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.

3/00 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

3/001 . . . . [Cleaning of filling devices]
3/002 . . . . [using cups or dummies to be placed under the filling heads]
3/004 . . . . [permanently attached to the filling machine and movable between a rest and a working position]
3/005 . . . . [Cleaning outside parts of filling devices]
3/007 . . . . [Applications of control, warning or safety devices in filling machinery (flow-control B67C 3/28)]
3/008 . . . . [Bottling or like apparatus specially adapted to be transported, e.g. positioned on a truck or in a container]
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 (B67C 3/208 takes precedence)]
3/026 . . . . [Filling the liquids simultaneously]
3/04 . . . . without applying pressure
3/045 . . . . [Apparatus specially adapted for filling bottles with hot liquids]
3/06 . . . . using counterpressure, i.e. filling while the container is under pressure
3/065 . . . . [Filling siphons, e.g. carbonating beverages during filling (siphons B67D 1/0456)]
3/08 . . . . and subsequently lowering the counterpressure
3/10 . . . . preliminary filling with inert gases, e.g. carbon dioxide
3/12 . . . . Pressure-control devices
3/14 . . . . specially adapted for filling with hot liquids
3/16 . . . . using suction
3/18 . . . . using siphoning arrangements
3/20 . . . . with provision for metering the liquids to be introduced, e.g. when adding syrups (measuring volume, or volume flow, in general G01F)
3/202 . . . . [by weighing]
3/204 . . . . [using dosing chambers]

3/206 . . . . [using arrangements of cylinders and pistons (B67C 3/208 takes precedence)]
3/208 . . . . [specially adapted for adding small amounts of additional liquids, e.g. syrup]
3/22 . . . . Details

2003/221 . . . . [Automatic exchange of components]
3/222 . . . . [Head-space air removing devices, e.g. by inducing foam]
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]
2003/226 . . . . [Additional process steps or apparatuses related to filling with hot liquids, e.g. after-treatment]
2003/227 . . . . [Additional apparatus related to blow-moulding of the containers, e.g. a complete production line forming filled containers from preforms]
2003/228 . . . . [Aseptic features]
3/24 . . . . Devices for supporting or handling bottles (transport or storing devices in general B65G)
3/242 . . . . [engaging with bottle necks (B67C 3/26 takes precedence)]
3/244 . . . . [Bottle lifting devices actuated by jacks, e.g. hydraulic, pneumatic (B67C 3/242 takes precedence)]
3/246 . . . . [Bottle lifting devices actuated by cams (B67C 3/324 takes precedence)]
3/248 . . . . [Bottle lifting devices actuated by threads (B67C 3/232 takes precedence)]
3/26 . . . . Filling-heads; Means for engaging filling-heads with bottle necks

2003/2602 . . . . [Details of vent-tubes]
2003/2605 . . . . [Piston-like check valves]
3/2608 . . . . [comprising anti-dripping means]
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]
3/2614 . . . . [specially adapted for counter-pressure filling]
B67C

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)]
2007/0006 . . . . . . . [Devices particularly adapted for container filling]
2007/00066 . . . . . . . [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 23/28; 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
<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
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<tbody>
<tr>
<td>11/063</td>
<td>. .  {for preventing spilling or dripping}</td>
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<td>11/066</td>
<td>. .  {for preventing overflow of the filled container}</td>
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<tr>
<td>2011/20</td>
<td>.  {comprising closures, e.g. stoppers, caps or lids}</td>
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<tr>
<td>2011/30</td>
<td>.  {comprising venting means}</td>
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<tr>
<td>2011/40</td>
<td>.  {comprising level indicating means}</td>
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