

**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 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 3/24	...	Devices for supporting or handling bottles ( <a href="#">transport or storing devices in general B65G</a> )
B67C 3/242	.....	{engaging with bottle necks ( <a href="#">B67C 3/26 takes precedence</a> )}
B67C 3/244	.....	{Bottle lifting devices actuated by jacks, e.g. hydraulic, pneumatic ( <a href="#">B67C 3/242 takes precedence</a> )}
B67C 3/246	.....	{Bottle lifting devices actuated by cams ( <a href="#">B67C 3/242 takes precedence</a> )}
B67C 3/248	.....	{Bottle lifting devices actuated by threads <a href="#">B67C 3/242 takes precedence</a> }
B67C 3/26	...	Filling-heads; Means for engaging filling-heads with bottle necks
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 ( <a href="#">level control in general 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 ( <a href="#">level control in general 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 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	.....	{Profiled valve bodies for smoothing the flow at the outlet of the filling nozzle}
B67C 3/282	.....	{ related to filling level control ( <a href="#">B67C 3/2617</a> , <a href="#">B67C 3/2625 take precedence</a> )}
B67C 3/283	.....	{ using pressure sensing means}
B67C 3/284	.....	{ using non-liquid contact sensing means ( <a href="#">B67C 3/283 takes precedence</a> )}
B67C 3/285	.....	{ using liquid contact sensing means ( <a href="#">B67C 3/283 takes precedence</a> )}
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 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 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 2003/00** **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 2003/02 . Bottling liquids or semiliquids; Filling jars or cans with liquids or semiliquids using bottling or like apparatus
- B67C 2003/22 .. Details
- B67C 2003/221 ... Automatic exchange of components
- 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 2003/26 ... 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 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 2007/00 Concurrent cleaning, filling, and closing of bottles; Processes or devices for at least two of these operations**
  
- B67C 2007/0006 . {Conveying; Synchronising}
- B67C 2007/006 .. Devices particularly adapted for container filling
- B67C 2007/0066 .. Devices particularly adapted for container closing

**B67C 2011/00**      **Funnels, e.g. for liquids** (filter funnels [B01D 23/28](#); volume flow-meters [G01F](#))

- B67C 2011/02      . 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 2011/20](#)      . comprising closures, e.g. stoppers, caps or lids
  
- [B67C 2011/30](#)      . comprising venting means
  
- [B67C 2011/40](#)      . comprising level indicating means