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(54) **A case for holding a hand tool**

(57) A case for holding a hand tool in a first position wherein the handle projects from the case and engages the hand tool such that the hand tool is prevented from being removed from the case while simultaneously, the handle can be operated with respect to the case to test a function of the hand tool. The case is also adapted to hold the hand tool in a second position wherein the handle fits within the case. The case includes a cover positioned

on top of a base, wherein the cover has an opening that when combined with an anti-theft device is adapted to hold the hand tool in the first position. Also included is a base adapted to carry interchangeable bits for the hand tool. The base includes a through hole to allow the working end of the hand tool to pass therethrough and engage a frictional engaging member that opposes a direction of rotation of the working end to test a function of the hand tool.

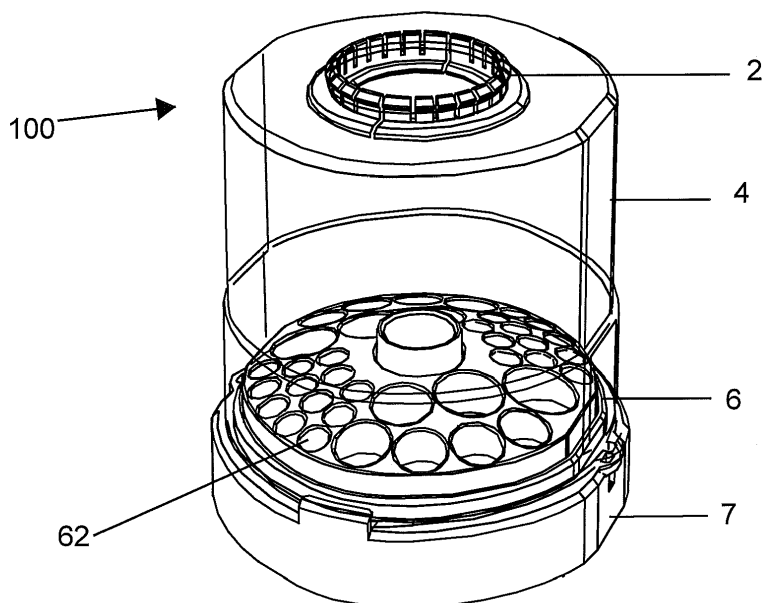


FIG. 1

Description

TECHNICAL FIELD

[0001] This invention relates to a multi-functional case for displaying hand tools at a point of sale and storing the hand tool thereafter, and particularly a case that allows a consumer to test the hand tool without removing the hand tool from the case.

BACKGROUND

[0002] Tool sets are customarily sold in cases with multiple interchangeably driven bits. The cases are sealed at the point of sale to prevent the hand tool and/or the driven bits from being lost or stolen. Consequently, it is not possible for the consumer to test the hand tool without opening the case and breaking the seal.

[0003] Previous disposable packages have been designed to allow the consumer to test a tool while it remains in the package. Such packaging includes scissor type hand tools wherein one handle is exposed and the other loop handle is enclosed in the packaging. The packaging has some room for the working end of the scissors to operate.

SUMMARY

[0004] A case for holding and displaying a hand tool at the point of sale is disclosed. The case is adapted to hold the hand tool in a first position wherein the handle projects from the case and engages the hand tool such that the hand tool is prevented from being removed from the case while simultaneously, the handle can be operated with respect to the case to test a function of the hand tool. The case is also adapted to hold the hand tool in a second position wherein the handle fits within the case. The case includes a cover positioned on top of a base, wherein the cover has an opening that when combined with an anti-theft device is adapted to hold the hand tool in the first position. Also included is a base adapted to carry interchangeable bits for the hand tool. The base includes a through hole to allow the working end of the hand tool to pass therethrough and engage a frictional engaging member that opposes a direction of rotation of the working end to test a function of the hand tool.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] These and other features and advantages of the present invention will be better understood by reading the following detailed description, taken together with the drawings wherein:

[0006] FIG. 1 is a perspective view of the case with the hand tool removed from the case;

[0007] FIG. 2 is an exploded view of the case with the hand tool removed from the case;

[0008] FIG. 3 is a perspective view of the case with the

hand tool combined with the case;

[0009] FIG. 4 is a side elevational view of the case and hand tool shown partially in vertical cross section;

[0010] FIG. 5 is a perspective view of the case with the hand tool positioned inside the case; and

[0011] FIG. 6 is a perspective view of the anti-theft ring.

DETAILED DESCRIPTION

[0012] Referring to FIGS. 1 - 4, disclosed is a case 100 for holding a hand tool 200 in two positions. In the first position, the case 100 holds the hand tool 200 with the handle 12 projecting from the case 100. The first position advantageously allows the function of the hand tool 200 to be tested at the point of sale. In the second position the hand tool 200 is separable from the case 100 which functions as a permanent carrying case 100 for the tool and its interchangeable tool bits 61.

[0013] The hand tool 200 is comprised of a handle 12, a conical shaped main body 1 beneath the handle 12 and a ratchet head 3 beneath the main body 1. The ratchet head 3 has an extension rod 23, and a retention groove 211 is formed between the ratchet head 3 and the main body 1.

[0014] FIG. 3 shows the case 100 and the hand tool 200 as encountered by the consumer at the point of sale with the handle 12 projecting from the case 100 and rotatable with respect to the case 100, so that the consumer can test the function of the hand tool 200 before its purchased. FIG. 4 shows the case 100 functioning as a permanent carrying case 100 for the hand tool 200, with the hand tool 200 stored entirely within the case 4. In the illustrative embodiment, the hand tool 200 is a ratcheting driver, and the case contains a plurality of interchangeable bits 61 for use with the driver. The ratcheting driver 200 is stored inside the case 100 with the interchangeable bits 61 to provide a useful, compact, and portable tool set for the user.

[0015] Referring to FIGS. 1 & 2, the case 100 is preferably substantially cylindrically shaped and includes a cylindrical base 7 and a cylindrical cover 4 positioned thereon. The cover 4 is removable and selectively lockable to the base 7 by rotating one or more tabs 20 on the cover 4 to engage an equal number of locks 21 on the base 7. Furthermore, the cover 4 is transparent so that the hand tool 200 and the interchangeable bits 61 are visible to the consumer. The base 7 has affixed to it or formed with it a central hollow pillar 71 adapted to receive the end of the extension rod 13 when the unit is fully assembled.

[0016] The case 100 is also designed to carry interchangeable bits 61 for the hand tool 200. A retainer 6 inside the case 100 provides a receptacle for the interchangeable bits 61. The retainer 6 resting on the base 7 has a plurality of pockets 62 arranged around its top for holding the interchangeable bits 61. The pockets 62 may be individually sized to mate with individual interchangeable bits 61. The retainer 6 also has a through hole 62

in its center to allow the extension 23 of the hand tool 200 to pass therethrough. The retainer 6 may be fixed to the base 7 or formed as an integral part of the base 7 or removable from the base 7. An optional removable plastic cover 5 for the interchangeable bits 61 may be provided to prevent the interchangeable bits 61 from being displaced when the case 100 is turned upside down.

[0017] An anti-theft ring 2 combines the hand tool 200 with the cover 4 to prevent removal of the hand tool by a customer until after purchase. The ring 2 is made of a material that is rigid but which has limited flexibility. As best seen in Fig. 6, the anti-theft ring 2 is a split ring and is comprised of an annular outer ring 241, an inner ring 231 and an upwardly extending main body 211. The main body 211 is comprised of a plurality of spaced-apart blocks 220 having tapered top edges that form a ridge 221. The blocks 220 are separated by notches 222 which allows the upwardly extending main body 211 to compress under force.

[0018] The anti-theft ring 2 is inserted into the opening 411 from the inside of the cover 4, with the ring 2 snapping in place in the opening 411 with the edge of the opening seated beneath the ridge 221 and above the outer ring 241. With the ring 2 thus locked in place, the hand tool 200 with the extension rod 13 attached is inserted through the ring 2 until the inner ring 23 engages the retention groove 211 below the main body 1 of the tool 200. Thus, the hand tool 200 is locked in place with the cover 4.

[0019] Once the hand tool 200 is positioned through the opening 411 and combined with the anti-theft ring 2, it cannot be removed from the case 100 once the unit is assembled, the cover 4 is locked to the base 7. This is because the extension rod 23 is seated in the pillar 71, which prevents the hand tool 200 from being pushed further into the cover 4, which would disengage the tool from the anti-theft ring 2.

[0020] The removable extension 23 of the hand tool 200 passes through the retainer 6 and combines with a frictional engaging member 72 inside the pillar 71 at the bottom center of the base 7. In an embodiment, the hand tool 200 is a ratcheting driver 200 and the removable extension 23 attached at the ratchet head 3 of the ratcheting driver 200 engages the frictional engaging member 72. The frictional engaging member 72 acts against the direction of rotation of the combined removable extension 23 and ratcheting head 3 so that the function of the ratcheting driver 200 can be tested by the consumer.

[0021] After sale, the purchaser can unlock the cover 4 from the base 7 and the anti-theft ring 2 can be removed and may be discarded. The rest of the case 100, including the cover 4 and base 7 form the permanent carrying case 100 for the hand tool 200.

[0022] FIG. 5 illustrates the case 100 holding the hand tool 200 in the second position after purchase and removal of the anti-theft ring 2. The hand tool 200 fits entirely within the cover 4 of the case 100. In the illustrated embodiment, the removable extension 23 of the hand tool 200 is stored within a receptacle 24 extending inside

the handle 12. In another embodiment, the extension 23 is received by the retainer 6 and fits in one of the pockets 62 of the retainer 6 along with the interchangeable bits 61. In a further embodiment, the top of handle 12 of the hand tool 200 is formed such that it forms a seal for the opening 411 of the case 100.

[0023] While the principles of the invention have been described herein, it is to be understood by those skilled in the art that this description is made only by way of example and not as a limitation as to the scope of the invention. Other embodiments are contemplated within the scope of the present invention in addition to the exemplary embodiments shown and described herein. Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention, which is not to be limited except by the following claims.

Claims

1. An apparatus comprising:

a case; and

a hand tool having a working end and a handle, wherein the case is adapted to hold the hand tool in a first position wherein the handle projects from the case and engages the hand tool such that the hand tool is prevented from being removed from the case while simultaneously, the handle can be operated with respect to the case to test a function of the hand tool, and a second position wherein the handle fits within the case.

2. The apparatus of claim 1, and further comprising an anti-theft device that combines the hand tool with the case to prevent the hand tool from being removed when the hand tool is held in the first position.

3. The apparatus according to claims 1 and 2, wherein the hand tool is a ratcheting driver.

4. The apparatus according to any of the preceding claims, wherein the case includes a base adapted to carry interchangeable bits.

5. The apparatus according to any of the preceding claims, wherein the case is substantially cylindrically shaped.

6. The apparatus according to any of the preceding claims, wherein the handle is ergonomically shaped.

7. The apparatus according to any of the preceding claims, wherein the case has a transparent periphery.

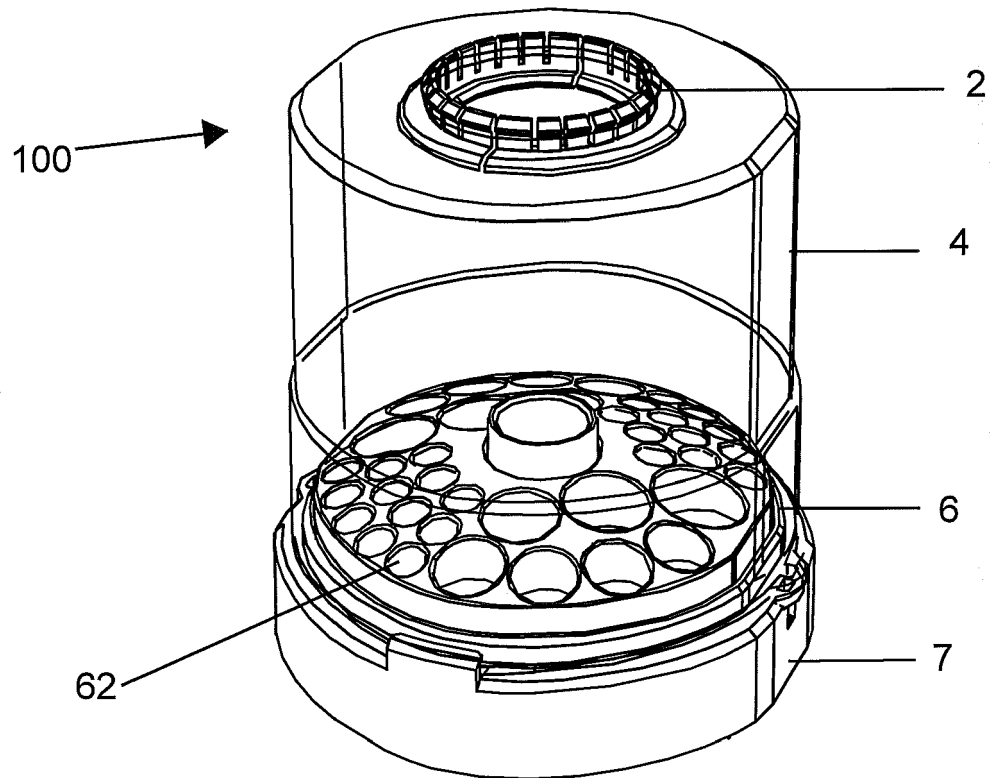


FIG. 1

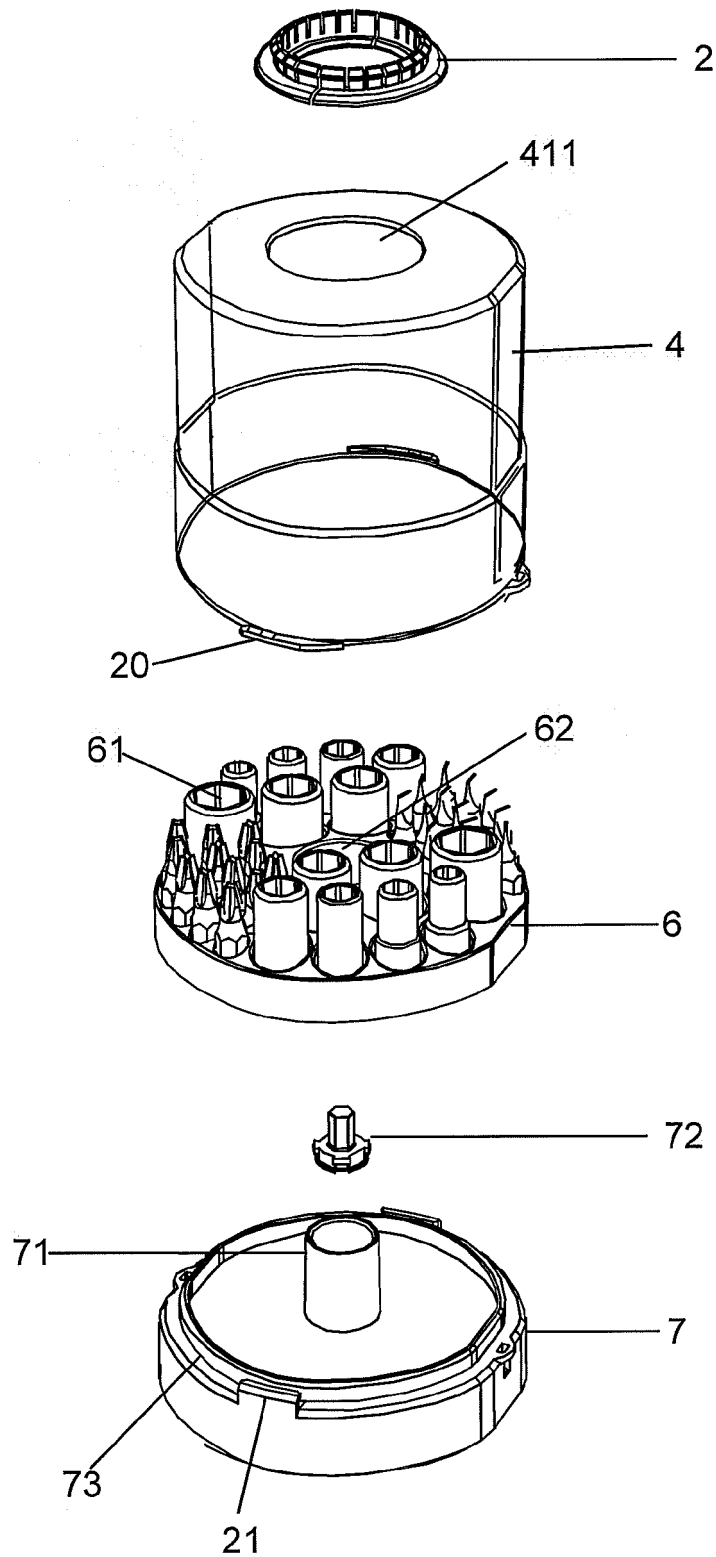
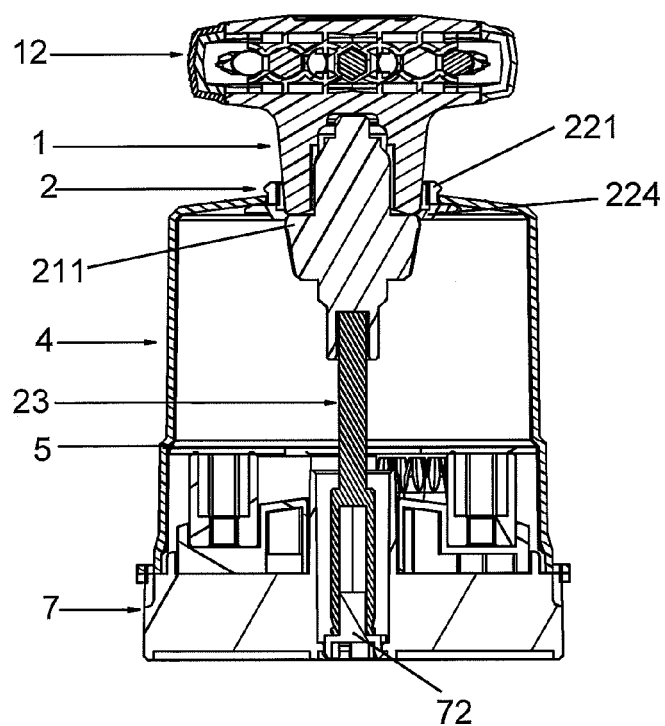
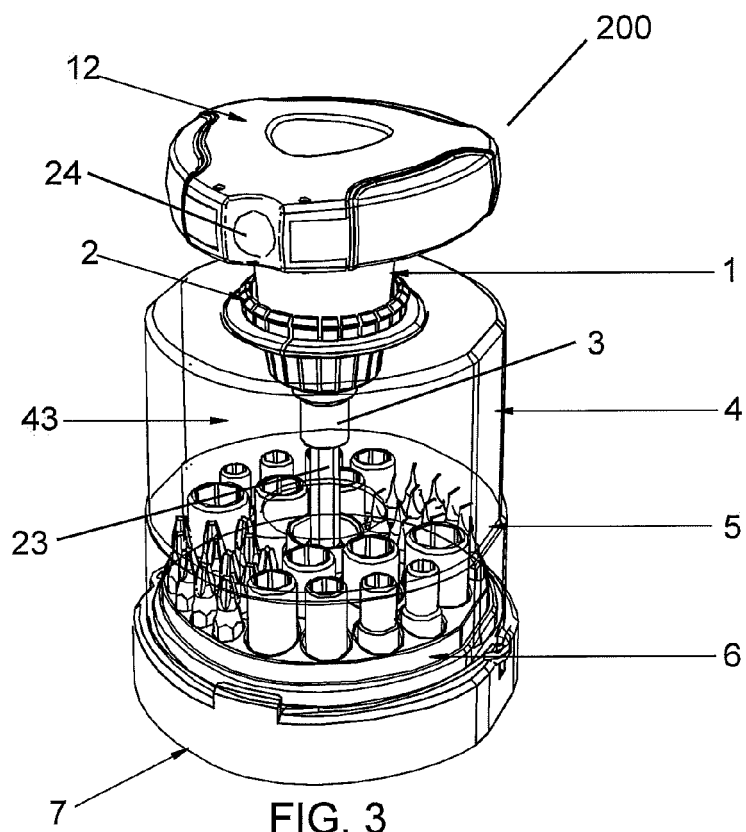


FIG. 2



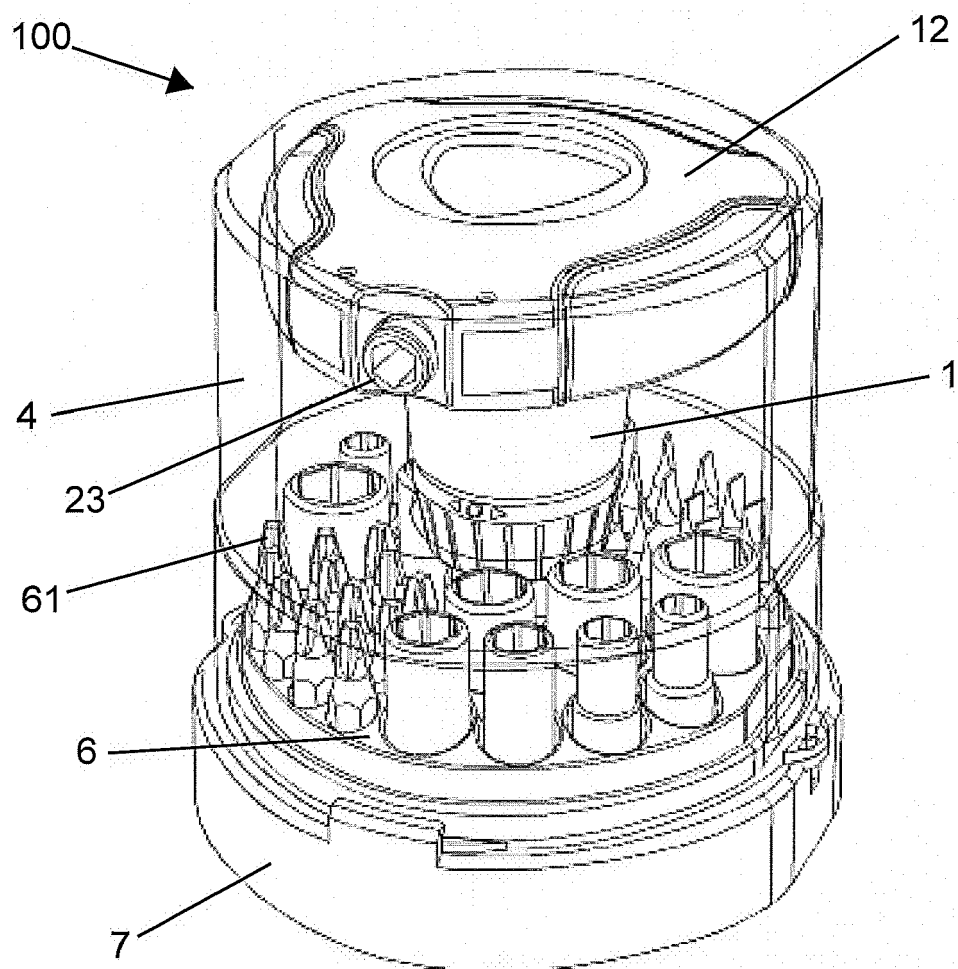


FIG. 5

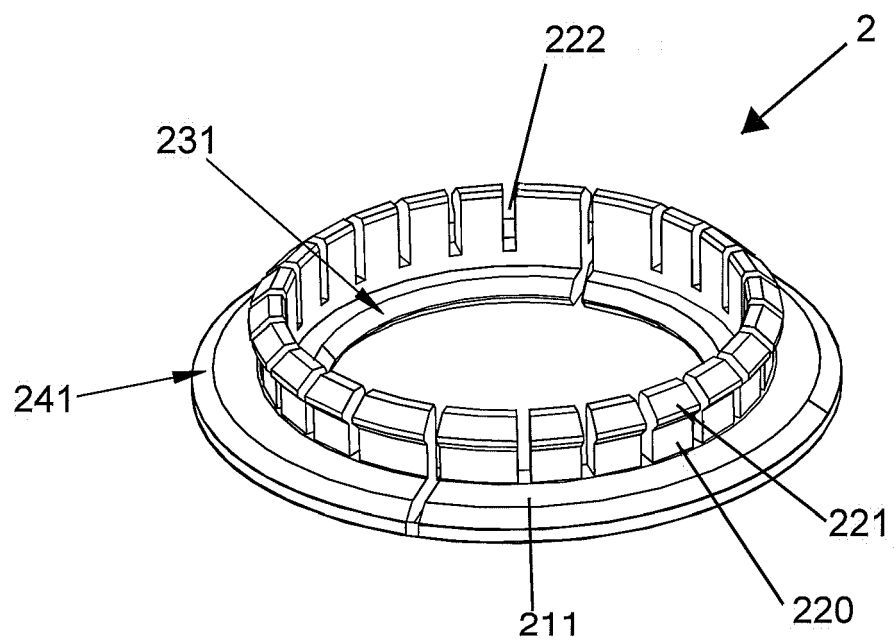


FIG. 6