

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