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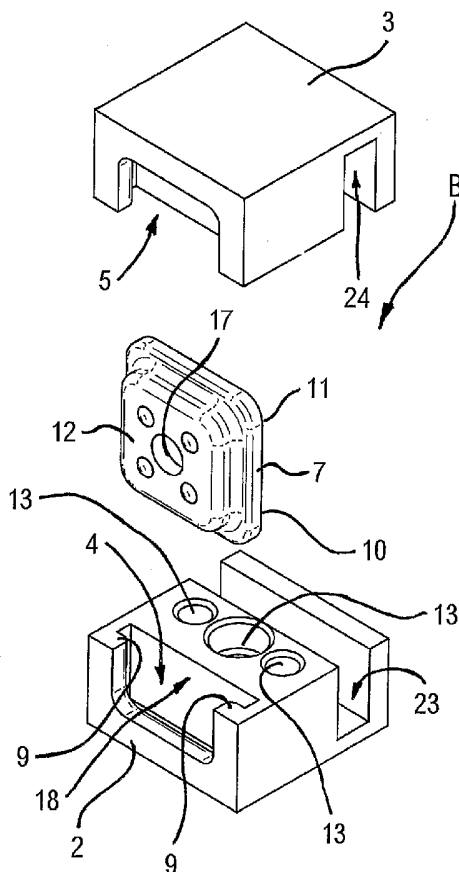
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(54) Title: APPARATUS FOR SUPPORTING OBJECTS



(57) Abstract: Apparatus for fixing objects to support means comprises first jaw means (2) and second jaw means (3), said first jaw means (2) and said second jaw means (3) delimiting cavity means (6) extending substantially along a plane parallel to a direction according to which said first jaw means (2) and said second jaw means (3) are brought one near the other to be tightened against each other; apparatus for hanging objects comprises container means (102) suitable for receiving said objects and support means (103) suitable for supporting said container means (102), said container means (102) comprising groove means (106) arranged to receive said support means (103).

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**Apparatuses for supporting objects**

The present invention relates to an apparatus for fixing objects to corresponding support devices, in particular for fixing furnishing elements to walls or support structures.

5 The invention furthermore refers to an apparatus for hanging objects, in particular to an apparatus usable as a furnishing element such as a midway unit for a kitchen, or as a support for containers, or accessories, for rooms in general.

Midway units are known, for example for kitchens, comprising a  
10 bar fixed to a wall in such a way as to be arranged substantially horizontally.

With the bar at least one container is associated that is provided with a chamber suitable for receiving objects to be hung such as kitchen utensils, for example soup ladles, or  
15 cleaning implements, such as sponges and/or soap.

The container furthermore comprises a pair of rods, each one of which having an end fixed to the container.

The rods lead away from the container in such a way as to be substantially perpendicular to a plane defined by a top  
20 opening of the aforementioned chamber.

At a further end of each of the aforementioned rods, opposite said end, a bent portion is provided in such a way as to constitute a hook by means of which each rod can be connected to the bar disclosed above.

25 During fitting, the bent portions of the rods associated with the container are arranged around the bar in such a way that the container is hung on the bar and is positioned below the latter.

In this way, the container rotates around the bar until a  
30 lower zone thereof, which acts as an abutment element, comes to rest against a wall to which the bar is fixed, so that the consequent interaction with the wall prevents the container from rotating further.

In other words, the bar prevents the container from moving by descending in a substantially vertical direction, whereas the wall prevents the container from rotating around the bar.

When the container has been arranged in the work configuration disclosed above, the chamber with which it is provided can be  
5 filled with objects.

One drawback of the midway units disclosed above consists of the fact that the container, by interacting with the wall, may damage it by producing marks or scratches on it.

10 Furthermore, the container may be made to slide along the bar and slide along the wall, thereby marking it.

A further drawback of the midway units disclosed above consists of the fact that they are of small aesthetic appearance inasmuch as the aforementioned bar constitutes a  
15 support element that projects from the wall and is constantly visible to a user.

A further drawback of the midway units disclosed above consists of the fact that two containers associated with the same bar cannot be brought into contact with each other  
20 because of the interference between the rods that lead away laterally from each of them.

One object of the present invention is to obtain an apparatus for fixing objects that is easy to make and enables a reliable connection between the aforementioned objects and  
25 corresponding support structures.

Another object of the invention is to obtain an apparatus that enables objects to be fixed to support structures, whatever their shapes and dimensions are.

A further object of the invention is to obtain an apparatus  
30 that enables objects and support structures made of different materials such as metals, plastic materials and wood to be fixed together.

A still further object of the invention is to obtain an apparatus that enables many types of fixing to be achieved and

which is provided with a pleasant appearance such as to be able to be used to connect furnishing elements to corresponding support structures.

5 Still another object of the invention is to obtain an apparatus for fixing objects that comprises a limited number of components, thus being easy to install.

In a first aspect of the invention, an apparatus for fixing objects to support means is provided, comprising first jaw means and second jaw means, in which said first jaw means and  
10 said second jaw means delimit cavity means extending substantially along a plane parallel to a direction according to which said first jaw means and said second jaw means are brought one near the other to be tightened against each other. The apparatus furthermore comprises plate means suitable for  
15 being received inside cavity means and connectable with the aforementioned objects, or with the aforementioned support means.

Owing to this aspect of the invention, it is possible to obtain an apparatus that is rather simple to install and  
20 suitable for enabling effective fixing.

The apparatus according to the invention is furthermore very versatile and enables different types of fixing to be accomplished.

In particular, the aforementioned objects can be fixed to the  
25 relative support structures according to a desired orientation.

The apparatus according to the invention can furthermore be used to connect objects to relative support structures, the  
30 aforementioned objects and the aforementioned support structures being made from materials belonging to a vast range of types.

According to a second aspect of the invention, an apparatus is provided for hanging objects, comprising container means suitable for receiving said objects and support means suitable

for supporting said container means, characterised in that said container means comprises groove means arranged to receive said support means.

Owing to the invention, it is possible to obtain an apparatus  
5 for hanging objects in which the container means is maintained at a constant distance from a wall to which the support means is fixed.

Furthermore, as the groove means is obtained directly on the container means, it is possible to bring such container means  
10 near to further container means without any empty space being placed between them.

The presence of the groove means enables container means to run along the support means: this enables a user to easily position, and at his or her own discretion, the container  
15 means on the support means.

In one embodiment, with the support means a plurality of container means can be associated having extensions such as to completely cover the support means so as to make the latter invisible to a user, contributing to considerably improving  
20 the aesthetic appearance of the apparatus.

The invention may be better understood and implemented with reference to the attached drawings that illustrate certain non-limiting examples of embodiments, in which:

Figure 1 is a perspective view of an apparatus for fixing  
25 objects;

Figure 2 is an exploded view of the apparatus in Figure 1;

Figure 3 is a side view of the apparatus in Figure 1;

Figure 4 is a section taken along plane IV-IV in Figure 3;

Figure 5 is a perspective view of the apparatus in Figure 1  
30 associated with a bar suitable for supporting containers, this bar constituting, together with the aforementioned containers, a midway unit of a kitchen furnishing;

Figure 6 is a view like the one in Figure 5, showing the apparatus associated with a bar for holding towels;

- Figure 7 is a perspective view of a container for magazines associated with plate means of the apparatus in Figure 1;
- Figure 8 is a perspective view of a shelf associated with plate means of the apparatus in Figure 1;
- 5 Figure 9 is a perspective view of a support element for a bar of soap associated with the plate means of the apparatus in Figure 1;
- Figure 10 is a detail of Figure 9;
- Figure 11 is a perspective view of a support element for  
10 lavatory paper associated with the plate means of the apparatus in Figure 1;
- Figure 12 is a perspective view of a mirror, a support arm of which is associated with the plate means of the apparatus in Figure 1;
- 15 Figure 13 is a perspective view of a container for toothbrushes associated with a respective support element by a version of the apparatus;
- Figure 14 is a partial and exploded view of the container for toothbrushes in Figure 13;
- 20 Figure 15 is a perspective view of another version of the apparatus;
- Figure 16 is an exploded view of the apparatus in Figure 15, showing a conical bush internally associatable with the apparatus;
- 25 Figure 17 is an exploded view of a further version of the apparatus, showing an elastic ring internally associatable with a conical seat of the apparatus;
- Figure 18 is an exploded view of a still further version of the apparatus;
- 30 Figure 19 is a partially fragmentary perspective front view of a mirror with one frame of which the apparatus in Figure 17 is associated;

Figure 20 is an exploded and fragmentary perspective view of the apparatus in Figure 19 and of a profiled element with which the aforementioned frame is made;

Figure 21 is a perspective view from behind of the apparatus  
5 in Figure 19 fixed to the aforementioned frame;

Figure 22 is a perspective side view of an apparatus for hanging objects;

Figure 23 is a view like the one in Figure 22 showing an apparatus provided with container means made according to one  
10 version;

Figure 24 is a view like the one in Figure 22 showing an apparatus provided with container means made according to a further version;

Figure 25 is a perspective view from the bottom showing  
15 container means associated with an end zone of the support means;

Figure 26 is a perspective view from below of a still further version of the container means;

Figure 27 is a partial section taken along a vertical plane of  
20 an apparatus for hanging objects provided with support means having a trapezoidal section;

Figure 28 is a section like the one in Figure 27 showing an apparatus provided with support means consisting of two bars with a circular section connected by a further bar with a  
25 rectangular section;

Figure 29 is a section like the one in Figure 27 showing an apparatus provided with support means having an "L"-shaped section;

Figure 30 is a section like the one in Figure 27 showing an  
30 apparatus provided with support means consisting of a pair of bars having a circular section;

Figure 31 is a section like the one in Figure 27 showing an apparatus provided with support means having a cross-shaped

section and engaging groove means having a rectangular section;

Figure 32 is a section like the one in Figure 27 showing an apparatus provided with support means having a cross-shaped  
5 section and engaging groove means having an upturned T-shaped section.

With reference to Figures 1 to 5, there is shown an apparatus 1 comprising a first jaw 2 and a second jaw 3 suitable for being tightened against each another.

10 The first jaw 2 and the second jaw 3 are shaped in such a way that the tightening pressure is distributed on end regions of the first jaw 2 and of the second jaw 3.

The first jaw 2 and the second jaw 3 are respectively provided with a first groove 4 and with a second groove 5 which, in one  
15 operating configuration A of the apparatus 1, shown in Figure 4, cooperate together to delimit a cavity 6 suitable for receiving a plate 7, as will be illustrated in greater detail below.

The cavity 6 is defined in an end portion 19 of the apparatus  
20 1.

The cavity 6 has an opening 8 through which connecting means - not shown - fixed to the plate 7 can project from the apparatus 1 to be fixed to an object, or to a support structure of the object.

25 The opening 8 is peripherally delimited by a shoulder 9 obtained in the first jaw 2 and in the second jaw 3 and suitable for preventing the plate 7 from emerging from the cavity 6, when the apparatus 1 is in the operating configuration A.

30 The apparatus 1 is assembled in the manner disclosed below. Initially, the apparatus is kept in a non-operative configuration, indicated by B in Figure 2, in which an end portion 10 of the plate 7 is inserted inside the first groove 4.

Subsequently, the second jaw 3 is associated with the first jaw 2, in such a way that a further end portion 11 of the plate 7, opposite the aforementioned end portion 10, is received inside the second groove 5.

5 The end portion 10 and the further end portion 11 are received in a shapingly coupled manner inside the cavity 7 and are shaped in such a way as to prevent rotation of the plate 7 in relation to the first jaw 2 and to the second jaw 3.

The plate 7 is substantially shaped like a frustum of a hollow  
10 pyramid and has a central zone 12, which in operating configuration A is projected towards the opening 8 to facilitate the connection of the plate 7 with an object or with a support structure located outside the apparatus 1.

The first jaw 2 is provided with a plurality of recesses 13  
15 suitable for receiving corresponding protruding elements 14 projecting from the second jaw 3.

The protruding elements 14 and the recesses 13 enable correct  
positioning of the first jaw 2 to be achieved in relation to the second jaw 3, in addition to preventing the corresponding  
20 rotation of the first jaw 2 and of the second jaw 3.

The first jaw 2 and the second jaw 3 can be connected by known connecting means.

Such connecting means may comprise a screw suitable for being  
received in a respective chamber 15, obtained in the first jaw  
25 2 and provided at the bottom with an opening 69, and provided with a threaded shank suitable for engaging in a corresponding threaded hole 16 obtained in the second jaw 3.

The plate 7 can be fixed to the objects, or to the support  
structures, using known methods, for example by welding, or by  
30 using screws.

The plate 7 may comprise appendages integral with the central zone 12 and projecting outside the cavity 7, such appendages being appropriately shaped in such a way as to be able to be

connected with objects, or with support structures, whatever their shapes and dimensions.

As shown in Figures 1 and 2, the plate 7 may be provided, at the central zone 12, with a hole 17 through which a screw passes, the head of which is received in the gap defined by the central zone 12 of the plate 7 and by a wall 18 delimiting the cavity 6.

With reference also to Figures 5 and 6, in a further end portion 20 of the apparatus 1, opposite the end portion 19, a seat 21 is defined that is suitable for receiving a bar 22 that constitutes a support element for containers, such a bar 22 and such containers together constituting a midway unit 25 of furnishing for kitchens.

The seat 21 is defined by a first throat 23, obtained in the first jaw 2, and by a second throat 24, obtained in the second jaw 3, the first throat 23 and the second throat 24 facing each other when the apparatus 1 is in operating configuration A.

In the case shown in Figure 5, the object to be supported is constituted by the bar 22, whereas the support structure is constituted by a wall to which the apparatuses 1 associated with the ends of the bar 22 are connected by means of screws projecting from the respective plates 7.

With reference to Figure 6, a support element for towels is shown 26, that is installable inside a water closet, comprising a pair of apparatuses 1 associated with a further bar 27.

The connection of the further bar 27 with the apparatuses 1 and the fixing of the latter to a wall of the aforementioned water closet occur in a similar manner to those illustrated with reference to the midway unit 25 shown in Figure 5.

Alternatively, the seat 21 may receive an elongated element that constitutes a support structure, in which case an object

to be supported may be fixed to the plate 7, as shown in Figures 7 to 12 that will be disclosed below.

A further example, which is not shown, is that of an indoor lamp, wherein an apparatus 1 enables a spotlight to be  
5 connected to a respective standard lamp.

In this case, the plate 7 can be connected to the aforementioned light whilst an elongated element constituting a portion of the aforementioned standard lamp can be received inside the seat 21.

10 Owing to the apparatus according to the invention, an object can be positioned on a respective support structure with extreme simplicity.

The apparatus 1, can in fact be made to slide along the aforementioned elongated element - when the first jaw 2 and  
15 the second jaw 3 are not still firmly tightened against each other - until it is placed in the desired position.

Subsequently, by stably pressing the first jaw 2 against the second jaw 3, it is possible to make the apparatus 1 integral with the elongated element, preventing further sliding  
20 thereof.

Figures 7 to 12 show some applications of the apparatus 1 disclosed above.

Figure 7 shows a container for magazines 28 made of metal wire 33 that is appropriately shaped and provided with a crosspiece  
25 29 to which a plate 7 of an apparatus 1 is fixed.

Figure 8 shows a shelf 30 provided with a frame 31 to which a plate 7 of an apparatus 1 is fixed.

Figures 9 and 10 show a support element for a bar of soap 32 provided with a further frame 34 to which a plate 7 of an  
30 apparatus 1 is fixed.

Figure 11 shows a support element for a roll 35 of lavatory paper provided with a fork 36 to which a plate 7 of an apparatus 1 is fixed.

Figure 12 shows a mirror 37 connected to an end of a support arm 39 having a further end 40 fixed to a plate 7 of an apparatus 1.

5 With reference to Figure 13, a container for toothbrushes 41 is shown comprising a glass 50 supported by a ring 42 associated with an upright 43 by means of a fixing device 44 consisting of a pair of apparatuses 1a, 1b made according to a version of the invention.

10 As shown in Figure 14, the first apparatus 1a comprises a first jaw 2a and a second jaw 3a suitable for being tightened against each other.

Similarly, the second apparatus 1b comprises a further first jaw 2b and a further second jaw 3b suitable for being tightened against each other.

15 The first jaw 2a and the second jaw 3a define a cavity 6a suitable for receiving a plate 7a provided with an appendage 45 that can be made integral with the upright 43.

The further first jaw 2b and the further second jaw 3b define a further cavity 6b suitable for receiving a further plate 7b  
20 integral with the ring 42.

The second jaw 3a is provided, in a zone 46 thereof that does not interact with the first jaw 2a, with hinge means 47 suitable for cooperating with further hinge means 49 obtained in a further zone 48 of the further second jaw means 3b that  
25 does not interact with the further first jaw means 2b.

Owing to the hinge means 47 and the further hinge means 49, the first apparatus 1a and the second apparatus 1b can be rotated in relation to one another and as a result the glass 50 can be rotated in relation to the upright 43.

30 With reference to Figure 15 an apparatus 1 is shown that is made according to a version in which the first jaw 2 and the second jaw 3 define, at the further end portion 20 of the apparatus 1 opposite the end portion 19 in which the cavity 6 is obtained, a further seat 51 having a substantially

cylindrical shape and suitable for receiving an elongated support element, associatable with the apparatus 1, having a correspondingly cylindrical shape.

Alternatively, as shown in Figure 16, inside the further seat  
5 51 a conical bush 52 is insertible that is suitable for improving the locking of the apparatus 1 on the aforementioned elongated support element.

The conical bush 52 is suitable for being operationally associated with fixing devices connected to the elongated  
10 support element and provided with active portions equipped with conical surfaces suitable for cooperating in a shapingly coupled manner with the conical bush.

With reference to Figure 17, an apparatus 1 is shown that is made according to a version in which the first jaw 2 and the  
15 second jaw 3 define at the further end portion 20 of the apparatus 1 opposite the end portion 19 in which the cavity 6 is obtained, a still further seat 53 having a frustum conical shape.

The still further seat 53 is delimited by an opening 55  
20 arranged at the larger base of the frustum of cone and by a further opening arranged at one of the lesser bases of the frustum of cone.

The still further seat 53 is suitable for receiving inside  
25 itself an elongated support element provided with at least one portion having a shape such as to be able to be associated in a shapingly coupled manner with the still further seat 53.

Between the still further seat 53 and the elongated support  
30 element a ring 54 can be interposed that is made of elastically deformable material that is compressed between the elongated support element and the still further seat 53.

The apparatus 1 is fitted by first lowering the ring 54 onto the elongated support element.

The elongated support element is then inserted inside the still further seat 53 through the opening 55 and is made to slide in the direction of the further opening 56.

In this way, the ring 54 is progressively compressed until it is able to slide inside the still further seat 53 and is locked between the latter and the elongated support element.

Locking the ring 54 inside the still further seat 53 enables effective mutual fixing of the apparatus 1 and of the elongated support element.

If it is necessary to remove the apparatus 1 from the elongated support element, it is sufficient to make the ring 54 slide towards the opening 55, thereby enabling the elongated support element to shift in relation to the still further seat 53.

With reference to Figure 18, an apparatus 1 is shown that is made according to a version in which the first jaw 2 and the second jaw 3 define at the further end portion 20 of the apparatus 1, opposite the end portion 19 in which the cavity 6 is obtained, a further cavity 57 similar to the cavity 7.

The further cavity 57 is suitable for receiving a further plate that is not shown that is substantially identical to the plate 7.

In this way, the plate 7 can be fixed to an object to be supported whereas the further plate can be fixed to a support structure, or vice versa.

The apparatus 1 made according to the version shown in Figure 18 can be connected to one or more further apparatuses 1 of the same type or of the types shown in Figures 1, 13, 15, 17, to constitute a spacer element that can be interposed between an object to be supported and a relative support structure.

In this case, a pair of apparatuses 1 can be connected by a first plate received in a first cavity of a first apparatus of the pair of apparatuses and a second plate received in a second cavity of a second apparatus of the pair of

apparatuses, the aforementioned first plate and second plate being fixed together at the corresponding central zones.

In a similar manner to those disclosed above, it is possible to connect a plurality of apparatuses rather than a pair thereof to obtain a spacer of preset length.

With reference to Figures 19 to 21, an apparatus 1 of the type disclosed in Figure 17 is shown, arranged to fix a light 58 to a frame 59 of a mirror 60.

The light 58 is provided with an elongated support member 61 that is received inside the still further cavity 53 defined by the first jaw 2 and by the second jaw 3 of the apparatus 1.

The apparatus 1 is furthermore provided with a cavity 6 suitable for receiving a plate 7 to which a "T"-shaped appendage 62 is fitted.

The frame 59 consists of a metal profiled section 64, one face of which opposite the face that is in view during use of the mirror, has a groove 65 running longitudinally along it.

Inside the groove 65 a fixing block 66 can be inserted.

The fixing block 66 is associatable in a shapingly coupled manner with the groove 65 and can slide inside it to be located in a preset position.

The fixing block 66 is provided with a pair of threaded holes 67 in which respective screws 68 engage passing through holes 63 obtained in the appendage 62.

In this way it is possible to associate a light with a mirror avoiding the necessity of making holes in the wall to which the mirror is hung, such holes being intended to receive support elements for the aforementioned light.

It is furthermore possible to obtain a furnishing element comprising a mirror and a light associated therewith in which the position of the light in relation to the mirror can be varied with extreme simplicity.

With reference to Figures 22 to 32, an apparatus for hanging objects 101 is shown comprising container means 102 suitable

for receiving the aforementioned objects and support means 103 suitable for supporting the container means 102.

The container means 102 comprises a chamber 104 inside which the objects can be positioned.

5 The apparatus 101 may be part of a furnishing element, constituting, for example, a midway unit suitable for being installed in a kitchen for supporting utensils, or a rest element for furnishings of different types to be applied to a wall of a water closet.

10 The container means 102 may have different shapes and dimensions.

Figures 22 and 23 show container means 102 provided with shallow chambers 104 and which are arranged to contain objects received to rest on a bottom wall 105 of the chambers 104 in  
15 such a way as to be arranged substantially horizontally, in particular the apparatus 101 shown in Figure 23 is suitable for constituting a rest element for a bar of soap.

Figure 24 shows container means 102 provided with a rather deep chamber 104 that is therefore suitable for receiving  
20 objects substantially vertically, in particular such an apparatus is suitable for being installed in a kitchen to constitute a receptacle for ladles and the like.

As shown in Figures 25 and 26, the container means 102 is provided, in a lower portion 107 thereof, with groove means  
25 106 suitable for receiving the support means 103 inside itself.

The groove means 106 and the support means 103 are shaped in such a way as to prevent the container means 102 from rotating in relation to the support means 103 when the latter engages  
30 in the groove means 106.

In one embodiment, the support means 103 and the groove means 106 have a shape that is not axially symmetrical in relation to one of its longitudinal axes.

The support means 103 can be fixed to a support element, such as a wall, in such a way as to be arranged substantially horizontally.

In this case, the container means 102 can be positioned above  
5 the support means 103 in such a way that a prevailing part 108 thereof leads away upwardly in relation to the support means 103.

The support means 103, owing to its shape and the shape of the corresponding groove means 106 arranged to receive it, acts as  
10 a constraining element for the container means 102, preventing the container means 102 from moving in a vertical direction and rotating around the support means 103.

In this way, it is not necessary to provide for parts of the container means 102 coming into contact with the above wall,  
15 which eliminates the risks of damage to the wall.

In other words, the shape of the support means 103 and the shape of the groove means 106 are such as to enable the container means 102 to maintain a preset position in relation to the support means 103, after being located on the latter,  
20 only through the action of its own weight.

The apparatus according to the invention is furthermore rather pleasing aesthetically inasmuch as rods are not provided that connect the container means 102 with the support means 103 and furthermore the support means 103 may be almost completely  
25 hidden from the view of a user by the container means 102 positioned thereupon.

In addition, the support means 103 constitutes a rail along which the container means 102 can slide in such a way as to be able to be located in a required position.

30 As shown in Figures 25 and 26, the groove means 106 may comprise a first groove 206 and a second groove 216 arranged substantially perpendicular to each other.

This enables the container means 102 to be positioned at a bending zone 109 of the support means 103, in which a first

length 114 and a second length 115 of the support means 103 form a right angle.

In this way, it is possible to maximise the extension of the zone of the support means 103 with which container means 102  
5 can be associated.

Owing to the presence of the first groove 206 and of the second groove 216, a user may furthermore position the container means 102 on the support means 103 according to different orientations.

10 To vary the orientation of the container means 102 in relation to the support means 103, the aforementioned user may lift up the container means 102 to take them to a position in which the groove means 106 is not engaged by the support means 103, rotate the container means 102 by 90° and subsequently insert  
15 again the support means 103 inside the groove means 106.

As shown in Figure 24, the groove means 106 may comprise a third groove 226 arranged substantially parallel to the first groove 206 and separated from the latter by a preset distance. This enables the extension of the portion of the container  
20 means 102 that protrudes from the support means to be selected at a user's discretion.

In other words, it is possible to vary the distance of the container means 102 from the aforementioned wall to which the support means 103 is fixed.

25 As shown in Figures 25 and 26, the lower portion 107 of the container means 102 in which the groove means 106 is obtained can consist of a full body or can be provided with cavities 110 arranged to lighten the container means 102.

With reference to Figures 27 to 32, some conformations of the  
30 support means 103 and of the groove means 106 associated therewith are shown.

As shown in Figure 27, the support means 103 may comprise a first support element 103a having a trapezoid section and

which is suitable for being received in a corresponding trapezoid section.

As shown in Figure 28, the support means 103 may comprise a second support element 103b received in a corresponding second  
5 groove 106b.

The second support element 103b consists of a first bar 111 and of a second bar 112 - both having a circular section - connected by a third bar 113, having a substantially rectangular section.

10 As shown in Figure 29, the support means 103 may comprise a third support element 103c consisting of an elongated element having an "L"-shaped section and which is suitable for being received inside a third groove 106c having a rectangular section.

15 As shown in Figure 30, the support means 103 may comprise a fourth support element 103d consisting of a first rod 116 and of a second rod 117 - both having a circular section - and suitable for being received inside a fourth groove 106d having a rectangular-shaped section.

20 The first rod 116 and the second rod 117 are arranged at opposite vertices of the aforementioned rectangle.

As shown in Figure 31, the support means 103 may comprise a fifth support element 103e consisting of an elongated element  
18 having a cross-shaped section and being received inside a  
25 fifth groove 106e having a rectangular-shaped section.

The elongated element 118 is arranged in such a way that the portions thereof that define the ends of the arms of the aforementioned cross are positioned at the vertices of the aforementioned rectangle.

30 As shown in Figure 32, the support means 103 may comprise a sixth support element 103f consisting of a further elongated element 119 and which is suitable for being received inside a sixth groove 106f having an upturned "T"-shaped section.

## CLAIMS

1. Apparatus for fixing objects to support means, comprising first jaw means (2) and second jaw means (3), wherein said first jaw means (2) and said second jaw means (3) delimit cavity means (6) extending substantially along a plane parallel to a direction according to which said first jaw means (2) and said second jaw means (3) are brought one near the other to be tightened against each other.
2. Apparatus according to claim 1, and furthermore comprising plate means (7) suitable for being received inside said cavity means (6) and connectable with said objects, or with said support means.
3. Apparatus according to claim 2, wherein said plate means (7) is associatable with said cavity means (6) in a shapingly coupled manner.
4. Apparatus according to any preceding claim, wherein said first jaw means (2) comprises first cavity means (4) cooperating with second cavity means (5) with which said second jaw means (3) is provided for defining said cavity means (6).
5. Apparatus according to any preceding claim, and further comprising an opening (8) delimited by shoulder means (9).
6. Apparatus according to any preceding claim, wherein said first jaw means (2) is movable between a non-operating configuration (B), in which said first jaw means (2) is far from said second jaw means (3), and an operating configuration (A), in which said first jaw means is pressed into contact with said second jaw means (3).
7. Apparatus according to claim 6, and further comprising locking means suitable for maintaining said first jaw

- means (2) and said second jaw means (3) in said operating configuration (A).
8. Apparatus according to claim 7, wherein said locking means comprises a screw passing through opening means (69) obtained in said first jaw means (2) and engaged in threaded-hole means (16) obtained in said second jaw means (3).
9. Apparatus according to any preceding claim and further comprising aligning means (13, 14) suitable for enabling correct positioning of said first jaw means (2) in relation to said second jaw means (3).
10. Apparatus according to claim 9, wherein said aligning means comprises protruding means (14) cooperating with recess means (13).
11. Apparatus according to claim 10, wherein said recess means (13) is obtained in said first jaw means (2) and said protruding means is projected from said second jaw means (3).
12. Apparatus according to any preceding claim and further comprising fixing means (21, 51, 53, 57) arranged to fix said objects, or said support means to said apparatus (1).
13. Apparatus according to claim 12, wherein said fixing means (21, 51, 53) is arranged in an end zone (20) of said apparatus (1) opposite a further end zone (19) of said apparatus (1) in which said cavity means (6) is defined.
14. Apparatus according to claim 12, or 13, wherein said fixing means comprises seat means (21, 51, 53, 57) arranged to receive inside parts of said objects, or of said support means.
15. Apparatus according to claim 14, wherein said first jaw means (2) comprises first throat means cooperating with second throat means with which said second jaw

- means (3) is provided for defining said seat means (21, 51, 53, 57).
16. Apparatus according to claim 14, or 15, wherein said seat means (21) has a prism shape.
- 5 17. Apparatus according to claim 14, or 15, wherein said seat means (51) has a cylindrical shape.
18. Apparatus according to claim 17, and further comprising frustum conical bush means (52) receivable inside said seat means (51).
- 10 19. Apparatus according to claim 14, or 15, wherein said seat means (53) has a frustum conical shape.
20. Apparatus according to claim 18, or 19, and further comprising elastically deformable presser means (54) suitable for promoting the fixing together of said parts and said apparatus (1).
- 15 21. Apparatus according to claim 20, wherein said elastically deformable presser means (54) is interposed between said parts and said seat means (51, 53).
- 20 22. Apparatus according to claim 20, or 21, wherein said elastically deformable presser means comprises an elastic ring (54).
23. Apparatus according to claim 14, or 15, wherein said seat means comprises further cavity means (57) substantially similar to said cavity means (7).
- 25 24. Apparatus according to any preceding claim, and further comprising hinge means (47) projecting from said first jaw means (2) and suitable for cooperating with further hinge means (49) of a further apparatus (1b) similar to said apparatus (1a) to enable the relative rotation of said apparatus (1a) and of said further apparatus (1b).
- 30 25. Apparatus according to claim 24, wherein said hinge means (47) is obtained in a zone (48) of said second

jaw means (3a, 3b) that does not interact with said first jaw means (2a, 2b).

26. Apparatus for hanging objects, comprising container means (102) suitable for receiving said objects and support means (103) suitable for supporting said container means (102), characterised in that said container means (102) comprises groove means (106) arranged to receive said support means (103).
27. Apparatus according to claim 26, wherein said groove means (106) and said support means (103) are shaped in such a way as to prevent said container means (102) from rotating in relation to said support means (103), when said support means (103) is received in said groove means (106).
28. Apparatus according to claim 26, or 27, wherein said groove means (106) has a non axially symmetrical traverse section.
29. Apparatus according to any one of claims 26 to 28, wherein said support means (103) has a non axially symmetrical traverse section.
30. Apparatus according to any one of claims 26 to 29, wherein said groove means (106) is shaped in such a way as to enable said container means (102) to run along said support means (103).
31. Apparatus according to any one of claims 26 to 30, wherein said groove means (106) is obtained in an end part (107) of said container means (102).
32. Apparatus according to any one of claims 26 to 31, wherein said support means (103) is suitable for being fixed to a support element in such a way as to be arranged substantially horizontally.
33. Apparatus according to claim 32, wherein, during use, a prevailing portion (108) of said container means (102) is projected above said support means (103).

34. Apparatus according to claim 32, or 33, wherein said container means (102) is maintained associated with said support means (103) through the action of its own weight.
- 5 35. Apparatus according to any one of claims 26 to 34, wherein said groove means (106) comprises at least a first groove (206) and a second groove (216) intersecting each another.
- 10 36. Apparatus according to claim 35, wherein said first groove (206) and said second groove (216) are arranged substantially perpendicular to each another.
- 15 37. Apparatus according to any one of claims 26 to 36 wherein said groove means (106) comprises at least one groove (206) and a further groove (226) arranged substantially parallel to each other.
- 20 38. Apparatus according to any one of claims 26 to 37, wherein said support means (103) comprises bar means (103a) having a trapezoid section and said groove means (106) comprises a groove (6a) having a trapezoid section and which is suitable for receiving said bar means (103a) in a shapingly coupled manner.
- 25 39. Apparatus according to any one of claims 26 to 37, wherein said support means (103) comprises a first bar (111) and a second bar (112) interconnected by a third bar (113) and said groove means comprises a first groove suitable for receiving said first bar (111), a second groove suitable for receiving said second bar (112) and a third groove suitable for connecting said first groove and said second groove and suitable for receiving said third bar (113).
- 30 40. Apparatus according to claim 39, wherein said first bar (111) and said second bar (112) have a substantially circular section and said third bar (113) has a substantially rectangular section.

41. Apparatus according to any one of claims 26 to 37, wherein said support means (103) comprises further bar means (103c) having an L-shaped section and said groove means (106) comprises a further groove (106c) having a substantially rectangular section.
- 5 42. Apparatus according to any one of claims 26 to 37, wherein said support means (103) comprises a first rod (116) and a second rod (117) and said groove means (106) comprises a throat (106d) having a rectangular
- 10 shape.
43. Apparatus according to claim 42, wherein said first rod (116) and said second rod (117) are in use positioned at vertices of the aforementioned rectangle.
- 15 44. Apparatus according to any one of claims 26 to 37, wherein said support means (103) comprises an elongated element (118) having a cross-shaped section and said groove means (106) comprises a seat (106e) having a substantially rectangular section.
- 20 45. Apparatus according to any one of claims 26 to 37, wherein said support means (103) comprises a further elongated element (119) having a cross-shaped section and said groove means (106) comprises a further seat (106f) having a T-shaped section.

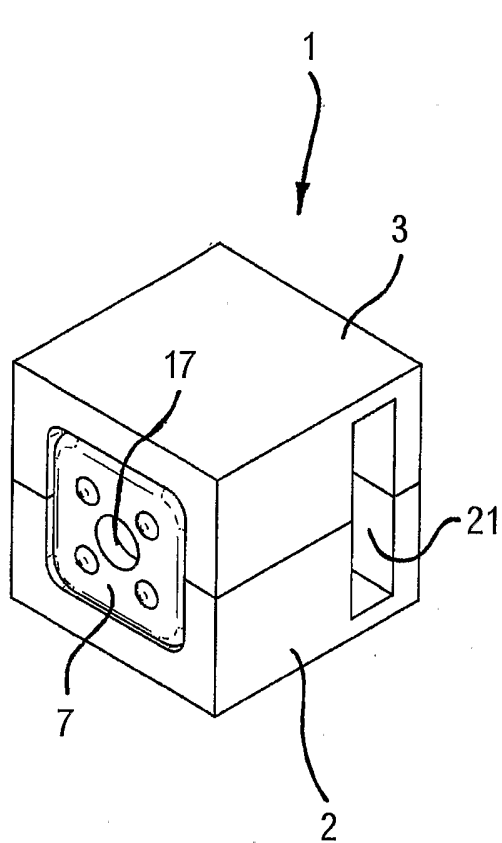


Fig. 1

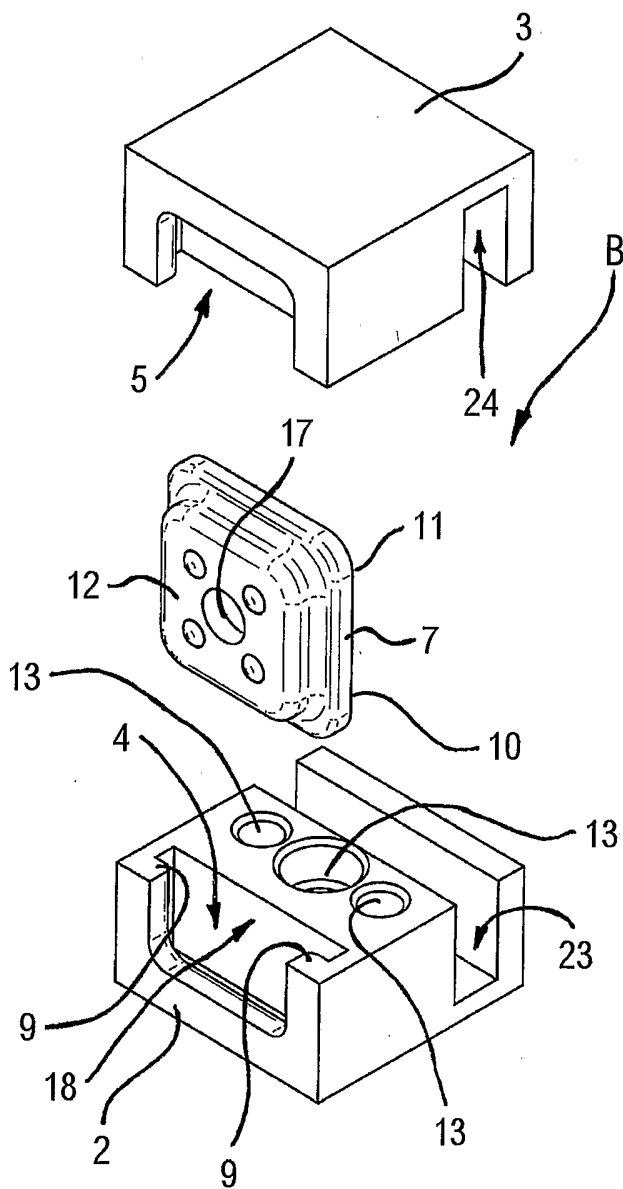


Fig. 2

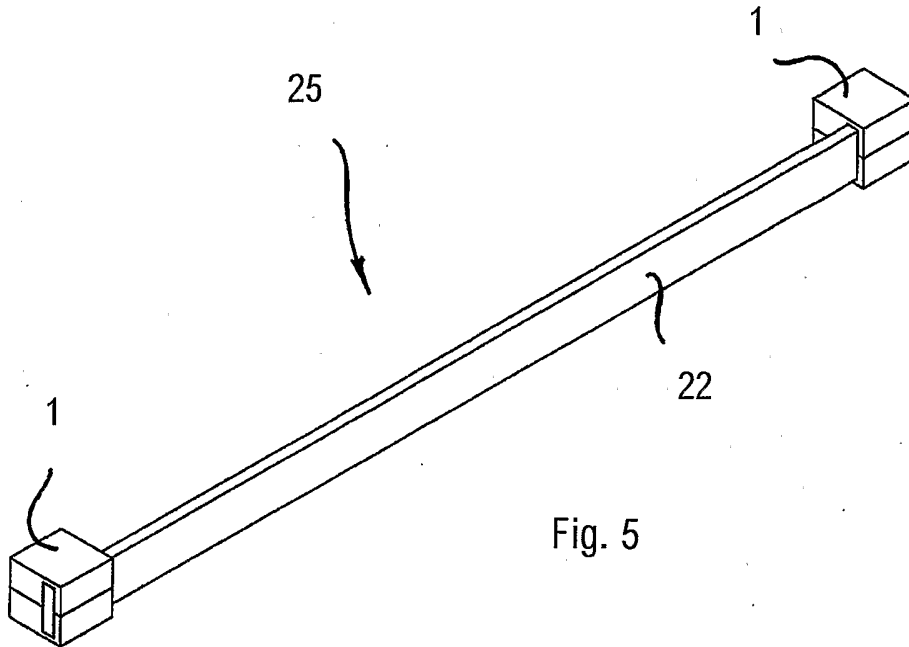


Fig. 5

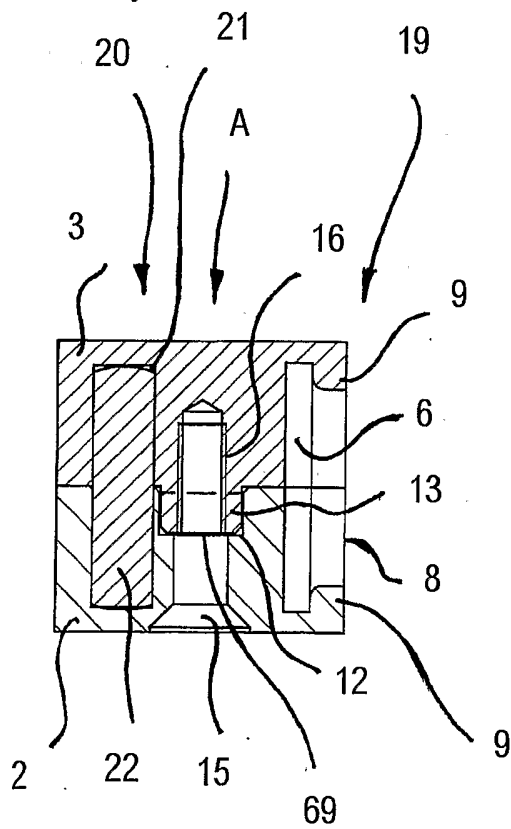


Fig. 4

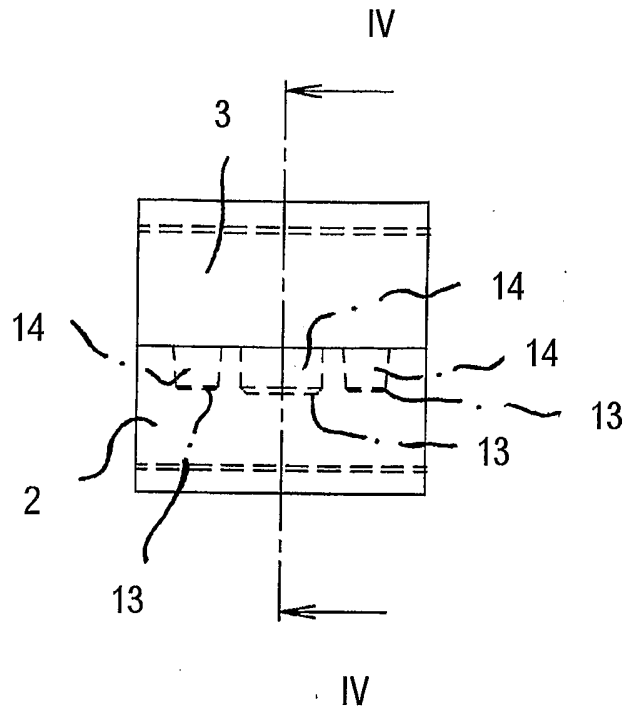
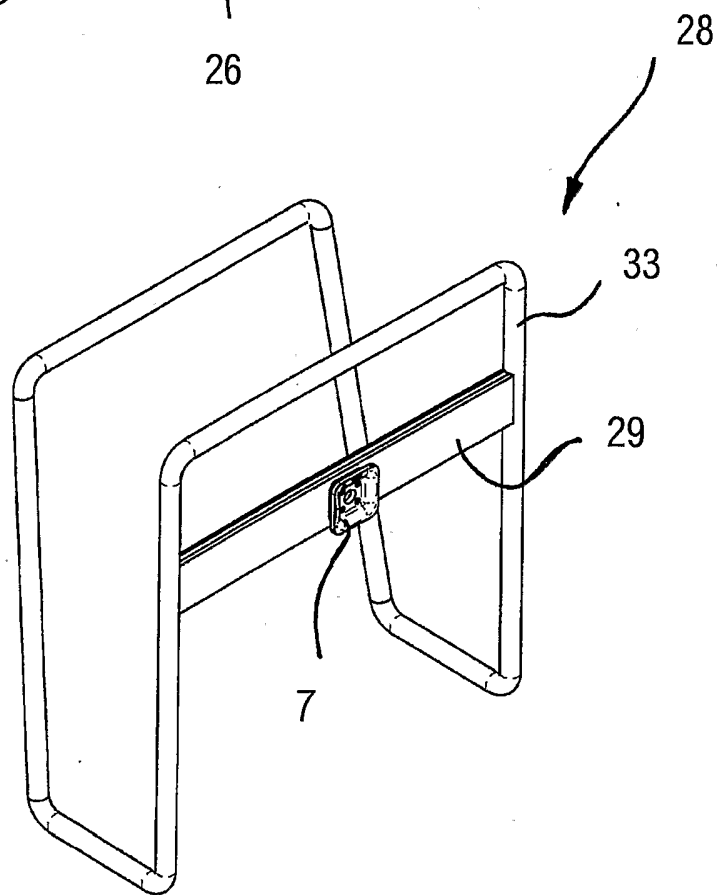
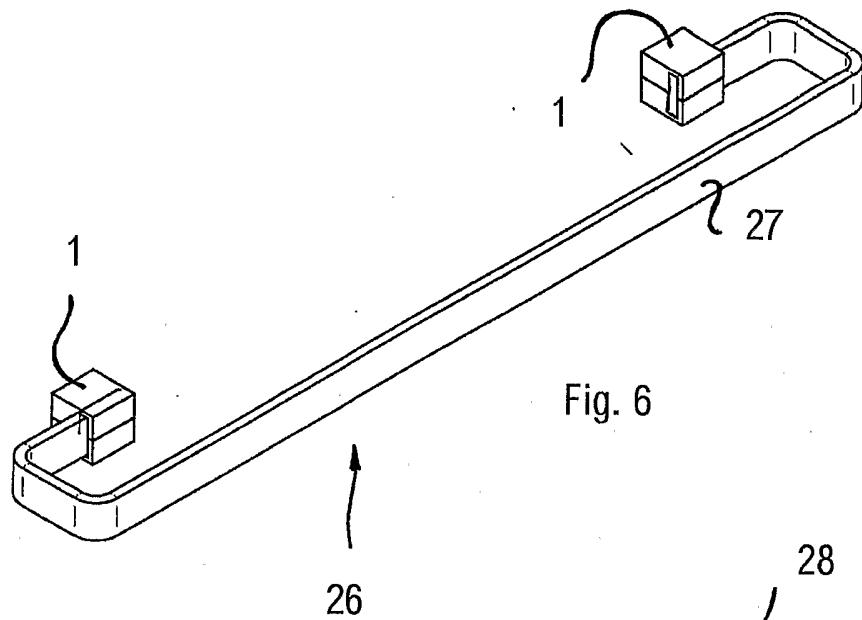


Fig. 3



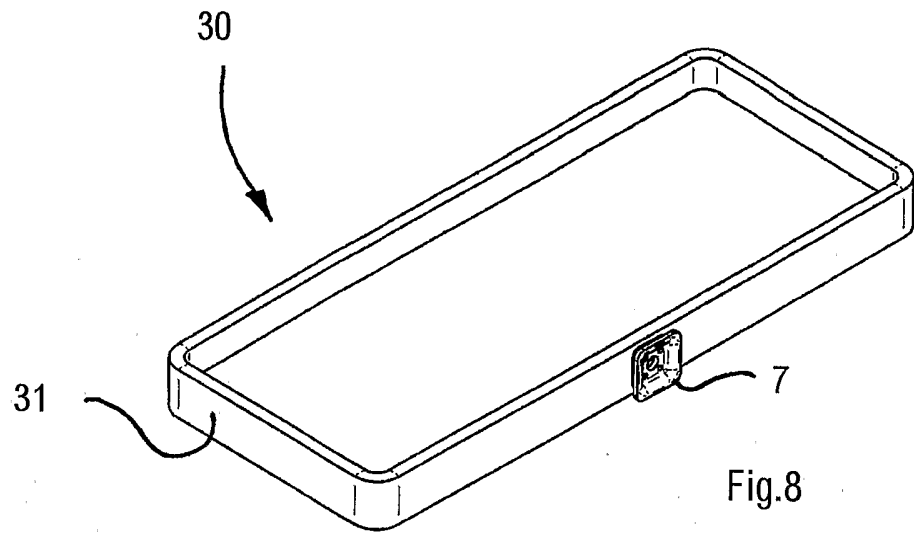


Fig. 8

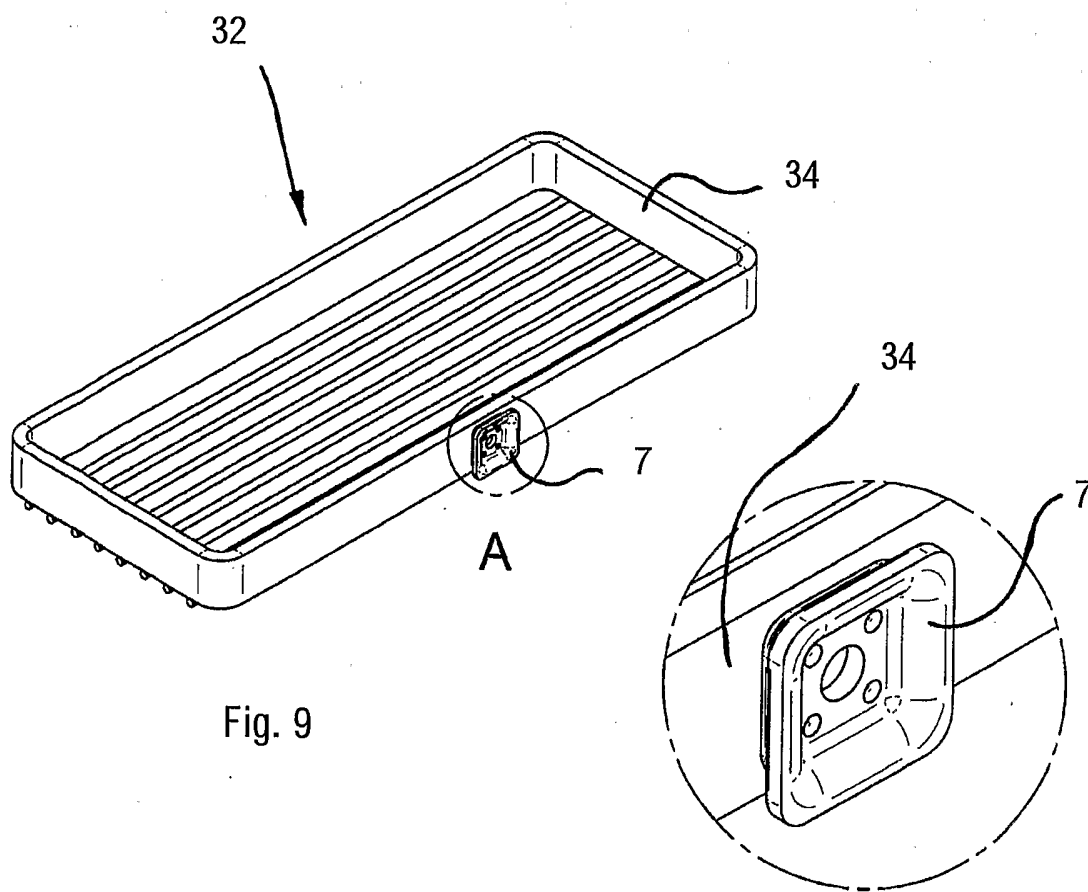


Fig. 9

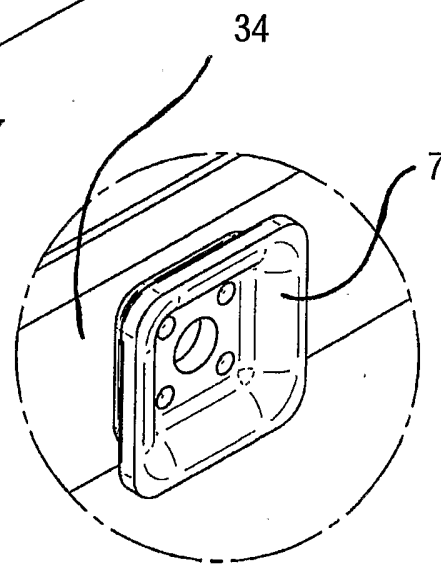
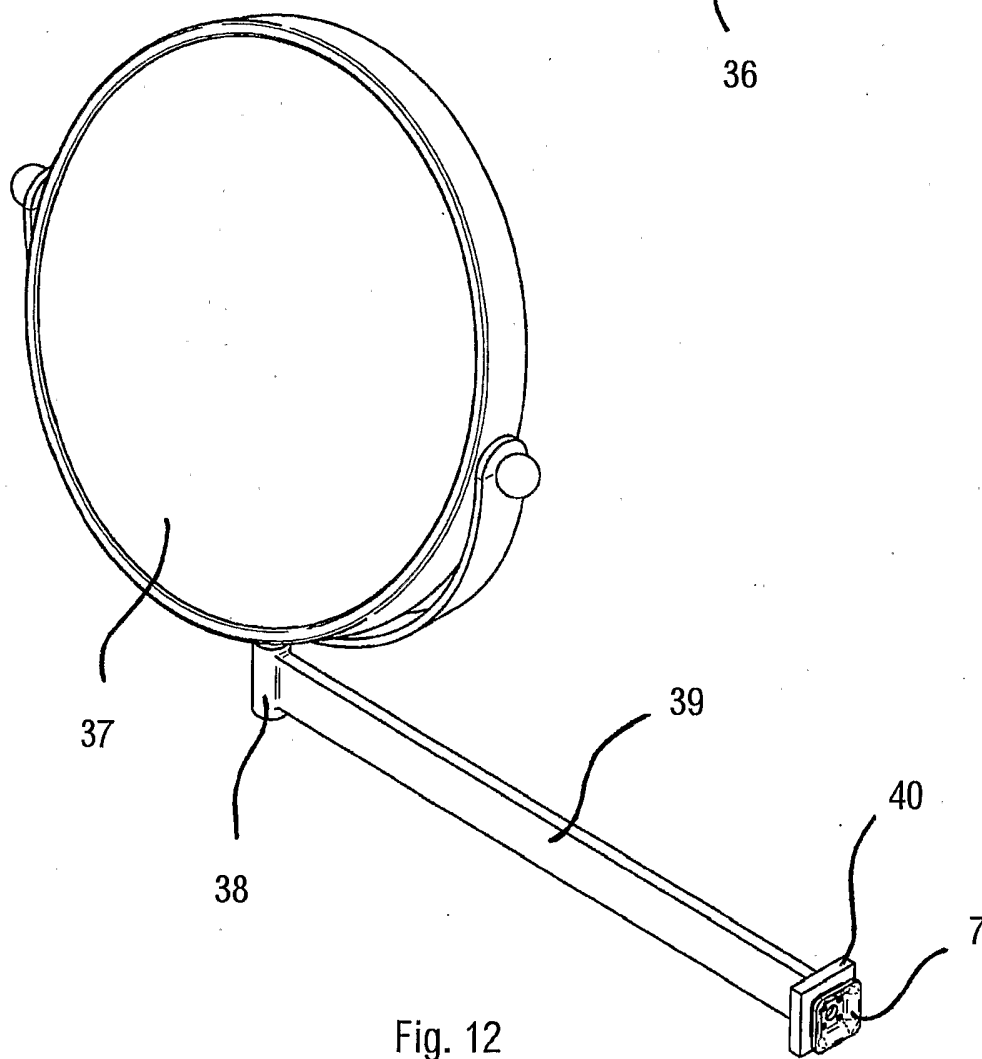
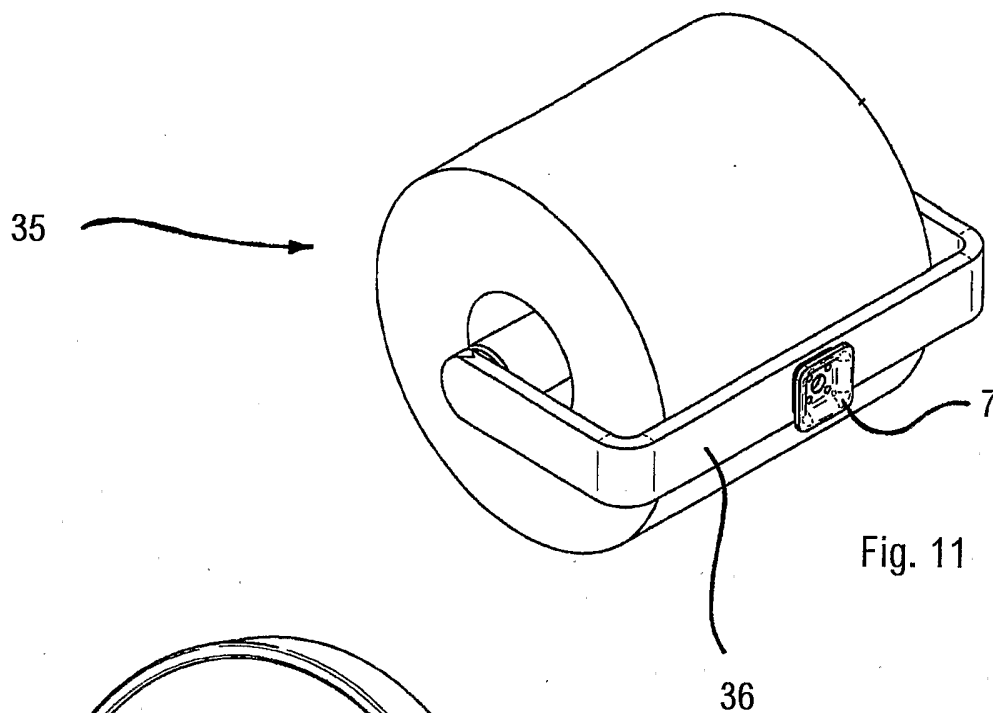


Fig. 10



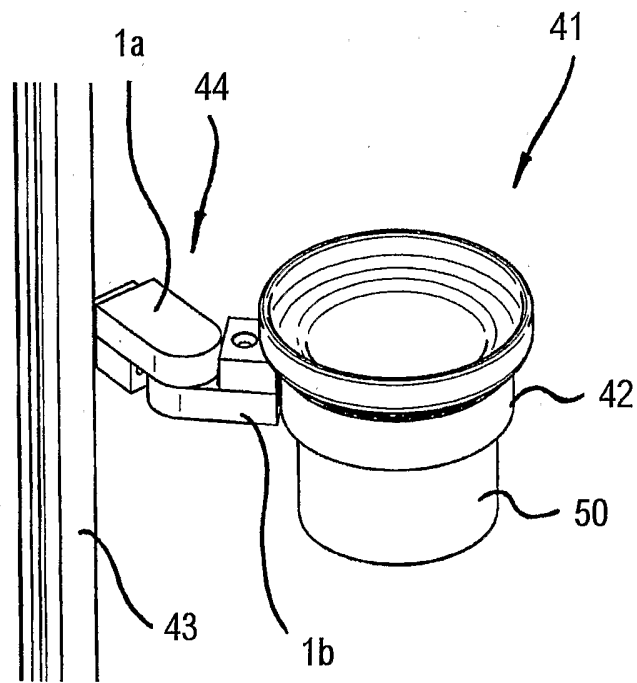


Fig. 13

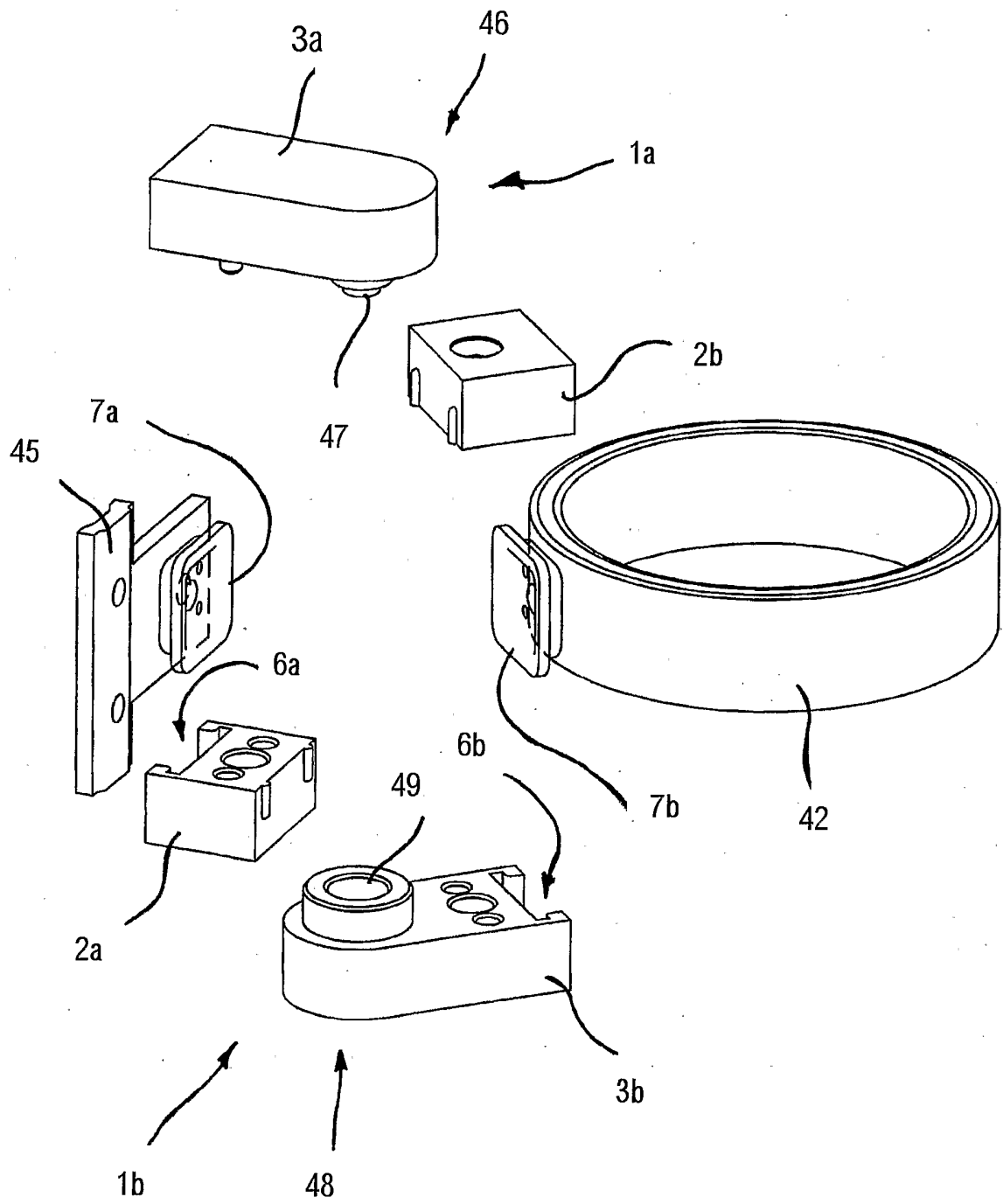


Fig. 14

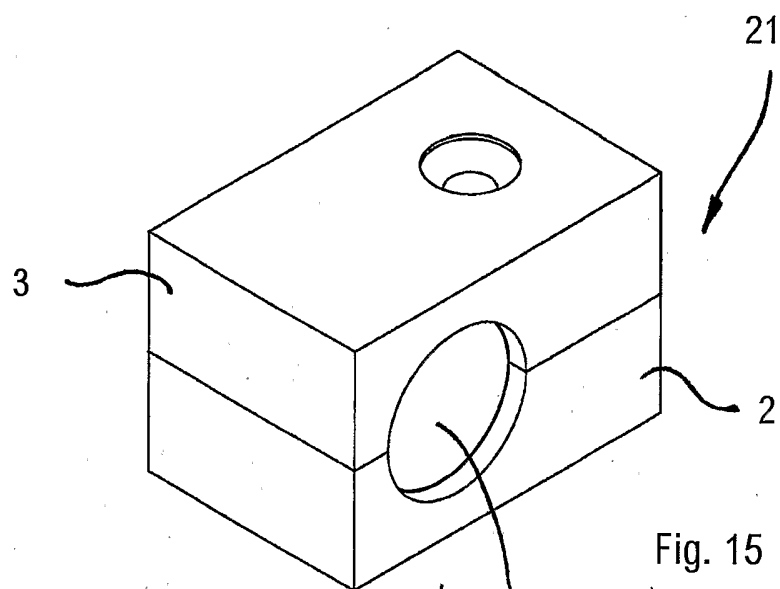


Fig. 15

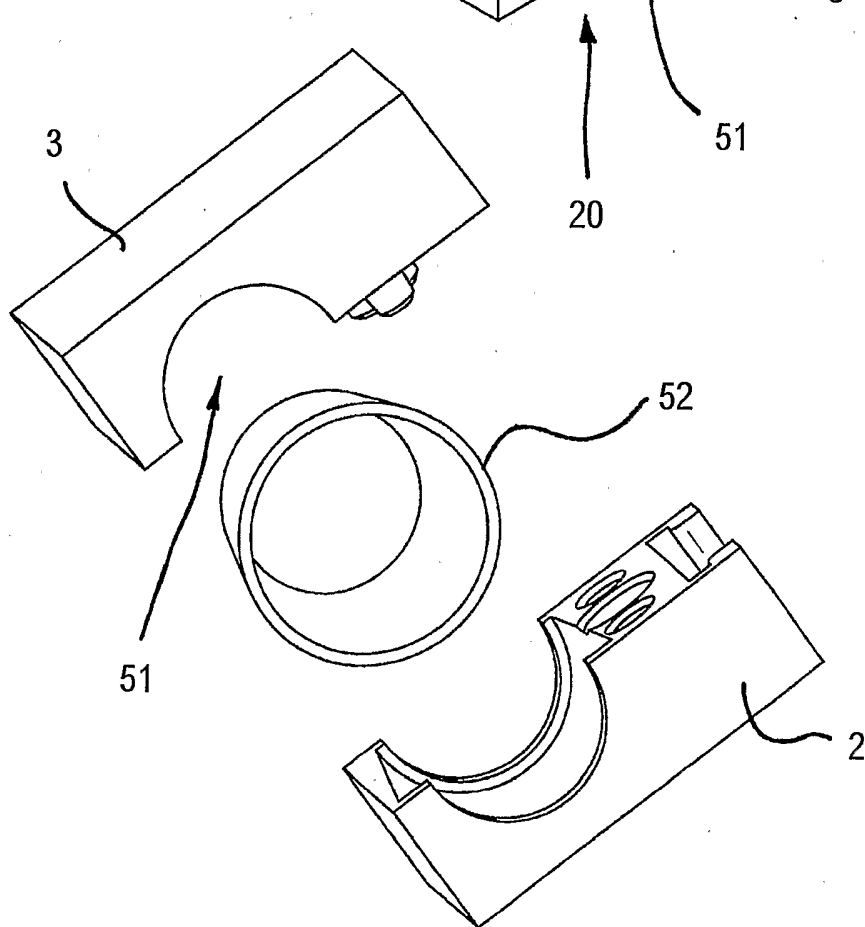


Fig. 16

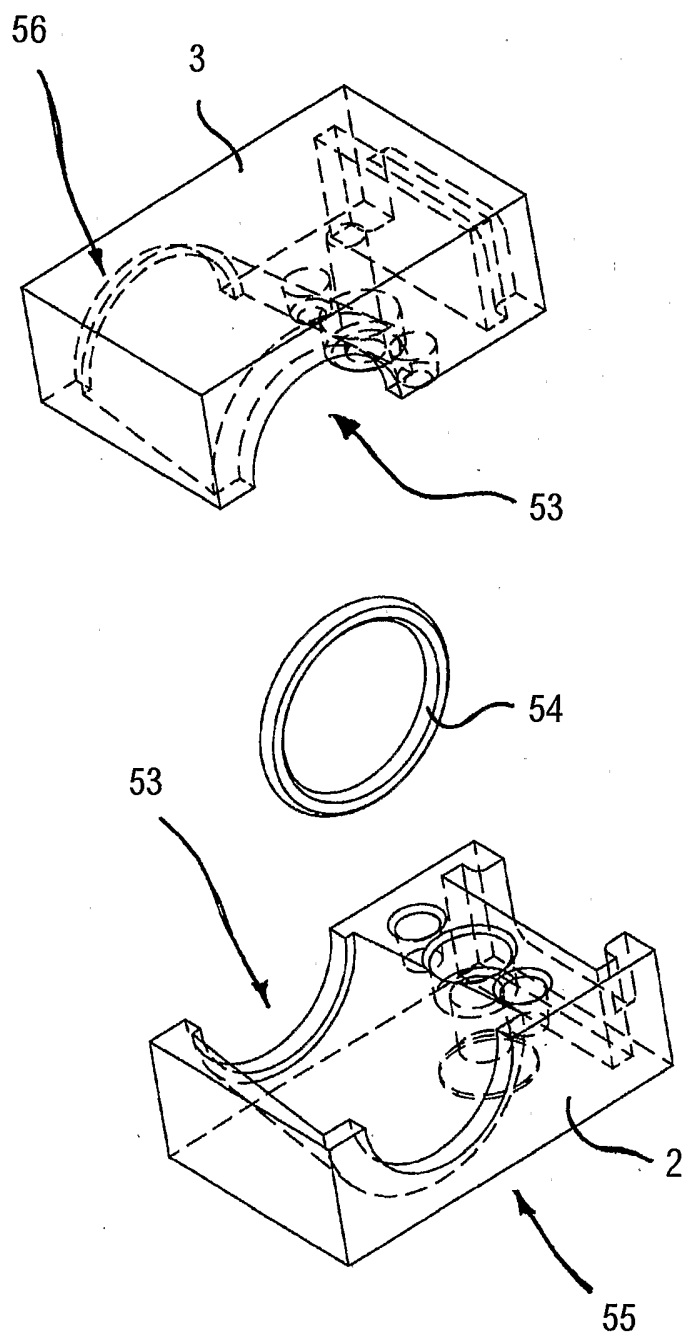


Fig. 17

10/18

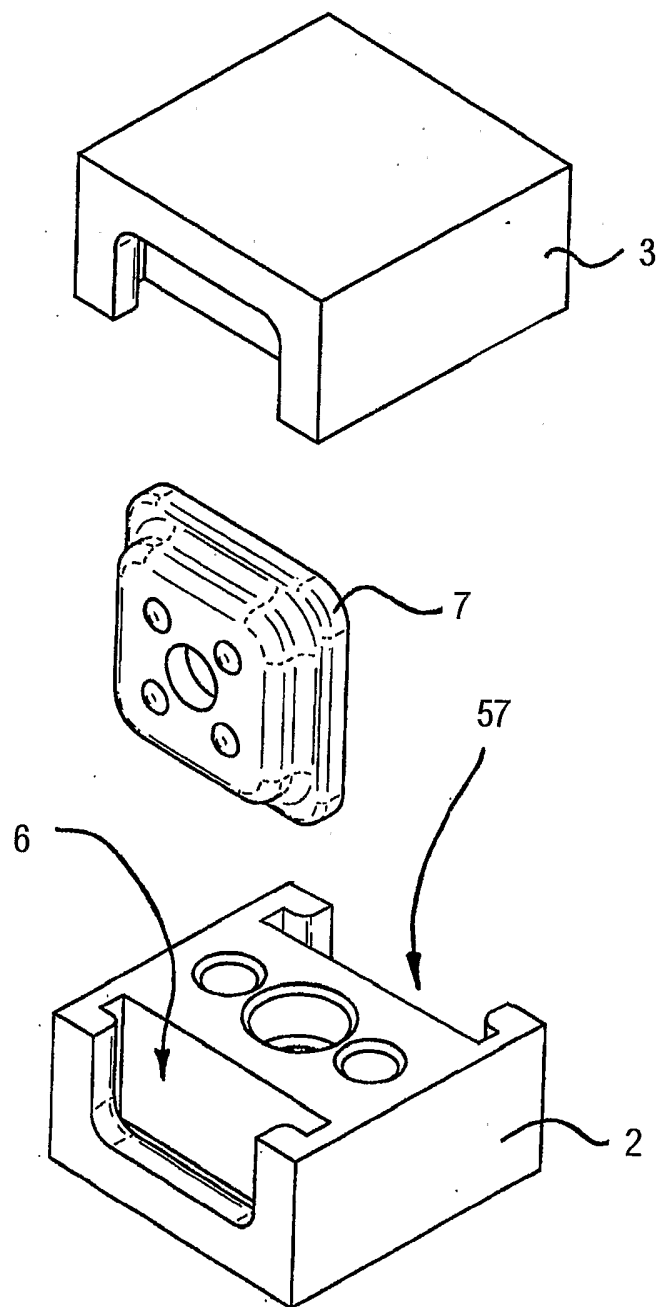


Fig. 18

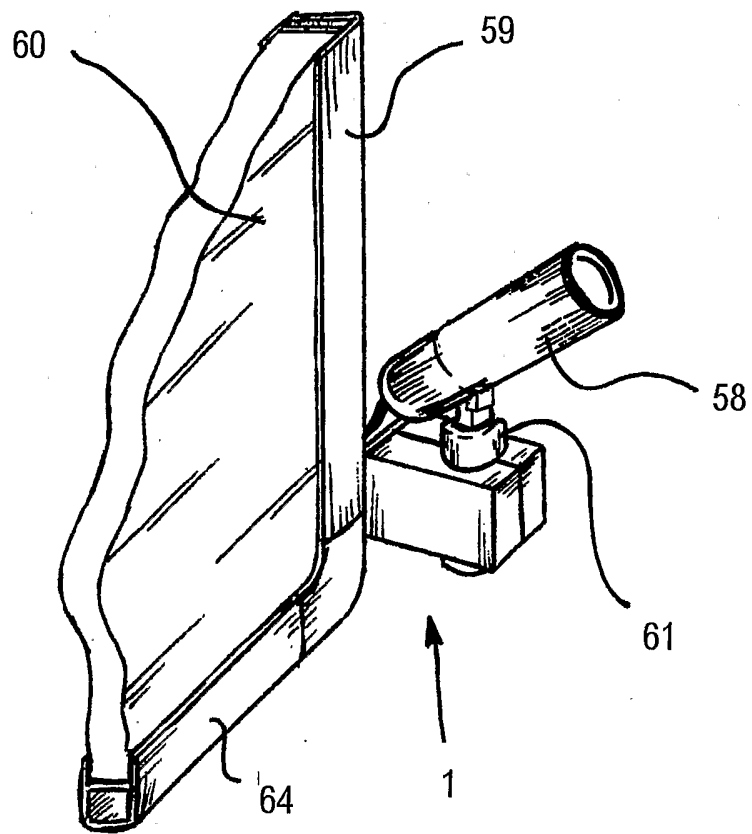


Fig. 19

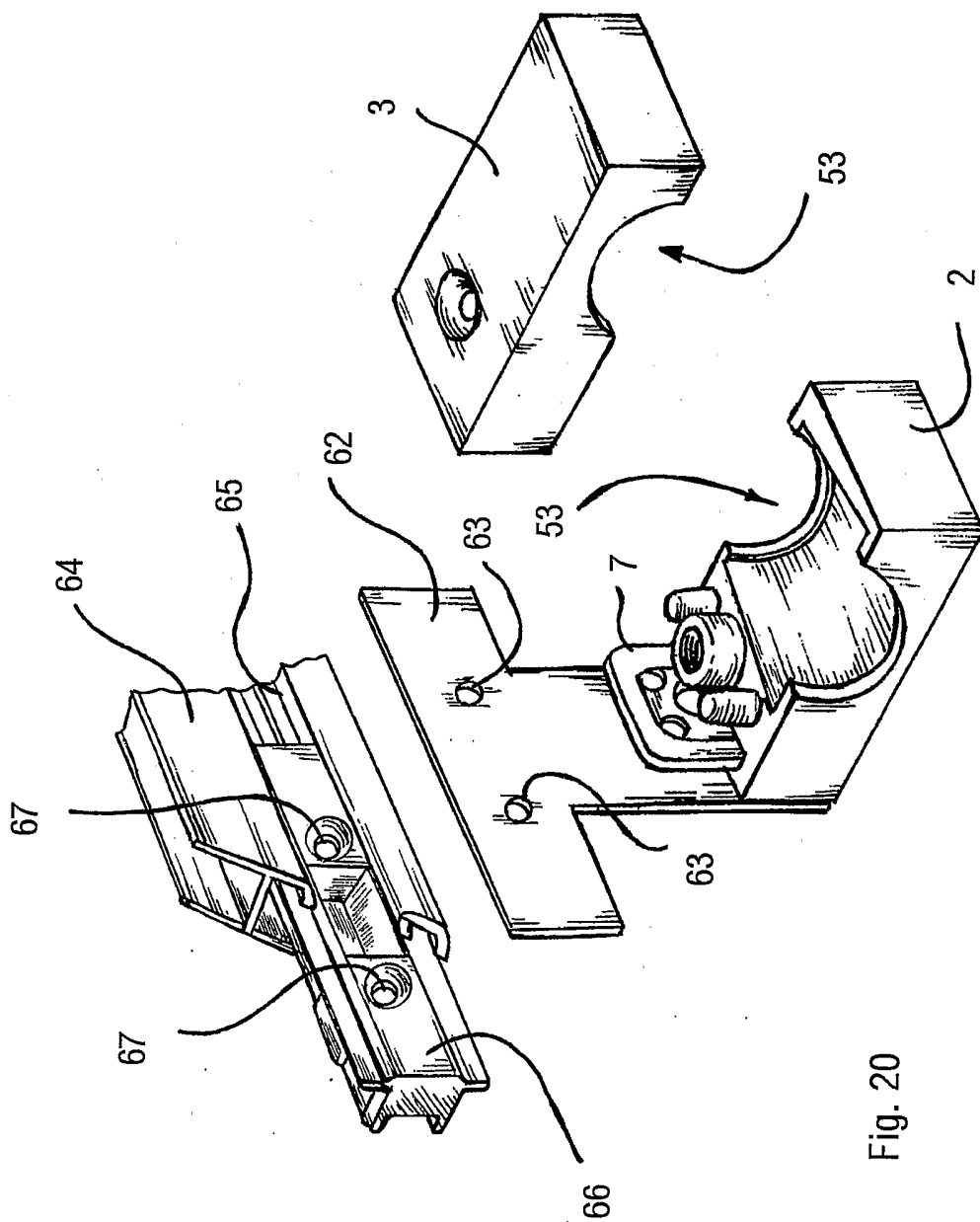


Fig. 20

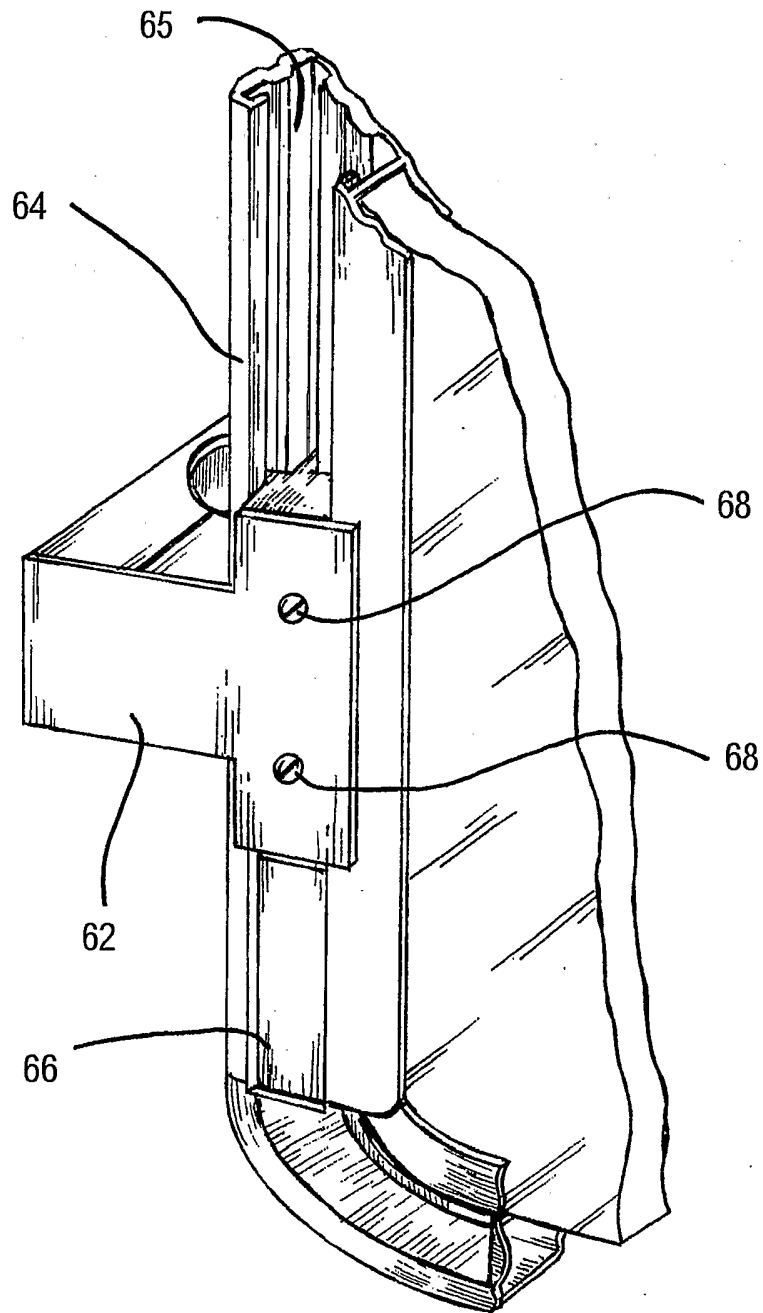
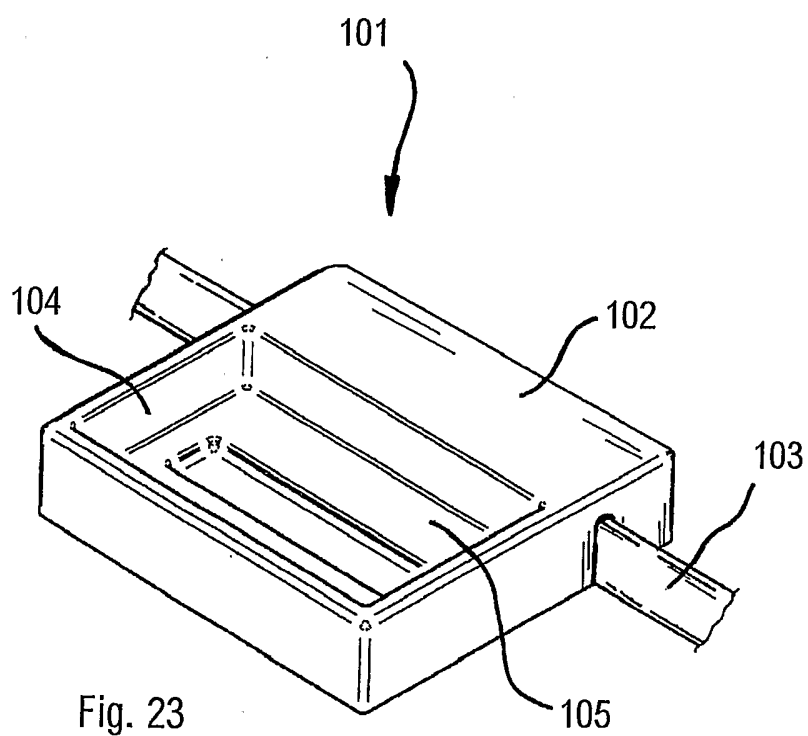
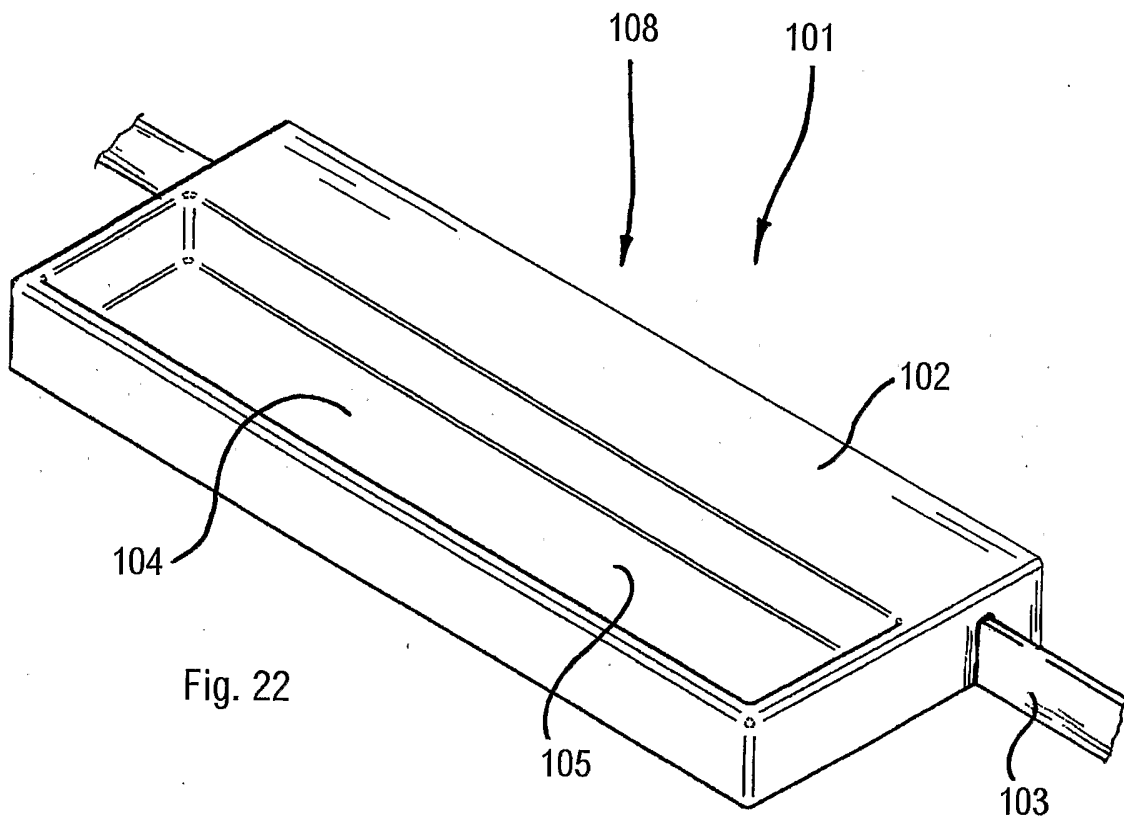


Fig. 21



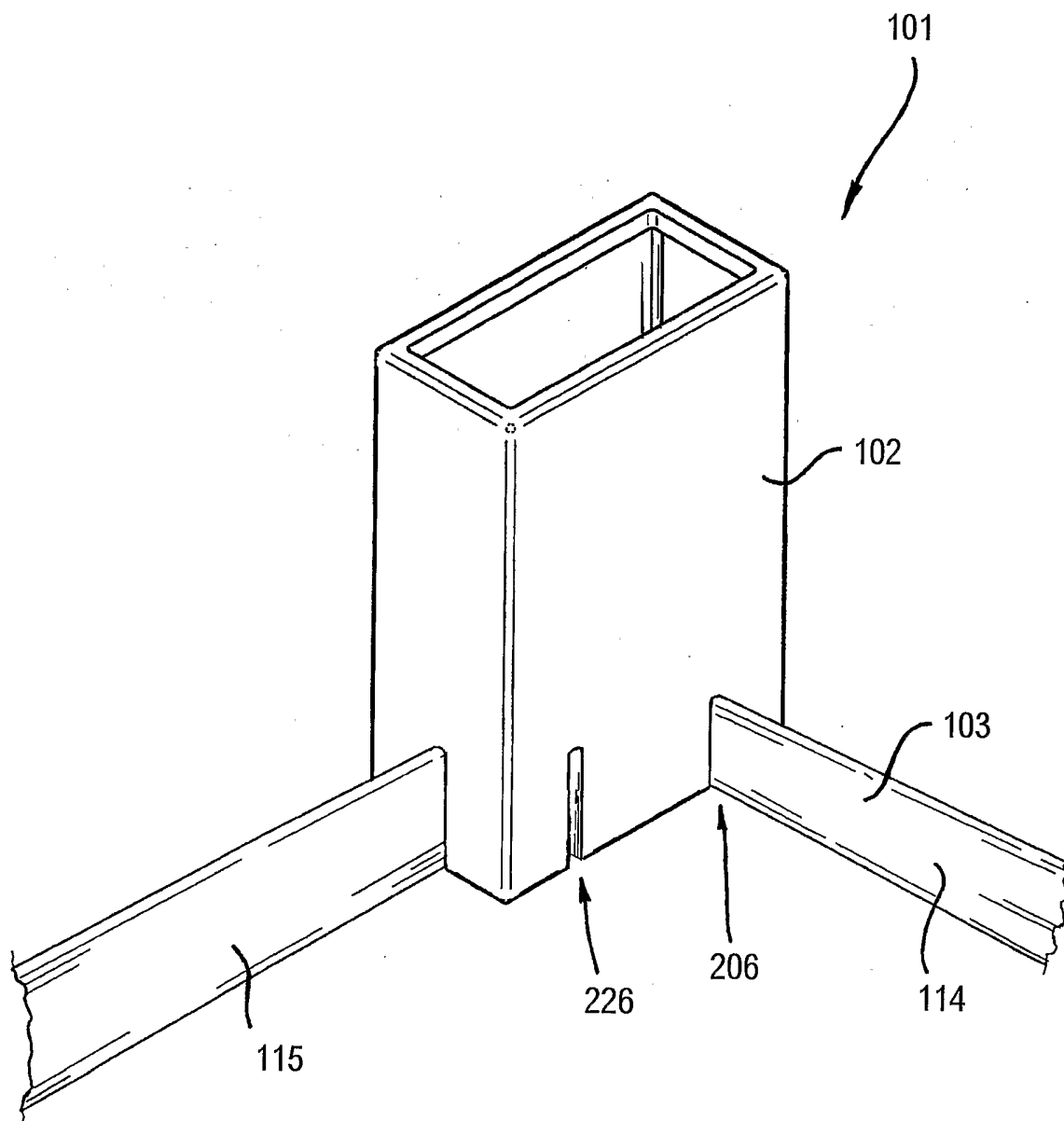


Fig. 24

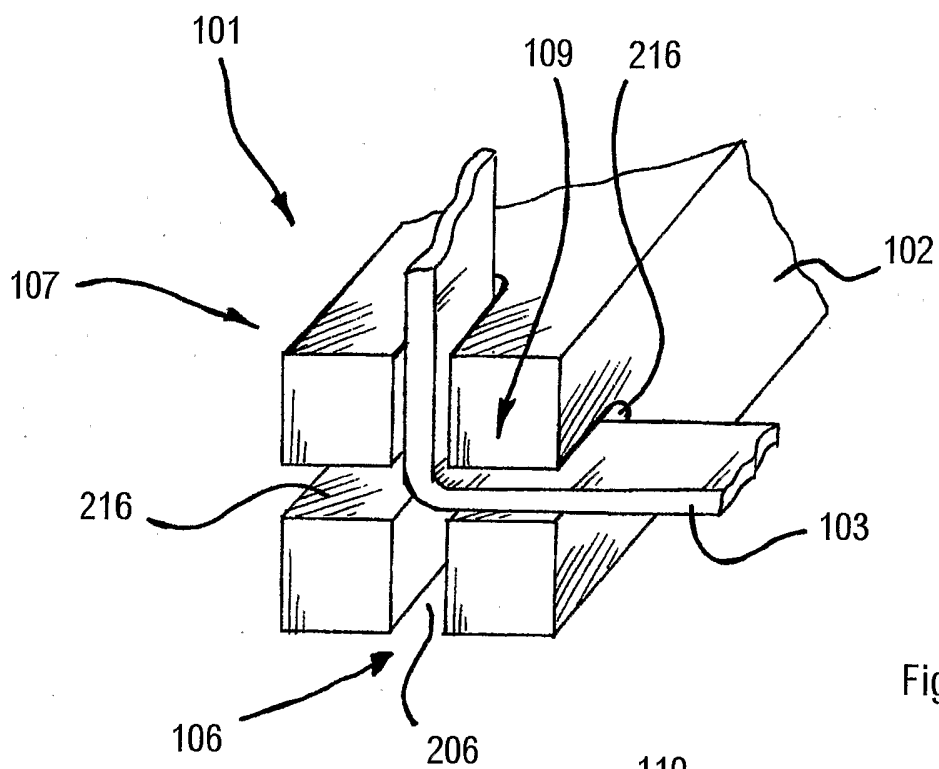


Fig. 25

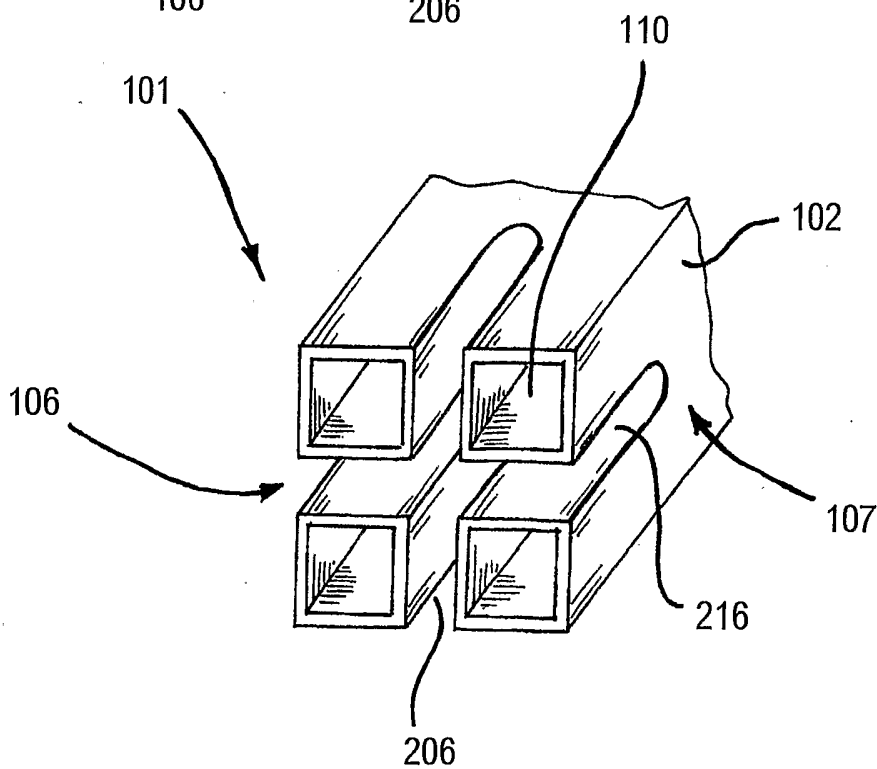


Fig. 26

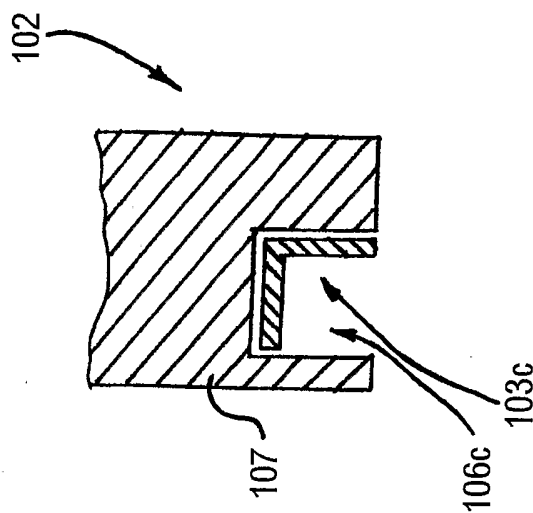


Fig. 27

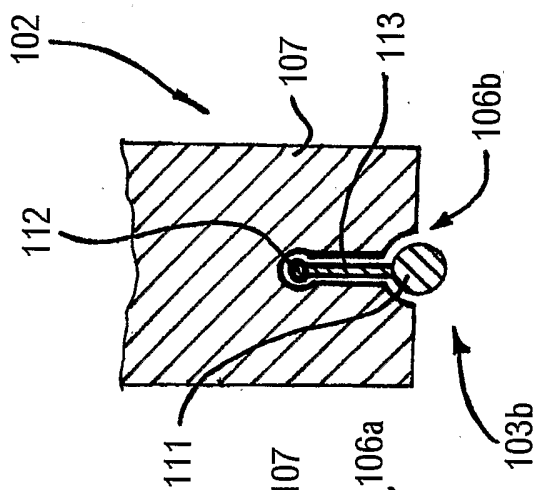


Fig. 28

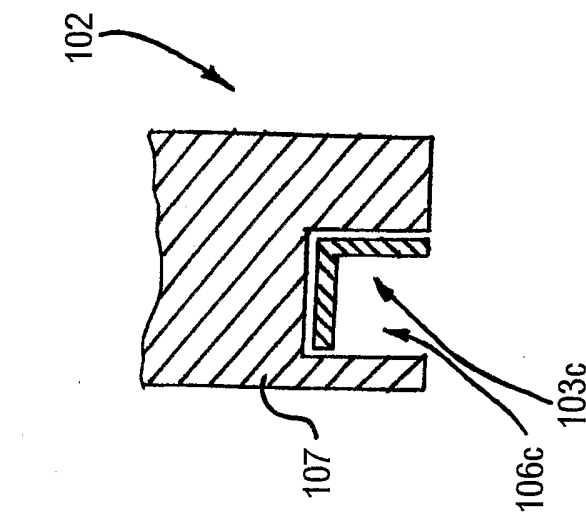


Fig. 29

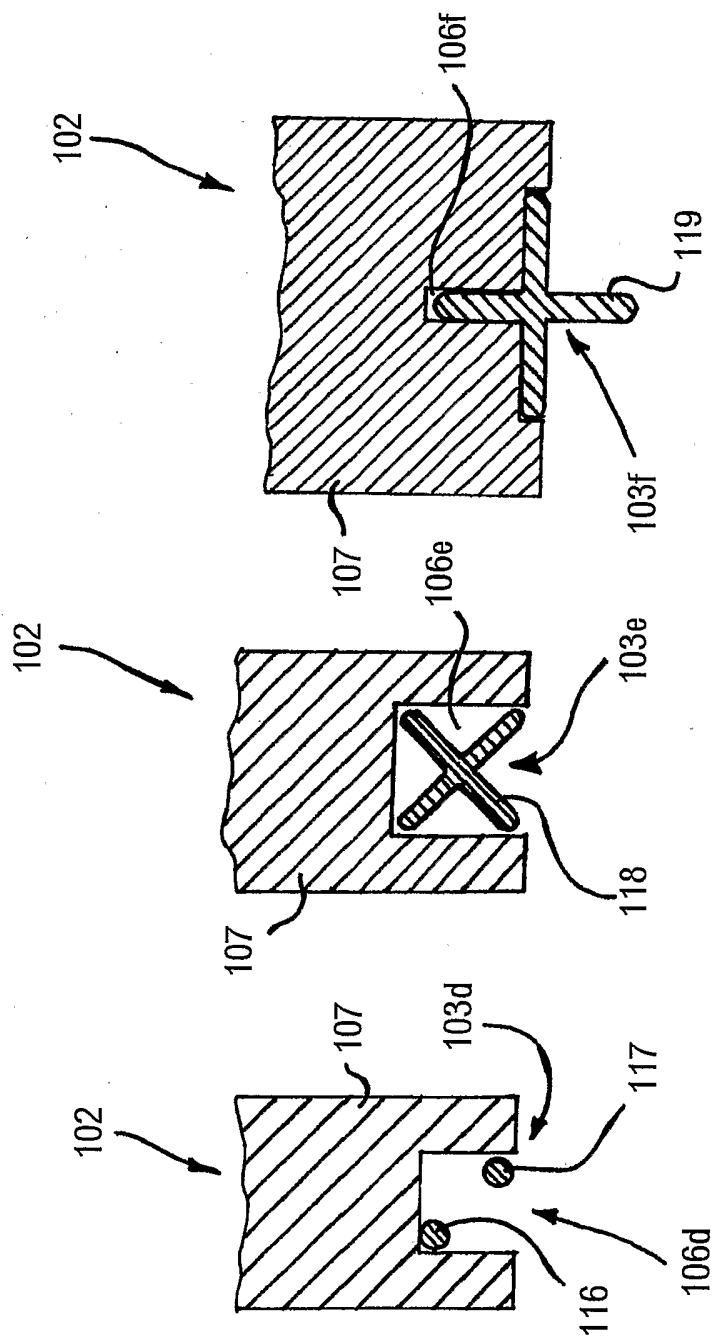


Fig. 32

Fig. 31

Fig. 30