March 2, 1926. 1,575,464

I. TAMURA

AIR TIGHT CAP FOR VESSELS

Filed Jan. 6, 1925

Fig. 1.

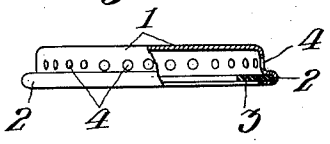


Fig. 4.

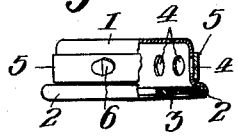


Fig. 2.

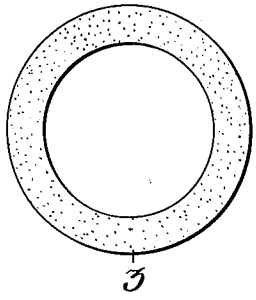


Fig. 5.

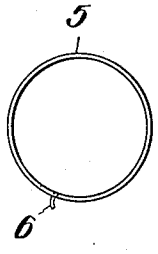


Fig. 3.

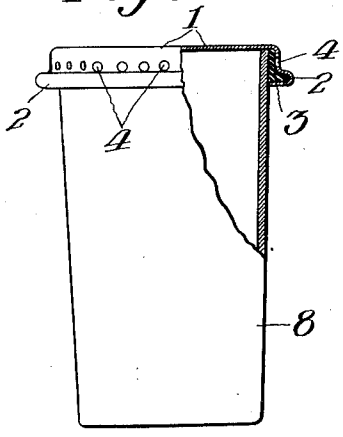
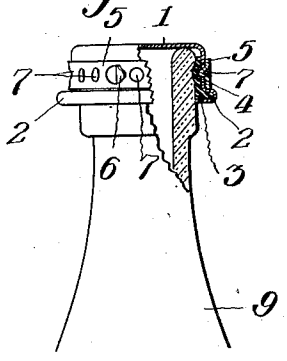


Fig. 6.



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UNITED STATES PATENT OFFICE.

IZO TAMURA, OF OSAKA, JAPAN.

AIR-TIGHT CAP FOR VESSELS.

Application filed January 6, 1925. Serial No. 888.

To all whom it may concern:

Be it known that I, IZO TAMURA, a subject of the Emperor of Japan, and a resident of No. 8, Temmabashi-suji 4-chome, Kita-ku, Osaka, Empire of Japan, have invented new and useful Improvements in Air-Tight Caps for Vessels, of which the following is a specification.

My invention relates to air-tight caps for vessels, and has for its object to obtain caps of the class specified which are easily and properly applied to bottles, cups, or other vessels with complete air-tightness. Another object of my invention is to obtain caps which can be readily removed from vessels which they have been applied to without spoiling them so that they can be used again and again. A further object of my invention is to get the caps easily and firmly sealed to vessels with a full reliability, whereby no one can touch the contents without breaking away the seals.

Referring now to the accompanying drawings, wherein:—

Fig. 1 is a side elevation of one embodiment of my invention, partly in section.

Fig. 2 is the plan view of the annular rubber piece shown in Fig. 1.

Fig. 3 is a side elevation showing the cap in Fig. 1 applied to a cup, partly in section.

Fig. 4 is a similar view of a modification to that shown in Fig. 1.

Fig. 5 is a plan view of the sealing piece shown in Fig. 4.

Fig. 6 is a similar view to Fig. 3 of the modification in Fig. 4.

In Fig. 1, my air-tight cap comprises an annular body, having a bottom 1 and an annular flange 2. The flange 2 is suitably bent back to grasp an annular rubber piece 3 at its outer edge. Along the side of the body are provided a number of holes 4. The width of the rubber piece 3 is such that it is sufficient to pass over the holes 4, when bent in along the side of the body. The piece is shown in Fig. 2 in plan view.

My improved cap is applied to a vessel such as a cup 8 in Fig. 3, with its rubber piece 3 on the cup tip, and pressed down to cover the tipwards end. The annular rubber piece is then bent in between the end and the body side to pack the same. During this operation, air compressed in the vessel is permitted to flow out through the holes 4, while at the end of the operation these holes are closed by the packing portion of the rubber piece 3, and an air-tight enclosure is perfectly formed.

For the removal of the cap, I slightly pull up same by its edge. Then the packing is loosed and the holes 4 communicate to within the vessel to allow a free passing of open air into the vessel. It is obvious that such a free communication facilitates the removal of the cap from the vessel tip.

In Figs. 4 to 6, I show a modification of my improved air-tight cap, suitable for a bottle sealing. The holes 4 are larger than that in Fig. 1, in diameter, for the purpose hereinafter described. The top end of the bottle 9 in Fig. 6 is inserted into the cap in the same manner as explained for the former embodiment. An annular sealing piece 5 of suitable material, having a tongue 6, is then applied to the cap around the latter to cover the series of holes 4 and pressed into the holes 4 at its portions 7 registering to the holes 4. The bottle end is provided with a peripheral groove registering or corresponding to the holes 4, and consequently the inward projections formed by the pressing in of the portions 7 firmly engage the groove having the rubber packing 3 therebetween, having the cap sealed.

For the removal of the cap, or for the unsealing, I pick the tongue 6 and thereby tear away the sealing 5. The rubber packing 3 then unengages the peripheral groove, and the cap is ready to be removed. Now that the sealing piece 5 is broken away, no one can reseal the bottle, unless he has quite a new sealing piece as well as pressing means above mentioned. This means a perfect reliability of the sealing.

Having now particularly described the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

The combination with a receptacle having a mouth provided on its outer surface with an annular groove, of a cap fitting over said mouth and including a disk provided with a depending skirt, said skirt having its lower edge bent to form an annular pocket, a resilient ring having its outer edge arranged in said pocket and adapted to lie between

the outer surface of the receptacle mouth and the inner surface of the skirt of the cap and to enter said groove, said skirt being provided with a circumferential series of apertures, and a sealing band arranged around the skirt of the cap and having projections extending through the apertures of the cap and engaging the resilient ring for forcing the latter into said groove, said band being provided with a tongue adapted to be grasped by the operator for unsealing the receptacle.

In testimony whereof I affix my signature.

IZO TAMURA.