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(54) **DEVICE FOR CUTTING ADHESIVE TAPES**

VORRICHTUNG ZUM SCHNEIDEN VON KLEBEBÄNDERN

DISPOSITIF POUR LA DÉCOUPE DE RUBANS ADHÉSIFS

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(73) Proprietor: **Fisioshen di Loris Redivo
33080 Roveredo in Piano (PN) (IT)**

(72) Inventors:

- **REDIVO, Loris
33080 Roveredo in Piano (PN) (IT)**
- **PASCHINI, Claudio
33080 Roveredo in Piano (PN) (IT)**

(74) Representative: **Giugni, Diego et al
Propria S.r.l.**

**Via della Colonna, 35
33170 Pordenone (IT)**

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Description

TECHNICAL FIELD OF INVENTION

[0001] The present invention is relative to a device for cutting adhesive cloth tapes and, in particular, to a device for the multiple cutting of cloth tapes for use in the medical rehabilitation field. Furthermore, the device is advantageously useful and versatile to meet any requirements that may arise when the adhesive tape is being used.

PRIOR ART

[0002] The use of cloth-reinforced tapes has found widespread applications thanks to the potential uses of such cloth tapes. In fact, this type of tapes is widely used in packaging, in the building industry, in repairs carried out on plastic or wooden objects and on leaking ducts. Moreover, depending on the structure and texture of the cloth tape, its use can be further diversified according to the demands of greater or lesser strength, resistance to atmospheric agents, elasticity, and adhesive strength on the surface to which it is applied using special glues.

[0003] A specific technical field in which cloth tapes are widely applied is found in physiotherapy and physical rehabilitation in general. Around the late seventies, a technique known as "kinesio taping method" was developed, in which cloth tapes of elastic type were applied in specific areas of the body with the aim of assisting in the treatment of muscle, tendon and joint traumas, or in rehabilitation following such traumas. Afterwards, still with the use of said elastic taping, other methodologies were used that well adapt to the physiological mechanisms of the body, making it also possible to extend its uses in the phlebological, circulatory and neurological fields, providing an effective support in the drainage of hematomas, in pre- and post-surgical preparation, in the healing of scar tissues, helping the venous blood flow, and as an amelioration in the therapeutic plans for neurological diseases.

[0004] The elastic ribbons or taping used in physical rehabilitation consist of an at least partially elastic fabric, provided with an application side that is coated with an adhesive compound to allow their application on the human or animal body. Thus, depending on the parts of the body involved in the intended treatment, as well as according to the specific manners and methods used, there may be a need for a multiplicity of tapes of well-defined shapes and sizes. However, the tapes are generally available in the form of rolls of predetermined width, and the operator is forced to cut the tape at a length and width that may each time be imposed by the type of treatment and region of the body involved. Moreover, these operations must be repeated a number of times when the type of application requires using different strips or portions. It must also be considered that carrying out longitudinal cuts with the scissors is rather slow and inaccurate because it must be done by hand.

[0005] In particular, in the uses required for athletes, the elastic tapes have a strong but elastically pliable structure that is resistant to tensile stress. Consequently, this type of tapes cannot be easily cut into portions, and requires very sharp scissors. Thus there is the risk of being cut during the preparation of the tapes. In addition, if the cut is not done properly, the tape can present frayed edges that may be irritating for the wearer, and that however may have weakened points of the fabric that could extend to other parts of the tape and affect its mechanical strength and correct operation.

[0006] Alternatively, the market offers precut tapes of different sizes that offer the operator a range of tapes without the above-mentioned drawbacks. These tapes, although they are practical, oblige the operator to stock a large quantity of tapes. Furthermore, the production of tapes of different sizes considerably complicates the production processes and appreciably increases the packaging volume and storage demands. In addition, a considerable quantity of waste is generated due to the personalization of the tape and to the dimensions of the limbs and parts of the body of the individual patient or user. This obviously results in high consumption of materials and production costs, especially if compared with the product by itself. Not leastways, a precut tape meets only some standard conditions, but it cannot adapt to all the variables of the human body.

[0007] It must be remembered that similar problems also materialize with cloth tapes used in different fields, such as those mentioned above. In fact, also for example in the field of repairs there can be the need to cut a tape longitudinally to obtain a plurality of uniform strips to apply to the object to be repaired. It follows that the use of sharp scissors or the use of precut tapes involves the same drawbacks as previously mentioned with reference to the elastic tapes for medical uses disclosed above.

[0008] KR 100864874 discloses a kinesio tape cutting machine including a main body part having an open space for receiving the wound kinesio tape in a roll and an outlet installed on the proximal end, a rolling pole on which the kinesio tape is wound, and a cutting member installed along a guide hole punched on the proximal end of the main body part in a transverse direction so as to cut the kinesio tape drawn through the outlet selectively in a transverse or longitudinal direction. However, this machine is quite complicated and dangerous since the cutting member can easily drop out the main body, as well as the rolled tape. Moreover the cut is not controlled.

SUMMARY OF THE INVENTION

[0009] The technical problem underlying the present invention is therefore to devise a device for cutting adhesive cloth tapes that is capable of cutting portions of desired length and width at the required moment, avoiding coming into contact with cutting parts and performing clean cuts that are substantially free of frayings or imperfections.

[0010] This problem is solved by a device having a simple but effective construction in which the tapes can be cut in various sizes safely and very accurately.

[0011] A first objective of the present invention is therefore to provide a versatile device for cutting cloth-backed adhesive tapes that is capable of cutting the cloth tapes in different sizes and with simultaneous multiple cuts.

[0012] A second objective is to provide a device that is safe to handle.

[0013] A third objective is a portable device that can be used in various contexts and that is preferably of pocket size type.

BRIEF DESCRIPTION OF THE FIGURES

[0014] Further characteristics and the advantages of the device for cutting cloth-backed tapes of the invention will become more evident from the following description of a variant embodiment given purely by way of example without limitations with reference to the following figures, wherein:

- figure 1 is an exploded perspective view of the inventive device seen from above;
- figure 2 is an exploded perspective view of the assembled inventive device of figure 1;
- figure 3 is top view of the outside of a first shell of the device of figure 1 ;
- figure 4 is a top view of the inside of a second shell of the device of figure 1;
- figure 5 is a top view of a blade unit of the device of figure 1;
- figure 6 is a front perspective view of the device of figure 1 partially assembled;
- figure 7 is a perspective view of the device of figure 2 in a first operating condition;
- figure 8 is a view from above of the device of figure 7 in a second operating condition;
- figure 9A is a perspective view of a knife of the device of figure 1 showing first cutting edges, in accordance with a first angle of view;
- figure 9B is a perspective view of a knife of the device of figure 1 showing second cutting edges, in accordance with a second angle of view;
- figures 10A and 10B are respectively a perspective view of the device of figure 2 in a third and fourth operating condition;
- figure 11 is a perspective view of the inventive device according to a first variant embodiment;
- figure 12A is an exploded perspective view of the inventive device in accordance with a second variant embodiment;
- figure 12B is a perspective view of the device of figure 12A according to a different angle of view;
- figures 13A, 13B, 13C and 13D illustrate respective views of a command button of the device of figure 12A;
- figure 14 is a perspective view of the assembled de-

vice of figure 12A.

DETAILED DESCRIPTION OF THE INVENTION

[0015] The underlying idea of the present invention is to make it possible to obtain, automatically and very accurately, with simple and rapid gestures, a plurality of strips of the same width, and preferably the same length, from a single tape. On the basis of this idea, a device was designed that allows a cloth-backed tape to run within it and that could contain a plurality of blades easily controlled to produce a plurality of strips.

[0016] As shown in figure 1, reference numeral 1 indicates as a whole a device for cutting adhesive cloth-backed tapes. The device 1 comprises a first half-shell 2 and a second half-shell 3 adapted to surround an inner cavity 4 provided with an entry 5 and an exit 6 through which a cloth-backed adhesive tape is caused to run and to be cut.

[0017] Preferably, the first 2 and the second 3 half-shells extend along a rectilinear longitudinal axis X-X (figure 2) defining the entry 5 and the exit 6 (figure 1) positioned at the opposite ends of said two half-shells along said axis.

[0018] The first half-shell 2 comprises advantageously commands 7 for activating one or more cutting blades 8 for a cloth adhesive tape. In accordance with a first variant embodiment of the invention, said commands 7 correspond to portions 71, 72, 73, 74 of the first half-shell 2 that elastically yield inwardly in the cavity 4 so as to selectively activate one or more cutting blades 8. These portions 71, 72, 73, 74 can be formed by partially shearing the first half-shell 2 so as to create a plurality of elastically yielding tabs. The tabs or portions thus lie on a single plane that defines the external surface of the first half-shell 2, when they are not activated (figure 3).

[0019] Preferably, the portions or tabs differ in a first 71, second 72, third 73 and fourth 74 portion (figure 3). The first portion 71 is formed in the proximity of the entry 5 of the cavity 4 by two lines 75 cut in the first half-shell 2. Said lines 75 extend from the edge 21 that delineates one part of said entry 5 toward a central band 22 of the first half-shell 2 arranged generally orthogonal to the longitudinal axis X-X. The second portion 72 is formed in the proximity of the exit 6 of the cavity 4 by two lines 76 cut in the first half shell 2 that extend from the edge 23 that delineates one part of said exit 6, toward the central band 22, said lines being substantially identical to said lines 75. The third portion 73 is defined by a line 77 cut so as to preferably have a generally squared C shape formed within the first portion 71. Similarly, the fourth portion 74 is defined by a line 78 cut so as to be substantially identical to line 77 but formed within the second portion 72. In this manner, it is clear that the first 71 and second 72 portions have a general C shape within which first and second portion the respective third 73 and fourth 74 portions have a generally rectangular shape. Preferably, the third 73 and the fourth 74 portions flex toward

the respective first 71 and second 72 portion, that is, respectively toward the entry 5 and the exit 6 of the half-shell 2. On the other hand, the central band 22 is substantially solid, that is, it does not contain any cut.

[0020] Preferably, each of said first 71, second 72, third 73 and fourth 74 portion can be provided with an indicator 9 that displays not only the specific portion but also serves as a point of activation of the blades 8. This indicator 9 can be, for example, a shallow depression that may be provided with a reference number, as shown in the figures, which identifies the number of strips that can be obtained.

[0021] Advantageously, as best illustrated in figure 1, the first half-shell 2 may comprise a first portion 10 of a lateral seat suitable to cooperate with a corresponding second portion of the second half-shell 3 to contain a knife 11, as will be explained later. The first portion 10 of the lateral seat is positioned on one of the two sides 24 that run between said edges 21 and 23 of the entry 5 and the exit 6, respectively (figure 3). The seat can also be covered with a lid 12 (figures 1 and 2).

[0022] The second half-shell 3, as shown in figures 1 and 4, presents a first edge 31 that cooperates with the first edge 21 of the first half-shell 2 to define the entry 5 of the cavity 4, a second edge 32 that cooperates with the second edge 23 of the second half-shell to define the exit 6 of the cavity 4 and two sides 33 serving as connection between said first 31 and second edges 32.

[0023] As can be seen, the bottom 34 of the second half-shell 3 comprises a plurality 35 of grooves arranged parallel to each other along the X-X axis of the inventive device 1. In particular, the grooves form the guides for the blades 8 when the blades are activated by the corresponding command buttons 7, more specifically by the corresponding first 71, second 72, third 73 and fourth 74 portion of the first half-shell 2, as will be explained below.

[0024] Preferably, the grooves form first 351, second 352, third 353 and fourth 354 groove sets, depending on the different blades that are activated and the number of cuts made, therefore on the number of strips that can be obtained.

[0025] Further, one of the two sides 33 is provided with a second portion 14 which, with the first portion 10 of the first half-shell 2 defines the seat for the knife 11. As is better shown in figures 1 and 3, the second portion 14, but also the first portion 10 although it is not shown, is provided with one end 141 for inserting the terminal of the knife 11 for its correct positioning on the device 1, and with a free zone 142 to allow the actuation of the knife, as will be explained later.

[0026] It should be noted that the respective sides 24 of the first shell 2 and the sides 33 of the second shell 3, when they are closed against each other, define two internal walls 15 (figure 2) that serve as guides for running to measure the cloth tape described below.

[0027] In figure 5 is shown a plurality of blades 8 provided in accordance with a first embodiment. As can be seen, the blades 8 are held on a support 80 that is formed

by a plate, preferably metallic, and having a regular rectangular shape arranged along the axis X-X from which are formed the blades directly by partial shearing. Further, the support 80 is segmented into different elastic portions, for example a first portion 81, a second 82, third 83 and fourth portion 84 by means of corresponding first 85 and second 86 sheared lines. Preferably, the first sheared line 85 has a profile with a single merlon, while the second has a double merlon, in which the merlons of each line are directed toward a corresponding smaller side of the support. In this manner, the first 81, second 82, third 83 and fourth 84 portions are located essentially in positions corresponding to the first 71, second 72, third 73 and fourth 74 portions of the first half-shell 2 so as to be selectively activated by these latter ones.

[0028] Furthermore, the shearings of the blades 8 are preferably achieved along a first line A, positioned proximal to a first minor side 87 of the support and parallel to the same, and along a second line B, positioned in proximity of the second minor side 88 of the support and still parallel to the same (figure 5). In this manner, the blades 8 are formed both on the respective merlons and astride the merlons as defined by the above first 85 and second 86 sheared lines.

[0029] It should be noted that the support 80 of the blades 8 is sandwiched between the two half-shells - first 2 and second 3 - and maintained in the correct position by conventional means (non shown), such as for example pins fastened to one of said half-shells on which are fitted the drilled tips of said support, or by gluing a central portion of the support in a position corresponding to the central band of the first half-shell 2, which is inactive.

[0030] As shown in figure 6, when for example the blades 8 of the second portion 82 and fourth portion 84 of the support 80 are activated, they insert themselves into the respective guides or grooves 35. Consequently, to activate the device 1 of the invention, an adhesive cloth-backed tape 15 (figure 7) is inserted into the entry 5 and is advanced until a portion of the same comes out of the exit 6. At this point (figure 8), one of the commands 7 described above is pressed to move, thereby activating, one or more blades 8 from the internal surface of the first half-shell 2 down to the bottom 34 of the second half-shell 3 so as to engage the respective grooves 35. In this manner, the blades 8 will cut the tape at the corresponding grooves (figure 6). Now, by simply pulling the end of the tape coming out of the exit 6 the portion of the tape upstream of the blades 8 will be pulled against the same blades, so that the cut started with the above-mentioned movement of the blades 8 in the grooves 35 propagates automatically in the longitudinal direction of the tape 15 which crosses the cavity 4 of the device 1 in a rectilinear direction on the X-X axis (figure 8).

[0031] In figure 9A is shown the knife 11 that is mounted reversibly on one of the sides of the device 1. In particular, the knife 11 comprises one end 110 suitable to engage the seat formed by the first portions 141 (only the one of the second half-shell is shown in the figures)

of the sides 24 and 33 respectively of the first 2 and second 3 half-shell. This end 110 is preferably bent into a U shape so as to work as a sort of elastic hinge from whose branches extend in parallel respectively a fork 112 and a plate 113. The plate 113 comprises a cutting edge 114 (figure 9B) that can be elastically shifted within the space defined by the two branches of the fork 112. One of said branches of the fork 112 is also provided with its own cutting edge 115 (figure 9A) which cooperates with the edge 114 of the plate 113 to perform the cross cut of the adhesive cloth-backed tape 15, as shown in figures 10A and 10B. In this manner, if the cloth-backed tape 15 is to be cross-cut without reducing the width but only the length, it is possible to operate in the above manner, that is, the tape 15 is run through the space defined between the fork 112 and the plate 113 (figure 10A) for a certain desired length and then the plate 113 is pressed so as to achieve the desired cut (figure 10B).

[0032] Preferably, the cutting edge 114 of the plate 113 of the knife 11 is curved to allow an arcuate transversal cut of the tape. The arcuate cut makes it advantageously possible to reduce the sharp edges caused by the straight cuts that can cause frayings of the tape after a certain period of time following the application.

[0033] In figure 11, the inventive device 1 comprises advantageously a support 16 for a roll 17 of cloth adhesive tape 15. Preferably, the support 17 includes a pair of arms 18 (only one is shown in figure 11) having first ends 181 mounted one each on a respective side of the device 1 and one portion 182 for supporting the roll 17. In this manner, the device can have the tape to be cut 15 ready with a large spare supply so that it can be available at any moment.

[0034] In accordance with a variant embodiment of the invention, as shown in figures 12A and 12B, the device 100 of the invention comprises a first half-shell 200 and a second half-shell 300 suitable to delineate an internal cavity 400 provided with an entry 500 and an exit 600, similar to what was previously described. Further, the first half-shell 200 comprises commands 700 for activating one or more blades 800 for cutting an adhesive cloth-backed tape 15 and the second half-shell 300 comprises instead a plurality 900 of guides of said cutting blades when activated by said command buttons. The device 100 preferably extends longitudinally along an axis Y-Y.

[0035] In particular, the first half-shell 200 is similar to the half-shell 2 previously described. The present half-shell 200 differs from the previous one in that it does not present differentiated carved portions for the selective control of the blades. Instead, it presents a plurality 210 (figure 12B) of through holes to slidably engage said command buttons 700 of the blades 800, which commands are independent of and separate from the half shell 200 itself. Furthermore, the half-shell 200 has a first edge 201 (figure 12A) that cooperates with a corresponding edge of the second half-shell 300 to define the entry 500, a second edge 202 (figure 12A) that cooperates with a corresponding edge of the second half-shell to define

the exit 600 and two lateral edges 203 (figure 12A) connecting said first edge and second edge.

[0036] The second half-shell 300 is provided with a bottom 340 in which is formed a plurality 900 of guides for the blades 800. As previously found, this plurality is also differentiated into first, second, third and fourth guides (not shown) to accommodate corresponding blades. The arrangement of the guides can also be in all effects similar to the one previously described. Alternatively, the first, second, third and fourth guides 900 can be positioned on different lines orthogonal to the Y-Y longitudinal axis of extension of the device 100, similarly to what was previously described.

[0037] In addition, the second half-shell 300 is surrounded by a first edge 301 which cooperates with said first edge 201 to define the entry 500 of the cavity 400, a second edge 302 which cooperates with said second edge 201 to define the exit 600 of the cavity 400 and two lateral edges 303 connecting said first and second edges. In particular, between each lateral edge 303 and the bottom 340 is formed a rise 307 with respect to said bottom that serves as a stop for the activation stroke of the commands 700. In addition, between said rise 307 and the lateral edge 303 are formed seats 305 that accommodate elastic elements 306. Preferably, said seats 305 are hollow cylinders with a closed bottom that are partially occupied by said respective elastic elements 306.

[0038] The commands 700 are advantageously represented by elements that are separate from each of the two, first 200 and second 300, half-shells and are sandwiched between them and held therein. As shown in particular in figures 13A, 13B and 13C, the commands include a central body 701 and at least one lateral portion 702. The central body 701 is such as to slidably engage one of the holes 210 of the first half-shell 200 so as to move along an axis Z-Z substantially orthogonal to the plane defined by the bottom 340 of the second half-shell 300, that is, orthogonal to the Y-Y axis (figures 12B and 14). When the commands 700 are mounted on the device 100, the central body 701 is such as to be flush with or slightly protruding from the external surface of the second half-shell 200 so that it can be pressed with one finger. The at least one lateral portion 702 is preferably made up of two arms 702 that branch off from said central body 701 along straight lines diametrically opposite to the body and parallel to the bottom 340 of the second half-shell 300. Said arms 702 comprise at least one blade 800 and one seat 703 engaging one end of said elastic element 306. Preferably, said at least one blade 800 is partially recessed in a relative slit (not shown) of said arms 702 or is partially embedded in them so as to be firmly restrained therein, with its cutting portion remaining free (figure 13B).

[0039] It must be noted that each command button 700 is bound through the central body 701 to slide substantially orthogonally with respect to the bottom 340 of the second half-shell 300 to allow the blades 800 to engage the guides or grooves 900. In addition, the maintenance

of the blades 800 in the idle position, or their return to such a position, is guaranteed by the elastic elements 306 previously described that are connected through the seats 305 of the second half shell 300 and the seats 703 of the command buttons 700. In addition, the arms 702 of the commands bring about a stroke on the internal surface of the first half-shell 200 to avoid the release of the same from their operating position with respect to the first half-shell itself.

[0040] Furthermore, the arms 702, when the central body 701 is pressed, strike the rise 307 of the second half-shell 300 to avoid the possibility that the command presses against the tape 15 and prevents its sliding movement. In fact, as is better shown in figures 13C and 13D, the blades 800 have an inclined cutting edge 801 with respect to the sliding plane of the tape to be cut, that is, the bottom 340 of the second half-shell 3. Preferably, the inclination faces toward the entry 500 of the device 100, thus forming a pointed apex turned toward said bottom 340. In this manner, when the command 700 is lowered onto the tape, the apex easily pierces the tape at one point and the rest of the cutting edge cuts into the tape and presets the blade in the best manner.

[0041] With regard to the adhesive tapes, they include a vast range of tapes resistant to mechanical stresses. The many different types can be discerned on the basis of the structure with reference to the support. For example, depending on the specific use, the support of the cloth-backed tapes can be paper, nonwoven fabric, plastic or metallic material. The plastic support is the most widely used thanks to its great versatility for many different fields of application. The most widespread plastic materials are polyester, polypropylene, polyethylene, polypropylene/polyethylene copolymer, polyvinyl chloride, polyimide, polyamide (nylon), polytetrafluoroethylene, polyvinyl alcohol, polyurethane, polyvinyl fluoride, rubber such as neoprene or elastomers.

[0042] The supports are then preferably strengthened with a fabric, preferably embedded in the support. The fabric is made up of fibers of different natural or synthetic origin, such as for example cotton, jute, wood fiber, cellulose, acrylic fibers, polyester, polyethylene, nylon, microfibers and their combinations. The weave of the fibers can be casual as in the case of nonwoven fabric obtained by the hydroentanglement of synthetic fibers or by regular woven with the fibers arranged longitudinally and/or orthogonally in one or more layers.

[0043] The glues that are used depend on the substrate to which the tapes are applied. Thus, they can be gummy resins with an acrylic base, a silicic base, preferably biocompatible glues in the case in which the tapes are of elastic type for rehabilitation or physiotherapy.

[0044] From what was previously described, it is now evident that the previously evidenced unsatisfactory drawbacks have been resolved.

[0045] In particular, it is no longer necessary to cut single strips each time with the scissors to adapt the tapes of standard sizes to the sizes required. At the same time,

this avoids having to keep in stock large supplies of tapes of different widths and the relative packaging.

[0046] Also, the necessity of an accurate cut is completely avoided because with the inventive device the cut is performed in an automatic, guided and therefore perfectly controlled manner.

[0047] The risk of accidental injuries caused by the handling of scissors or cutters is eliminated because the blades are contained in a cavity inside the device accessible only through openings designed to allow the sliding of the tape.

[0048] Further variants and modifications of the inventive device can be adopted by a person skilled in the field without departing from the scope of patent protection as defined by the enclosed claims.

[0049] For example, the shape of the device may vary, based on the particular requirements or preferences, so as to take up ergonomic and/or pocket formats in order to optimize the convenience and speed of use, especially if required for example during competition activity.

[0050] The materials with which the various pieces are made are generally plastic, with the exception of the blades and the elastic elements. The blades are, in fact, made of metallic materials, such as steel and relative alloys suitable to guarantee long usage life and optimum cutting edge.

[0051] The blades may consist of rotating blades mounted on conventional shafts fastened to one of the two half-shells.

[0052] The number and arrangement of the command buttons for the blades may vary, according to specific requirements or preferences, also with the object of varying the cut size possibility. In particular, the commands 700 can guarantee the ease of changing and stocking spare parts, avoiding costly constructions that impose the total replacement of the support 80 of the blade 8.

[0053] The device itself 100 can also be provided with a roll support 16 as illustrated in figure 11 and a knife 11 as shown in figures 9 and 10.

[0054] It should be kept in mind that the tape can be run from the entry to the exit as identified in the present description or vice versa, taking into account the necessity of activating one or more blades at the same time.

[0055] Finally, it should be remembered that the inventive device is clearly suitable for also cutting tapes of different nature, in other words, also non-adhesive tapes and/or tapes that are not cloth-backed.

Claims

1. Device (1; 100) for cutting tapes comprising a first half-shell (2; 200) and a second half-shell (3; 300) adapted to surround an inner cavity (4; 400), which cavity is provided with an entry (5; 500) and an exit (6; 600) through which a tape is caused to run along an axis (X-X; Y-Y) corresponding to the longitudinal axis of the device (1; 100), the first half-shell (2; 200)

comprising commands (7; 700) for activating one or more cutting blades (8; 800) of a tape and a second half-shell instead (3; 300) comprising a plurality (35; 900) of guides for said cutting blades when the blades are activated by said commands (7; 700).

2. Device (1; 100) according to claim 1, wherein said second half-shell (3; 300) has a bottom (34; 340) comprising a plurality (35; 900) of grooves, which grooves represent said guides and are parallel each other along the axis (X-X; Y-Y) of the device (1; 100)
3. Device (1; 100) according to claim 1 or 2, wherein said one or more blades (8; 800) are distributed parallel each other along one or more lines (A, B), which lines are orthogonal to said axis (X-X; Y-Y) of the device.
4. Device (1) according to any one of claims 1 to 3, wherein said commands (7) are portions (71, 72, 73, 74) of the first half-shell (2) which portions elastically flat towards the inner of the cavity (4) of the device (1) to selectively activate one or more blade (8).
5. Device (1) according to any one of claims 1 to 4, wherein said blades (8) are carried by a support (80) formed by a metallic plate from which said blades are directly obtained through partial shearing.
6. Device (1) according to claim 5, wherein said support (8) is divided into different elastic portions (81, 82, 83, 84) by means of partial shearing lines (85, 86) so that said elastic portions are positioned substantially in correspondence of the portions (71, 72, 73, 74) of the first half-shell (2) and by these selectively activable.
7. Device (100) according to any one of claims 1 to 3, wherein said commands (700) are elements separated from each of said first (200) and second (300) half-shell and herein sandwiched, the commands comprising a central body (701) and at least a side portion (702), the central body (701) being so that to slidably engage a hole (210) of the first half-shell (200) along an axis (Z-Z) orthogonal to the axis (Y-Y) of the device (100), the at least one side portion (702) comprising at least one blade (800).
8. Device (1; 100) according to any one of claims 1 to 7, further comprising a knife (11) mounted onto one of the sides (24, 33; 203, 303) of said device to cross-cut said tape (15).
9. Device (1; 100) according to claim 8, wherein said knife (11) comprises an U-formed end (110) adapted to engage a seat (141) provided onto said sides (24, 33) of the device, two branches extending parallel each other from said end as a fork (112) and a plate

(113), each fork and plate being provided with corresponding sharp edges (115; 114) cooperating to cut the blade (15) when the plate (113) comes close to the space between said fork (112).

10. Device (1; 100) according to any one of claims 1 to 9, further comprising a support (16) for an adhesive tape roll (15).

Patentansprüche

1. Vorrichtung (1; 100) zum Schneiden von Bändern, die eine erste Halbschale (2; 200) und eine zweite Halbschale (3; 300) umfasst, die so eingerichtet sind, dass sie einen inneren Hohlraum (4; 400) umgeben, wobei der Hohlraum mit einem Eingang (5; 500) und einem Ausgang (6; 600) versehen ist, durch die ein Band entlang einer Achse (X-X; Y-Y) geleitet wird, die der Längsachse der Vorrichtung (1; 100) entspricht, die erste Halbschale (2; 200) Auslöseeinrichtungen (7; 700) zum Aktivieren einer oder mehrerer Klingen (8; 800) zum Schneiden eines Bandes umfasst und eine zweite Halbschale (3; 300) stattdessen eine Vielzahl von Einrichtungen (35; 900) umfasst, mit denen die Schneidklingen geführt werden, wenn die Klingen durch die Auslöseeinrichtungen (7; 700) aktiviert werden.
2. Vorrichtung (1; 100) nach Anspruch 1, wobei die zweite Halbschale (3; 300) einen Boden (34; 340) aufweist, der eine Vielzahl (35; 900) von Nuten umfasst, die die Führungen darstellen und entlang der Achse (X-X; Y-Y) der Vorrichtung (1; 100) parallel zueinander verlaufen.
3. Vorrichtung (1; 100) nach Anspruch 1 oder 2, wobei die eine oder mehreren Klinge/n (8; 800) entlang einer oder mehrerer Linie/n (A, B) parallel zueinander verteilt sind und die Linien senkrecht zu der Achse (X-X; Y-Y) der Vorrichtung sind.
4. Vorrichtung (1) nach einem der Ansprüche 1 bis 3, wobei die Auslöseeinrichtungen (7) Abschnitte (71, 72, 73, 74) der ersten Halbschale (2) sind und sich die Abschnitte elastisch zu dem Inneren des Hohlraums (4) der Vorrichtung (1) hin abflachen und so selektiv eine oder mehrere Klinge/n (8) aktivieren.
5. Vorrichtung (1) nach einem der Ansprüche 1 bis 4, wobei die Klingen (8) von einem Träger (80) getragen werden, der aus einer Metallplatte besteht, aus der die Klingen direkt durch teilweises Scheren hergestellt werden.
6. Vorrichtung (1) nach Anspruch 5, wobei der Träger (8) über Linien zum teilweisen Scheren (85, 86) in verschiedene elastische Abschnitte (81, 82, 83, 84)

so unterteilt wird, dass die elastischen Abschnitte im Wesentlichen in Entsprechung zu den Abschnitten (71, 72, 73, 74) der ersten Halbschale (2) positioniert sind und durch diese selektiv aktiviert werden können.

7. Vorrichtung (100) nach einem der Ansprüche 1 bis 3, wobei die Aktivierungseinrichtungen (700) Elemente sind, die jeweils von der ersten (200) und zweiten (300) Halbschale getrennt und zwischen ihnen eingeschlossen sind, und die Aktivierungseinrichtungen einen mittigen Körper (701) sowie wenigstens einen Seitenabschnitt (702) umfassen, der mittige Körper (701) so eingerichtet ist, dass er entlang einer Achse (Z-Z) senkrecht zu der Achse (Y-Y) der Vorrichtung (100) gleitend in ein Loch (210) der ersten Halbschale (200) eingreift, und der wenigstens eine Seitenabschnitt (702) wenigstens eine Klinge (800) umfasst.
8. Vorrichtung (1; 100) nach einem der Ansprüche 1 bis 7, die des Weiteren ein Messer (11) umfasst, das an einer der Seiten (24, 33; 203, 303) der Vorrichtung angebracht ist, um das Band (15) quer zu schneiden.
9. Vorrichtung (1; 100) nach Anspruch 8, wobei das Messer (11) ein U-förmiges Ende (110) umfasst, das so eingerichtet ist, dass es mit einer an den Seiten (24, 33) der Vorrichtung befindlichen Aufnahme (141) in Eingriff kommt, wobei sich zwei Schenkel parallel zueinander als eine Gabel (112) und eine Platte (113) von dem Ende aus erstrecken, jede Gabel und jede Platte mit entsprechenden scharfen Kanten (115; 114) versehen sind, die zusammenwirken, um das Band (15) zu schneiden, wenn die Platte (113) in die Nähe des Zwischenraums der Gabel (112) gelangt.
10. Vorrichtung (1; 100) nach einem der Ansprüche 1 bis 9, die des Weiteren einen Träger (16) für eine Klebebandrolle (15) umfasst.

Revendications

1. Dispositif (1 ; 100) pour couper des rubans comprenant une première demi-coque (2 ; 200) et une deuxième demi-coque (3 ; 300) adaptées pour entourer une cavité intérieure (4 ; 400), laquelle cavité est pourvue d'une entrée (5 ; 500) et d'une sortie (6 ; 600) à travers laquelle un ruban est amené à courir le long d'un axe (X-X ; Y-Y) correspondant à l'axe longitudinal du dispositif (1 ; 100), la première demi-coque (2 ; 200) comprenant des commandes (7 ; 700) pour activer une ou plusieurs lames (8 ; 800) de coupe d'un ruban et une deuxième demi-coque (3 ; 300) à la place comprenant une pluralité (35 ; 900) de guides pour lesdites lames de coupe lorsque

les lames sont activées par lesdites commandes (7 ; 700) .

2. Dispositif (1 ; 100) selon la revendication 1, dans lequel ladite seconde demi-coque (3 ; 300) a un fond (34 ; 340) comprenant une pluralité (35 ; 900) de rainures, lesquelles rainures représentent lesdits guides et sont parallèles les unes aux autres le long de l'axe (X-X; Y-Y) du dispositif (1 ; 100)
3. Dispositif (1 ; 100) selon la revendication 1 ou 2, dans lequel lesdites une ou plusieurs lames (8 ; 800) sont réparties parallèlement les unes aux autres le long d'une ou plusieurs lignes (A, B), lesquelles lignes sont orthogonales audit axe (X-X; Y-Y) du dispositif.
4. Dispositif (1) selon l'une quelconque des revendications 1 à 3, dans lequel lesdites commandes (7) sont des parties (71, 72, 73, 74) de la première demi-coque (2), lesquelles parties sont élastiquement plates vers l'intérieur de la cavité (4) du dispositif (1) pour activer sélectivement une ou plusieurs lames (8).
5. Dispositif (1) selon l'une quelconque des revendications 1 à 4, dans lequel lesdites lames (8) sont portées par un support (80) formé par une plaque métallique à partir de laquelle lesdites lames sont directement obtenues par cisaillement partiel.
6. Dispositif (1) selon la revendication 5, dans lequel ledit support (8) est divisé en différentes parties élastiques (81, 82, 83, 84) au moyen de lignes de cisaillement partielles (85, 86) de sorte que lesdites parties élastiques sont positionnées sensiblement en correspondance des parties (71, 72, 73, 74) de la première demi-coque (2) et sont activables sélectivement par celles-ci.
7. Dispositif (100) selon l'une quelconque des revendications 1 à 3, dans lequel lesdites commandes (700) sont des éléments séparés de chacune desdites première (200) et deuxième (300) demi-coques et ici prises en sandwich, les commandes comprenant un corps central (701) et au moins une partie latérale (702), le corps central (701) étant conçu de manière à engager par coulissement un trou (210) de la première demi-coque (200) le long d'un axe (Z-Z) orthogonal à l'axe (Y-Y) du dispositif (100), la au moins une partie latérale (702) comprenant au moins une lame (800).
8. Dispositif (1 ; 100) selon l'une quelconque des revendications 1 à 7, comprenant en outre un couteau (11) monté sur l'un des côtés (24, 33 ; 203, 303) dudit dispositif pour couper transversalement ledit ruban (15).

9. Dispositif (1 ; 100) selon la revendication 8, dans lequel ledit couteau (11) comprend une extrémité en U (110) adaptée pour engager un siège (141) prévu sur lesdits côtés (24, 33) du dispositif, deux branches s'étendant parallèlement l'une à l'autre à partir de ladite extrémité en tant que fourche (112) et une plaque (113), chaque fourche et plaque étant pourvues d'arêtes (115 ; 114) vives correspondantes coopérant pour couper la lame (15) lorsque la plaque (113) s'approche de l'espace dans ladite fourche (112) .
10. Dispositif (1 ; 100) selon l'une quelconque des revendications 1 à 9, comprenant en outre un support (16) pour un rouleau de ruban (15) adhésif.

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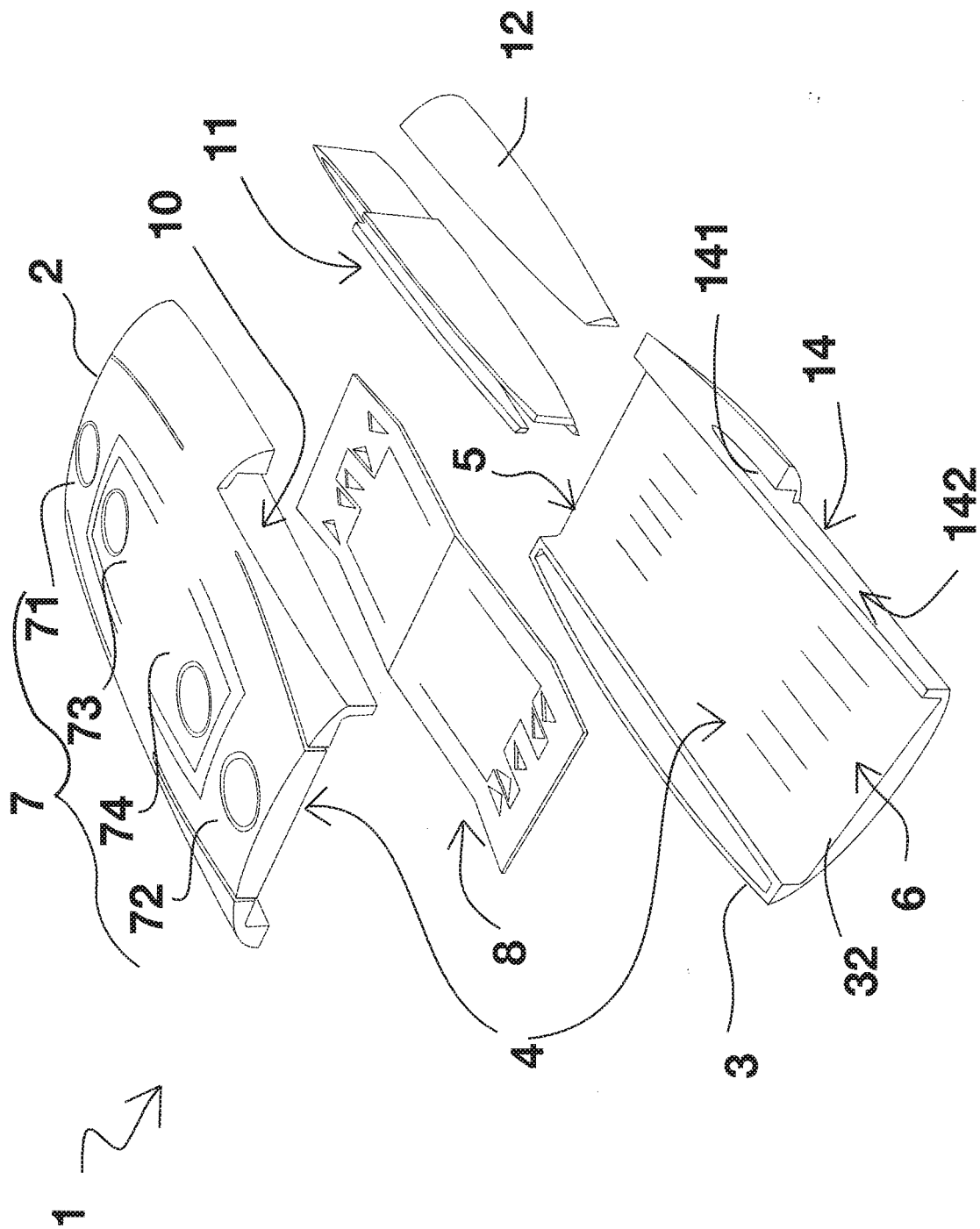


FIG.1

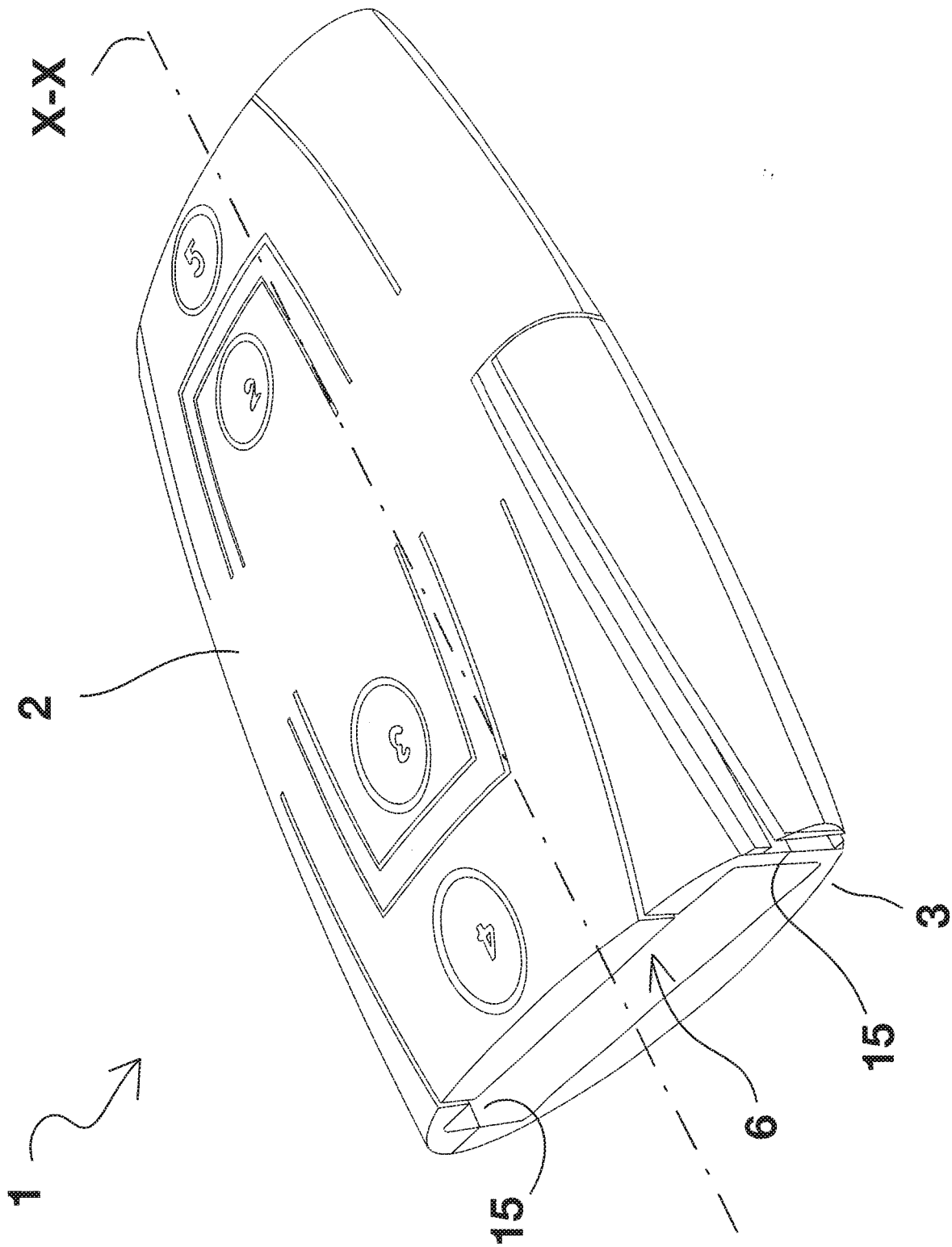
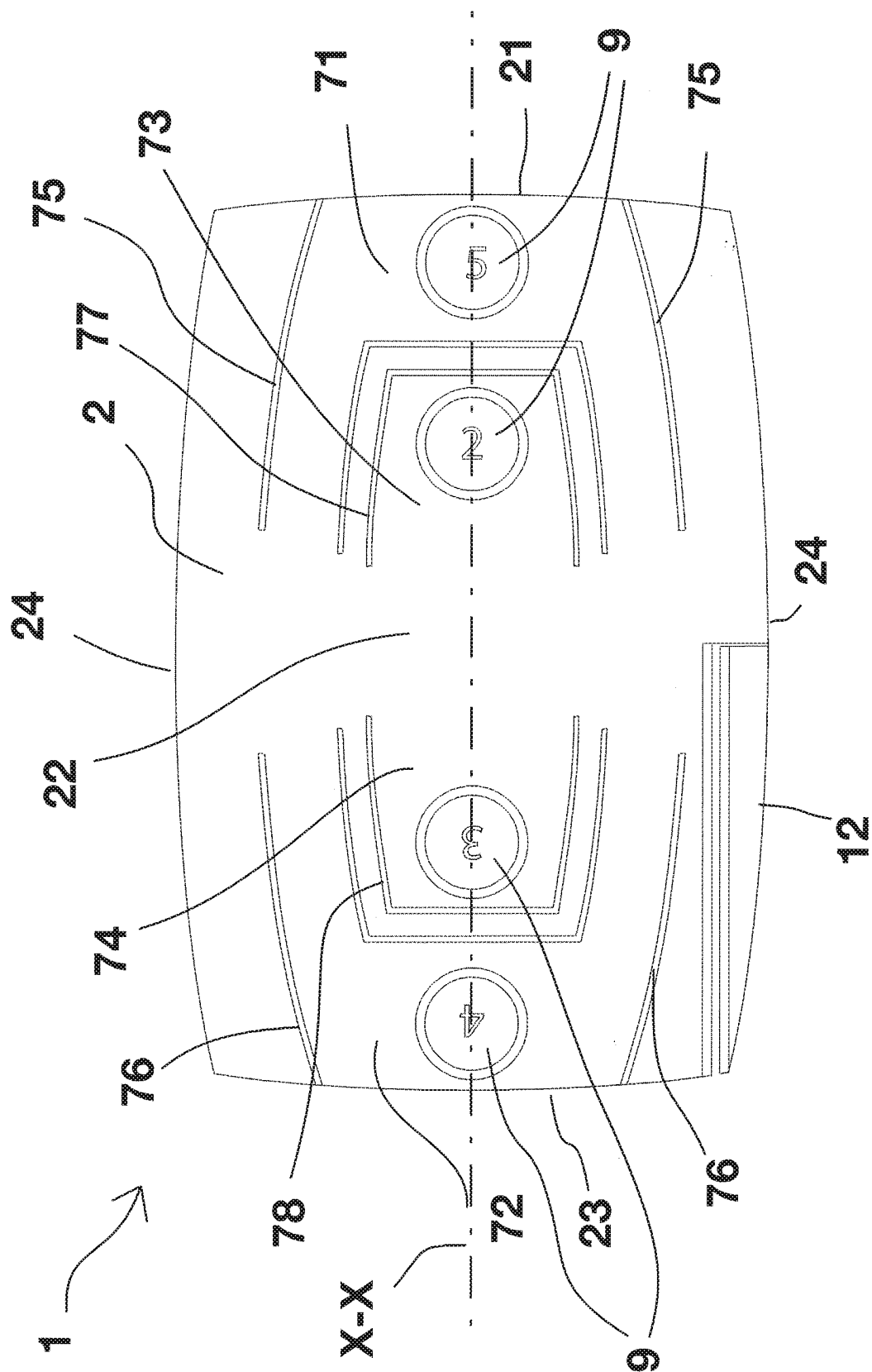


FIG. 2



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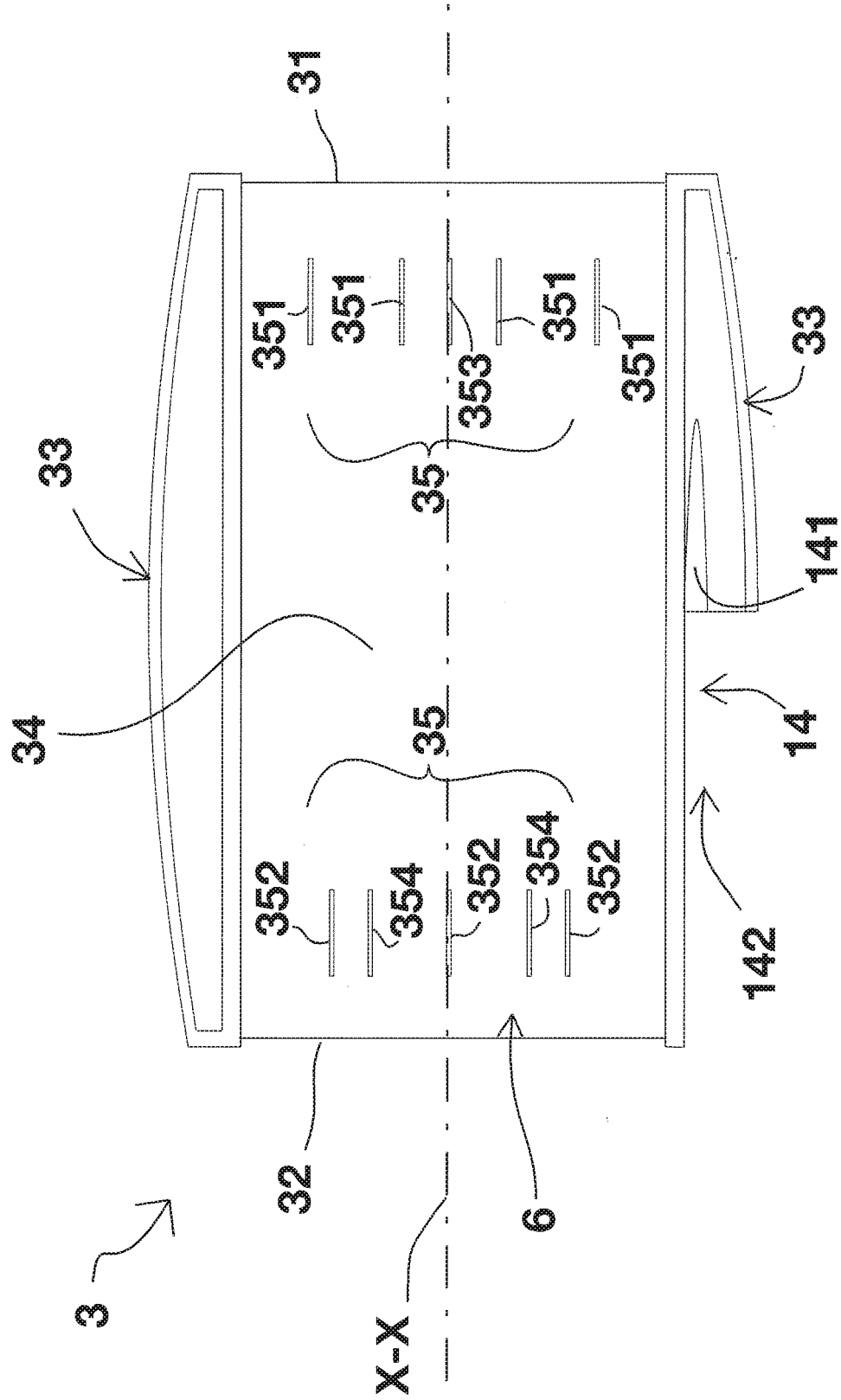
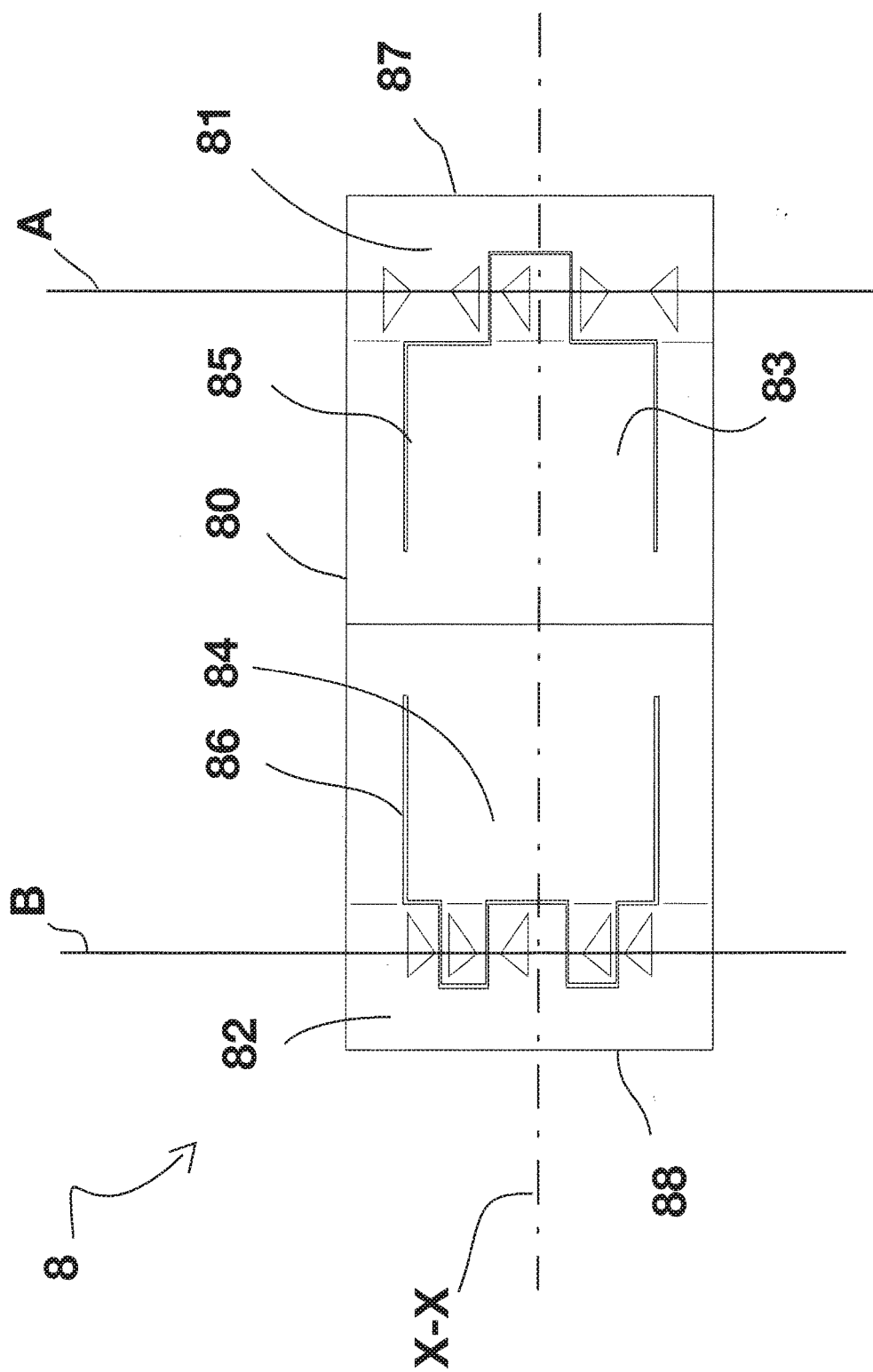


FIG.4



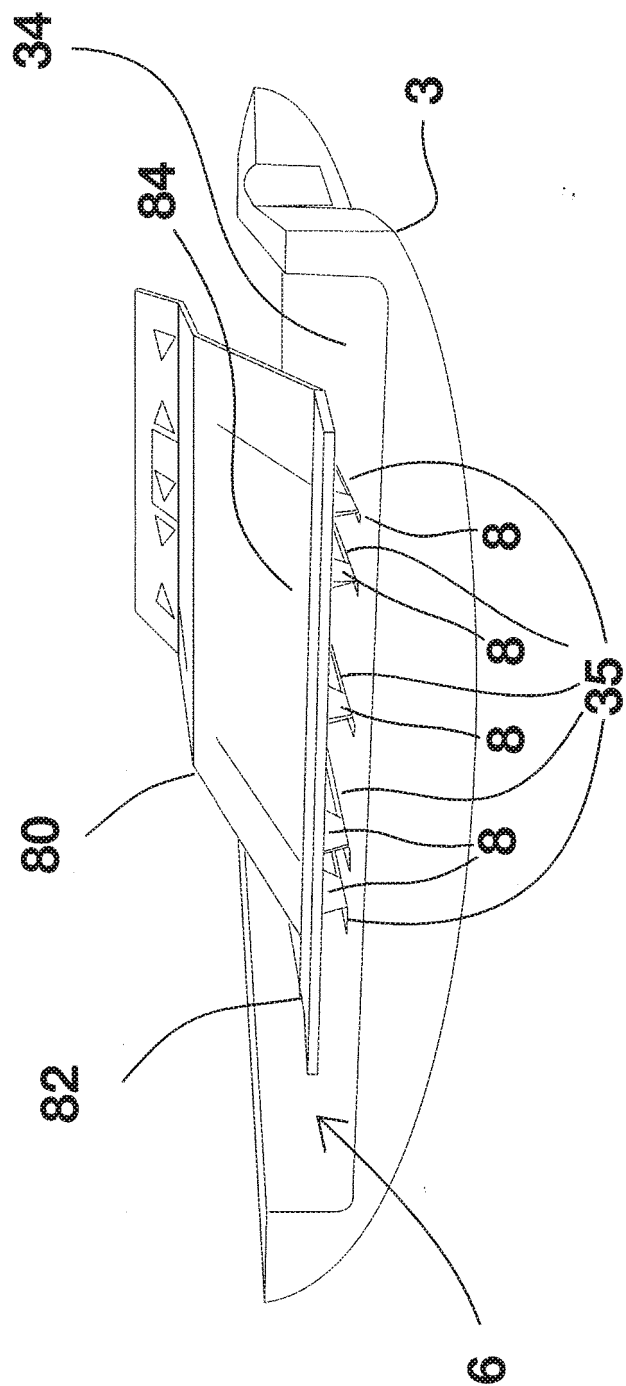


FIG. 6

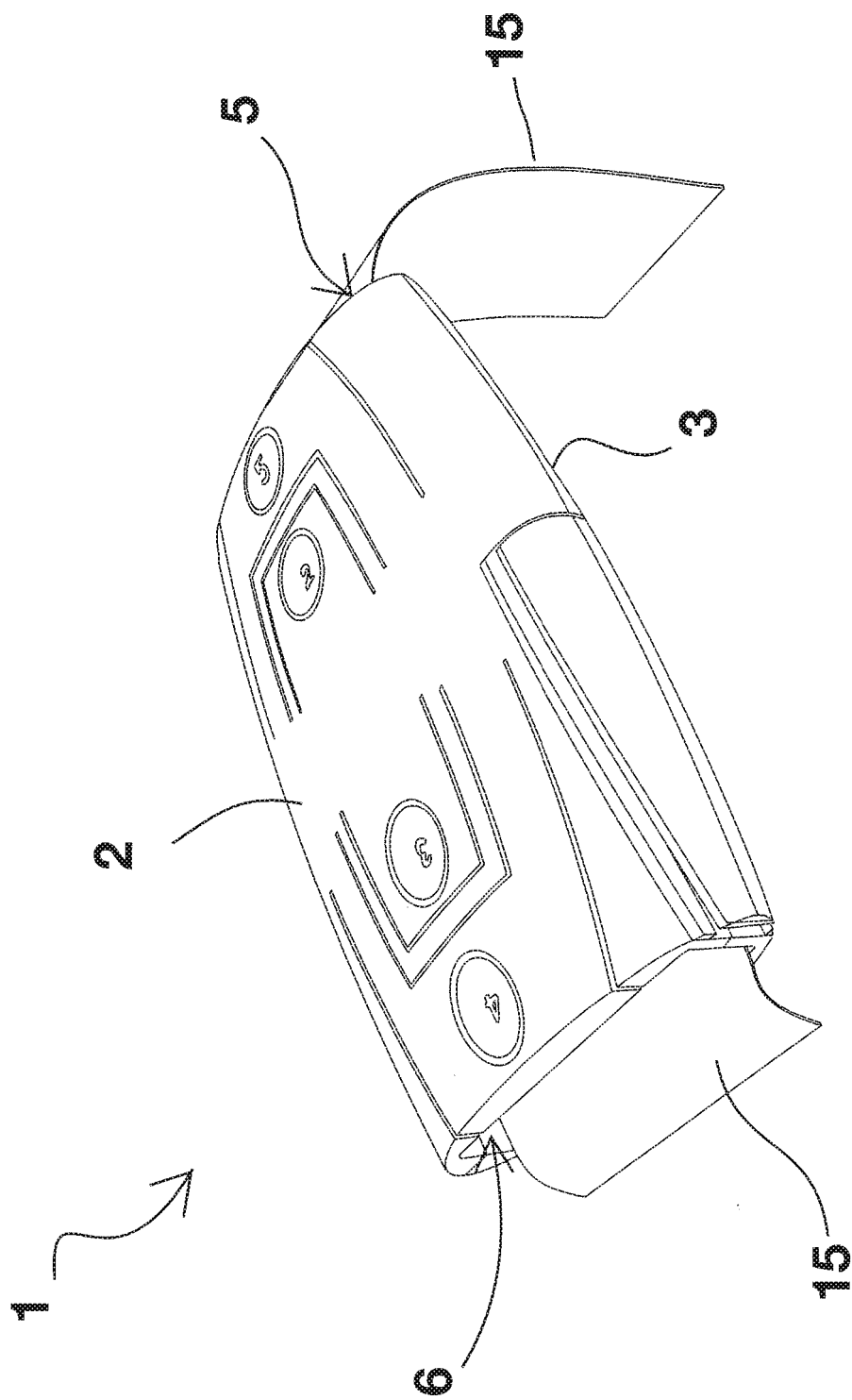


FIG. 7

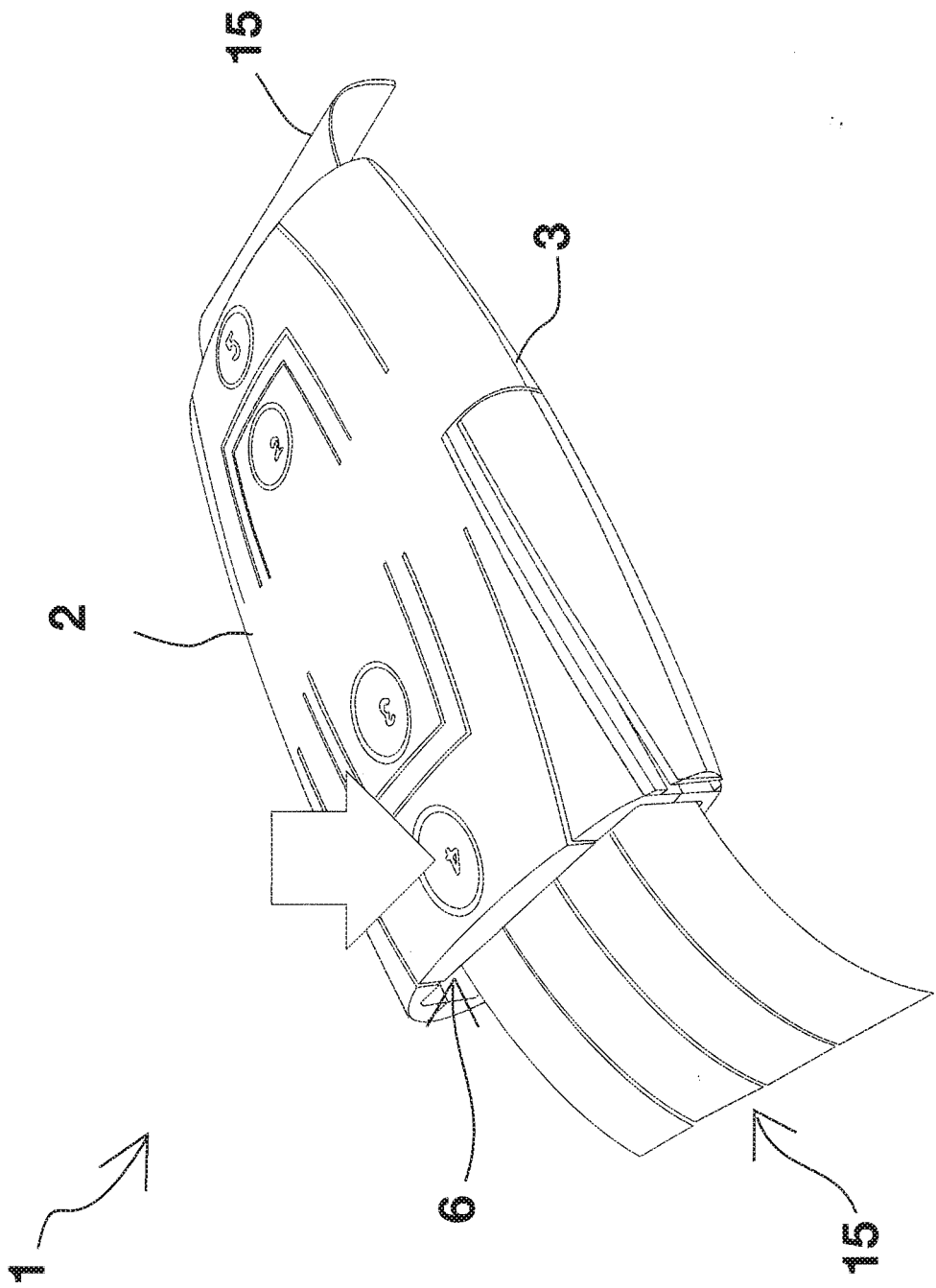


FIG. 8

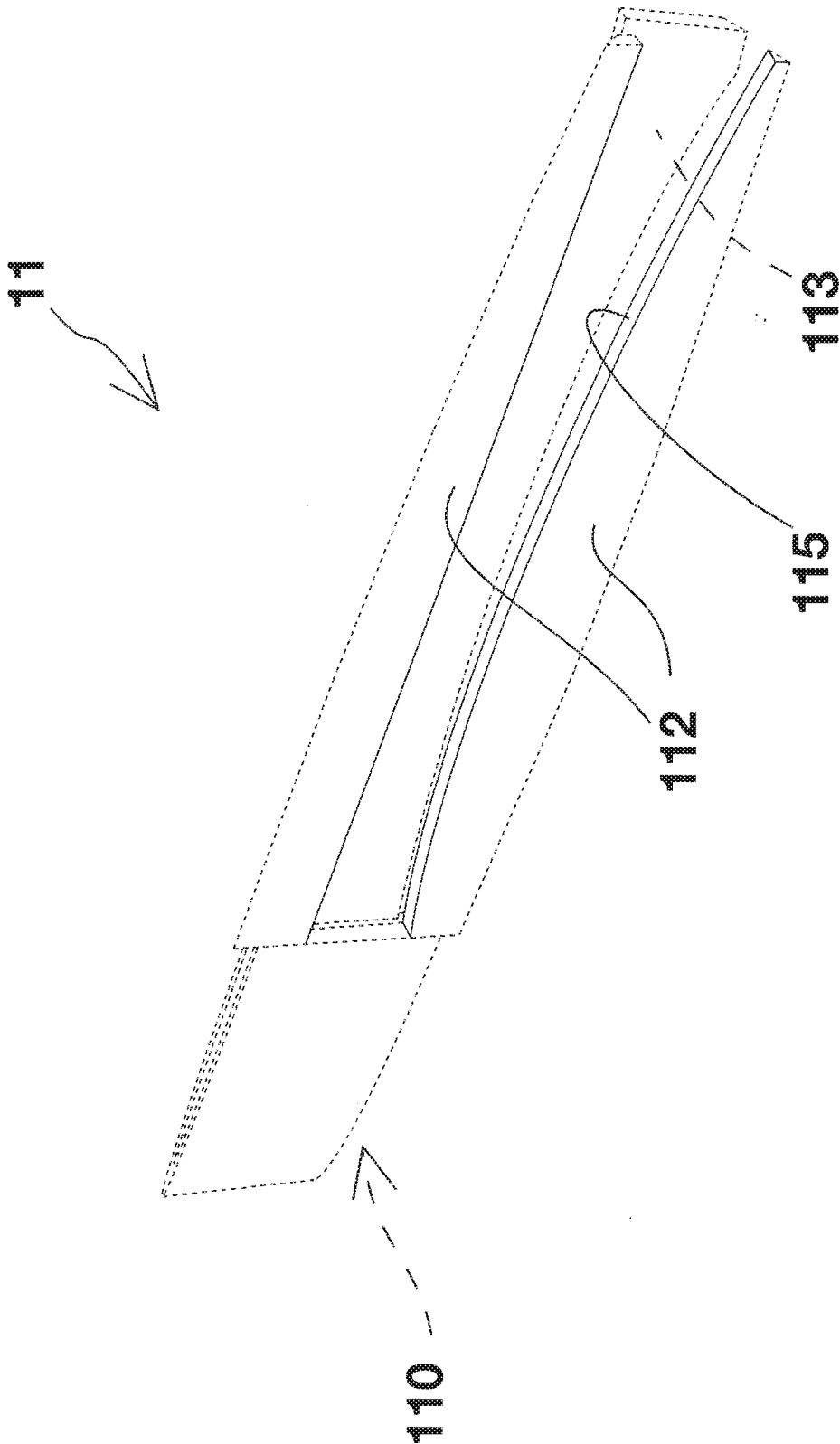


FIG. 9A

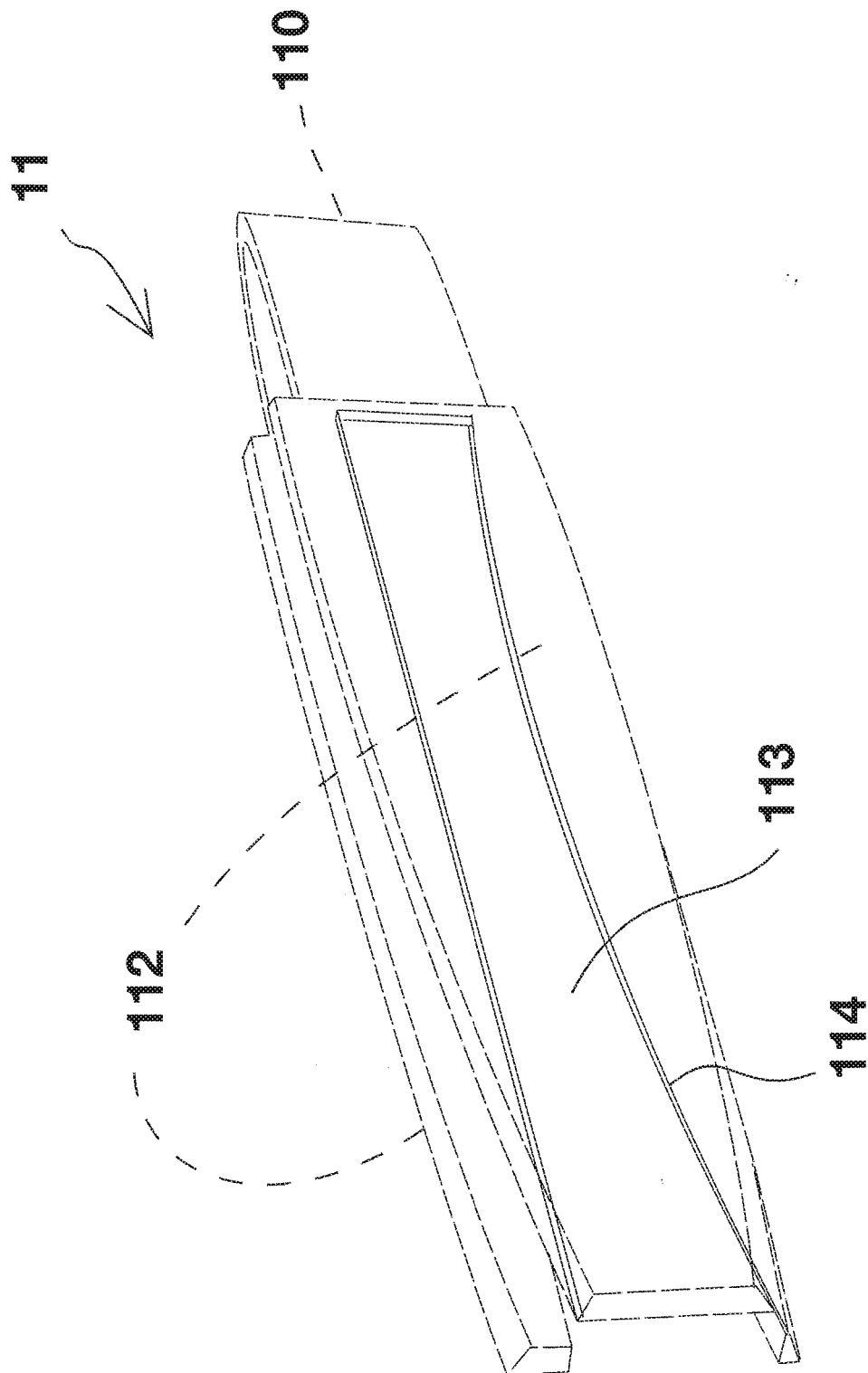


FIG. 9B

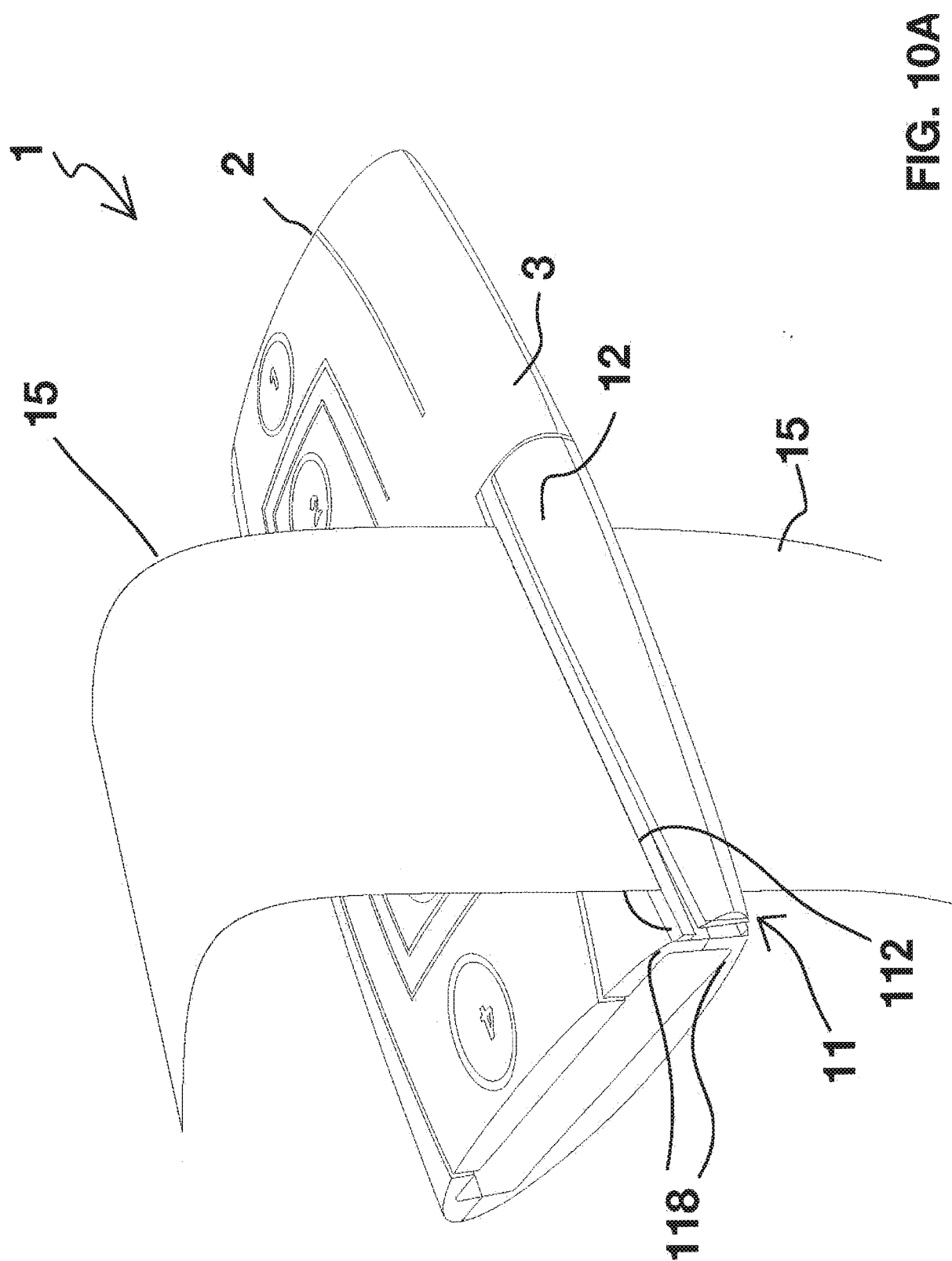


FIG. 10A

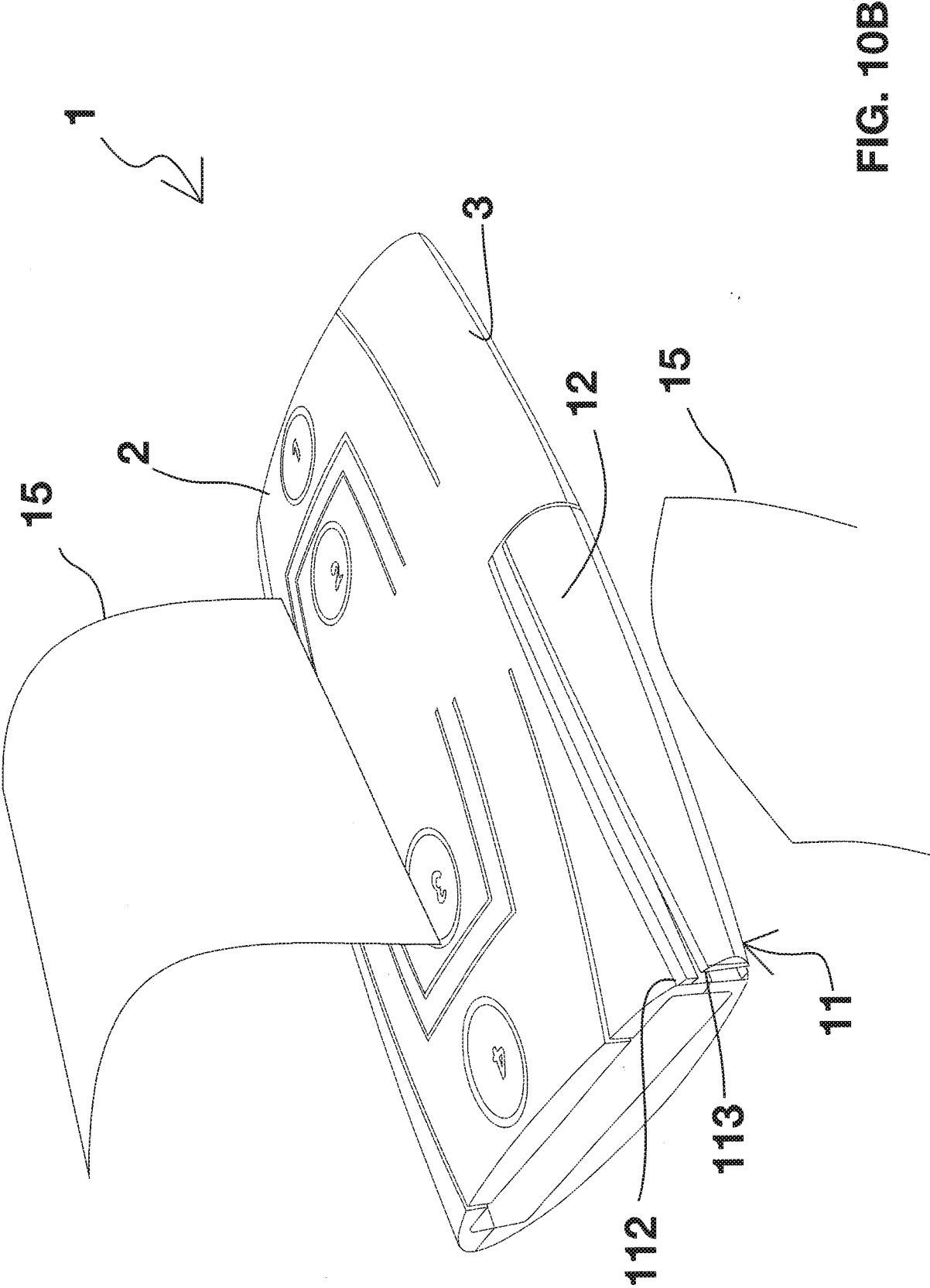


FIG. 10B

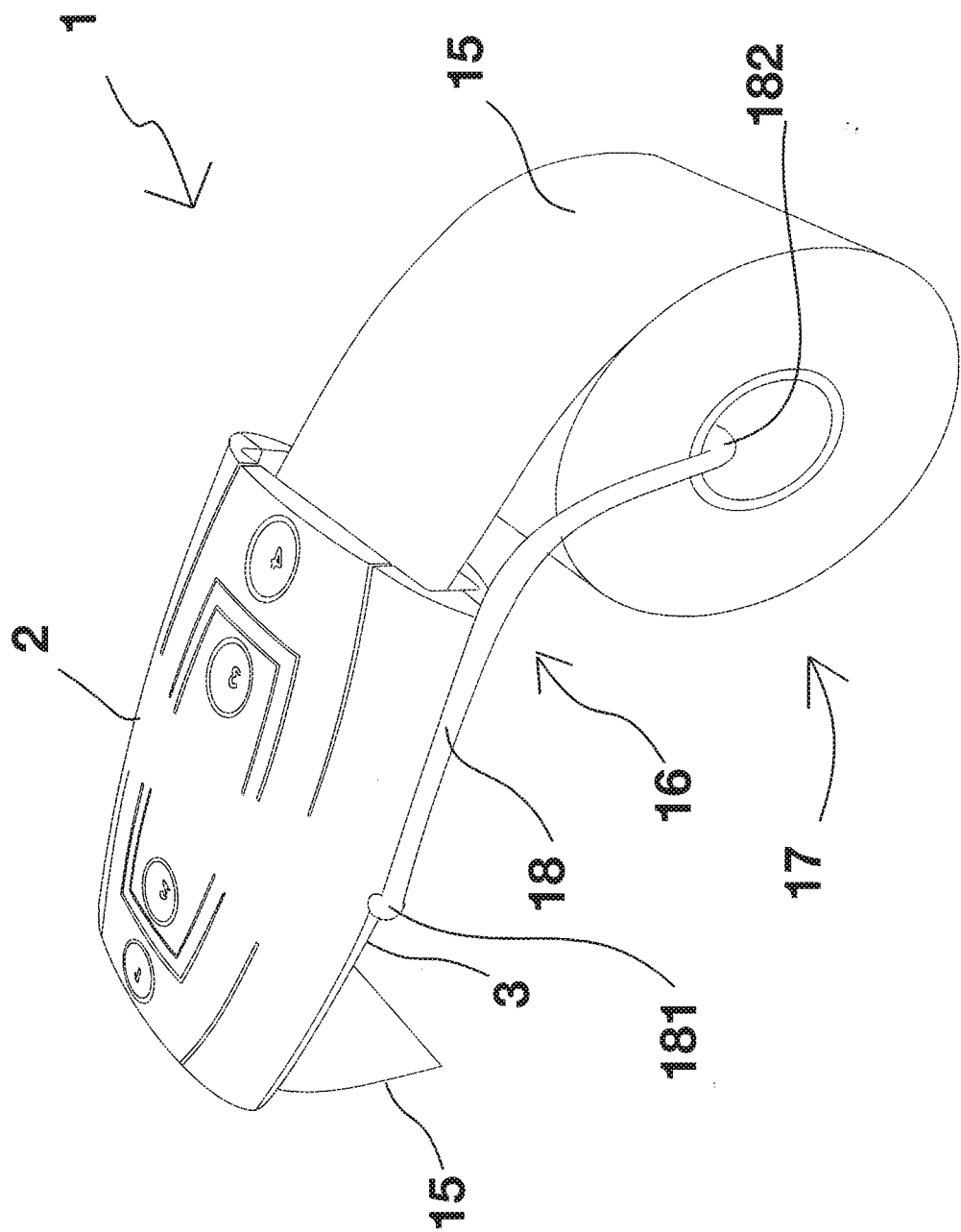


FIG. 11

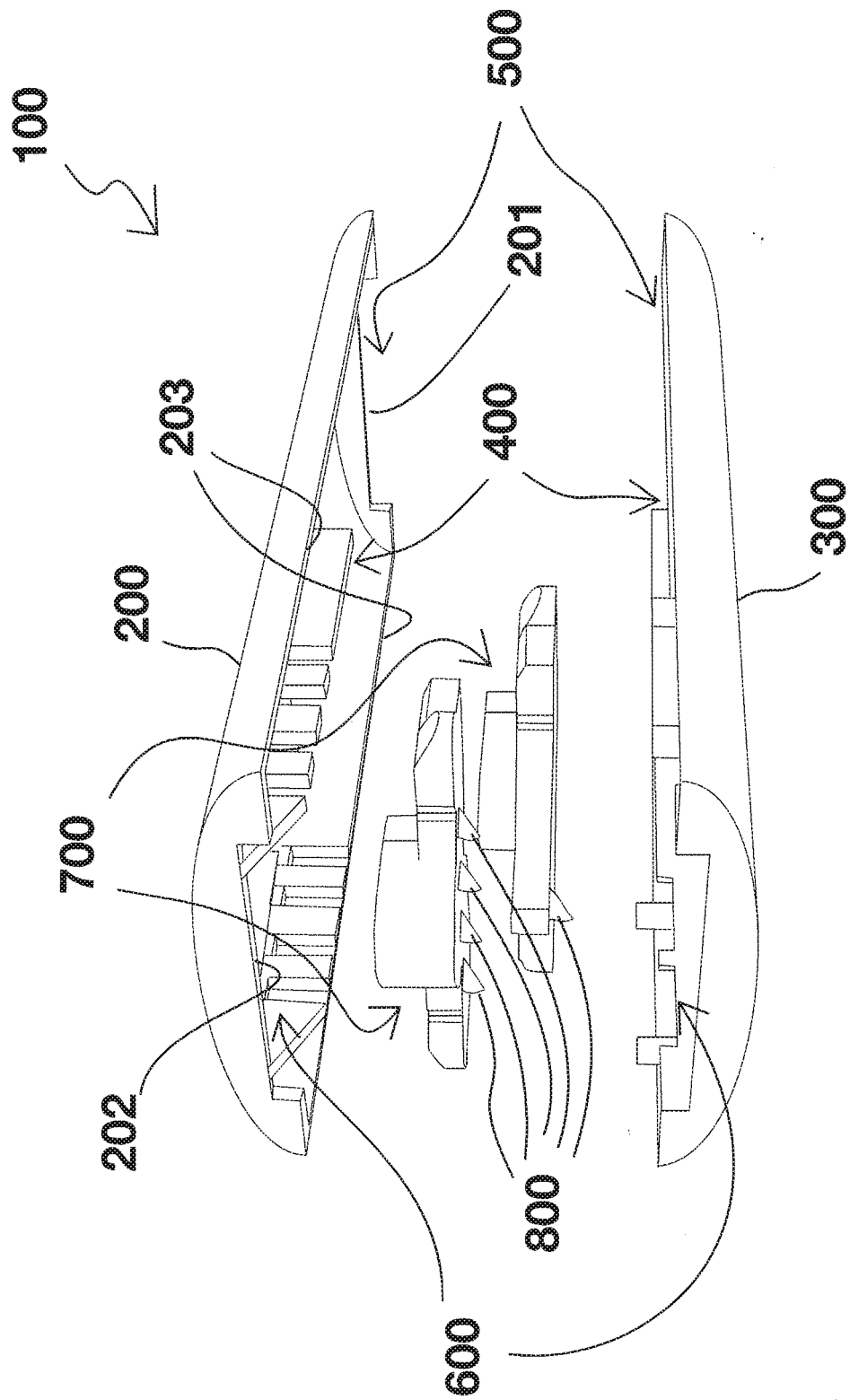


FIG. 12A

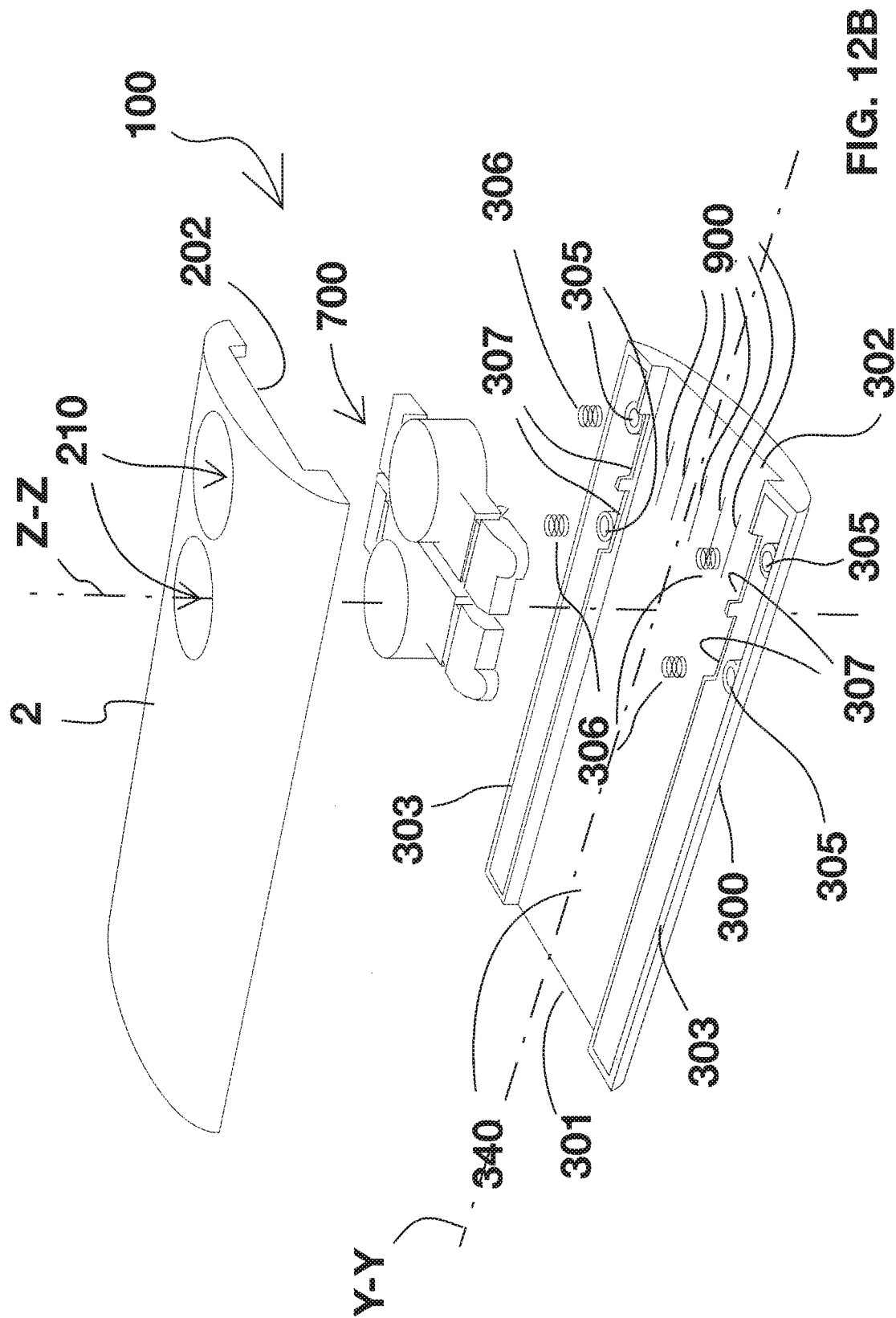


FIG. 12B

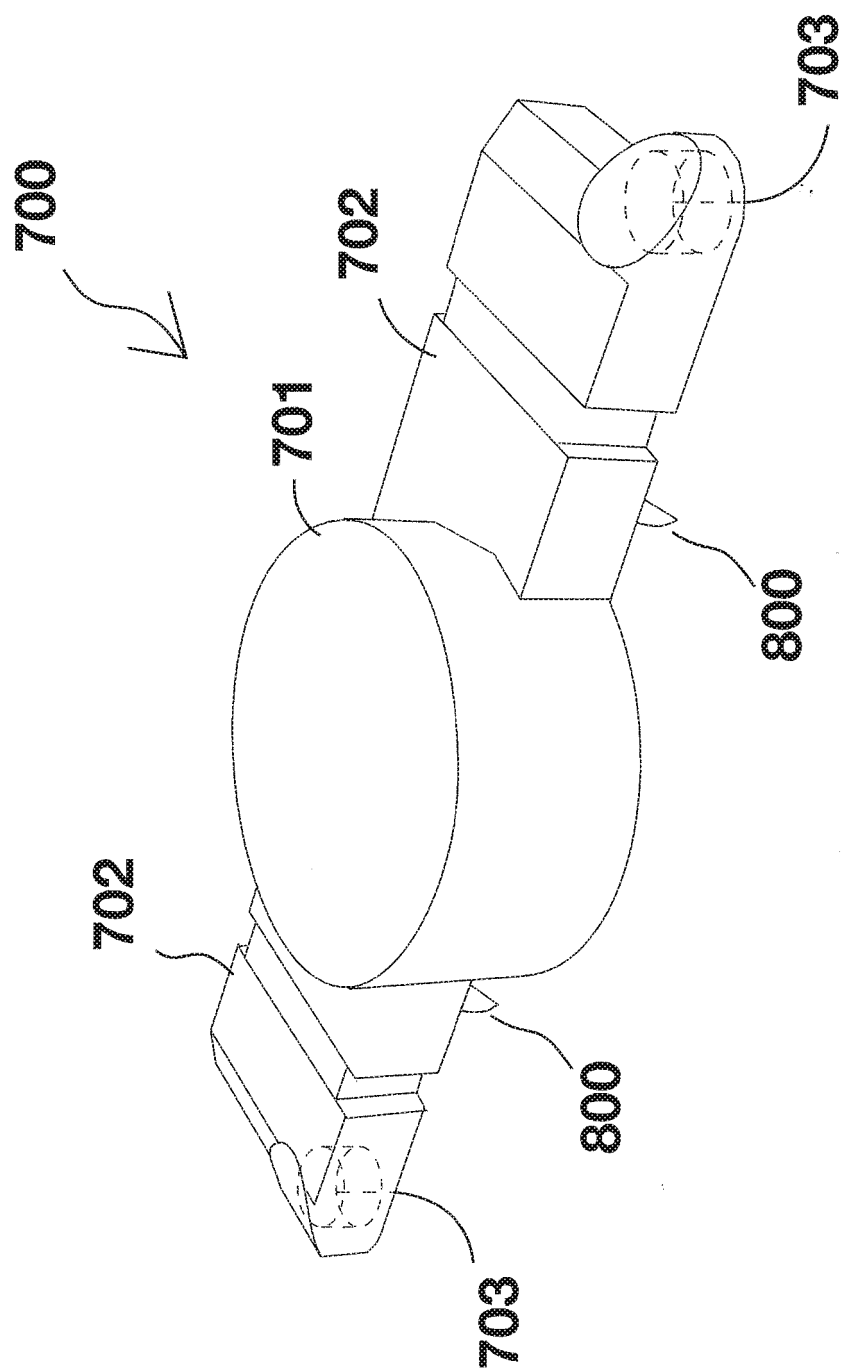


FIG. 13A

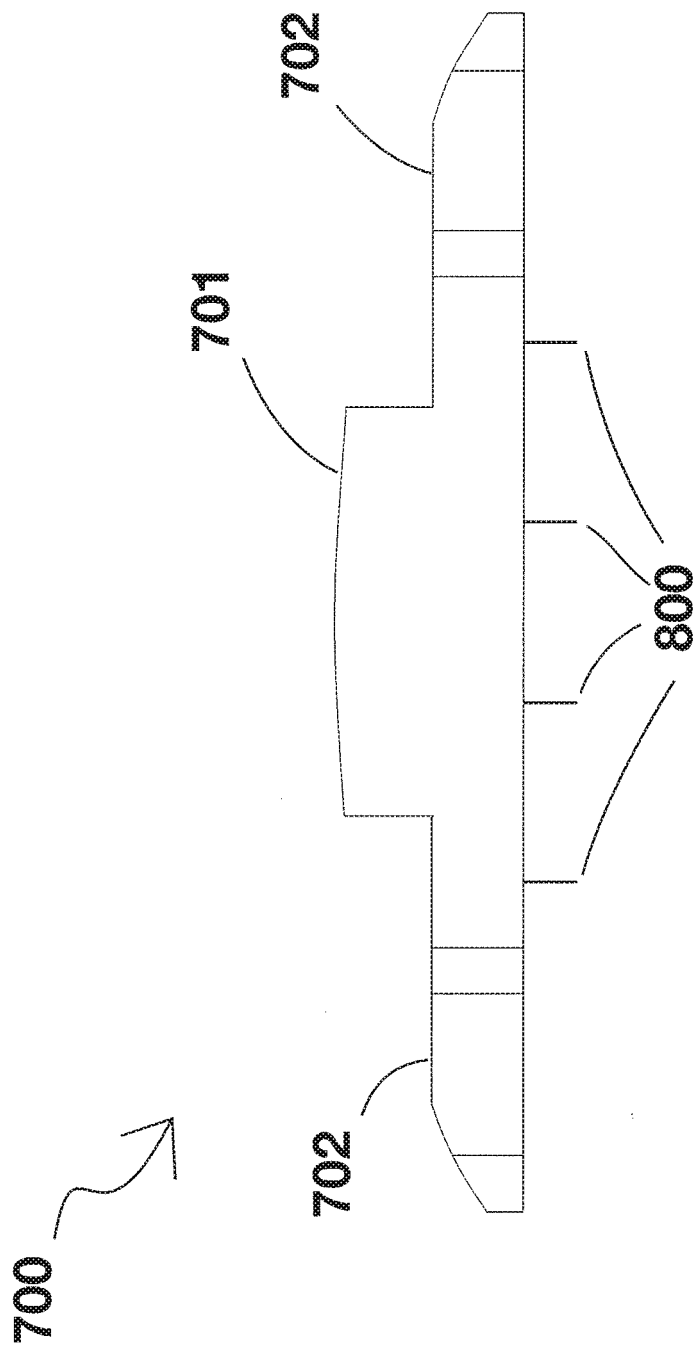


FIG. 13B

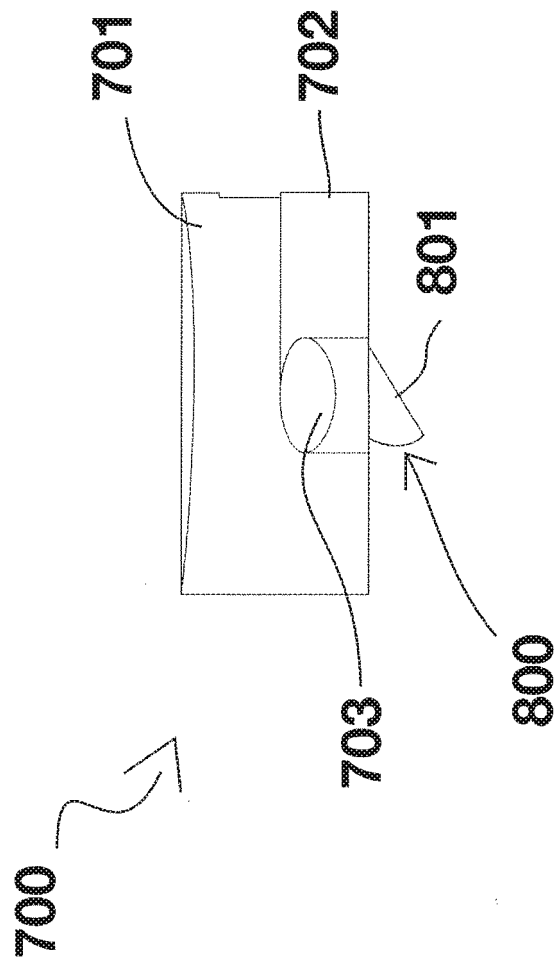


FIG. 13C

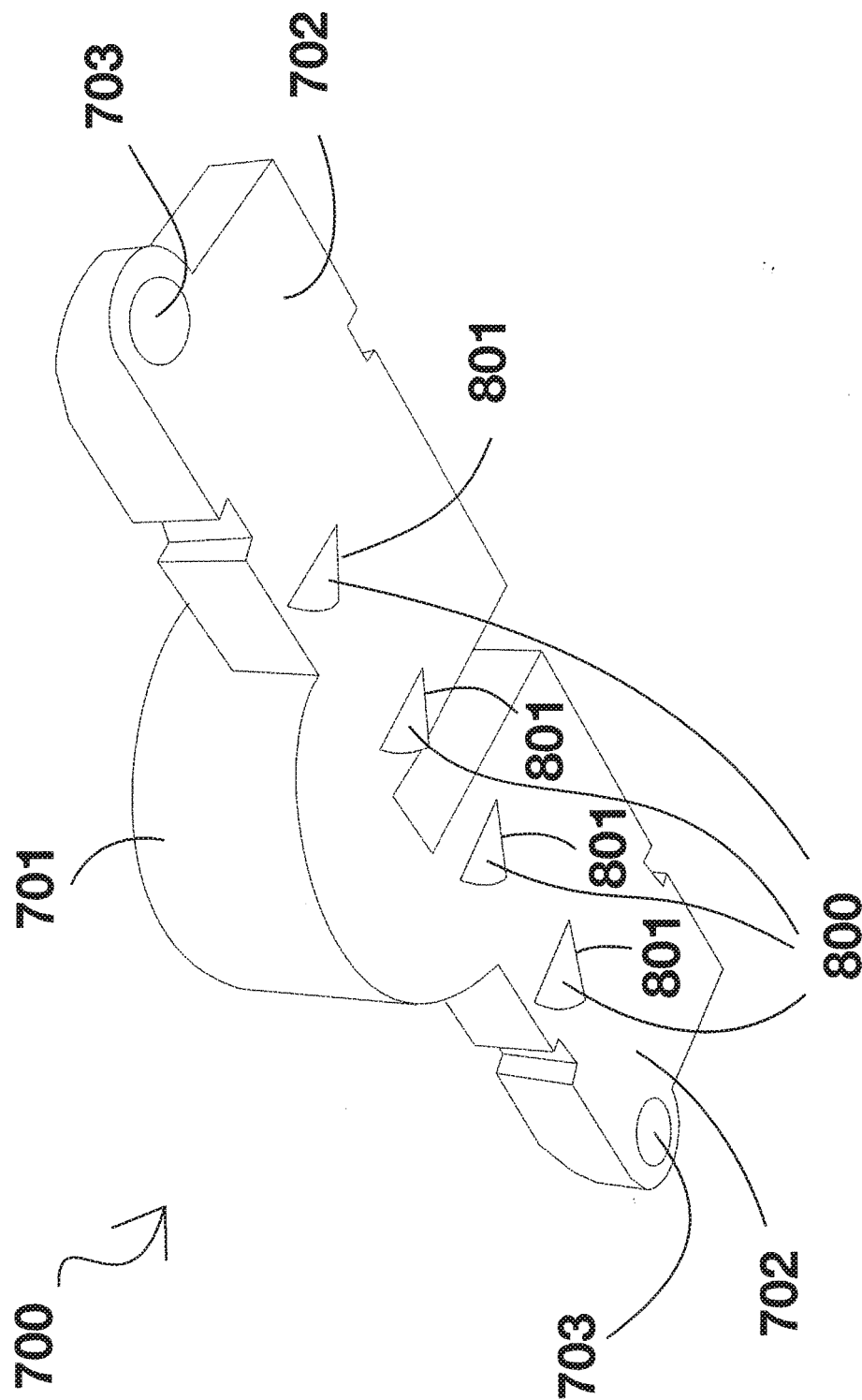


FIG. 13D

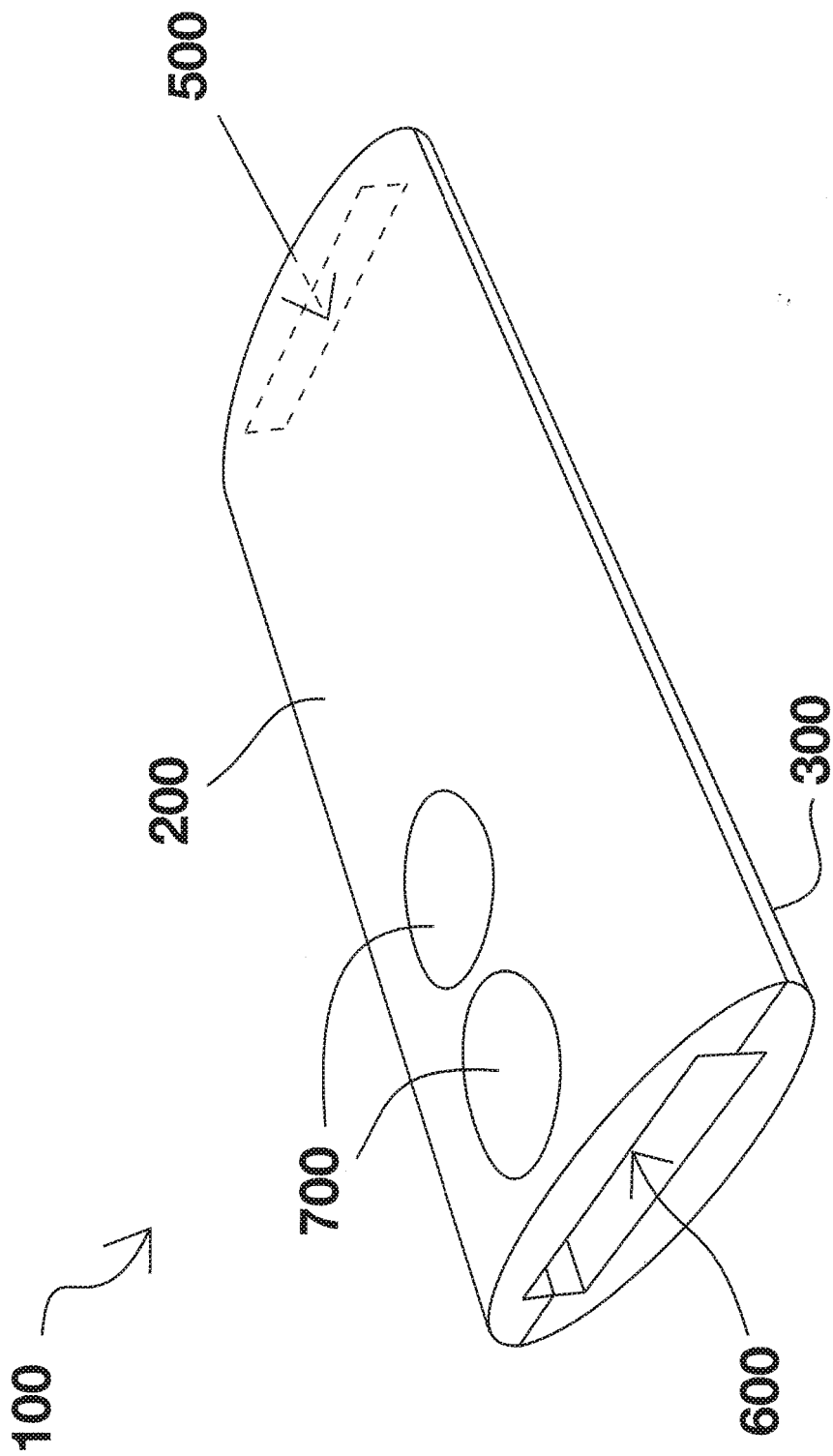


FIG. 14

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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