

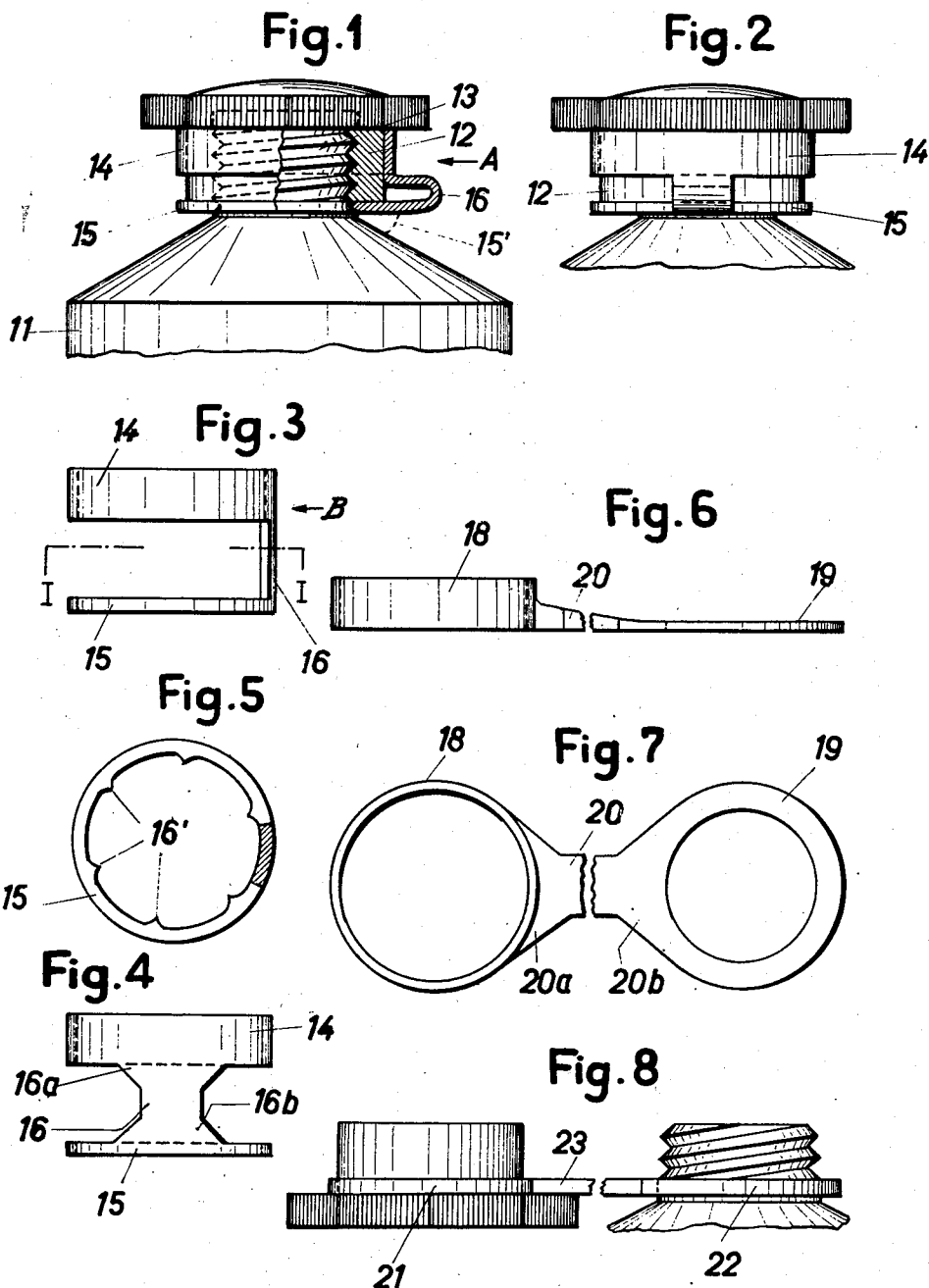
Jan. 8, 1952

P. FISCH

2,581,849

CONTAINER WITH CAP

Filed Dec. 20, 1948



INVENTOR

Paul Fisch

UNITED STATES PATENT OFFICE

2,581,849

CONTAINER WITH CAP

Paul Fisch, Zurich, Switzerland, assignor to
Transimpex, Import, Export und Transit A. G.,
Zurich, Switzerland

Application December 20, 1948, Serial No. 66,161
In Switzerland October 1, 1948

4 Claims. (Cl. 220—38.5)

1

This invention is concerned with a connector device for the cap and the neck of a container. It is an object of the invention to provide a non-metallic connector which is characterized by two rings so constructed and connected with each other, that the cap is yieldably held relatively to the neck of the container. It is another object of the invention to provide means affording unequal tension of the two connector rings, of which only one turns as the cap is screwed or unscrewed, the unequal tension of said rings being obtained due to unequal external diameter of the cap and the neck of the tube even if the two rings have equal internal diameters.

Connectors with a bridge or strap which springs outwardly have already been suggested, however merely for the purpose of removing the cap automatically away from the opening of the neck of the tube. According to the invention, however, a new action is achieved by an elastic bridge which tends to hold the rings apart, making chamfer rings on cap and neck unnecessary.

Various novel characteristics and advantages of the invention and the novel features of construction and arrangement ensue from the following description with the accompanying drawing, wherein:

Fig. 1 is a side view partly in section of the head or cap of a tubular container having applied thereto a connector made according to the invention,

Fig. 2 is a side elevational view as seen in direction of arrow 1, Fig. 1,

Fig. 3 is a side elevation of a connector embodying the invention,

Fig. 4 is an end view of the connector seen in Fig. 3,

Fig. 5 is a sectional view taken along line 5—5 of Fig. 3,

Fig. 6 is a side view of a connector in modified form,

Fig. 7 is a top plan view of the connector of Fig. 6,

Fig. 8 is a side view of a connector of a further modified form as applied to a cap and a threaded neck of a container.

According to Figs. 1 and 2, the container consists of a tube 11 with a threaded neck 13, on which is fitted a screw cap 12. Tube 11 and cap 12 are joined together by a connector, which freely engages the cap to permit same to be unscrewed and removed from the neck without becoming detached. The connecting device is formed from a single piece of material and consists of two rings 14 and 15, which are inter-

2

connected by a band or strap. The band 16 is broader at 16a and 16b where it is jointed to rings 14 and 15, and provides for a substantially stiffer joint. The connecting device is formed preferably from a rubber tube, part of the wall of which has been cut out. Cylindrical ring 14 holds cap 12, and ring 15 engages neck 13 of tube 11. The internal diameter of the rubber tube from which the connector is formed should correspond to approximately the external diameter of the threads on neck 13, so that ring 15 easily moves around the neck. To facilitate twisting, the inner surface of ring 15 is grooved in axial direction, radially or possibly in spiral fashion, so that its entire inner surface does not contact and grip the neck 13, see 16' in Fig. 5.

Since the external diameter of the cylindrical part of cap 12 is greater than that of neck 13, ring 14 will grip cap 12 more firmly than ring 15 will engage neck 13, so that cap 12 will not slip in ring 14. The joining strip 16 is designed to be longer than the length necessary to join the two rings 14, 15 when the cap is screwed on. Since ring 14 is tightly fastened to cap 12 ring 15 is pressed against tube 11 by screwing the cap on the tube so that a chamfer groove to hold ring 15 on tube 11 is unnecessary.

In order to increase the firmness with which cylindrical ring 14 grips cap 12, it is advantageous to increase the contact surface of ring 14 in comparison to that of ring 15, by choosing an appropriate cut out in the manufacture of the connecting device.

An additional development of the invention makes possible the use of ring 15 as a washer by forming the ring to fit the shoulder of the tube (Fig. 1, illustrated by dotted line 15'). In closing the tube, the ring is squeezed between cap 12 and the shoulder of tube 11 preventing the escape of the contents.

Other embodiments of the invention are shown in Figs. 6, 7 and 8. Figures 6 and 7 show a connecting device, having two rings 18 and 19 which however do not form parts of a tube, but are rather connected in alignment with each other by strip 20, which must be at least longer than the length necessary to join the two rings 18, 19 when in superposed position and when the cap is screwed on the threaded neck of the container. The rings 18 and 19 tend to extend in a plane when released or when the cap is unscrewed rather than above one another as in the first embodiment. The rings above mentioned may have like or unlike diameters and may be manufactured together with strip 20 of a nonmetallic

3

elastic substance, such as natural or synthetic rubber and may be moulded, stamped, etc. Again as in the first embodiment, strip 20 is broadened at 20a and 20b where it joins the rings. The strip 20 is further stiffened in that its longitudinal section is wedge-shaped. Also in this embodiment one of the rings has spiral ribs on its inner surface to reduce friction.

A further modification is illustrated in Fig. 8. The connector consists of rings 21 and 22 with strip 23 similar to connector device 18, 19, 20 except that rings 21 and 22 are equally thick.

The embodiments described above are intended only as examples, not in any way to be interpreted to limit the scope of the invention, as the connector device may also be manufactured from elastic textiles.

What it is desired to claim and secure by Letters Patent of the United States is:

1. In a container having a threaded neck including an upper and a lower part and a cap adapted for engagement with said threaded neck; a flexible non-metallic connector device made from a single piece of a tubular body cut so as to provide two co-axially arranged and normally spaced apart rings and a strap interconnecting said rings, one of said rings being adapted for position at the lower end of said threaded neck and for rotation thereabout, the other ring being adapted for frictional and firm engagement with said cap, said strap being of such length that in engagement position of said cap on said threaded neck said strap projects laterally beyond said

4

rings whereby upon disengagement of said cap from said upper part of said threaded neck said cap will be springedly removed from said threaded neck by said strap and securely held by the latter on said container.

2. In a container according to claim 1, wherein the inner face of said strap is conformed in shape to coincide with the inner diameter of said rings.

3. In a container according to claim 1, wherein the length of said strap corresponds at least to the height of said threaded neck of said container.

4. In a container according to claim 1, wherein the height of one of said rings is greater than that of the other of said rings, said other ring forming a washer for engagement with said cap when screwed home on said threaded neck of said container.

PAUL FISCH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,201,254	Clark	Oct. 17, 1916
1,522,779	Hellman	Jan. 13, 1925
1,836,811	McNeal	Dec. 15, 1931
1,937,674	Teason	Dec. 5, 1933
1,972,481	Gray	Sept. 4, 1934
2,036,351	Mulhens	Apr. 7, 1936