

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B67 OPENING, CLOSING {OR CLEANING} BOTTLES, JARS OR SIMILAR CONTAINERS; LIQUID HANDLING (nozzles in general [B05B](#); packaging liquids [B65B](#), e.g. [B65B 3/00](#); pumps in general [F04](#); siphons [F04F 10/00](#); valves [F16K](#); handling liquefied gases [F17C](#))

B67C CLEANING, FILLING WITH LIQUIDS OR SEMILIQUIDS, OR EMPTYING, OF BOTTLES, JARS, CANS, CASKS, BARRELS, OR SIMILAR CONTAINERS, NOT OTHERWISE PROVIDED FOR; FUNNELS

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)	3/206	. . . {using arrangements of cylinders and pistons (B67C 3/208 takes precedence)}
		3/208	. . . {specially adapted for adding small amounts of additional liquids, e.g. syrup}
		3/22	. . Details
		2003/221	. . . {Automatic exchange of components}
3/001	. {Cleaning of filling devices}	3/222	. . . {Head-space air removing devices, e.g. by inducing foam}
3/002	. . {using cups or dummies to be placed under the filling heads}	3/223	. . . . {by squeezing the container elastically}
3/004	. . . {permanently attached to the filling machine and movable between a rest and a working position}	3/225	. . . {Means for filling simultaneously, e.g. in a rotary filling apparatus or multiple rows of containers}
3/005	. . {Cleaning outside parts of filling devices}	2003/226	. . . {Additional process steps or apparatuses related to filling with hot liquids, e.g. after-treatment}
3/007	. {Applications of control, warning or safety devices in filling machinery (flow-control B67C 3/28)}	2003/227	. . . {Additional apparatus related to blow-moulding of the containers, e.g. a complete production line forming filled containers from preforms}
3/008	. {Bottling or like apparatus specially adapted to be transported, e.g. positioned on a truck or in a container}	2003/228	. . . {Aseptic features}
3/02	. Bottling liquids or semiliquids; Filling jars or cans with liquids or semiliquids using bottling or like apparatus	3/24	. . . Devices for supporting or handling bottles (transport or storing devices in general B65G)
3/023	. . {Filling multiple liquids in a container (B67C 3/208 takes precedence)}	3/242	. . . . {engaging with bottle necks (B67C 3/26 takes precedence)}
3/026	. . . {Filling the liquids simultaneously}	3/244	. . . . {Bottle lifting devices actuated by jacks, e.g. hydraulic, pneumatic (B67C 3/242 takes precedence)}
3/04	. . without applying pressure	3/246	. . . . {Bottle lifting devices actuated by cams (B67C 3/242 takes precedence)}
3/045	. . . {Apparatus specially adapted for filling bottles with hot liquids}	3/248	. . . . {Bottle lifting devices actuated by threads (B67C 3/242 takes precedence)}
3/06	. . using counterpressure, i.e. filling while the container is under pressure	3/26	. . . Filling-heads; Means for engaging filling-heads with bottle necks
3/065	. . . {Filling siphons, e.g. carbonating beverages during filling (siphons B67D 1/0456)}	2003/2602	. . . . {Details of vent-tubes}
3/08	. . . and subsequently lowering the counterpressure	2003/2605	. . . . {Piston-like check valves}
3/10	. . . preliminary filling with inert gases, e.g. carbon dioxide	3/2608	. . . . {comprising anti-dripping means}
3/12	. . . Pressure-control devices	3/2611	. . . . {to prevent dripping from sources other than the filling product, e.g. defectors for vapours condensed on the outer surface of the filling device}
3/14	. . . specially adapted for filling with hot liquids	3/2614	. . . . {specially adapted for counter-pressure filling}
3/16	. . using suction		
3/18	. . using siphoning arrangements		
3/20	. . with provision for metering the liquids to be introduced, e.g. when adding syrups (measuring volume, or volume flow, in general G01F)		
3/202	. . . {by weighing}		
3/204	. . . {using dosing chambers}		

3/2617	. . . . .	{the liquid valve being opened by mechanical or electrical actuation}	2003/2694	. . . . .	{by enclosing a set of containers in a chamber}
3/262	. . . . .	{and the filling operation stopping when the liquid rises to a level at which it closes a vent opening}	2003/2697	. . . . .	{by enclosing the container partly in a chamber}
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)}	3/28	. . .	Flow-control devices, e.g. using valves (B67C 3/2617 , B67C 3/2625 , B67C 3/2637 take precedence); valves in general F16K)}
3/2625	. . . . .	{the liquid valve being opened automatically when a given counter-pressure is obtained in the container to be filled}	3/281	. . . . .	{Profiled valve bodies for smoothing the flow at the outlet of the filling nozzle}
3/2628	. . . . .	{and the filling operation stopping when the liquid rises to a level at which it closes a vent opening}	3/282	. . . . .	{related to filling level control (B67C 3/2617 , B67C 3/2625 take precedence)}
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)}	3/283	. . . . .	{using pressure sensing means}
3/2634	. . . . .	{specially adapted for vacuum or suction filling}	3/284	. . . . .	{using non-liquid contact sensing means (B67C 3/283 takes precedence)}
3/2637	. . . . .	{comprising a liquid valve opened by relative movement between the container and the filling head}	3/285	. . . . .	{using liquid contact sensing means (B67C 3/283 takes precedence)}
3/264	. . . . .	{and the filling operation being carried out manually}	3/286	. . . . .	{related to flow rate control, i.e. controlling slow and fast filling phases}
3/2642	. . . . .	{specially adapted for sterilising prior to filling}	3/287	. . . . .	{related to flow control using predetermined or real-time calculated parameters}
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}	3/288	. . . . .	{using master-slave controls}
2003/2648	. . . . .	{Inflatable gaskets for sealingly engaging bottle necks or bodies}	3/30	. . .	Filling of barrels or casks
2003/2651	. . . . .	{The liquid valve being carried by the vent tube}	3/32	. . .	using counterpressure, i.e. filling while the container is under pressure
2003/2654	. . . . .	{specially adapted for bottom filling, e.g. the liquid valve being located at the lowest part of the vent tube}	3/34	. . .	Devices for engaging filling-heads with filling-apertures
2003/2657	. . . . .	{specially adapted for filling cans}	7/00		Concurrent cleaning, filling, and closing of bottles; Processes or devices for at least two of these operations
2003/266	. . . . .	{Means for centering the container with the filling head}	7/0006	. . .	{Conveying; Synchronising}
2003/2662	. . . . .	{with means for detecting the presence of a container}	7/0013	. . .	{Synchronising}
2003/2665	. . . . .	{Means for locking the filling head in a given position once engaged by a container}	7/002	. . .	{General lay-out of bottle-handling machines}
2003/2668	. . . . .	{Means for adapting the filling head to various sizes of containers}	7/0026	. . .	{the containers travelling along a linear path}
2003/2671	. . . . .	{Means for preventing foaming of the liquid}	7/0033	. . .	{the operation being performed batch-wise}
2003/2674	. . . . .	{by creating a conical shaped flow directed to the container wall at the container neck height}	7/004	. . .	{the containers travelling along a circular path}
2003/2677	. . . . .	{by means of a deflector}	7/0046	. . .	{Infeed and outfeed devices}
2003/268	. . . . .	{by means of a flow channel integral with the filling nozzle}	7/0053	. . . . .	{using grippers (for supporting bottle necks during filling B67C 3/242)}
2003/2682	. . . . .	{by creating a conical shaped flow directed to the container wall just above the container bottom}	2007/006	. . .	{Devices particularly adapted for container filling}
2003/2685	. . . . .	{Details of probes}	2007/0066	. . .	{Devices particularly adapted for container closing}
2003/2688	. . . . .	{Means for filling containers in defined atmospheric conditions}	7/0073	. . .	{Sterilising, aseptic filling and closing (B67C 3/2642 takes precedence)}
2003/2691	. . . . .	{by enclosing one container in a chamber}	7/008	. . .	{comprising a cleaning step between two closing steps}
			7/0086	. . .	{Sterilisation being restricted to the area of application of the closure}
			7/0093	. . .	{Lever action devices operated by hand or foot}
			9/00		Devices for emptying bottles, not otherwise provided for {(during preparation of alcoholic beverages except beer C12G 1/00)}
			11/00		Funnels, e.g. for liquids (filter funnels B01D 23/28; volume flow-meters G01F)
			11/02	. . .	without discharge valves
			2011/022	. . .	{for draining oil from engines}
			2011/025	. . .	{with integral tool for opening the draining plug}
			2011/027	. . .	{for filling oil into engines}
			11/04	. . .	with non-automatic discharge valves
			11/06	. . .	with automatic discharge valves

B67C

- 11/063 . . {for preventing spilling or dripping}
- 11/066 . . {for preventing overflow of the filled container}
- 2011/20 . {comprising closures, e.g. stoppers, caps or lids}
- 2011/30 . {comprising venting means}
- 2011/40 . {comprising level indicating means}