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A weighted duvet for applying stimulating deep pressure to one or more users including two fabric layers divided into at least two duvet sections along the length of the weighted duvet wherein at least one of the duvet sections contains a discrete segment of connected weight elements, e.g. a piece of chain, beads on a string, or weights clamped to a ribbon, placed between the two fabric layers. Retaining means guide the weight distribution within the duvet sections by keeping the discrete segment of connected weight elements in place while still allowing it some freedom of movement such that it may conform to the shape of the user's body.

Fortsættes...

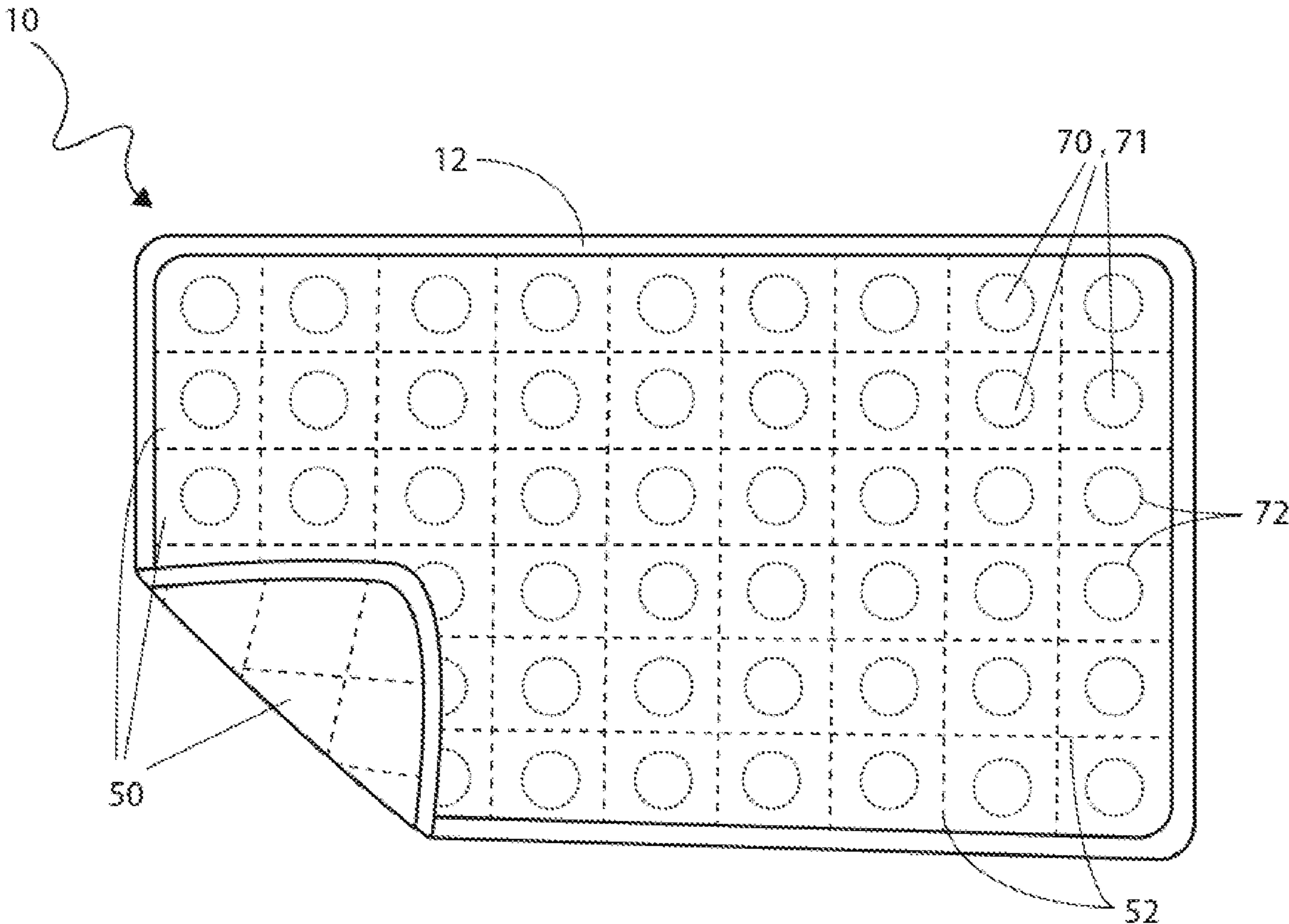


Fig. 2

WEIGHTED DUVET WITH DISCRETE CONNECTED WEIGHT ELEMENTS

FIELD OF THE INVENTION

The present invention relates to the field of aids for stimulating a duvet user. More specifically, it relates to an aid comprising weight fillings for stimulating the senses
5 of a duvet user.

BACKGROUND OF THE INVENTION

People having trouble finding rest, relaxing or sleeping may benefit from external stimuli offering a sensory input to focus on. One such external stimuli can be provided by a weighted duvet or blanket which can be wrapped around a person to
10 provide pressure. Such a blanket may be especially helpful for people suffering from depression, ADHD, dementia, autism, sensorimotor disorders, stress, or other conditions that may provoke the unwanted effect of being unable to relax or sleep.

In addition to providing a sensory input for the duvet user to focus on and helping the duvet user identify the boundaries of the body, the deep pressure to the
15 proprioceptive body sense provided by a weighted duvet and the stimulation of the tactile sense trigger the release of hormones, including oxytocin. Oxytocin has important physical and psychosocial effects including making a person feel more calm and safe.

A weighted duvet is, as the name suggests, a duvet or blanket weighing more than
20 the weight of a traditional duvet through the addition of weights or by being made from heavier materials. For the best effect of a weighted duvet, it is important that it is comfortable for the duvet user, that the weight and weight distribution accommodates the size of the duvet user, e.g. an adult or a child, and that the duvet adjusts to the shape of the body of the duvet user.

25 Various types of weighted blankets exist where different objects are added to create the weight. In one known variant, pockets filled with small, loose weights such as balls are added to a fabric. However, gravity will cause the balls to bunch in one end of such a pocket when the blanket is draped across the duvet user making it difficult to actually guide where the weight is applied. Making the pockets smaller or filling
30 them more such that the balls can move less within the pockets, the weighted duvet will become stiffer and less capable of adjusting to the shape of the duvet user.

An alternative variant of weighted blankets is to sew small rings into pockets or directly into the fabric of the duvet to avoid them moving about. However, such rings will need to be very small or they will make the duvet less flexible due to their inherent stiffness.

- 5 Other variants use chains to provide weight instead of loose balls to avoid the problem of bunching while maintaining flexibility. In such variants, the chains will be attached in both ends of the duvet and may either be allowed to move freely between these points of attachment or they may be placed within channels in the duvet, to restrict their movement to some extent while still allowing them to follow
10 the contours of the body of the duvet user. Even within such channels, chains attached at the ends of a duvet suffer from some of the same issues as the loose balls, namely that they are inclined to fall towards one side of the channel. Choosing the length of such chains also becomes problematic as making them too long make them more likely to bunch up on the side of a channel while making them too short
15 limits the flexibility of the duvet. Attaching a long chain at each end of the duvet will cause a lot of strain to those point attachments causing a risk of tears of the duvet fabric at those points.

Furthermore, long, solid weight elements such as chains spanning the full length of the weighted duvet pose a threat when used to treat people with self-harming or
20 violent tendencies, e.g. patients in the psychiatrist sector, although such duvet users might benefit greatly from the calming effect of deep pressure stimulus. Thus, there is a need for comfortable weighted duvets that safely provide the duvet user with deep pressure and tactile stimuli.

WO 2014/166556 A1 teaches a weighted blanket with channels filled with
25 substantially spherical objects. The spherical objects provide weight and tactile stimuli and the channels restrict them to some regions of the weighted blanket. However, as only the seams of the channels and the other spherical objects within said channel guide the placement of the spherical objects, they can move inside the channel and be pulled by gravity towards the lowest point. This movement of the
30 spherical objects can lead to the them rolling off the user and not providing the intended weight. Alternatively, the channels must be completely filled with spherical objects to prevent that they move inside the channel. This will cause the weighted

blanket to be stiffer making it harder for the weighted blanket to conform to the shape of the body of the user.

SUMMARY OF THE INVENTION

It is the aim of the present invention to provide a weighted duvet capable of applying
5 body pressure, where the weights accommodate the duvet user and adjust to the body shape while alleviate some of the above-mentioned problems.

This is achieved by a weighted duvet applying stimulating pressure to the body of one or more duvet users comprising:

- 10 – a first fabric layer, a second fabric layer;
- at least two duvet sections along the length of the weighted duvet; where the duvet sections are delimited by sectioning stitches extending through said first fabric layer and said second fabric layer;
- wherein at least one of said duvet sections contains a discrete segment of
15 connected weight elements placed between said first and said second fabric layer; and
- retaining means, different from said sectioning stitches, for guiding the weight distribution within said duvet sections.

20 By a weighted duvet is understood a flexible material with weighted objects between sheets of fabric as such it could be any type of blanket, quilt or other cover.

By connected weight elements is understood multiple elements having mass and the position of which influence each other. This influence can be direct such as is the case with a chain link directly connected to neighbour chain links. Alternatively,
25 the connection can be mediated through a connection mediator, e.g. a string on which beads can be drawn onto, a band which weights can be clasped onto, or a sheath which weights can be placed inside, in these cases the positions of the weight elements and the weight mediator relate to each other even though they have more freedom than the directly linked elements.

30 By a discrete segment of connected weight elements is understood a length of the connected weight elements separated from other discrete segments. Each discrete

segment may move independently of each other and they may be made from different materials and have differing weights and/or lengths.

In a preferred variant of the invention, each discrete segment is shorter than the length of the weighted duvet itself. In a more preferred variant, each discrete
5 segment is shorter than three quarters of the length of the weighted duvet. In a specific realization of the invention, the discrete segments of connected weight elements will have lengths between 15 cm and 75 cm.

By retaining means are understood features capable of partially restricting the movement of the discrete segments of connected weight elements. These may take
10 various forms and may allow the discrete segments of the connected weight elements different degrees of freedom in their movement.

While the duvet sections are similar to pockets filled with loose weight elements, the duvet sections with discrete segments of connected weight elements allow the addition of retaining means within the duvet sections. These ensure that the
15 connected weight elements will not bunch in one end of the duvet section. Furthermore, having discrete segments of the connected weight elements ensures that each of these discrete segments may be lighter than if it had to cross the entire weight duvet, whereby it will cause less wear on each of the retaining means while still being able to provide the duvet user with the necessary weight and stimulus.
20 Additionally, that each discrete segment may be kept short and contained within the segments means that they are safer as they may not easily be wrapped around a body part. This might otherwise happen by accident or if the blanket is used to calm a person suffering from self-harming tendencies.

The number of sections in the duvet may vary allowing for more fine-tuning of the
25 weight distribution. Each section may comprise one or more discrete segments of connected weights and these may vary in make. Thereby, it is possible to make weighted duvets customised to the needs of the duvet user, for example by making the weighted duvet heavier in a band across the middle, at the legs or on the sides whereby it is more difficult for the blanket to slide off a sleeping duvet user.

In an embodiment of the invention there is filling material present between said first fabric layer and said second fabric layer in one or more of said duvet sections.

By filling is understood a material which is compactable under pressure and which is flexible, e.g. fibres, wool, or pieces of foam. Such a layer of filling may provide
5 other features such as insulation.

Providing filling between the first fabric layer and the second fabric layer makes it possible to make the weighted duvet warmer which is practical in colder climates.

Placing filling within the same layer as connected weight element may also provide a further, but mild, restriction to the movement of the discrete segments of the
10 connected weight elements. In addition, the filling may also provide padding around the connected weight elements if it is desirable to have a more even distribution of the pressure. Filling placed in the same layer as the weight elements also allows a more level height of the weighted duvet as the amount of filling may be adjusted to the height of the connected weight elements themselves. These effects are
15 adjustable in the production by choice of the type and the amount of filling provided between the fabric layers, whereby the weight duvet becomes more customisable. For example, it might be desirable for the connected weight elements to provide a textural difference in height as well in which case less filler may be used.

Some duvet sections may be without filling material. This may for example provide
20 the weighted duvet with channels which have no insulating filling whereby the duvet user's skin is allowed to breathe through the weighted duvet while it still provides good heating properties.

Within the invention, the duvet sections are delimited by sectioning stitches extending through said first fabric layer and said second fabric layer.

25 The duvet sections may be made from stitching together neighbouring layers of the weighted duvet whereby mutual borders are made between adjacent duvet sections. In an embodiment where there is a first and a second fabric layer, the stitches will extend through both of the fabric layers. If a third fabric layer is added on to the weighted duvet, the sectioning stitches will in a preferred embodiment

extend through all three layers of the fabric. However, in other embodiments of the invention, the sectioning stitches will extend through only the fabric layers adjacent to the discrete segments of connected weight elements. If further layers beyond three are added to the weighted duvet, it is similarly preferable to have the
5 sectioning stitches extend through all layers. However, embodiments within the scope of the invention may have the sectioning stitches extend through some, but not all, of the fabric layers.

Having the duvet sections extend through all of the fabric layers has the benefit of holding together all layers and keeping their positions relative to each other the
10 same such that they will not slide relative to each other. If they were allowed to slide, this might cause lumping of the fabric of some of the layers which may be annoying to the duvet user. If one layer could move relative to the others, the duvet user might even pull part of said layer to the side of the rest of the weighted cover and, unintentionally, end up covered by a part of the weighted blanket which has no
15 connected weight elements within it and lose the desired effect.

In an embodiment of the invention, one or more of the discrete segments of the connected weight elements forms a loop within one or more of said duvet sections.

Creating a loop out of the discrete segments of the connected weight elements allows for different ways of fastening them within the weighted duvet, which do not
20 lead to them being fixed and tight near the ends while slack at the middle. This also allows less strain at the attachment end points.

Using discrete segments of connected weight elements formed in a loop rather than using a solid ring of a weight material allows for more flexibility. A solid ring is stiff and will not be able to conform to the body of the duvet user. In the art, this is
25 compensated for by having many small rings, however they will still be fixed to a certain place on the duvet rather than allowed to move. Furthermore, the larger diameter of the loops compared to rings means that the duvet user will get the benefit of intermittent pressure feeling the edge and centre of the loop providing further tactile stimuli.

The flexibility and mobility of the discrete segments also have the benefit of providing the duvet user with varying sensory input. This is important as the body may adapt to stationary stimulation, whereby the effect fades over time. Flexible filling and movements of the connected weight elements give the senses new sensory input to help the activation of the brain and nervous system.

It is understood that the loop need not be round; rather it may be held to any shape by the retaining means. That it is a loop simply means that the ends of the discrete segment of the connected weight elements or connection mediator are joined. This joining may be of a more permanent nature or the ends of the discrete segments may be provided with releasable joining means. Regardless of whether the joining is releasable or not, it may be done before or after the mounting of the discrete segments within the weight duvet.

In an embodiment of the invention, the connected weight elements are a chain.

Chains comprise mutually linked objects whereby their movement within the weighted duvet becomes coherent. Chains are readily available in various sizes and made from various materials making them a cost-effective choice.

Furthermore, chains are easily divided into discrete segments of various lengths by simply removing a link and this requires no further treatment of the exposed ends. Chains are also easily joined into shapes such as the previously mentioned loops or into crosses or other shapes that might be preferable.

Additionally, the structures of chains, i.e. changes in loop direction and regions of overlapping links, means that chains inherently supply the tactile sense with the stimuli needed to trigger the oxytocin hormone.

In an embodiment of the invention, the retaining means comprise a restricted region delimited by a stitched region border along which said discrete segments of said connected weight elements can be placed.

The stitched border becomes a block for the connected weight elements which does not fix any part of it in place, but restricts its movement even so. This means that it

can shift and rotate along the stitched border giving it ample freedom to follow the shapes of the body of the duvet user, while preventing it from folding in on itself or bunching in one corner of the duvet section.

5 The region between the edges of the duvet section and the stitched border then provides a sort of channel in which the discrete segment of the connected weight elements is placed and which restricts the movement of the connected weight elements to the intended region on the weighted duvet.

10 In a preferred variant of the invention, the weighted duvet comprises stitched borders forming substantially circular shapes within one or more of the duvet section and a discrete segment of the connected weight elements forms a loop around said circular stitched border. The stitched border then keeps the looped discrete segment in a ring-like shape while it is still able to move and adjust to the shape of the body of the duvet user.

15 In another embodiment of the invention, the retaining means comprise two or more point fasteners.

Point fasteners can take various forms such as being single points where the discrete segments are sown into the weighted duvet or it may be straps in which the weight elements can be threaded. Such straps may either be closed loops attached to the weighted blanket or they may include opening means allowing the straps a
20 tighter fit around the connected weight elements as they do not need to be able to move within them. Point fasteners may also take other forms such as hooks or clasps.

25 The point fasteners have the benefit of ensuring weight in specific points, i.e. where the connected weight elements are fastened to the weighted duvet. Although it is important that the connected weight elements can move and adjust to the shape of the body of the duvet user, it may be preferable to ensure weights at specific points or at specific positions in relation to each other. Point fasteners give control over the weight distribution in specific points while allowing freedom of movement of the connected weight elements in others.

Point fasteners also ensure that it is known exactly where most wear will take place and makes it possible to reinforce these points to decrease the risk of tears and prolong the lifetime of the weighted duvet.

5 In an embodiment of the invention, the weighted duvet comprises a releasable connection means, e.g. at least one zipper, running across the entirety of said weighted duvet allowing it to be divided into at least two smaller weighted duvets.

By a releasable connection means is to be understood a way to attach two parts of a weighted duvet and detach them from each other again. This might be done by a zipper, but other connection means would also be possible, such as buttons or hook-
10 and-loop strips, or simply straps for tying two parts together.

Weighted duvets can be difficult to clean as they may become too heavy for washers or dryers to handle. Thus, being able to divide it into smaller segments which can be washed separately, provides the weighted duvet with sanitary advantages. This is important both for private users and institutions. Especially at hospitals and mental
15 care institutions where sanitary requirements are very high, easy washing is an important feature. Items that cannot be thoroughly cleaned are simply not feasible as it may compromise the safety of patients by increasing risks of spreading diseases.

Furthermore, being able to divide the weighted duvet into smaller segments gives it
20 more versatility for example if it is used intermittently by a single and multiple users or if a duvet user wishes to have a weighted blanket only on part of the body while having an un-weighted blanket on another part.

In an embodiment of the invention, at least two connected weight elements having at least two different average weights are placed in at least two duvet sections.

25 By having multiple discrete segments of connected weight elements confined to different duvet sections, it is possible to adjust and customize the weight as well as the tactile stimuli to the needs of the duvet user.

Some users may benefit from having some regions be heavier than others, e.g. by having heavier connected weight elements placed in the duvet sections near one end of the weighted duvet. Additional stimuli may be obtained by having intermittent rows of heavier and lighter connected weights in neighbouring segments. Having
5 heavier connected weight elements near the edge of the weighted blanket may provide a different benefit of making it more difficult for the weighted duvet to slide off the duvet user if they move in their sleep.

Similarly having different types of connected weight elements, e.g. chains and beads on a string, in different duvet sections will result in both different weight and
10 in different tactile inputs.

In an embodiment of the invention, the weighted duvet comprises a third fabric layer.

The third fabric layer provides the benefit of reinforcing the weighted duvet. It is placed next to the layer through which the connected weight elements are attached and, thus, provides reinforcement of the fabric of the second layer where it is
15 subjected to most stress. If the discrete segments are positioned between the first and the second fabric layer through holes in the second layer, the third layer will also cover these holes ensuring that the connected weight elements are not exposed to the surroundings and that the duvet user will not come in direct contact with them. The reinforcing effects are especially important during washing of the
20 weighted duvet, where the frequent and rapid movements of the weighted blanket will cause stress on the restraining means and general wear on the weighted duvet.

That the weighted duvet has two different sides with distinctive properties, e.g. one with padding between the connected weight elements and the duvet user, the other without or with different surface materials, provides the product with two different
25 kinds of stimulation which gives the duvet user the possibility to choose individually according to personal preferences, needs, as well as changes in the surroundings such as varying temperature.

In an embodiment of the invention, the third fabric layer in the weighted duvet is a functional layer made from a different material than either or both of the first and the
30 second fabric layer.

The third fabric layer may be a functional layer where the fabric has properties chosen to provide extra comfort to the duvet user. The third layer could for example be made from an especially soft material giving it a nice feel against the skin of the duvet user. It may also be made from material with special heat conducting properties allowing it to transfer heat away from the duvet user and provide them with a phase change material that allows material to feel cool or warm depending on the ambient temperature.

In a preferred variant, the weighted blanket has a mass of 3-20 kg. The ideal mass depends on the mass of the duvet user. A child might need a smaller mass while an adult will need a heavier weighted duvet to obtain the necessary deep stimulation.

SHORT LIST OF THE DRAWINGS

In the following, example embodiments are described according to the invention, where:

Fig. 1 is an illustration of a person under a weighted duvet in accordance with the invention.

Fig. 2 is a weighted duvet according to the invention laid out flat with a folded back corner and seen from the top. Illustrating the two different sides of the duvet.

Fig. 3 is a cross-sectional, semi-exploded view of a duvet section of a weighted duvet according to the invention illustrating the layers in the duvet.

Fig. 4a-4c shows part of the layers of the final weighted blanket with the adjacent layers being invisible.

Figs. 5a-5e illustrate sections of various possible connected weight elements according to the invention.

Figs. 6a-6f illustrate various retaining means according to the invention wherein stitched borders guiding the position of the discrete segments of connected weight elements within the duvet sections.

Figs. 7a-7f illustrate various retaining means according to the invention wherein point fasteners guiding the position of the discrete segments of connected weight elements within the duvet sections.

Figs. 8a-8e illustrate various combinations of the two types of retaining means used according to the invention.

DETAILED DESCRIPTION OF DRAWINGS

In the following, the invention is described in detail through embodiments thereof
5 that should not be thought of as limiting to the scope of the invention.

Fig. 1 shows the invention in use. A duvet user 1 rests under a weighted duvet 10 according to the invention. The weighted duvet 10 applies a pressure to the part of the duvet user 1, which is under it; this deep pressure helps the duvet user 1 feel safe and relaxed.

10 Although Fig. 1 shows a sleeping duvet user 1 lying under the weighted duvet 10, it may also be used in other contexts such as wrapped around the shoulders of a duvet user 1 sitting upright.

As shown in Fig. 1, the weighted duvet 10 may be covered in bedding to protect it and decrease the need for washing of the weighted duvet 10 itself. Hence, during
15 use it might resemble a common, unweighted duvet.

Fig. 2 is an illustration of the weighted duvet 10 according to one embodiment of the invention without any bedding on. The weighted duvet 10 is shown with a corner flipped over revealing that there is a difference between the two sides in this embodiment of the weighted duvet 10.

20 The weighted duvet 10 is divided into a number of duvet sections 50, these duvet sections 50 are defined by the sectioning stitches 52. The sectioning stitches 52 extend through all layers of the weighted duvet 10 and are thus visible on both sides. The discrete segments 110 of connected weight elements 100 (not shown in Fig. 2) are confined within the duvet sections 50. There may be discrete segments 110 in
25 each of the duvet sections 50, or they may be present in only some of them. Similarly, there may be different types of connected weight elements 100 in different duvet sections 50.

The duvet sections 50 may be squares as illustrated in Fig. 2, but they may also take any other shape or take multiple different shapes across the weighted duvet
30 10. For example, larger sections may be bordered by narrow sections, where the

narrower sections have no connected weight elements 100 in them, thus providing channels with increased breathability. An alternative example is to have many smaller duvet sections 50 in regions where additional weight is preferable.

Fig. 2 illustrates one type of retaining means 70 where stitched geometry borders 72 define restricted regions 71 of the duvet sections 50 which the discrete segments 110 of connected weight elements 100 cannot occupy. As such, the discrete segments 110 will be confined to the spaces between stitched geometry borders 72 and the sectioning stitches 52.

In a preferred embodiment, the stitched geometry borders 72 do only extend through the fabric layers adjacent to the connected weight elements 100. In such cases, the stitched geometry borders 72 will only be visible on one side of the weighted duvet 10 as illustrated in Fig. 2.

In other embodiments of the invention, additional layers may be added to the weighted duvet 10. This may be done to make the weighted duvet 10 warmer or to add functional layers contributing specific features to the surface of the weighted duvet 10 on both sides.

The weighted duvet 10 may be equipped with edging 12. Such edging 12 collects the ends of the various layers of the weighted duvet 10 keeping it together and protecting the edges of the layers themselves from fraying or other sorts of damage through wear.

Fig. 3 illustrates the various layers of a preferred embodiment of the weighted duvet 10 shown in a semi-exploded cross-sectional view of a duvet section 50.

The weighted duvet 10 comprises at least a first fabric layer 20, a second fabric layer 30, and a third fabric layer 40 (all shown hatched in Fig. 3). In other embodiments, the weighted duvet 10 may comprise additional fabric layers to add warmth, softness or similar beneficial effects. The material of the first 20, second 30 and third fabric layer 40 may be the same or it may differ. In a preferred embodiment, the first 20 and second fabric layers 30 are made from the same material, while the third fabric layer 40 is a functional layer made from a different functional fabric adding a specific functionality to the fabric. Such a layer may for example be particularly insulating making the weighted duvet 10 warmer, it may be particularly

soft providing the weighted blanket 10 with a comfortable feel for the duvet user 1, or it may be made from a material with particularly good heat conductivity providing a cooling effect for the duvet user 1.

Between the first 20 and second fabric layer 30, the weighted duvet 10 may
5 comprise a filling material 25 such as fibre filling. This filling material may provide an insulating effect and help keep the duvet user 1 warm under the weighted duvet 10. In other embodiments, the filling material 25 may be chosen to be mainly soft and impact absorbent without providing a significant amount of insulation so that the
10 weighted blanket can be used in warmer ambient temperatures. Furthermore, the filling material 25 does also provide friction against the discrete segments 110 of connected weight elements 100 hampering their movement, while the filling material 25 is still flexible enough that it and the connected weight elements 100 will still be able to follow the shape of the duvet user 1.

The discrete segment 110 of connected weight elements 100 is placed between the
15 first fabric layer 20 and the second fabric layer 30. In Fig. 3, the discrete segments 110 of connected weight elements 100 are illustrated conceptually; the Fig. 3 is neither to scale nor showing a specific type of connected weight elements. The discrete segment 110 may be placed on top of the filling material 25 as shown in Fig. 3, and in this way the duvet user 1 may have the third fabric layer 40 in contact
20 with them and there may be very little filling material 25 between them and the connected weight elements 100. This has the benefit of the duvet user 1 very clearly feeling tactile variations along the discrete segment 110. In another embodiment of the invention, the discrete segment 110 may be placed amongst the filling material 25 so that it is surrounded by this filling material 25, whereby the connected weight
25 elements 100 will experience additional friction and be less likely to move separately and will more thoroughly follow the movements of the entirety of the weighted duvet 10. The duvet user 1 may also place the weighted duvet 10 such that the filling material 25 is between the duvet user 1 and the connected weight elements 100. This will cause a more even spread of the weight supplied by the connected weight
30 elements 100 leading to a gentler pressure sensation.

The filler material 25 may be any compactable and flexible material, such as fibres, foam pieces or down.

Although not illustrated in Fig. 3, it is foreseen that additional fabric layers may be added on both or either side of the illustrated structure. This can further contribute to having a specific functionality on both sides of the weighted duvet 10. Additional layers may also be used to provide extra padding increasing the even distribution of the pressure feeling through the weighted duvet 10.

No retaining means are included in the illustration of Fig. 3, just as the sectioning stitches defining the edges of the duvet section have not been included in the illustration.

Figs. 4a-4c illustrate a cut of a weighted duvet 10 seen from the top each with only one fabric layer visible but shown as the finished product according to a preferred embodiment of the invention simply with above-lying layers invisible. The full weighted duvet 10 may continue the exact same pattern all the way to the edge where edging 12 (not shown) may be present. The full weighted duvet 10 may also have less than the six duvet sections 50 shown here, or it may have duvet sections 50 of differing sizes or shapes.

Fig. 4a shows only the third fabric layer 40 of the weighted duvet 10. The third fabric layer 40 is divided into a number of duvet sections 50 and these are delimited by sectioning stitches 52.

Fig. 4b shows a region of only the second fabric layer 30. Just as the third fabric layer 40, the second fabric layer 30 is divided into a number of duvet sections 50 and these are delimited by sectioning stitches 52. The sectioning stitches 52 pass through both the second 30 and the third fabric layer 40, hence their positions coincide as they are indeed the same throughout the weighted duvet 10.

The second fabric layer 30 may further comprise retaining means 70 in the form of a region into which the discrete segment 110 of connected weight elements 100 cannot move. These regions of retaining means 70 are defined by stitched geometry borders 72. In Fig. 4b the stitched geometry borders 72 define restricted regions 71 in the form of circles placed centrally in the duvet sections 50, however, in other embodiments of the invention the retaining means 70 may be defined as other geometries. Furthermore, there may be several retaining means 70 within one duvet

section 50 either in the form of several restricted regions 71 or as a combination of restricted regions 71 and point fasteners 74 (not shown in Figs. 4a-4c).

5 The second fabric layer 30 may also be equipped with mounting openings 35, wherethrough the discrete segments 110 of connected weight elements 100 can be inserted to place them between the first 20 and second fabric layer 30. These mounting openings 35 may comprise means for resealing; alternatively, they may simply be closed by the third fabric layer 40 which is placed over the second fabric layer 30.

10 In other embodiments of the invention, the second fabric layer 30 will not have the mounting openings 35, instead the discrete segments 110 of connected weight elements 100 will be placed on top of the first fabric layer 20 before any additional layers are added on top.

15 Fig. 4c shows a region of only the first fabric layer 20 and the placement of the discrete segments 110 of connected weight elements 100 according to a preferred embodiment of the invention. The first fabric layer 20 too is divided into duvet sections 50 by the sectioning stitches 52 that extend through all three of the fabric layers. Furthermore, the first fabric layer 20 also comprises the retaining means 70 in the form of restricted regions 71 defined by stitched geometry borders 72 that extend through both the first 20 and second fabric layer 30.

20 The connected weight elements 100 are illustrated as chains of similar size, but they may vary in size and weight and they may be made from other types of connected weight elements 100 as shown in Figs. 5a-5e. In the preferred embodiment of the weighted duvet 10, shown in Figs. 4a-4c, the discrete segments 110 of the connected weight elements 100 form closed loops around the restricted region of the retaining means 70. This configuration allows the discrete segments 110 to
25 move and adjust to the shape of the user 1 under the weighted duvet 10, while still restricting it to the region between the sectioning stitches 52 and the geometry borders stiches 72. This ensures that the discrete segments 110 will not be able to pile in one side or corner or the duvet section 50, instead the weight that they will
30 provide will be distributed over a larger area of the duvet section 50. This has the benefit of a more controlled placement of the weight without losing the flexibility and

ability to follow the shapes of the duvet user 1 which will make the weighted duvet 10 more comfortable to use.

Figs. 5a-5e illustrate various embodiments of connected weight elements 100 according to the invention. These types show various ways of connecting the weight
5 elements and of delivering different types of tactile and pressure stimuli to the duvet user 1. However, it is to be understood that they can be combined or varied and are not an exhaustive list. For example, size, mass and material of the connected weight elements 100 and the connection mediators 105 may vary between different discrete segments 110 and within the same discrete segments 110.

10 Fig. 5a shows a variant of the connected weight elements 100, where the connected weight elements 100 are directly connected to each other as they are linked elements in the form of a chain. Each link in the chain is connected to a neighbour link. In a preferred embodiment, these chains are made of metal, e.g. stainless steel, iron, brass, or zinc. In other equally preferred embodiments, the chains are made
15 from other materials such as glass, wood, or hard plastic which is preferably recycled plastic. The links of the chain might also be made from flexible materials such as pieces of rope or other spun materials of natural fibres, e.g. cellulose fibres. They can also be made from multiple materials by having links either of different materials or by having links made from one material with a coating of another, e.g.
20 a metal core with a rubber cladding.

Fig. 5b shows a variant of the connected weight elements 100 where the weight elements are beads with a hole in them through which they can be placed onto a connection mediator 105. The beads may be spaced apart so that they can move
25 respectively to each other or they may be placed so close to each other that they are in contact and their relative movement is more restricted. Thus, the connected weight elements 100 are not directly linked, however their placement is still related through the connection mediator 105.

The connected weight elements 100 of Fig. 5b, i.e. the beads, may be made from various materials including, but not limited to, plastic, metal, or wood. Although they
30 are illustrated as round with a hole placed centrally they may take any shape and the hole through which the connection mediator 105 is drawn may also vary in size,

shape, and placement. By having the holes placed off-centre they will create an even more varying tactile stimulation.

Just as the connected weight elements 100, the connection mediator 105 may be made from different materials like a string of leather, a natural fabric, such as cotton
5 or hemp, or it may be a synthetic string, such as rubber that may give it more elastic properties. The connection mediator 105 could also be metal. Indeed, it would be possible to have a small chain such as the one illustrated in Fig. 5a with the addition of beads placed on it similar to what is shown in Fig. 5b.

Fig. 5c shows a different type of beads on a string being another version of
10 connected weight elements 100 in accordance with the invention. In this version, the connected weight elements 100 are clamped onto the connection mediator 105, such that the connected weight elements 100 cannot move relative to each other along the connection mediator 105. Such a solution ensures that the pressure delivered by the connected weight elements 100 is pointwise creating more variation
15 across the duvet user 1 and that they will not bunch on the same region of the connection mediator 105.

As illustrated in Fig. 5c, the connected weight elements may have shapes that comprise variations, such as corners, that makes the sensation of pressure even more pointwise. The shown shapes are only illustrative, stars, squares, spheres,
20 pyramids and other sorts of shapes are foreseen variations to the invention. Additionally, they may also vary in size along the length of a discrete segment 110 or they may have the same size.

As previously described, the materials of the connected weight elements 100 and the connection mediator 105 may vary too.

25 Fig. 5d shows a variant of the connected weight elements 100 that also includes pointwise weights placed statically along a connection mediator 105. In this case, the connection mediator 105 is a band of material. Having a band, rather than a string to which the connected weight elements 100 are attached, has the benefit of a more sturdy discrete segment 110 that is less likely to tear if for example the duvet
30 user 1 pulls on the weighted duvet 10. In this case, the connection mediator may also contribute significantly to the weight of the weighted duvet 10. However, the

broader connection mediator 105 may be slightly less flexible depending on the material of which it is made.

Fig. 5e shows an alternative embodiment of the connected weight elements 100 where the connection mediator 105 is a sheath placed around the connected weight elements 100. Once again the connected weight elements 100 may be placed closely spaced such that they are in contact or they may be more loosely spaced within the connection mediator 105 such that they can move around, be more flexible and provide more sensory stimulation.

Figs. 5a-5e are illustrating only sections of the connected weight elements 100. Although some of them may be mounted directly within the weighted duvet 10 without further treatment, e.g. the chain from Fig. 5a or the clamped beads from Fig. 5c, others may need further treatment. For example, the beads on a string as illustrated in Fig. 5b and the weight in a sheath of Fig. 5e would include means of stopping the connected weight elements 100 from falling off the connection mediator 105. Such stopping means may include knots, stitching openings together, or stoppers in the form of static weights at the ends.

In all cases, it is also possible to connect the ends of discrete segments 110 of the connected weight elements 100 such that they form a loop. This may be done in different ways for the different embodiments of the discrete segments 110. For chain links, another link may loop two free ends together. Strings may be tied together, strips may be stitched and so may sheaths. Furthermore, looping means (not shown) may be attached to the ends. Such looping means may be semi-tubular rivets, snap-hooks, or other types of hooks and loops.

Figs. 6a-8e illustrate different embodiments of the retaining means 70 as shown for a single duvet section 50 of the weighted duvet 10 limited by sectioning stitches 52. The same type of retaining means 70 may be used in all duvet sections 70 across the entire weighted duvet 10 or different duvet sections may comprise different retaining means 70. It is also possible that the weighted duvet 10 has duvet sections 50 wherein there are no retainage means 70 and that it has others where there is a combination of multiple retaining means 70.

Figs. 6a-6f show retaining means 70 of the form of stitched border 72. These stitched borders 72 may be simple lines holding together the first 20 and second fabric layer 30 preventing the discrete segment 110 from passing a specific position. Alternatively, the stitched borders 72 may delimit restricted regions 71 which are
5 places within the duvet section 50 wherein no discrete segment 110 of connected weight elements 100 are present. The restricted region 70 may take any shape or form, just as the stitched borders 72 generally may define any contour.

Fig. 6a illustrates the same retaining means 70 as shown in Figs. 4a-4c. In this case, the retaining means 70 is a restricted region 71 in the shape of a round circle placed
10 centrally in the duvet section 50. The stitched geometry border 72 delimits the restricted region 71. The stitched geometry borders extend through the first 20 and second fabric layers 30 whereby the fabrics are held together and form a barrier restricting where to the discrete segments 110 of connected weight elements 100 (not shown) may move. Thus, the discrete segment 110 cannot be at the centre of
15 the duvet section 50, and if it forms a loop around the restricted region 71, it also cannot bunch in one end of the duvet section 50 when pulled by gravity as part of the discrete segment 50 will always be stopped by the stitched border 72.

Although the central geometry in Fig. 6a is a circle, it might take any shape, such as a square, a triangle, or another polygon. The circle has the benefit that it will be
20 subjected to more even amounts of wear along the periphery of the circle, whereas sharper angles are likely to experience wear at the tips. However, sharper angles and indeed lines that do not define a fully bordered region will allow more freedom of movement for the discrete segments 110 of connected weight elements 100.

Fig. 6b shows a different variant of the retaining means 70 where multiple restricted
25 regions 71 are formed by separate stitched borders 72. These restricted regions 71 are shown as squares to emphasize that the geometry might be any but as previously mentioned the geometry might be circles or any sort of polygon or star shape also when there are multiple restricted regions 71 within a duvet section 50.

The discrete segment 110 of connected weight elements 100 may be looped around
30 all of the multiple retaining means 70 present in the duvet section as illustrated in Fig. 6b. This constellation has the benefit that the discrete segment cannot bunch up in one corner or side of the duvet section 50 since the retaining means 70 will

force it to be spread out. Simultaneously, the regions, in which the connected weight elements 100 cannot be present, are smaller, giving the discrete segments 110 more freedom to conform to the shape of the duvet user 1.

Fig. 6c shows a different variant of having multiple restricted regions 71 present within a duvet section 50. In this embodiment, the stitched borders 72 define triangles. They are spaced apart such that the discrete segment 110 of connected weight elements 100 may enter in between them, but will still be kept from collapsing to one side of the duvet section 50.

Fig. 6d illustrates that the retaining means 70 may take the form of stitched borders 72 that do not define a restricted region. This is yet another way of hindering the discrete segment 100 of bundling in one spot while still allowing it to occupy most positions of the duvet section 50 such that it may follow the shape of the body of the duvet user 1.

Fig. 6d further illustrates that the discrete segment 110 of connected weight elements 100 may take other forms than a simple loop. In the present illustration, it makes a figure eight geometry whereby it is ensured that some of the connected weight elements 100 are present in the centre of the duvet section 50 as the retaining means 70 hinders them from moving away completely.

Fig. 6e shows simplistic retaining means 70 in the form of a stitched border 72 defining a single line through part of the duvet section 50 around which the discrete segment 110 of connected weight elements 100 can be looped. The single line stitched border 72 can prevent the discrete segment 110 from bunching just as well as a restricted region 71, but it will guide the placement of the discrete segment 110 less. Thus, the choice of stitched borders 72 and how large a part of the duvet section 50 that is barred to the discrete segment 110 of connected weight elements 100 is a trade-off between allowing the discrete segments freedom of movement and ensuring that they are in preferred positions along the weighted duvet 10. Which of these is more beneficial from the others may vary for different regions of the weighted duvet 10 which is why the retaining means 70 may vary between different duvet sections 50. Furthermore, which solutions are more comfortable for the individual duvet user 1 may vary making the possibility of different retaining means 70 essential for optimal comfort and benefits of the weighted duvet 10.

Fig. 6f shows yet another variant of the retaining means 70 in the form of stitched borders 72 to illustrate how simple line contours may also be used to distribute and guide the placement of the discrete segment 110 of connected weight elements 100 in a single loop.

- 5 Such stitched borders 72 in the form of simple lines may, of course, be placed at angles with respect to each other as well as vary in number and length.

Figs. 6a-6f have illustrated various embodiments of retaining means 70 in the form of stitched borders 72, however the list should not be considered exhaustive as the concept can be extended to various other geometries of restricted regions 71,
10 shapes of stitched borders and placements of both the retaining means 70 and the discrete segments 110.

Figs. 7c-7f show various embodiments of retaining means 70 in the form of point fasteners 74 that keep the discrete segments 110 of connected weight elements 100 in place at specific points within the duvet section 50.

- 15 Fig. 7a shows that point fasteners 74 may be stitches sewing the discrete segment 110 directly to the second fabric layer 30. Stitches have the benefit of ensuring full control of the placement of weight at specific points along the weighted duvet 10, in this manner it is possible to ensure a spread of the weights or to ensure that weights are retained in spots where they are most needed. However, they do also make
20 specific points of strain to the second fabric layer 30. Meanwhile, knowing these points of stress in advance does also offer the possibility of reinforcing those regions and prevent tears as might be done by applying the third fabric layer 40 (not shown).

Fig. 7b shows point fasteners 74 in the form of straps. These straps create loops through which the discrete segments 110 are placed. In the present embodiment,
25 the loops are large enough to allow the discrete segment 110 freedom of movement and rotation within the duvet section 50 while still ensuring that some of the connected weight elements 100 or the connection mediator 105 must be positioned within each loop of the point fasteners 74. Once again the retaining means 70 ensure that the discrete segments 110 cannot fully bunch in one side of the duvet
30 section 50.

The point fasteners 74 may be straps stitched into the section stitches 50 as shown in Fig. 7b, but they may also be straps creating loops stitched to other positions in the duvet section 50 as shown in Fig. 7c. Additionally, the straps of Fig. 7c are shown to be smaller than the connected weight elements 100 clamped onto the connection mediator 105, such that the connection mediator 105 may move under the point fasteners 74 while the connected weight elements 100 cannot pass them. Using smaller straps will restrict the movement of the discrete segments 110 and give further control of the placement of the weight applied to the duvet user 1. However, since the connection mediator 105 can move with respect to the point fasteners 74 this does not hamper the weighted duvet 10 from conforming to the shape of the body of the duvet user 1.

Fig. 7d illustrates that the point fasteners 74 may be straps in the form of loops placed in various positions in the duvet section 50. These loops may further comprise clasping means 75 such as snap fasteners or buttons allowing the straps to be opened and closed such that they can provide a tighter fit around the discrete segments 110 and so that the discrete segments 110 can be taken out or exchanged without breaking the point fastener 74 or the discrete segment 110.

Fig. 7e illustrates an alternative form of point fasteners 74 as the discrete segments 110 are connected to the second fabric layer 30 by an adhesive applied between the discrete segments 110 and the second fabric layer 30. In addition, Fig. 7e shows the possibility of having multiple discrete segments 110 of connected weight elements within one duvet section 50. This is, of course, possible for any type of connected weight elements 100.

Fig. 7f shows an alternative version of point fasteners 74 in the form of stitches. Where the stitches in Fig. 7a are placed within the duvet section 50, the discrete segments 110 in Fig. 7f are attached directly into the sectioning stitches 52. Note, that this is only a functional solution if the same connected weight elements 100 does not extend into neighbouring duvet sections 50 as they would otherwise not be discrete segments 110. However, this solution may still be preferable if different types of retaining means 70 are used in neighbouring duvet sections 50.

Fig. 8a-8e show combinations of various types of retaining means 70 including both stitched borders 72 and point fasteners.

Fig. 8a illustrates that the restricted regions 71 may be at the edges of the duvet section and may be in combination with one or more discrete segments 110 which are fastened to the second fabric layer 30 by one or more point fasteners 74. In the specific case of Fig. 8a, two discrete segments 110 are fastened each with two point fasteners 74 in the form of stitches, but they could have used different point fasteners too.

Fig. 8b shows an embodiment of the invention where the retaining means comprise a stitched border in the form of a spiral inside which the discrete segment 110 of connected weight elements 100 is placed. The discrete segment 110 is fixed at the opening and centre of the spiral. This type of retaining means 70 ensures that the connected weight elements 100 will be distributed across a significant area of the duvet section 50 while allowing the discrete segment 110 flexibility to follow the shape of the duvet user 1.

Fig 8c shows another embodiment of the invention with similar benefits to the spiral, in this case the presence of restricted regions 71 guides the discrete segment across the duvet section 50 while point fasteners 74 at the ends of the discrete segment 110 prevents it from bunching up.

Fig. 8d illustrates that multiple stitched borders 72 may encircle each other and form regions to which the discrete segments 110 are restricted. This allows the benefits of the stitched border 72 retaining means 70 to extend to multiple discrete segments 110. In embodiments of the weighted duvet 10, such as this embodiment with multiple discrete segments 110 within one duvet section 50, the duvet section may be provided with multiple mounting openings 35 (not shown).

Fig. 8e illustrates that retaining means 70 in the form of a stitched border 72 can form a restricted region 74 with respect to one discrete segment 110; while a second discrete segment 110' may be placed within this region. In Fig. 8e, the second discrete segment 110' is illustrated to be fixed to the second fabric layer 30 by an adhesive.

Thus, it is clear that various types of connected weight elements 100 and retaining means 70 may be used according to costumes, the distribution of weight and the flexibility of the weighted duvet 10.

PATENTKRAV

1. Vægtet dyne (10) til påføring af stimulerende tryk på en eller flere dynebrugere (1), hvilken dyne omfatter:

- et første stoflag (20) og et andet stoflag (30);
- mindst to dynesektioner (50) langs længden af den vægtede dyne (10), hvilke dynesektioner er afgrænset ved snitsting, der strækker sig gennem det første stoflag og det andet stoflag;
- 10 – hvor mindst en af dynesektionerne (10) indeholder et diskret segment (110) af forbundne vægtelementer (100), der er placeret mellem det første (20) og det andet stoflag (30); og
- fastholdelsesmidler (70) der er forskellige fra snitstingene til styring af vægtfordelingen inden i dynesektionerne (50).

15

2. Vægtet dyne ifølge krav 1, hvor fyldmateriale (25) er til stede mellem det første stoflag (20) og det andet stoflag (30) i et eller flere af dynesektionerne (50).

20 3. Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvor det diskrete segment (110) er kortere end tre fjerdedele af selve den vægtede dyne (10).

25 4. Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvor et eller flere af de diskrete segmenter (110) af de forbundne vægtelementer (100) danner en løkke inden i en eller flere af dynesektionerne (50).

5. Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvor de forbundne vægtelementer (100) er en kæde.

30

6. Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvor fastholdelsesmidlerne (70) omfatter et begrænset område (71), der er afgrænset af et

syet grænseområde (72), langs hvilket de diskrete segmenter (110) af de forbundne vægtelementer (100) kan placeres.

5 **7.** Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvor fastholdelsesmidlerne (70) omfatter to eller flere fastgørelsesindretninger (74).

10 **8.** Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvilken vægtede dyne omfatter et løsbart forbindelsesmiddel, f.eks. mindst en lynlås, der løber over hele den vægtede dyne, således at den kan opdeles i mindst to mindre vægtede dyner.

15 **9.** Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvor mindst to forbundne vægtelementer (100) med mindst to forskellige gennemsnitlige vægte er placeret i mindst to dynesektioner (50).

10. Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvilken vægtede dyne (10) omfatter et tredje stoflag (40).

20 **11.** Vægtet dyne ifølge et hvilket som helst af de foregående krav, hvor det tredje stoflag (40) er et funktionelt lag, der er fremstillet af et andet materiale end det ene eller begge af det første (20) og det andet stoflag (30).

1/6

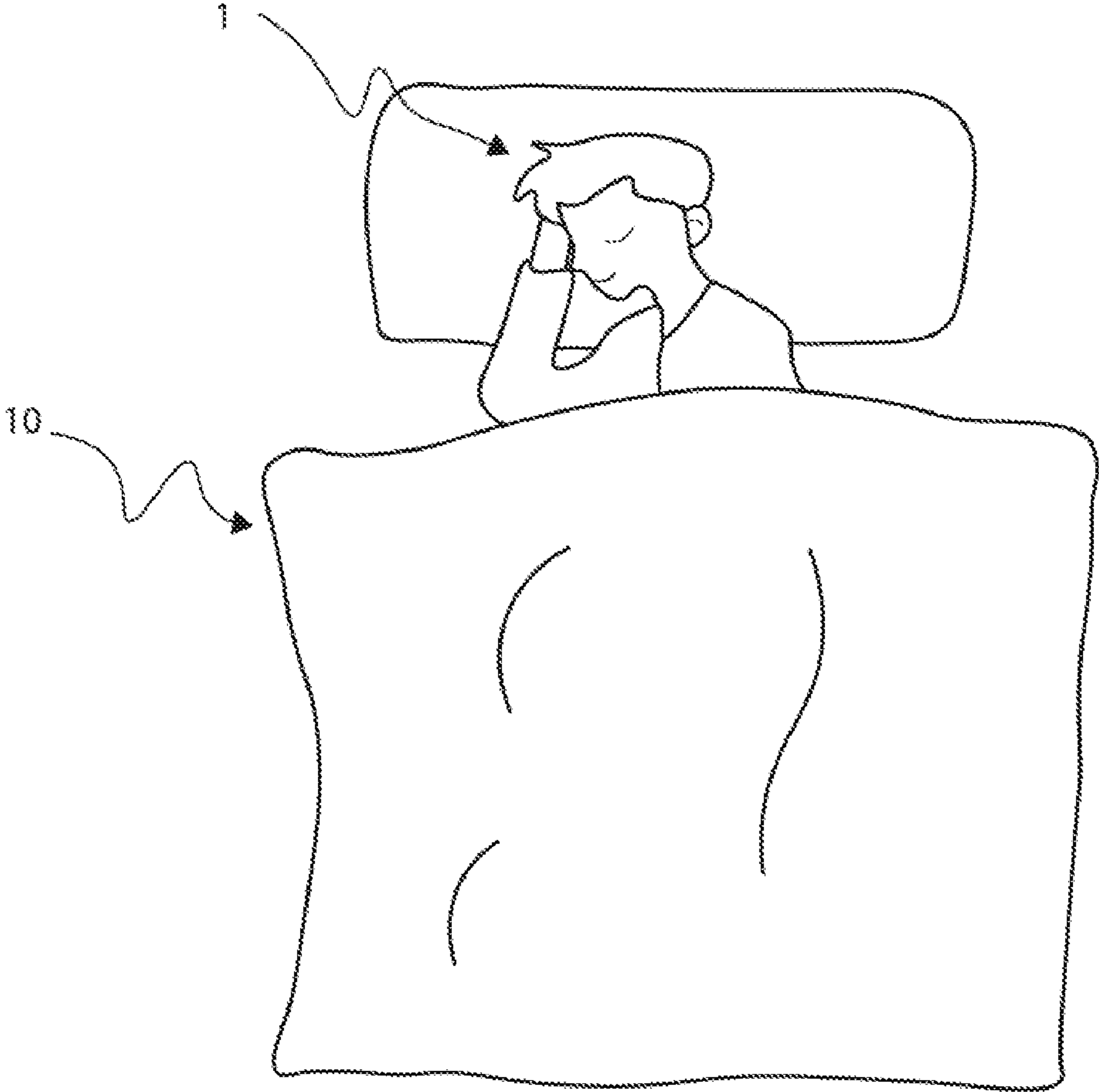


Fig. 1

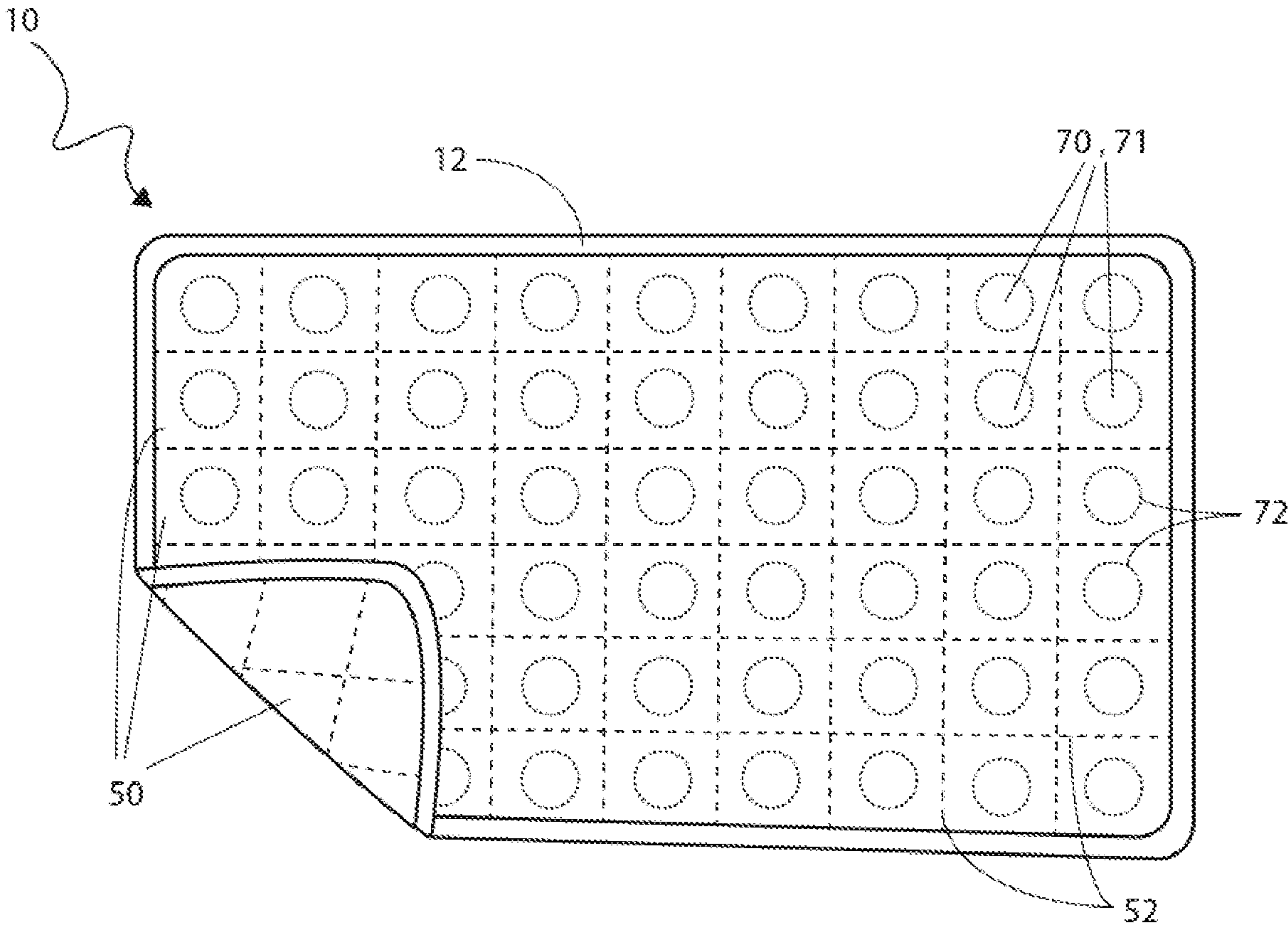
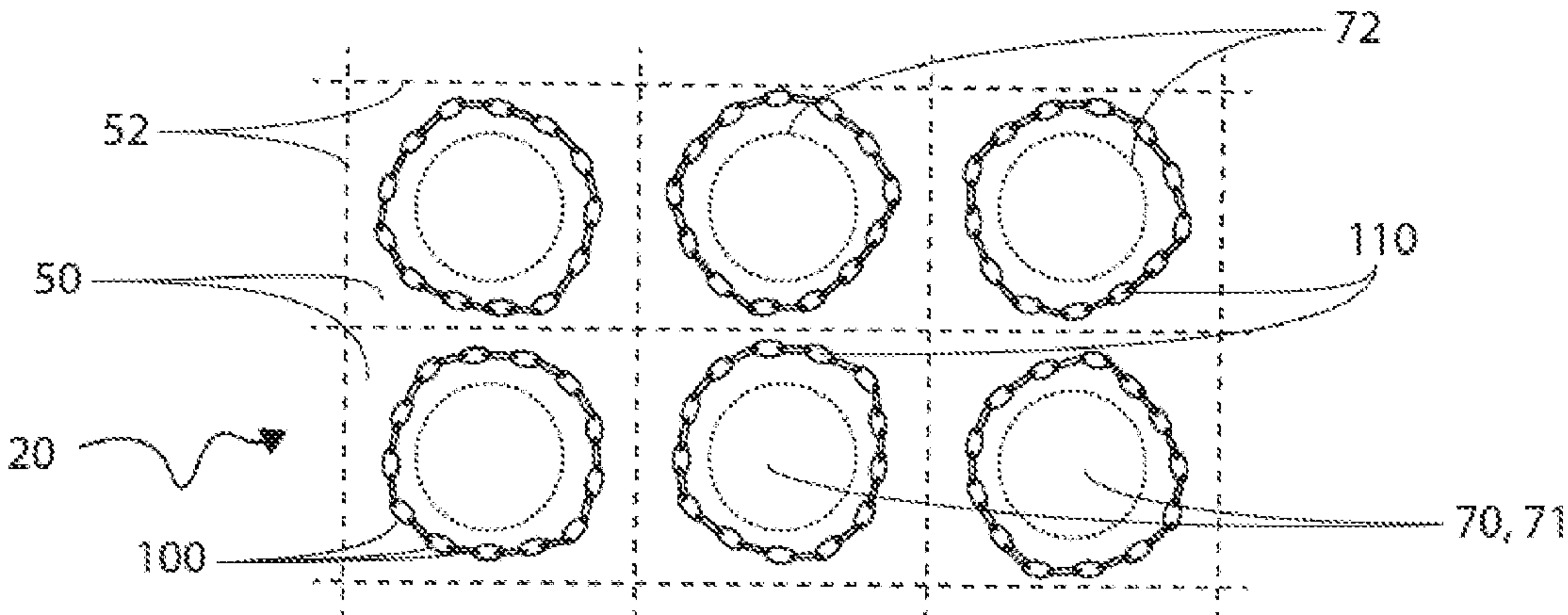
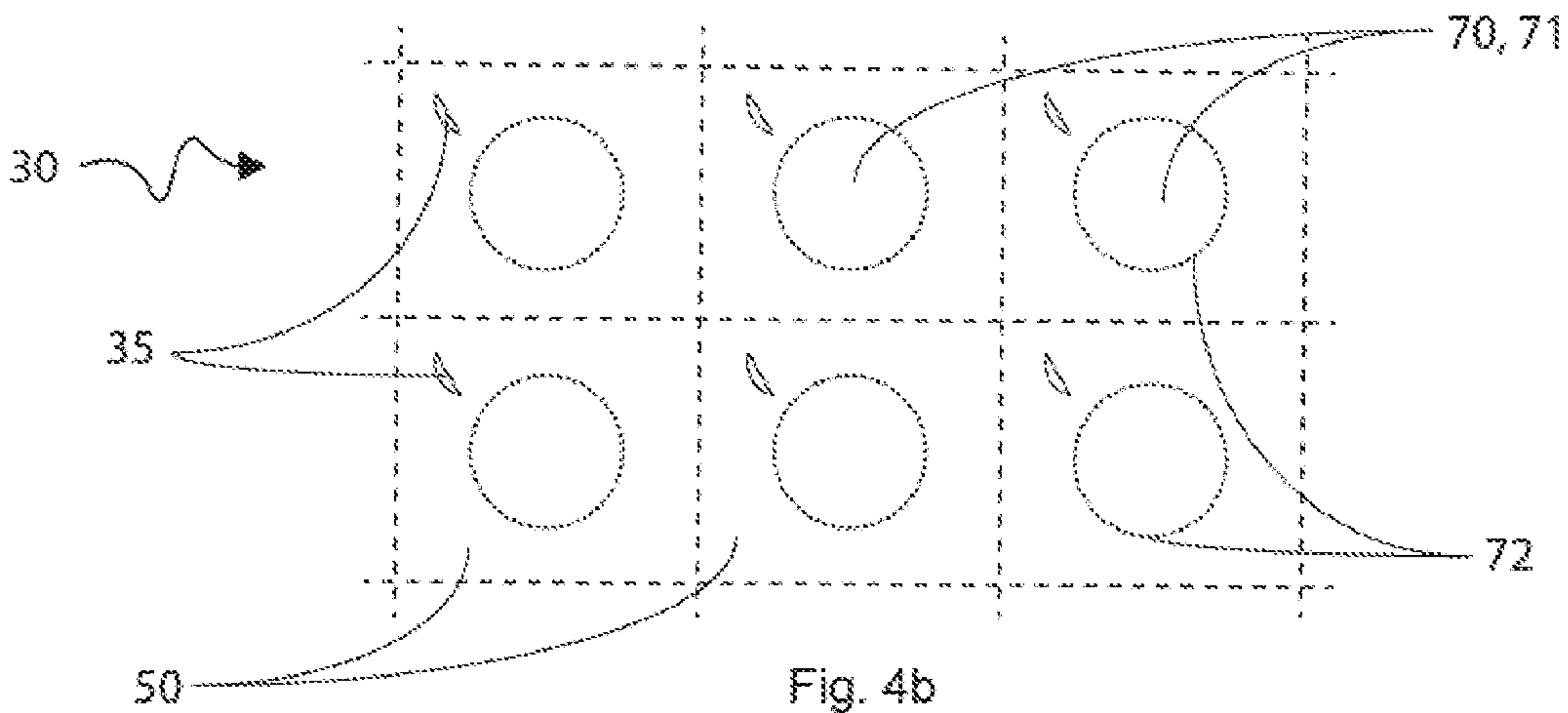
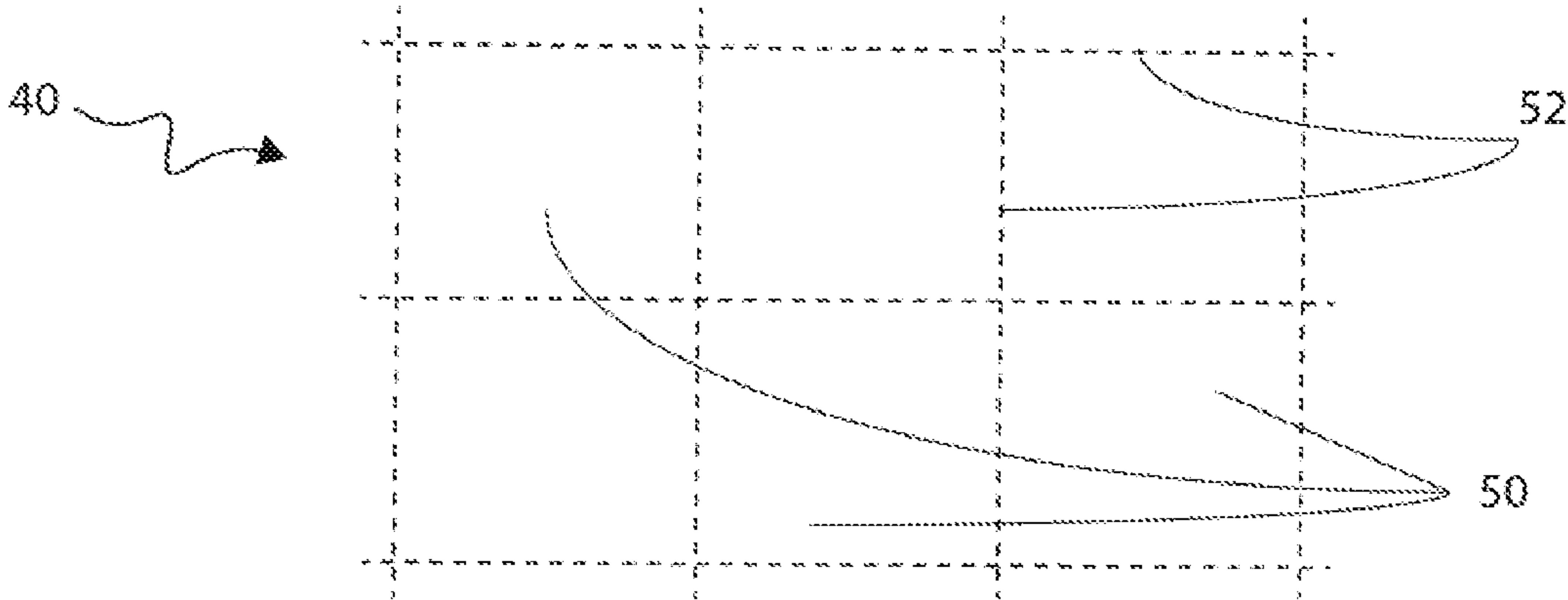
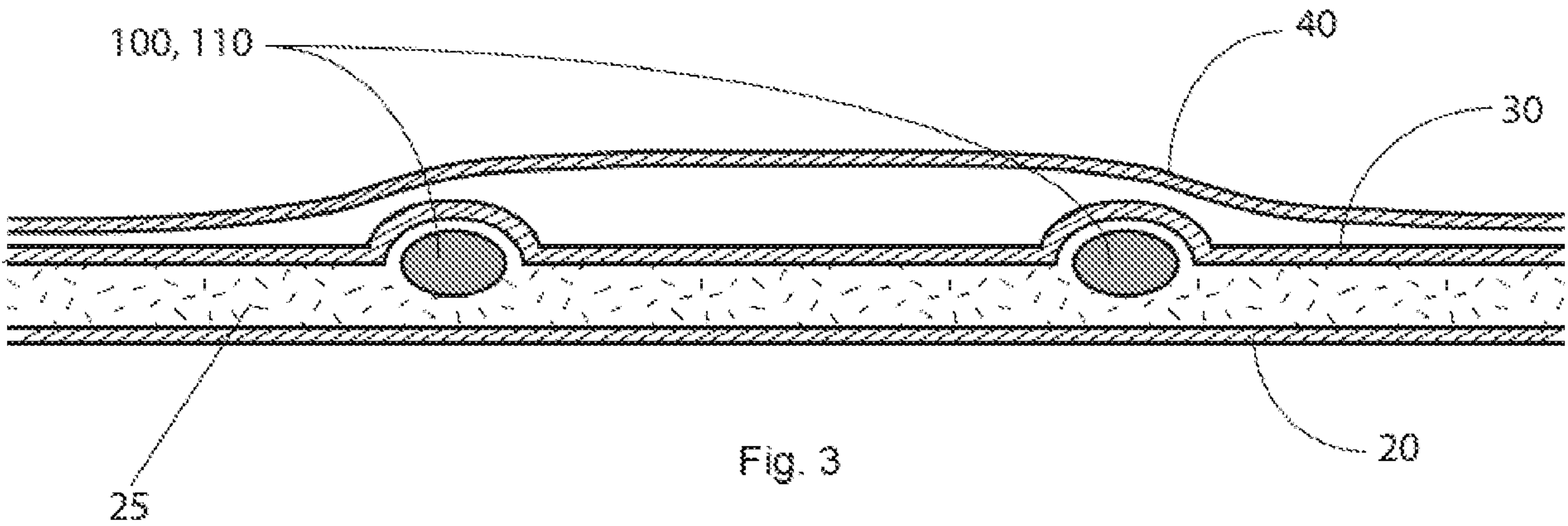


Fig. 2



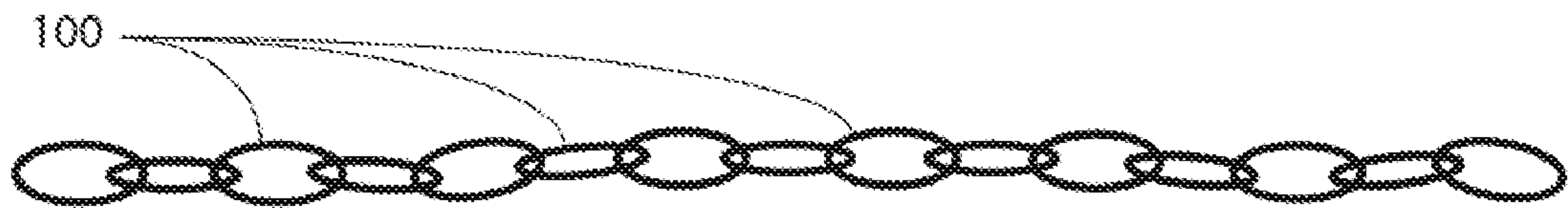


Fig. 5a

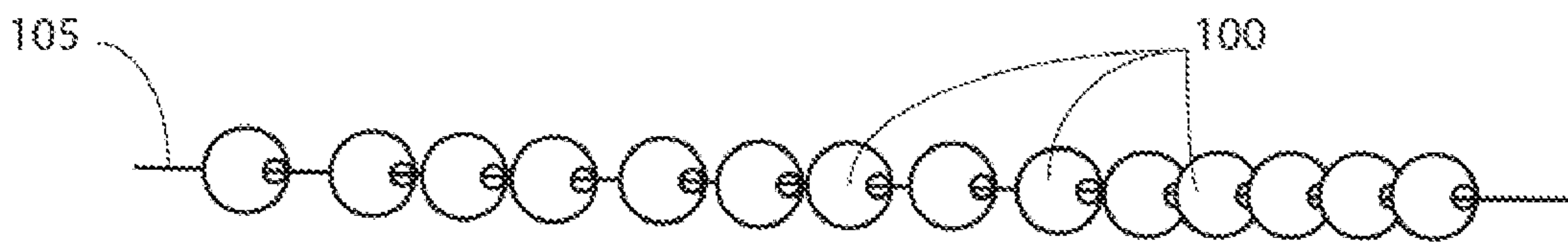


Fig. 5b

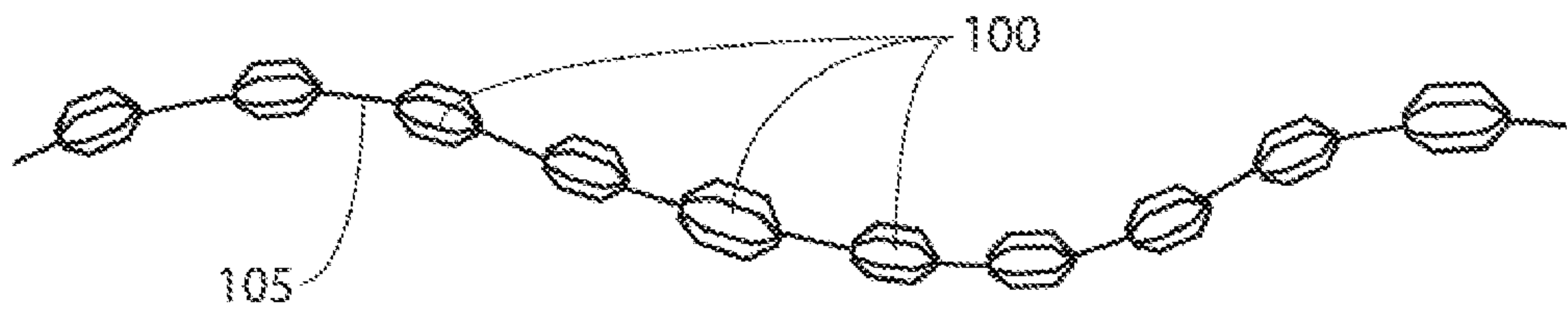


Fig. 5c

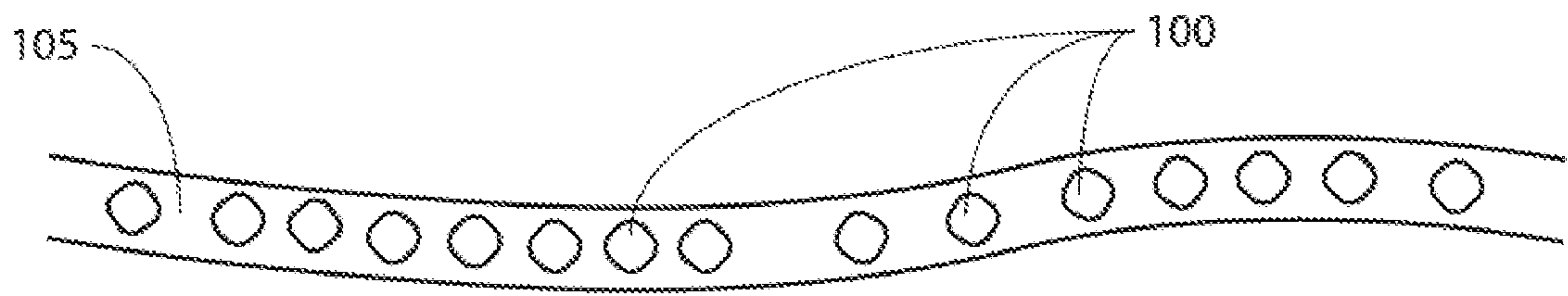


Fig. 5d



Fig. 5e

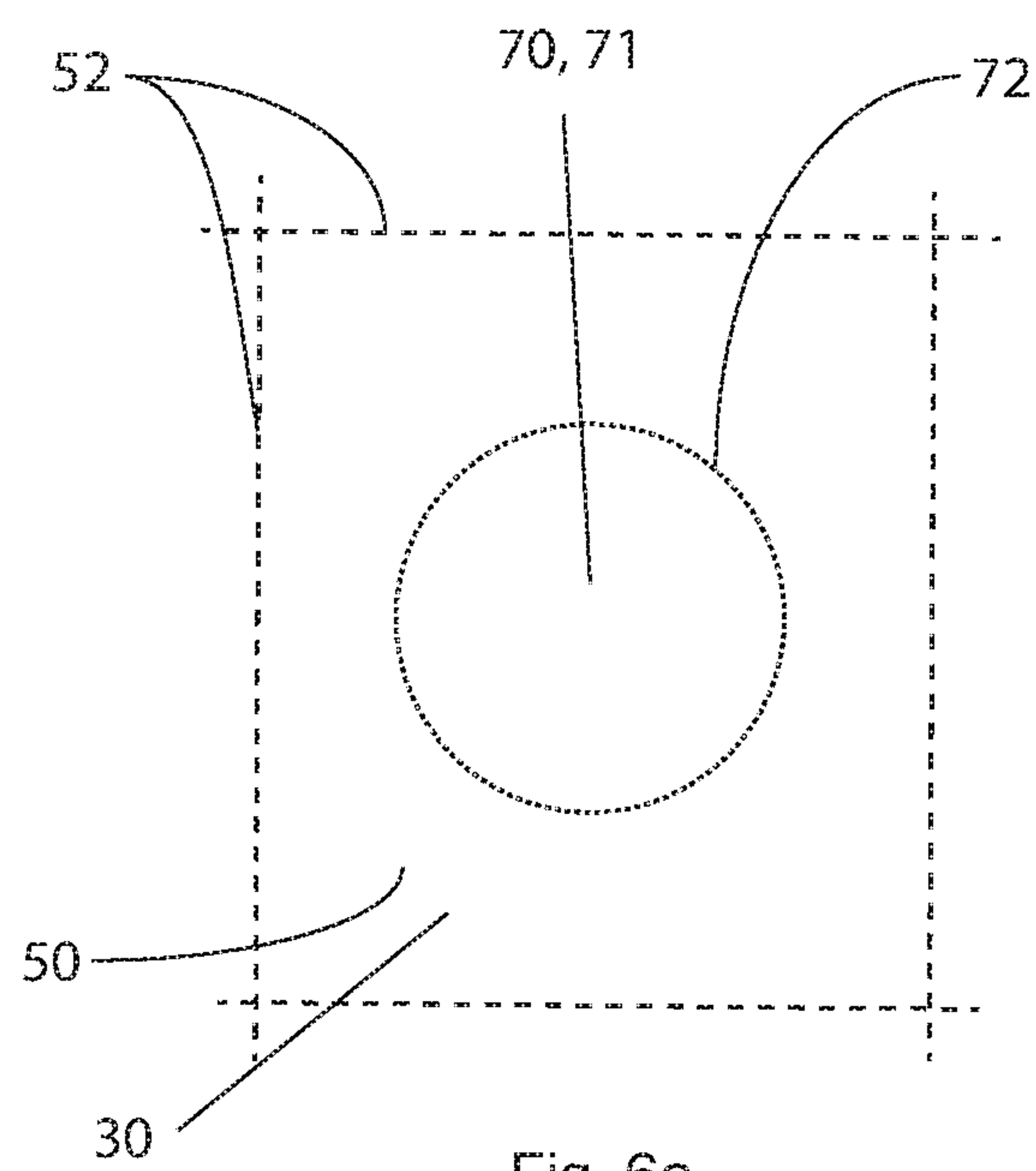


Fig. 6a

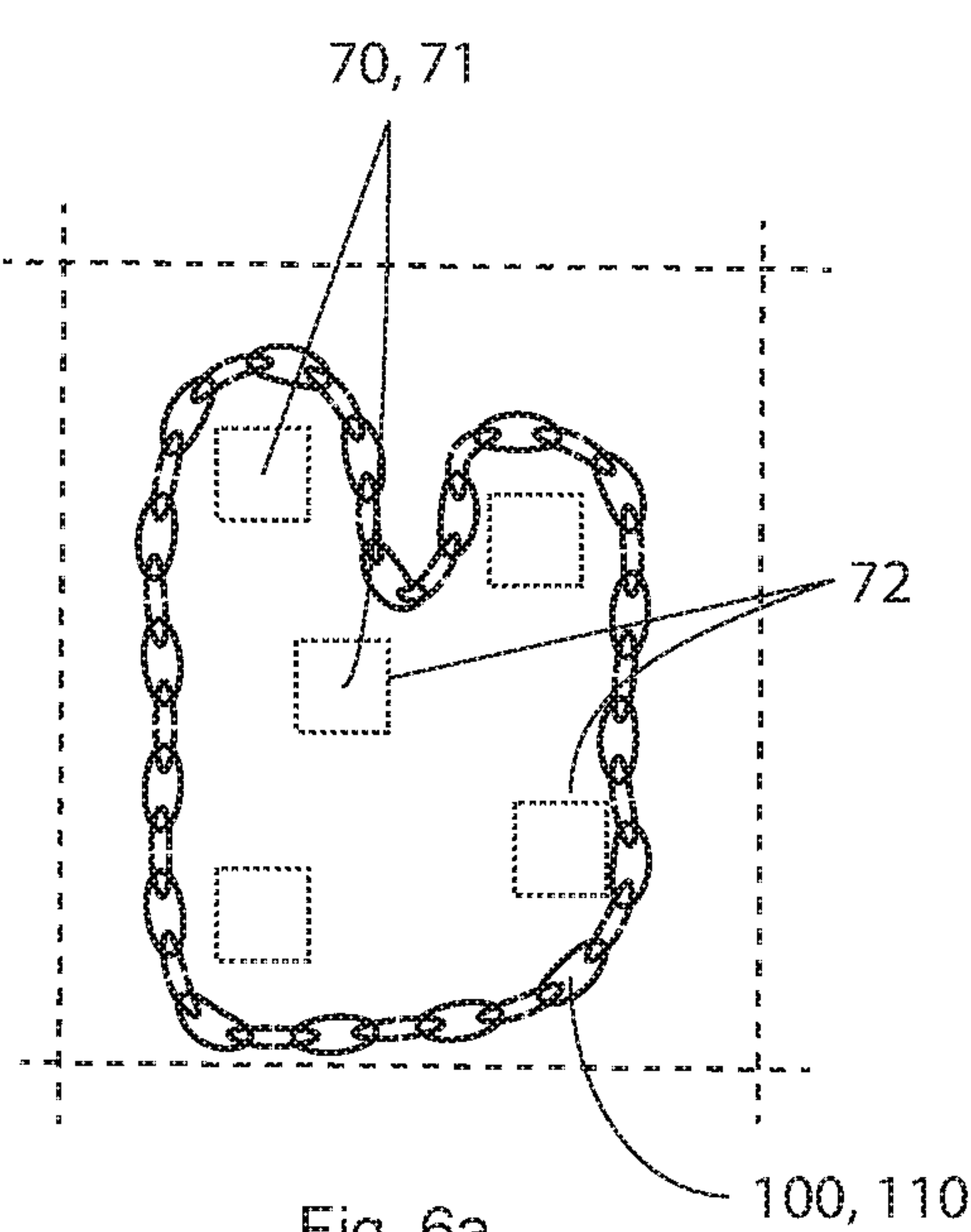


Fig. 6a

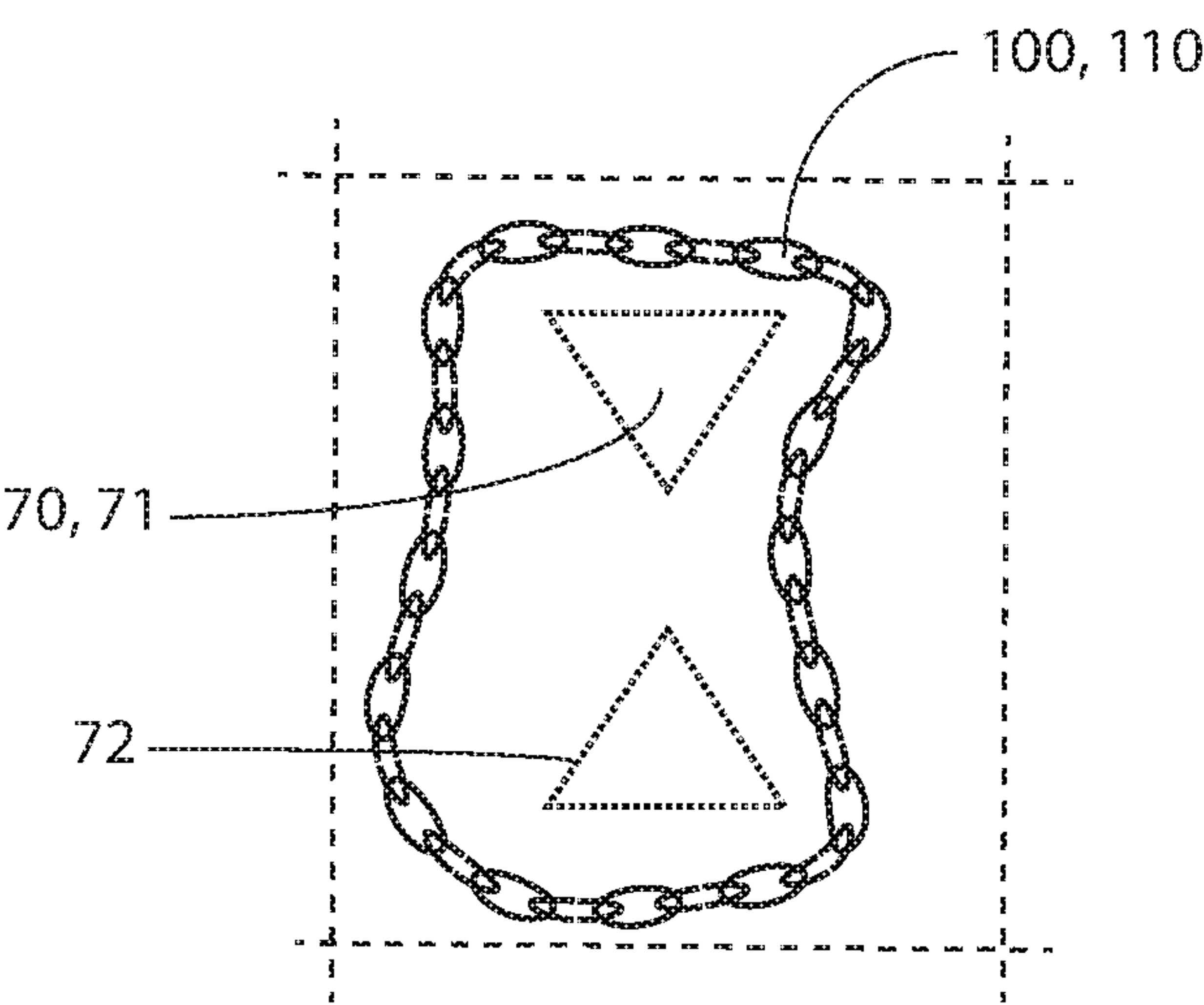


Fig. 6c

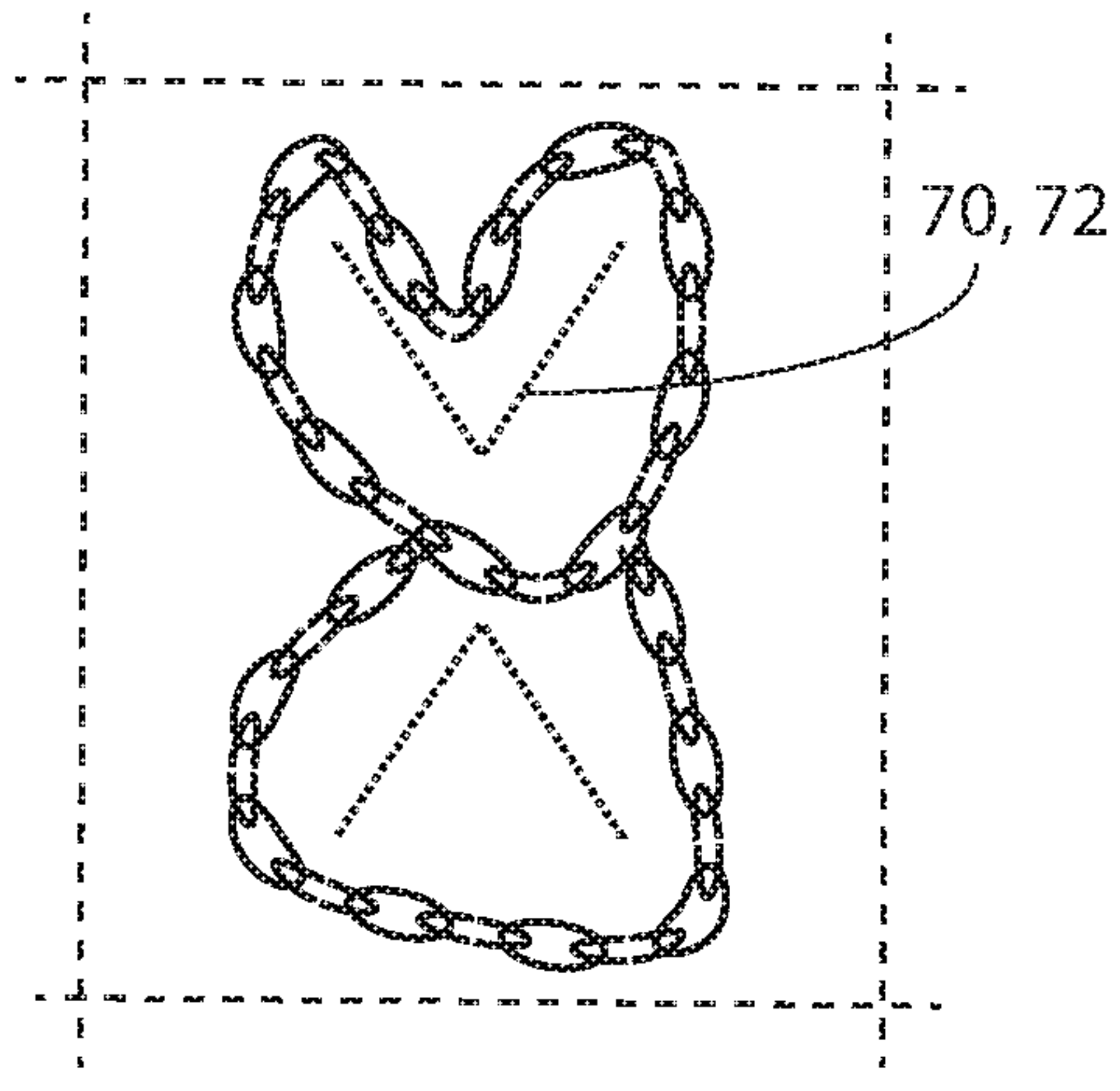


Fig. 6d

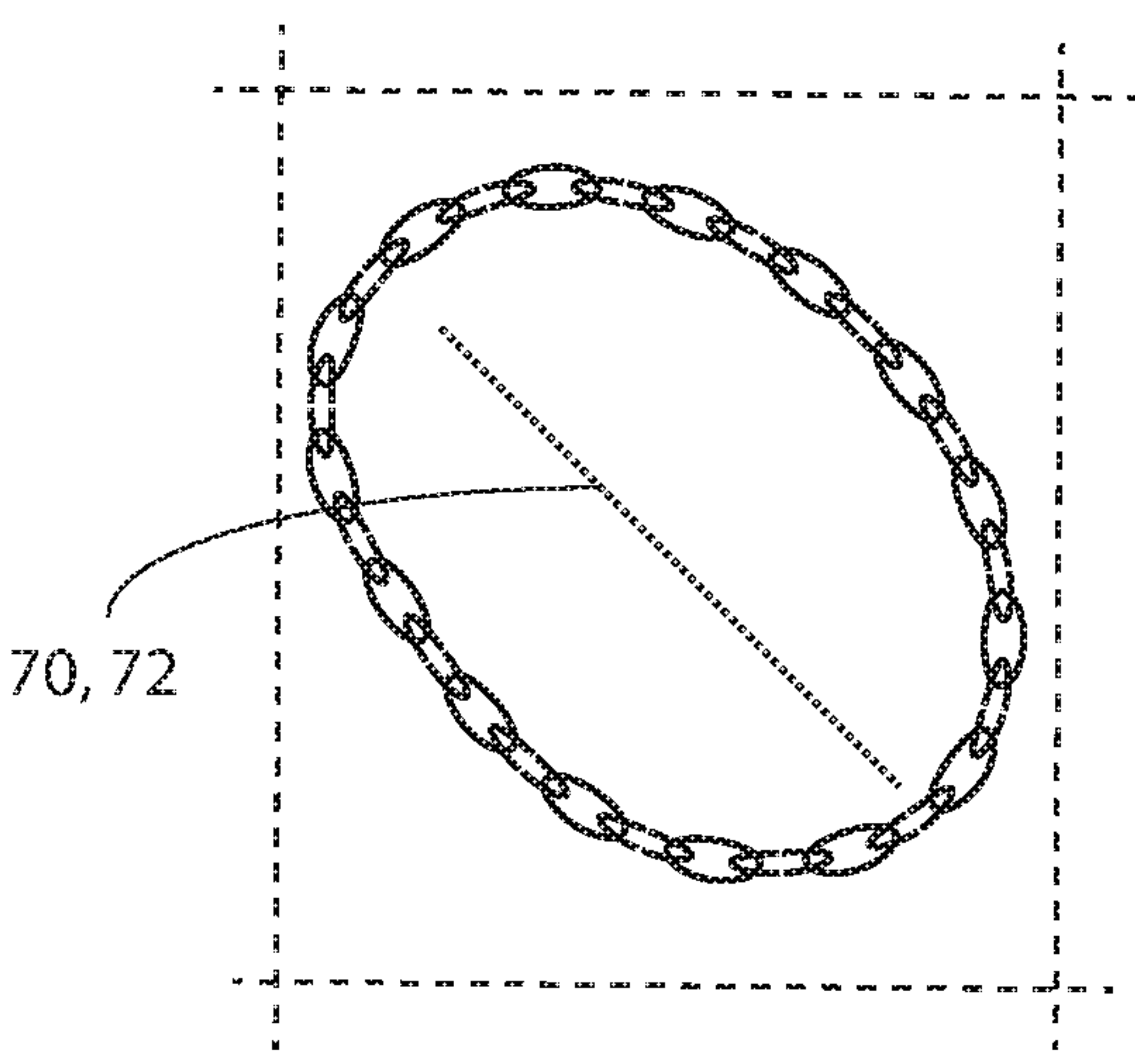


Fig. 6e

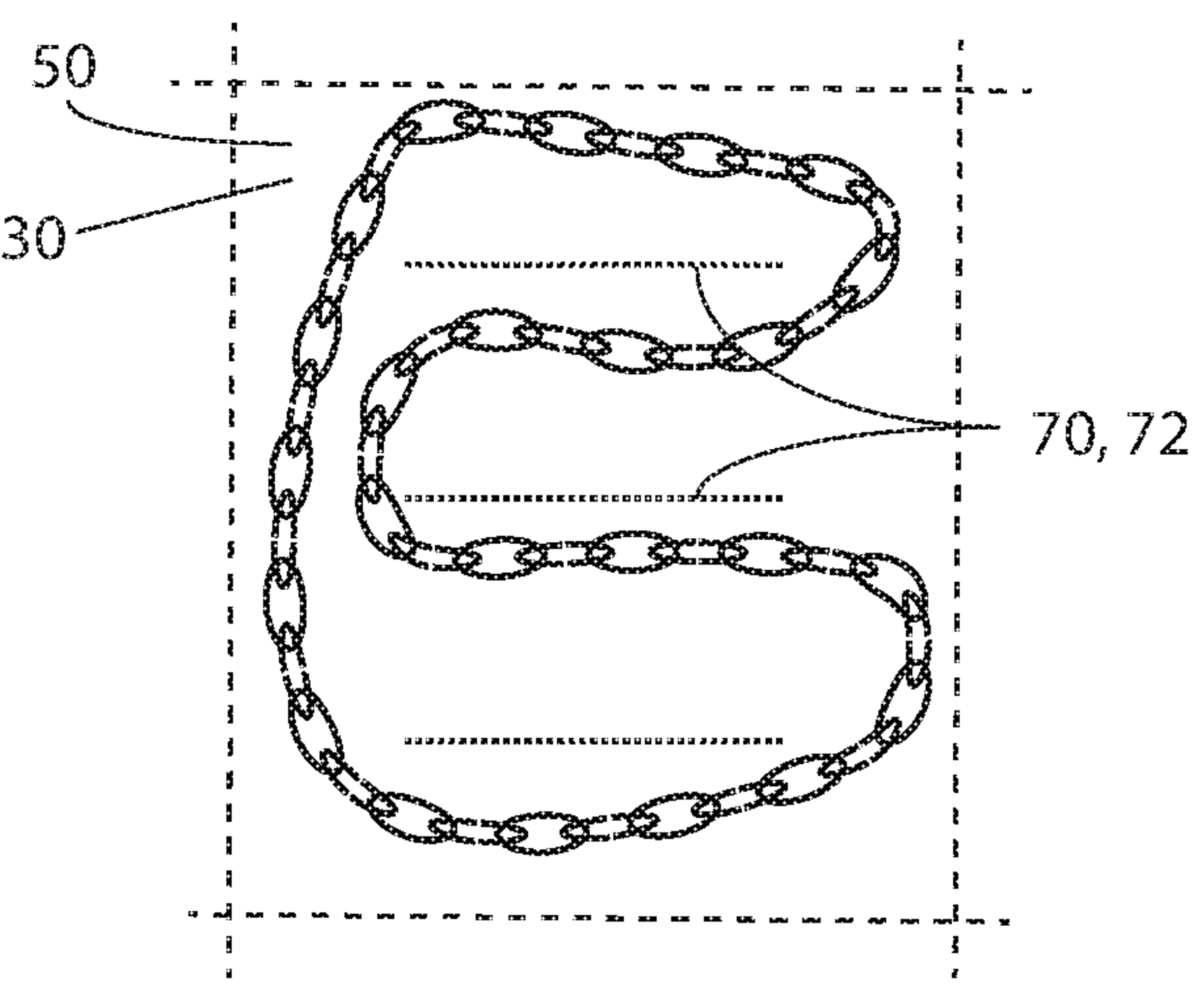
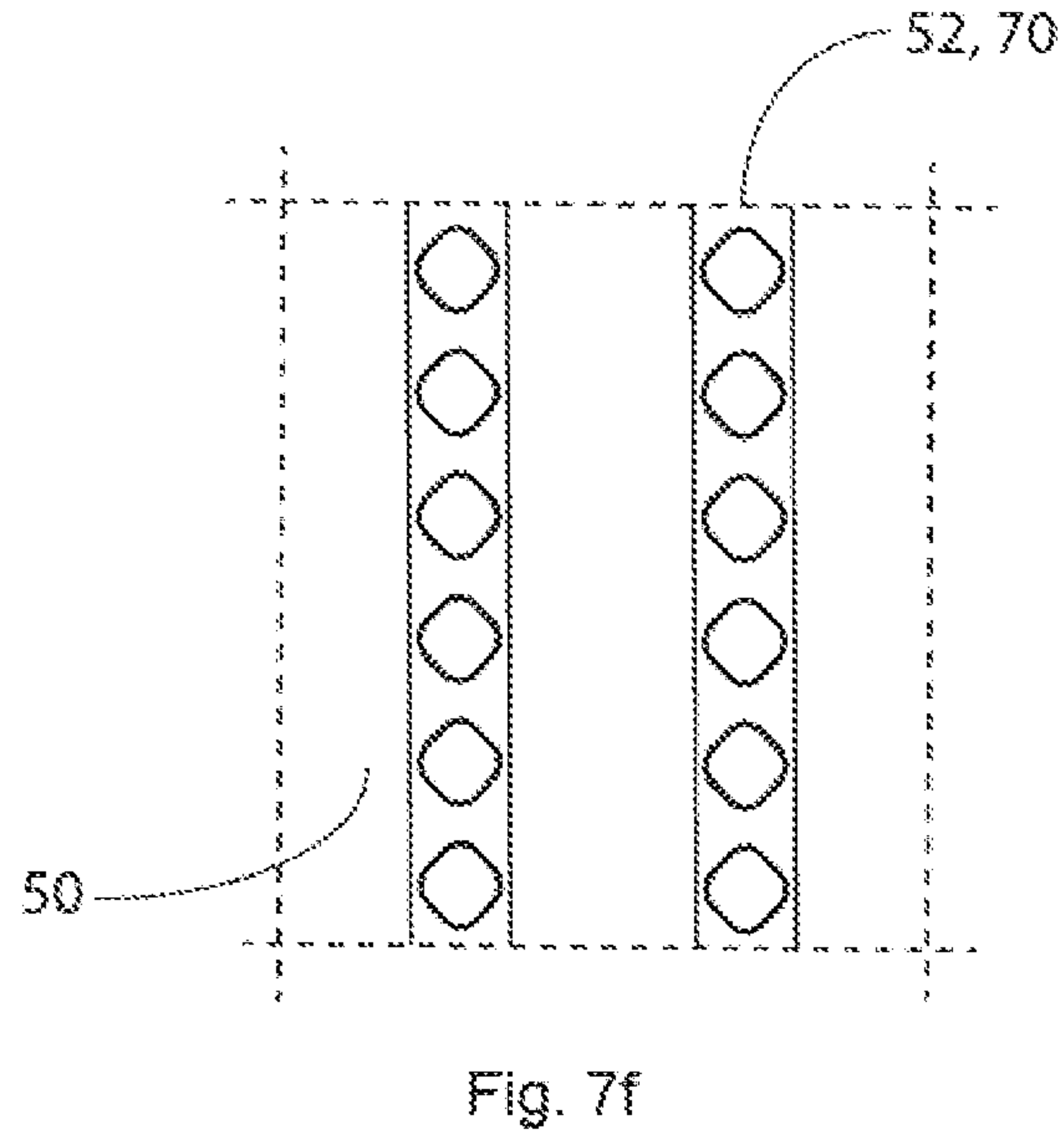
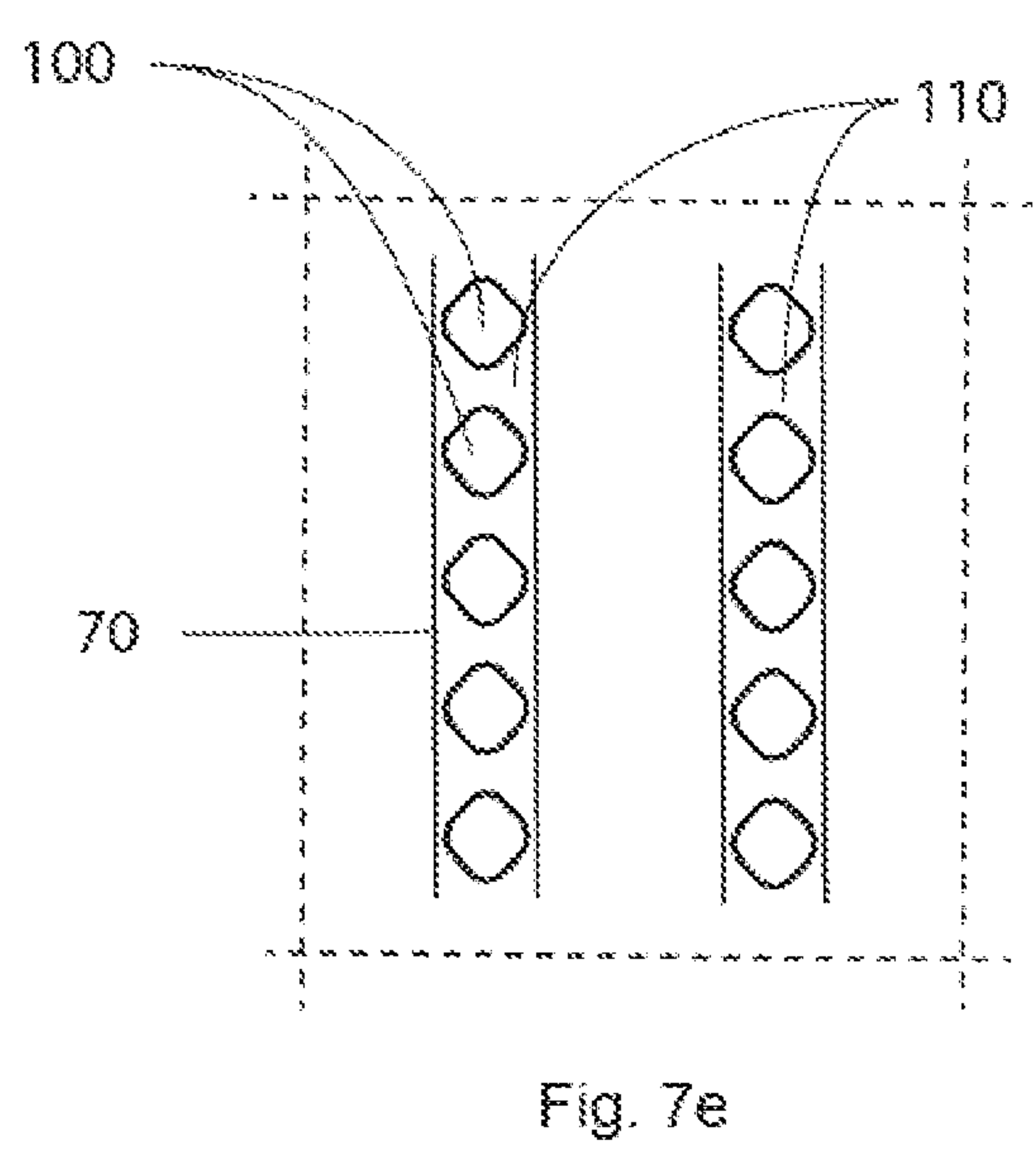
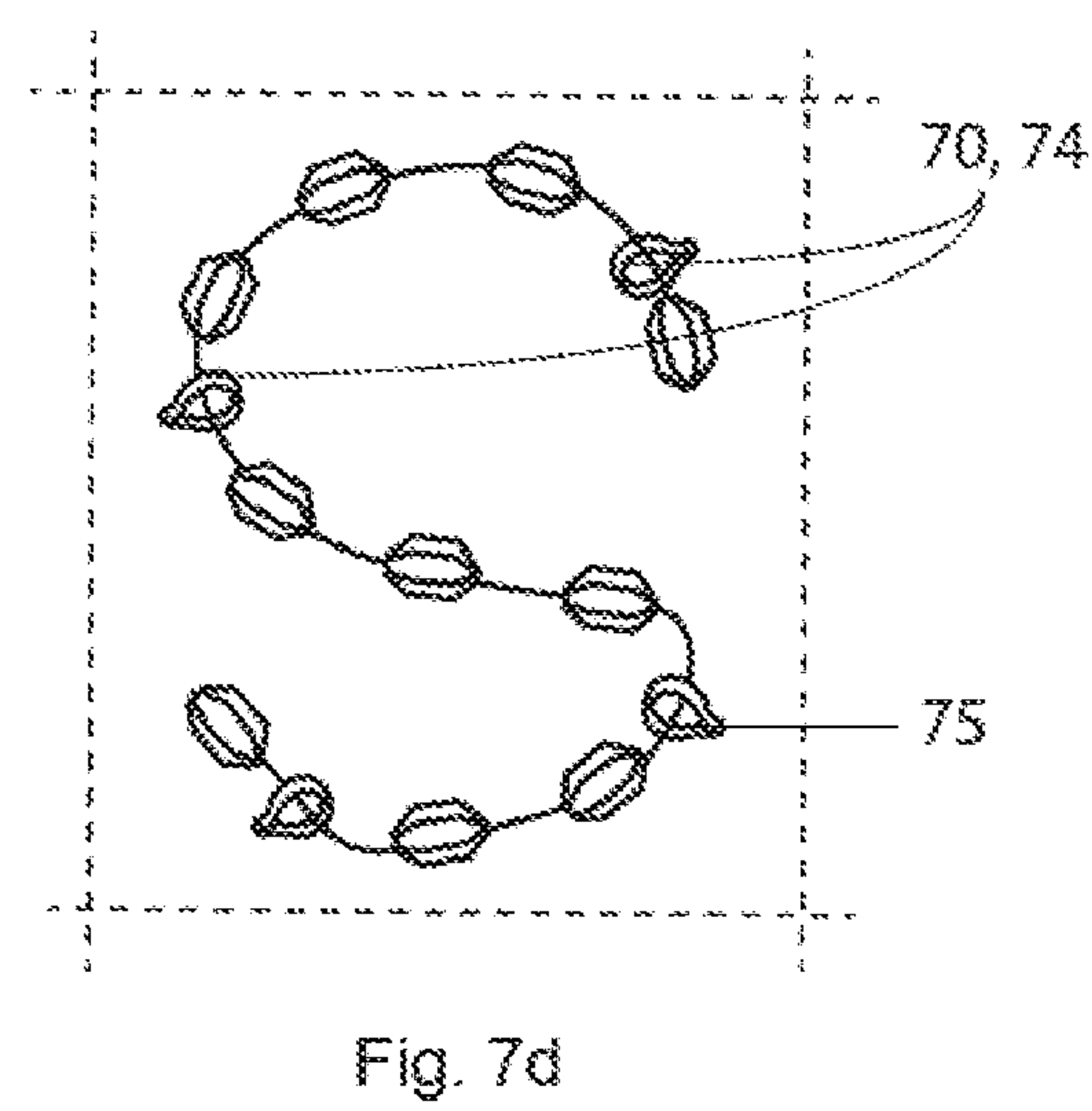
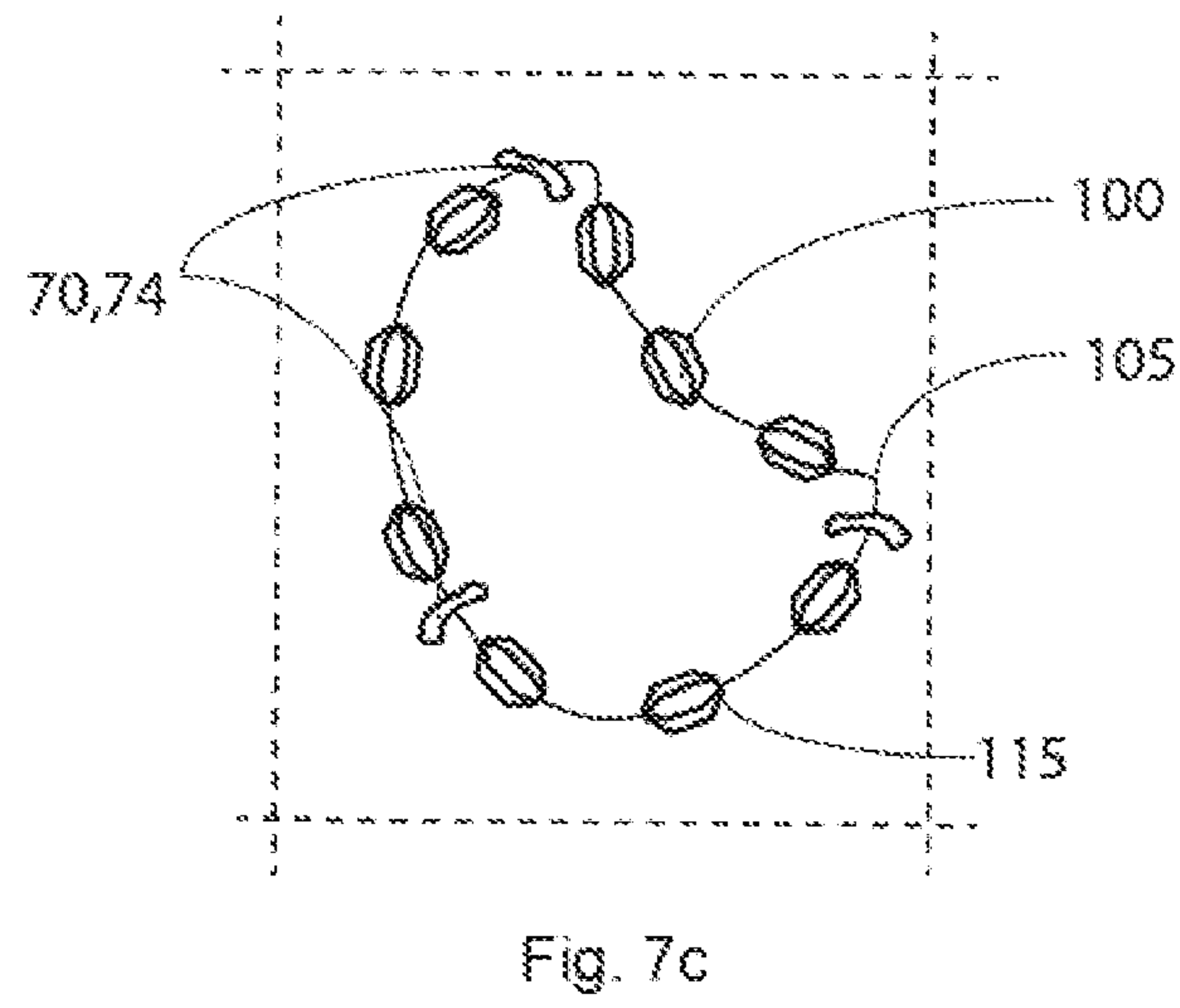
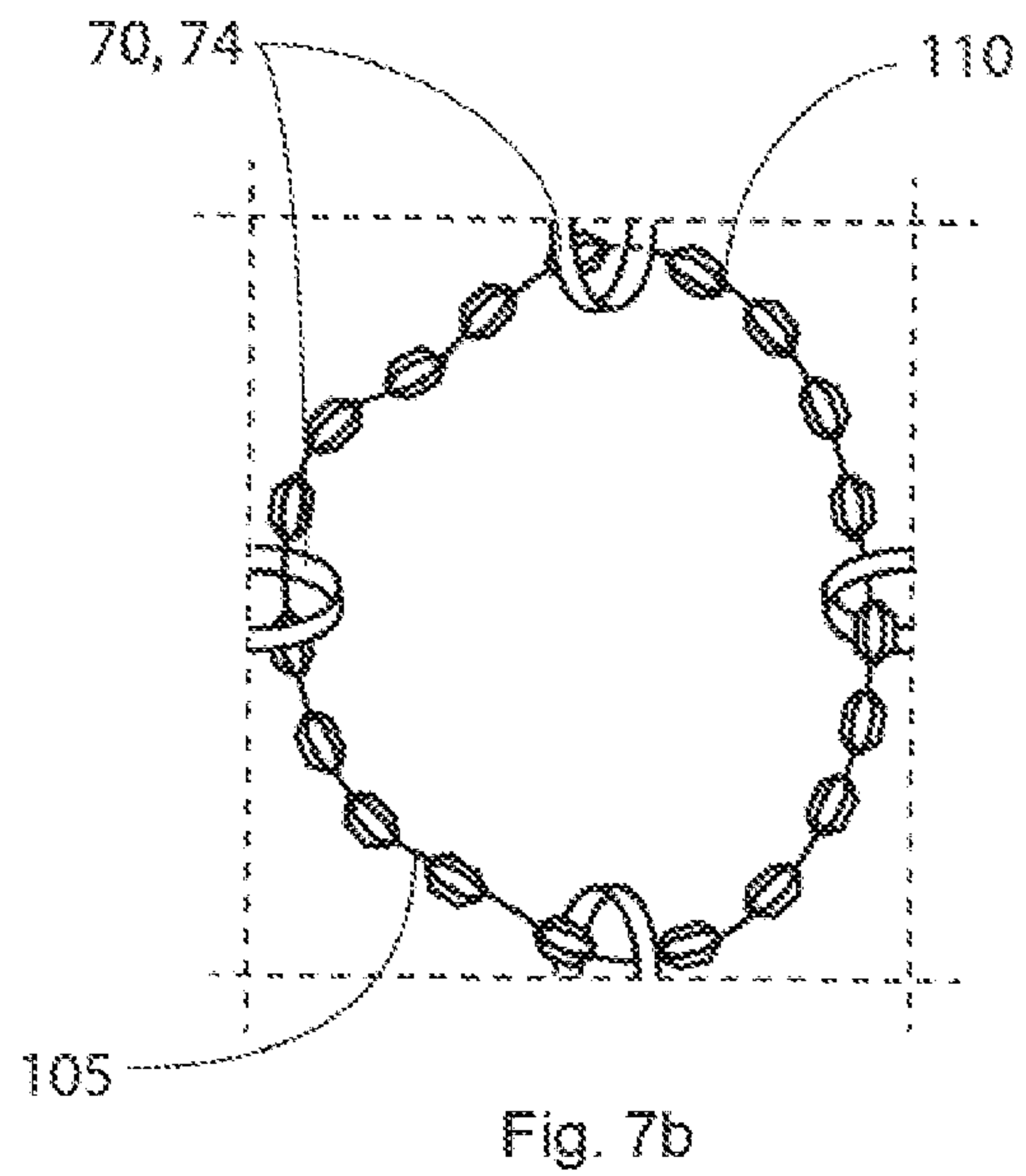
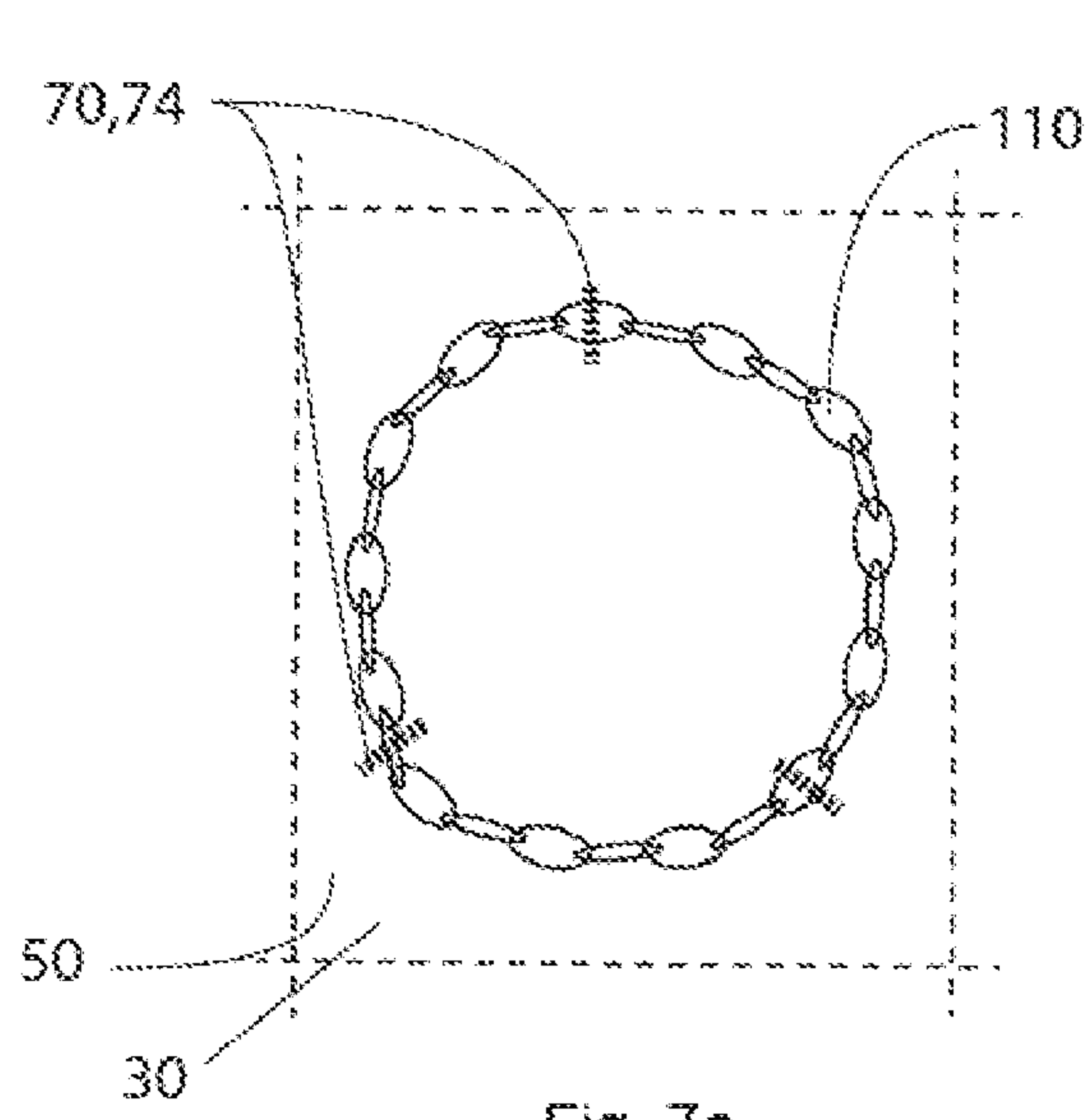


Fig. 6f



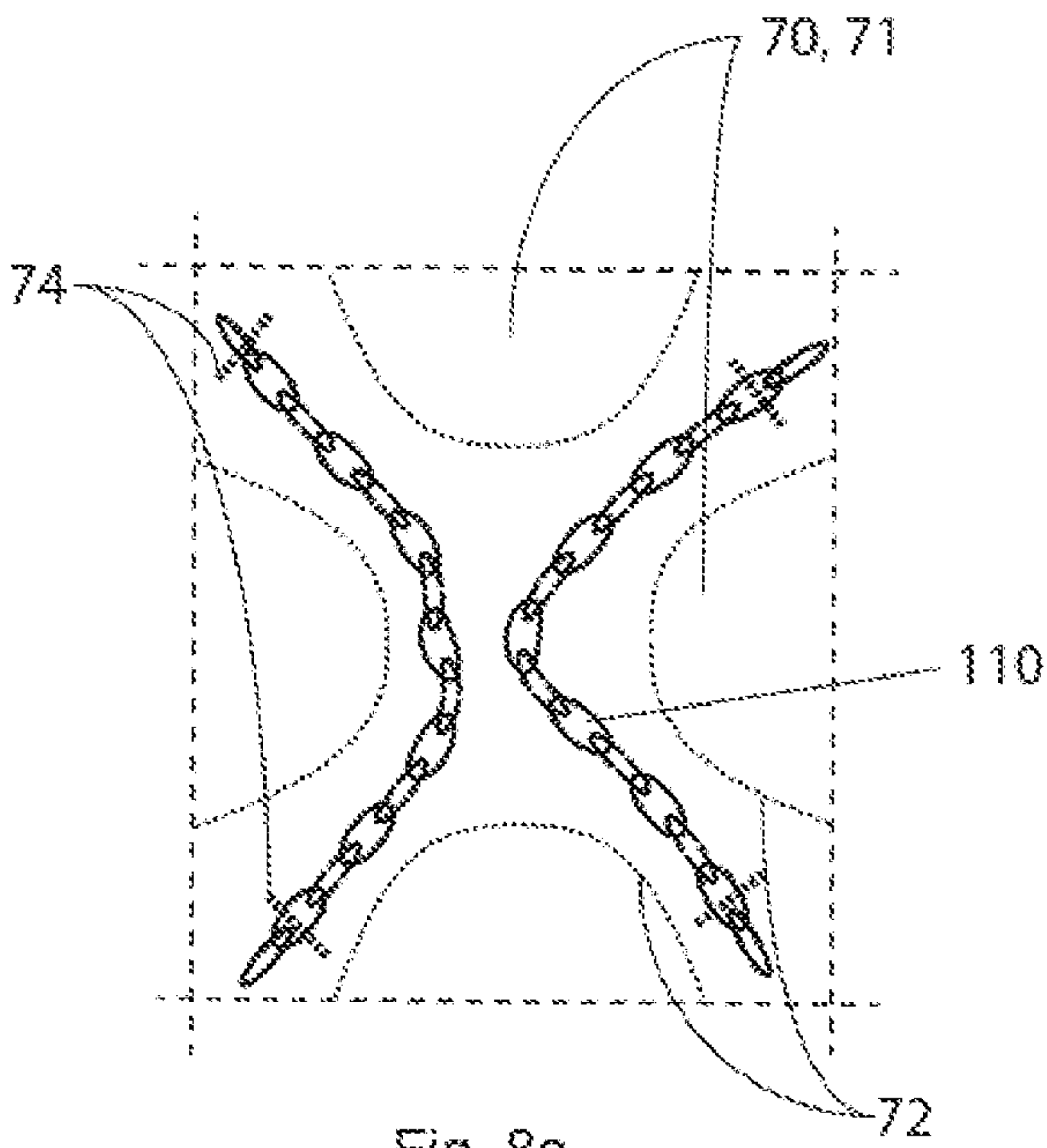


Fig. 8a

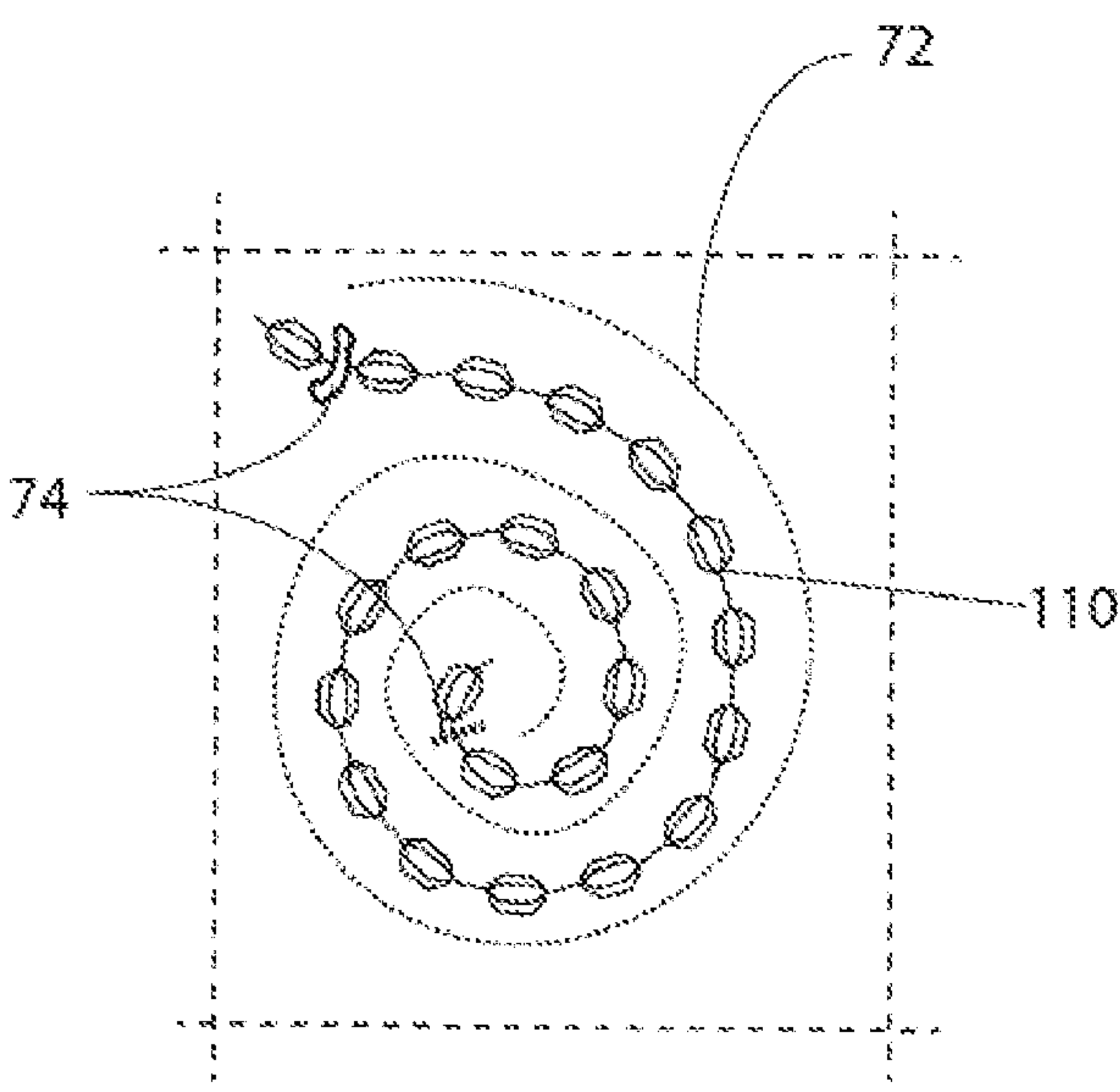


Fig. 8b

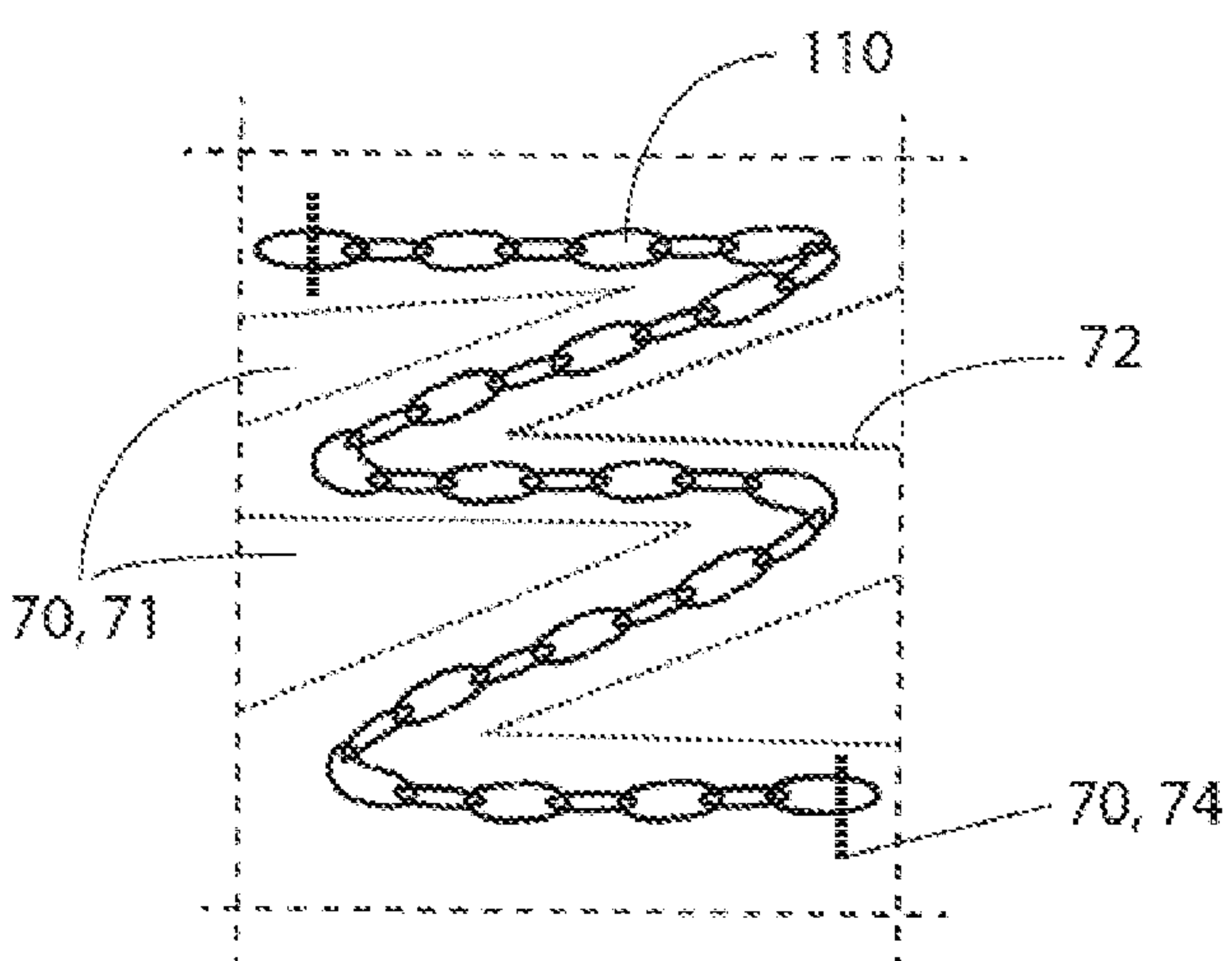


Fig. 8c

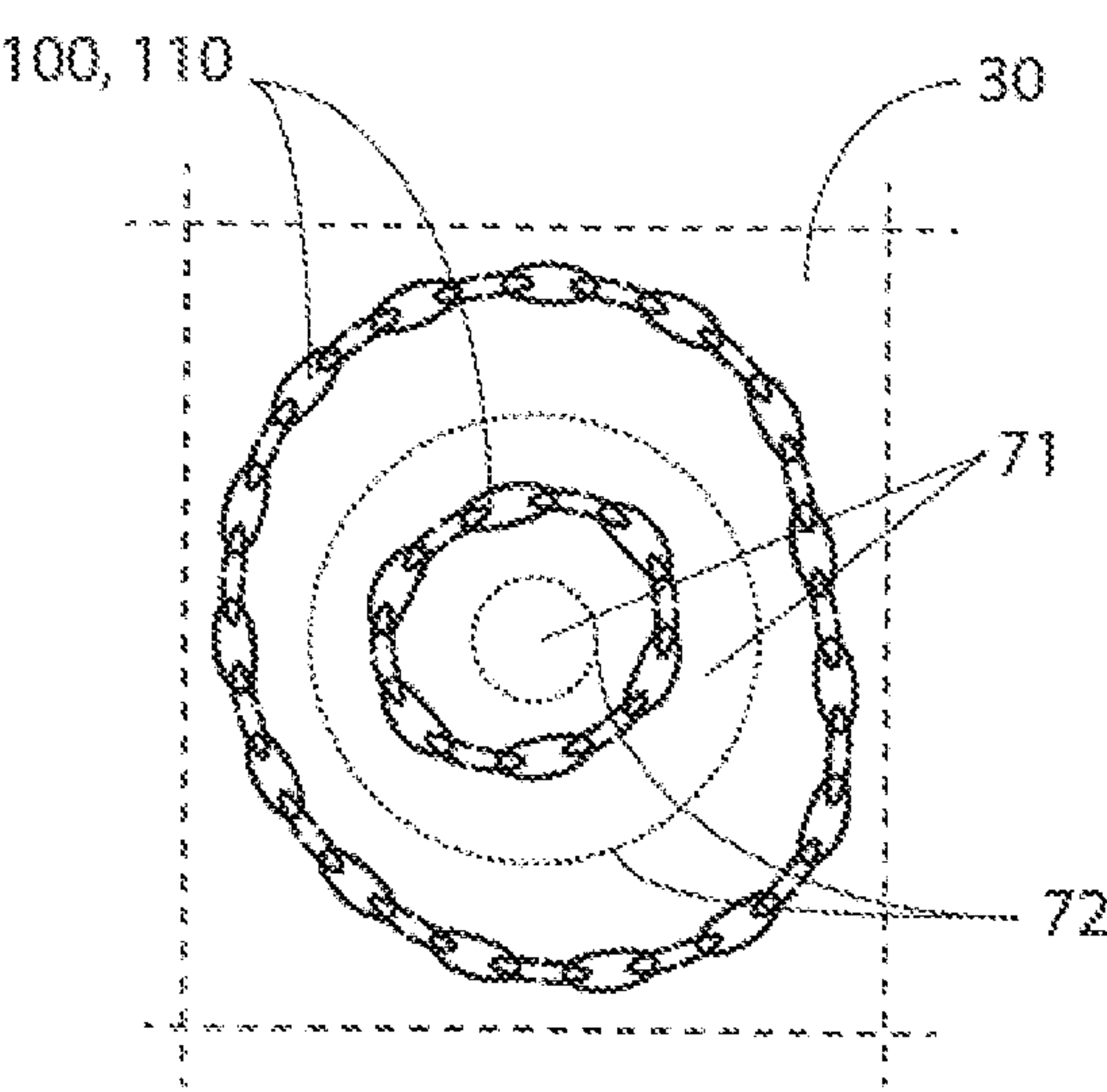


Fig. 8d

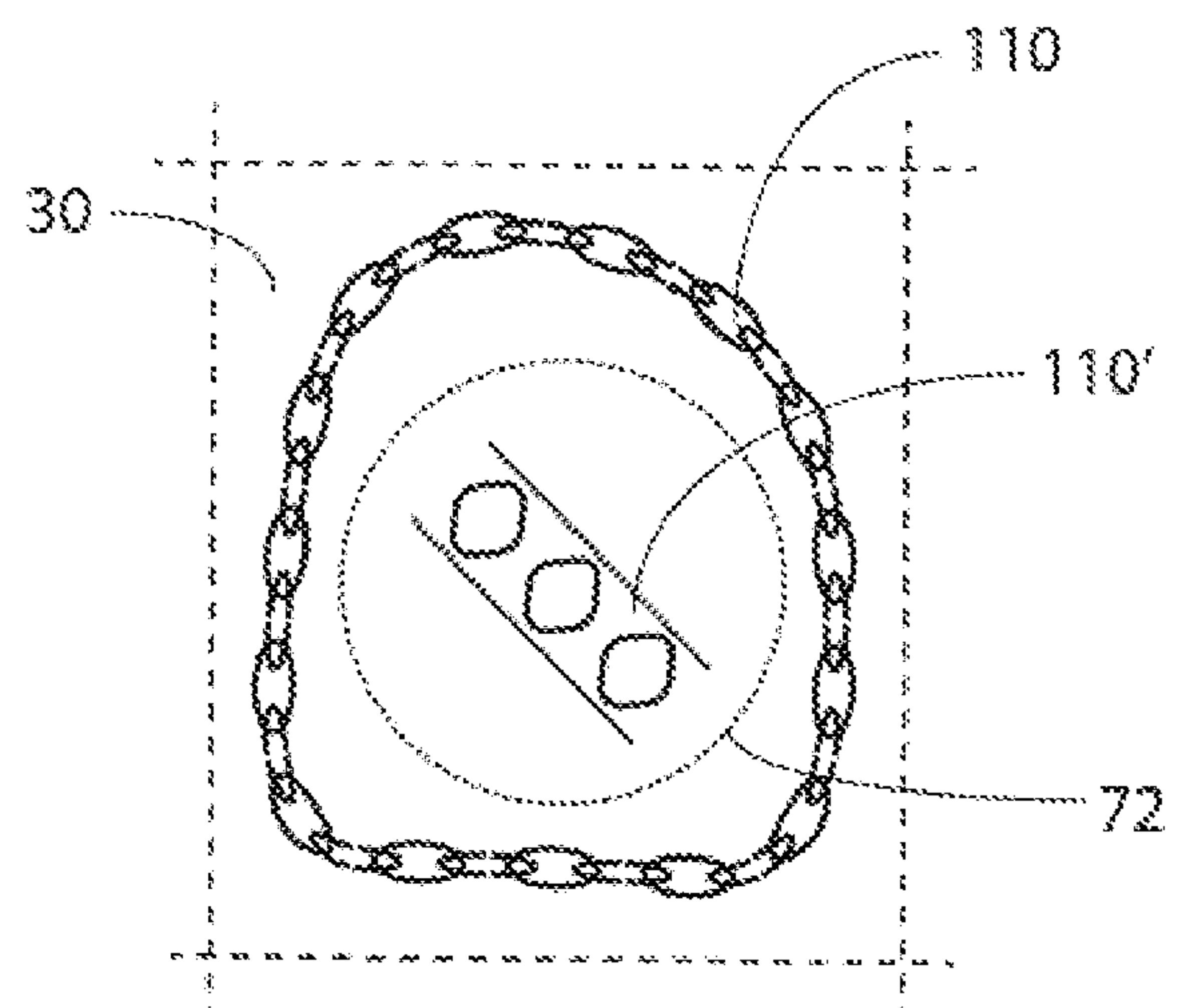


Fig. 8e

SEARCH REPORT - PATENT		Application No. PA 2019 70571
1. ☐ Certain claims were found unsearchable (See Box No. I).		
2. ☐ Unity of invention is lacking prior to search (See Box No. II).		
A. CLASSIFICATION OF SUBJECT MATTER A47G 9/02 (2006.01) According to International Patent Classification (IPC)		
B. FIELDS SEARCHED		
PCT-minimum documentation searched (classification system followed by classification symbols) A47G, A61F, A61H, A61M		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched DK, NO, SE, FI: IPC-classes as above.		
Electronic database consulted during the search (name of database and, where practicable, search terms used) EPODOC, WPI, FULL TEXT: ENGLISH		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant for claim No.
X	<u>WO 2014/166556</u> A1 (PROTAC A/S) 2014.10.16 See whole document	1-4, 6-12
X	<u>WO 2014/166557</u> A1 (PROTAC A/S) 2014.10.16 See whole document	1-4, 6-12
A	<u>WO 2017/194456</u> A1 (SOMNA AB) 2017.11.16 See figure 2; abstract	1-12
A	<u>SE 1651725</u> A1 (MONDIAN AB) 2017.01.16 See figure 1a; abstract	1-12
☒ Further documents are listed in the continuation of Box C.		
* Special categories of cited documents: "A" Document defining the general state of the art which is not considered to be of particular relevance. "D" Document cited in the application. "E" Earlier application or patent but published on or after the filing date. "L" Document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified). "O" Document referring to an oral disclosure, use, exhibition or other means.	"P" Document published prior to the filing date but later than the priority date claimed. "T" Document not in conflict with the application but cited to understand the principle or theory underlying the invention. "X" Document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone. "Y" Document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" Document member of the same patent family.	
Danish Patent and Trademark Office Helgeshøj Allé 81 DK-2630 Taastrup Denmark Telephone No. +45 4350 8000 Facsimile No. +45 4350 8001		Date of completion of the search report 13 March 2020
		Authorized officer Anita Thyrsted Telephone No. +45 43 50 81 32

SEARCH REPORT - PATENT		Application No. PA 2019 70571
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant for claim No.
A	<u>WO 2018/013025</u> A1 (NOVISTA OF SWEEDEN AB) 2018.01.18 See figures; abstract	1-12
A	<u>CN 208573351</u> U (HANGZHOU QIANLAN IMP AND EXPORT CO LTD) 2019.03.05 See figures; abstract	1-12

SEARCH REPORT - PATENT	Application No. PA 2019 70571
Box No. I Observations where certain claims were found unsearchable	
This search report has not been established in respect of certain claims for the following reasons: 1. ☐ Claims Nos.: because they relate to subject matter not required to be searched, namely: 2. ☐ Claims Nos.: because they relate to parts of the patent application that do not comply with the prescribed requirements to such an extent that no meaningful search can be carried out, specifically: 3. ☐ Claims Nos.: because of other matters.	
Box No. II Observations where unity of invention is lacking prior to the search	
The Danish Patent and Trademark Office found multiple inventions in this patent application, as follows:	

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SUPPLEMENTAL BOX	
Continuation of Box [.]	