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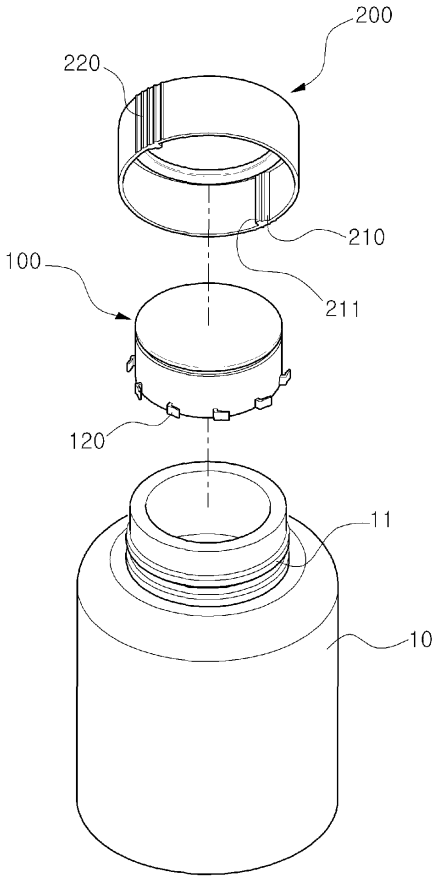
(54) **SIDE-PRESSURE TYPE SAFETY CAP**

(57) According to the present invention, a side-pressure type safety cap is threaded onto an upper portion of a container body containing contents therein, so as to open/close the outlet of the container. The safety cap of the present invention is configured to be opened only when a joint protrusion and a rotating protrusion contact each other by pressure being applied to the sides of an outer cap. Thus, a child unable to perceive such a configuration cannot open the cap, thereby preventing the child from ingesting harmful substances, and the contents in the container from being unnecessarily wasted.

[Fig. 1]



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Description

Technical Field

[0001] The present invention relates to a side-pressure type safety cap, and in particular to a side-pressure type safety cap which is configured for a cap to be opened and closed only when an engaging protrusion and a rotating protrusion come into contact with each other by a side pressure of an outer cap, so a kid is prevented from eating a harmful substance to a human body by preventing a kid, who does not know what is in the container, from opening the cap, so unnecessary consumption of the contents stored in the container can be prevented.

Background Art

[0002] A cap is generally designed to prevent the contents stored in a container body from discharging to the outside as it is capped at the top of the container body while preventing contamination of contents.

[0003] The above mentioned cap is so designed that anyone can easily open and close as it rotates on one or the other direction because it is screwed to the threads of a container body. With this construction, a kid who lacks discernment may open easily the cap thus spilling the contents, which results in over consumption of the contents. In particular, in case that the container body stores contents harmful to a human body, a kid may drink the contents without knowing what is in the container body, so a serious accident may happen.

[0004] In order to improve the above mentioned problems, there are provided a structure featuring in that the cap can be opened only when the top of the cap is pressed downward, and a structure featuring in that the cap can be opened only when both sides of the cap are pressurized for the kid not to easily open the cap.

[0005] The conventional safety cap will be described with reference to "Bottle assembly preventing children from opening" of the utility model registration number 0318864. The above mentioned utility model registration of the safety cap is characterized in that there is provided a container assembly formed of a hollow container body part of the top of which is open, and a cap 20 covering the opening of the container body. The container body 10 comprises a neck 14 extending with a diameter smaller than the other portions of the container, an outlet 11 formed as the top of the neck 14 is open, a male engaging screw 12 protruded from the surrounding of the neck 14, a flange 13 extending along the surrounding of the neck 4 as much as a certain width in an outer radial direction, and an engaging protrusion 15 protruded from the top of the flange 13. The cap 20 comprises an upper side engaging protrusion 25 formed at the inner wall surface while corresponding to the engaging protrusion 15, an inner cap 23 with the inner diameter matching the outer diameter of the outlet 11, and a female engaging screw 22 protruding from the inner wall surface of the inner cap 23 while corresponding to the male engaging screw 12.

[0006] The conventional safety cap 20 forms a flange 13 at the container body 10 so as to form an engaging protrusion 15 butting with the upper side engaging protrusion 5 formed in the interior of the cap 20 when opening the cap 20, and the engaging protrusion 15 formed at the top of the flange 13, so the construction of the container body 10 seems complicated, which makes it impossible to obtain the role of the safety cap when engaging the cap 20 to various containers with only threads.

Disclosure of Invention

[0007] Accordingly, the present invention is made to improve the above mentioned problems encountered in the conventional art and other problems. It is an object of the present invention to provide a side pressure type safety cap which is configured for a cap to be opened and closed only when an engaging protrusion and a rotating protrusion come into contact with each other by a side pressure of an outer cap, so a kid is prevented from eating a harmful substance to a human body by preventing a kid, who does not know what is in the container, from opening the cap, so unnecessary consumption of the contents stored in the container can be prevented.

[0008] When the cap rotates as the engaging protrusion of the inner cap the rotating protrusion of the outer cap are engaged and rotate, the threads formed at the inner surface of the inner cap are thread-engaged with the threads of the container body, so the cap can be opened and closed. The above mentioned construction can be well applied to all the containers with threads.

[0009] To achieve the above objects, there is provided a side press type safety cap in a safety cap which is thread engaged onto the top of a container body which stores contents, for thereby opening and closing an outlet of the container; an inner cap which has threads at its inner surface for surrounding and thread-engaging the top of the container body, a plurality of regularly spaced engaging protrusions formed at its outer surface and surrounding the same; an outer cap which surrounds and engages the inner cap and has a rotating protrusion which protrudes from between the plurality of the engaging protrusions at each side of the inner surface and is engaged with the engaging protrusion and rotates the inner cap.

[0010] In addition, the engaging protrusion comprises an engaging protrusion portion protruded forward from the outer surface of the inner cap; and a bent part which is bent in one direction from an end portion of a protrusion piece.

[0011] In addition, the bent part comprises a slope surface which is gently in the direction of the end portion, going farther from an outer surface of the inner cap.

[0012] In addition, at the rotating protrusion is formed a mounting groove for mounting the front end of the engaging protrusion therein.

[0013] In addition, at the outer cap is formed a press

indication part indicating a pressed portion in the outer surface facing the rotation protrusion for a user to rotate the outer cap while pressing the same.

Advantageous Effects

[0014] As described above, the present invention has an advantages in that a cap is configured to be opened and closed only when an engaging protrusion and a rotating protrusion come into contact with each other by a side pressure of an outer cap, so a kid is prevented from eating a harmful substance to a human body by preventing a kid, who does not know what is in the container, from opening the cap, so unnecessary consumption of the contents stored in the container can be prevented.

[0015] In addition, the present invention has an advantage in that when the cap rotates as the engaging protrusion of the inner cap the rotating protrusion of the outer cap are engaged and rotate, the threads formed at the inner surface of the inner cap are thread-engaged with the threads of the container body, so the cap can be opened and closed. The above mentioned construction can be well applied to all the containers with threads.

Brief Description of Drawings

[0016] Figure 1 is a disassembled perspective view illustrating a construction of a side pressure type safety cap according to a preferred embodiment of the present invention.

[0017] Figure 2 is an engaged cross sectional view illustrating a construction of a side pressure type safety cap according to a preferred embodiment of the present invention.

[0018] Figure 3 is a cross sectional view illustrating a press indication part of a side pressure type safety cap according to a preferred embodiment of the present invention.

[0019] Figures 4 and 5 are views illustrating an opening and closing state on the basis of an engagement of an inner cap and an outer cap of a side pressure type safety cap according to a preferred embodiment of the present invention.

Best modes for carrying out the invention

[0020] The present invention will be described with reference to the accompanying drawings. It is noted that the same reference numerals appearing in each drawing means the same elements.

[0021] Figure 1 is a disassembled perspective view illustrating a construction of a side pressure type safety cap according to a preferred embodiment of the present invention. Figure 2 is an engaged cross sectional view illustrating a construction of a side pressure type safety cap according to a preferred embodiment of the present invention. Figure 3 is a cross sectional view illustrating a press indication part of a side pressure type safety cap according to a preferred embodiment of the present invention.

[0022] Figures 4 and 5 are views illustrating an opening and closing state on the basis of an engagement of an inner cap and an outer cap of a side pressure type safety cap according to a preferred embodiment of the present invention.

[0023] As shown in Figures 1 to 5, the side pressure type safety cap according to a preferred embodiment of the present invention comprises an inner cap 100 and an outer cap 200.

[0024] The inner cap 100 is thread engaged to the thread 11 formed at the top of the container body 10 configured to store contents and has a thread 110 formed at its inner surface for the thread engagement with the thread 11.

[0025] In the present invention, a plurality of regularly spaced engaging protrusions 120 are formed along the outer surface of the inner cap 100. The engaging protrusion 120 comprises a protrusion piece 121 protruding forward from the outer surface of the inner cap 100, and a bent part 122 bent in one direction at the end of the inner cap 100.

[0026] The engaging protrusion 120 is formed in an inverted L-shaped and consists of a protrusion piece 121 and a bent part 122. During the rotation of the outer cap 200, the front end 120a and the terminal part 120b of the engaging protrusion 120 are engaged with the rotation protrusion 210 for thereby opening and closing the safety cap.

[0027] Meanwhile, the bent part 122 has a slope surface which becomes gentle in the direction of the end portion, going farther from the outer surface of the inner cap 100. When it is intended to close the safety cap by rotating the outer cap 200, the rotation protrusion 210 is engaged with the terminal part 120b of the engaging protrusion 120, so the inner cap 100 can rotate together.

[0028] The outer cap 200 allows the inner cap 100 to rotate in engagement with the engaging protrusion 120 depending on the rotations while the outer cap 200 is engaged with the inner cap 100 while surrounding the same. In the present invention, at each side of the inner surface of the outer cap 200 is provided a rotation protrusion 210 protruding between the engaging protrusion 120.

[0029] One surface of the rotation protrusion 210 is formed of a gentle slope, the other surface having a sharp slope of about 90°, so the rotation protrusion 210 is engaged with either the front end 120a or the terminal part 120b of the engaging protrusion 120 depending on the rotations one direction or the other direction of the outer cap 200.

[0030] At the rotation protrusion 210 is formed a mounting groove 211 for the front end 120a of the engaging protrusion 120 to mounts therein. When rotating the outer cap 200 by pressing each side of the same, the front part 120a of the engaging protrusion 120 is mounted in the mounting groove 211, and the inner cap 100 comes to

rotate together with the outer cap 200, so the safety cap can be opened.

[0031] At the outer cap 200 is formed a press indication part 220 indicating a pressed portion in the outer surface facing the rotation protrusion 210 for a user to rotate the outer cap 200 while pressing the same.

[0032] Referring to Figures 4 and 5, the opening and closing operations of the side press type safety cap according to a preferred embodiment of the present invention will be described.

[0033] Figures 4 and 5 are views illustrating an opening and closing state on the basis of an engagement of an inner cap and an outer cap of a side pressure type safety cap according to a preferred embodiment of the present invention.

[0034] As shown in Figure 4, when it needs to close the side press type safety cap according to a preferred embodiment of the present invention, holding the outer cap 200 the user rotates the outer cap 200 in the closing direction. When the rotation of the outer cap 200 is finished, the rotation protrusion 210 protruded from each side of the inner surface of the outer cap 200 rotates together. As the rotation protrusion 210 rotates, the other surface which corresponds to a sharp slope of the rotation protrusion 210 becomes engaged with the terminal part 120b of the engaging protrusion 120 and allows the inner cap 100 to rotate. Therefore, the user can close the cap in the same way as closing the common thread type cap onto the container body.

[0035] As shown in Figure 5, when it needs to open the side press type safety cap according to a preferred embodiment of the present invention, the user rotates the outer cap 200 in the opening direction in a state that the press indication part 220 of the outer cap 200 is pressed. When the press indication part 220 is pressed, each side of the outer cal 200 where the rotation protrusion 210 is formed is dented a little. When the outer cap 200 is rotated in the opening direction, the rotating protrusion 210 of the outer cap 200 is engaged with the front end 120a of the engaging protrusion 120, so the inner cap 100 can rotate together, thus opening the safety cap.

[0036] When the outer cap 200 is rotated in a state that the press indication part 220 is no pressed when opening the safety cap, the engaging protrusion 120 and the rotating protrusion 210 idle rotate thanks to the space between the engaging protrusion 120 and the rotating protrusion 210. Therefore, the inner cap 100 does not rotate, and the safety cap does not open.

[0037] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described examples are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the meets and bounds of the claims, or equivalences of such meets and bounds are therefore intended to be embraced by the appended claims.

Claims

1. A side press type safety cap in a safety cap which is thread engaged onto the top of a container body which stores contents, for thereby opening and closing an outlet of the container;
   an inner cap which has threads at its inner surface for surrounding and thread-engaging the top of the container body, a plurality of regularly spaced engaging protrusions formed at its outer surface and surrounding the same;
   an outer cap which surrounds and engages the inner cap and has a rotating protrusion which protrudes from between the plurality of the engaging protrusions at each side of the inner surface and is engaged with the engaging protrusion and rotates the inner cap.

2. The cap of claim 1, wherein the engaging protrusion comprises:

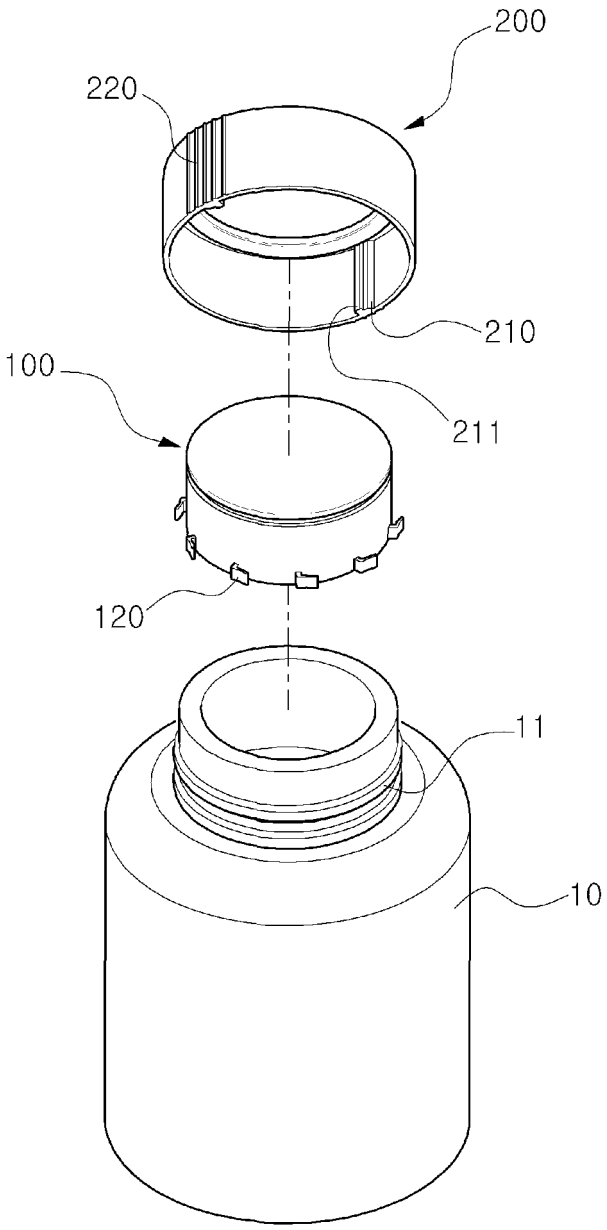
   an engaging protrusion portion protruded forward from the outer surface of the inner cap; and an bent part which is bent in one direction from an end portion of a protrusion piece.

3. The cap of claim 2, wherein the bent part comprises a slope surface which is gently in the direction of the end portion, going farther from an outer surface of the inner cap.

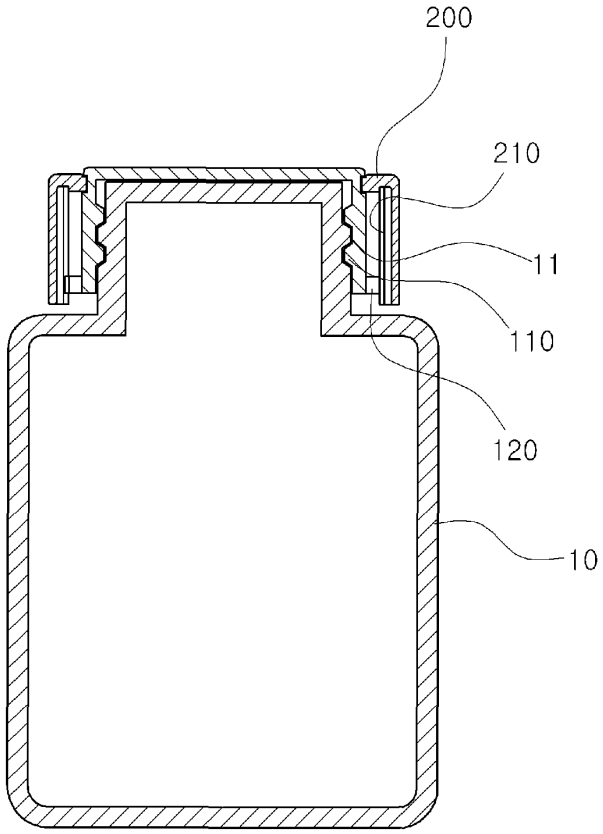
4. The cap of claim 1, wherein at the rotating protrusion is formed a mounting groove for mounting the front end of the engaging protrusion therein.

5. The cap of claim 1, wherein at the outer cap is formed a press indication part indicating a pressed portion in the outer surface facing the rotation protrusion for a user to rotate the outer cap while pressing the same.

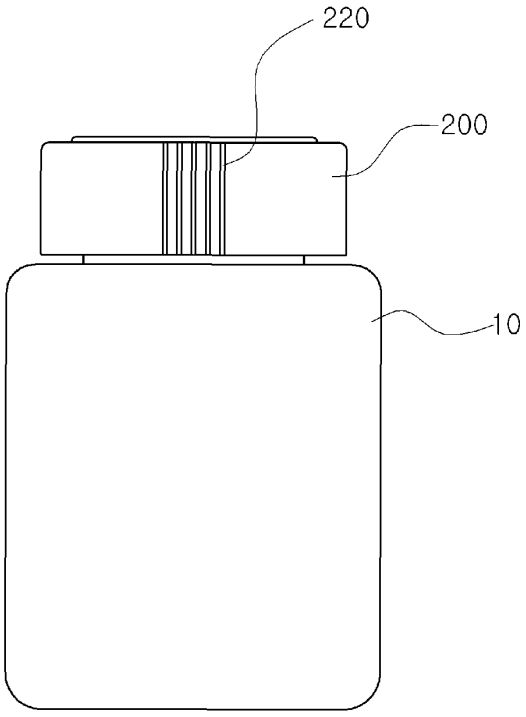
[Fig. 1]



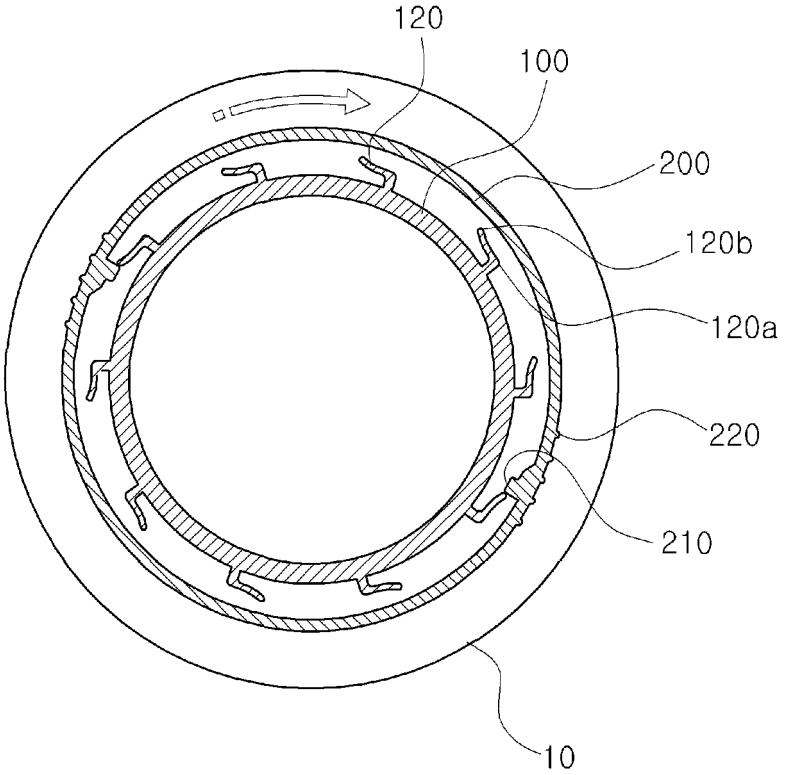
[Fig. 2]



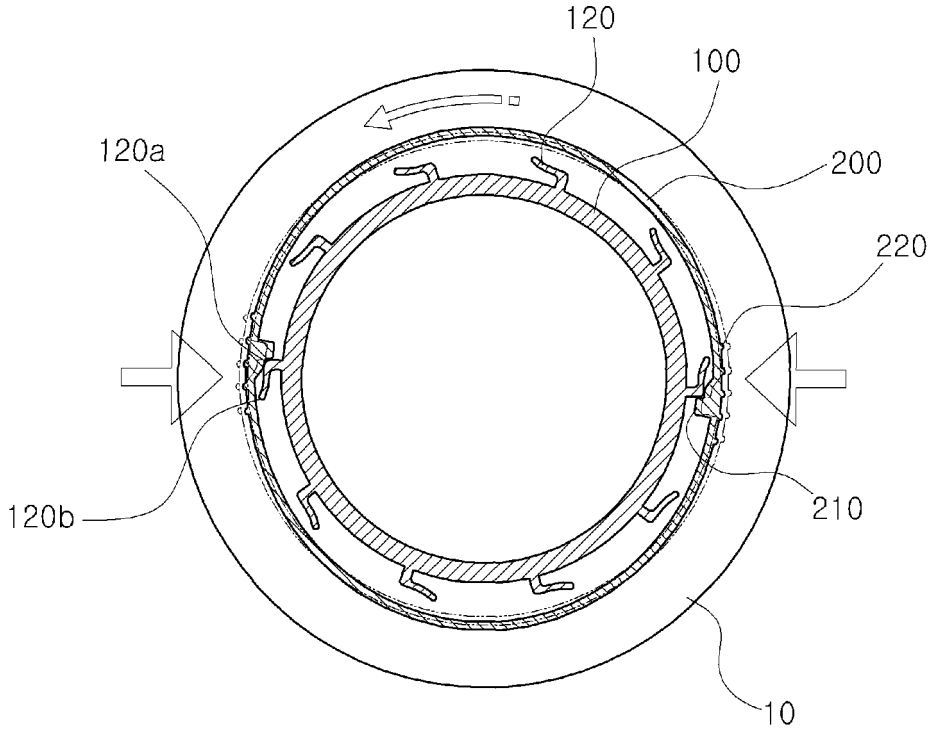
[Fig. 3]



[Fig. 4]


120
100
200
120b
120a
220
210
10

[Fig. 5]


120
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