

# CPC COOPERATIVE PATENT CLASSIFICATION

## B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

### TRANSPORTING

## B67 OPENING, CLOSING {OR CLEANING} BOTTLES, JARS OR SIMILAR CONTAINERS; LIQUID HANDLING

## B67C CLEANING, FILLING WITH LIQUIDS OR SEMILIQUIDS, OR EMPTYING, OF BOTTLES, JARS, CANS, CASKS, BARRELS, OR SIMILAR CONTAINERS, NOT OTHERWISE PROVIDED FOR; FUNNELS

### WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

|             |   |           |   |
|-------------|---|-----------|---|
| <b>3/00</b> | <b>Bottling liquids or semiliquids; Filling jars or cans with liquids or semiliquids using bottling or like apparatus; Filling casks or barrels with liquids or semiliquids</b> | 3/206     | . . . {using arrangements of cylinders and pistons ( <a href="#">B67C 3/208 takes precedence</a> )}   |
|             |   | 3/208     | . . . {specially adapted for adding small amounts of additional liquids, e.g. syrup}  |
| 3/001       | . {Cleaning of filling devices}   | 3/22      | . . Details   |
| 3/002       | . . {using cups or dummies to be placed under the filling heads}  | 2003/221  | . . . {Automatic exchange of components}  |
| 3/004       | . . . {permanently attached to the filling machine and movable between a rest and a working position}   | 3/222     | . . . {Head-space air removing devices, e.g. by inducing foam}  |
| 3/005       | . . {Cleaning outside parts of filling devices}   | 3/223     | . . . . {by squeezing the container elastically}  |
| 3/007       | . {Applications of control, warning or safety devices in filling machinery ( <a href="#">flow-control B67C 3/28</a> )}  | 3/225     | . . . {Means for filling simultaneously, e.g. in a rotary filling apparatus or multiple rows of containers}   |
| 3/008       | . {Bottling or like apparatus specially adapted to be transported, e.g. positioned on a truck or in a container}  | 2003/226  | . . . {Additional process steps or apparatuses related to filling with hot liquids, e.g. after-treatment}   |
| 3/02        | . Bottling liquids or semiliquids; Filling jars or cans with liquids or semiliquids using bottling or like apparatus  | 2003/227  | . . . {Additional apparatus related to blow-moulding of the containers, e.g. a complete production line forming filled containers from preforms}              |
| 3/023       | . . {Filling multiple liquids in a container ( <a href="#">B67C 3/208 takes precedence</a> )}   | 2003/228  | . . . {Aseptic features}  |
| 3/026       | . . . {Filling the liquids simultaneously}  | 3/24      | . . . Devices for supporting or handling bottles ( <a href="#">transport or storing devices in general B65G</a> )   |
| 3/04        | . . without applying pressure   | 3/242     | . . . . {engaging with bottle necks ( <a href="#">B67C 3/26 takes precedence</a> )}   |
| 3/045       | . . . {Apparatus specially adapted for filling bottles with hot liquids}  | 3/244     | . . . . {Bottle lifting devices actuated by jacks, e.g. hydraulic, pneumatic ( <a href="#">B67C 3/242 takes precedence</a> )}                                 |
| 3/06        | . . using counterpressure, i.e. filling while the container is under pressure   | 3/246     | . . . . {Bottle lifting devices actuated by cams ( <a href="#">B67C 3/242 takes precedence</a> )}   |
| 3/065       | . . . {Filling siphons, e.g. carbonating beverages during filling ( <a href="#">siphons B67D 1/0456</a> )}  | 3/248     | . . . . {Bottle lifting devices actuated by threads ( <a href="#">B67C 3/242 takes precedence</a> )}  |
| 3/08        | . . . and subsequently lowering the counterpressure   | 3/26      | . . . Filling-heads; Means for engaging filling-heads with bottle necks   |
| 3/10        | . . . preliminary filling with inert gases, e.g. carbon dioxide   |           |   |
| 3/12        | . . . Pressure-control devices  | 2003/2602 | . . . . {Details of vent-tubes}   |
| 3/14        | . . . specially adapted for filling with hot liquids  | 2003/2605 | . . . . . {Piston-like check valves}  |
| 3/16        | . . using suction   | 3/2608    | . . . . {comprising anti-dripping means}  |
| 3/18        | . . using siphoning arrangements  | 3/2611    | . . . . . {to prevent dripping from sources other than the filling product, e.g. deflectors for vapours condensed on the outer surface of the filling device} |
| 3/20        | . . with provision for metering the liquids to be introduced, e.g. when adding syrups ( <a href="#">measuring volume, or volume flow, in general G01F</a> )                     | 3/2614    | . . . . {specially adapted for counter-pressure filling}  |
| 3/202       | . . . {by weighing}   |           |   |
| 3/204       | . . . {using dosing chambers}   |           |   |

|           |           |  |              |           |   |
|-----------|-----------|--|--------------|-----------|---|
| 3/2617    | . . . . . | {the liquid valve being opened by mechanical or electrical actuation}  | 2003/2694    | . . . . . | {by enclosing a set of containers in a chamber}   |
| 3/262     | . . . . . | {and the filling operation stopping when the liquid rises to a level at which it closes a vent opening}  | 2003/2697    | . . . . . | {by enclosing the container partly in a chamber}  |
| 3/2622    | . . . . . | {and the filling operation stopping when probes, e.g. electrical or optical probes, sense the wanted liquid level ( <a href="#">level control in general G01F</a> )} | 3/28         | . . .     | Flow-control devices, e.g. using valves ( <a href="#">B67C 3/2617</a> , <a href="#">B67C 3/2625</a> , <a href="#">B67C 3/2637</a> take precedence); valves in general <a href="#">F16K</a> )} |
| 3/2625    | . . . . . | {the liquid valve being opened automatically when a given counter-pressure is obtained in the container to be filled}  | 3/281        | . . . . . | {Profiled valve bodies for smoothing the flow at the outlet of the filling nozzle}  |
| 3/2628    | . . . . . | {and the filling operation stopping when the liquid rises to a level at which it closes a vent opening}  | 3/282        | . . . . . | {related to filling level control ( <a href="#">B67C 3/2617</a> , <a href="#">B67C 3/2625</a> take precedence)}   |
| 3/2631    | . . . . . | {and the filling operation stopping when probes, e.g. electrical or optical probes, sense the wanted liquid level ( <a href="#">level control in general G01F</a> )} | 3/283        | . . . . . | {using pressure sensing means}  |
| 3/2634    | . . . . . | {specially adapted for vacuum or suction filling}  | 3/284        | . . . . . | {using non-liquid contact sensing means ( <a href="#">B67C 3/283</a> takes precedence)}   |
| 3/2637    | . . . . . | {comprising a liquid valve opened by relative movement between the container and the filling head}   | 3/285        | . . . . . | {using liquid contact sensing means ( <a href="#">B67C 3/283</a> takes precedence)}   |
| 3/264     | . . . . . | {and the filling operation being carried out manually}   | 3/286        | . . . . . | {related to flow rate control, i.e. controlling slow and fast filling phases}   |
| 3/2642    | . . . . . | {specially adapted for sterilising prior to filling}   | 3/287        | . . . . . | {related to flow control using predetermined or real-time calculated parameters}  |
| 2003/2645 | . . . . . | {Means to avoid overfilling by preventing gas returning from the container into the filling tank via the liquid valve, e.g. mesh screens}                            | 3/288        | . . . . . | {using master-slave controls}   |
| 2003/2648 | . . . . . | {Inflatable gaskets for sealingly engaging bottle necks or bodies}   | 3/30         | . . .     | Filling of barrels or casks   |
| 2003/2651 | . . . . . | {The liquid valve being carried by the vent tube}  | 3/32         | . . .     | using counterpressure, i.e. filling while the container is under pressure   |
| 2003/2654 | . . . . . | {specially adapted for bottom filling, e.g. the liquid valve being located at the lowest part of the vent tube}  | 3/34         | . . .     | Devices for engaging filling-heads with filling-apertures   |
| 2003/2657 | . . . . . | {specially adapted for filling cans}   | <b>7/00</b>  |           | <b>Concurrent cleaning, filling, and closing of bottles; Processes or devices for at least two of these operations</b>  |
| 2003/266  | . . . . . | {Means for centering the container with the filling head}  | 7/0006       | . . .     | {Conveying; Synchronising}  |
| 2003/2662 | . . . . . | {with means for detecting the presence of a container}   | 7/0013       | . . .     | {Synchronising}   |
| 2003/2665 | . . . . . | {Means for locking the filling head in a given position once engaged by a container}   | 7/002        | . . .     | {General lay-out of bottle-handling machines}   |
| 2003/2668 | . . . . . | {Means for adapting the filling head to various sizes of containers}   | 7/0026       | . . .     | {the containers travelling along a linear path}   |
| 2003/2671 | . . . . . | {Means for preventing foaming of the liquid}   | 7/0033       | . . .     | {the operation being performed batch-wise}  |
| 2003/2674 | . . . . . | {by creating a conical shaped flow directed to the container wall at the container neck height}  | 7/004        | . . .     | {the containers travelling along a circular path}   |
| 2003/2677 | . . . . . | {by means of a deflector}  | 7/0046       | . . .     | {Infeed and outfeed devices}  |
| 2003/268  | . . . . . | {by means of a flow channel integral with the filling nozzle}  | 7/0053       | . . . . . | {using grippers ( <a href="#">for supporting bottle necks during filling B67C 3/242</a> )}  |
| 2003/2682 | . . . . . | {by creating a conical shaped flow directed to the container wall just above the container bottom}   | 2007/006     | . . .     | {Devices particularly adapted for container filling}  |
| 2003/2685 | . . . . . | {Details of probes}  | 2007/0066    | . . .     | {Devices particularly adapted for container closing}  |
| 2003/2688 | . . . . . | {Means for filling containers in defined atmospheric conditions}   | 7/0073       | . . .     | {Sterilising, aseptic filling and closing ( <a href="#">B67C 3/2642</a> takes precedence)}  |
| 2003/2691 | . . . . . | {by enclosing one container in a chamber}  | 7/008        | . . .     | {comprising a cleaning step between two closing steps}  |
|           |           |  | 7/0086       | . . .     | {Sterilisation being restricted to the area of application of the closure}  |
|           |           |  | 7/0093       | . . .     | {Lever action devices operated by hand or foot}   |
|           |           |  | <b>9/00</b>  |           | <b>Devices for emptying bottles, not otherwise provided for {(during preparation of alcoholic beverages except beer <a href="#">C12G 1/00</a>)}</b>   |
|           |           |  | <b>11/00</b> |           | <b>Funnels, e.g. for liquids (<a href="#">filter funnels B01D 23/28</a>; <a href="#">volume flow-meters G01F</a>)</b>   |
|           |           |  | 11/02        | . . .     | without discharge valves  |
|           |           |  | 2011/022     | . . .     | {for draining oil from engines}   |
|           |           |  | 2011/025     | . . .     | {with integral tool for opening the draining plug}  |
|           |           |  | 2011/027     | . . .     | {for filling oil into engines}  |
|           |           |  | 11/04        | . . .     | with non-automatic discharge valves   |
|           |           |  | 11/06        | . . .     | with automatic discharge valves   |

## B67C

- 11/063 . . {for preventing spilling or dripping}
- 11/066 . . {for preventing overflow of the filled container}
- 2011/20 . {comprising closures, e.g. stoppers, caps or lids}
- 2011/30 . {comprising venting means}
- 2011/40 . {comprising level indicating means}