

# 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</a> takes precedence)}
		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}
		3/222	. . . {Head-space air removing devices, e.g. by inducing foam}
3/004	. . . {permanently attached to the filling machine and movable between a rest and a working position}	3/223	. . . . {by squeezing the container elastically}
		3/225	. . . {Means for filling simultaneously, e.g. in a rotary filling apparatus or multiple rows of containers}
3/005	. . {Cleaning outside parts of filling devices}		
3/007	. {Applications of control, warning or safety devices in filling machinery ( <a href="#">flow-control B67C 3/28</a> )}	2003/226	. . . {Additional process steps or apparatuses related to filling with hot liquids, e.g. after-treatment}
3/008	. {Bottling or like apparatus specially adapted to be transported, e.g. positioned on a truck or in a container}	2003/227	. . . {Additional apparatus related to blow-moulding of the containers, e.g. a complete production line forming filled containers from preforms}
3/02	. Bottling liquids or semiliquids; Filling jars or cans with liquids or semiliquids using bottling or like apparatus		
3/023	. . {Filling multiple liquids in a container ( <a href="#">B67C 3/208</a> takes precedence)}	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</a> takes precedence)}
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</a> takes precedence)}
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</a> takes precedence)}
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</a> takes precedence)}
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}
- 3/262 . . . . . {and the filling operation stopping when the liquid rises to a level at which it closes a vent opening}
- 3/2622 . . . . . {and the filling operation stopping when probes, e.g. electrical or optical probes, sense the wanted liquid level ([level control in general G01F](#))}
- 3/2625 . . . . . {the liquid valve being opened automatically when a given counter-pressure is obtained in the container to be filled}
- 3/2628 . . . . . {and the filling operation stopping when the liquid rises to a level at which it closes a vent opening}
- 3/2631 . . . . . {and the filling operation stopping when probes, e.g. electrical or optical probes, sense the wanted liquid level ([level control in general G01F](#))}
- 3/2634 . . . . . {specially adapted for vacuum or suction filling}
- 3/2637 . . . . . {comprising a liquid valve opened by relative movement between the container and the filling head}
- 3/264 . . . . . {and the filling operation being carried out manually}
- 3/2642 . . . . . {specially adapted for sterilising prior to filling}
- 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}
- 2003/2648 . . . . . {Inflatable gaskets for sealingly engaging bottle necks or bodies}
- 2003/2651 . . . . . {The liquid valve being carried by the vent tube}
- 2003/2654 . . . . . {specially adapted for bottom filling, e.g. the liquid valve being located at the lowest part of the vent tube}
- 2003/2657 . . . . . {specially adapted for filling cans}
- 2003/266 . . . . . {Means for centering the container with the filling head}
- 2003/2662 . . . . . {with means for detecting the presence of a container}
- 2003/2665 . . . . . {Means for locking the filling head in a given position once engaged by a container}
- 2003/2668 . . . . . {Means for adapting the filling head to various sizes of containers}
- 2003/2671 . . . . . {Means for preventing foaming of the liquid}
- 2003/2674 . . . . . {by creating a conical shaped flow directed to the container wall at the container neck height}
- 2003/2677 . . . . . {by means of a deflector}
- 2003/268 . . . . . {by means of a flow channel integral with the filling nozzle}
- 2003/2682 . . . . . {by creating a conical shaped flow directed to the container wall just above the container bottom}
- 2003/2685 . . . . . {Details of probes}
- 2003/2688 . . . . . {Means for filling containers in defined atmospheric conditions}
- 2003/2691 . . . . . {by enclosing one container in a chamber}
- 2003/2694 . . . . . {by enclosing a set of containers in a chamber}
- 2003/2697 . . . . . {by enclosing the container partly in a chamber}
- 3/28 . . . . . Flow-control devices, e.g. using valves ([B67C 3/2617](#), [B67C 3/2625](#), [B67C 3/2637](#) take precedence); valves in general [F16K](#))
- 3/281 . . . . . {Profiled valve bodies for smoothing the flow at the outlet of the filling nozzle}
- 3/282 . . . . . {related to filling level control ([B67C 3/2617](#), [B67C 3/2625](#) take precedence)}
- 3/283 . . . . . {using pressure sensing means}
- 3/284 . . . . . {using non-liquid contact sensing means ([B67C 3/283](#) takes precedence)}
- 3/285 . . . . . {using liquid contact sensing means ([B67C 3/283](#) takes precedence)}
- 3/286 . . . . . {related to flow rate control, i.e. controlling slow and fast filling phases}
- 3/287 . . . . . {related to flow control using predetermined or real-time calculated parameters}
- 3/288 . . . . . {using master-slave controls}
- 3/30 . . . . . Filling of barrels or casks
- 3/32 . . . . . using counterpressure, i.e. filling while the container is under pressure
- 3/34 . . . . . Devices for engaging filling-heads with filling-apertures
- 7/00 Concurrent cleaning, filling, and closing of bottles; Processes or devices for at least two of these operations**
- 7/0006 . . . . . {Conveying; Synchronising}
- 7/0013 . . . . . {Synchronising}
- 7/002 . . . . . {General lay-out of bottle-handling machines}
- 7/0026 . . . . . {the containers travelling along a linear path}
- 7/0033 . . . . . {the operation being performed batch-wise}
- 7/004 . . . . . {the containers travelling along a circular path}
- 7/0046 . . . . . {Infeed and outfeed devices}
- 7/0053 . . . . . {using grippers ([for supporting bottle necks during filling B67C 3/242](#))}
- 2007/006 . . . . . {Devices particularly adapted for container filling}
- 2007/0066 . . . . . {Devices particularly adapted for container closing}
- 7/0073 . . . . . {Sterilising, aseptic filling and closing ([B67C 3/2642](#) takes precedence)}
- 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}
- 9/00 Devices for emptying bottles, not otherwise provided for {(during preparation of alcoholic beverages except beer [C12G 1/00](#))}**
- 11/00 Funnels, e.g. for liquids (filter funnels [B01D 29/085](#); volume flow-meters [G01F](#))**
- 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}