SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B67 OPENING OR CLOSING BOTTLES, JARS OR SIMILAR CONTAINERS; LIQUID HANDLING

B67B APPLYING CLOSURE MEMBERS TO BOTTLES, JARS, OR SIMILAR CONTAINERS; OPENING CLOSED CONTAINERS (opening or closing devices attached to, or incorporated in, containers or container closures B65D)

1/00 Closing bottles, jars, or similar containers by applying stoppers (stoppers per se B65D 39/00)

1/03 • Pretreatment of stoppers, e.g. cleaning, steaming, heating, impregnating or coating; Applying resilient rings to stoppers (mechanical working of cork B27J 5/00) **[5]**

1/04 • by inserting threadless stoppers, e.g. corks

1/06 • by inserting and rotating screw stoppers

1/08 • Securing stoppers, e.g. swing stoppers, which are held in position by associated pressure-applying means coacting with the bottle neck

1/10 • by inserting disc closures **[6]**

3/00 Closing bottles, jars, or similar containers by applying caps (caps per se B65D 41/00)

3/02 • by applying flanged caps, e.g. crown caps, and securing by deformation of flanges

3/04 • • Cutting caps from strip material in capping machines (devices for registering moving strip material B65H 23/00)

3/06 • • Feeding caps to capping heads

3/062 • • • from a magazine

3/064 • • • from a hopper

3/10 • • Capping heads for securing caps

3/12 • • • characterised by being movable axially relative to cap to deform flanges thereof, e.g. to press projecting flange rims inwardly

3/14 • • • characterised by having movable elements, e.g. hinged fingers, for applying radial pressure to the flange of the cap (B67B 3/16, B67B 3/18 take precedence) **[5]**

3/16 • • • characterised by having resilient deforming elements, e.g. resilient sleeves or collars (B67B 3/18 takes precedence) **[5]**

3/18 • • • characterised by being rotatable, e.g. for forming screw threads in situ **[5]**

3/20 • by applying and rotating preformed threaded caps (forming threads in situ by resilient deforming means B67B 3/16, by rotary capping heads B67B 3/18) **[5]**

3/22 • by applying snap-on caps

3/24 • Special measures for applying and securing caps under vacuum

3/26 • Applications of control, warning, or safety devices in capping machinery

3/28 • Mechanisms for causing relative movement between bottle or jar and capping head **[5]**

5/00 Applying protective or decorative covers to closures; Devices for securing bottle closures with wire (infant-feeding teats with means for fastening to bottles A61J 11/04) **[6]**

5/03 • Applying protective or decorative covers to closures, e.g. by forming in situ **[3]**

5/05 • • by applying liquids, e.g. by dipping **[3]**

5/06 • Devices for securing bottle closures with wire (B67B 1/08 takes precedence)

6/00 Closing bottles, jars or similar containers by applying closure members, not provided for in groups B67B 1/00-B67B 5/00 [2009.01]

7/00 Hand- or power-operated devices for opening closed containers (nail pullers or extractors B25C 11/00; attached to, or incorporated in, containers or container closures B65D)

7/02 • for removing stoppers

7/04 • • Cork-screws

7/06 • • Other cork removers

7/08 • • • using air or gas pressure

7/10 • • with means for retrieving stoppers from the interior of the container

7/12 • for removing disc-closures

7/14 • for removing tightly-fitting lids or covers, e.g. of shoe-polish tins, by gripping and rotating

7/15 • • finger grapple type **[5]**

7/16 • for removing flanged caps, e.g. crown caps

7/18 • for removing threaded caps (B67B 7/14 takes precedence; wrenches B25B 13/00) **[2]**

7/20 • for breaking vacuum seals between lids or covers and bodies of preserving jars, e.g. by wedge action

7/22 • • incorporating loops, e.g. of wire, which are tightened around seal

7/40 • Devices for engaging tags, strips, or tongues for opening by tearing, e.g. slotted keys for opening sardine tins

7/42 • Devices for removing barrel bungs

7/44 • Combination tools, e.g. comprising cork-screws, can piercers, crown-cap removers (combinations of opening devices with cutting tools B26, with devices serving other purposes, see the appropriate places, e.g. B25F, B43K 29/00)

7/46 • Cutting devices, i.e. devices including at least one cutting element having one or more cutting edges for piercing through the wall of a closed container, e.g. can openers (B67B 7/44 takes precedence; machines for domestic use with a plurality of interchangeable units A47J 43/06, A47J 44/00; hand-held cutting tools, cutting, severing, in general B26) **[4]**

7/48 • • punch type, i.e. the cutting element including at least one sharp cutting edge adapted to pierce through the container wall in, ordinarily, a single operating stroke **[4]**

7/50 • • • with fulcrum, i.e. a lever-like actuating handle with provision to establish a pivot point **[4]**

7/52 • • • Plural spaced cutting edges adapted to pierce the container during a single operating stroke **[4]**

7/54 • • sweep cutter type, i.e. an opening device including means to establish a pivot point between the cutting element and the container and having means to move the cutting element about the pivot point **[4]**

7/56 • • • with container penetrating pivot and variable cutter radius, i.e. the distance between the cutting element and the penetrating pivot being changeable **[4]**

7/58 • • • • Freely slidable cutter **[4]**

7/60 • • having force multiplying means employed to relatively turn the container and cutting element about a fixed point to force the cutting element to traverse the container **[4]**

Note(s)

In this group, a simple lever or handle to be manipulated by the operator to relatively rotate the container and opener is not considered to be a force multiplying means.

7/62 • • Progressive fulcrum, i.e. having a lever-like actuating handle and provision to establish a pivot point which is progressively translated relative to the container during the opening operation **[4]**

Note(s)

In this group, the pivot point may be established by (a) contact between the container and a portion of the handle engaging the container, or (b) contact between the handle and a reaction member engaging the container.

7/64 • • • with guide means to engage container wall and guide the cutting element thereabout **[4]**

7/66 • • • cutter pivoted to reaction member **[4]**

7/68 • • shear type, i.e. including cutting elements co-operating with one another so that their respective cutting edges move pass and in substantial contact with each other to perform the cutting operation **[4]**

7/70 • • including an annular, driven, wheel-like roller member adapted to continuously engage a container chime during the opening operation **[4]**

7/72 • • • Cutter comprising rotatable disc **[4]**

7/74 • • • Roller drive means causes initial piercing, i.e. force applied to rotate the wheel-like member causes the cutting element to pierce the container wall **[4]**

7/76 • • • adapted to pierce container side wall **[4]**

7/78 • • including plural cutters **[4]**

7/80 • • with means to cover an opening in the container made by the cutting element **[4]**

7/82 • • with means to prevent the cut portion from dropping into the container or to raise the cut portion out of the container **[4]**

7/84 • • adapted for right or left-hand operation, i.e. the device is capable of being operated in either direction about the container **[4]**

Note(s)

This group covers also a progressive fulcrum type container opener including a fulcrum extending from each side of the cutting blade.

7/86 • • with spout or means to deform or bend the material of the container to form a spout **[4]**

7/88 • • with means to clean or sanitise the cutting element **[4]**

7/90 • • with sensor, activator and controller **[4]**

Note(s)

In this group, the sensor, e.g. trip lever, push button, photo-cell system, or the like, detects a condition, such as the condition of the container, the container contents, the can opener itself or the environment of the opener which may affect the operation of the opener. The activator, e.g. circuit breaker, clutch, valve, or the like, causes a release of energy. The controller, e.g. motor, driver, or the like, changes or causes the operation of the opener.

7/92 • by breaking, e.g. for ampoules **[5]**