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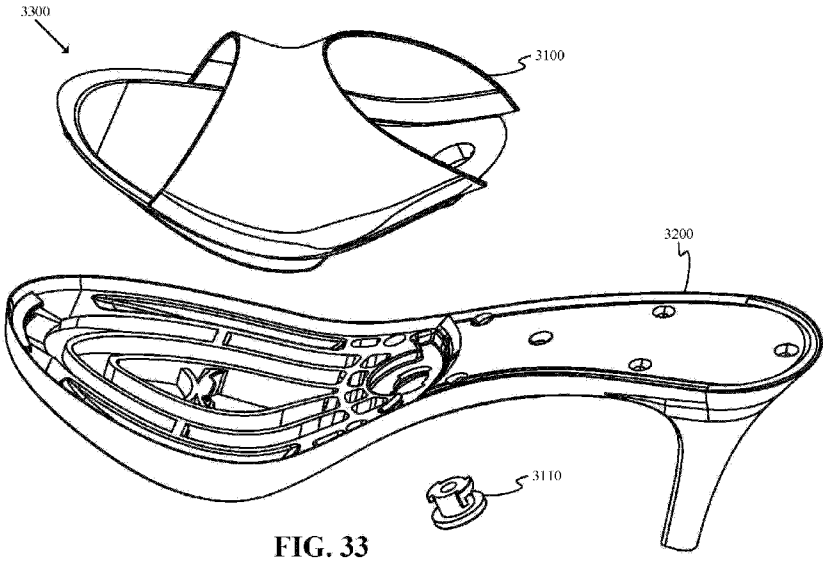


FIG. 33

(57) Abstract: A modular shoe having a removable upper is described. The upper may be adapted to be attached to an associated base. The upper may be secure to the base using a fastening element. Such a fastening element may be inserted through the base into a receptacle in the upper before being locked in place to secure the upper to the base. Similarly, the upper may be removed from the base by unlocking the fastening element from the receptacle. Such a modular shoe allows a wearer to easily change uppers (and/or bases) to create various combinations as desired.

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COLLAPSIBLE SHOE AND REPLACEABLE STRAPS AND METHODS FOR MAKING AND USING SAME

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of, and is a PCT International Filing of co-pending U.S. Utility Patent Application Serial No. 13/438,256 filed on April 3, 2012 which application is a continuation-in-part application of U.S. Utility Patent Application Serial No. 13/151,576, filed on June 2, 2011. Application Serial No. 13/151,576 is a continuation-in-part application of U.S. Utility Patent Application Serial No. 12/107,760, filed on April 22, 2008, now issued U.S. Patent No. 7,975,405. Application Serial No. 12/107,760 is a continuation-in-part application of U.S. Utility Patent Application Serial No. 11/530,377, filed on September 8, 2006, now issued U.S. Patent No. 7,578,075, which claims priority to U.S. Provisional Patent Application Serial No. 60/715,745 filed on September 10, 2005. The above-referenced applications are all hereby incorporated by reference for all that they disclosed.

FIELD OF THE INVENTION

[0002] The present invention relates in general to shoes and methods for using and making same and more particularly to a collapsible shoe and a shoe having interchangeable straps and methods for using and making same.

DESCRIPTION OF THE PRIOR ART

[0003] Shoes have been in existence for thousands of years. Their utility is beyond question. There are numerous varieties of shoes. Various types and styles of shoes may be used for different occasions such as formal occasions or informal occasions.

[0004] When traveling, multiple pairs of shoes are often needed in order that an appropriate pair of shoes is available to a traveler for any particular social occasion and to match various articles of clothing brought by the traveler. Packing multiple pairs of shoes in one's luggage can often take an excessive amount of space and may not be practical.

[0005] Furthermore, shoes are often singular in styling and aesthetics and can

be limited in their ability to match various types of attire or styling.

BRIEF SUMMARY OF THE INVENTION

[0006] In one embodiment, a collapsible shoe is disclosed comprising a sole, a heel, and a connector, wherein the connector is configured to removably attach the heel to the sole.

[0007] In some embodiments, the connector is a threaded rod. In some embodiments, the connector is a threaded rod extending through the heel and further comprises a threaded cap nut. The threaded cap nut in some embodiments is part of the sole of the shoe and in other embodiments it is separate from the sole and attaches the sole to the heel.

[0008] In another embodiment, a collapsible shoe is disclosed having a base that includes a heel portion where the heel portion includes a base cavity, a heel insert configured to be accepted by the base cavity, a vertical lock disposed at the heel portion of the base where the vertical lock engages the heel insert within the base cavity to secure the removable heel to the base, and a horizontal lock disposed at the heel portion of the base adjacent to the vertical lock where the horizontal lock engages the vertical lock in order to secure the vertical lock and to prevent the vertical lock from disengaging from the heel insert.

[0009] In another embodiment, a collapsible shoe is disclosed comprising a first sole portion, a second portion and a hinge wherein the hinge connects the first sole portion to the second portion.

[0010] In another embodiment, a collapsible shoe is disclosed comprising a removable strap portion. Some such embodiments further comprise a removable heel portion.

[0011] In some of the embodiments, the removable heel portion further comprises slots adapted to connect removable heel portion to the sole portion.

[0012] In another aspect, a modular decorative element is disclosed comprising a first decorative portion and a second base portion, wherein the decorative portion removably attaches to the base portion. In some such embodiments, the decorative portion further comprises a jewel, ornamentation or any other aesthetic item. Some embodiments of the modular decorative element further comprise a connection. In some such embodiments, the connection further comprises

slots or channels. Other embodiments comprise at least one connection, which further comprises at least one magnet.

[0013] In some embodiments, the base portion further comprises an earring, a pendant, a broach, a ring, a shoe portion, or further connective portion adapted to connect the decorative element to other clothing, body part or device.

[0014] The present application also includes elaboration of the interchangeable strap mechanism, which may include a quick release mechanism used in attaching and detaching the upper straps to the base of the shoe. The same quick lease mechanism for the straps can be used on any range of base heights.

[0015] In one embodiment, a shoe base is disclosed comprising of a removable strap portion with a quick release locking mechanism. Figure 27, shows a side profile drawing of a flat shoe base 1801, with a removable strap 2626 attached. The quick release button 2207 is shown at rest, the strap material can be sewn to the roll bar 2415 of the quick release strap mechanism, and the mechanism can be securely fastened to the base. When the strap is attached to the shoe it secures the foot to the base enabling a person to walk in the shoe. Figure 27, illustrates that when the button is at rest, it can be flush with the back of the shoe base. To release the strap attachment device, the button is pressed into the shoe base, thus unhooking the quick release strap mechanism and allowing the strap material to be removed from the base.

[0016] In another embodiment, the strap locking mechanism can be activated using a lever instead of a button that can be moved from one side of the base to another, thus allowing the quick release mechanism to be disengaged and the strap to be released.

[0017] In another embodiment, the button could be replaced with multiple buttons or pins that are pressed into the shoe base and release the strap mechanism.

[0018] In another embodiment, the button or like mechanism, could be situated in another location on the shoe base, the location is not limited to the back of the shoe base. The button can be located under the arch of the shoe base or on the side of the base. The button or pin can range in size depending on the design appeal for the shoe style.

[0019] Some embodiments include a removable upper section that may be attached to an associated base using a fastening element. The removable upper may include various catches or rails that are associated with various cavities or slots, respectively, that are included in the base.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The features disclosed herein and the manner of attaining them will become apparent and will be best understood by reference to the following description of certain embodiments taken in conjunction with the accompanying drawings, wherein:

[0021] Figure 1 illustrates a perspective view of one embodiment of a collapsible shoe;

[0022] Figure 2 illustrates a partial side view of Figure 1 taken substantially on line 2-2 thereof;

[0023] Figure 3 illustrates an exploded view of a portion of the embodiment illustrated in Figure 3;

[0024] Figure 4 is a partial sectional view of Figure 1 taken substantially on line 4-4;

[0025] Figure 5 is a bottom plan view of one embodiment of a collapsible shoe;

[0026] Figure 6 is a side elevational view of the collapsible shoe embodiment;

[0027] Figure 7 illustrates a perspective view of one embodiment of a collapsible shoe;

[0028] Figure 8 illustrates a cross-sectional side view of the base and removable heel;

[0029] Figure 9 illustrates a bottom plan view of one embodiment of a collapsible shoe;

[0030] Figure 10 illustrates an exploded view of a heel sliding into the base;

[0031] Figure 11 illustrates a side elevational view of one embodiment of a removable heel;

[0032] Figure 12 illustrates a perspective view of Figure 11 illustrating one embodiment of a removable heel;

[0033] Figure 13 illustrates a perspective view of one embodiment of a removable straps mechanism;

[0034] Figure 14 illustrates a side view of Figure 7 illustrating the use of Figure 13 as it pertains to removing a strap;

[0035] Figure 15 illustrates a bottom view of a removable platform;

[0036] Figure 16 illustrates a perspective view of an interchangeable platform with a strap attachment;

[0037] Figure 17 illustrates a view of a small platform;

[0038] Figure 18 illustrates a perspective view of one embodiment of a shoe base;

[0039] Figure 18A illustrates an exploded perspective view of one embodiment of a collapsible shoe;

[0040] Figure 18B illustrates a perspective view of one embodiment of a removable heel and a removable heel blank and removable ankle strap attachment piece;

[0041] Figure 18C illustrates one embodiment of a removable heel including one embodiment of a reinforcement cylinder and a heel insert;

[0042] Figure 18D illustrates a side view, top view, and perspective view of a horizontal lock lever;

[0043] Figure 18E illustrates a side view, top view, and perspective view of a vertical lock lever;

[0044] Figure 18F illustrates a bottom view of one embodiment of the collapsible shoe;

[0045] Figure 18G illustrates an exploded perspective view of one embodiment of a removable strap and a device that secures the removable strap to the base of the collapsible shoe;

[0046] Figure 18H illustrates the use of a removable strap button lever to disengage a removable strap from the base of the collapsible shoe;

[0047] Figure 19 illustrates a bottom plan view of one embodiment of a shoe base showing the empty cavity of wherein, the strap release lever would be attached;

[0048] Figure 20 illustrates a side view of Fig 1, illustrating the profile of the strap release cavity and the button release cavity before the strap lease lever is attached;

[0049] Figure 21 illustrates a posterior view of the button release cavity illustrating the profile before the release button is secured to the shoe;

[0050] Figure 22 illustrates a posterior view of the shoe base once the release button is assembled to the shoe base. It illustrates the button in the “rest” position;

[0051] Figure 23 illustrates a perspective view of the shoe base cover prior to attachment to the base;

[0052] Figure 24 illustrates a posterior view of the strap attachment mechanisms. In one embodiment the strap attachment mechanism can have one hook

locking device. In another embodiment, the strap attachment mechanism can have two hooks, in other embodiments there can be more hooks for locking;

[0053] Figure 25 illustrates a top view of the release lever of the quick strap release mechanism;

[0054] Figure 26 illustrates a posterior view of a removable strap. In one embodiment the strap can be one piece of material attached via the roll bar to both strap attachment mechanisms. In other embodiments the material may be multiple pieces attached to different sections of the roll bar and the material may be any suitable material for the purpose, such as leather, fabric, vinyl, but not limited to these listed;

[0055] Figure 27 illustrates a side view of the shoe base with the interchangeable strap attached to the base;

[0056] Figure 28 illustrates a posterior view of the strap attachment cavity with the strap release lever inserted into the cavity;

[0057] Figure 29 illustrates a posterior view of the strap attachment cavity with the strap release lever inserted into the cavity and the strap attachment pieces fitted into the strap attachment cavity;

[0058] Figure 30 illustrates a posterior view of the strap attachment cavity showing the male and female hooks locked in place;

[0059] Figure 31 illustrates a perspective posterior view of a removable upper and associated fastening element of some embodiments;

[0060] Figure 32 illustrates a perspective view of a base that may be used with the removable upper of Figure 31 in some embodiments; and

[0061] Figure 33 illustrates an exploded perspective view of a modular shoe that includes the upper of Figure 31 and the base of Figure 32.

DETAILED DESCRIPTION OF CERTAIN EMBODIMENTS

[0062] It will be readily understood that the components of the embodiments as generally described and illustrated in the drawings herein, could be arranged and designed in a wide variety of different configurations. Thus, the following more detailed description of the embodiments of the system, components and methods of the present embodiments, as represented in the drawings, is not intended to limit the scope of any invention, but is merely representative of the various embodiments.

I. A COLLAPSIBLE SHOE HAVING A REMOVABLE HEEL

[0063] According to certain embodiments, there is provided a collapsible shoe having a removable heel. The removable heel being removably attached to the base, or sole of the shoe. In some embodiments, the removable attachment is via a threaded rod or the like, and a fastening device such as a cap nut while in other embodiments it is via slots or dovetails or other locking mechanism. The shoe may further include one or more removable straps releasably attached to the base of the shoe. The releasable attachment can be via hooks and loops, via tabs and slots, via balls, via latch and slots or any other engaging/disengaging mechanism.

[0064] In some embodiments, the connector is part of the heel. The connector is a modification to the heel head designed so to fit securely into the sole. The sole has a release button that is depressed so the heel head may slide past it and fit into an empty cavity. The heel enters the cavity and locks into place by wedging against the button head and the back of the sole.

[0065] According to other embodiments, there is provided a method of manufacturing a collapsible shoe having a removable heel including the steps of forming a base having a fastening device such as a cap nut formed therein or an empty cavity with a release mechanism such as a button. The method further includes providing a removable heel and sole with a release button or the like for releasably attaching the removable heel to the base. The method of some embodiments further includes providing removable straps for removable attachment to the base.

[0066] According to yet another embodiment, there is provided a method of using a collapsible shoe having a removable heel including the steps of attaching a removable heel to the base of a collapsible shoe to prepare the collapsible shoe for subsequent use, and subsequently removing the removable heel to collapse the collapsible shoe for storage. The method of use may further include attaching one or more straps to the base.

[0067] According to yet another embodiment, a decorative element is disclosed that can be part of the collapsible shoe in order to provide modular decorative elements to the shoe. The decorative element provides easy quick fastening of jewels or other aesthetic elements to clothes, jewelry, shoes or other items.

[0068] Referring now to the drawings and more particularly to Figure 1 thereof, there is shown a collapsible shoe 10 having a removable heel 15. The removable heel 15 of the illustrated embodiment is attached to the collapsible shoe 10

near its rear end in a manner in which it may be removed and replaced. Some embodiments of the collapsible shoe include a base 30 for supporting the wearer's foot (not shown). The base 30 in some embodiments is formed of a suitable material, such as plastic, cardstock material, wood or other suitable material or combination thereof. The bottom surface of the base 30 of some embodiments forms the sole (not shown) of the collapsible shoe 10. The sole is formed of any material, such as rubber, cork, leather, wood or other suitable material or combination thereof.

[0069] Some embodiments of the collapsible shoe 10 further include a heel plate 20 interposed between the base 30 and the removable heel 15. The heel plate 20 may serve to support the removable heel 15 and to rigidly and releasably mount the removable heel 15 to the base 30. In some embodiments, the heel plate 20 is formed of a rigid material such as plastic, wood or metal and may either be permanently or releasably attached to the base 30.

[0070] Some embodiments of the collapsible shoe 10 further include an empty cavity 173 for the heel head 167 to slide past a button 163 and lock into place. The empty cavity is molded into the base predesigned to fit the head of the heel.

[0071] A fastening device such as a cap nut 25 is counter sunk within the base 30 of some embodiments and is permanently affixed thereto in some such embodiments. The cap nut 25 is used to mate with a threaded rod 70 (Figure 2) which is inserted through a central axial bore 80 in the removable heel 15 and the heel plate 20 and which, in some embodiments, removably affixes the removable heel 15 and heel plate 20 to the base 30.

[0072] With continued reference to Figure 1, some embodiments include one or more removable straps 35 that are releasably attached to the base 30 of the collapsible shoe 10 in order to provide support and to contain the user's foot (not shown) onto the base 30 of the collapsible shoe 10. The removable straps 35 of some embodiments also serve to add decorative content to the collapsible shoe 10. For example, the removable straps 35 may be formed of different colors or materials to match the outfit of the user (not shown). In some embodiments, different thicknesses of the straps may be employed to achieve a variety of styles and appearances.

[0073] Referring again to Figure 1, the removable straps 35 of some embodiments are releasably attached to the base 30 of the collapsible shoe 10 via a set of loops and hooks, such as loop 40 and hook 45. In such embodiments, in order to releasably attach the removable straps 35 to the base 30, one or more loops in the

form of screw eyes, such as loop 40, are attached to the outside edge of the base 30. In one embodiment, three loops 40, 50 and 60 are attached to the outside base 30. The releasable straps shown generally at 35 each contain a hook, such as hooks 45, 55, and 65, which are adapted to releasably attach to their corresponding loops 40, 50, and 60, respectively. In this regard, the releasable straps may be releasably attached to the base 30. It should be understood that any number of loops can be attached to the outside edge of the base in multiple positions to receive any number of releasable straps. Furthermore, the hooks and loops may be replaced with Velcro® or any other attachment devices. It is contemplated that the straps may be attached to the base 30 in a variety of different configurations to achieve a variety of different appearances for the shoe 10.

[0074] In some embodiments, a retainer clasp 152 is used to attach and detach a strap from the base of the shoe. In this method a series of strap retainers 140 are molded into the base. In some embodiments, one end of the clasp attaches to the fabric via a jump ring or like material and the other end of the clasp fits into the lower strap retainer 143, moves up thru the retainer 142 and into the third chamber of the retainer 141 to lock into place. The three retainers are slightly different sizes. In some embodiments, the lower retainer 143 is slightly larger than the other two, thus creating tension on the clasp 152 as it moves into the third retainer 141. In some embodiments, this tension is what keeps the clasp in place, thus securing the strap to the base of the shoe. In Figure 14, 144 shows the clasp in the locked position in strap retainer 141. When the clasp is in the unlocked position, it is in the lower strap retainer 143 and is demonstrated in 145. The size, shape, material make-up, and texture of the clasp will vary depending upon style and designer. The clasp and strap retainer mechanism is not limited to any hole size or shape as well. It should be understood that there can be any number of strap retainers on the sides of the sole and retainers may also be located under the sole or on the top surface. The strap retainers may appear in different shapes such as squares, ovals, rectangles.

[0075] In some embodiments the clasp will enter one hole and lock into place via the tension caused by material or size of the retainer. When the clasp moves past the small retainers (regardless of size and shape) into the shoe it will lock into place due to the side tension placed on the clasp. It doesn't have to move into a second chamber or third chamber to lock.

[0076] In operation, the user of the collapsible shoe 10 may first assemble the collapsible shoe 10 by attaching the removable heel 15 to the heel plate 20 which is removably attached to the base 30 as illustrated in the embodiment illustrated in Figure 1 or in any of the embodiments illustrated and/or described in Exhibit B. In addition, the removable straps 35 or any embodiment illustrated in Exhibit B may be releasably attached to the outer edge of the base 30 by inserting the hooks of each releasable strap onto the loops attached to the outer edge of the base 30 or as illustrated in Exhibit B. For example, hook 45 would be releasably attached to the loop 40. After the collapsible shoe 10 is assembled as described heretofore, the user may place their foot (not shown) onto the base 30. The foot (not shown) of the user (not shown) may then be held by the releasable straps 35 and may thereby walk with the collapsible shoe 10.

[0077] In another embodiment, Figure 10 illustrates the removable heel 15 sliding into the base from the toe of the heel to back of the shoe. The heel slides over 163 the spring loaded release button. As it slides past the button, the weight of the heel with the pressure of the user depresses the heel and creates a space for the heel to move into the empty cavity. The head of the heel 167 slides along the bottom of the heel cavity and the heel attachment site 170 becomes flush with the base of the shoe. As the heel moves completely into the cavity, the button no longer is blocked and the spring lifts forward to become flush with the heel front 171.

[0078] In some embodiments, the removable heel 15 is locked into place, see Figure 8, and held there by 171 the front of the heel head resting flush with 166 the back of the spring loaded retaining button. The two surfaces, rest against each other when the heel is in a locked position. Once the heel is into the hollow cavity, the button is released and keeps the heel in place. In some embodiments, when 163 is pushed down, the spring recoils and allows 171 to slide out and past 163 the spring loaded retainer button, thus releasing the heel from the sole.

[0079] In a similar manner, when the user of the collapsible shoe 10 desires to collapse the collapsible shoe 10 for storage or for travel, the user (not shown) would remove their foot (not shown) from the base 30. The removable heel 15 would then be removed thereby reducing the required space for storing of for traveling. The heel plate 20, on embodiments having a separate such part, may also be removed from the base 30 to further collapse and reduce the required space for the collapsible shoe 10.

[0080] Considering now the removable heel 15 and the heel plate 20 in more detail and in reference to Figures 2 and 3, the removable heel 15 of such embodiments has an axial bore 80 (Figure 3) formed within its longitudinal axis that extends from the bottom to the top of the removable heel 15 and further extends through the bottom and top of the removable heel 15. The axial bore 80 serves to receive and support the threaded rod 70 (Figure 2) therein. A boss 100 is provided in some embodiments at the top of the removable heel 15 and disposed in communicating relationship with the axial bore 80.

[0081] Considering now the threaded rod 70 in more detail and with reference to Figure 3, the threaded rod 70 can be formed of a rigid metallic or plastic material having threads formed thereon. The threaded rod 70 further includes a heel cap 75 which can serve a number of different functions. First, the heel cap 75 can facilitate insertion of the threaded rod 70 within the axial bore 80 of the removable heel 15. Second, the heel cap 75 further facilitates rotation of the threaded rod within the axial bore 80 by the user (not shown). Third, the heel cap 75 in some embodiments provides support for the removable heel 15 when the collapsible shoe 10 (Figure 1) is being worn by the user (not shown) as the heel cap 75 will be in direct contact with the ground. Since the heel cap may be in direct contact with the ground, the heel cap may be formed of a durable material, such as rubber or plastic.

[0082] Considering now the heel plate 20 in more detail and with continued reference to Figures 2 and 3, the heel plate 20 can be interposed between the removable heel 15 in the base 30 (Figure 2). The heel plate 20 of some embodiments includes an axial bore 85 along the short axis of the heel plate 20 as best shown in Figure 3. The axial bore 85 of the heel plate 20 serves to receive both a boss 100 of the removable heel 15 and the threaded rod 70 passing from the axial bore 80 of the removable heel 80. In this way, the threaded rod 70 may pass completely through the axial bore 85 from the axial bore 80 to be received by a cap nut shown generally at 25 (Figure 2).

[0083] With reference to Figure 3, the cap nut shown 25 of the illustrated embodiment includes a cap portion 90 and a nut portion 95. The nut portion 95 can be formed of a metallic or plastic threaded material for threadably receiving the threaded rod 70. Moreover, as best shown in Figure 2, the cap nut 25 of some embodiments is disposed within the base 30 where the cap portion 90 may be flush with or disposed slightly below the top surface of the base 30 of the collapsible shoe 10 so that the

user's heel (not shown) may not touch or be bothered by the cap nut 25. The nut portion 95 of the cap nut 25 extends downwardly from the cap portion 90 through the base 30 so that the threaded portion of the nut portion 95 may be accessible from the bottom of the base 30 and may threadably receive the threaded rod 70.

[0084] Considering the assembly of the collapsible shoe 10 in more detail and with reference to the embodiment illustrated in Figures 1-3, the user may first place the heel plate 20 onto the bottom surface of the base 30. This may be best accomplished by turning the base 30 upside down so that the heel plate 20 may rest onto the bottom surface of the base 30 by gravity. The axial bore 85 of the heel plate 20 may then be axially aligned with the nut portion 95 of the cap nut 25. The removable heel 15 may then be placed onto the heel plate 20 and the boss 100 placed within the axial bore 85 of the heel plate 20 so that the axial bore 80 of the removable heel 15 is placed in axial alignment with both the axial bore 85 of the heel plate 20 and the nut portion 95 of the cap nut 25.

[0085] Still referring to the embodiment illustrated in Figures 1-3, the threaded rod 70 may then be inserted into the axial bore 80 of the removable heel 15 through the bottom of the removable heel 15 and pass entirely through the axial bore 80 and then through the boss 100 into the axial bore 85 of the heel plate 20. The threaded rod then continues to be inserted into the nut portion 95 of the cap nut 25. When the threaded rod 70 engages the nut portion 95 of the cap nut 25, the user then may rotate the threaded rod 70 using the heel cap 75 to facilitate rotation until the threaded rod 70 is threadably secured within the cap nut 25. After the threaded rod 70 is threadably secured within the cap nut 25, the heel cap 75 will then be positioned abutting the bottom surface of the removable heel 15. In addition, the heel plate 20 and the removable heel 15 may be rigidly secured between the heel cap 75 and the base 30.

[0086] Considering the construction of the removable heel and the heel plate 20 in more detail and with reference to Figure 4, the removable heel 15 further includes a pair of integral extensions or projections, such as integral projections 105 and 110 extending from the top surface of the removable heel 15. The projections 105 and 110 help to prevent rotation of the removable heel 15 when attached to the heel plate 20. The integral projections 105 and 110 are adapted to be received by two corresponding bores 115 and 120 formed within the heel plate 20 at the bottom

surface thereof. The bores 115 and 110 are generally shown at 115 and 120, having the integral projections 105 and 110 inserted therein.

[0087] In operation, when the removable heel 15 is disposed abutting the bottom surface of the heel plate 20, the integral projections 105 and 110 are then inserted and received by the bores 115 and 120. Thus, when the threaded rod 70 is inserted into the cap nut 25 and tightened, the removable heel 15 is secured flat against the heel plate 20 and the projections 105 and 110 and held tightly within the bores 115 and 120. In this way, the removable heel 15 may not be inadvertently loosened or removed from the heel plate 20 of the shoe 10. Furthermore, the removable heel 15 may not rotate since the integral projections 105 and 110 may not permit this to occur since they inhibit rotation of the heel 15 relative to the heel plate 20.

[0088] In another embodiment of the present invention and with reference to Figure 5, the collapsible shoe 10 can be further reduced in size for storage or travel purposes by including a slit 130 formed within the base 30. The slit 130 permits the base 30 of the collapsible shoe 10 to fold back upon itself as best shown in Figure 6. To facilitate this operation, a hinge 135 can be affixed to the bottom surface of the base 30 as best shown in Figure 5. The center of the hinge 135 of the illustrated embodiment is disposed over the slit 130 so that the hinge may permit the base 30 to fold back upon itself. The hinge 135 then serves to permit folding and collapsing of the base 30 while preventing the two sections of the base 30 separated by the slit 130 from separating by an extensive distance where they could then be misplaced.

[0089] In operation, with reference to Figures 5 and 6, after the user (not shown) is finished using the collapsible shoe 10, the user removes the shoe 10 and the removable heel 15 and then folds the base 30 of the collapsible shoe back upon itself as best shown in Figure 6. When the user desires to utilize the collapsible shoe 10 once again, the collapsible shoe 10 is unfolded via the hinge 135 so that the base 30 is generally flat as best shown in Figure 5. At this point, the removable heel 15 would then be attached to the base 30 of the collapsible shoe 10 as described heretofore.

[0090] Consider the construction of the removable heel in Figure 11 and 12, the heel is made of the plastic, metal, wood, or like material. The head of the heel consists of a fillet raised edge that will be identical in all heels. The head is attached to a larger flatter area 170 known as the attachment site to the base. Once the heel is inserted into the cavity 173, the heel attachment site 170 will lay against the base

attachment site 188 with a seamless edge. The upper portion of the heel will be the same in each heel; however the lower portion of the heel 15 will change aesthetically in shape, color, size, fabric covering, material, thickness, etc. There is a steel rod 190, within the heel for stability and structure. You can't see the rod from the outside. A heel cap 75 will be attach to the end of the heel, covering the steel rod from the bottom. Changing the heels in the sole, allows the consumer to interchange a thin heel, for a wedge heel or a pump heel. The shapes and styles of the heels that will be created to interchange with the removable heel 15 will be determined by fashion trends and should not be limited to any said configuration in this patent.

[0091] In some embodiments, the heel head 167 may vary in shape or design, depending on the shape and design of the base attachment sight. The two pieces, the heel 15 and the shoe 10 will be designed in unison so that they fit into each other. The heel head 167 may be more circular, rectangular, or square in each model depending on the particular design of the shoe. This will depend on fashion trend.

[0092] In some embodiments the heel head 167 will be extended to fit on a wedge heel (not pictured). The surface area of the heel cap 75 is much larger as is the shape of the entire heel 15. When the sole of the shoe is made to accommodate a wedge, the attachment sight for the sole 188 will be larger in dimensions, as will the entire cavity 173 and the heel head 167. In some embodiments, the same locking mechanism will be used and the same design concept will be used. In some embodiments, the components will just be larger than those pictured and shaped slightly different.

[0093] In some embodiments, as shown in Figure 10, the heel enters the bottom of the sole. In this particular drawing, the heel is shown entering the sole from the front of the shoe 10 to the back of the shoe. Thus, adding more stability when the consumer walks on the heel. This approach minimized the chance of the heel 15 coming off the sole from the back. In some embodiments the heel may slide in from the back of the sole to the front of the sole. The spring loaded retaining button 163 would be moved to the back of the cavity 173 to enable it to be depressed by the heel as it enters the cavity.

[0094] In some embodiments, the spring loaded heel-retaining button 163 in Figure 9 will be decorated or ornamented according to fashion trends. It will also vary in size, color, material, and shape. The size of the spring will also vary in size, material, color, and strength.

[0095] In one embodiment, the spring loaded heel-retaining button 163 is shown in Figure 8, is a separate piece made to fit into the sole. The button 163 is connected to the sole via 162 a clip attaching the button to the sole via small screws 161 but not limited to screws, pins, or like structures. In one embodiment the button is molded into the construction of the sole (not pictured), and 162 is not needed. The spring 165 is then attached to the sole under the heel release button. The spring loaded retaining button is used to release and attach the heel 15.

[0096] Consider in Figure 8, how the front heel retaining plate 171 rest against 166 the front of the button when the heel is completely in the cavity. In some embodiments, the heel will be completely inside the cavity in order for the spring loaded retaining button to release and raise up flush with the heel front 171.

[0097] In some embodiments, as shown in Figure 10, the construction of the sole's heel cavity is designed to mirror the exact dimensions of the heel head 167. There can be a small ridge on the inside of the cavity 173 that allows for the filleted edges of the heel neck to dip down lower into the cavity. This can create an added locking mechanism because once the heel is lowered in to the cavity, it may not be pulled up because the neck of the heel is trapped underneath the ridge in some embodiments.

[0098] In some embodiments, Figure 13, the clasp 152 has two sides. One end of the clasp 151 can be inserted into the holes 140 of the sole. The other end of the clasp 154, can have a hole in it, where a jumpring 153, or like configuration, is inserted through the hole to attach the strap 35. In some embodiments, the strap is fed thru the jumpring and sew on itself to secure the latch to the strap. The size of the hole 153 in the clasp may vary in size, shape, or location depending on design style. The shape of 151 and 154 of the clasp is altered in some embodiments. In some embodiments the ends are square or rectangular. The design of this clasp is not limited to the shape, circular design, measurements, or material.

[0099] In one embodiment, Figure 14, the strap retainer 140 are on the sides of the shoe. One strap retainer is divided into three parts; the bottom portion of the strap retainer 143, the middle portion of the strap retainer 142, and the upper portion of the strap retainer 141. The three parts are slightly different dimensions. The bottom retainer 143 is where the clasp end 151 is inserted into the shoe. The clasp can be inserted into the side of the shoe 10 so that only the 154 end of the clasp is exposed. In some embodiments, the depth of the strap retainer is molded into the side of the

shoe, and is determined by the clasp length. The clasp end 151 enters the bottom strap retainer and is moved past 142, which is a smaller strap retainer dimension. In some embodiments, the smaller dimensions can create tension on the clasp as it moves past the strap retainers. Then the clasp is forced by direct upward pressure into the smallest of the strap retainers 141, where it snaps into place, in some embodiments. Strap retainer 141 is just big enough for the 151 clasp end to fit into the retainer, this creates side tension on the clasp and keeps the clasp in the strap retainer. In Figure 14, 144 illustrates the clasp in the upward, locked position in one embodiment. The fabric is attached to the clasp and can be secured to the sole of the shoe. When the consumer wants to remove the strap, the consumer can push downward on the clasp in position 141 and move the latch past 142 into 143 in some embodiments.

[00100] In some embodiments, 140 can consists of just one chamber instead of three spaces like 141,142,143. The dimension of the strap retainer is slightly larger than the clasp end 151. The consumer can push the clasp end 151 into the strap retainer comprising of one compartment, and the side tension can make it difficult to slide the clasp past the hole. This side tension is what will secure the clasp to the shoe in some embodiments.

[00101] In some embodiments the size, shape, design, and material of the strap retainer can be altered for design style. The dimensions of the strap retainer are dependent upon the size and shape of the clasp. The shape of the clasp is determined by fashion trend and designer interpretations. It is also determined by the material used to create the clasp which can range from plastic, metal, wood, nylon, or other synthetic material.

[00102] In review, the purpose of creating an interchangeable shoe is to enable the consumer to own one pair of shoes (soles) and purchase heels and straps separately to change the style of your shoes. In some embodiments of the interchangeable shoe, you can change a thin, stiletto heel for a thicker/wedge heel. In some embodiments you can change one thick strap for a strap comprising of 3 or 4 decorative straps. In some embodiments, the hinge in the sole will enable the consumer to fold the sole in half, to pack the shoe easier for traveling. In some embodiments, the heels and straps will come in variety of colors, shapes, material types, and style. The consumer will be able to interchange the straps and heels per fashion trends or per functionality.

[00103] It will become apparent to those skilled in the art that the disclosed embodiments of the invention are subject to a variety of modifications without departing from the invention and such variations are assumed to be within the skill of those in the art such that they are included in this disclosure.

[00104] In some embodiments, the platform is removable from the base via a spring loaded button 195. Once the button 195, is depressed the platform is twisted to one side and released. In Fig 15, 192 demonstrates one such removable platform. Note 196, are the guides that are used for the interchangeable platform to get and stay in place. The platform is reattached by lining up the cog 194 on the inside of the platform with the hole in the bottom on the base. The platform is in place once the guide is lined up on each side of the lever (spring loaded button, 195). The same cog design is seen in both mates: the base and platform. The cog is lined up and the platform is twisted into place. The button is depressed upon twisting. Fig 15, In this particular embodiment, the removable wedge heel is attached after the platform in attached and adds security to the removable platform. The platform is removable to increase or decrease the height of the shoe. The platforms may be constructed in several heights. Fig 17 shows a small platform, but several heights exist. Once the desired platform height is attached, the removable heel that corresponds to that height will be inserted into the shoe. In some embodiments, this is how the interchangeable platforms and interchangeable heels can add or subtract height to a shoe.

[00105] In some embodiments, the interchangeable platforms also feature a strap attachment site, 193 in Fig 16. There is a strap cut-out on the inside of the removable platform. The cut-out dictates where the straps will be positioned. Once the platform is attached to the base, the straps will be sandwiched in between the platform and the base. This will ensure that the strap will not come off the foot or the base.

[00106] Another embodiment of a collapsible shoe having a removable heel is illustrated in Figure 18A. Figure 18A specifically illustrates an exploded perspective view of a several components of one embodiment of a collapsible shoe. These components include a base 1805, a base plate cover 1810, a sole 1815, a removable heel 1820, a heel insert 1825, a removable heel blank 1830, a removable ankle strap attachment piece 1835, a reinforcement cylinder 1840, a horizontal lock lever 1845, a vertical lock lever 1850, a removable wedge 1855, and a wedge support insert 1860.

[00107] A detailed perspective view of the removable heel 1820 of the embodiment shown in Figure 18A is illustrated in Figure 18B. When the removable

heel 1820 is in place, one of either the removable heel blank 1830 or the removable ankle strap attachment piece 1835 may be interposed between the removable heel 1820 or removable wedge 1855 and the base 1805. The removable heel blank 1830 is similar to the heel plate 20 shown in Figure 2 and Figure 3 in that it may serve to support the removable heel 1820 and to rigidly and releasably mount the removable heel 1820 to the base 1805.

[00108] As can be seen in Figure 18C, the removable heel 1820 may include a first and second cavity 1865 and 1866. The first cavity 1866 may accommodate a heel insert 1825. The heel insert 1825 fits into a base cavity on the bottom of the heel and the heel insert 1825 facilitates the locking and unlocking of the removable heel 1820 to the base 1805. The heel insert 1825 may be permanently secured to the first cavity 1866 with a bonding agent such as glue. The second cavity 1865 may be an axial bore at the bottom of the removable heel 1820. This second cavity 1865 may accommodate a reinforcement cylinder 1840 for added stability in the heel similar to the steel rod 190 shown in Figure 8. The reinforcement cylinder 1840 may be permanently secured to the second cavity 1865 with a bonding agent such as glue.

[00109] The removable heel 1820 may also be interchanged with a removable wedge 1855 in order to provide a different look and style. The removable wedge 1855 may also include a cavity that can accommodate the same heel insert 1825 as the removable heel 1820 in the same manner in order to assist in locking and unlocking the removable wedge 1855 to the base 1805. A wedge support insert 1860 may slide into a front recessed cavity in the removable wedge 1855 in order to provide support and stability when the removable wedge is attached to the base 1805. The wedge support insert 1860 may be permanently affixed to the front recessed cavity of the removable wedge 1855 with a bonding agent. The wedge support insert 1860 may couple to a wedge support slot 1890 shown in Figure 18F when the removable wedge 1855 is secured to the base 1805.

[00110] To secure the removable heel 1820 or removable wedge 1855 to the base 1805 of the collapsible shoe, one embodiment of the collapsible shoe may use a double lock mechanism in conjunction with the heel insert 1825 in order to ensure the removable heel 1820 or wedge 1855 does not inadvertently become insecure while a user is wearing the collapsible shoe. The double lock mechanism may incorporate a horizontal lock lever 1845 that locks and unlocks a vertical lock lever 1850 that interact with the heel insert 1825. The horizontal lock lever 1845 may be aligned with

a horizontal lock slot 1846 and the vertical lock lever 1850 may be aligned with a vertical lock slot 1851 in the base 1805. Figure 18D illustrates a side 1870, a front 1871 and a perspective view 1872 view of the horizontal lock lever 1845. Figure 18E illustrates a side 1875, a front 1876 and a perspective view 1877 of the vertical lock lever 1850.

[00111] As illustrated in Figure 18F, when the heel is inserted into the base cavity and in a locked position, the vertical lock lever 1850 is pushed up toward the removable heel 1820 and the horizontal lock lever 1845 is moved to the right in a lock position. The vertical lock lever 1850 engages the heel insert 1825 to hold the removable heel 1820 in place. When the vertical lock lever 1850 is in the lock position and engaged with the heel insert 1825, the horizontal lock lever 1850 may be moved in a position that engages the vertical lock lever 1850 so that the vertical lock lever 1850 is not able to move down to an unlocked position. When a user wants to remove the removable heel 1820, the horizontal lock lever 1845 must first be moved to the left, for example, to its unlock position which allows the vertical lock lever 1850 to freely move down to its unlock position. A user can then move the vertical lock lever 1850 down and away from the removable heel 1820 thus freeing the removable heel 1820 and allowing the user to remove it from the base 1805.

[00112] It will become apparent to those skilled in the art that the disclosed embodiments of the invention are subject to a variety of medications without departing from the invention and such variations are assumed to be within the skill of those in the art such that they are included in this disclosure.

II. A SHOE BASE HAVING REMOVABLE AND INTERCHANGEABLE UPPER STRAPS

[00113] According to certain embodiments, there is provided a collapsible shoe base having removable upper straps, the removable straps being attached to the base or sole of the shoe.

[00114] Figure 18G illustrates an exploded perspective view of the base 1805 of one embodiment of the collapsible shoe with removable straps 1895, a removable strap device 1896, and a removable strap button lever 1897. The removable strap device 1896 may be housed within the base 1805 and may include a push button 1894 at an interior center of the removable strap device 1896. When the removable straps 1895 are manually pushed into the sides of the base 1805 the removable strap device 1896 will be forced forward within the base 1805 causing the push button 1894 to be

depressed against a wall of the base 1805. When the teeth 1898 have engaged the removable straps 1895, the push button 1894 will cause the removable strap device 1896 to move back into its original position locking the removable straps 1895 in place. When in place, the user may thread straps through slots of the removable straps 1895 for use.

[00115] In order to release the removable straps 1895 from the base 1805, the removable strap button lever 1897, for example, may be inserted into hole 1899 as illustrated in Figure 18H. The hole 1899 is an access point to the removable strap device 1896, which may be pushed forward with the removable strap button lever 1897 disengaging the teeth 1989 so the removable straps 1895 can be pulled out of the base. Once the removable straps 1895 are disengaged and the push button 1894 will cause the removable strap device 1896 to move back to its original locked position. Similar devices such as a pen cap or pencil may also be used to disengage the removable straps 1895 through the hole 1899 in the base.

[00116] If a user wishes to add high ankle straps to the collapsible shoe, the user may make use of the removable ankle strap attachment piece 1835 shown in Figure 18B. The removable ankle strap attachment piece 1835 is shown in place in Figure 18F where two metal rings 1888 are exposed. Straps may be threaded through the metal rings 1888 as desired by the user.

[00117] Figure 19 shows a cross section of another embodiment of the shoe base, exposing the cavities that house the quick release mechanism. In some embodiments their can be more cavities, can vary in shape/size, and compartmentalized differently. The cavities shown in Figure 19, house the strap release mechanism. A base cover 2312, shown in Figure 23 can then be attached to the shoe base to cover and protect the strap release mechanism. The base cover is attached to the shoe base by any suitable attaching means, such as using screws, pins, plugs, or nails. In some embodiments the base cover is glued or hard pressed to the shoe base.

[00118] The base cover is attached once the quick strap attachment pieces are placed into the cavity to ensure their security and function in the shoe base. The shoe base is then covered, as shown in Figure 27, with a suitable covering material 2730, such as a piece of rubber, leather, plastic, fabric, or sole-like material to protect all working mechanisms in the shoe base.

[00119] In some embodiments, the quick release mechanism shown in Figure 25 can be one solid piece or several pieces. The quick release mechanism can be made of wood, plastic, pvc, abs, steel, or like-metal, and is not limited or to mentioned materials.

[00120] In some embodiments, the button is attached to the quick release lever. In some embodiments the button is a separate piece than the quick release lever. Figure 25, shows one such quick strap release lever, with the button attached and one set of strap attachment hooks.

[00121] In another embodiment, the strap release lever could have multiple strap attachment hooks.

[00122] In the embodiment of Figure 25, the strap release lever is placed in the empty cavity of the shoe base. The upper part of the release lever comprises of, but is not limited to: a spring attachment post 2523, a spring 2524, a female strap attachment hook 2519, and an empty cavity known as the female hook locking cavity 2520.

[00123] In other embodiments, there are multiple springs and spring attachment post, and several female attachment hooks and several female hook locking cavities. The strap release lever is placed in the empty shoe body cavity so that the top of the springs 2524 rests against the mating surface of the head of the base cavity 1906 shown in Figure 19. When the springs 2524 are at rest, the spring is elongated and there is an empty space 2829 created in the strap attachment cavity. In Figure 28, the button and the spring are at rest, creating the leverage space 2829 in the strap attachment cavity. When the button is pressed, the entire strap release lever moves forward, the spring shortens, and the top of the strap release lever moves closer to the mating surface 1906 of the shoe base. The female hook heads 2518 move forward as well and become flush with the sides of the strap attachment cavity. When the button is released, the strap release lever moves back to its original place, the string is returned to its natural state and the female hook heads return to their natural position. When the button is released, the stoppers at the end of the strap release lever, rest against the body of the shoe, thus ensuring that the button does not protrude past the body of the shoe base.

[00124] In Figure 29, the illustration shows the strap attachment pieces 2425, being slid into the strap attachment cavity. When the base cover is attached to the base of the shoe, it exposes an open slot on the side of the shoe for the strap attachment pieces 2425 to enter the shoe. As the strap attachment pieces enter the shoe, the button

is depressed by the user and held down. When the button is held down, the strap release lever is moved forward, the spring is shortened, thus causing tension. The male hook head 2414, moves forward into the cavity unobstructed. The male hook head moves forward until it rests against the side of the strap. The button is then released and the strap release lever moves back to its original rest position. The female hook head is lowered, thus trapping the male hook head inside the female hook locking cavity. This acts to secure the strap attachment device inside the shoe base until the button is re-pressed. The male and female hooks engage and block each other from leaving the shoe base. They create a barrier and the spring holds the tension on this barrier to keep the strap attachment pieces securely fastened.

[00125] In some embodiments, there are two or more male and female locking hooks attaching together, creating multiple areas of strap security.

[00126] In other embodiments, there is no button that needs to be depressed to allow the male hook head to pass the female hook head. In some embodiments the strap attachment piece is pushed into the strap cavity and a force is applied, causing the tension on the spring. The spring shortens in length, thus allowing the male hook head to pass the female hook head and locking the strap attachment mechanism inside the shoe base.

[00127] In some embodiments the spring is located in the button cavity 1903, instead of attached to the release lever. The spring attachment posts are attached to the back of the button cavity. In some embodiments the springs are attached to spring attachment post at the back of the button cavity and the tension used to move the strap release lever is applied by pressing the button. The springs touch the back of the button head and when the button is pressed the springs shorten in length, thus moving the strap release lever forward toward the mating surface 1906 on the shoe base, thus activating the quick release mechanism. The lever is moved forward toward the front of the shoe and the female hook heads are also moved forward allowing the male hook heads to slide into place. The button is then released and the male hook heads trap the female hook heads in place and secure the straps to the base.

[00128] In some embodiments, the strap attachment mechanism shown in Figure 24 has one set of male hook heads or multiple male hook heads. The strap attachment mechanisms can be made of, but not limited to, plastic, abs, pvc, nylon, metal or wood. The strap attachment pieces have a roll bar 2415, and an open slot for material 2011, which can be one continuous slot or multiple slots for the strap

material to slide through. Once the strap material is slid thru the material slots, the material is sewn to itself as shown in Figure 27. In some embodiments the material is glued to itself or other material. In other embodiments the strap material comprises of several pieces of material fed thru the material slot and then attached to the itself.

[00129] In some embodiments the material used for the straps can be leather, fabric, vinyl, rubber, synthetic, satin, and/or other various materials. The strap material is not limited to the materials listed.

[00130] In some embodiments the button used to trigger the quick strap release mechanism is covered by the interchangeable wedge. The wedge needs to be removed first, and then the button can be exposed.

[00131] In some embodiments the button is not visible, it is recessed into the shoe. In other embodiments, the button is protruded on the outside of the shoe base.

[00132] In some embodiments the configuration of the quick strap release mechanism can vary. It includes, but is not limited to having a roll bar, that enters the shoe base completely or slightly protrudes the shoe base. In other embodiments, the roll bar is a solid piece of plastic of other suitable material with holes along the edges. The solid piece of plastic is fixed to the edge of the quick strap release mechanism and rests against the side of the shoe base once the mechanism is locked into place. The material is attached to the bar with rivets or other similar or suitable fixtures. The bar may be made of metal, pvc, plastic, wood, or other like material.

[00133] List of Numbered Parts for Figures 18 through 30 showing specific embodiments:

[00134] 1801: Body of Shoe Base;

[00135] 1902: Strap attachment cavity;

[00136] 1903: Button Cavity;

[00137] 1904: Release Lever Cavity;

[00138] 1905: Screw Hole;

[00139] 1906: Mating surface for head of base cover;

[00140] 2207: Release Button;

[00141] 2208: Back end of Cover Plate;

[00142] 2309: Mating surface of Head of cover plate;

[00143] 2310: Side surface of cover plate;

[00144] 2011: Side surface of body of shoe base;

[00145] 2312: Base Cover;

[00146] 2413: Material Slot;

[00147] 2414: Male Hook Head;

[00148] 2415: Roll Bar;

[00149] 2416: Male Hook Locking Cavity;

[00150] 2417: Strap Attachment Hook – Male;

[00151] 2518: Female Hook Head;

[00152] 2519: Strap Attachment Hook-Female;

[00153] 2520: Female Hook Locking Cavity;

[00154] 2521: Release Lever;

[00155] 2522: Button;

[00156] 2523: Spring Attachment Post;

[00157] 2524: Spring;

[00158] 2425: Strap Attachment Quick Release Device;

[00159] 2626: Strap Material;

[00160] 2627: Sewing Seam – Used to Attach Material to Roll Bar;

[00161] 2828: Stoppers;

[00162] 2829: Leverage Space; and

[00163] 2730: Shoe Sole.

III. REMOVABLE UPPER AND ASSOCIATED FASTENER AND BASE

[00164] Figure 31 illustrates a perspective posterior view of a removable upper 3100 and associated fastening element 3110 of some embodiments. As shown, the underside of the upper may include a receptacle 3120 for the fastening element 3110, various catches 3130, and/or various rails 3140.

[00165] The removable upper 3100 may be adapted to attach to an associated base. Such a base will be described below in reference to Figure 32. Returning to Figure 31, the fastening element 3110 may be adapted to fasten the upper to the base. The receptacle 3120 may be adapted to receive and secure the fastening element. The catches 3130 may be adapted to align with lips, receptacles, etc. that may be included in the base. The rails 3140 may be adapted to align with cavities in the base.

[00166] The upper 3100 and fastening element 3110 may be made from various appropriate materials (e.g., plastic, metal, wood, etc.). In addition, the top portion of the upper may include various materials that may be the same as or different than the materials used in the base (e.g., leather, vinyl, plastic, etc.) and/or various ornamental

and/or functional features (e.g., buckles, buttons, zippers, straps, graphics, patterns, etc.).

[00167] In some embodiments, the fastening element 3110 may be inserted into the receptacle 3120 and turned to secure the fastening element 3110 to the upper 3100. The fastening element 3110 may have various ridges or guides that align the element within the receptacle 3120. In addition, the fastening element 3110 and receptacle 3120 may be configured such that the fastening element may be turned a particular amount (e.g., one-half turn in a clockwise direction) before "locking" in place, such that the fastening element 3110 will remain secured until the element is released (e.g., by turning the element one-half turn in a counter-clockwise direction). The fastening element 3110 may include a slot (or other appropriate feature) that is adapted to accept a tool (e.g., a screwdriver) or other appropriate item (e.g., a coin, a key, etc.). In this way, a user of the shoe may be able to easily attach or detach the fastening element to the upper 3100 without requiring any special tools.

[00168] Figure 32 illustrates a perspective view of an example base 3200 that may be used with the removable upper 3100 in some embodiments. As shown, the base 3200 may include an opening and/or cavity 3210 adapted to receive the fastening element 3110 and/or the receptacle 3120. In addition, the base 3200 may include various lips and/or cavities 3220 adapted to receive the catches 3130, and/or various slots 3230 adapted to receive the rails 3140. The base may also include other elements, as appropriate (e.g., a sole, a heel, various inserts, etc.). The base may be similar to base 1805 described above, and may be adapted to couple to various components other than the upper 3100. For instance, the base may be adapted to couple to a base plate cover (e.g., base plate cover 1810).

[00169] Figure 33 illustrates an exploded perspective view of a modular shoe 3300 that includes the upper 3100, fastening element 3110, and the base 3200. As shown, the upper 3100 may be adapted to attach to the base 3200 using the fastening element 3110 to secure the upper to the base, in order to form the shoe 3300.

[00170] When assembling the shoe 3300, the various catches 3130 and rails 3140 may be aligned with the associated cavities or lips 3220 and slots 3230 such that the upper 3100 is properly aligned with the base 3200. Once the upper has been positioned properly in relation to the base, the fastening element 3110 may be inserted through the bottom of the base 3200 and secured to the upper 3100 (e.g., by turning the fastening element in a clockwise direction).

[00171] The fastening element 3110 may include a flange or lip such that only a portion (e.g., a shaft) of the fastening element passes through the base 3200. In addition, the fastening element 3110 may be threaded or otherwise adapted to be secured to the upper 3100. In this way, the fastening element 3110 may be passed at least partway through the base cavity 3210 such that the flange passes only partway through the cavity (e.g., the cavity may include an opening at one surface of the base that is a larger diameter than the rest of the cavity, such that the flange is flush with the bottom of the base).

[00172] The fastening element 3110 (and receptacle 3120 and cavity 3210) may be adapted such that a surface of the fastening element (e.g., the end of the shaft) is flush with a surface of the upper (e.g., the top surface of the upper) and another surface of the fastening element (e.g., the other end of the shaft, at the flange) is flush with a surface of the base 3200 when the fastening element 3110 is locked in place and the upper 3100 is attached to the base 3200. In this way, the components of the shoe may not be apparently visible such that the shoe is comfortable for the wearer and does not appear to have any components that would not be found in a non-modular shoe.

[00173] When disassembling the shoe 3300, the fastening element 3110 may be released from the upper 3100 (e.g., by turning the fastening element in a counter-clockwise direction) and the upper may then be removed from the base 3200.

[00174] The shoe 3300 of some embodiments may provide flexibility to a wearer of the shoe. For instance, in some cases a wearer may wish to use a single base with multiple different uppers (e.g., uppers of different materials, different colors, different design elements, different structures, etc.). Alternatively, a wearer may wish to use multiple bases with a single upper (e.g., bases having different heel heights, different sole materials, etc.). As another example, a wearer may wish to maintain a set of uppers and a set of bases such that the user may mix and match to form various combinations.

[00175] One of ordinary skill in the art will recognize that the modular shoe described above in reference to, for example, Figures 31-33 may be implemented in various different ways without departing from the spirit of the invention. For instance, although the shoe was described as having a single fastening element, some embodiments may include multiple fastening elements. In addition, although the shoe has been described as having a single upper, some embodiments may include shoes

with multiple uppers (e.g., a front upper and a rear upper), where each of the uppers may be secured to the base using a different fastening element. Alternatively, multiple uppers may be secured using a single fastening element (e.g., a front and rear upper may overlap at a particular section that is secured by the fastening element).

[00176] It will become apparent to those skilled in the art that the disclosed embodiments of the invention are subject to a variety of medications without departing from the invention and such variations are assumed to be within the skill of those in the art such that they are included in this disclosure.

We claim:

1. A modular shoe comprising:

a base;

a removable upper adapted to be attached to the base; and

a fastening element adapted to be secured to the upper in order to couple the upper to the base.

2. The modular shoe of claim 1, the upper comprising:
a receptacle adapted to receive at least a portion of the fastening element;
a set of catches adapted to secure the upper to the base; and
a set of rails adapted to align the upper to the base.

3. The modular shoe of claim 2, the base comprising:
an opening adapted to allow at least a portion of the fastening element to pass through the base;
a set of cavities, each cavity adapted to receive a catch from the set of catches; and
a set of slots, each slot adapted to receive a rail from the set of rails.

4. The modular shoe of claim 3, wherein the opening has a first radius and a second radius, wherein the first radius is larger than the second radius.

5. The modular shoe of claim 4, wherein the fastening element comprises a flange that has a radius that is greater than the second radius and less than the first radius.

6. The modular shoe of claim 5, wherein the fastening element comprises a shaft that has a radius that is less than the second radius.

7. The modular shoe of claim 6, wherein the shaft of the fastening element comprises a locking feature that is adapted to secure the fastening element to the receptacle.

8. A method of securing a removable upper of a shoe to a base of the shoe, the method comprising:

providing a set of cavities and slots in the base, the set of cavities and slots adapted to align the base to the upper;

providing a set of catches and rails in the upper, the set of catches and rails adapted to align to the set of cavities and slots; and

providing a fastening element adapted to couple the upper to the base.

9. The method of claim 8 further comprising:
providing an opening in the base, the opening adapted to allow a portion of the fastening element to pass through the base; and
providing a receptacle in the upper, the receptacle adapted to lock the fastening element in place.

10. The method of claim 9, wherein the opening comprises a first portion with a first diameter and second portion with a second diameter, the first diameter being larger than the second diameter.

11. The method of claim 10, wherein the fastening element includes a shaft portion having a diameter less than the second diameter and a flange portion having a diameter greater than the second diameter and less than the first diameter.

12. The method of claim 11, wherein the fastening element is adapted to lock into place when inserted through the opening into the receptacle and turned in a clockwise direction.

13. The method of claim 12, wherein the fastening element is adapted to unlock when turned in a counter-clockwise direction.

14. The method of claim 8, wherein the base includes a removable heel.

15. A removable upper for a shoe, the upper comprising:
a receptacle adapted to receive at least a portion of a fastening element;
a set of catches adapted to secure the upper to a base of the shoe; and
a set of rails adapted to align the upper to the base.

16. The removable upper of claim 15, wherein the receptacle includes a locking feature adapted to secure the fastening element in place.

17. The removable upper of claim 15, wherein the set of catches comprises a set of curved protrusions emanating from a surface of the upper adapted to be coupled to the base.

18. The removable upper of claim 16, wherein the set of rails comprises at least two ridges running along the surface.

19. The removable upper of claim 15, wherein the upper comprises a set of ornamental features.

20. The removable upper of claim 15, wherein the receptacle is adapted such that a surface of the fastening element is flush with a surface of the upper.

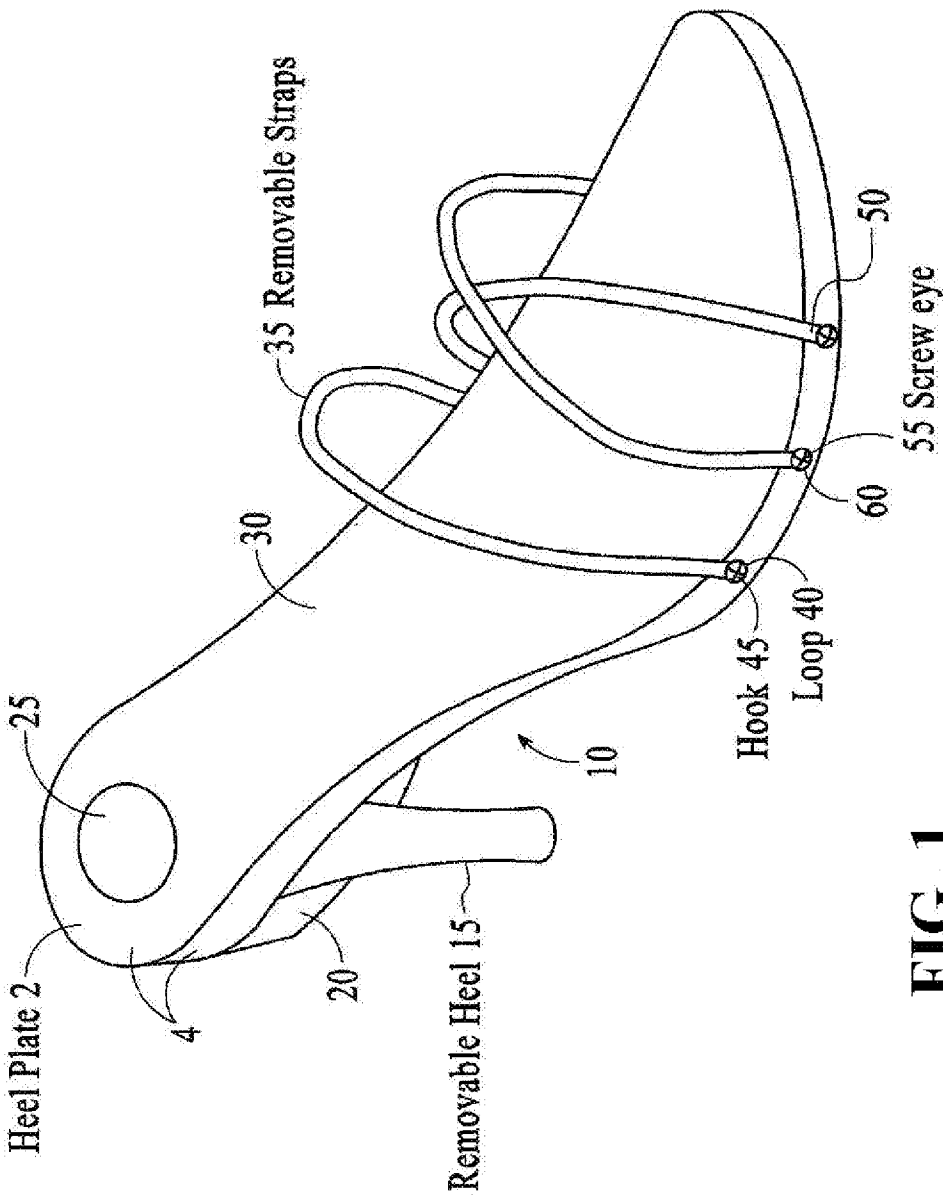
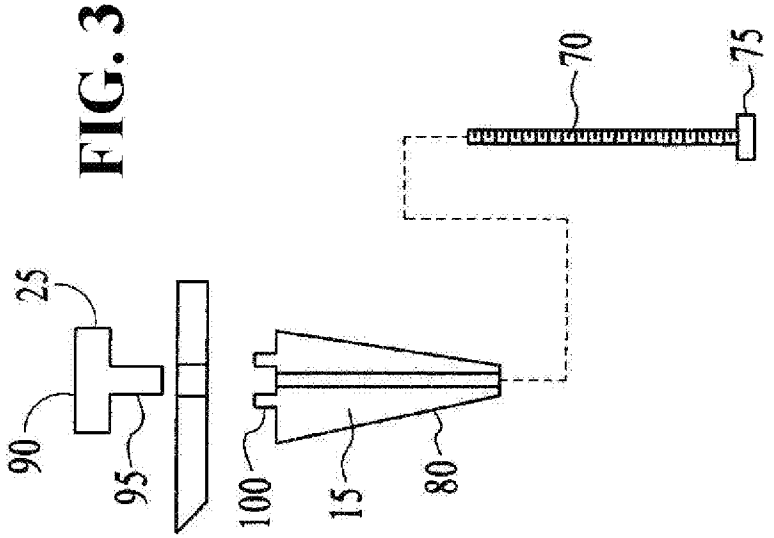

Heel Plate 2
25
4
20
Removable Heel 15
10
Hook 45
Loop 40
60
55 Screw eye
50
30
35 Removable Straps

FIG. 1

FIG. 3



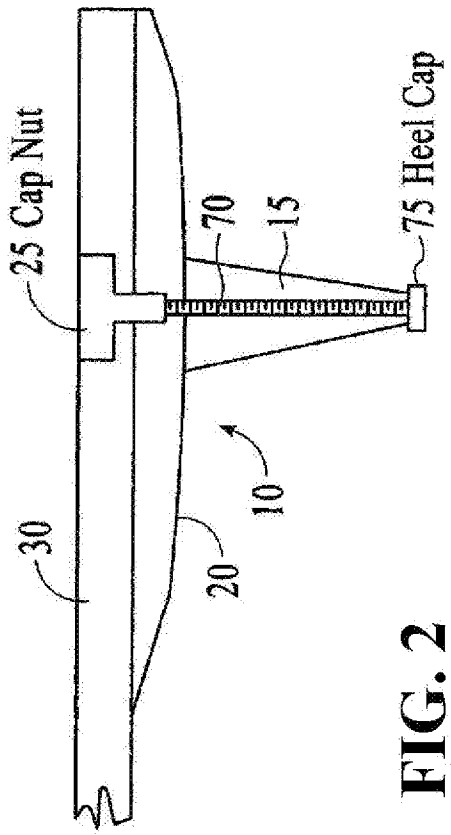


FIG. 2

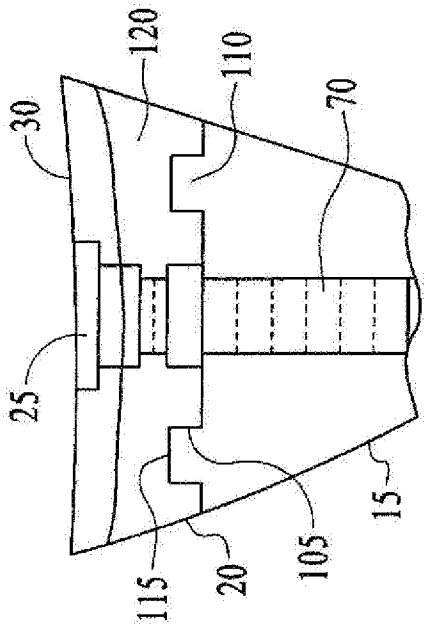


FIG. 4

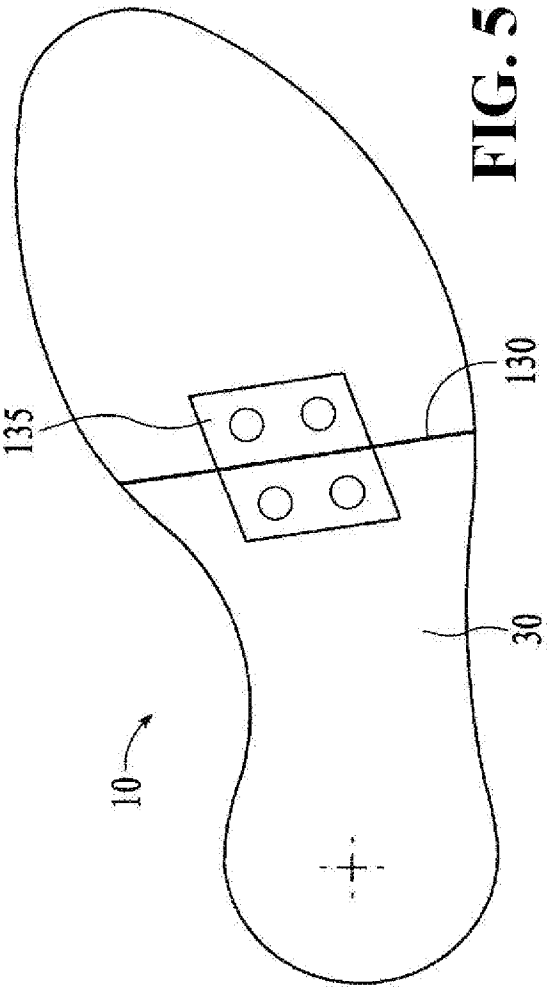


FIG. 5

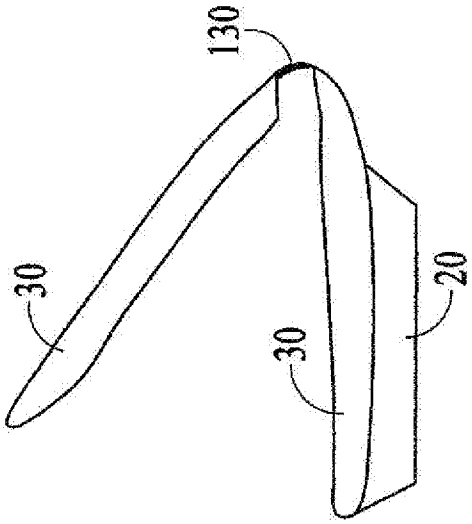


FIG. 6

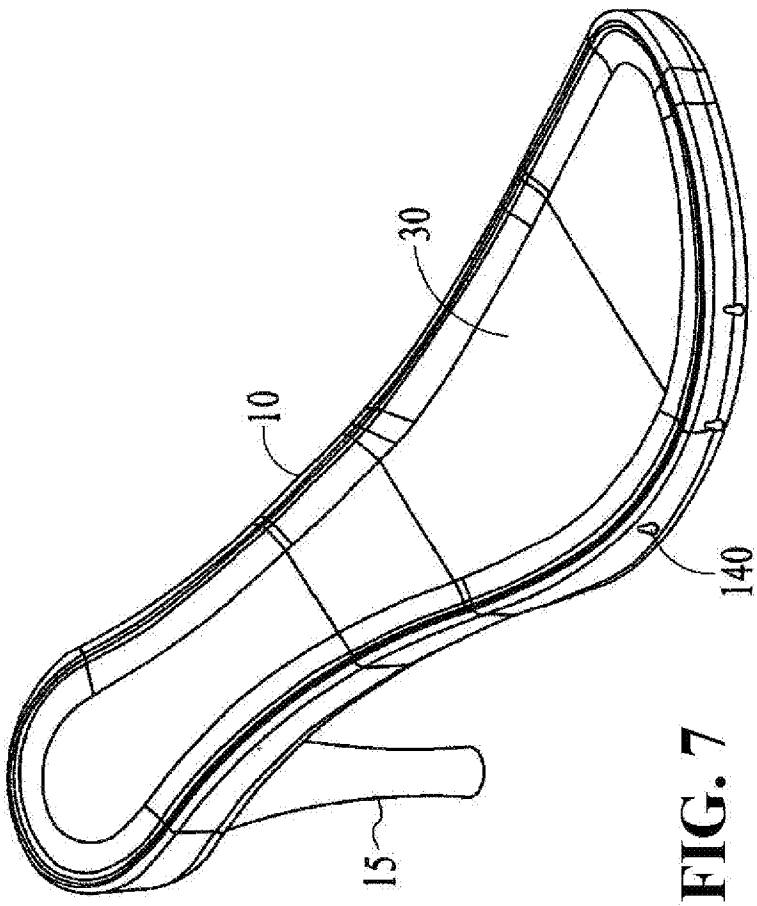


FIG. 7

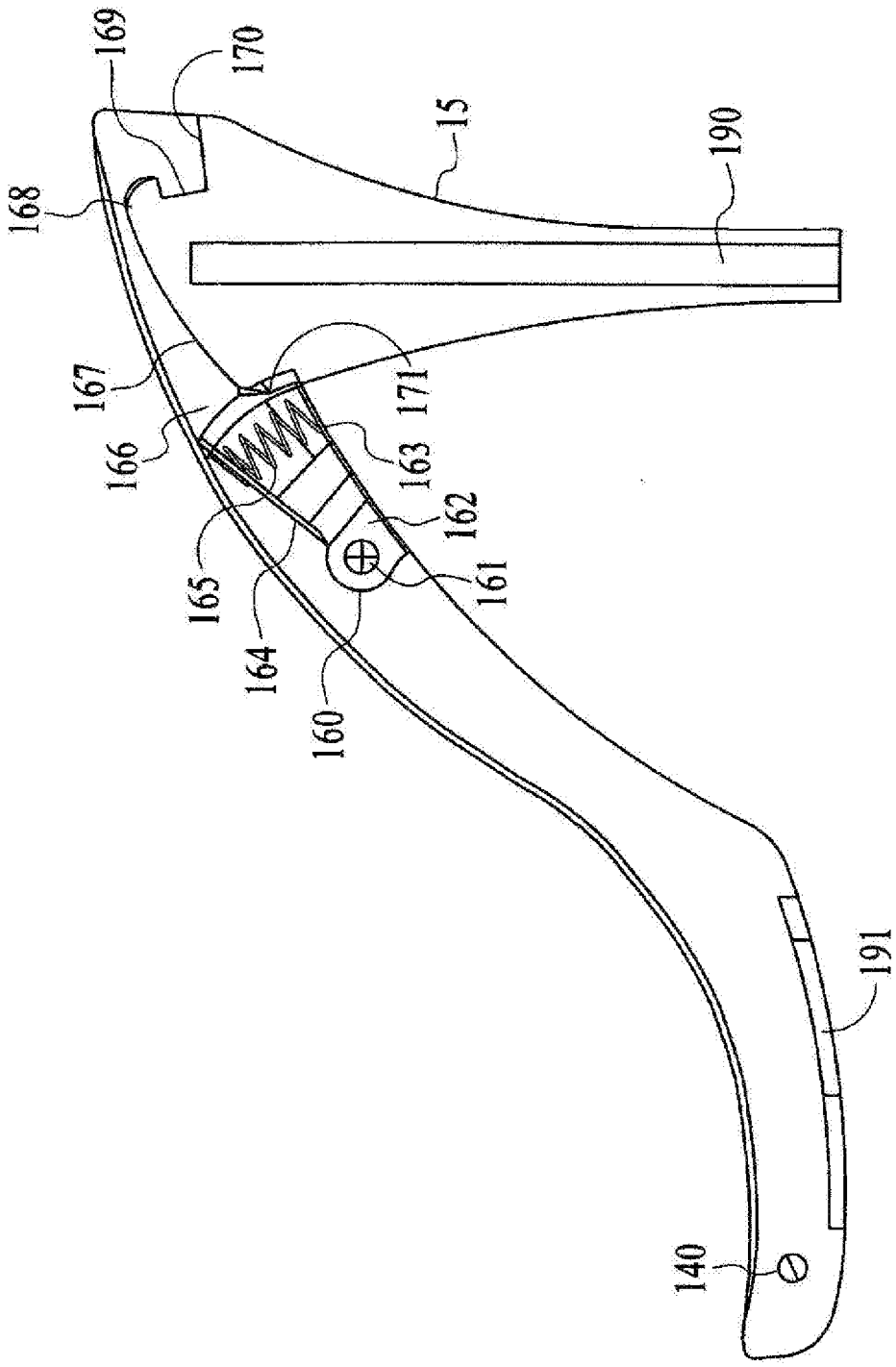


FIG. 8

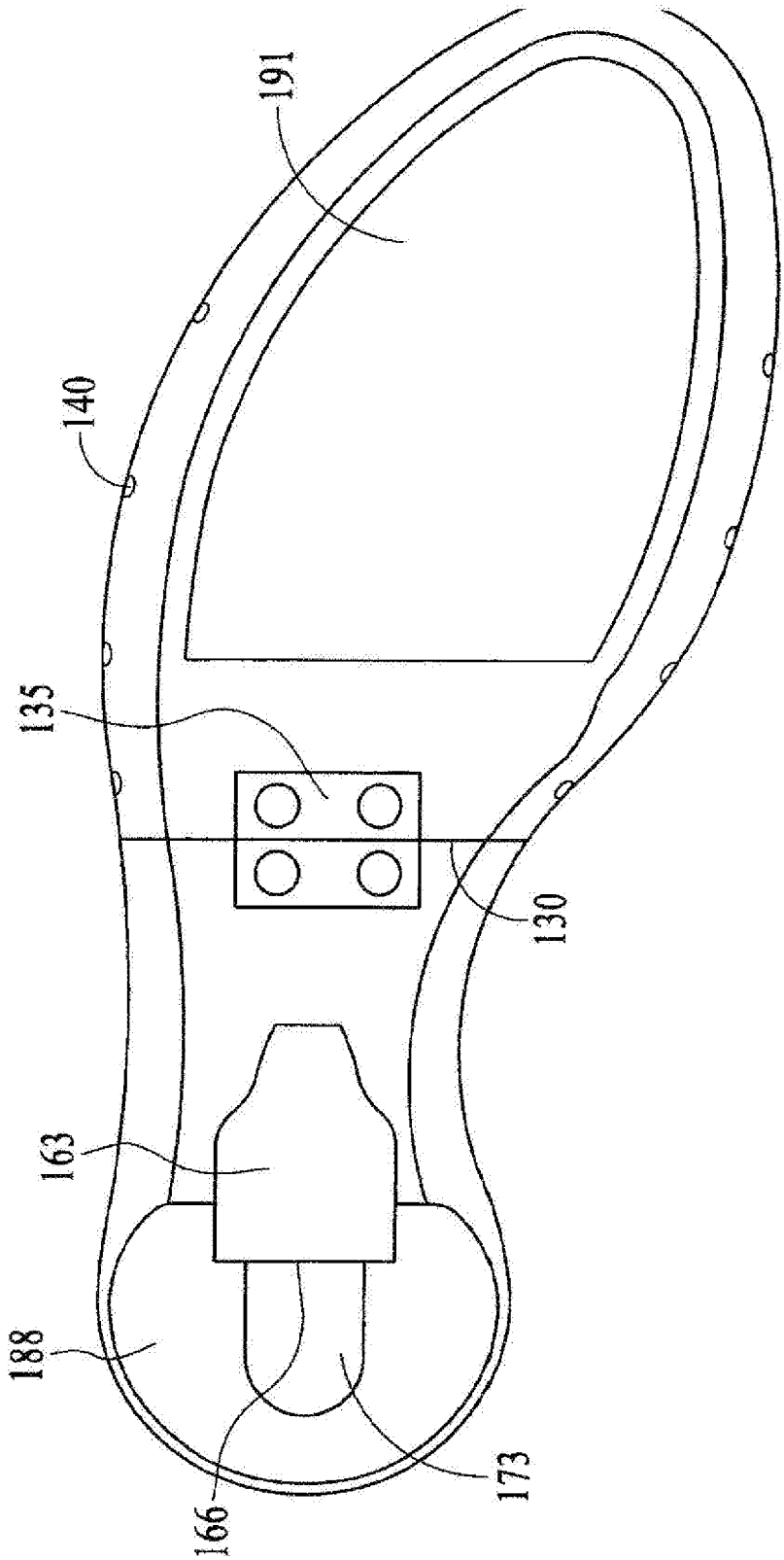


FIG. 9

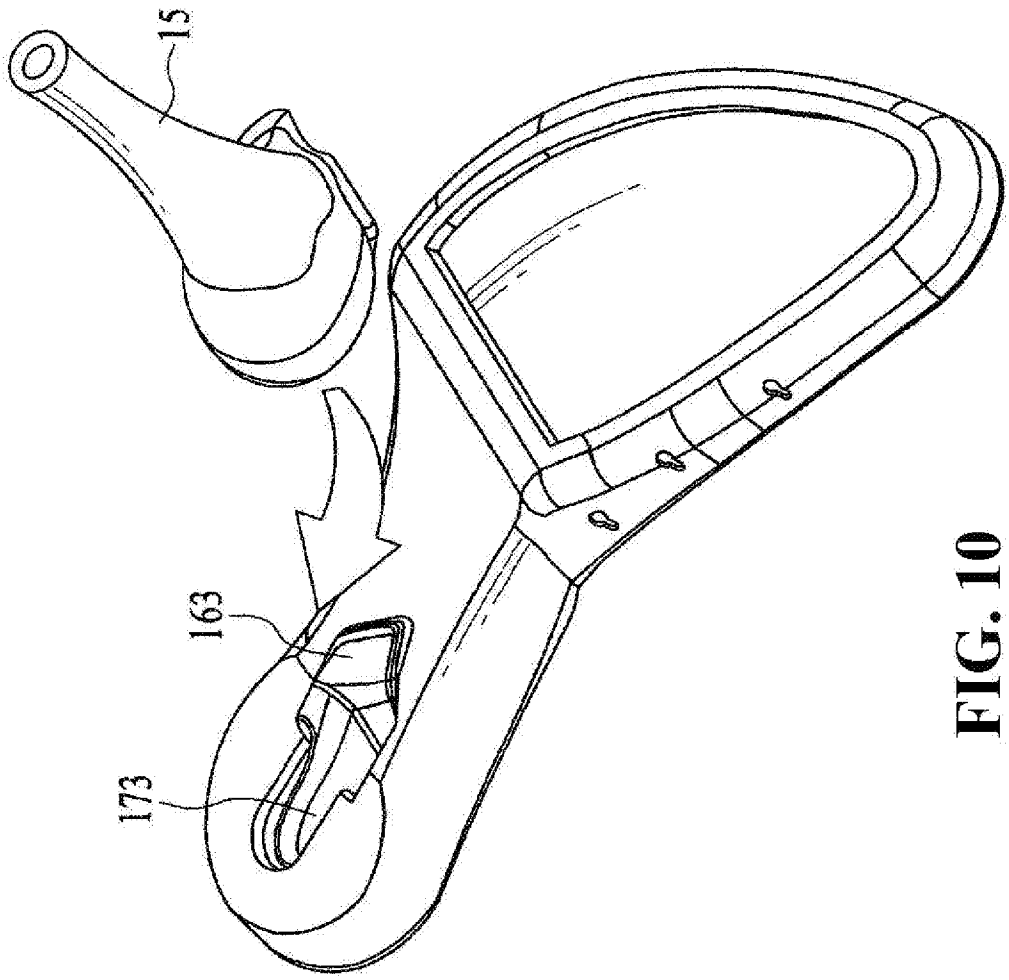


FIG. 10

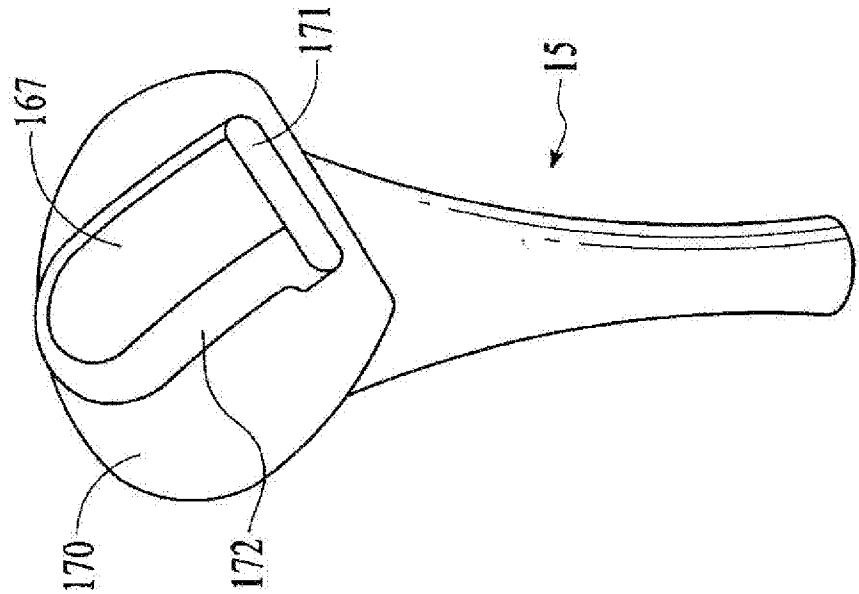


FIG. 12

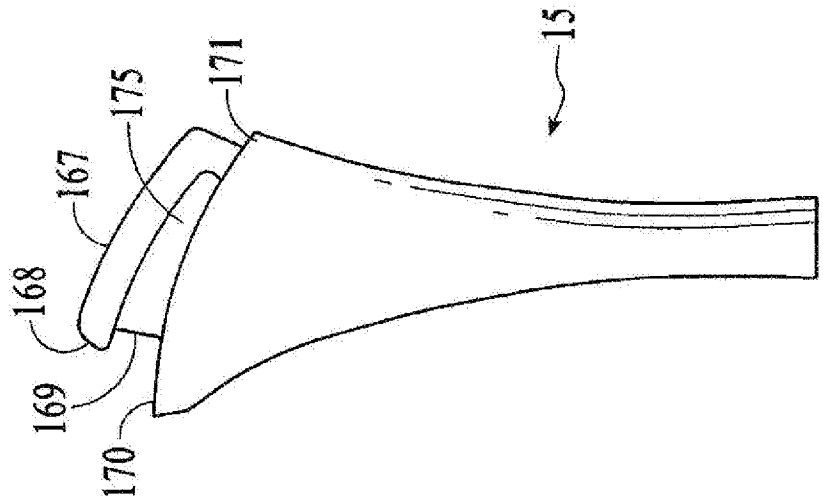


FIG. 11

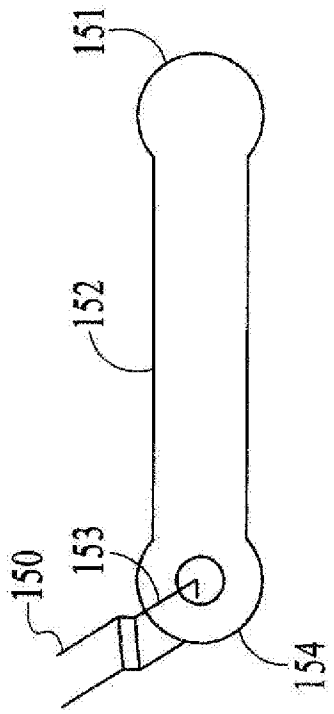


FIG. 13

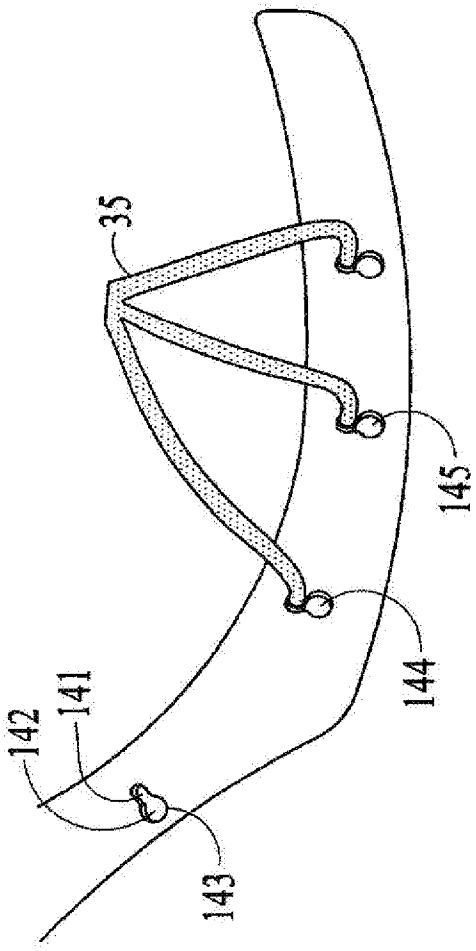


FIG. 14

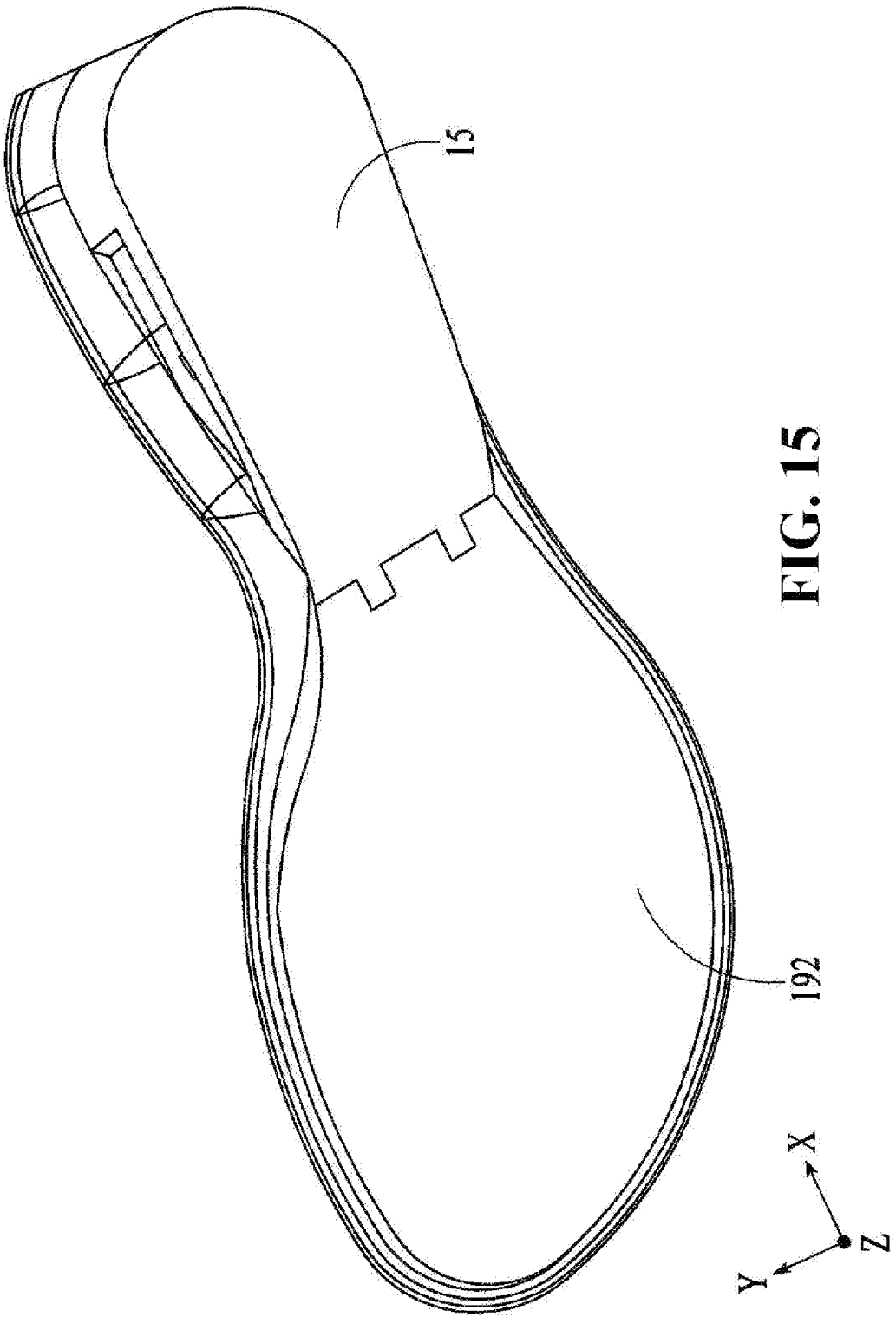


FIG. 15

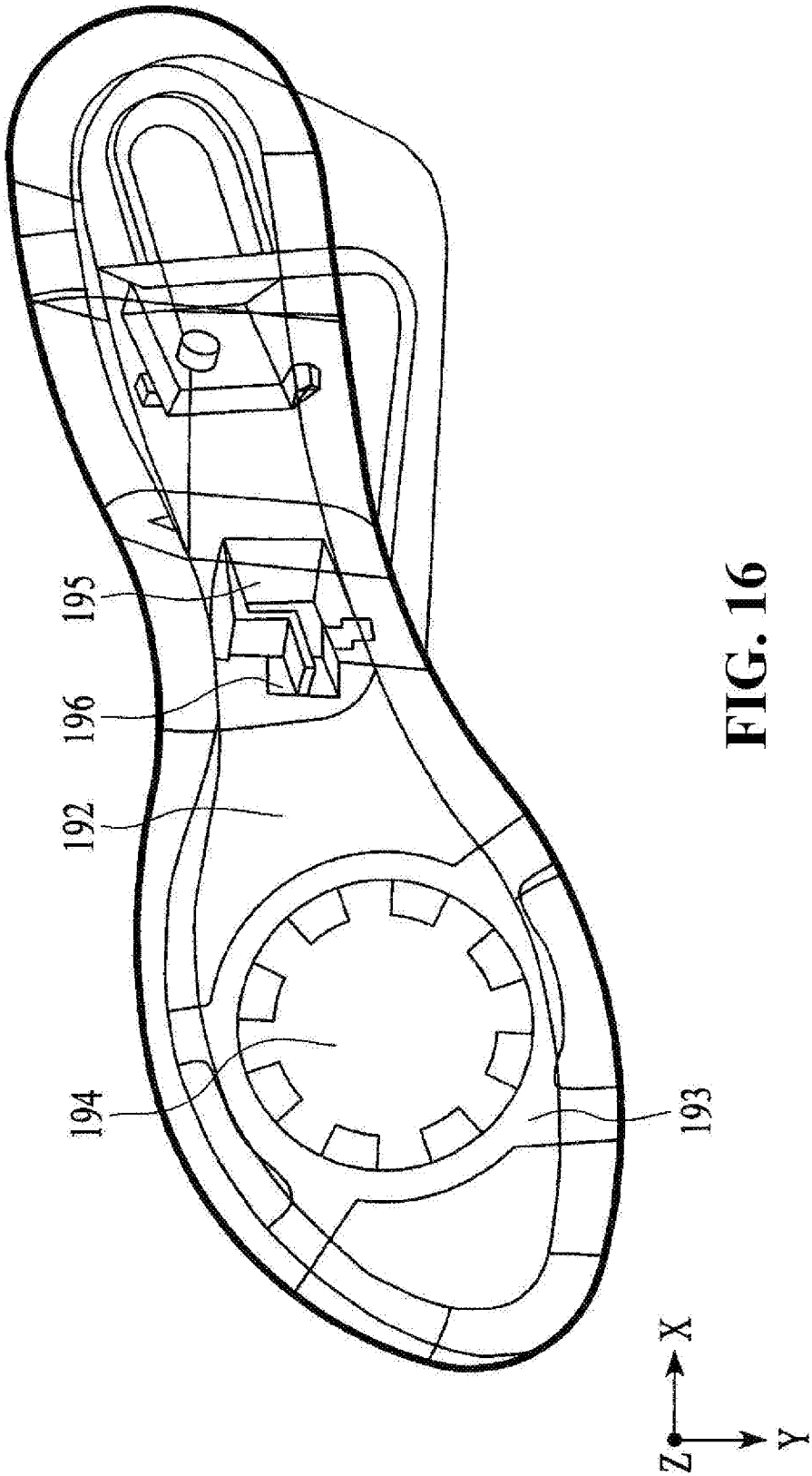


FIG. 16

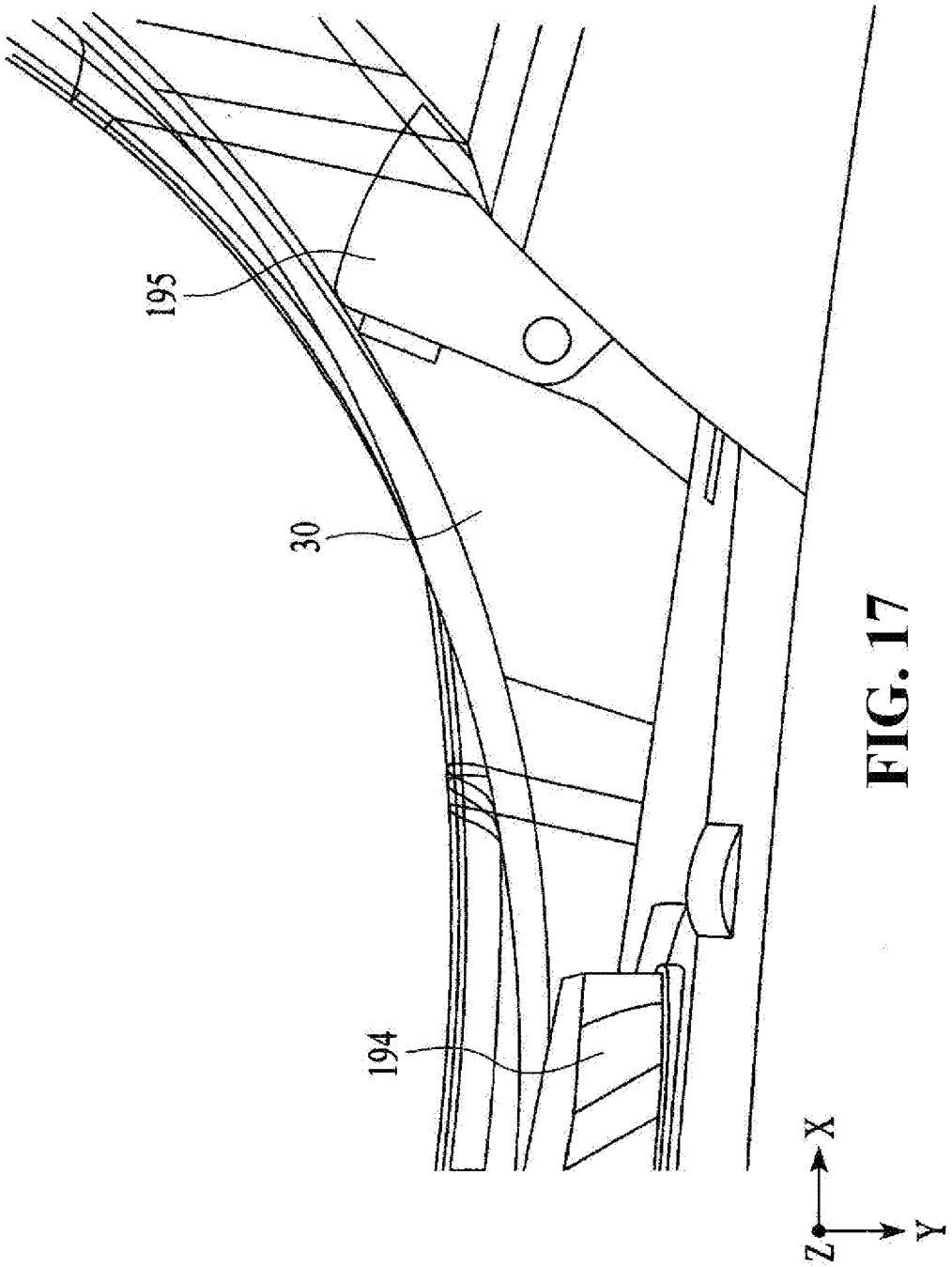


FIG. 17

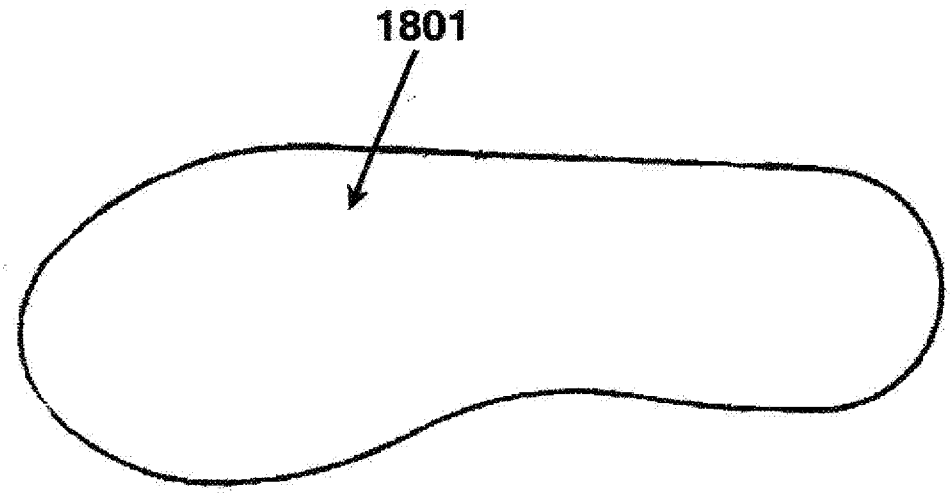


FIG. 18

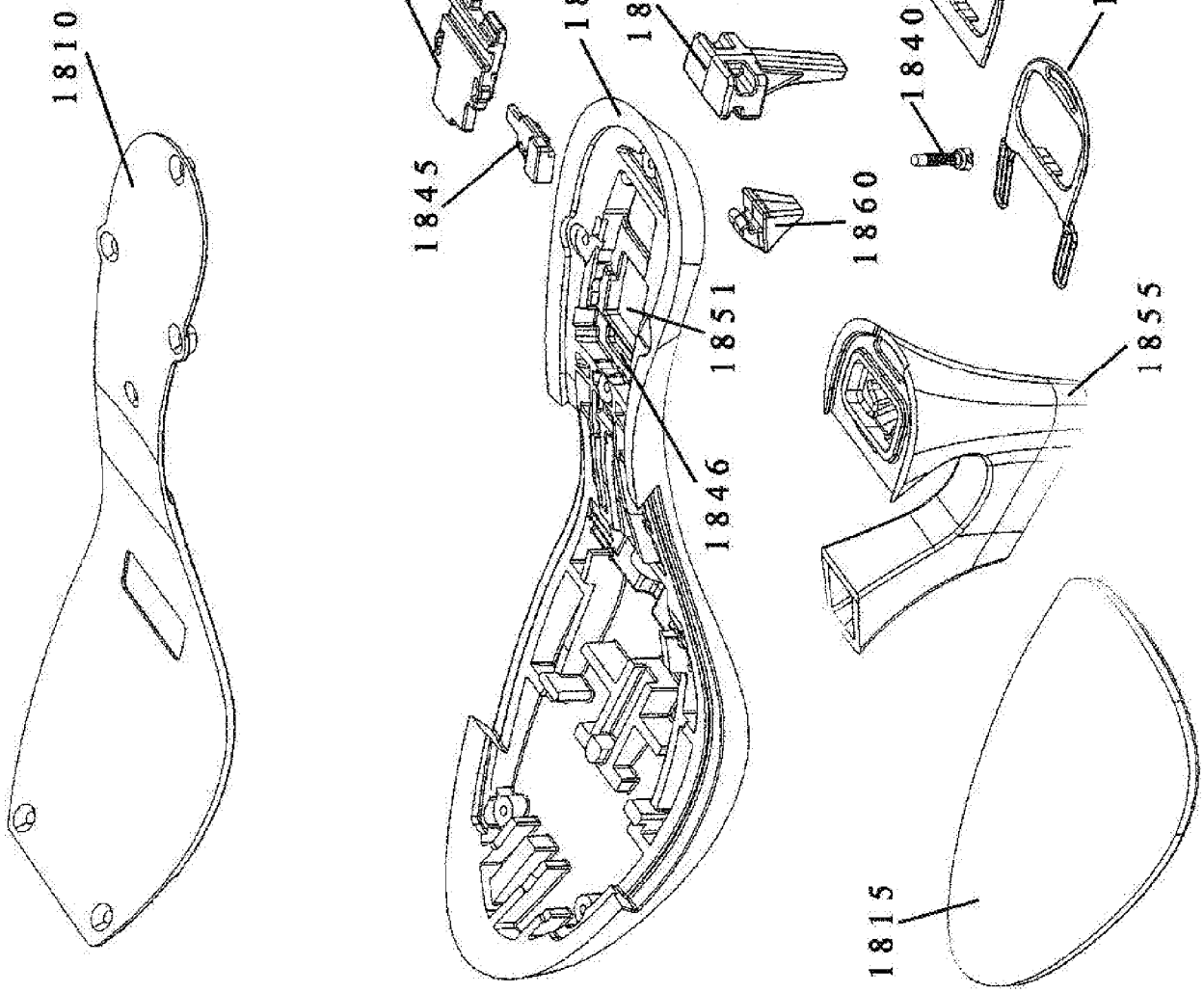

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FIG. 18A

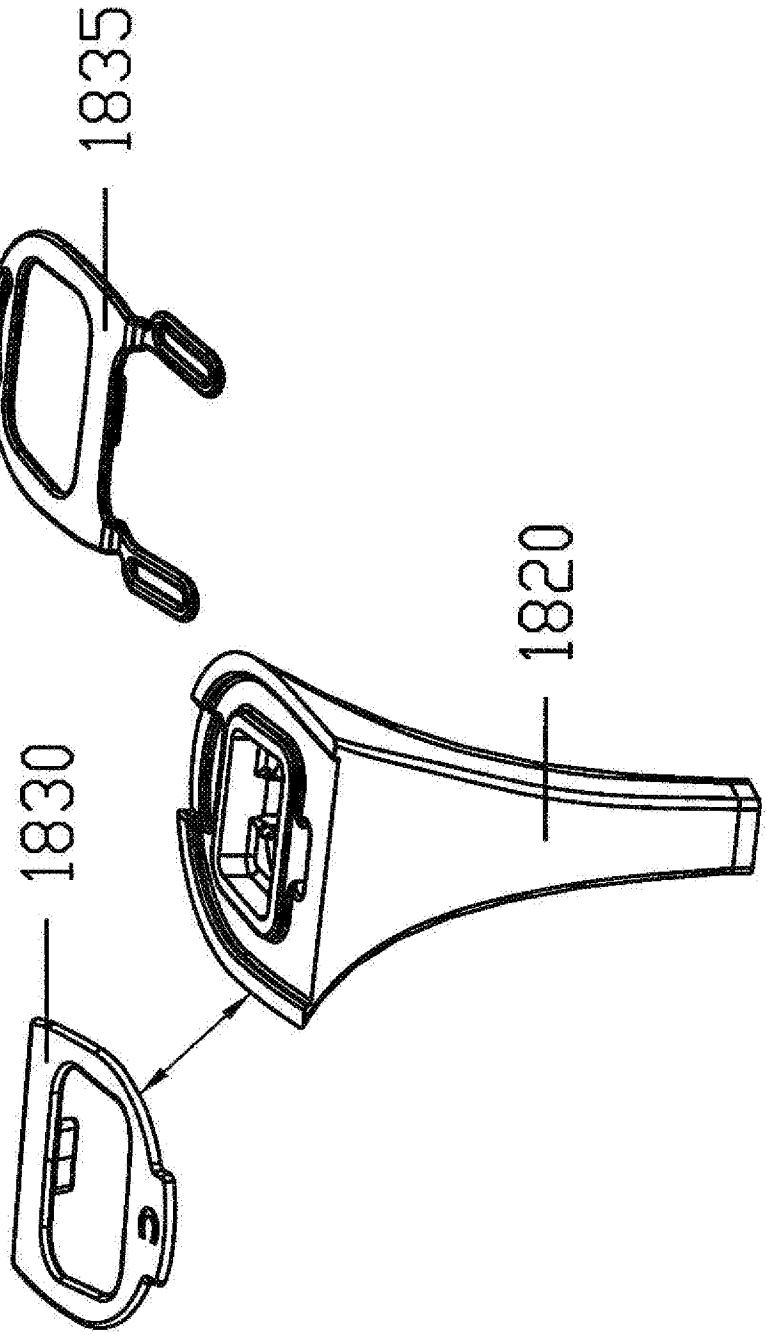


FIG. 18B

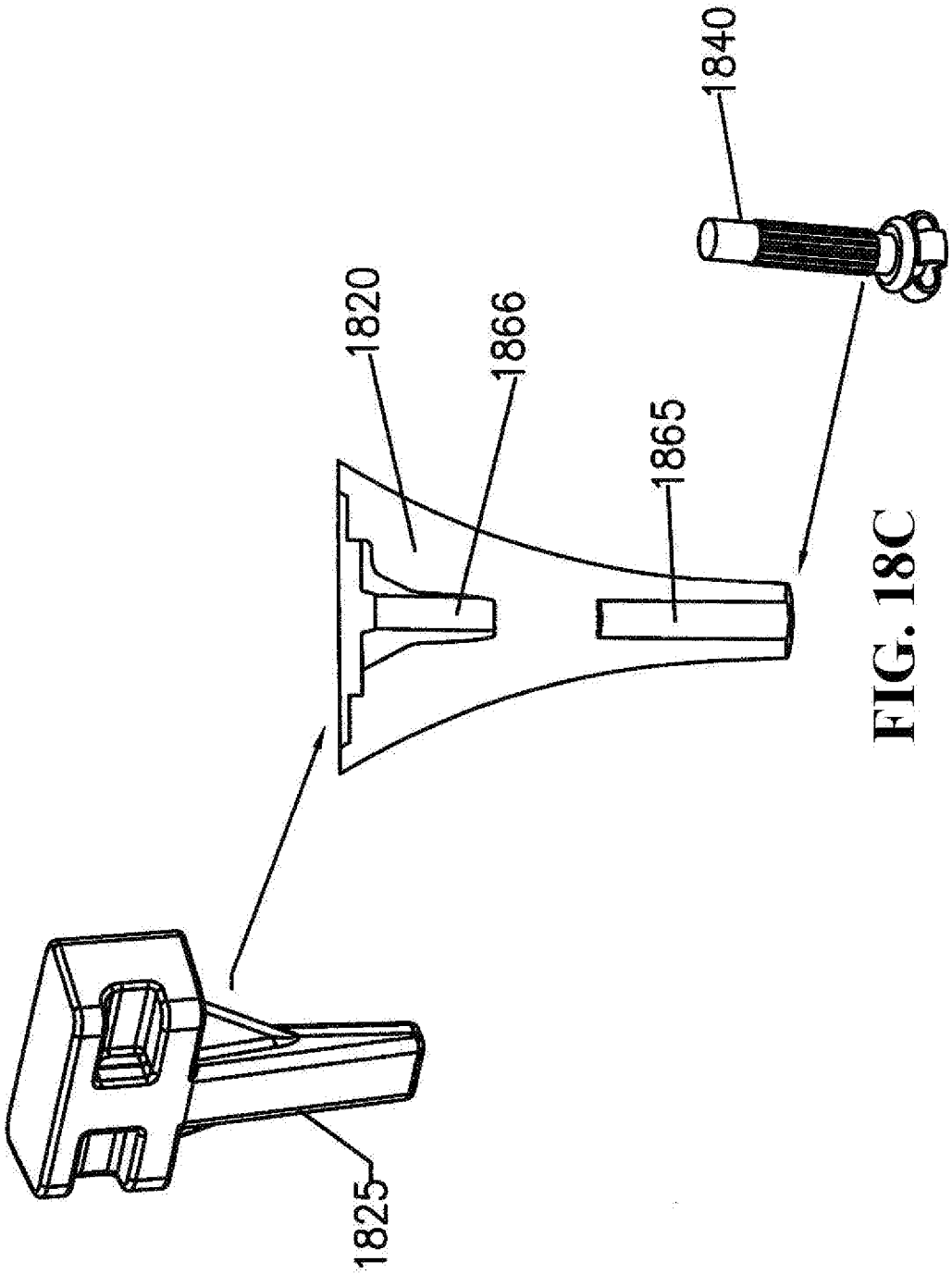


FIG. 18C

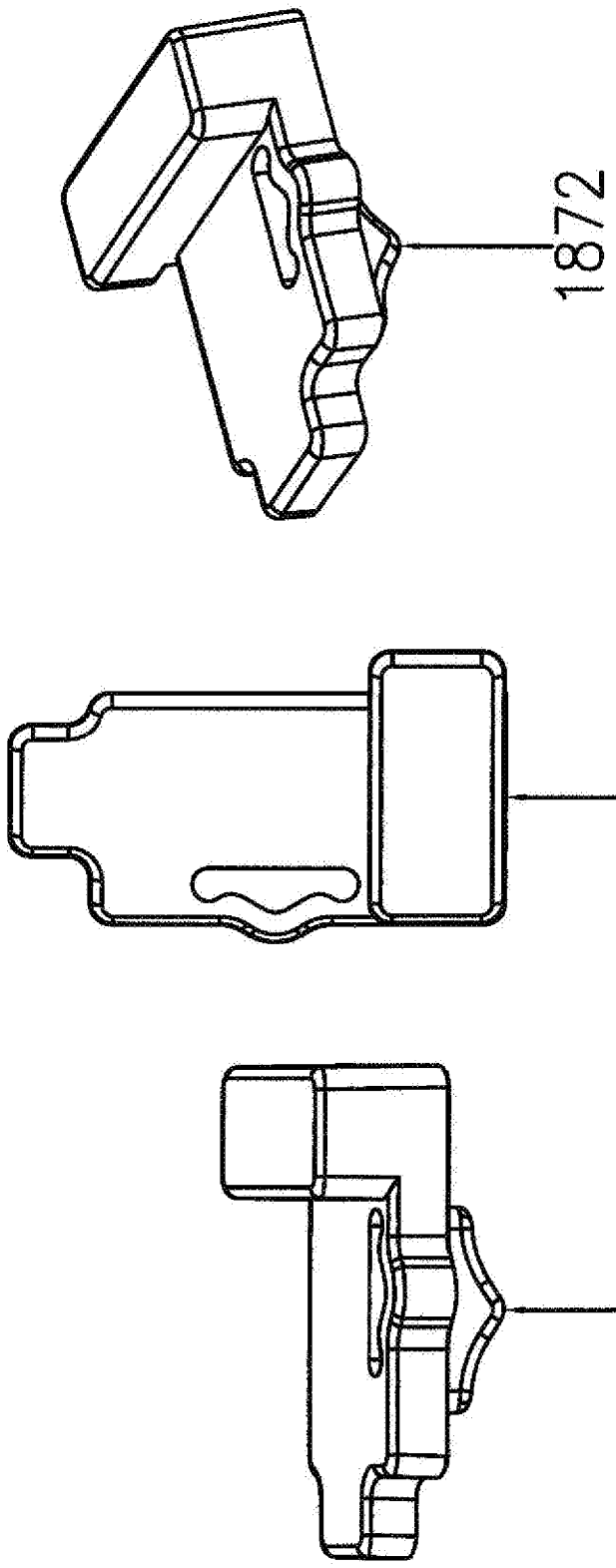


FIG. 18D

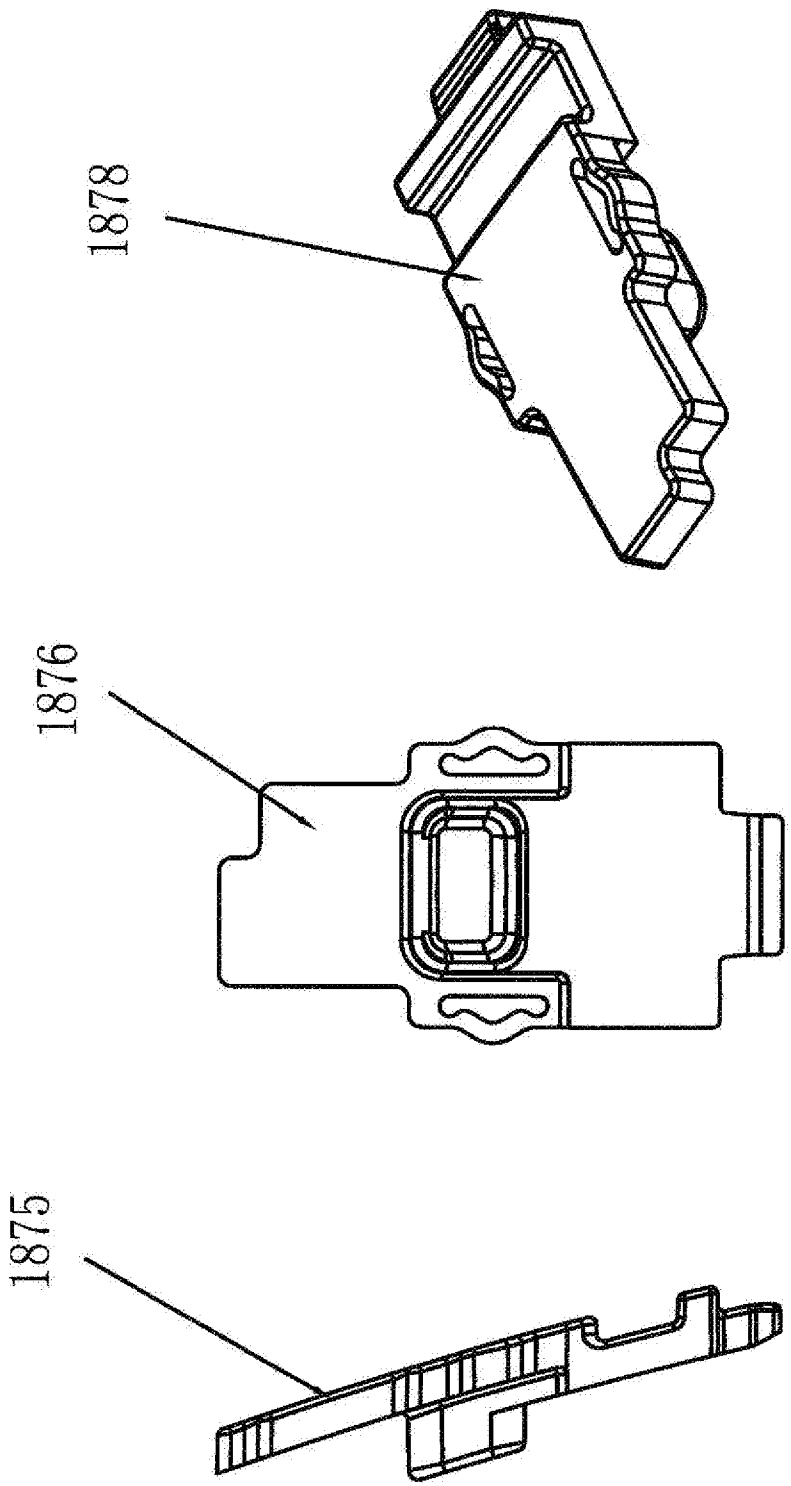


FIG. 18E

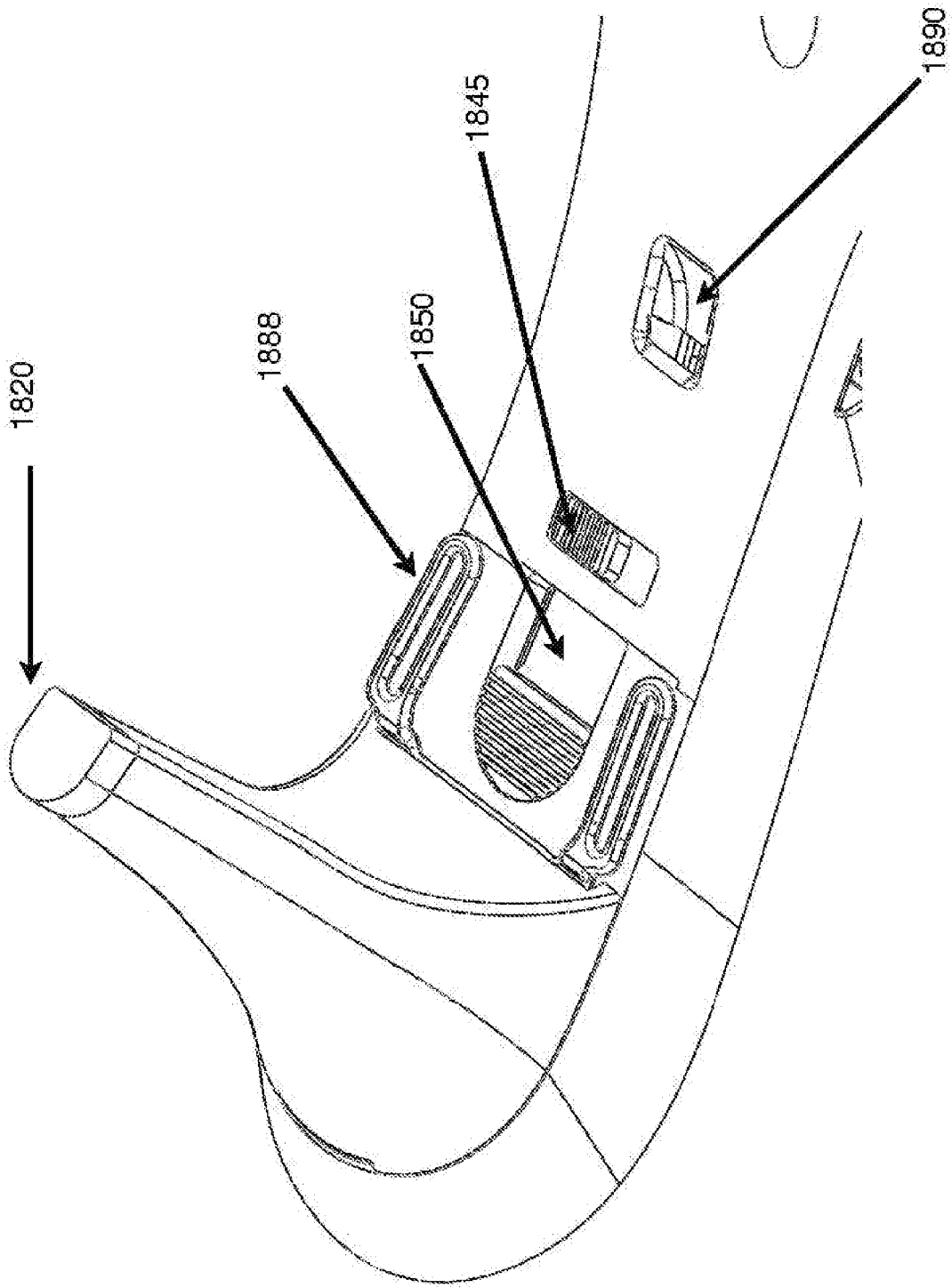


FIG. 18F

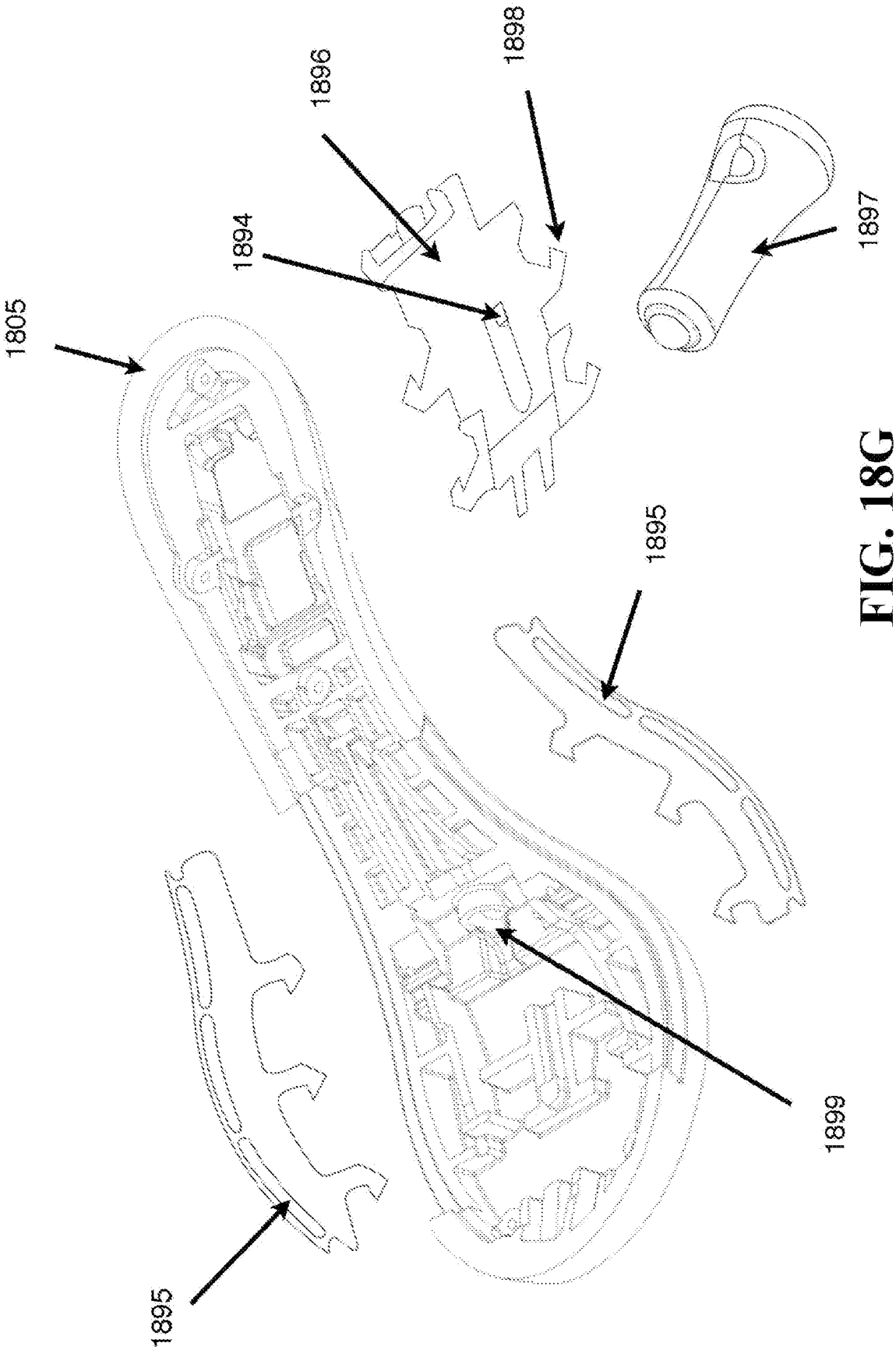


FIG. 18G

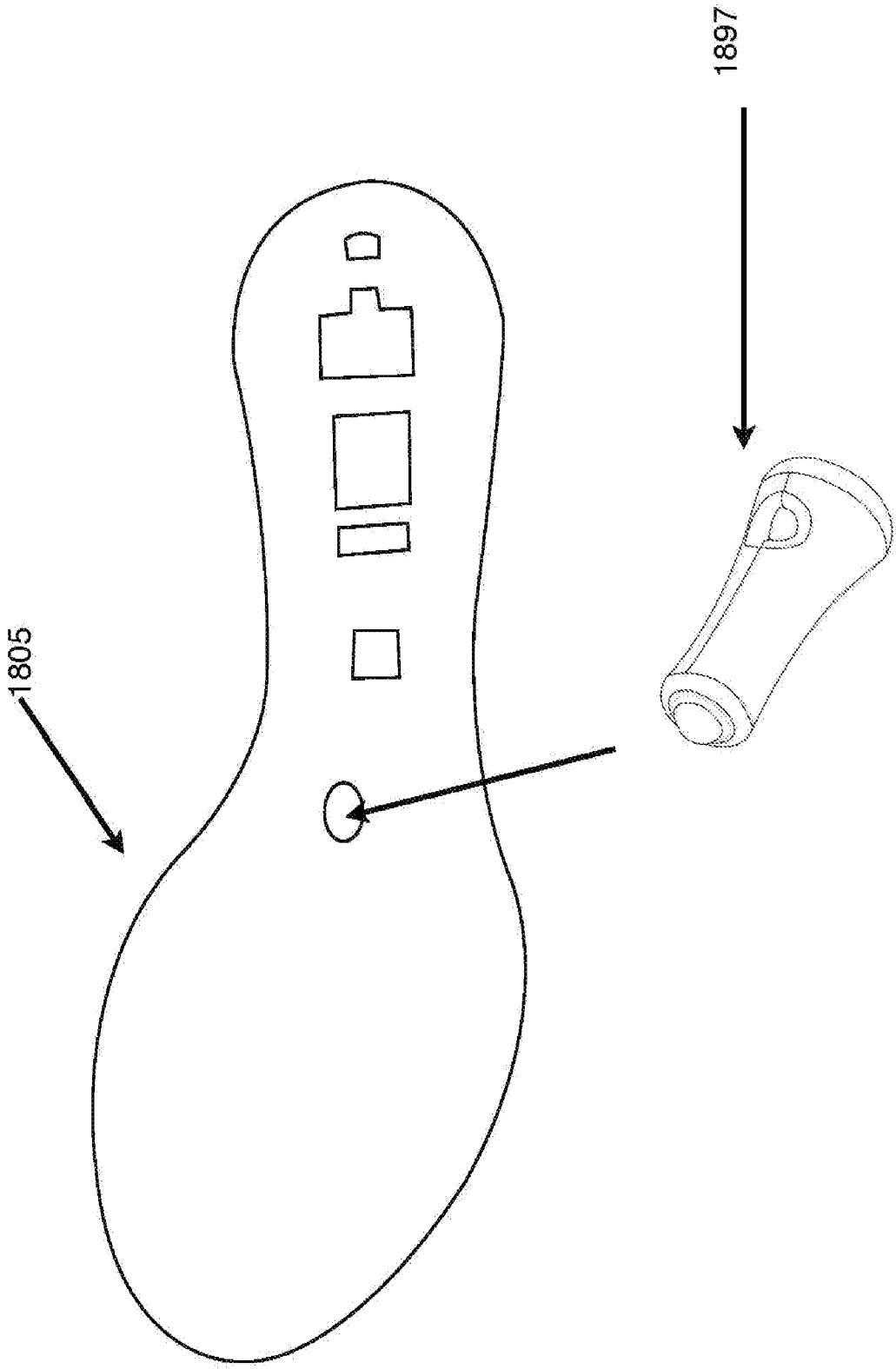


FIG. 18H

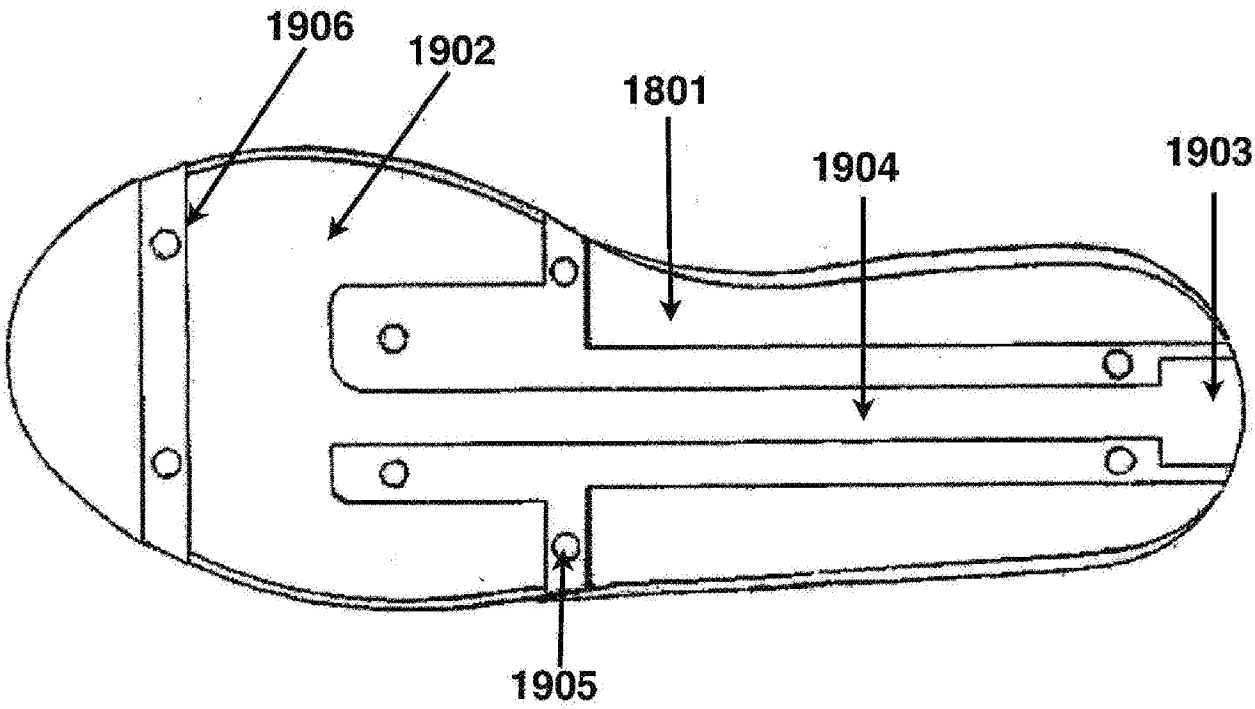


FIG. 19

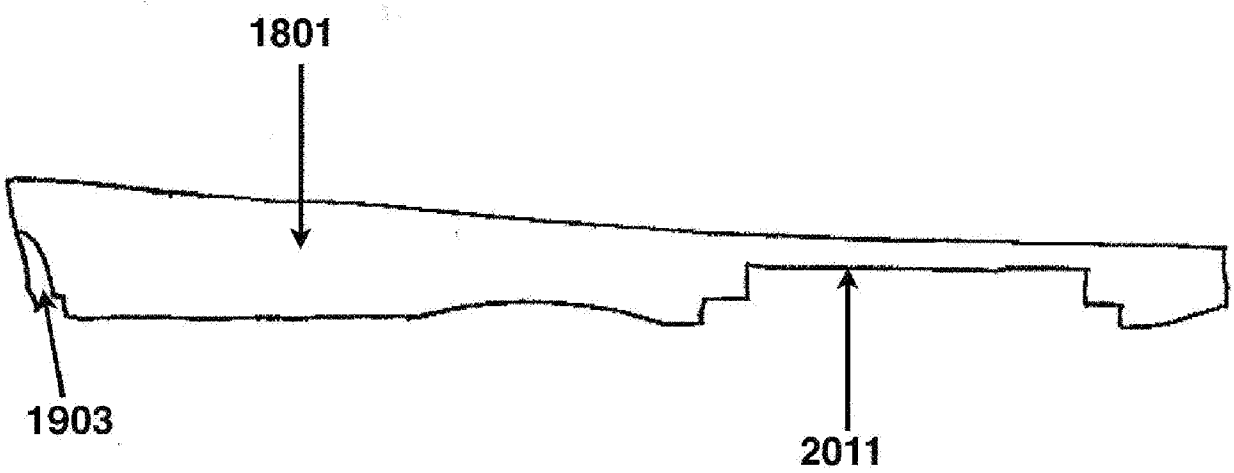


FIG. 20

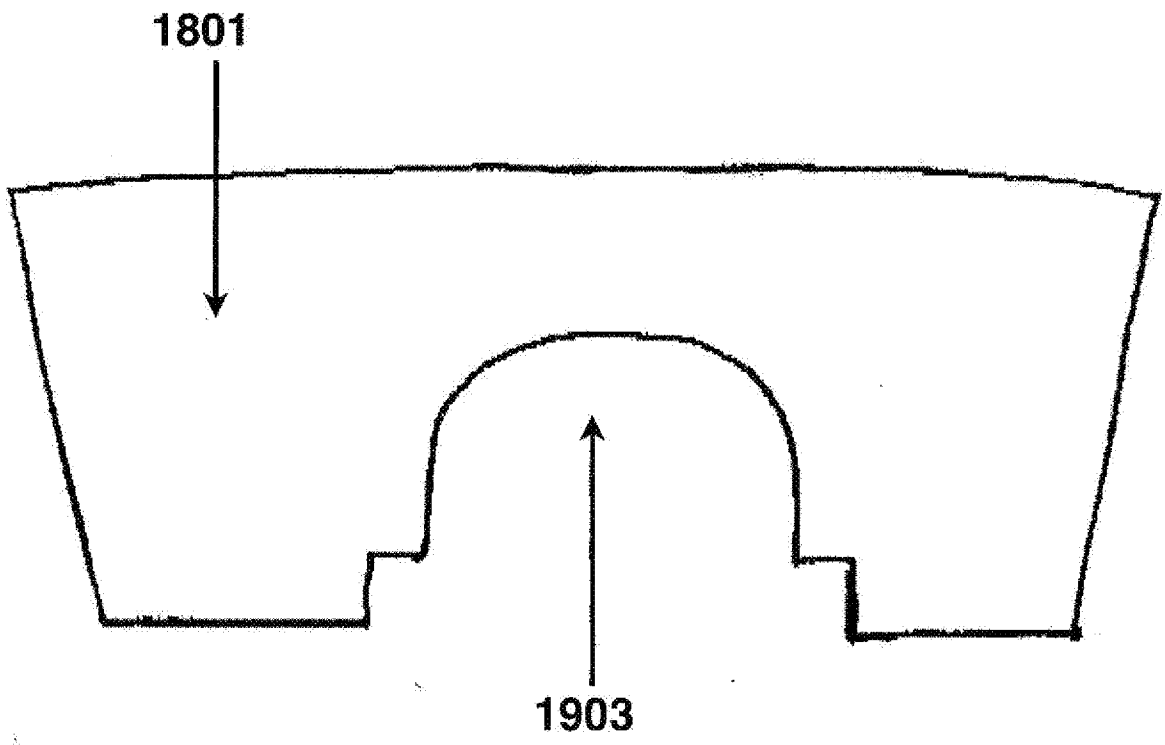


FIG. 21

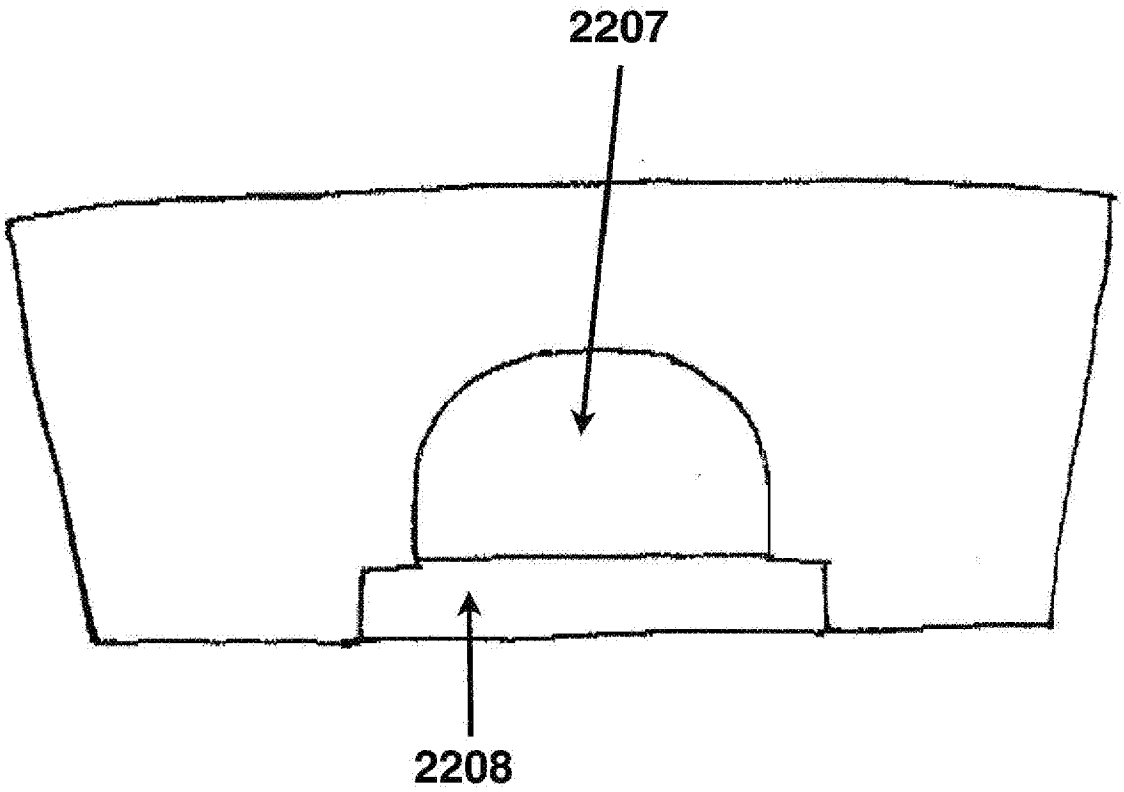


FIG. 22

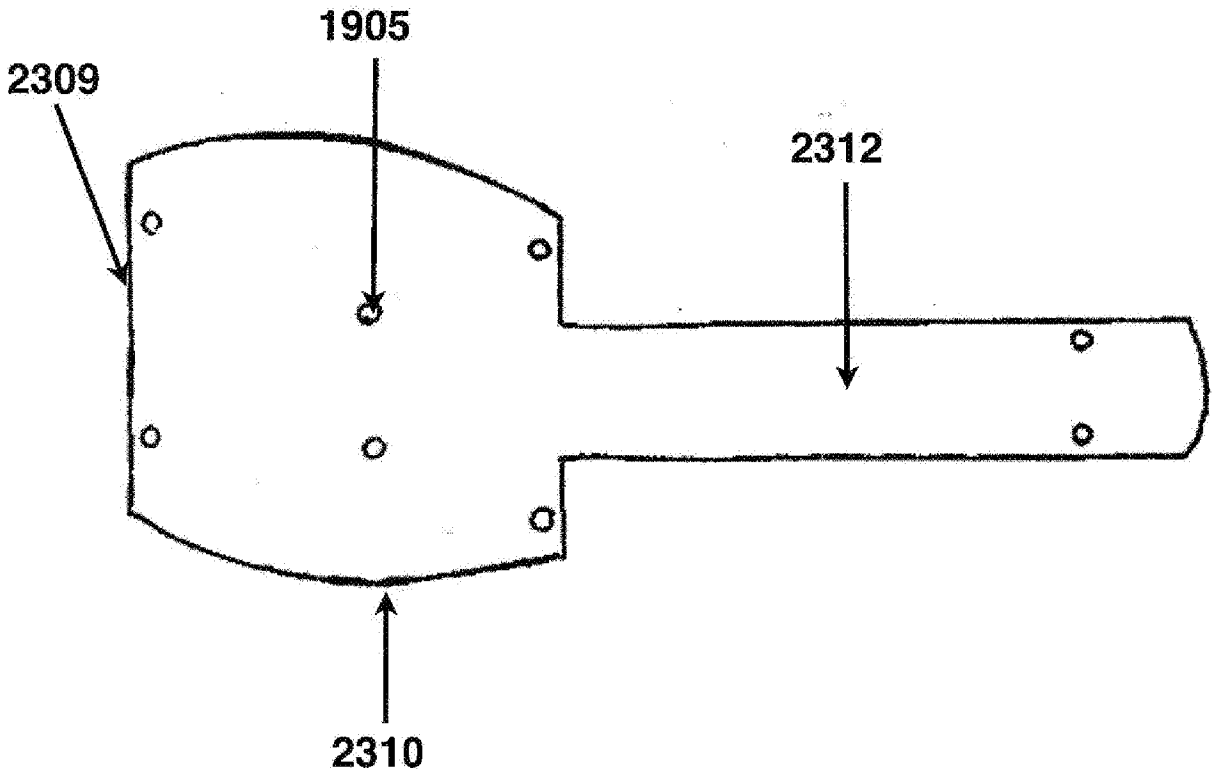


FIG. 23

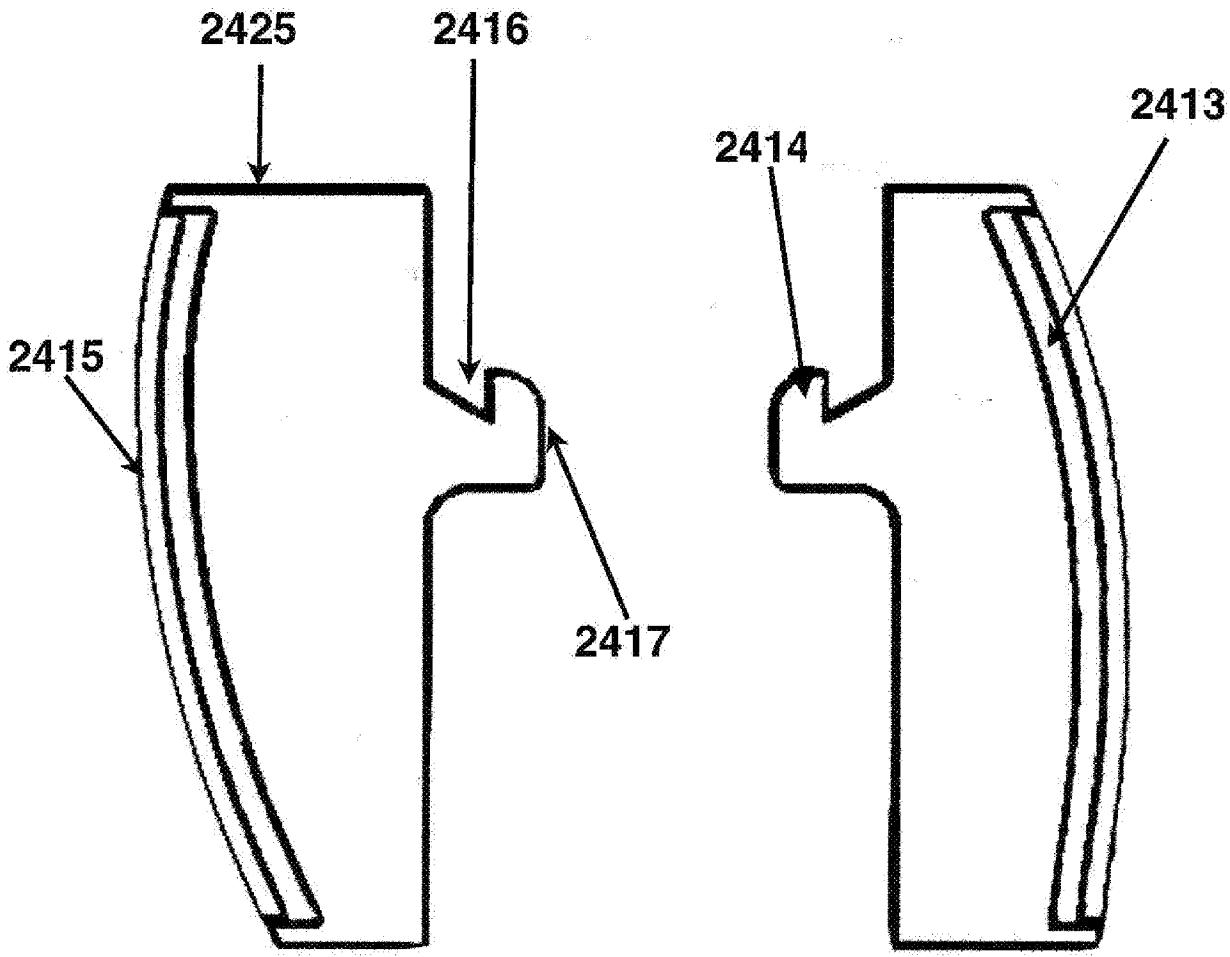


FIG. 24

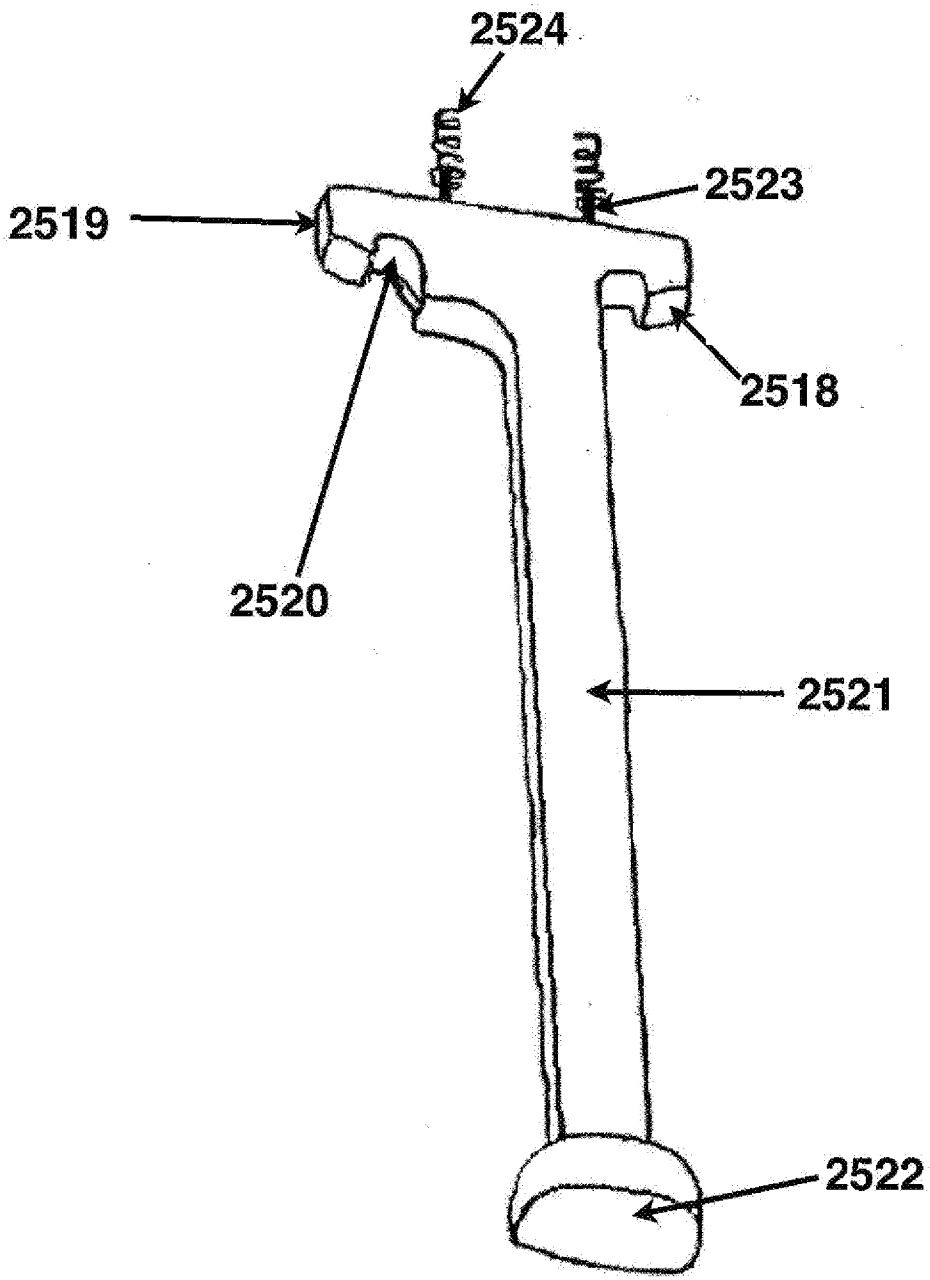


FIG. 25

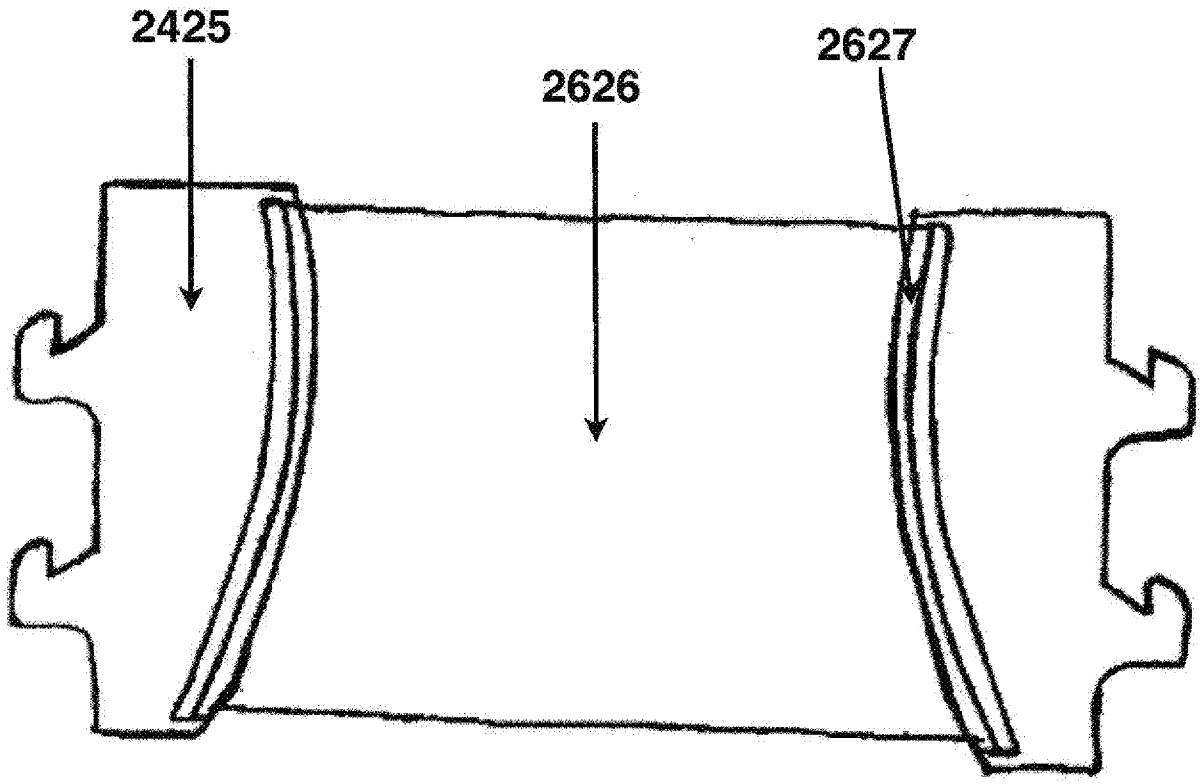


FIG. 26

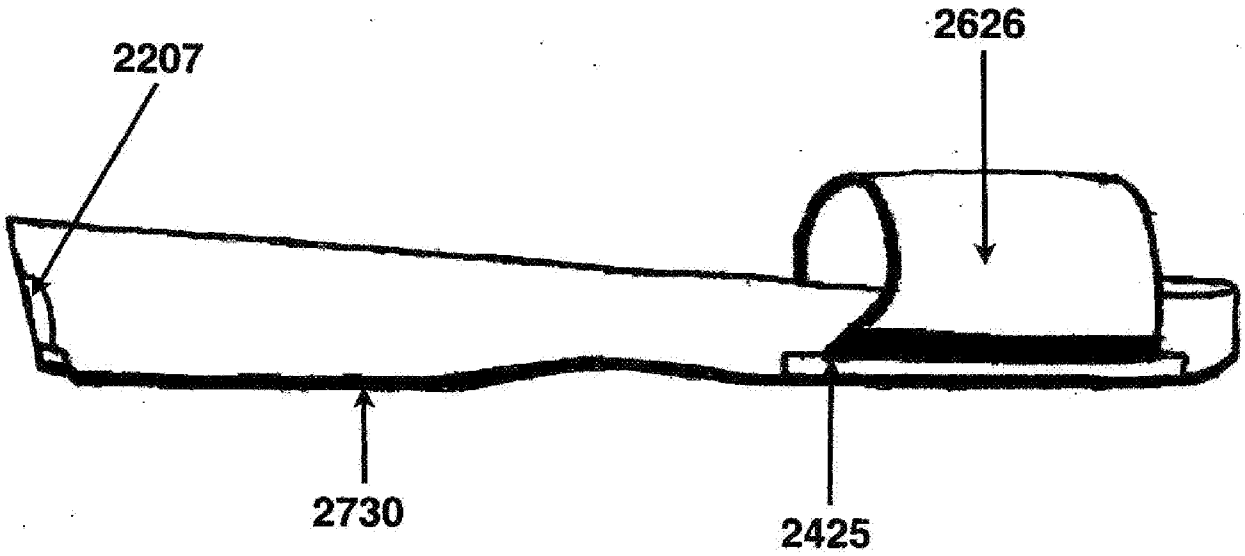


FIG. 27

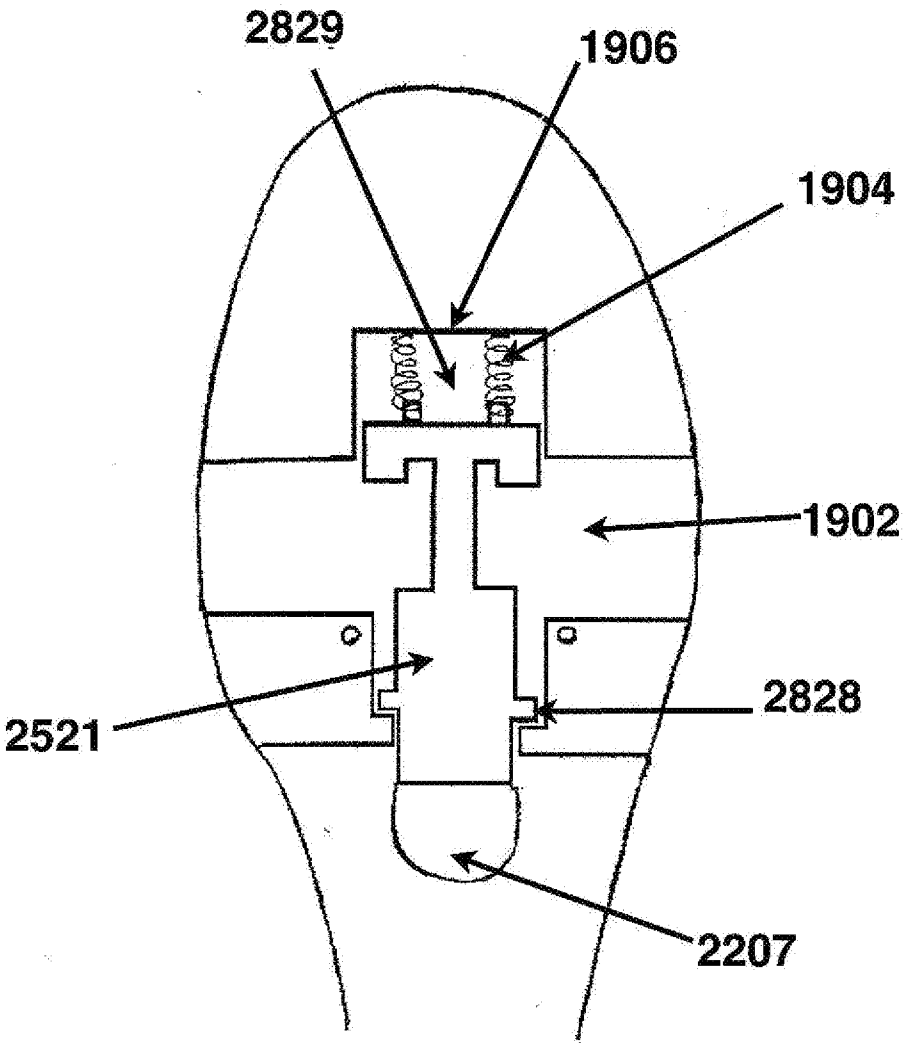


FIG. 28

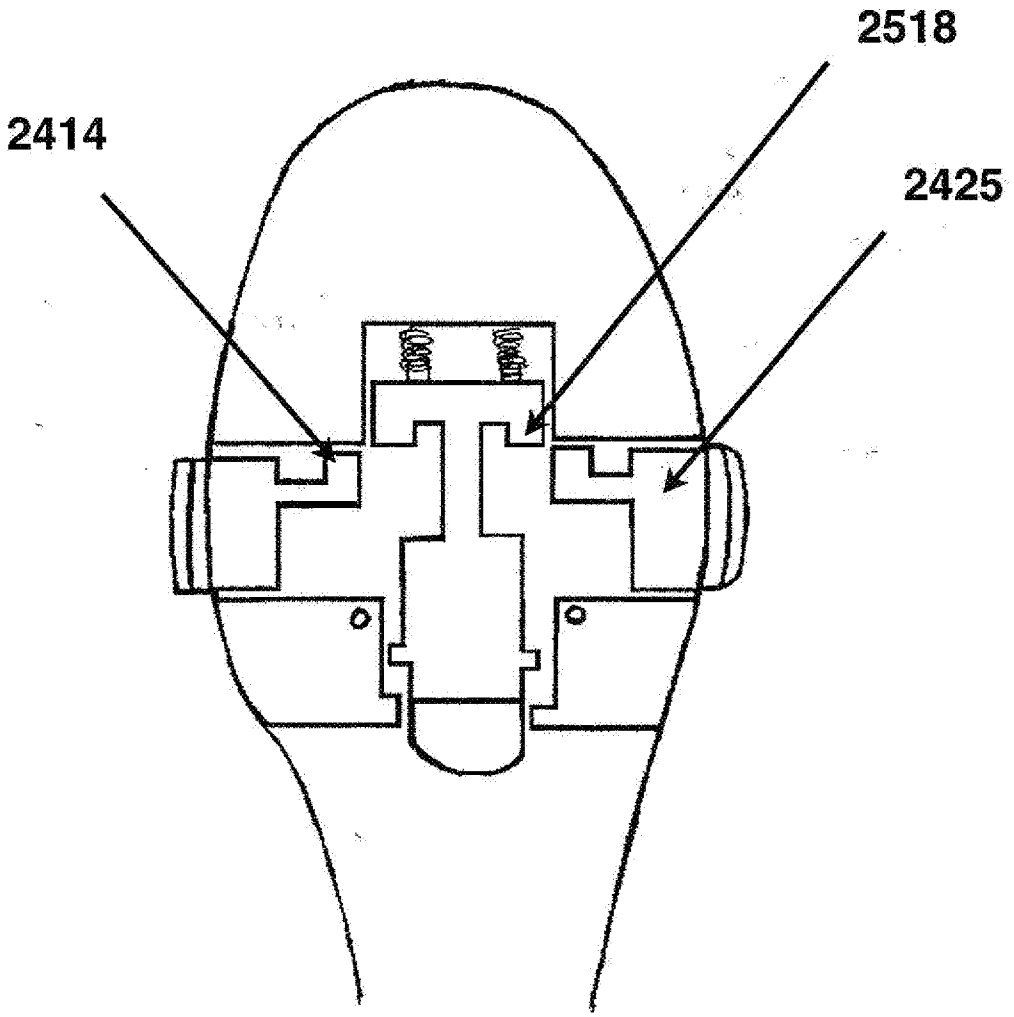


FIG. 29

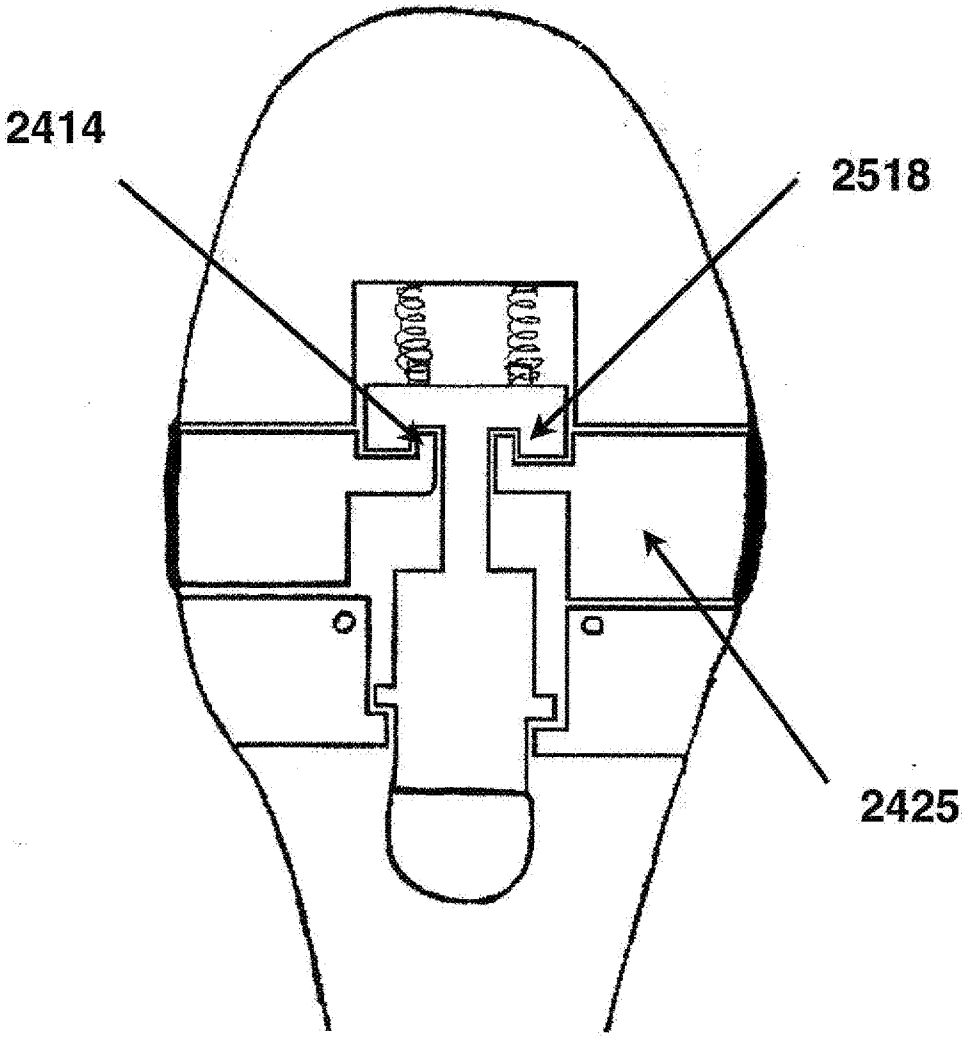


FIG. 30

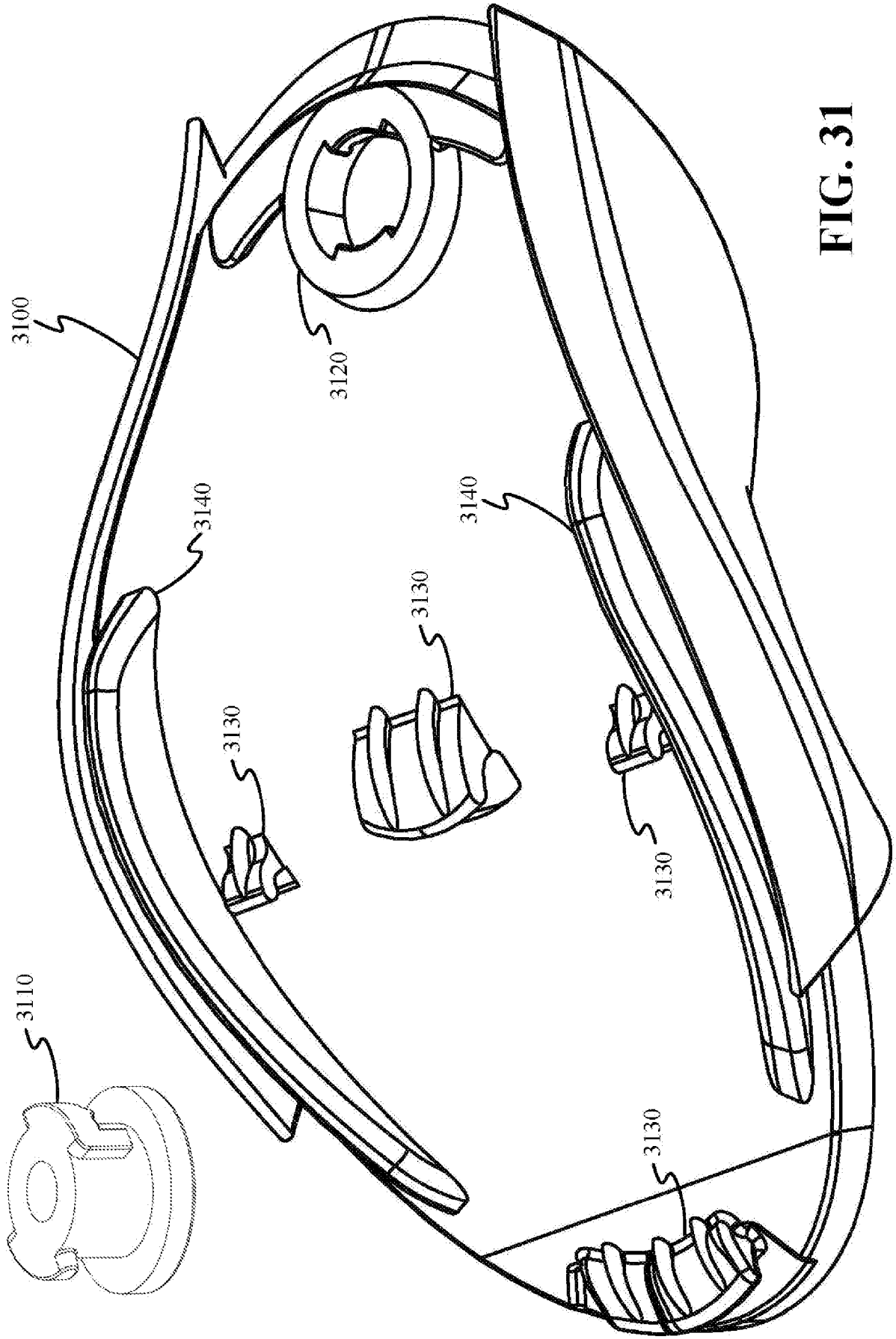


FIG. 31

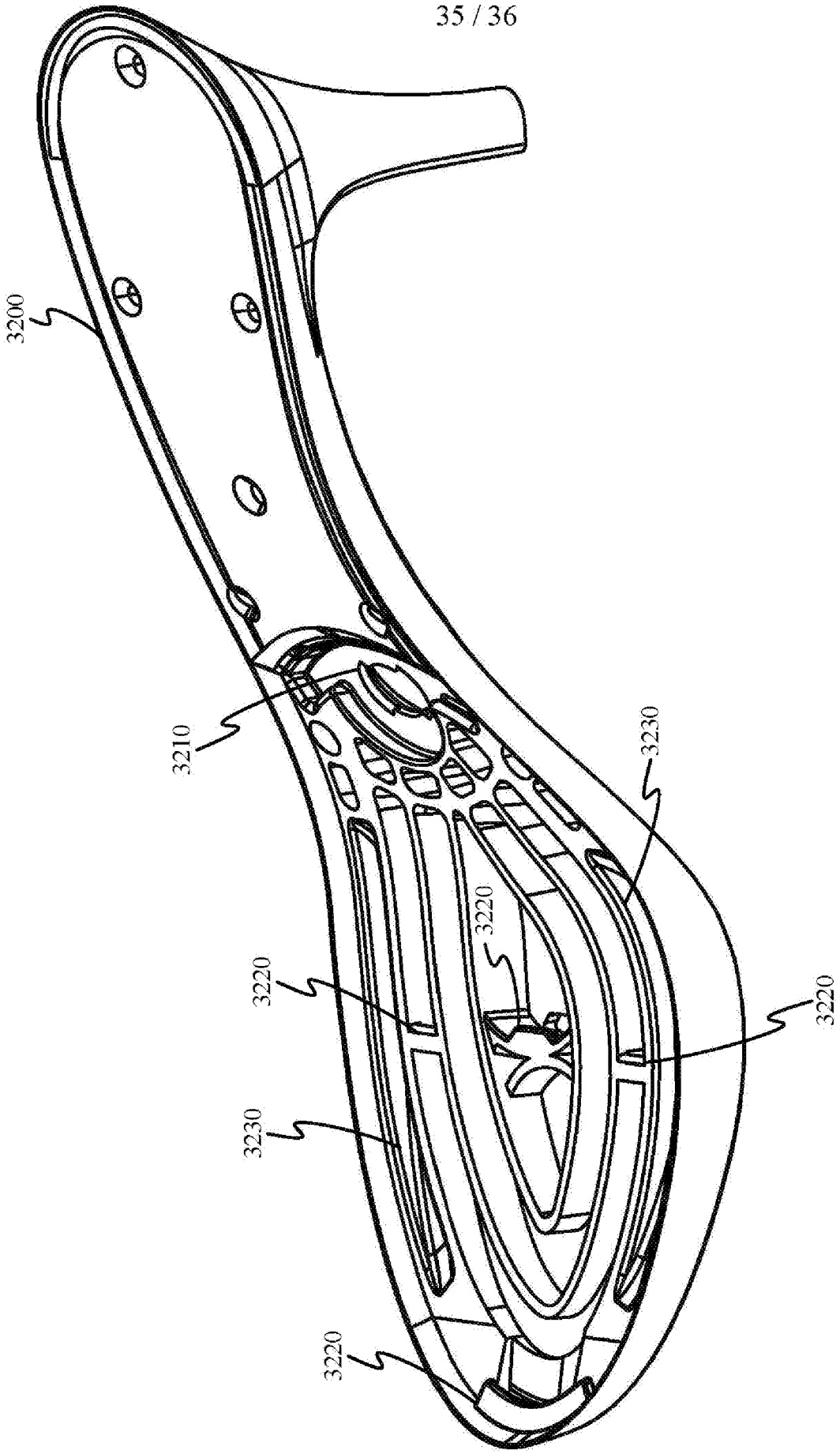


FIG. 32

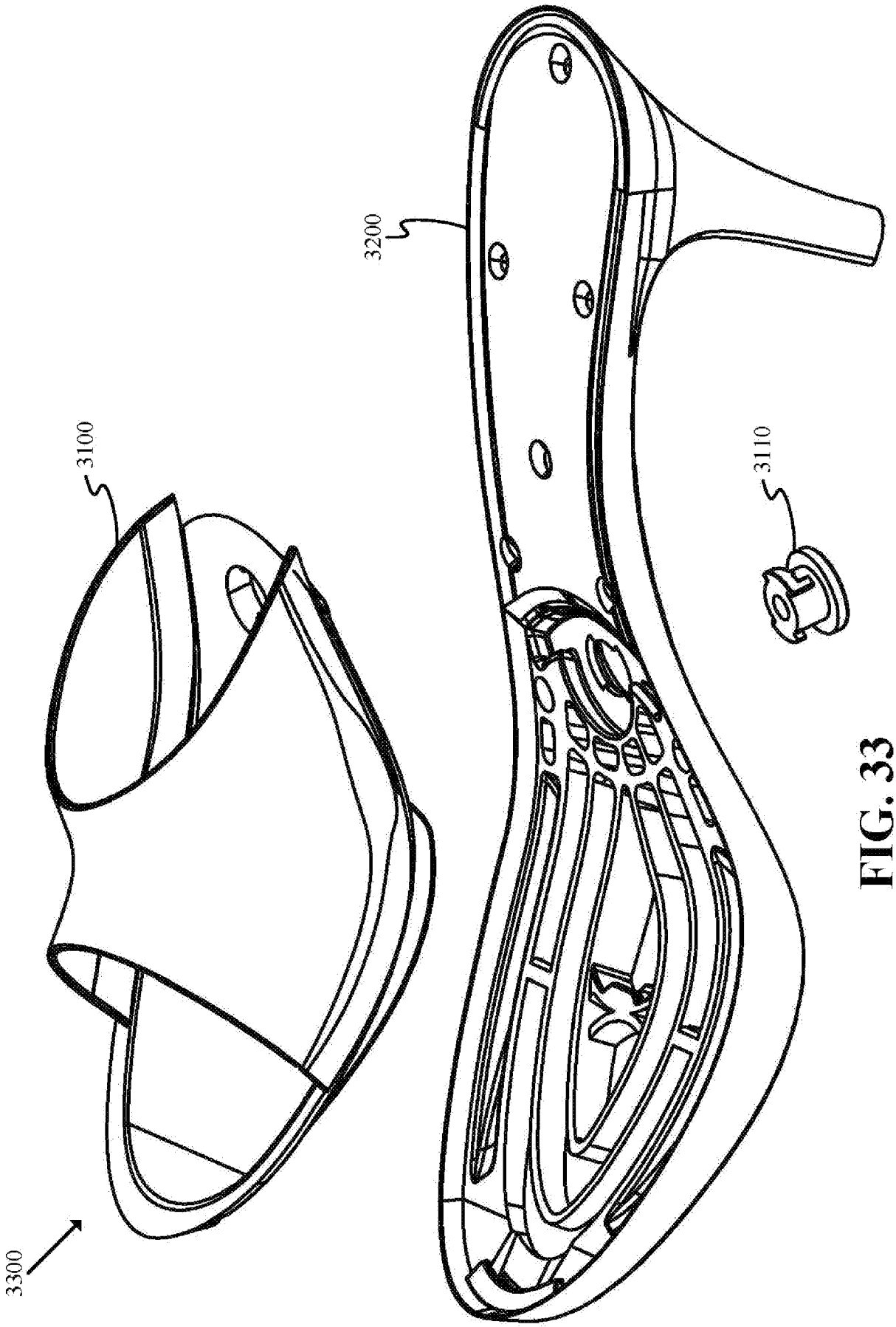


FIG. 33

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/034119

A. CLASSIFICATION OF SUBJECT MATTER

A43B 3/24(2006.01)i, A43B 23/00(2006.01)i, A43B 21/42(2006.01)i, A43B 23/24(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A43B 3/24; A43B 5/16; A43B 21/36; A43B 5/14; A43B 23/24; A43B 23/00; A43B 21/42

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: shoe, collapsible, top, fastener, catch, rail, cavity

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4887369 A (BAILEY, A. et al.) 19 December 1989 See abstract; column 1, line 65- column 2, line 10; figure 1.	1
A		2-20
A	US 6467198 B1 (JAMES, B.) 22 October 2002 See abstract; column 3, line 27- colimn 4, line 51; figures 1-3.	1-20
A	US 7578075 B1 (KEMP, Q.) 25 August 2009 See abstract.	1-20
A	WO 96-10346 A1 (SIDI SPORT S.A.S DI DINO SIGNORI & C.) 11 April 1996 See abstract; pages 3-6; figure 2.	1-20
A	US 8104198 B2 (BARRAS, P. O.) 31 January 2012 See abstract; figure 2.	1-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of 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 international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and 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

Date of the actual completion of the international search	Date of mailing of the international search report
29 July 2013 (29.07.2013)	**31 July 2013 (31.07.2013)**

Name and mailing address of the ISA/KR
Korean Intellectual Property Office
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Facsimile No. +82-42-472-7140

Authorized officer
YANG In Su
Telephone No. +82-42-481-8131

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2013/034119

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4887369 A	19/12/1989	None	
US 6467198 B1	22/10/2002	None	
US 7578075 B1	25/08/2009	US 7975405 B1	12/07/2011
WO 96-10346 A1	11/04/1996	AU 3565995 A	26/04/1996
		IT 1269004 B	18/03/1997
		IT PD940166 A1	04/04/1996
		IT PD940166 D0	04/10/1994
US 8104198 B2	31/01/2012	US 2010-0180472 A1	22/07/2010
		WO 2010-090616 A2	12/08/2010
		WO 2010-090616 A3	07/04/2011
		WO 2010-090616 A9	23/06/2011