

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](#))}

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}

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}