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# (54) A bottle opener

(57) A bottle opener for removing caps from bottles comprises a cup-shaped removing member (3) being substantially symmetrical with respect to rotation, e.g. cylindrical or frusto-conical of an inner diameter being greater than the diameter of the cap to be removed. The removing member comprises an annular gripping means (1), which with its inner rim portion (16) may grip under the free rim of the cap during the use so as to loosen said cap from the bottle neck, and a cup-shaped retaining means (2) located substantially centrally relative to the gripping means (1) and capable of being pressed downwards on the top side of the cap during the use. A holding member (4) such as a holding cover surrounds the removing member (3) and keeps the parts (1) and (2) together. In this manner a bottle opener is obtained which is easy to orient and to maintain in the working position, and which is handy and of such a shape that it reliably grips about the rim of the cap when the latter is to be removed.

The holding member may be shaped as a drinking cup or bottle stand, the removing member being located in the bottom thereof.

The holding member (4) may be omitted, parts (1) and (2) being formed integrally.

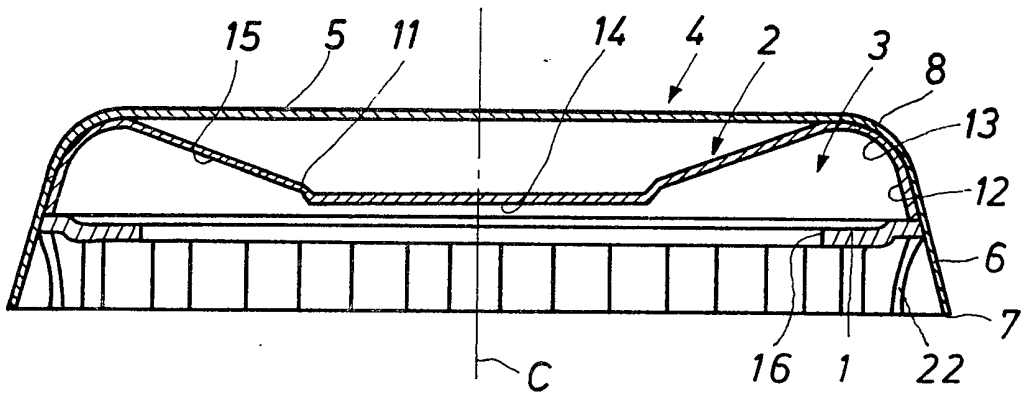


Fig. 3

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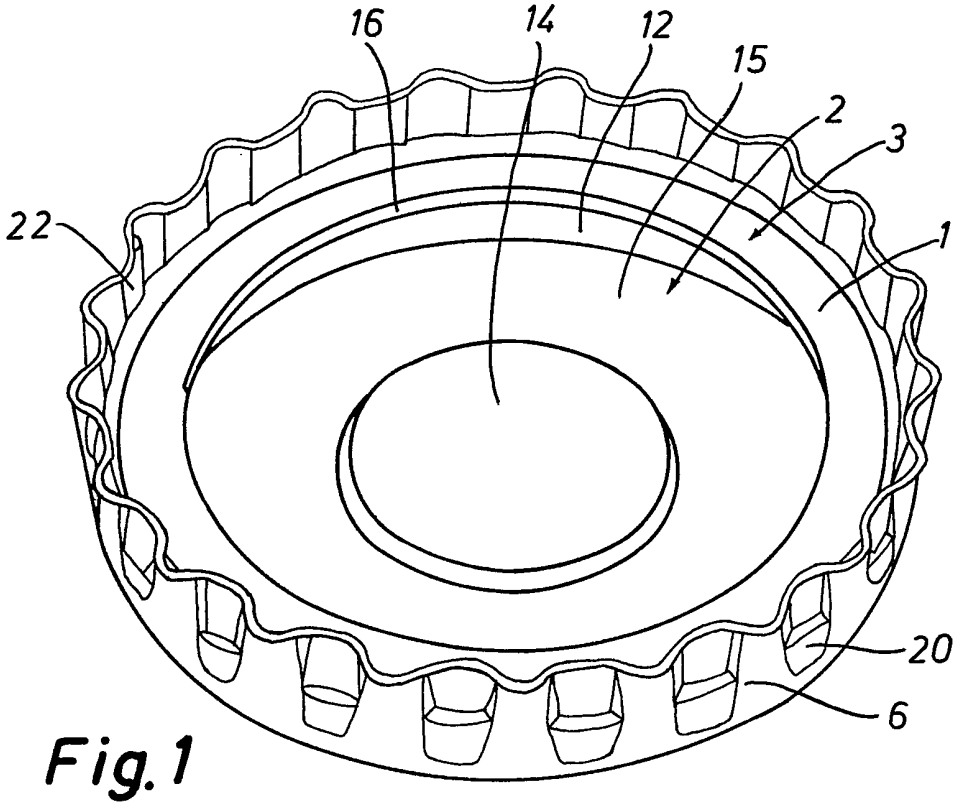


Fig. 1

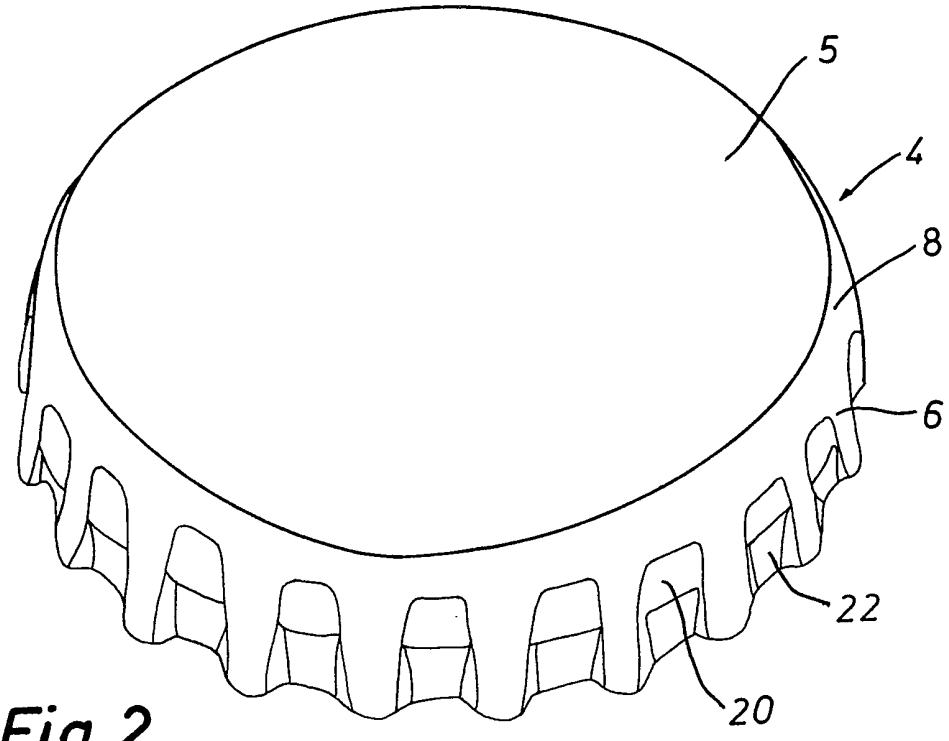


Fig. 2

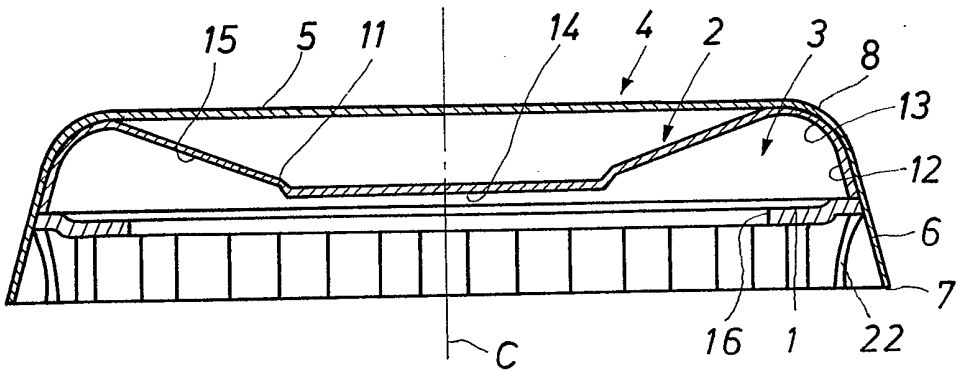


Fig. 3

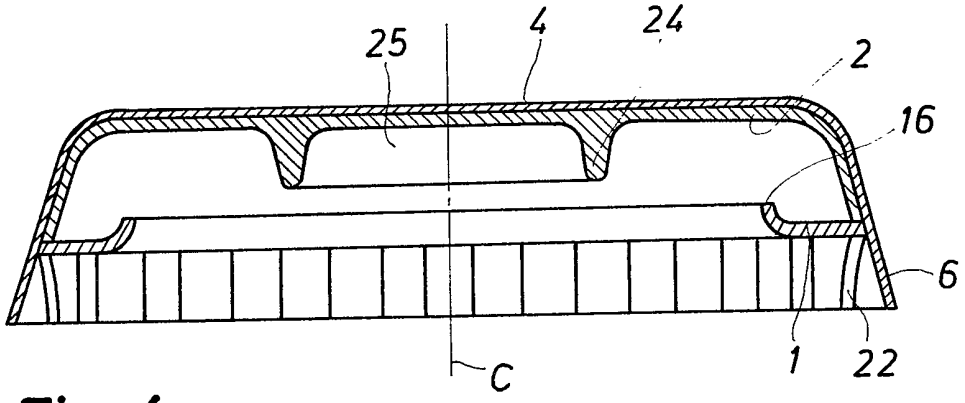


Fig. 4

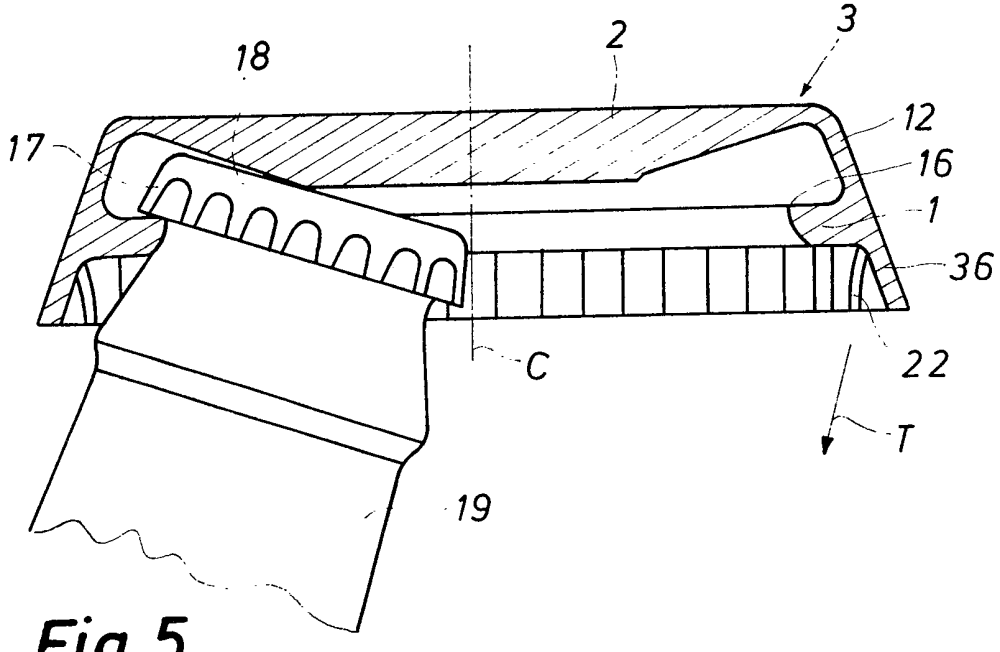


Fig. 5

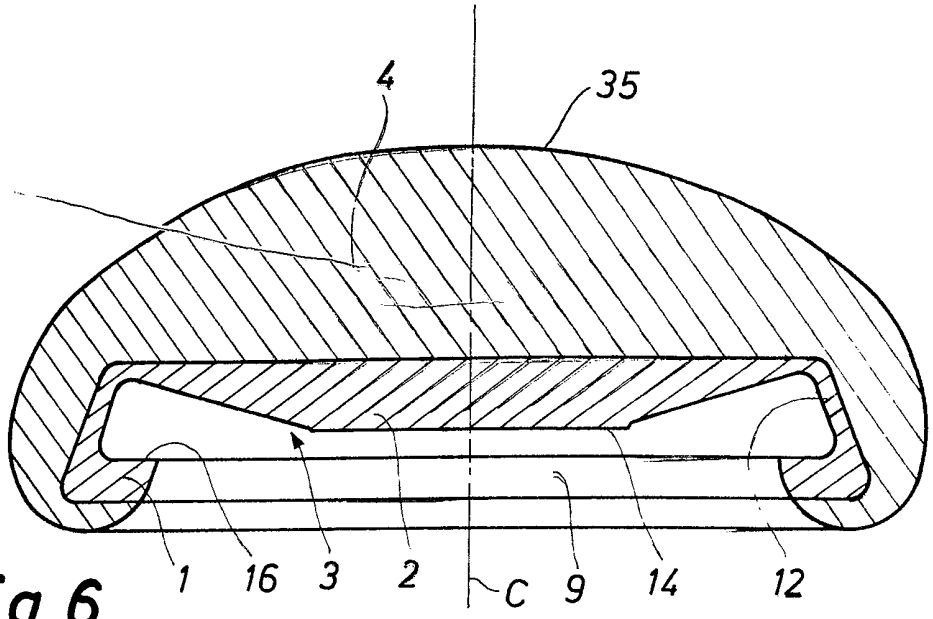


Fig. 6

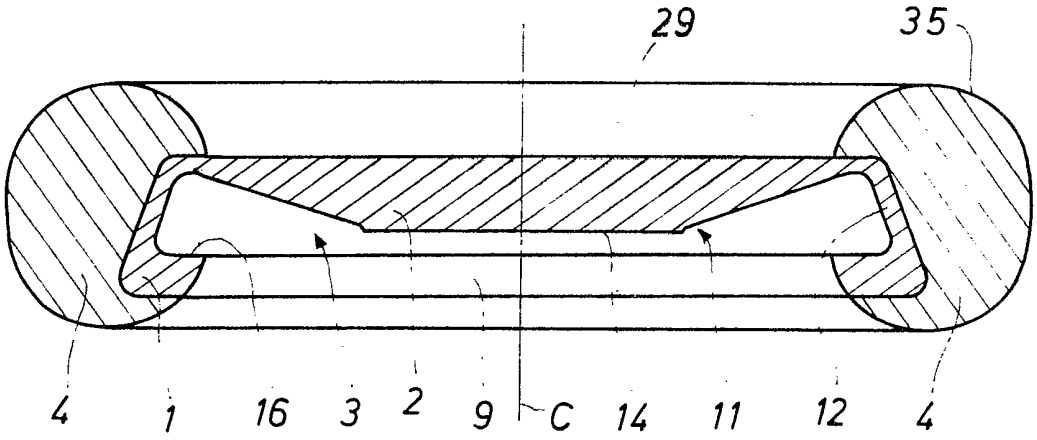


Fig. 7

SPECIFICATION

**A bottle opener**

The invention relates to a bottle opener for removing caps from bottles and which in use may be located on the cap and pressed downwards so as to subject the cap to a pull whereby the cap is tipped from the bottle neck

Bottle openers are known, whereby a hook-shaped part of one end of the bottle opener grips under the rim of the cap and then the cap is tipped from the bottle neck by a downward pressure on the opposite end. These bottle openers are, however, encumbered with the drawback that they must be turned in a quite specific manner and located and operated carefully in order to prevent them from sliding on the rim of the cap without removing said cap because they only have a relatively narrow portion capable of gripping the rim of the cap.

The object of the present invention is to provide a bottle opener which is easy to orient and maintain in the working position, and which is handy and of such a shape that it grips reliably in the rim of the cap when it with a quick motion of the hand is moved downwards over the cap.

The bottle opener according to the invention is characterised in that it comprises a cup-shaped removing member being substantially symmetrical with respect to rotation, e.g. cylindrical or frusto-conical, and of an internal diameter, which is greater than the diameter of the cap to be removed, and which comprises an annular gripping means, which with its inner rim portion may grip under the free rim of the cap during the use so as to loosen said free rim from the bottle neck, and which furthermore comprises a cup-shaped retaining means located substantially centrally relative to the gripping means and capable of being pressed downwards on the top side of the cap during the use, a holding member such as a holding cover, if necessary, being secured on the outside of the removing member. As the gripping means to be gripping under the free rim of the cap is a circular inner rim portion, it is rendered possible to orient the removing member correctly in an easy manner, only an arbitrary portion of this rim portion having to engage the free rim of the cap. The circular shape of the bottle opener furthermore ensures that the bottle opener is not particularly inclined to slide on the cap, but instead is easy to maintain in the working position. The symmetrical shape with respect to rotation of the removing member ensures that the bottle opener is handy in any working position. The outer holding member implies partly that the parts of the removing member are kept together, and partly that a grip-improving and characteristic, decorative surface is obtained.

According to the invention, the gripping means is formed in the outer wall of the removing member in such a manner that it turns towards the centre of the removing member, and it comprises a gripping rim portion, the surface of which may be smooth or serrated, the gripping means preferably being situated in a plane perpendicular to the axis of rotation, whereby a particularly advantageous shaping is obtained, which furthermore is simple to manufacture.

When the gripping rim portion is turned downwards towards the bottom of the removing member, a particularly advantageous shaping of the gripping rim portion is obtained, whereby both its strength and its non-deformability are improved. The gripping rim portion may optionally be tapering so as better to find its way under the rim of the cap.

When the opening of the gripping means is of a diameter equal to or exceeding the bottom diameter of the bottle, it is furthermore possible to place the bottle in the bottle opener, the latter thereby serving as a bottle base.

By providing the retaining means forming the bottom portion and the outer wall of the removing member with a substantially circular-cylindrical, optionally annular projection at the central portion of the bottom of the removing member, the bottle opener possesses a uniform retaining towards the top side of the cap in any working position, whereby the function of the bottle opener in any direction is performed in a uniform manner by means of the principle of the lever.

When the height of the projection above the bottom of the removing member does not exceed essentially the total axial internal height of the removing member and preferably is a short distance shorter than said height of the removing member, it is always possible to obtain an appropriate working position for the user of the bottle opener.

A particularly advantageous embodiment of the functional portions of the bottle opener is obtained, when the distance between the gripping rim portion and the projection of the retaining means is constant along the periphery of the gripping means and is of the same magnitude as the radius of the cap to be removed, the bottle opener then functioning uniformly along the entire periphery of the gripping means.

When the distance between the gripping rim portion and the projection of the retaining means varies along the periphery of the gripping means, e.g. because the projection is obliquely cut or located eccentrically relative to the gripping means or the opening thereof, the same bottle opener may easily be used for several types or sizes of caps or for various shapings of bottle necks.

According to a particularly advantageous embodiment of the bottle opener, the portion

of the bottom of the removing member located radially outside the central projection is substantially frusto-conical and inclines inwards and upwards towards said projection, whereby this frusto-conical surface is guiding the bottle opener when the latter is placed on top of the cap.

According to a particularly preferred embodiment of the bottle opener, the gripping means of the removing member and the retaining means are mutually separated and of substantially the same outer diameter, the gripping means and the retaining means being located closed to each other and maintained in this position. In this manner it is rendered possible to manufacture the individual parts of various material and in various manners.

When a substantially frusto-conical cap is used as holding cover, whereby the cap is open at its wide end and closed by means of a top portion at its narrow end, and whereby the inner shape of the cap fits into and abuts the outer bottom portion of the removing member, the cap and its skirt preferably extending beyond the cup-shaped removing member so that the latter is tightly surrounded and retained, a good maintaining of the removing member is ensured. Furthermore, the bottle opener surface is easy to hold on and has a nice appearance.

The above is underlined by the feature that for small, substantially axial or inclined, and preferably equidistant partial portions, the skirt is pressed radially inwards towards the removing member in such a manner that the part of the partial portions of the skirt extending beyond the removing member is pressed a short distance inwards beyond the outer periphery of said removing member. In this manner small projections of pressed-in skirt are formed, which tightly maintain and lock the removing member in a position in which it abuts the top portion of the holding cover, and whereby the holding cover furthermore obtains the characteristic look of a bottle cap.

A particularly inexpensive embodiment may be obtained by the gripping means and the retaining means of the removing member being integrally formed, and by a skirt shaped as holding member in the form of an extension of the outer wall of the removing member beyond the annular gripping means optionally being provided instead of a particular holding cover, said skirt, if necessary, being provided with outer, substantially axial or inclined, and preferably equidistant recesses along the periphery of said skirt. Such an embodiment may be manufactured in one working operation by welding, and in this manner a particularly solid embodiment of the bottle opener is obtained, optionally whilst maintaining the above characteristic shape.

A particularly easy and elegant embodiment may be obtained by the gripping means and the retaining means of the removing member as well as the holding cover being made of punched sheet material pressed or pulled into shape.

By shaping the holding member with a domed surface and by making it substantially solid, whereby, however, it may comprise material-saving cavities and for instance be annular with an opening greater than the bottom diameter of the bottle, an embodiment is obtained, which is well fit for certain materials such as glas, plastics, wood or ceramic materials. When the circular holding member is provided with a sufficiently great opening, the bottle opener may furthermore be used as a bottle base or optionally as an ash-tray.

The bottle opener may be manufactured of many different materials, and parts of or the entire bottle opener may for instance be made of hard, preferably stainless material such as stainless steel or cast iron, and other parts may optionally be made of another material, preferably stainless material such as metal, alloys, glas, plastics or wood and corresponding materials. As a result, numerous variations are possible both regarding shape and material combinations.

The invention will be described below with reference to the accompanying drawings, in which

*Figure 1* is a perspective view of a rotational, frusto-conical bottle opener according to the invention, whereby a removing member with cover appears,

*Figure 2* is a perspective view of the cover of Fig. 1, seen from the outside,

*Figure 3* is an axial sectional view through the embodiment of Fig. 1,

*Figure 4* is an axial sectional view through a second similar embodiment,

*Figure 5* is an axial sectional view through an embodiment integrally formed and illustrated in the working position on a bottle with a cap,

*Figure 6* is an axial sectional view through an embodiment with a removing member, the gripping means and the retaining means being integrally formed, and a holding member with a domed surface, and

*Figure 7* is an axial sectional view through an embodiment with a removing member made in one piece, and a circular holding member.

The bottle opener illustrated in Figs. 1, 2, and 3 comprises three parts, viz. an annular gripping means 1 and a cup-shaped holding member 2, which together form a cup-shaped removing member 3, as well as a cap-shaped holding cover 4 surrounding and securing said parts. The three parts are made of sheet material punched or cut, and individually pressed or pulled into shape and subsequently assembled. The holding cover 4 comprises a circular, plane top portion 5 and a rotational, frusto-conical skirt 6, the diameter of which is

greatest at the free rim. The transition between the top portion 5 and the skirt 7 is shaped with a curve 8. The cup-shaped holding member 2 comprises a circular bottom portion 11, a substantially rotational, frusto-conical outer wall 12, and a transition portion with a curve 13 therebetween. The shape and dimension of the holding member are such that it with the outer wall fits exactly into the skirt and the curve of the holding cover 4, cf. Fig. 3. The bottom portion 11 comprises a central part pressed upwards as a projection 14 beyond the remaining bottom portion forming a rotational, frusto-conical surface 15 between the projection 14 and the curve 13. The outer diameter of the annular gripping means 1 corresponds almost to the outer diameter of the wall 12, and the gripping means is located within the holding cover 4 in such a manner that its outer rim abuts said wall 12. The gripping means 1 is of a slightly double-curved profile, but is otherwise substantially located in a plane perpendicular to the axis of rotation C. Furthermore, the gripping means has a sharp inner rim portion or gripping rim portion 16 fit to grip under the free rim 17 of a bottle cap 18, cf. Fig. 5. The diameter of the opening within the gripping rim portion 16 corresponds to about twice the diameter of the cap 18 to be removed. The distance between the gripping rim portion 16 and the rotational, frusto-conical surface 15 is a short distance greater than the height of the cap 18 to be removed, whereby the bottle opener easily may be located on the cap 18 with the gripping rim portion 16 extending under the free rim 17 of said cap. The radial distance between the surface of the projection 14 and the inner side of the gripping rim portion 16 adjacent the projection 14 must, however, preferably be shorter than the height of the cap 18 in such a manner that said cap when being removed only touches the rim of the projection 14 and thereby tips and bends about the rim of said projection during the removing. This distance may optionally be equal to or exceed the height of the cap 18, when the projection 24 is an annular projection 24 as illustrated in Fig. 4. As a result, the cap 18 may nevertheless be tipped and bent about the annular projection 24, part of the cap then being present in the cavity 25 of the projection.

As illustrated in Figs. 3 and 4, the holding cover and its skirt 6 extend beyond the holding member 2 and gripping means of the removing member tightly surrounded and secured through said holding member and its skirt. Furthermore as illustrated in Figs. 1 and 2 as well as in Figs. 3 and 4, the skirt 6 is for substantially axial, equidistant partial portions 20 pressed radially inwards towards the removing member 3 in such a manner that the part 22 of the partial portions of the skirt extending beyond the removing member is pressed a short distance inwards past the outer periphery of the removing member. In this manner small projections 22 of pressed-in skirt 6 are produced, which tightly maintain and lock the removing member 3 in a position in which it abuts the top portion 5 of the holding cover 4. At the same time, the portions pressed in on the outer side provide a characteristic serrated surface on the skirt, said surface partly providing it with a cap-like look and partly rendering it easier to hold about the bottle opener.

Fig. 4 illustrates how the annular gripping means 1 with its inner gripping rim portion 16 may be pulled up in such a manner that it is directed towards the bottom portion of the removing member, which provides it with an increased resistance to bending during the use. As previously mentioned, the cup-shaped holding member 2 comprises an annular projection 24. This holding member 2 may be formed integral with the annular projection 24, e.g. through welding, or be punched in sheet material without the projection 24 then being secured subsequently, e.g. through welding or spot welding. The annular gripping means 1 and the cup-shaped holding member 2 are secured in the same manner as illustrated in connection with the embodiment of Fig. 3, i.e. secured tightly through a holding cover 4. The skirt 6 of this holding cover is for small substantially radial partial portions 20 pressed towards the annular gripping means 1 and the cup-shaped holding member 2, whereby the part of the skirt 6 extending beyond the gripping means 1 is pressed a short distance inwards past the outer periphery of the removing member.

Fig. 5 illustrates an embodiment without a particular holding cover, but whereby the removing member comprises a skirt-like extension 36 of the outer wall 12 beyond the gripping means 1. This embodiment is as illustrated manufactured in one piece, e.g. through welding and optionally with a subsequent finishing. The outer wall 12 and the skirt-like extension 36 may as indicated at 22 have recesses or projections of the same type as illustrated in Figs. 1 and 2 for the purpose of a grip-improving and decorative effect. Fig. 5 furthermore illustrates how the bottle opener must be located above a cap 18 on a bottle 19 in order to remove said cap, and the arrow T indicates the direction in which a pressure must be carried out on the bottle opener during the use.

In the most simple embodiment of the bottle opener according to the invention, the bottle opener only comprises the removing member illustrated in Fig. 5 and made in one piece, but without the skirt 6.

Fig. 6 illustrates an embodiment with a removing member 3 made in one piece and with a solid holding member 4 with a domed surface 35. The holding member 4 may for

instance be made of wood, plastics, glas or ceramic materials and optionally be transparent.

Fig. 7 illustrates an embodiment with a removing member made in one piece and with an annular holding member 4, whereby the opening in the holding member is greater than the diameter of a bottle bottom, thus rendering it possible to use the bottle opener as a bottle base.

The holding member may furthermore be shaped as a drinking-cup, a cup or as a pitcher, the removing member being located in the bottom thereof. The securing of the removing member to the holding member may be produced in many different manners, e.g. through sticking, screwing in, snap-locking, welding or by any known assembling method.

The bottle opener may be manufactured of numerous materials and material combinations, but stainless materials such as stainless steel, aluminium, cast iron, bronze, brass and the like are preferably used, and at least parts thereof may be made of other materials such as wood, plastics, and ceramic materials, or for instance of transparent material such as glas or plastics, whereby many different effects are obtained.

CLAIMS

1. A bottle opener for removing caps from bottles and which in use may be located on the cap and pressed downwards so as to subject the cap to a pull whereby the cap is tipped from the bottle neck, characterised in that it comprises a cup-shaped removing member being substantially symmetrical with respect to rotation, e.g. cylindrical or frusto-conical, and of an internal diameter, which is greater than the diameter of the cap to be removed, and which comprises an annular gripping means, which with its inner rim portion may grip under the free rim of the cap during the use so as to loosen said free rim from the bottle neck, and which furthermore comprises a cup-shaped retaining means located substantially centrally relative to the gripping means and capable of being pressed downwards on the top side of the cap during the use, a holding member such as a holding cover, if necessary, being secured on the outside of the removing member.

2. A bottle opener as claimed in claim 1, characterised in that the gripping means is formed in the outer wall of the removing member in such a manner that it turns towards the centre of the removing member, and that it comprises a gripping rim portion, the surface of which may be smooth or serrated, the gripping means preferably being situated in a plane perpendicular to the axis of rotation.

3. A bottle opener as claimed in claim 1 or 2, characterised in that the gripping rim portion is turned downwards towards the bottom of the removing member.

4. A bottle opener as claimed in one or more of the preceding claims 1–3, characterised in that the opening of the gripping means if of a diameter equal to or exceeding the bottom diameter of the bottle.

5. A bottle opener as claimed in one or more of the preceding claims 1–4, characterised in that the retaining means forms the bottom portion and the outer wall of the removing member, and that it at the central portion of the bottom of the removing member is provided with a substantially circular-cylindrical projection which also may be annular.

6. A bottle opener as claimed in one or more of the preceding claims 1–5, characterised in that the height of the projection above the bottom of the removing member does not exceed essentially the total axial internal height of the removing member and preferably is a short distance shorter than said height of the removing member.

7. A bottle opener as claimed in one or more of the preceding claims 1–6, characterised in that the distance between the gripping rim portion and the projection of the retaining means is constant along the periphery of the gripping means and is of the same magnitude as the radius of the cap to be removed.

8. A bottle opener as claimed in one or more of the preceding claims 1–7, characterised in that the distance between the gripping rim portion and the projection of the retaining means varies along the periphery of the gripping means, e.g. because the projection is obliquely cut or located eccentrically relative to the gripping means or the opening thereof.

9. A bottle opener as claimed in one or more of the preceding claims 1–8, characterised in that the portion of the bottom of the removing member located radially outside the central projection is substantially frusto-conical and inclines inwards and upwards towards said projection.

10. A bottle opener as claimed in one or more of the preceding claims 1–9, characterised in that the gripping means of the removing member and the retaining means are mutually separated and of substantially the same outer diameter, the gripping means and the retaining means being located close to each other and maintained in this position.

11. A bottle opener as claimed in one or more of the preceding claims 1–10, characterised in that a substantially frusto-conical cap is used as holding cover, said cap being open at its wide end and closed by means of a top portion at its narrow end, and that the inner shape of the cap fits into and abuts the outer bottom portion of the removing member, the cap and its skirt preferably extending beyond the cup-shaped removing member so that the latter is tightly surrounded and re-

tained.

12. A bottle opener as claimed in claim 11, charterised in that for small, substantially axial or inclined, and preferably equidistant partial portions, the skirt is pressed radially inwards towards the removing member in such a manner that the part of the partial portions of the skirt extending beyond the removing member is pressed a short distance inwards beyond the outer periphery of said removing member.

13. A bottle opener as claimed in one or more of the preceding claims 1–9, 11 or 12, characterised in that the gripping means and the retaining means of the removing member are integrally formed, and that a skirt shaped as holding member in the form of an extension of the outer wall of the removing member beyond the annular gripping means is optionally provided instead of a particular holding cover, said skirt, if necessary, being provided with outer, substantially axial or inclined, and preferably equidistant recesses along the periphery of said skirt.

14. A bottle opener as claimed in one or more of the preceding claims 1–12, characterised in that the gripping means and the retaining means of the removing member as well as the holding cover are made of punched sheet material pressed or pulled into shape.

15. A bottle opener as claimed in claim 1, characterised in that the holding member has a domed surface, and that it is substantially solid, whereby it, however, may comprise material-saving cavities, and whereby it for instance may be annular and provided with an opening being of a diameter greater than the bottom diameter of a bottle.

16. A bottle opener as claimed in one or more of the preceding claims 1–15, characterised in that parts of or the entire bottle opener is made of hard, preferably stainless material such as stainless steel or cast iron, and that other parts are optionally made of another material, preferably stainless material such as metal, alloys, glas, plastics or wood and corresponding materials.

17. A bottle opener substantially as described above with reference to the accompanying drawings.

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