free end (37) of the mixer connection (31) into two separate partial channels (33, 34), between which the second outlet channel (35) is arranged, and with the base plate (22) having a first passage channel (27) for joining the first receptacle portion (24) with the first outlet channel (38) and a second passage channel (28) for joining the second receptacle portion (25) with the second outlet channel (35).

ABSTRACT OF THE DISCLOSURE

A foil container (11) has two foil bags (12, 16) arranged next to one another for components of a multi-component compound which are stored separately from one another and has a one-piece head part (21), a head part (21) having a base plate (22) having a contact side (23) at which a first receptacle portion (24) is provided for an end of the first foil bag (12) and a second receptacle portion (25) is provided for an end of the second foil bag (16), a mixer connection (31) projecting from a side (26) of the base plate opposite the contact side (23), the mixer connection (31) having a first outlet channel (38) with a first outlet opening at its free end (37) for one of the components of the multi-component compound and a second outlet channel (35) with a second outlet opening at its free end (37) for at least one additional component of the multi-component compound, with the first outlet channel (38) being divided at least in the area of the free end (37) of the mixer connection (31) into two separate partial channels (33, 34), between which the second outlet channel (35) is arranged, and with the base plate (22) having a first passage channel (27) for joining the first receptacle portion (24) with the first outlet channel (38) and a second passage channel (28) for joining the second receptacle portion (25) with the second outlet channel (35).

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a foil container for storing and inserting into a receptacle of a pressing-out device and having two foil bags arranged next to one another for components of a multi-component compound which are stored separately from one another, a head part which has a base plate having a contact side with a first receptacle portion for an end of the first foil bag and a second receptacle portion for an end of the second foil bag, and with a mixer connection projecting from the side of the base plate opposite the contact side, the mixer connection having a first outlet channel with a first outlet opening at its free end for one of the components of the multi-component compound and a second outlet channel with a second outlet opening at its free end for at least one additional component of the multi-component compound, and wherein a first passage channel for joining the first receptacle portion with the first outlet channel and a second passage channel for joining the second receptacle portion with the second outlet channel are provided at the base plate.

2. Description of the Prior Art

Multi-component compounds such as, for example, mortar compounds, foam compounds and sealing compounds are made available to the user as two-

component or multi-component compounds in cartridges and foil containers. Foil containers have proven successful as packaging for compounds of this type and are distinguished in particular by the small proportion of material to be disposed of after the compound is dispensed compared to cartridges. Further, foil containers are simple and inexpensive to produce.

The foil container is inserted or guided into a receptacle of a pressing-out device such as, e.g., a dispenser. The components are pressed out simultaneously through the outlet channels in the mixer connection of the head part by a pressing-out mechanism so as to be guided through a mixer housing with a mixer element in which the individual components are mixed to form the desired compound and are dispensed at the application location.

German Utility Model DE 91 00 054 U1 discloses a foil container with two foil bags arranged side by side. The mixer connection of the head part has a dividing wall for creating two outlet channels located next to one another, each of them feeding one component of the two-component compound to a mixer element. This feeding in the mixer connection is also known as a side-by-side feed.

The known solution is disadvantageous in that, owing to the dividing wall in the mixer connection, the components flow parallel next to one another along the inner wall of the mixer connection when the foil container is squeezed. Accordingly, a high mixing energy or a long mixing path with a

correspondingly designed mixer element is required for a sufficiently thorough mixing of the components. Consequently, high pressing-out forces are required for dispensing the multi-component compound.

German Publication DE 41 38 351 A1 discloses a mixer housing which can be secured to a head part and which has a mixing element. The mixer housing has a receptacle for a pre-mixer which is arranged in front of the mixing element and which is constructed as a separate element. The pre-mixer deforms the flow of components exiting from the mixer connection in a side-by-side feed to form segment-shaped layers which are fed to the mixing element in the mixer housing. This improves the mixing of the components in the mixing element, reducing the required mixing path and the pressing-out forces needed to dispense the components arranged in the foil container.

It is disadvantageous in the known solution that the pre-mixer is a separate element which can be accidentally lost, for example, and that the mixer housing for the mixing element must have a special shape for receiving the pre-mixer. Therefore, commercially available mixer housings cannot be used.

SUMMARY OF THE INVENTION

It is the object of the invention to provide a foil container with two foil bags which are arranged next to one another and with a head part which insures

uniform mixing results over the entire pressing-out process with different types of mixer elements and with reduced pressing-out forces, and which is simple to produce.

This and other objects of the present invention, which will become apparent hereinafter, are achieved by providing a foil container in which the first outlet channel is divided at least in the area of the free end of the mixer connection into two separate partial channels between which the second outlet channel is located.

The second outlet channel spaces apart the two partial channels from one another in such a way that they are completely separated from one another at least in the area of the free end of the mixer connection. When dispensed from the foil container, the flows of all components are divided into segments directly in the head part which is advantageously formed of one piece in its entirety. The flow of at least one component is enclosed on at least two sides by the divided flow of the other component. Conventional mixer housings can be arranged at the mixer connection and, because of the divided or pre-divided components, the mixing elements arranged therein can be formed substantially shorter than in the previously known foil containers, while ensuring consistent mixing results.

Further, the foil bags in the foil container according to the present invention can be spaced farther apart than in the previously known foil

containers, without forming undercuts which substantially impede production, especially of a head part formed of one piece. The improved flexibility of spacing allows much larger ranges of component ratios to be achieved with the foil container according to the invention. For example, foil containers with a component ratio of 1:1 to 10:1 or even greater can be realized. In particular, simple foil containers with a component ratio of 5:1 can be realized.

The mixer connection advantageously has a circular outlet, and the second outlet channel completely intersects the circle and forms at least two separated circle segments adjacent to one another which form the partial channels of the first outlet channel.

The head part is advantageously made of a plastic material by injection molding and, also advantageously, is formed in one piece. The arrangement of the second outlet channel in the first outlet channel ensures a simple removal from the mold. Aside from facilitating removal from the mold, the sealing of the mixer connection with the head part is also improved by the simpler geometry of the head part which is advantageously formed of one piece.

The dividing walls of the partial channels which separate them from the second outlet channel, are preferably formed integrally with the mixer connection so that the quantity of elements for manufacturing and handling the foil container is reduced. The entire head part is advantageously formed of one

piece and the foil bags are glued into the corresponding receptacle portions. Thereby, the foil container can be produced simply and economically.

The cross-sectional areas of the two partial channels are preferably identical in a plane parallel to a plane defined by the base plate so that the flows of components are divided symmetrically, and an optimum use is made of all of the chambers of the advantageously static mixing element, starting already from the first mixing step. When the mixer connection has a circular outlet, the second outlet channel advantageously extends through its center, so that the double rotational symmetry insures that the flows of all components are always divided in equal portions, in an optional step, through the center or through the circle center.

The ratio of the sum of cross-sectional areas of the two partial channels to the cross-sectional area of the second outlet channel advantageously corresponds to the ratio of the cross-sectional area of the first foil bag to the cross-sectional area of the second foil bag, with reference to a plane parallel to the plane defined by the base plate. This insures advantageous mixing results are ensured.

The novel features of the present invention which are considered as characteristic for the invention, are set forth in the appended claims. The invention itself, however, both as to its construction and its mode of operation, together with additional advantages and objects thereof, will be best understood

from the following detailed description of preferred embodiment, when read with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS:

The drawings show:

- Fig. 1 a partial, cross-sectional view of a foil container according to the present invention;
- Fig. 2 a plan view of the head part along line II-II in Fig. 1; and
- Fig. 3 a plan view of the head part along line III-III in Fig. 1, without the foil bags.

Identical parts are provided with the same reference numerals in the drawings.

DETAILED DESCRIPTION OF
THE PREFERRED EMBODIMENT

The foil container 11 according to the present invention for storing and for insertion into a receptacle of a pressing-out device, not shown, and which is

shown in Figs. 1-3, has two foil bags 12 and 16 for components of a multi-component compound which are stored separately from one another. The foil bags 12 and 16 are arranged next to one another. With a two-component compound, each foil bag 12 and 16 has one of the components. With a compound formed of more than two components, at least one of the foil bags 12 or 16 can have a corresponding number of foil bag chambers arranged next to one another so that a plurality of components are stored separately from one another in a foil bag.

Further, the foil container 11 has a one-piece head part 21 with a base plate 22 having, at a contact side 23, a first receptacle portion 24 for one end of the first foil bag 12 and a second receptacle portion 25 for one end of the second foil bag 16. A mixer connection 31 with an external thread 32 for the connection of a mixer housing 41 with a mixer element 42 is provided at a side 26 of the base plate 22 located opposite from the contact side 23. Arranged in the mixer connection 31 are a first outlet channel 38 with a first outlet opening at its free end 37 for one of the components of the multi-component compound and a second outlet channel 35 with a second outlet opening at its free end 37 for at least one other component of the multi-component compound. In an area of the free end 37 of the mixer connection 31, the first outlet channel 38 is divided into two partial channels 33 and 34 which are completely separated from one another and between which the second outlet channel 35 is arranged.

Further, a first passage channel 27 for joining the first receptacle portion 24 with the first outlet channel 38 or with its partial channels 33 and 34 and a second passage channel 28 for joining the second receptacle portion 25 with the second outlet channel 35 are provided in the base plate 22.

During the pressing-out process with the press-out device, not shown, the foil bags 12 and 16 are opened, for example, actively by puncturing means or passively, e.g., by a weakening of the foil, whereby the components of the multi-component compound located in the foil bag 12 are dispensed from the foil container 11 through the first passage channel 27, the first outlet channel 38 and the partial channels 33 and 34 which are separated from one another, and the components of the multi-component compound located in foil bag 16 are dispensed from the foil container 11 through the second passage channel 28 and the second outlet channel 35. In a variant of this construction, at least one of the foil bags is provided in some areas with at least one weakening of the foil material so that this foil bag is torn, and accordingly opened, for example, under pressure generated by a pressing-out piston of the pressing-out device, not shown.

The outlet of the mixer connection 31 has a substantially circular cross section. The cross-sectional areas of the two partial channels 33 and 34 in a plane parallel to the plane E1, which is defined by the base plate 22, substantially correspond to circle segments and are of identical dimensions.

The ratio of the cross-sectional area of the sum of the partial channels 33 and 34 to the cross-sectional area of the second outlet channel 35 corresponds to the ratio of the cross-sectional area of the first foil bag 12 to the cross-sectional area of the second foil bag 16 with reference to a plane parallel to the plane E1 defined by the base plate 22.

The second outlet channel 35 and the second passage channel 28 are arranged parallel to one another in direction of the plane E1 defined by the base plate 22. To create a through-opening 36 for the component located in the foil bag 16 between the second outlet channel 35 and the second passage channel 28, the latter at least touch one another along a portion, or their cross sections intersect or overlap in some areas. The partial channels 33 and 34 of the first outlet channel 38 and the first passage channel 27 are arranged parallel to one another in direction of the plane E1 defined by the base plate, and their cross sections intersect or overlap in some areas. The head part 21 accordingly has a geometric shape which ensures that it can be produced in a simple manner, particularly when the head part 21 is formed of one piece and/or by injection molding. The production of a one-piece head part 21 is possible, for example, with simple mold forms which are only moved perpendicular to the plane E1 defined by the base plate 22.

Though the present invention was shown and described with references to the preferred embodiment, such is merely illustrative of the present invention

and is not to be construed as a limitation thereof, and various modifications of the present invention will be apparent to those skilled in the art. It is, therefore, not intended that the present invention be limited to the disclosed embodiment or details thereof, and the present invention includes all variations and/or alternative embodiments within the spirit and scope of the present invention as defined by the appended claims.

WHAT IS CLAIMED IS:

1. A foil container for storing and inserting into a receptacle of a pressing-out device, comprising two foil bags (12, 16) arranged next to one another for components of a multi-component compound which are stored separately from one another; a head part (21) having a base plate (22) having a contact side (23) provided with a first receptacle portion (24) for an end of the first foil bag (12) and a second receptacle portion (25) for an end of the second foil bag (16); and a mixer connection (31) projecting from a side (26) of the base plate (22) opposite to the contact side (23), the mixer connection (31) having a first outlet channel (38) with a first outlet opening at its free end (37) for one of the components of the multi-component compound and a second outlet channel (35) with a second outlet opening at its free end (37) for at least one additional component of the multi-component compound, the first outlet channel (38) being divided at least in the area of the free end (37) of the mixer connection (31) into two separate partial channels (33, 34) between which the second outlet channel (35) is arranged, the base plate (22) having a first passage channel (27) for joining the first receptacle portion (24) with the first outlet channel (38) and a second passage channel (28) for joining the second receptacle portion (25) with the second outlet channel (35).

2. A foil container according to claim 1, wherein dividing walls separating the partial channels (33, 34) from the second outlet channel (35) are formed integral with the mixer connection (31).

3. A foil container according to claim 1, wherein a cross-sectional areas of the two partial channels (33, 34) are identically dimensioned in a plane parallel to a plane (E1) defined by the base plate (22).

4. A foil container according to claim 1, wherein a ratio of the sum of cross-sectional areas of the partial channels (33, 34) to a cross-sectional area of the second outlet channel (35) corresponds to a ratio of a cross-sectional area of the first foil bag (12) to a cross-sectional area of the second foil bag (16), with reference to a plane parallel to the plane (E1) defined by the base plate (22).

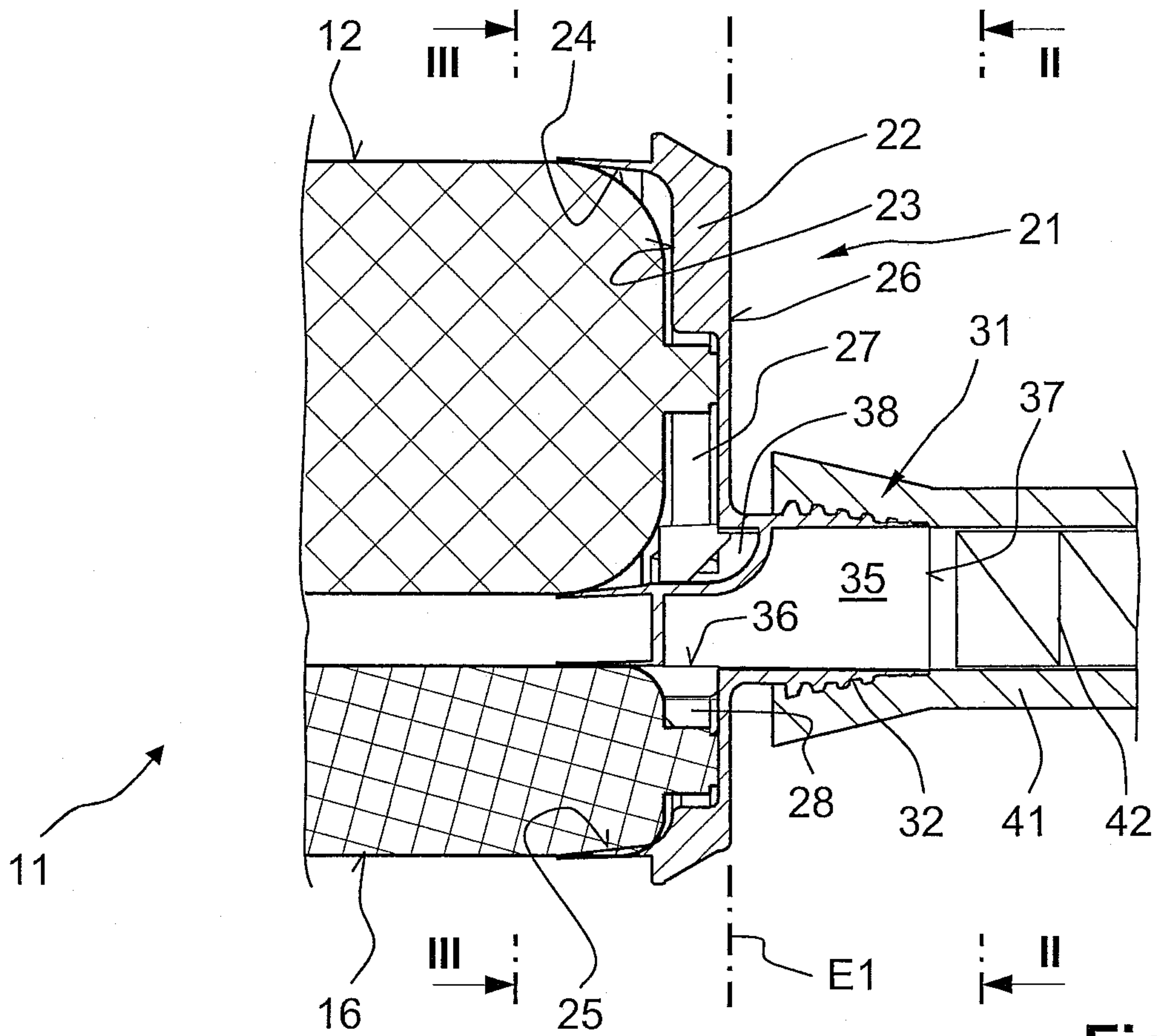


Fig. 1

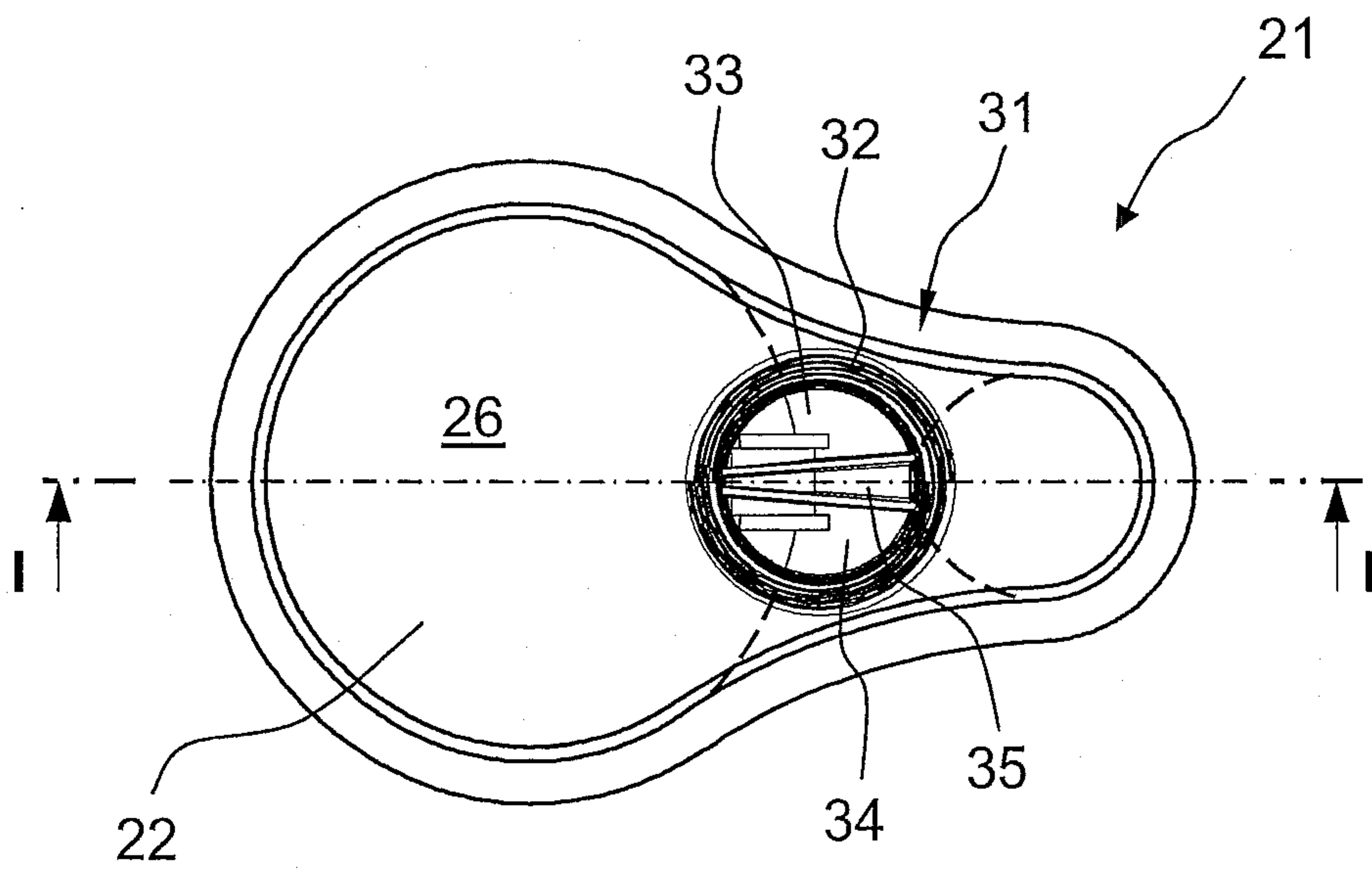


Fig. 2

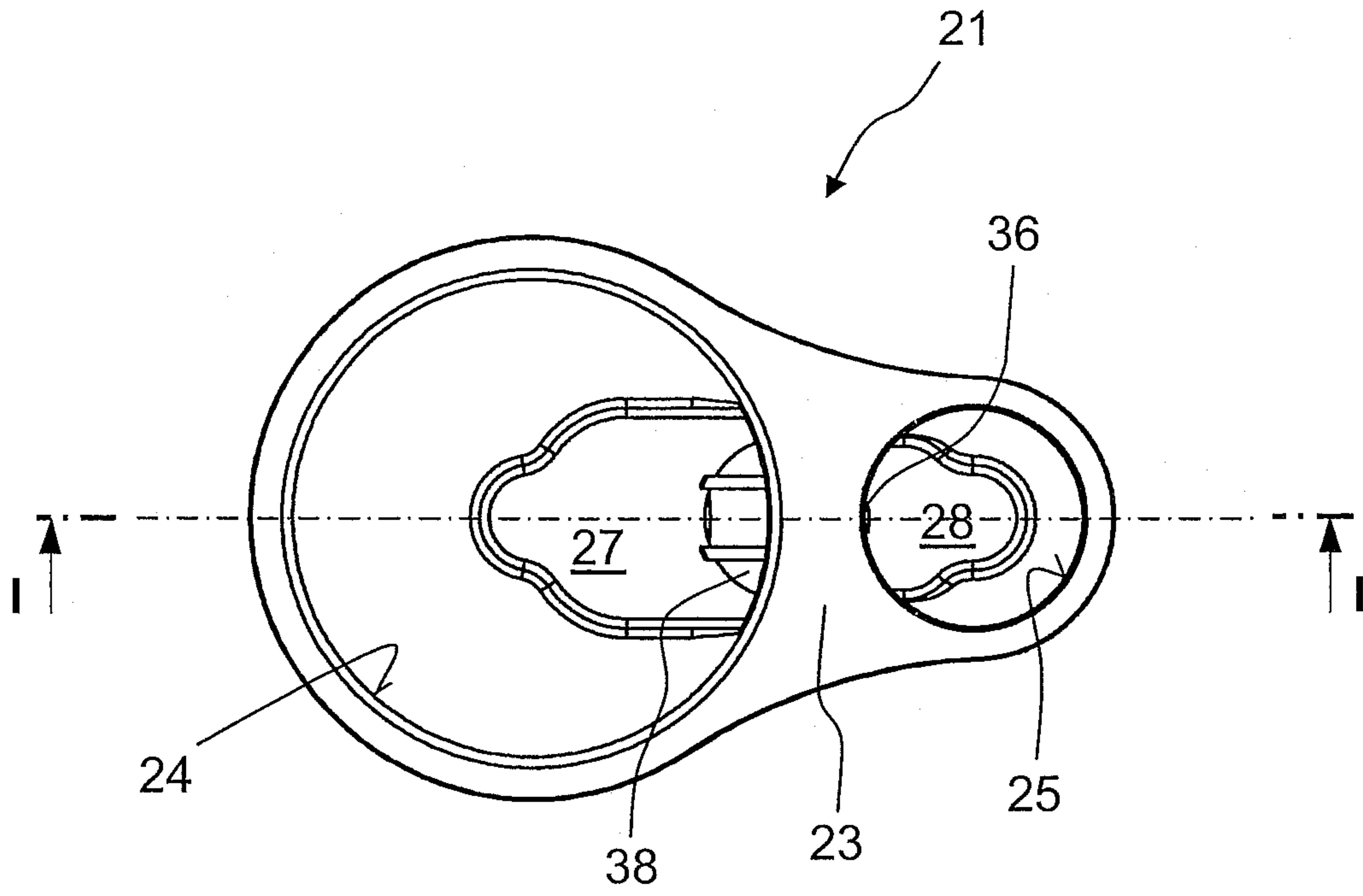


Fig. 3

