

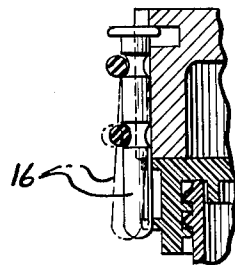
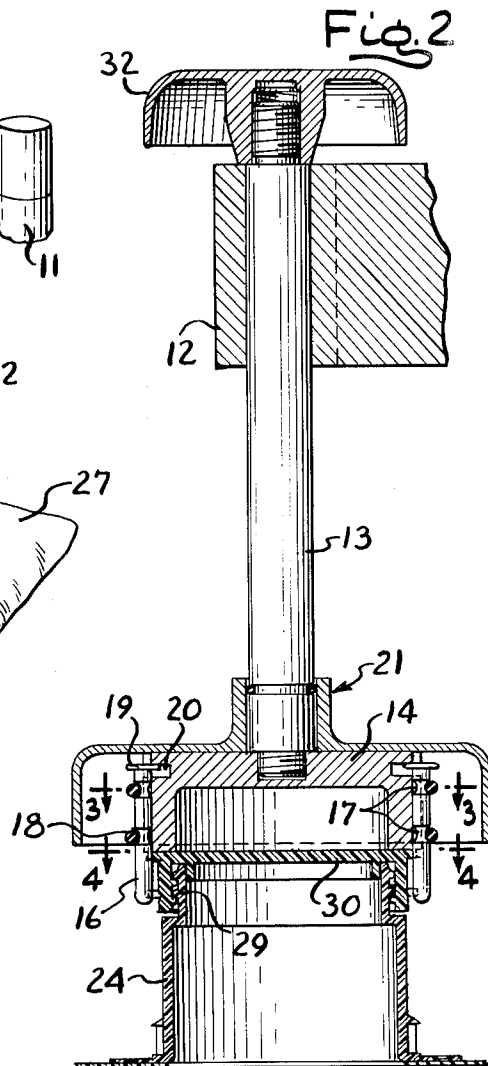
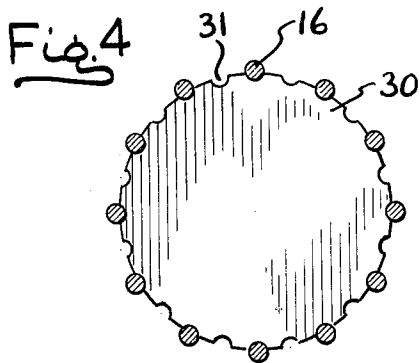
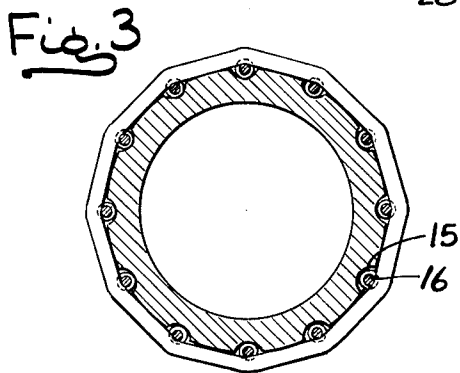
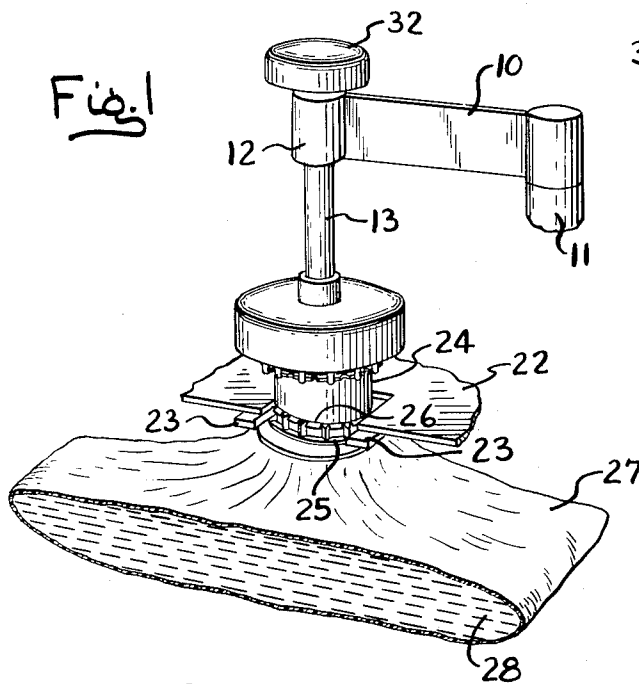
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3,262,247

CAPPER

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CAPPER

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5 Claims. (Cl. 53—317)

This invention relates to improvements in a capping device or more specifically to a torque capper.

It is an object of the present invention to provide a novel means for securing caps onto container nozzles in a quick and convenient manner.

It is another object of the present invention to provide a capping device which effectively and securely applies a closure cap to a nozzle in a sanitary manner and one which permits a minimum manual operation and thus avoids contact with for example milk or acid materials when such liquids are being packaged.

Other objects and advantages of the present invention relate to details of construction, arrangement of parts, and economies thereof, as will be apparent from the following specification and accompanying drawings wherein:

FIG. 1 is a perspective view of the device of the present invention illustrating the use thereof.

FIG. 2 is a vertical section of the device of the present invention in operative association with a cap applied to a nozzle for closure of the latter.

FIG. 3 is a section on the line 3—3 of FIG. 2.

FIG. 4 is a section on the line 4—4 of FIG. 3.

FIG. 5 is a fragmentary detailed sectional view of a portion of the assembly shown in FIG. 2 illustrating operation of the device of the present invention.

Referring to the drawings, the reference numeral 10 indicates an arm pivotally engaged at one end to a standard 11, the opposed end of the arm 10 being formed with a sleeve 12 which rotatably receives shaft 13 and permits the latter to be vertically reciprocated therein.

The lower end of the shaft 13 carries a generally cylindrical holder body portion 14, the holder body being formed with a plurality of radially extending peripherally and downwardly opening and upwardly closed slots 15 regularly spaced thereabout, said slots 15 seating therein gripping pins 16 which project outwardly and downwardly of the holder body 14. These pins 16 are suitably peripherally grooved at one or more spaced points as at 17, 17 and thereby seat the resilient bands 18 which may be in the form of coil springs or rubber material. These resilient bands 18 yieldably retain the pins 16 in their seats 15 in the holder body 14. These pins 16 are suitably formed with heads 19 which partially enter the annular slot 20 in the holder body 14 and abut on the shoulder formed thereabove, whereby the pins 16 can pivot outwardly when they meet resistance as shown in dotted lines in FIG. 5.

The shaft 13 suitably carries a cup or shield generally indicated as 21 in concentric embracing engagement over the holder body 14 and seats over the holder 14 and embraces the pins 16 thereof in spaced relation thereto.

Although the drawings show the device of the present invention pivotally mounted on a standard 11, it will be understood that the standard 11 is diagrammatically illustrative of a suitable supporting device which may for example be a component of a filling machine, another apron portion thereof being diagrammatically illustrated at 22, beneath which there are shown the two spaced parallel arms 23 of a fork-like device which receives nozzle 24 and enters between the nozzle flanges 25 and 26 and supports the nozzle in upright manner by means of the flange 26 which rests on the fork arms 23, 23.

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While held on the flange 26 by means of the fork arms 23, 23, the flexible plastic container 27 is filled with liquid 28 from means not shown, whereupon the nozzle 24 which has a screw threaded upper portion 29 is capped by means of the internally threaded cap 30. This cap is formed with a series of peripherally opening notches 31 and in the capping operation, one manipulates the torque capping device means of its hand-hold 32 and pivots it to a supply of caps (not shown), wherefrom the top cap is engaged and lifted mechanically by first lifting the assembly in its sleeve 12 by means of the hand-hold 32, and then permitting it to reciprocate downwardly so that the pins 16 enter the notches 31 of a cap 30 and thereby grip it. The assembly with the cap is then moved pivotally on the standard 10 to a filled bag while held by the fork arms 23, and then manually rotated by means of the hand-hold 32 until such time as the cap 30 is fully brought down on the threads 29 of the nozzle 24. When this is fully tightened and the cap can no longer move downwardly or can no longer be rotated, the pins 16 pivot outwardly as shown in FIG. 5 and thereupon the capping device is removed from the cap by manually lifting or reciprocating it in the sleeve 12 for the next operation.

Although I have shown and described the preferred embodiment of my invention it will be understood by those skilled in the art that changes may be made in the details thereof without departing from its scope as comprehended by the following claims.

I claim:

1. A torque capper for container caps formed with notched peripheral portions, said capper comprising a generally cylindrical holder body portion, an axial shaft secured thereto, sleeve means rotatably retaining said shaft and for permitting said shaft to be axially reciprocated therein, said holder body portion being formed with a plurality of radially extending peripherally opening slots, gripping pins seated in said slots and projecting outwardly of the holder body in a direction opposed to that of said shaft, and resilient means embracing said pins and retaining them in yieldable pivotal engagement with said holder body.

2. A torque capper for container caps formed with notched peripheral portions, said capper comprising a generally cylindrical holder body portion, an axial shaft secured thereto at one end and carrying an actuating knob at the opposed end, sleeve means rotatably retaining said shaft and for permitting said shaft to be axially reciprocated therein, a cap axially secured to said sleeve including a skirt portion spaced from and embracing said holder body, said holder body portion being formed with a plurality of radially extending peripherally opening slots, gripping pins seated in said slots and projecting outwardly of the holder body in a direction opposed to that of said shaft, and resilient means embracing said pins and retaining them in yieldable pivotal engagement with said holder body.

3. A torque capper for container caps formed with notched peripheral portions, said capper comprising a generally cylindrical holder body portion, an axial shaft secured thereto, sleeve means rotatably retaining said shaft and for permitting said shaft to be axially reciprocated therein, said holder body portion being formed with a plurality of radially extending slots opening peripherally and downwardly, gripping pins seated in said slots and projecting outwardly and downwardly of the holder body and in pivotal abutment therewith at their upper end portions, and resilient means embracing said pins and retaining them in yieldable pivotal engagement with said holder body.

4. A torque capper for container caps formed with notched peripheral portions, said capper comprising a

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generally cylindrical holder body portion, an axial shaft secured thereto, sleeve means rotatably retaining said shaft and for permitting said shaft to be axially reciprocated therein, said holder body portion being formed with a plurality of radially extending peripherally opening slots, gripping pins seated in said slots including head portions pivotally disposed in an annular groove above said slots and projecting outwardly and downwardly of the holder body in a direction opposed to that of said shaft, and a spaced pair of resilient bands embracing said pins and retaining them in yieldable pivotal engagement at their head portions with said holder body.

5. A torque capper for container caps formed with notched peripheral portions, said capper comprising a generally cylindrical holder body portion, an axial shaft secured thereto at one end and a handhold secured to the opposed end of said shaft, said holder body portion

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being formed with a plurality of radially extending peripherally opening slots, gripping pins seated in said slots and projecting outwardly of holder body in a direction opposed to that of said shaft, resilient means embracing said pins and retaining them in yieldable pivotal engagement with said holder body, sleeve means rotatably retaining said shaft for permitting it to be axially reciprocated therein, and a standard pivotally retaining an arm carrying said sleeve.

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