

CPC**COOPERATIVE PATENT CLASSIFICATION****B67C****CLEANING, FILLING WITH LIQUIDS OR SEMILIQUIDS, OR EMPTYING, OF BOTTLES, JARS, CANS, CASKS, BARRELS, OR SIMILAR CONTAINERS, NOT OTHERWISE PROVIDED FOR; FUNNELS****B67C 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 (filling containers with liquids or semiliquids using apparatus other than bottling or like apparatus [B65B 3/00](#))

B67C 3/001

. { Cleaning of filling devices }

B67C 3/002

.. { using cups or dummies to be placed under the filling heads }

B67C 3/004

... { permanently attached to the filling machine and movable between a rest and a working position }

B67C 3/005

.. { Cleaning outside parts of filling devices }

B67C 3/007

. { Applications of control, warning or safety devices in filling machinery (flow-control [B67C 3/28](#)) }

B67C 3/008

. { Bottling or like apparatus specially adapted to be transported, e.g. positioned on a truck or in a container }

B67C 3/02

. Bottling liquids or semiliquids; Filling jars or cans with liquids or semiliquids using bottling or like apparatus

B67C 3/023

.. { Filling multiple liquids in a container ([B67C 3/208](#) takes precedence) }

B67C 3/026

... { Filling the liquids simultaneously }

B67C 3/04

.. without applying pressure

B67C 3/045

... { Apparatus specially adapted for filling bottles with hot liquids }

B67C 3/06

.. using counterpressure, i.e. filling while the container is under pressure

B67C 3/065

... { Filling siphons, e.g. carbonating beverages during filling (siphons [B67D 1/0456](#)) }

B67C 3/08

... and subsequently lowering the counterpressure

B67C 3/10

... preliminary filling with inert gases, e.g. carbon dioxide

B67C 3/12

... Pressure-control devices

B67C 3/14

... specially adapted for filling with hot liquids

B67C 3/16

.. using suction

B67C 3/18

.. using siphoning arrangements

B67C 3/20

.. with provision for metering the liquids to be introduced, e.g. when adding syrups ([measuring volume, or volume flow, in general G01F](#))

B67C 3/202

... { by weighing }

B67C 3/204

... { using dosing chambers }

B67C 3/206

... { using arrangements of cylinders and pistons ([B67C 3/208](#) takes precedence) }

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|----------------|-------|---|
| B67C 3/208 | ... | { specially adapted for adding small amounts of additional liquids, e.g. syrup } |
| B67C 3/22 | .. | Details |
| B67C 2003/221 | ... | { Automatic exchange of components } |
| B67C 3/222 | ... | { Head-space air removing devices, e.g. by inducing foam } |
| B67C 3/223 | .... | { by squeezing the container elastically } |
| B67C 3/225 | ... | { Means for filling simultaneously, e.g. in a rotary filling apparatus or multiple rows of containers } |
| B67C 2003/226 | ... | { Additional process steps or apparatuses related to filling with hot liquids, e.g. after-treatment } |
| B67C 2003/227 | ... | { Additional apparatus related to blow-moulding of the containers, e.g. a complete production line forming filled containers from preforms } |
| B67C 2003/228 | ... | { Aseptic features } |
| B67C 3/24 | ... | Devices for supporting or handling bottles (transport or storing devices in general B65G) |
| B67C 3/242 | .... | { engaging with bottle necks (B67C 3/26 takes precedence)} |
| B67C 3/244 | .... | { Bottle lifting devices actuated by jacks, e.g. hydraulic, pneumatic (B67C 3/242 takes precedence)} |
| B67C 3/246 | .... | { Bottle lifting devices actuated by cams (B67C 3/242 takes precedence)} |
| B67C 3/248 | .... | { Bottle lifting devices actuated by threads B67C 3/242 takes precedence } |
| B67C 3/26 | ... | Filling-heads; Means for engaging filling-heads with bottle necks |
| B67C 2003/2602 | .... | { Details of vent-tubes } |
| B67C 2003/2605 | ..... | { Piston-like check valves } |
| B67C 3/2608 | .... | { comprising anti-dripping means } |
| B67C 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 } |
| B67C 3/2614 | .... | { specially adapted for counter-pressure filling } |
| B67C 3/2617 | ..... | { the liquid valve being opened by mechanical or electrical actuation } |
| B67C 3/262 | ..... | { and the filling operation stopping when the liquid rises to a level at which it closes a vent opening } |
| B67C 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)} |
| B67C 3/2625 | ..... | { the liquid valve being opened automatically when a given counter-pressure is obtained in the container to be filled } |
| B67C 3/2628 | ..... | { and the filling operation stopping when the liquid rises to a level at which it closes a vent opening } |
| B67C 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)} |
| B67C 3/2634 | .... | { specially adapted for vacuum or suction filling } |
| B67C 3/2637 | | { comprising a liquid valve opened by relative movement between the container and the filling head } |
| B67C 3/264 | | { and the filling operation being carried out manually } |

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| B67C 3/2642 | | { specially adapted for sterilising prior to filling } |
| B67C 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 } |
| B67C 2003/2648 | .... | { Inflatable gaskets for sealingly engaging bottle necks or bodies } |
| B67C 2003/2651 | .... | { The liquid valve being carried by the vent tube } |
| B67C 2003/2654 | ..... | { specially adapted for bottom filling, e.g. the liquid valve being located at the lowest part of the vent tube } |
| B67C 2003/2657 | .... | { specially adapted for filling cans } |
| B67C 2003/266 | .... | { Means for centering the container with the filling head } |
| B67C 2003/2662 | ..... | { with means for detecting the presence of a container } |
| B67C 2003/2665 | .... | { Means for locking the filling head in a given position once engaged by a container } |
| B67C 2003/2668 | .... | { Means for adapting the filling head to various sizes of containers } |
| B67C 2003/2671 | .... | { Means for preventing foaming of the liquid } |
| B67C 2003/2674 | ..... | { by creating a conical shaped flow directed to the container wall at the container neck height } |
| B67C 2003/2677 | ..... | { by means of a deflector } |
| B67C 2003/268 | ..... | { by means of a flow channel integral with the filling nozzle } |
| B67C 2003/2682 | ..... | { by creating a conical shaped flow directed to the container wall just above the container bottom } |
| B67C 2003/2685 | .... | { Details of probes } |
| B67C 2003/2688 | .... | { Means for filling containers in defined atmospheric conditions } |
| B67C 2003/2691 | ..... | { by enclosing one container in a chamber } |
| B67C 2003/2694 | ..... | { by enclosing a set of containers in a chamber } |
| B67C 2003/2697 | ..... | { by enclosing the container partly in a chamber } |
| B67C 3/28 | ... | Flow-control devices, e.g. using valves (B67C 3/2617 , B67C 3/2625 , B67C 3/2637 take precedence); valves in general F16K) |
| B67C 3/281 | .... | { Profiled valve bodies for smoothing the flow at the outlet of the filling nozzle } |
| B67C 3/282 | .... | { related to filling level control (B67C 3/2617 , B67C 3/2625 take precedence)} |
| B67C 3/283 | ..... | { using pressure sensing means } |
| B67C 3/284 | ..... | { using non-liquid contact sensing means (B67C 3/283 takes precedence)} |
| B67C 3/285 | ..... | { using liquid contact sensing means (B67C 3/283 takes precedence)} |
| B67C 3/286 | .... | { related to flow rate control, i.e. controlling slow and fast filling phases } |
| B67C 3/287 | .... | { related to flow control using predetermined or real-time calculated parameters } |
| B67C 3/288 | ..... | { using master-slave controls } |
| B67C 3/30 | . | Filling of barrels or casks |
| B67C 3/32 | .. | using counterpressure, i.e. filling while the container is under pressure |
| B67C 3/34 | .. | Devices for engaging filling-heads with filling-apertures |

B67C 7/00 **Concurrent cleaning, filling, and closing of bottles; Processes or devices for at least two of these operations**

- B67C 7/0006 . { Conveying; Synchronising }
- B67C 7/0013 .. { Synchronising }
- B67C 7/002 .. { General lay-out of bottle-handling machines }
- B67C 7/0026 .. { the containers travelling along a linear path }
- B67C 7/0033 ... { the operation being performed batch-wise }
- B67C 7/004 .. { the containers travelling along a circular path }
- B67C 7/0046 ... { Infeed and outfeed devices }
- B67C 7/0053 { using grippers (for supporting bottle necks during filling [B67C 3/242](#)) }
- B67C 2007/006 .. { Devices particularly adapted for container filling }
- B67C 2007/0066 .. { Devices particularly adapted for container closing }

- B67C 7/0073 . { Sterilising, aseptic filling and closing ([B67C 3/2642](#) takes precedence) }
- B67C 7/008 .. { comprising a cleaning step between two closing steps }
- B67C 7/0086 .. { Sterilisation being restricted to the area of application of the closure }

- B67C 7/0093 . { Lever action devices operated by hand or foot }

B67C 9/00 **Devices for emptying bottles, not otherwise provided for** { during preparation of alcoholic beverages except beer [C12G 1/00](#) }

B67C 11/00 **Funnels, e.g. for liquids** (filter funnels [B01D 23/28](#); volume flow-meters [G01F](#))

- B67C 11/02 . without discharge valves
- B67C 2011/022 .. { for draining oil from engines }
- B67C 2011/025 ... { with integral tool for opening the draining plug }
- B67C 2011/027 .. { for filling oil into engines }

- B67C 11/04 . with non-automatic discharge valves

- B67C 11/06 . with automatic discharge valves
- B67C 11/063 .. { for preventing spilling or dripping }
- B67C 11/066 .. { for preventing overflow of the filled container }

- B67C 2011/20 . { comprising closures, e.g. stoppers, caps or lids }

- B67C 2011/30 . { comprising venting means }

- B67C 2011/40 . { comprising level indicating means }