

**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 <a href="#">B65G</a> )
B67C 3/242	....	{engaging with bottle necks ( <a href="#">B67C 3/26</a> takes precedence) }
B67C 3/244	....	{Bottle lifting devices actuated by jacks, e.g. hydraulic, pneumatic ( <a href="#">B67C 3/242</a> takes precedence) }
B67C 3/246	....	{Bottle lifting devices actuated by cams ( <a href="#">B67C 3/242</a> takes precedence) }
B67C 3/248	....	{Bottle lifting devices actuated by threads <a href="#">B67C 3/242</a> 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 <a href="#">G01F</a> ) }
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 <a href="#">G01F</a> ) }
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 ( { <a href="#">B67C 3/2617</a> , <a href="#">B67C 3/2625</a> , <a href="#">B67C 3/2637</a> take precedence } ; valves in general <a href="#">F16K</a> )
B67C 3/281	....	{ <a href="#">Profiled valve bodies for smoothing the flow at the outlet of the filling nozzle</a> }
B67C 3/282	....	{ <a href="#">related to filling level control</a> ( <a href="#">B67C 3/2617</a> , <a href="#">B67C 3/2625</a> take precedence) }
B67C 3/283	.....	{ <a href="#">using pressure sensing means</a> }
B67C 3/284	.....	{ <a href="#">using non-liquid contact sensing means</a> ( <a href="#">B67C 3/283</a> takes precedence) }
B67C 3/285	.....	{ <a href="#">using liquid contact sensing means</a> ( <a href="#">B67C 3/283</a> takes precedence) }
B67C 3/286	....	{ <a href="#">related to flow rate control, i.e. controlling slow and fast filling phases</a> }
B67C 3/287	....	{ <a href="#">related to flow control using predetermined or real-time calculated parameters</a> }
B67C 3/288	.....	{ <a href="#">using master-slave controls</a> }
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
<b>B67C 7/00</b>		<b>Concurrent cleaning, filling, and closing of bottles; Processes or devices for at least two of these operations</b>
B67C 7/0006	.	{ <a href="#">Conveying; Synchronising</a> }
B67C 7/0013	..	{ <a href="#">Synchronising</a> }
B67C 7/002	..	{ <a href="#">General lay-out of bottle-handling machines</a> }

- 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