

## SHAPED CAPS AND CONTAINERS

### FIELD OF THE INVENTION

The present invention relates to the positioning of a cap on a container and is intended particularly but not exclusively to be applied to perfume bottles.

### BACKGROUND OF THE INVENTION

It is known that most bottles are closed by a cap which screws onto the neck or spout, a liquid-tight seal being placed between the upper part of the neck of the bottle and the inside ring of the cap. Closure is obtained by a helical movement (rotating plus translation), of the cap on the neck. During the closing of the bottle the seal flattens, thus braking the translation movement whilst the rotary movement can continue as a function of the force couple exerted on the cap. It is found that in relation to the body of the bottle, the rotational orientation of the cap when the bottle is fully closed can vary over an angle which is of the order of 90°, this angle depending of course on the pitch of the thread and the compressibility of the seal.

This fact is not a significant disadvantage when the cap and the bottle are rotationally symmetrical. It is not the same when the bottle and/or the cap have polygonal sections, for example, square ones. More often than not in that case the cap is out of line, which distinctly spoils the appearance of the whole.

In the perfume industry, the product in the bottle being by definition very volatile, it is essential to arrange for a closure which ensures a perfect fit. To this end, it has been known to arrange inside the cap proper a skirt with external fluting and internal threading which, by resilient deformation absorbs the differences in dimensions arising from manufacture and ensures fluid-tightness by close contact with the material of the bottle.

### SUMMARY OF THE INVENTION

An object of the invention is to realise a simple device which ensures a specified orientation of the outside of the cap relative to the body of the container.

It is a further object of the invention to provide a positioning device for a cap on a container which is effective to orientate the cap at a time when a vapour-tight seal has been established between the cap and the container.

It is yet a further object of the invention to provide a positioning device effective between a container and a two-part cap the inner part of which forms the seal with the container and the outer part of which forms a driving engagement with the inner part and also has a stop member for defining, with an abutment member on the container, the said predetermined orientation.

It is a yet further object of the invention to provide a two-part cap for a container in which, on assembly, an inner part first forms a sealing engagement with the container and the outer part is then pushed axially into driving engagement with the inner part in an orientation determined by abutment elements on the container and the outer part of the cap.

More specifically, an internally screw-threaded cap for screwing onto the neck of a bottle has at its lower end (the end nearest to the body of the bottle) an inwardly-extending face. At the shoulder of the bottle there is an outwardly extending face. When the cap is screwed down onto the neck, the two faces come into

abutment and block further rotation of the cap as a whole.

Thus, the translational movement of the cap having been more or less stopped by the braking action of the neck on the seal or the fluted skirt, the rotational movement is blocked by the abutment. One can then be sure that the cap will stop in a predetermined orientation in relation to the body of the bottle.

When the cross-sections of the bottle and the cap are polygonal, e.g. being substantially square, the abutment face preferably extends in the direction of a diagonal plane of the bottle. The cross-sectional outlines of the cap and the body of the bottle may of course be the same or different but the cross-section area through the cap will usually be not greater than that of the body of the bottle.

Other characteristics and advantages of the invention will appear in the course of the description which follows.

### DESCRIPTION OF THE DRAWINGS

FIG. 1 is an external view of a bottle actually on the market, which does not differ in its external appearance from a bottle embodying the invention;

FIG. 2 is a view of a bottle embodying the invention, the cap being separated from the body of the bottle;

FIG. 3 is a partial section of the upper end of the bottle of FIG. 2 and of the cap;

FIG. 4 is a sectional view along the line A—A of FIG. 3.

### DESCRIPTION OF A PREFERRED EMBODIMENT

FIG. 1 shows one type of bottle actually on sale, which does not differ externally from a bottle provided with a device according to the invention. This bottle has a body 1 and a cap 2 screwed onto the body 1. The problem which is solved by the invention is that of ensuring that the side 1a of the body of the bottle will finish up parallel with side 2a of the cap after the cap has been unscrewed from the bottle and then screwed on again.

As is shown more clearly in FIG. 2, this problem is solved by forming on the shoulder of the bottle an abutment surface able to cooperate with a stop element formed in the outer part of the cap 2. It can be seen in FIG. 2 that the body 1 is joined by means of a flange 3, forming part of the shoulder, to a neck 4. The neck 4 is threaded, the threads 5 being able to cooperate with a threading 5a inside the inner part of the cap 2 which is a capsule 21 having external flutes 22 which by cooperating with corresponding ridges in the outer part ensure that the outer part of the cap and the skirt are drivingly engaged together. A rib 8 ensures the centering of the cap on the neck. As is shown in FIG. 2, thickening 6 upstanding on the flange 3 has a vertical, generally radially directed, abutment face 6a. This abutment face 6a cooperates during the closing of the bottle with a vertical, generally radially directed, face of a stop element 7 formed inside and at the bottom part of the outer part of the cap. During the screwing of the cap onto the neck, the cap and therefore the stop part turn freely about the neck until, following the translational movement of the cap, the face 7 of the stop part comes into contact with the face 6a of the thickening 6. Further rotary movement is thus blocked, which ensures the