

## SECTION B — PERFORMING OPERATIONS; TRANSPORTING

### B05 SPRAYING OR ATOMISING IN GENERAL; APPLYING LIQUIDS OR OTHER FLUENT MATERIALS TO SURFACES, IN GENERAL

**B05B SPRAYING APPARATUS; ATOMISING APPARATUS; NOZZLES** (spray-mixers with nozzles B01F 5/20; processes for applying liquids or other fluent materials to surfaces by spraying B05D) [2]

#### Note(s)

1. This subclass covers particularly apparatus for the release or projection of drops or droplets into the atmosphere or into a chamber to form a mist or the like. For this purpose, the materials to be projected may be suspended in a stream of gas or vapour.
2. Attention is drawn to the Note following the title of class B05.

#### Subclass index

APPARATUS CHARACTERISED BY THEIR STRUCTURE.....	3/00, 9/00, 11/00
APPARATUS FOR DISCHARGE OF FLUIDS FROM TWO OR MORE SOURCES.....	7/00
ELECTROSTATIC OR ELECTRIC APPARATUS.....	5/00
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DELIVERY CONTROL.....	12/00

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| <p><b>1/00 Nozzles, spray heads or other outlets, with or without auxiliary devices such as valves, heating means</b> (B05B 3/00, B05B 5/00, B05B 7/00 take precedence; devices for applying liquids or other fluent materials to surfaces by contact B05C; nozzles for ink-jet printing mechanisms B41J 2/135; nozzles for liquid-dispensing, e.g. in vehicle service stations, B67D 7/42)</p> <p>1/02 • designed to produce a jet, spray, or other discharge of particular shape or nature, e.g. in single drops (B05B 1/26, B05B 1/28, B05B 1/34 take precedence)</p> <p>1/04 • • in flat form, e.g. fan-like, sheet-like</p> <p>1/06 • • in annular, tubular or hollow conical form</p> <p>1/08 • • of pulsating nature, e.g. delivering liquid in successive separate quantities</p> <p>1/10 • • in the form of a fine jet, e.g. for use in wind-screen washers</p> <p>1/12 • capable of producing different kinds of discharge, e.g. either jet or spray (B05B 1/16 takes precedence)</p> <p>1/14 • with multiple outlet openings (B05B 1/02, B05B 1/26 take precedence); with strainers in or outside the outlet opening</p> <p>1/16 • • having selectively-effective outlets</p> <p>1/18 • • Roses; Shower heads</p> <p>1/20 • • Perforated pipes or troughs, e.g. spray booms; Outlet elements therefor</p> <p>1/22 • Spouts (anti-splash devices for water-taps E03C 1/08)</p> <p>1/24 • incorporating means for heating the liquid or other fluent material, e.g. electrically</p> <p>1/26 • with means for mechanically breaking-up or deflecting the jet after discharge, e.g. with fixed deflectors; Breaking-up the discharged liquid or other fluent material by impinging jets</p> | <p>1/28 • with integral means for shielding the discharged liquid or other fluent material, e.g. to limit area of spray; with integral means for catching drips or collecting surplus liquid or other fluent material</p> <p>1/30 • designed to control volume of flow, e.g. with adjustable passages (B05B 1/02 takes precedence)</p> <p>1/32 • • in which a valve member forms part of the outlet opening</p> <p>1/34 • designed to influence the nature of flow of the liquid or other fluent material, e.g. to produce swirl (B05B 1/30 takes precedence)</p> <p>1/36 • Outlets for discharging by overflow</p> <p><b>3/00 Spraying or sprinkling apparatus with moving outlet elements or moving deflecting elements</b> (B05B 5/00 takes precedence)</p> <p>3/02 • with rotating elements</p> <p>3/04 • • driven by the liquid or other fluent material discharged, e.g. the liquid actuating a motor before passing to the outlet</p> <p>3/06 • • • by jet reaction</p> <p>3/08 • • in association with stationary outlet or deflecting elements</p> <p>3/10 • • discharging over substantially the whole periphery of the rotating member</p> <p>3/12 • • with spray booms or the like rotating around an axis by means independent of the liquid or other fluent material discharged</p> <p>3/14 • with oscillating elements; with intermittent operation</p> <p>3/16 • • driven or controlled by the liquid or other fluent material discharged, e.g. the liquid actuating a motor before passing to the outlet</p> <p>3/18 • with elements moving in a straight line, e.g. along a track; Mobile sprinklers [2]</p> |
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**5/00 Electrostatic spraying apparatus; Spraying apparatus with means for charging the spray electrically; Apparatus for spraying liquids or other fluent materials by other electric means**

- 5/025 • Discharge apparatus, e.g. electrostatic spray guns [5]
- 5/03 • • characterised by the use of gas [5]
- 5/035 • • characterised by gasless spraying [5]
- 5/04 • • characterised by having rotary outlet or deflecting elements
- 5/043 • • using induction-charging [5]
- 5/047 • • using tribo-charging [5]
- 5/053 • • Arrangements for supplying power, e.g. charging power [5]
- 5/057 • • Arrangements for discharging liquids or other fluent material without using a gun or nozzle [5]
- 5/06 • using electric arc
- 5/08 • Plant for applying liquids or other fluent materials to objects
- 5/10 • • Arrangements for supplying power, e.g. charging power (B05B 5/053 takes precedence) [5]
- 5/12 • • specially adapted for coating the interior of hollow bodies [5]
- 5/14 • • specially adapted for coating continuously moving elongated bodies, e.g. wires, strips, pipes [5]
- 5/16 • Arrangements for supplying liquids or other fluent material [5]

**7/00 Spraying apparatus for discharge of liquids or other fluent materials from two or more sources, e.g. of liquid and air, of powder and gas (B05B 3/00, B05B 5/00 take precedence)**

- 7/02 • Spray pistols; Apparatus for discharge (B05B 7/14, B05B 7/16, B05B 7/24 take precedence)
- 7/04 • • with arrangements for mixing liquids or other fluent materials before discharge [2]
- 7/06 • • with one outlet orifice surrounding another approximately in the same plane (B05B 7/10 takes precedence)
- 7/08 • • with separate outlet orifices, e.g. to form parallel jets, to form intersecting jets
- 7/10 • • producing a swirling discharge
- 7/12 • • designed to control volume of flow, e.g. with adjustable passages
- 7/14 • designed for spraying particulate materials (B05B 7/16 takes precedence)
- 7/16 • incorporating means for heating the material to be sprayed
- 7/18 • • the material having originally the shape of a wire, rod, or the like
- 7/20 • • by flame or combustion
- 7/22 • • electrically, e.g. by arc
- 7/24 • with means, e.g. a container, for supplying liquid or other fluent material to a discharge device (B05B 7/14, B05B 7/16, B05B 11/00 take precedence)
- 7/26 • • Apparatus in which liquids or other fluent materials from different sources are brought together before entering the discharge device
- 7/28 • • • in which one liquid or other fluent material is fed or drawn through an orifice into a stream of a carrying fluid
- 7/30 • • • • the first liquid or other fluent material being fed by gravity, or sucked into the carrying fluid
- 7/32 • • • • the fed liquid or other fluent material being under pressure

**9/00 Spraying apparatus for discharge of liquid or other fluent material without essentially mixing with gas or vapour (B05B 11/00 takes precedence) [3]**

- 9/01 • Spray pistols (B05B 9/03 takes precedence) [3]
- 9/03 • characterised by means for supplying liquid or other fluent material [3]
- 9/04 • • with pressurised or compressible container (aerosol containers B65D 83/14); with pump [3]
- 9/043 • • • having pump readily separable from container [2, 3]
- 9/047 • • • supply being effected by follower in container, e.g. membrane or floating piston [2, 3]
- 9/06 • • • the delivery being related to the movement of a vehicle, e.g. the pump being driven by a vehicle wheel [3]
- 9/08 • • • Apparatus to be carried on or by a person, e.g. of knapsack type [3, 4]

**11/00 Single-unit, i.e. unitary, hand-held apparatus in which flow of liquid or other fluent material is produced by the operator at the moment of use [2]**

- 11/02 • the flow being effected by a follower, e.g. membrane, floating piston, in container for liquid or other fluent material [2]
- 11/04 • the flow being effected by deformation of container for liquid or other fluent material [2]
- 11/06 • the spray being effected by gas or vapour flow, e.g. from a compressible bulb [2, 3]

**12/00 Arrangements or special adaptations of delivery controlling means in spraying systems [2]**

- 12/02 • for controlling time, or sequence, of delivery [2]
- 12/04 • • for sequential operation or multiple outlets [2]
- 12/06 • • for effecting pulsating flow [2]
- 12/08 • responsive to condition of liquid or other fluent material discharged, of ambient medium or of target [2]
- 12/10 • • responsive to temperature or viscosity of liquid or other fluent material discharged [2]
- 12/12 • • responsive to conditions of ambient medium or target, e.g. humidity, temperature [2]
- 12/14 • for supplying a selected one of a plurality of liquids or other fluent materials to a single spray outlet [3]

**13/00 Machines or plants for applying liquids or other fluent materials to surfaces of objects or other work by spraying, not covered by groups B05B 1/00-B05B 11/00 (processes for applying liquids or other fluent materials to surfaces in general B05D; means for supplying or discharging liquid or other fluent material for this purpose, see the relevant one of groups B05B 1/00-B05B 12/00) [3]**

- 13/02 • Means for supporting work; Arrangement or mounting of spray heads; Adaptation or arrangement of means for feeding work (B05B 13/06 takes precedence)
- 13/04 • • the spray heads being moved during operation
- 13/06 • specially designed for treating the inside of hollow bodies (spray heads B05B 1/00-B05B 7/00)

**15/00 Details of spraying plant or apparatus not otherwise provided for; Accessories [4]**

- 15/02 • Arrangements or devices for cleaning discharge openings
- 15/04 • Control of spray area, e.g. masking, side shields; Means for collection or re-use of excess material (B05B 1/28 takes precedence)

- 15/06 • Mountings, supporting or holding means, or rests for spray heads or other outlets when in use or out of use (B05B 15/10 takes precedence)
- 15/08 • • Means for adjusting position of spray heads
- 15/10 • Arrangements for moving spray heads automatically to or from the working position
- 15/12 • Spray booths [4]

- 17/00 Apparatus for spraying or atomising liquids or other fluent materials, not covered by any other group of this subclass** (dropping or releasing powdered, liquid or gaseous matter in flight B64D 1/16) [2]
- 17/04 • operating with special methods
- 17/06 • • using ultrasonic vibrations
- 17/08 • Fountains (drinking fountains E03B 9/20; wash fountains E03C 1/16)