COOPERATIVE PATENT CLASSIFICATION

A61M

NOTES

1. This subclass covers suction, pumping or atomising devices for medical use (e.g. cups, breast relievers, irrigators, sprays, powder insufflators, atomisers, inhalers), apparatus for general or local anaesthetics, devices or methods for causing a change in the state of consciousness, catheters, dilators, apparatus for introducing medicines into the body other than orally.

2. Void.

3. When classifying in this group, classification is also made in group B01D 15/08 insofar as subject matter of general interest relating to chromatography is concerned.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

<table>
<thead>
<tr>
<th>IPC Group</th>
<th>Covered by</th>
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<tbody>
<tr>
<td>A61M 1/18</td>
<td>B01D 63/02, B01D 63/04</td>
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<tr>
<td>A61M 1/20</td>
<td>B01D 63/06</td>
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<td>A61M 1/22</td>
<td>B01D 63/08</td>
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<td>A61M 1/24</td>
<td>B01D 63/10</td>
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<td>A61M 3/04</td>
<td>A61M 3/02</td>
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<td>A61M 5/175</td>
<td>A61M 5/168</td>
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<td>A61M 5/303</td>
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<td>A61M 25/01</td>
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<td>A61M 25/0133</td>
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<tr>
<td>A61M 25/095</td>
<td>A61M 25/01, A61B 5/00, A61N 1/056</td>
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<tr>
<td>A61M 25/098</td>
<td>A61M 25/0108</td>
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<tr>
<td>A61M 25/12</td>
<td>A61M 25/10, A61M 29/02</td>
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<tr>
<td>A61M 25/14</td>
<td>A61M 25/0021</td>
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<tr>
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<td>A61M 37/0009, A61N 5/10</td>
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<td>A61M 37/0069, A61N 5/10</td>
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<td>A61M 37/0069, A61N 5/10</td>
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<td>A61M 37/0069, A61N 5/10</td>
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<td>A61M 36/14</td>
<td>A61M 37/0069, A61N 5/10</td>
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</table>

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.
Suction or pumping devices for medical purposes; Devices for carrying-off, for
treatment of, or for carrying-over, body-liquids;
Drainage systems (A61M 3/00 - A61M 5/00);
A61M 11/00 - A61M 16/00;
A61M 27/00 - A61M 35/00 take precedence );
catheters A61M 25/00; tube connectors, tube
 couplings, valves or branch units specially adapted for
medical use A61M 39/00; devices for taking samples
of blood A61B 5/14; implements for holding wounds
open A61B 17/02; (saliva removers for dentists
A61C 17/06 ); filters implantable into blood vessels
A61F 2/01; pumps in general F04)

WARNING
Groups A61M 1/0007, A61M 1/0015,
A61M 1/0017, A61M 1/0023 - A61M 1/0029,
A61M 1/0033, A61M 1/0035, A61M 1/0045,
A61M 1/005 - A61M 1/0054, A61M 1/006,
A61M 1/0068, A61M 1/0072, A61M 1/0082,
A61M 1/0086, A61M 1/009 - A61M 1/0098,
A61M 1/0204, A61M 1/0213, A61M 1/0236,
A61M 1/0254, A61M 1/0277, A61M 1/0286,
A61M 1/0295, A61M 1/062 - A61M 1/068,
A61M 1/1001, A61M 1/1008,
A61M 1/1012, A61M 1/1036,
A61M 1/1039 - A61M 1/1044,
A61M 1/1048, A61M 1/1051,
A61M 1/1055 - A61M 1/1058,
A61M 1/1062 - A61M 1/1065,
A61M 1/1074 - A61M 1/1075, A61M 1/1082,
A61M 1/1084 - A61M 1/1087, A61M 1/1089,
A61M 1/1096. A61M 1/122, A61M 1/125,
A61M 1/1601 - A61M 1/1652,
A61M 1/1606, A61M 1/1676,
A61M 1/1682 - A61M 1/1684,
A61M 1/1688, A61M 1/262 - A61M 1/267,
A61M 1/281, A61M 1/284,
A61M 1/288, A61M 1/301 - A61M 1/309,
A61M 1/322 - A61M 1/327,
A61M 1/3403, A61M 1/3417,
A61M 1/3424 - A61M 1/3437,
A61M 1/3444 - A61M 1/3451,
A61M 1/3458, A61M 1/3465, A61M 1/3468,
A61M 1/3475 - A61M 1/3493,
A61M 1/3601, A61M 1/362,
A61M 1/3609, A61M 1/3629,
A61M 1/3655 - A61M 1/3668,
A61M 1/3672, A61M 1/3676, A61M 1/3678,
A61M 1/3683, A61M 1/3686, A61M 1/3689,
A61M 1/3692, A61M 1/3695, A61M 1/3698
should be considered in order to perform a
complete search.

Until reclassification is complete, groups
A61M 1/00 or respective subgroup
and A61M 1/0007, A61M 1/0015,
A61M 1/0017, A61M 1/0025 - A61M 1/0029,
A61M 1/0033, A61M 1/0035, A61M 1/0045,
A61M 1/005 - A61M 1/0054, A61M 1/006,
A61M 1/0068 - A61M 1/0072, A61M 1/0082,
A61M 1/0086, A61M 1/009 - A61M 1/0098,
A61M 1/0204, A61M 1/0213 - A61M 1/0236,
A61M 1/0254, A61M 1/0277, A61M 1/0286,
...
Blood transfusion apparatus (blood infusion by syringes A61M 5/14)

1/0204 . . . [Blood stirrers, e.g. for defibrination]
1/0209 . . . [Multiple bag systems for separating or storing blood components]
1/0213 . . . [with isolated sections of the tube used as additive reservoirs]
1/0218 . . . [with filters]
1/0222 . . . [and filter bypass]
1/0227 . . . [and means for securing the filter against damage, e.g. during centrifugation]
1/0231 . . . [with gas separating means, e.g. air outlet through microporous membrane or gas bag]
1/0236 . . . [with sampling means, e.g. sample bag or sampling port]
1/024 . . . [Means for controlling the quantity of transfused blood, e.g. by weighing the container and automatic stopping of the transfusion after reaching a determined amount]
1/0245 . . . [combined with blood container shaking means]
1/025 . . . [Means for agitating or shaking blood containers (A61M 1/0245 takes precedence; shaking in general B01F 11/00)]
1/0254 . . . [with a support plate moving only in one plane, e.g. horizontal]
1/0259 . . . [Apparatus for treatment of blood or blood constituents not otherwise provided for (for agitating A61M 1/025; for separating blood components present in distinct layers in a container A61M 1/029)]
1/0272 . . . [Apparatus for treatment of blood or blood constituents prior to or for conservation, e.g. freezing, drying or centrifuging]
1/0277 . . . [Frames constraining or supporting bags, e.g. during freezing]
1/0281 . . . [Apparatus for treatment of blood or blood constituents prior to transfusion, e.g. washing, filtering or thawing]
1/0286 . . . [Handling a large number of blood product units, e.g. storage cabinets, blood bank administration]
1/029 . . . [Separating blood components present in distinct layers in a container, not otherwise provided for (containers for storing blood or blood components A61J 1/05; sampling or analysing blood by separating blood components G01N 33/491)]
1/0295 . . . [whereby the blood container and a solution container are compressed simultaneously by the same means]
1/04 . . . [Artificial] pneumothorax apparatus
1/06 . . . Milking pumps (feeding-bottles A61J 9/00)
1/062 . . . [Pump accessories]
1/064 . . . [Suction cups]
1/066 . . . [Inserts therefor]
[A61M]

I/068 . . . {having means for simultaneous feeding, e.g. with rubber nipple for feeding}
I/08 . . . Cupping glasses
I/10 . . . Blood pumps; Artificial hearts; Devices for mechanical circulatory assistance, e.g. intra-aortic balloon pumps (artificial heart valves A61F 2/24; heart stimulation A61H 31/00)
I/1001 . . . {General aspects of blood pumps irrespective of pump type}
I/1003 . . . {skeletal muscle-powered}
I/1005 . . . {with means for making a blood flow pulsatile (moving filter membranes used for pumping A61M 1/267; piston pumps A61M 1/1081)}
I/1006 . . . {Blood pumps incorporated within another functional device, e.g. an oxygenator, a dialyser or a blood chamber}
I/1008 . . . {Tubes; Connections therefor}
I/101 . . . {Non-positive displacement pumps, e.g. impeller, centrifugal, vane pumps}
I/1012 . . . {Constructional features thereof}
I/1013 . . . Types of bearings
I/1015 . . . Magnetic bearings
I/1017 . . . Hydrodynamic bearings
I/1018 . . . with occluders preventing backflow
I/102 . . . {having a purge fluid supply}
I/1022 . . . {using filtered blood as purge fluid}
I/1024 . . . {having a collapsible rotor}
I/1025 . . . {Details on blood sealings between rotational parts, e.g. sealing by axial forces}
I/1029 . . . {Drive systems therefor}
I/1031 . . . {using a motor with canned rotor, i.e. a motor enclosed within a casing along with the rotor so that the motor bearings are lubricated by the blood that is being pumped}
I/1032 . . . {with hydraulic or pneumatic driving means}
I/1034 . . . {using rotating cables for driving}
I/1036 . . . {using rotating magnets for driving}
I/1037 . . . {Pumps having flexible elements, e.g. with membranes, diaphragms, or bladder pumps (Moving membranes in blood filters used for pumping A61M 1/267)}
I/1039 . . . {Peristaltic pumps}
I/1041 . . . Linear
I/1043 . . . Constructional features thereof
I/1044 . . . {Compliance chamber containing a gas or liquid other than blood to compensate volume variations of a blood chamber}
I/1046 . . . {Drive systems therefor, e.g. mechanically, electromechanically or skeletal muscle drive means}
I/1048 . . . {Characterised by way of converting the movement}
I/1049 . . . {with means converting the rotation of a motor into a translational movement of the flexible element}
I/1051 . . . {the axis of both movements being parallel, e.g. roller screw actuator, cylindrical cam transmission}
I/1053 . . . {using non-rotary electrical means}
I/1055 . . . {Electromagnetic means, e.g. solenoids or ferro-fluids, magnetostrictive means}

I/1056 . . . {Thermo-electric means, e.g. shaped memory alloys}
I/1058 . . . {Piezoelectric means}
I/106 . . . {using hydraulic or pneumatic means}
I/1062 . . . {with application of vacuum at the blood pump, e.g. to accelerate filling}
I/1063 . . . {Diastole or systole switching by stopping or reversing a hydraulic or pneumatic pump operating at a much higher cyclical speed than the heart rate}
I/1065 . . . {Diastole or systole switching by valve means between the blood pump and the hydraulic or pneumatic energy source}
I/1067 . . . {using a blood vessel as flexible element (not used, see subgroups)}
I/1068 . . . {using the heart as flexible element}
I/107 . . . {Pulsating membrane pumps without valves, e.g. for counter pulsation, extra-arterial balloon pumps}
I/1072 . . . {Intra-arterial balloon pumps, e.g. intra-arteric (intravascular pumps A61M 1/125)}
I/1074 . . . {Intra-ventricular balloon pumps}
I/1075 . . . {the pump membrane acting as inlet valve}
I/1081 . . . {Piston pumps}
I/1082 . . . {High-frequency pumps}
I/1084 . . . {Venturi or jet pumps}
I/1086 . . . {Regulating or controlling systems therefor}
I/1087 . . . {Active valves for blood pumps or artificial hearts, i.e. using an external force for actuating the valve}
I/1089 . . . {where the valve is formed by a flexible tube element which is clamped for restricting the flow}
I/1096 . . . {Passive valves for blood pumps or artificial hearts, i.e. valves actuated by the fluid}
I/1098 . . . {Valves having flexible or resilient parts, e.g. flap valve}
I/12 . . . implantable into the body {not used, see subgroups}
I/122 . . . {Heart assist devices, i.e. for assisting an ailing heart, using additional pumping means in the blood circuit}
I/125 . . . {intravascular, i.e. introduced or implanted in an existing blood vessel}
I/127 . . . {Energy supply devices, converters therefor}
I/14 . . . Dialysis systems; Artificial kidneys; Blood oxygenators; {Reciprocating systems for treatment of body fluids, e.g. single needle systems for haemofiltration, pheresis haemofiltration using non reciprocating systems A61M 1/34; extracorporeal blood circuit aspects A61M 1/36}; {processes of separation using semi-permeable membranes B01D 61/00; semi-permeable membranes characterised by the material, manufacturing processes therefor B01D 71/00}
I/16 . . . with membranes {A61M 1/30 takes precedence; membranes per se B01D 69/00, B01D 71/00}
I/1601 . . . {Control or regulation}
I/1603 . . . {Regulation parameters}
I/1605 . . . {Physical characteristics of the dialysate fluid}
I/1607 . . . {before use}
I/1609 . . . {after use}
I/1611 . . . {Weight of the patient}
extracorporeal blood circuit aspects A61M 1/34

diafiltration { (A61M 1/30, A61M 1/3643) }

Priming (priming in extracorporeal blood circuits A61M 1/3643)

Reciprocating systems, alternately withdrawing blood from and returning it to the patient, e.g. single-lumen-needle dialysis or single needle systems for haemofiltration, pheresis

[Details]

[ having a reservoir for withdrawn untreated blood]

[ having a reservoir for treated blood to be returned]

[ Treatment chamber used as reservoir, e.g. centrifuge bowl or filter with movable membrane]

[Control of inversion point between collection and re-infusion phase]

[Pressure control, e.g. using substantially rigid closed, gas buffered or elastic reservoirs]

[Time control]

[Volume control, e.g. with open or flexible containers, by counting the number of pump revolutions, weighing]

[with trans-membrane pressure [TMP] increasing substantially continuously during arterial phase]

Oxygenators without membranes

[Antifoam; Defoaming]

[Surfactant coating; Improving wettability]

[using catalytic production of oxygen]

Filtering material out of the blood by passing it through a membrane, i.e. haemofiltration, dianifiltration ((A61M 1/30 takes precedence; extracorporeal blood circuit aspects A61M 1/36))
A61M

1/3406 . . . [Physical characteristics of the filtrate, e.g. urea]
1/341 . . . [by measuring the filtrate rate, volume]
1/3413 . . . [Dialfiltration]
1/3417 . . . [using distinct filters for dialysis and ultrafiltration]
1/342 . . . [Adding solutions to the blood, e.g. substitution solutions (for preventing coagulation A61M 1/3672)]
1/3424 . . . [Substitution fluid path]
1/3427 . . . [back through the membrane, e.g. by inverted trans-membrane pressure [TMP]]
1/3431 . . . [upstream the filter]
1/3434 . . . [with pre-dilution and post-dilution]
1/3437 . . . [downstream the filter, e.g. post-dilution with filtrate]
1/3441 . . . [Substitution rate control as a function of the ultrafiltration rate]
1/344 . . . [in which the collected ultra-filtrate expels an equal volume of substitution fluid from a reservoir]
1/3448 . . . [by mechanical linked pumps in both ultrafiltrate and substitution flow line]
1/3451 . . . [the difference in weight between both ultrafiltrate and substitution reservoir being used as control signal]
1/3455 . . . [Substitution fluids]
1/3458 . . . [having electrolytes not present in the dialysate]
1/3462 . . . [Circuits for the preparation thereof]
1/3465 . . . [using dialysate as substitution fluid]
1/3468 . . . [using treated filtrate as substitution fluid]
1/3472 . . . [with treatment of the filtrate]
1/3475 . . . [with filtrate treatment agent in the same enclosure as the membrane]
1/3479 . . . [by dialyzing the filtrate]
1/3482 . . . [by filtrating the filtrate using another cross-flow filter, e.g. a membrane filter]
1/3486 . . . [Biological, chemical treatment, e.g. chemical precipitation; treatment by absorbents]
1/3489 . . . [by biological cells]
1/3493 . . . [using treatment agents in suspension]
1/3496 . . . [Plasmapheresis; Leucopheresis; Lymphopheresis (A61M 1/3472 takes precedence; single-needle processes A61M 1/36)]

1/36 . . . Other treatment of blood in a by-pass of the natural circulatory system, e.g. temperature adaptation, irradiation (; Extra-corpooreal blood circuits)
1/3601 . . . [Extra-corpooreal circuits in which the blood fluid passes more than once through the treatment unit]
1/3603 . . . [in the same direction]
1/3604 . . . [in opposite directions]
1/3606 . . . [Arrangements for blood-volume reduction of extra-corpooreal circuits]
1/3607 . . . [Regulation parameters]
1/3609 . . . [Physical characteristics of the blood, e.g. haematocrit, urea]
1/361 . . . [before treatment]
1/3612 . . . [after treatment]
1/3613 . . . [Reperfusion, e.g. of the coronary vessels, e.g. retroperfusion]
1/3615 . . . [Cleaning blood contaminated by local chemotherapy of a body part temporarily isolated from the blood circuit]
1/3616 . . . [Batch-type treatment]
1/3618 . . . [Magnetic separation]
1/362 . . . [changing physical properties of target cells by binding them to added particles to facilitate their subsequent separation from other cells, e.g. immunoadfinity]
1/3621 . . . [Extra-corpooreal blood circuits (single-needle circuits A61M 1/36)]
1/3624 . . . [Level detectors; Level control]
1/3626 . . . [Gas bubble detectors (blood leak detection by change of transparency of dialysate A61M 1/1992); in infusion devices A61M 5/365; observing bubbles in a liquid pool for leak detection, in general G01M 3/06]
1/3627 . . . [Degassing devices; Buffer reservoirs; Drip chambers; Blood filters (priming A61M 1/3643; blood filters for infusion A61M 5/165)]
1/3629 . . . [degassing by changing pump speed, e.g. during priming]
1/363 . . . [Degassing by using vibrations]
1/3632 . . . [Combined venous-cardiomyotomy reservoirs]
1/3633 . . . [Blood component filters, e.g. leukocyte filters]
1/3635 . . . [Constructional details]
1/3636 . . . [having a flexible housing]
1/3638 . . . [with a vapour trap]
1/3639 . . . [Blood pressure control, pressure transducers specially adapted therefor]
1/3641 . . . [Pressure isolators]
1/3643 . . . [Priming, rinsing before or after use]
1/3644 . . . [Mode of operation]
1/3646 . . . [Expelling the residual body fluid after use, e.g. back to the body]
1/3647 . . . [with recirculation of the priming solution]
1/3649 . . . [using dialysate as priming or rinsing liquid]
1/365 . . . [through membranes, e.g. by inverted trans-membrane pressure [TMP]]
1/3652 . . . [using gas, e.g. air]
1/3653 . . . [Interfaces between patient blood circulation and extra-corpooreal blood circuit]
1/3655 . . . [Arterio-venous shunts, fistulae]
1/3656 . . . [Monitoring patency or flow at connection sites; Detecting disconnections]
1/3658 . . . [Indicating the amount of purified blood recirculating in the fistula or shunt]
1/3659 . . . [ Cannulae pertaining to extracorporeal circulation]
1/3661 . . . [for haemodialysis]
1/3663 . . . [Flow rate transducers; Flow integrators (measuring the flow in general G01P)]
1/3664 . . . [for preparing cardioplegia solutions]
1/3666 . . . [Cardiac or cardiopulmonary bypass, e.g. heart-lung machines]
1/3667 . . . [with assisted venous return]
1/3669 . . . [Electrical impedance measurement of body fluids; transducers specially adapted therefor]
1/367 . . . [Circuit parts not covered by the preceding subgroups of group A61M 1/3621]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning
(Other apparatus for introducing medicines into the body A61M 29/00 - A61M 37/00)

3/00 Medical syringes, e.g. enemata; Irrigators
(A61M 5/00 takes precedence; pistons A61M 5/315)

WARNING


Until reclassification is complete, groups A61M 3/02 and A61M 3/0204 - A61M 3/022 should be considered to perform a complete search.

3/005 . . . [comprising means for injection of two or more media, e.g. by mixing]
3/02 . . . Enemata; Irrigators
3/0204 . . . [Physical characteristics of the irrigation fluid, e.g. conductivity or turbidity]
3/0208 . . . [before use]
3/0212 . . . [after use]
3/0216 . . . [Pressure]
3/022 . . . [Volume; Flow rate]

3/0225 . . . [Devices on which the patient can sit, e.g. mounted on a toilet bowl (combined with bidets A61M 3/06); Devices containing liquid pumped by the patient's weight]
3/0229 . . . [Devices operating in a closed circuit, i.e. recycling the irrigating fluid]
3/0233 . . . [characterised by liquid supply means, e.g. from pressurised reservoirs]
3/0237 . . . [the pressure being generated in the reservoir, e.g. by gas generating tablets]
3/0241 . . . [the liquid being supplied by gravity]
3/0245 . . . [Containers therefor, e.g. with heating means, with storage means for cannula]
3/025 . . . [supplied directly from the pressurised water source, e.g. with medicament supply (combined with bidets A61M 3/06)]
3/0254 . . . [the liquid being pumped (by the patient's weight A61M 3/0225)]
3/0258 . . . [by means of electric pumps]
3/0262 . . . [manually, e.g. by squeezing a bulb]
3/0266 . . . [Stands, holders or storage means for irrigation devices (containers with storage means for cannula A61M 3/0245)]
3/027 . . . [Devices for holding the cannula in position, e.g. belts (cannula details A61M 3/0279)]
3/0275 . . . [Pulsating jets; Vibrating nozzles]
3/0279 . . . [Cannula; Nozzles; Tips; their connection means]
3/0283 . . . [with at least two inner passageways, a first one for irrigating and a second for evacuating]
3/0287 . . . [with an external liquid collector]
3/0291 . . . [with dilating fingers]
3/0295 . . . [with inflatable balloon]
3/06 . . . combined with bidets

5/00 Devices for bringing media into the body in a subcutaneous, intra-vascular or intramuscular way; Accessories therefor, e.g. filling or cleaning devices, arm-rests {vaccination appliances for veterinary use A61D 1/025}; tube connectors, tube couplings, valves or branch units specially adapted for medical use A61M 39/00; containers specially adapted for medical or pharmaceutical purposes A61J 1/00; [combinations of vial and syringe for mixing or transferring their contents A61J 1/20; holders for containers for collecting, storing or administering blood or medical fluids A61J 1/16]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning

5/14 . . . Infusion devices, e.g. infusing by gravity; Blood infusion; Accessories therefor (suction in pumping blood transfusion A61M 1/02; [infusion containers A61J 1/05])

5/1401  . . . [Functional features]
5/1402  . . . [Priming]
5/1403  . . . [Flushing or purging]
5/1404  . . . [Keep vein-open rate [KVO], i.e. low flow rate]
5/1405  . . . [Patient controlled analgesia [PCA]]
5/1406  . . . [Minimizing backflow along the delivery catheter track]
5/1407  . . . [Infusion of two or more substances]
5/1408  . . . [in parallel, e.g. manifolds, sequencing valves (access sites A61M 39/02; tube connectors A61M 39/10)]
5/1409  . . . [in series, e.g. first substance passing through container holding second substance, e.g. reconstitution systems (needle sets A61M 5/162)]
5/141  . . . [with capillaries for restricting fluid flow]
5/1411  . . . [Drip chambers (A61M 5/162, A61M 5/1689, A61M 5/40 take precedence)]
5/1412  . . . [Burettes, measuring cylinders (for laboratory use B01L 3/02)]
5/1413  . . . [Modular systems comprising interconnecting elements]
5/1414  . . . [Hanging-up devices]
5/1415  . . . [Stands, brackets or the like for supporting infusion accessories]
5/1416  . . . [placed on the body of the patient]
5/1417  . . . [Holder or handles for hanging up infusion containers]
5/1418  . . . [Clips, separators or the like for supporting tubes or leads]
5/142  . . . Pressure infusion, e.g. using pumps

**NOTE**

In this group, the following expression is used with the meaning indicated:
- "pressure infusion" includes powered injection working at a controlled rate

5/14204  . . . [with gas-producing electrochemical cell]
5/14208  . . . [with a programmable infusion control system, characterised by the infusion program]
5/14212  . . . [Pumping with an aspiration and an expulsion action]
5/14216  . . . [Reciprocating piston type]
5/1422  . . . [with double acting or multiple pistons]
5/14224  . . . [Diaphragm type]
5/14228  . . . [with linear peristaltic action, i.e. comprising at least three pressurising members or a helical member]

**NOTE**

Pumps having tubular flexible working members F04B 43/08

5/14232  . . . [Roller pumps]

**NOTE**

Pumps having rollers for peristaltic action F04B 43/12

5/14236  . . . [Screw, impeller or centrifugal type pumps]

5/1424  . . . . . . [Manually operated pumps]
5/14244  . . . . . . [adapted to be carried by the patient, e.g. portable on the body]
5/14248  . . . . . . [of the skin patch type]
5/14252  . . . . . . [with needle insertion means]
5/14256  . . . . . . [with means for preventing access to the needle after use]
5/1426  . . . . . . [with means for preventing access to the needle after use]
5/14264  . . . . . . [with means for compensating influence from the environment]
5/14268  . . . . . . [with a reusable and a disposable component]
5/14272  . . . . . . [for emergency, field or home use, e.g. self-contained kits to be carried by the doctor]
5/14276  . . . . . . [specially adapted for implantation]
5/1428  . . . . . . [with manual pumping action]
5/14284  . . . . . . [with needle insertion means]
5/14288  . . . . . . [Infusion or injection simulation (simulation of surgery in general A61B 34/10; training for or simulation of use of injection or infusion devices G09B 23/285)]
5/14292  . . . . . . [Computer-based infusion planning or simulation of spatio-temporal infusate distribution]
5/14296  . . . . . . [Pharmacokinetic models]
5/145  . . . . . . [using pressurised reservoirs, e.g. pressurised by means of pistons]
5/14506  . . . . . . [mechanically driven, e.g. spring or clockwork]
5/14513  . . . . . . [with secondary fluid driving or regulating the infusion]
5/1452  . . . . . . [pressurised by means of pistons]
5/14526  . . . . . . [the piston being actuated by fluid pressure]
5/14533  . . . . . . [cam actuated]
5/1454  . . . . . . [spring-actuated, e.g. by a clockwork]
5/14546  . . . . . . [Front-loading type injectors]
5/14553  . . . . . . [comprising a pressure jacket]
5/1456  . . . . . . [with a replaceable reservoir comprising a piston rod to be moved into the reservoir, e.g. the piston rod is part of the removable reservoir]
5/14566  . . . . . . [with a replaceable reservoir for receiving a piston rod of the pump]
5/14573  . . . . . . [with a replaceable reservoir for quick connection/disconnection with a driving system]
5/1458  . . . . . . [Means for capture of the plunger flange]
5/14586  . . . . . . [pressurised by means of a flexible diaphragm]
5/14593  . . . . . . [the diaphragm being actuated by fluid pressure]
5/148  . . . . . . [flexible, e.g. independent bags (A61M 5/155 takes precedence)]
5/1483  . . . . . . [using flexible bags externally pressurised by fluid pressure]
5/1486  . . . . . . [the bags being substantially completely surrounded by fluid]
5/152  . . . . . . [pressurised by contraction of elastic reservoirs ([containers for dispensing contents by contraction of an elastic bag provided therein, in general B65D 83/0061)])
Syringes; Irrigators; Baths for subaquatic intestinal cleaning

5/155 . . . . pressurised by gas [introduced into the reservoir]
5/158 . . . Needles [for infusions; Accessories therefor, e.g. for inserting infusion needles, or for holding them on the body]

2005/1581 . . . [Right-angle needle-type devices]
5/1582 . . . [Double lumen needles]
2005/1583 . . . [Needle extractors]
5/1585 . . . [Needle inserters]
2005/1586 . . . [Holding accessories for holding infusion needles on the body (holding devices for catheters A61M 25/02)]
2005/1587 . . . [suitable for being connected to an infusion line after insertion into a patient]
2005/1588 . . . [having means for monitoring, controlling or visual inspection, e.g. for patency check, avoiding extravasation]

5/162 . . . Needle sets, i.e. connections by puncture between reservoir and tube (; Connections between reservoir and tube (in jet-action syringes A61M 5/30; connectors for tubes having sealed ends and a needle for piercing them A61M 39/14)]

2005/1623 . . . [Details of air intake]
5/1626 . . . [Needle protectors therefor (in combination with syringes A61M 5/3202; protectors for sharps A61B 50/3001)]

5/165 . . . Filtering accessories, e.g. blood filters, filters for infusion liquids ([A61M 1/14], A61M 1/34, A61M 1/3627, A61M 1/3679, A61M 1/3687) take precedence; [needle sets with incorporated air inlet filters A61M 5/162)]

2005/1652 . . . [Filter with duct, e.g. filtering element incorporated in a flow line, tube, duct]
2005/1655 . . . [Filter with fibers, e.g. filtering element in form of hollow fibers]
2005/1657 . . . [Filter with membrane, e.g. membrane, flat sheet type infusion filter]

5/168 . . . Means for controlling media flow to the body or for metering media to the body, e.g. drip meters, counters (; Monitoring media flow to the body (flow control in general G05D 7/00)]

5/16804 . . . [Flow controllers]
5/16809 . . . [by repeated filling and emptying of an intermediate volume (pressure infusion using positive displacement pumps A61M 5/142)]
5/16813 . . . [by controlling the degree of opening of the flow line]
5/16818 . . . [by changing the height of the reservoir]
5/16822 . . . [by controlling air intake into infusion reservoir (needle sets with air inlet A61M 5/162)]
5/16827 . . . [controlling delivery of multiple fluids, e.g. sequencing, mixing or via separate flow-paths (infusion of multiple fluids without using a controller A61M 5/147)]
5/16831 . . . [Monitoring, detecting, signalling or eliminating infusion flow anomalies (low-level float-valves causing cut-off A61M 5/40; indicating or recording presence, absence or direction of flow in general G01P 13/0066)]
5/16836 . . . [by sensing tissue properties at the infusion site, e.g. for detecting infiltration (detecting tissue temperature for diagnostic purposes A61M 39/0247)]

5/1684 . . . [by detecting the amount of infusate remaining, e.g. signalling end of infusion]
5/16845 . . . [by weight]
5/1685 . . . [by detection of position of a floating member]
5/16854 . . . [by monitoring line pressure]
5/16859 . . . [Evaluation of pressure response, e.g. to an applied pulse]

2005/16863 . . . [Occlusion detection]
2005/16868 . . . [Downstream occlusion sensors]
2005/16872 . . . [Upstream occlusion sensors]

5/16877 . . . [Adjusting flow; Devices for setting a flow rate]
5/16881 . . . [Regulating valves (on-off valves, e.g. clamps A61M 39/28)]
5/16886 . . . [for measuring fluid flow rate, i.e. flowmeters]
5/1689 . . . [Drip counters]
5/16895 . . . [by monitoring weight change, e.g. of infusion container]
5/172 . . . electrical or electronic ([A61M 5/16804, A61M 5/16831 take precedence])
5/1723 . . . [using feedback of body parameters, e.g. blood-sugar, pressure (measurement of body parameters A61B 5/00)]

2005/1726 . . . [the body parameters being measured at, or proximate to, the infusion site]

5/178 . . . Syringes
5/1782 . . . [Devices aiding filling of syringes in situ (combination of a vial and a syringe for transferring or mixing their contents A61J 1/2096, filling of medical containers in general B65B 3/003)]

5/1785 . . . [comprising radioactive shield means (syringe shields or holders for storage of radioactive sources G21F 5/018)]

2005/1787 . . . [Syringes for sequential delivery of fluids, e.g. first medicament and then flushing liquid]
5/19 . . . [having more than one chamber, e.g. including a manifold coupling two parallelly aligned syringes through separate channels to a common discharge assembly (surgical glue applicators A61B 17/00491)]

5/20 . . . [Automatic syringes, e.g. with automatically actuated piston rod, with automatic needle injection, filling automatically (A61M 5/142, A61M 5/46) take precedence; [hypodermic projectiles F42B 12/54)]

2005/2006 . . . [Having specific accessories]
2005/2013 . . . [triggering of discharging means by contact of injector with patient body]
2005/202 . . . [cocking means, e.g. to bias the main drive spring of an injector]
2005/2026 . . . [Semi-automatic, e.g. user activated piston is assisted by additional source of energy]
5/2033 . . . [Spring-loaded one-shot injectors with or without automatic needle insertion (multishot dosing syringes A61M 5/31525, needle insertion only A61M 5/3287)]
5/204 . . . [connected to external reservoirs for multiple refilling]
5/2046 . . . [Media being expelled from injector by gas generation, e.g. explosive charge]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning

5/2053 . . . [Media being expelled from injector by pressurised fluid or vacuum (for infusion A61M 5/145, A61M 5/155)]

2005/206 . . . [With automatic needle insertion]

5/2066 . . . [comprising means for injection of two or more media, e.g. by mixing]

2005/2073 . . . [preventing premature release, e.g. by making use of a safety lock]

2005/208 . . . [Release is possible only when device is pushed against the skin, e.g. using a trigger which is blocked or inactive when the device is not pushed against the skin]

2005/2086 . . . [having piston damping means, e.g. axially or rotationally acting retarders]

2005/2093 . . . [including concentration setting means]

5/24 . . . Ampoule syringes, i.e. syringes with needle for use in combination with replaceable ampoules or carpules, e.g. automatic (Ampoules or carpules A61J 1/06)

2005/2403 . . . [Ampoule inserted into the ampoule holder]

5/2407 . . . [from the rear]

5/2411 . . . [from the front]

5/2414 . . . [from the side]

5/2418 . . . [comprising means for damping shocks on ampoule]

5/2422 . . . [using emptying means to expel or eject media, e.g. pistons, deformation of the ampoule, or telescoping of the ampoule]

5/2425 . . . [by compression of deformable ampoule or carpule wall]

5/2429 . . . [by telescoping of ampoules or carpules with the syringe body]

2005/2433 . . . [Ampoule fixed to ampoule holder]

2005/2437 . . . [by clamping means]

2005/244 . . . [by flexible clip]

2005/2444 . . . [by thread]

5/2448 . . . [comprising means for injection of two or more media, e.g. by mixing]

2005/2451 . . . [preventing delivery before mixing is completed, e.g. by locking mechanisms]

5/2455 . . . [with sealing means to be broken or opened]

5/2459 . . . [upon internal pressure increase, e.g. pierced or burst (A61M 5/2429 takes precedence)]

2005/2462 . . . [by displacing occluding plugs]

5/2466 . . . [by piercing without internal pressure increase (A61M 5/2429 takes precedence)]

2005/247 . . . [with fixed or steady piercing means, e.g. piercing under movement of ampoule]

2005/2474 . . . [with movable piercing means, e.g. ampoule remains fixed or steady]

2005/2477 . . . [comprising means to reduce play of ampoule within ampoule holder, e.g. springs]

2005/2481 . . . [comprising means for biasing the ampoule out of the ampoule holder]

2005/2485 . . . [Ampoule holder connected to rest of syringe]

2005/2488 . . . [via rotation, e.g. threads or bayonet]

2005/2492 . . . [via snap connection]

2005/2496 . . . [via pivot]

5/28 . . . Syringe ampoules or carpules, i.e. ampoules or carpules provided with a needle

5/281 . . . [using emptying means to expel or eject media, e.g. pistons, deformation of the ampoule, or telescoping of the ampoule]

5/282 . . . [by compression of deformable ampoule or carpule wall]

5/283 . . . [by telescoping of ampoules or carpules with the syringe body]

5/284 . . . [comprising means for injection of two or more media, e.g. by mixing]

5/285 . . . [with sealing means to be broken or opened]

5/286 . . . [upon internal pressure increase, e.g. pierced or burst (A61M 5/283 takes precedence)]

2005/287 . . . [by displacing occluding plugs]

5/288 . . . [by piercing without internal pressure increase (A61M 5/283 takes precedence)]

5/30 . . . Syringes for injection by jet action, without needle, e.g. for use with replaceable ampoules or carpules

5/3007 . . . [with specially designed jet passages at the injector's distal end]

5/3015 . . . [for injecting a dose of particles in form of powdered drug, e.g. mounted on a rupturable membrane and accelerated by a gaseous shock wave or supersonic gas flow (cell injection devices C12M 3/006)]

2005/3022 . . . [Worn on the body, e.g. as patches (pressure infusion of the skin patch type A61M 5/14248)]

5/31 . . . Details

2005/3101 . . . [Leak prevention means for proximal end of syringes, i.e. syringe end opposite to needle mounting end]

2005/3103 . . . [Leak prevention means for distal end of syringes, i.e. syringe end for mounting a needle]

2005/3104 . . . [Caps for syringes without needle]

2005/3106 . . . [Plugs for syringes without needle]

2005/3107 . . . [for needles]

2005/3109 . . . [Caps sealing the needle bore by use of, e.g. air-hardening adhesive, elastomer or epoxy resin]

2005/311 . . . [Plugs, i.e. sealing rods or styles closing the bore of needles]

2005/3112 . . . [Incorporating self-aspirating means, e.g. to provide flashback]

2005/3114 . . . [Filling or refilling]

2005/3115 . . . [spring-assisted]

2005/3117 . . . [Means preventing contamination of the medicament compartment of a syringe]

2005/3118 . . . [via the distal end of a syringe, i.e. syringe end for mounting a needle cannula]

2005/312 . . . [comprising sealing means, e.g. severable caps, to be removed prior to injection by, e.g. tearing or twisting]

2005/3121 . . . [via the proximal end of a syringe, i.e. syringe end opposite to needle cannula mounting end]

2005/3123 . . . [having air entrapping or venting means, e.g. purging channels in pistons]

2005/3125 . . . [specific display means, e.g. to indicate dose setting]

2005/3126 . . . [Specific display means related to dosing]

2005/3128 . . . [Incorporating one-way valves, e.g. pressure-relief or non-return valves]

5/3129 . . . [Syringe barrels (A61M 5/3205 and A61M 5/50 take precedence)]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning

2005/3131 . . . . . . [specially adapted for improving sealing or sliding]
2005/3132 . . . . . . [having flow passages for injection agents at the distal end of the barrel to bypass a sealing stopper after its displacement to this end due to internal pressure increase]

5/3134 . . . . . . [characterised by constructional features of the distal end, i.e. end closest to the tip of the needle cannula]
5/3135 . . . . . . [characterised by constructional features of the proximal end]
5/3137 . . . . . . [Specially designed finger grip means, e.g. for easy manipulation of the syringe rod]

5/3139 . . . . . . { Finger grips not integrally formed with the syringe barrel, e.g. using adapter with finger grips}
5/3140 . . . . . . { Flat shaped barrel forms, e.g. credit card shaped]
5/3141 . . . . . . { Modular constructions, e.g. supplied in separate pieces to be assembled by end-user}
5/3142 . . . . . . { Damping means for syringe components executing relative movements, e.g. retarders or attenuators slowing down or timing syringe mechanisms}

5/3145 . . . . . . { Filters incorporated in syringes]
5/3146 . . . . . . { Priming, e.g. purging, reducing backlash or clearance]
5/3148 . . . . . . { Means for causing or aiding aspiration or plunger retraction]

5/315 . . . . . . { Pistons; Piston-rods: Guiding, blocking or restricting the movement of the rod [or piston]; Apparatus on the rod for facilitating dosing [; Dosing mechanisms]
5/3150 . . . . . . { Means for blocking or restricting the movement of the rod or piston (A61M 5/5013 takes precedence)
5/3155 . . . . . . [Integral with the syringe barrel, i.e. connected to the barrel so as to make up a single complete piece or unit]

5/3156 . . . . . . {formed as a single piece, e.g. moulded]
5/3157 . . . . . . {provided on the piston-rod]
5/3158 . . . . . . {by friction]
5/3159 . . . . . . {Piston or piston-rod constructions, e.g. connection of piston with piston-rod (A61M 5/5066 takes precedence)
5/3160 . . . . . . {Piston constructions to improve sealing or sliding]
5/3161 . . . . . . {Connection of piston with piston rod]
5/3162 . . . . . . {reducing dead-space in the syringe barrel after delivery]

5/3163 . . . . . . {designed to reduce the overall size of an injection device, e.g. using flexible or pivotally connected chain-like rod members]
5/3164 . . . . . . {including gearings to multiply or attenuate the piston displacing force]
5/3165 . . . . . . {Pistons with a forward extending skirt at their front end]
5/3166 . . . . . . {for reducing reflux]
5/3167 . . . . . . {Dosing (burettes, pipettes B01L 3/02)]
5/3168 . . . . . . {by means of stepwise axial movements, e.g. ratchet mechanisms or detents]
5/3169 . . . . . . {by means of rotational movements, e.g. screw-thread mechanisms]
5/3170 . . . . . . {by single stroke limiting means]
5/3171 . . . . . . {Microsyringes, e.g. having piston bore diameter close or equal to needle shaft diameter]
5/3172 . . . . . . {Dosing mechanisms, i.e. setting a dose (administering mechanisms A61M 5/31565)]
5/3173 . . . . . . {Means improving security or handling thereof, e.g. blocking means, means preventing insufficient dosing, means allowing correction of overset dose]
5/3174 . . . . . . {Blocking means to immobilize a selected dose, e.g. to administer equal doses]
5/3175 . . . . . . {Permanent blocking, e.g. by medical personnel]
5/3176 . . . . . . {setting a dose (administrating mechanisms A61M 5/31565)]
5/3177 . . . . . . {Means improving security or handling thereof, e.g. blocking means, means preventing insufficient dosing, means allowing correction of overset dose]
5/3178 . . . . . . {Blocking means to immobilize a selected dose, e.g. to administer equal doses]
5/3179 . . . . . . {Permanent blocking, e.g. by medical personnel]
5/3180 . . . . . . {limiting maximum permissible dose]
5/3181 . . . . . . {Means preventing setting of a dose beyond the amount remaining in the cartridge]
5/3182 . . . . . . {piston rod reset means, i.e. means for causing or facilitating retraction of piston rod to its starting position during cartridge change]
5/3183 . . . . . . {Setting modes for dosing]
5/3184 . . . . . . {Electrically operated dose setting, e.g. input via touch screen or plus/minus buttons]
5/3185 . . . . . . {Mechanically operated dose setting member]
5/3186 . . . . . . {by rotational movement of dose setting member, e.g. during setting or filling of a syringe]
5/3187 . . . . . . {including axial movement of dose setting member]
5/3188 . . . . . . {without axial movement of dose setting member]
5/3189 . . . . . . {by purely axial movement of dose setting member, e.g. during setting or filling of a syringe]
5/3190 . . . . . . {Accuracy improving means]
5/3191 . . . . . . {using scaling up or down transmissions, e.g. gearbox]
5/3192 . . . . . . {using volume steps only adjustable in discrete intervals, i.e. individually distinct intervals]
5/3193 . . . . . . {using freely adjustable volume steps]
5/3194 . . . . . . {interacting with a displaceable stop member]
5/3195 . . . . . . {Administration mechanisms, i.e. constructional features, modes of administering a dose (dosing mechanisms for setting a dose A61M 5/31533)]
5/3196 . . . . . . {Means improving security or handling thereof]
5/3197 . . . . . . {Means keeping track of the total dose administered, e.g. since the cartridge was inserted]
5/3198 . . . . . . {Means providing feedback signals when administration is completed (A61M 5/20 takes precedence)
5/3199 . . . . . . {Means preventing accidental administration (for automatic syringes A61M 5/20d)]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning...

- **5/3157** . . . . . . . [Accuracy improving means]
- **5/3157** . . . . . . . [using scaling up or down transmissions, e.g. gearbox]
- **5/3156** . . . . . . . [Constructional features or modes of drive mechanisms for piston rods]
- **5/3158** . . . . . . . [based on axial translation, i.e. components directly operatively associated and axially moved with plunger rod]
- **5/3158** . . . . . . . [performed by axially moving actuator operated by user, e.g. an injection button]
- **5/3158** . . . . . . . [performed by rotationally moving or pivoting actuator operated by user, e.g. an injection lever or handle]
- **5/3158** . . . . . . . [based on rotational translation, i.e. movement of piston rod is caused by relative rotation between the user activated actuator and the piston rod]
- **5/3158** . . . . . . . [performed by axially moving actuator, e.g. an injection button]
- **5/3158** . . . . . . . [performed by rotationally moving or pivoting actuator, e.g. an injection lever or handle]
- **2005/31588** . . . . . [electrically driven]
- **5/3159** . . . . . . . [Dose expelling manners]
- **5/31591** . . . . . . . [Single dose, i.e. individually set dose administered only once from the same medicament reservoir, e.g. including single stroke limiting means]
- **5/31593** . . . . . . . [Multi-dose, i.e. individually set dose repeatedly administered from the same medicament reservoir]
- **5/31595** . . . . . . . [Pre-defined multi-dose administration by repeated overcoming of means blocking the free advancing movement of piston rod, e.g. by tearing or de-blocking]
- **5/31596** . . . . . . . [comprising means for injection of two or more media, e.g. by mixing]
- **2005/31598** . . . . . [having multiple telescopically sliding coaxial pistons encompassing volumes for components to be mixed]
- **5/32** . . . . . . . [Needles; Details of needles pertaining to their connection with syringe or hub (infusion needles A61M 5/158); Accessories for bringing the needle into, or holding the needle on, the body (\cite{A61M 5/42, A61M 5/46 take precedence; guide needles for catheters A61M 25/065}); Devices for protection of needles (apparatus specially adapted for cleaning or sterilising needles A61M 5/001)]
- **2005/3201** . . . . . [Coaxially assembled needle cannulas placed on top of another, e.g. needles having different diameters]
- **5/3201** . . . . . . . [Devices for protection of the needle before use, e.g. caps (A61M 5/50 takes precedence; for infusion spikes A61M 5/1626; protectors for sharps A61B 50/3001)]
- **5/3204** . . . . . . . [Needle cap remover, i.e. devices to dislodge protection cover from needle or needle hub, e.g. deshielding devices]
- **5/3205** . . . . . . . [Apparatus for removing or disposing of used needles or syringes, e.g. containers; Means for protection against accidental injuries from used needles (for sharps A61B 50/362; disintegrating apparatus in general B02C, e.g. B02C 19/0075; B23H 9/001; disposal of medical waste in general B09B 3/0073; receptacles for refuse disposal in general B65F 1/000)]
- **2005/3206** . . . . . [Needle or needle hub disconnecting devices forming part of or being attached to the hub or syringe body]
- **2005/3208** . . . . . [by application of rotational movement to the needle hub, e.g. by use of electrically driven toothed wheels]
- **2005/3209** . . . . . [comprising heat generating means, e.g. melt chamber]
- **5/321** . . . . . . . [Means for protection against accidental injuries by used needles]
- **2005/3212** . . . . . [Blunting means for the sharp end of the needle]
- **5/3213** . . . . . . . [Caps placed axially onto the needle, e.g. equipped with finger protection guards (axially-extensible protective sleeves A61M 5/3243)]
- **2005/3215** . . . . . [Tools enabling the cap placement]
- **5/3216** . . . . . . . [Caps placed transversally onto the needle, e.g. pivotally attached to the needle base]
- **2005/3217** . . . . . [Means to impede repositioning of protection cap from needle covering to needle uncovering position, e.g. catch mechanisms]
- **5/3219** . . . . . . . [Semi-automatic repositioning of the cap, i.e. in which the repositioning of the cap to the needle covering position requires a deliberate action by the user to trigger the repositioning of the cap, e.g. manual release of spring-biased cap repositioning means]
- **5/322** . . . . . . . [Retractable needles, i.e. disconnected from and withdrawn into the syringe barrel by the piston (devices for protecting guide needles in combination with catheters A61M 25/0612)]
- **5/3221** . . . . . . . [Constructional features thereof, e.g. to improve manipulation or functioning]
- **2005/3223** . . . . . [Means impeding or disabling repositioning of used needles at the syringe nozzle]
- **2005/3224** . . . . . [Means to disalign the needle tip and syringe nozzle]
- **2005/3226** . . . . . [with means obstructing or blocking the needle mounting opening]
- **2005/3227** . . . . . [the needle being retracted laterally outside the syringe barrel, e.g. with separate guideway]
- **2005/3228** . . . . . [the needle being retracted by a member protruding laterally through a slot in the barrel, e.g. double-ended needles]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning

2005/323 . . . . . . . . [Connection between plunger distal end and needle hub proximal end, e.g. stud protruding from the plunger]

2005/3231 . . . . . . . . (Proximal end of needle captured or embedded inside piston head, e.g. by friction or hooks)

5/3232 . . . . . . . . [Semi-automatic needle retraction, i.e. in which triggering of the needle retraction requires a deliberate action by the user, e.g. manual release of spring-biased retraction means]

5/3234 . . . . . . . . [Fully automatic needle retraction, i.e. in which triggering of the needle does not require a deliberate action by the user]

2005/3235 . . . . . . . . [triggered by radial deflection of the anchoring parts between needle mount and syringe barrel or needle housing, e.g. spreading of needle mount retaining hooks having slanted surfaces by engagement with correspondingly shaped surfaces on the piston at the end of an injection stroke]

2005/3236 . . . . . . . . [Trigger provided at the distal end, i.e. syringe end for mounting a needle]

2005/3238 . . . . . . . . [Trigger provided at the proximal end, i.e. syringe end opposite to needle mounting end]

2005/3239 . . . . . . . . [triggered by dislodgement of outer part anchoring the needle portion to the inside of the syringe barrel wall, e.g. a ring-shaped portion]

2005/3241 . . . . . . . . [Needle retraction energy is accumulated inside of a hollow plunger rod]

2005/3242 . . . . . . . . [Needle retraction by vacuum]

5/3243 . . . . . . . . [being axially-extensible, e.g. protective sleeves coaxially slidable on the syringe barrel (devices for protecting guide needles in combination with catheters A61M 25/0612)]

5/3245 . . . . . . . . [Constructional features thereof, e.g. to improve manipulation or functioning]

2005/3246 . . . . . . . . [being squeezably deformable for locking or unlocking purposes, e.g. with elliptical cross-section]

2005/3247 . . . . . . . . [Means to impede repositioning of protection sleeve from needle covering to needle uncovering position]

2005/3249 . . . . . . . . [Means to disalign the needle tip and the distal needle passage of a needle protection sleeve]

2005/325 . . . . . . . . [Means obstructing the needle passage at distal end of a needle protection sleeve]

2005/3252 . . . . . . . . [being extended by a member protruding laterally through a slot in the syringe barrel]

2005/3253 . . . . . . . . [disconnecting the needle hub from the syringe barrel during removal of the sleeve from the syringe barrel]

2005/3254 . . . . . . . . [Shielding of proximal needles, e.g. for pen needles]

2005/3256 . . . . . . . . [having folding ring sections]

5/3257 . . . . . . . . [Semi-automatic sleeve extension, i.e. in which triggering of the sleeve extension requires a deliberate action by the user, e.g. manual release of spring-biased extension means]

2005/3258 . . . . . . . . [being compressible or compressed along the needle]

5/326 . . . . . . . . [Fully automatic sleeve extension, i.e. in which triggering of the sleeve does not require a deliberate action by the user]

2005/3261 . . . . . . . . [triggered by radial deflection of the anchoring parts between sleeve and syringe barrel, e.g. spreading of sleeve retaining hooks having slanted surfaces by engagement with conically shaped collet of the piston rod during the last portion of the injection stroke of the plunger]

2005/3263 . . . . . . . . [Trigger provided at the distal end, i.e. syringe end for mounting a needle]

2005/3264 . . . . . . . . [Trigger provided at the proximal end, i.e. syringe end opposite to needle mounting end]

2005/3265 . . . . . . . . [Degree of extension of sleeve to its needle covering position is progressively established by the degree of piston insertion into the syringe barrel]

2005/3267 . . . . . . . . [Biased sleeves where the needle is uncovered by insertion of the needle into a patient's body]

2005/3268 . . . . . . . . [having cantilever elastically spreadable arms, e.g. to accumulate energy during needle uncovering movement for urging protection sleeve to return to needle covering position]

5/3269 . . . . . . . . [guided by means not coaxially aligned with syringe barrel, e.g. channel-like member formed on exterior surface of syringe barrel for guiding a pushing rod connected to and displacing needle safety sheath]

5/3271 . . . . . . . . [with guiding tracks for controlled sliding of needle protective sleeve from needle exposing to needle covering position]

5/3272 . . . . . . . . [having projections following labyrinth paths]

5/3273 . . . . . . . . [freely sliding on needle shaft without connection to syringe or needle]

5/3275 . . . . . . . . [being connected to the needle hub or syringe by radially deflectable members, e.g. longitudinal slats, cords or bands]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning

A61M

5/3276 . . . . . . . (Means imparting rotational movement to the needle or needle hub in order to assist in its disconnection from syringe nozzle)

5/3278 . . . . . . . (Apparatus for destroying used needles or syringes (needle resheathing means destroying the needle A61M 5/321))

2005/3279 . . . . . . . [Breaking syringe nozzles or needle hubs]

2005/328 . . . . . . . [having needle tip encapsulating means, e.g. two-component hardenable compound or molten plastic]

2005/3282 . . . . . . . [using mechanical means, e.g. mills]

2005/3283 . . . . . . . [using electric current between electrodes]

2005/3284 . . . . . . . [Deformation of needle by deflection or bending]

5/3286 . . . . . . . [Needle tip design, e.g. for improved penetration]

5/3287 . . . . . . . [Accessories for bringing the needle into the body; Automatic needle insertion (A61M 5/20, A61M 5/31, A61M 5/32 take precedence)]

2005/3289 . . . . . . . [with rotation of the needle, e.g. to ease penetration]

5/329 . . . . . . . (characterised by features of the needle shaft)

5/3291 . . . . . . . [Shafts with additional lateral openings]

5/3293 . . . . . . . [characterised by features of the needle hub]

5/3294 . . . . . . . [comprising means for injection of two or more media, e.g. by mixing]

5/3295 . . . . . . . [Multiple needle devices, e.g. a plurality of needles arranged coaxially or in parallel]

5/3297 . . . . . . . [Needles arranged coaxially]

5/3298 . . . . . . . [Needles arranged in parallel]

5/34 . . . . . . . Constructions for connecting the needle (. e.g. to syringe nozzle or needle hub (connecting catheter tubes to hubs A61M 25/0014))

2005/341 . . . . . . . [angularly adjustable or angled away from the axis of the injector]

2005/342 . . . . . . . [Off-center needles, i.e. needle connections not being coaxial with the longitudinal symmetry axis of syringe barrel]

5/343 . . . . . . . [Connection of needle cannula to needle hub, or directly to syringe nozzle without a needle hub (A61M 5/322 takes precedence)]

5/344 . . . . . . . [using additional parts, e.g. clamping rings or collets]

5/345 . . . . . . . [Adaptors positioned between needle hub and syringe nozzle]

5/346 . . . . . . . (friction fit (A61M 5/344 takes precedence))

5/347 . . . . . . . (rotatable, e.g. bayonet or screw (A61M 5/344 takes precedence))

5/348 . . . . . . . [snap lock, i.e. upon axial displacement of needle assembly (A61M 5/344 takes precedence)]

5/349 . . . . . . . [using adhesive bond or glues]

5/36 . . . . . . . with means for eliminating or preventing injection or infusion of air into body (dialysis systems, blood oxygenators A61M 1/14; haemofiltration equipment A61M 1/34; [automatic tube cut-off A61M 39/281])

5/365 . . . . . . . (Air detectors (A61M 5/1684 takes precedence; in extracorporeal blood circuits A61M 1/3626))

5/38 . . . . . . . [using hydrophilic or hydrophobic filters]

5/385 . . . . . . . [using hydrophobic filters]

5/40 . . . . . . . [using low-level float-valve to cut off media flow from reservoir (position detection of a floating member A61M 5/1685)]

5/42 . . . . . . . [having means for desensitising skin, for protruding skin to facilitate piercing, or for locating point where body is to be pierced]

5/422 . . . . . . . [Desensitising skin]

5/425 . . . . . . . [Proruding skin to facilitate piercing, e.g. vacuum cylinders, vein immobilising means]

5/427 . . . . . . . [Locating point where body is to be pierced, e.g. vein location means using ultrasonic waves, injection site templates]

5/44 . . . . . . . [having means for cooling or heating the devices or media]

5/445 . . . . . . . (the media being heated in the reservoir, e.g. warming bloodbags)

5/46 . . . . . . . [having means for controlling depth of insertion]

5/48 . . . . . . . [having means for varying, regulating, indicating or limiting injection pressure (A61M 5/142 takes precedence; monitoring pressure in infusion systems A61M 5/16854)]

5/482 . . . . . . . [Varying injection pressure, e.g. by varying speed of injection]

5/484 . . . . . . . [Regulating injection pressure]

5/486 . . . . . . . [Indicating injection pressure]

5/488 . . . . . . . [Limiting injection pressure]

5/50 . . . . . . . [having means for preventing re-use, or for indicating if defective, used, tampered with or unsterile (retractable needles or needle protectors with means for preventing re-use A61M 5/321)]

2005/5006 . . . . . . . [Having means for destroying the syringe barrel, e.g. by cutting or piercing]

5/5013 . . . . . . . [Means for blocking the piston or the fluid passageway to prevent illegal refilling of a syringe]

5/502 . . . . . . . [for blocking the piston] 2005/5026 . . . . . . . [allowing single filling of syringe]

2005/5033 . . . . . . . [by use of an intermediate blocking member positioned between the syringe barrel and the piston rod to prevent retraction of the latter, e.g. toothed clip placed on the piston rod]

5/504 . . . . . . . [for blocking the fluid passageway]

2005/5046 . . . . . . . [automatically, e.g. plug actuated by the piston head, one-way valve]

2005/5053 . . . . . . . [Valve or plug actuated by fluid flow or fluid pressure allowing initial filling of the syringe]

2005/506 . . . . . . . [Plug actuated by contact with fluid, e.g. hydrophilic expansion plug]

5/5066 . . . . . . . [Means for preventing re-use by disconnection of piston and piston-rod]

2005/5073 . . . . . . . [by breaking or rupturing the connection parts]

5/508 . . . . . . . [Means for preventing re-use by disrupting the piston seal, e.g. by puncturing]
Syringes; Irrigators; Baths for subaquatic intestinal cleaning

Sprayers; Atomisers; Insufflators

11/00 Sprayers or atomisers specially adapted for therapeutic purposes (in general B05B; [aerosol containers B65D 83/14])

11/001 [Particle size control]

11/002 [by flow deviation causing inertial separation of transported particles]

11/003 [by passing the aerosol through sieves or filters]

11/005 [using ultrasonics (spraying or atomising liquids using ultrasonic vibrations in general B05B 17/06)]

11/006 [operated by applying mechanical pressure to the liquid to be sprayed or atomised]

11/007 [Syringe-type or piston-type sprayers or atomisers]

11/008 [by squeezing, e.g. using a flexible bottle or a bulb]

11/02 [operated by air [or other gas] pressure applied to the liquid [or other product] to be sprayed or atomised] (sprayers for horticulture A01G, A01H; killing insects A01M; air humidifying by nozzles F24F 6/14, F24F 6/18; cooling by spraying F28B, F28C)

11/04 [operated by the vapour pressure of the liquid to be sprayed or atomised] (air humidification, e.g. "room humidifiers" F24F 6/00)

11/041 [using heaters]

11/042 [electrical]

11/044 [with electrodes immersed in the liquid]

11/045 [using another liquid as heat exchanger, e.g. bain-marie]

11/047 [by exothermic chemical reaction]

11/048 [with a flame, e.g. using a burner]

11/06 [of the injector type]

11/065 [using steam as driving gas]

11/08 [Pocket atomisers of the injector type (aerosol cans A61M 15/009)]

13/00 Insufflators for therapeutic or disinfectant purposes, i.e. devices for blowing a gas, powder or vapour into the body (hand-held units in which gas flow is produced by muscular energy at the moment of use B05B 11/062)

13/003 [Blowing gases other than for carrying powders, e.g. for inflating, dilating or rinsing]

13/006 [with gas recirculation]

Inhaling devices

15/00 Inhalators ([drug delivery in endotracheal tubes A61M 16/04])

15/0001 [Details of inhalators; Constructional features thereof]

15/0003 [with means for dispensing more than one drug]

15/0005 [with means for agitating the medicament]

15/0006 [using rotating means]

15/0008 [rotating by airflow]

15/001 [using ultrasonic means]

15/0011 [with microcapsules, e.g. several in one dose]
Inhaling devices

16/00 Devices for influencing the respiratory system of patients by gas treatment, e.g. mouth-to-mouth respiration; Tracheal tubes (stimulating the respiratory movement by mechanical, pneumatic or electrical means, iron lungs combined with gas breathing means A61H 31/00)

16/0003 . . . (Accessories therefor, e.g. sensors, vibrators, negative pressure)
16/0006 . . . (with means for creating vibrations in patients’ airways)
16/0009 . . . (with sub-atmospheric pressure, e.g. during expiration)
16/0012 . . . (by Venturi means)
16/0015 . . . (inhalation detectors)
16/0018 . . . (electrical)
16/0021 . . . (with a proportional output signal, e.g. from a thermistor)
16/0024 . . . (with an on-off output signal, e.g. from a switch)
16/0027 . . . (pressure meter)
16/003 . . . (with a flowmeter)
16/0033 . . . (electrical)
16/0036 . . . (in the breathing tube and used in both inspiratory and expiratory phase)
16/0039 . . . (in the inspiratory circuit)
16/0042 . . . (in the expiratory circuit)
16/0045 . . . (Means for re-breathing exhaled gases, e.g. for hyperventilation treatment)
16/0048 . . . (Mouth-to-mouth respiration (teaching or training models G09B 23/288))
16/0051 . . . (with alarm devices)
16/0054 . . . (Liquid ventilation)
16/0057 . . . (Pumps therefor)
16/006 . . . (Tidal volume membrane pumps)
16/0063 . . . (Compressors)
16/0066 . . . (Blowers or centrifugal pumps)
16/0069 . . . (the speed thereof being controlled by respiratory parameters, e.g. by inhalation)
16/0072 . . . (Tidal volume piston pumps)
16/0075 . . . (Bellows-type)
16/0078 . . . (Breathing bags)
16/0081 . . . (Bag or bellow in a bottle)
16/0084 . . . (self-reinflatable by elasticity, e.g. resuscitation squeeze bags)
16/0087 . . . (Environmental safety or protection means, e.g. preventing explosion)
16/009 . . . (Removing used or expired gases or anaesthetic vapours (Filtering, sterilising or disinfecting the exhaust air in drainage systems A61M 1/0052; Bacterial filters in the expiratory path A61M 16/1065))
16/0093 . . . (by adsorption, absorption or filtration)
16/0096 . . . [High frequency jet ventilation]
16/01 . . . (specially adapted for anaesthetising (A61M 16/104, A61M 16/18 take precedence))
16/021 . . . (operated by electrical means (A61M 16/202 – A61M 16/205 take precedence))
16/022 . . . (Control means therefor)
16/024 . . . (including calculation means, e.g. using a processor)
16/026 . . . (specially adapted for predicting, e.g. for determining an information representative of a flow limitation during a ventilation cycle by using a root square technique or a regression analysis)
16/04 . . . (Tracheal tubes (catheters in general A61M 25/00))
16/0402 . . . (Special features for tracheal tubes not otherwise provided for)
16/0404 . . . (with means for selective or partial lung respiration)
16/0406 . . . (implanted flow modifiers)
16/0409 . . . (with mean for closing the oesophagus)
16/0411 . . . (with means for differentiating between oesophageal and tracheal intubation)
16/0413 . . . (with detectors of CO₂ in exhaled gases)
16/0415 . . . (with access means to the stomach)
16/0418 . . . (with integrated means for changing the degree of curvature, e.g. for easy intubation)
16/042 . . . (with separate conduits for in-and expiration gas, e.g. for limited dead volume)
16/0422 . . . (Laser-resistant)
16/0425 . . . (Metal tubes)
16/0427 . . . (with removable and re-insertable liner tubes, e.g. for cleaning)
16/0429 . . . (with non-integrated distal obturators)
16/0431 . . . (with a cross-sectional shape other than circular)
16/0434 . . . (Cuffs)
16/0436 . . . (Special fillings therefor)
16/0438 . . . (Liquid-filled)
16/044 . . . (External cuff pressure control or supply, e.g. synchronisation with respiration)
16/0443 . . . (Special cuff-wall materials (A61M 16/481, A61M 16/422 take precedence))
16/0445 . . . (Special cuff forms, e.g. undulated)
16/0447 . . . (Bell, canopy or umbrella shaped)
16/045 . . . (with cuffs partially or completely inflated by the respiratory gas)
16/0452 . . . (following the inspiration and expiration pressure)
16/0454 . . . (Redundant cuffs)
16/0456 . . . (one cuff within another)
16/0459 . . . (one cuff behind another)
16/0461 . . . (Nasoendotracheal tubes)
Inhaling devices

16/0463 . . . [combined with suction tubes, catheters or the like; Outside connections]
16/0465 . . . [Tracheostomy tubes; Devices for performing a tracheostomy; Accessoires therefor, e.g. masks, filters]
16/0468 . . . . [with valves at the proximal end limiting exhalation, e.g. during speaking or coughing (air passages from trachea to oesophagus or to pharynx, artificial epiglottis A61F 2/203)]
16/047 . . . . [Masks, filters, surgical pads, devices for absorbing secretions, specially adapted therefor]
16/0472 . . . [Devices for performing a tracheostomy]
16/0475 . . . [having openings in the tube]
16/0477 . . . [with incorporated means for delivering or removing fluids]
16/0479 . . . . [above the cuff, e.g. giving access to the upper trachea]
16/0481 . . . . [through the cuff wall]
16/0484 . . . [at the distal end]
16/0486 . . . [Multi-lumen tracheal tubes]
16/0488 . . . . [Mouthpieces; Means for guiding, securing or introducing the tubes (guiding or introducing with laryngoscopes A61B 1/267; holding devices on the body A61M 25/02)]
16/049 . . . . [Mouthpieces]
16/0493 . . . [with means for protecting the tube from damage caused by the patient's teeth, e.g. bite block]
16/0495 . . . . [with tongue depressors]
16/0497 . . . . [Tube stabilizer]
16/06 . . . . . . Respiratory or anaesthetic masks
16/0605 . . . . [Means for improving the adaptation of the mask to the patient]
16/0611 . . . . [with a gusset portion]
16/0616 . . . . [with face sealing means comprising a flap or membrane projecting inwards, such that sealing increases with increasing inflation gas pressure]
16/0622 . . . . [having an underlying cushion]
16/0627 . . . . [with sealing means on a part of the body other than the face, e.g. helmets, hoods or domes]
16/0633 . . . . [with forehead support]
16/0638 . . . . [in the form of a pivot]
16/0644 . . . . [having the means for adjusting its position]
16/065 . . . . . . [in the form of a pivot]
16/0655 . . . . [in the form of a linear or curvilinear slide]
2016/0661 . . . . [with customised shape]
16/0666 . . . . [Nasal cannulas or tubing (devices for improving normal breathing through the nose A61F 5/08; nose filters A62B 23/06; outside holding devices A61M 25/02)]
16/0672 . . . . [Nasal cannula assemblies for oxygen therapy]
16/0677 . . . . [Gas-saving devices therefor]
16/0683 . . . . [Holding devices therefor]
16/0688 . . . . [by means of an adhesive]
16/0694 . . . . [Chin straps]
16/08 . . . . . . Bellows; Connecting tubes {having means for taking samples G01N 1/22}; Water traps; Patient circuits
16/0808 . . . . [Condensation traps]
16/0816 . . . . [Joints or connectors]
16/0825 . . . . [with ball-sockets]
16/0833 . . . . [T-or Y-type connectors, e.g. Y-piece]
16/0841 . . . . [for sampling]
16/085 . . . . . . [Gas sampling]
16/0858 . . . . [Pressure sampling ports]
16/0866 . . . . [Passive resistors therefor]
16/0875 . . . . [Connecting tubes]
16/0883 . . . . [Circuit type]
16/0891 . . . . [Closed circuit, e.g. for anaesthesia]
16/10 . . . . . . Preparation of respiratory gases or vapours
16/1005 . . . . [with O2 features or with parameter measurement]
16/101 . . . . . . [using an oxygen concentrator]
16/1015 . . . . [using a gas flush valve, e.g. oxygen flush valve]
2016/0102 . . . . [Measuring a parameter of the content of the delivered gas]
2016/0125 . . . . [the O2 concentration]
2016/0103 . . . . [the CO2 concentration]
2016/0135 . . . . [the anaesthetic agent concentration]
16/104 . . . . . . (specially adapted for anaesthetics (A61M 16/18 takes precedence)]
16/1045 . . . . [Devices for humidifying or heating the inspired gas by using recovered moisture or heat from the expired gas]
16/105 . . . . [Filters (A61M 16/047, A61M 16/22 take precedence; water traps A61M 16/08)]
16/1055 . . . . [bacterial]
16/106 . . . . . . [in a path]
16/1065 . . . . [in the expiratory path]
16/107 . . . . . . [in the inspiratory path]
16/1075 . . . . [by influencing the temperature (A61M 16/1045 takes precedence)]
16/108 . . . . . . [before being humidified or mixed with a beneficial agent]
16/1085 . . . . [after being humidified or mixed with a beneficial agent]
16/109 . . . . . . [the humidifying liquid or the beneficial agent]
16/1095 . . . . [in the connecting tubes]
16/12 . . . . . . [by mixing different gases]
16/122 . . . . . . [with dilution]
16/125 . . . . . . [Diluting primary gas with ambient air]
16/127 . . . . . . [by Venturi effect, i.e. entrainment mixers]
16/14 . . . . . . [by mixing different fluids, one of them being in a liquid phase]
16/142 . . . . . . [with semi-permeable walls separating the liquid from the respiratory gas]
16/145 . . . . . . [using hollow fibres]
16/147 . . . . . . [the respiratory gas not passing through the liquid container]
16/16 . . . . . . . . . . Devices to humidify the respiration air (A61M 16/1045 takes precedence)]
16/161 . . . . . . [with means for measuring the humidity]
16/162 . . . . . . [Water-reservoir filling system, e.g. automatic]
16/164 . . . . . . [including a liquid inlet valve system]
16/165 . . . . . . [with a float actuator]
16/167 . . . . . . [acting vertically on the valve]
16/168 . . . . . . [having a dual float]
16/18 . . . . . . . . . . Vapourising devices for anaesthetic preparations
16/183 . . . . . . [Filling systems]
Inhaling devices

16/209 . . . [Relief valves]
16/22 . Carbon dioxide-absorbing devices [: ; Other means for removing carbon dioxide] (cartridges with absorbing substances for respiratory apparatus A62B 19/00)

Other devices for producing sleep or stupor: Devices for ending sleep or stupor

19/00 Local anaesthesia (syringes therefor A61M 5/00); Hypothermia (A61M 5/42 takes precedence; cooling blood in a bypass of the arterial system A61M 1/36)

21/00 Other devices or methods to cause a change in the state of consciousness; Devices for producing or ending sleep by mechanical, optical, or acoustical means, e.g. for hypnosis

2025/0005 . . . [by the use of a particular sense, or stimulus]
2025/0011 . . . [in a subliminal way, i.e. below the threshold of sensation]
2025/0016 . . . [by the smell sense]
2025/0022 . . . [by the tactile sense, e.g. vibrations]
2025/0027 . . . [by the hearing sense]
2025/0033 . . . [subsonic]
2025/0038 . . . [ultrasonic]
2025/0044 . . . [by the sight sense]
2025/005 . . . . [images, e.g. video]
2025/0055 . . . [with electric or electro-magnetic fields]
2025/0061 . . . [Simulated heartbeat pulsated or modulated]
2025/0066 . . . [with heating or cooling]
2025/0072 . . . [with application of electrical currents]
2025/0077 . . . [with application of chemical or pharmacological stimulus]
2025/0083 . . . [especially for waking up]
2025/0088 . . . [modulated by a simulated respiratory frequency]
21/009 . . . . [Isolation chambers used therewith, i.e. for isolating individuals from external stimuli (other treatment rooms or enclosures A61G 10/00)]
21/02 . for inducing sleep or relaxation, e.g. by direct nerve stimulation, hypnosis, analgesia (for massage A61H; electrotherapy A61N, e.g. applying alternating or intermittent electric currents for producing anaesthesia A61N 1/36021)

Probes; Catheters; Dilators; Drainage appliances for wounds

25/00 Catheters; Hollow probes (dilators A61M 29/00); [peritonioc catheters A61M 1/285; tracheal tubes A61M 16/04; for drainage A61M 27/00; for uterus, vagina or rectum A61M 31/00; for measuring or testing A61B; (materials for catheters A61L 29/00)]
2025/0001 . . . [for pressure measurement]
2025/0002 . . . [with a pressure sensor at the distal end]
2025/0003 . . . [having an additional lumen transmitting fluid pressure to the outside for measurement]
2025/0004 . . . [having two or more concentrically arranged tubes for forming a concentric catheter system]
2025/0006 . . . [which can be secured against axial movement, e.g. by using a locking cuff]
2025/0007 . . . [ Epidural catheters]
2025/0008 . . . [having visible markings on its surface, i.e. visible to the naked eye, for any purpose, e.g. insertion depth markers, rotational markers or identification of type]
25/0009 . . . [Making of catheters or other medical or surgical tubes]
25/001 . . . [Forming the tip of a catheter, e.g. bevelling process, join or taper]
25/0012 . . . [with embedded structures, e.g. coils, braids, meshes, strands or radiopaque coils]
25/0013 . . . [Weakening parts of a catheter tubing, e.g. by making cuts in the tube or reducing thickness of a layer at one point to adjust the flexibility]
25/0014 . . . [Connecting a tube to a hub]
25/0015 . . . [Making lateral openings in a catheter tube, e.g. holes, slits, ports, piercings of guidewire ports; Methods for processing the holes, e.g. smoothing the edges]
25/0017 . . . [specially adapted for long-term hygiene care, e.g. urethral or indwelling catheters to prevent infections]
2025/0018 . . . [having a plug, e.g. an inflatable plug for closing catheter lumens]
2025/0019 . . . [Cleaning catheters or the like, e.g. for reuse of the device, for avoiding replacement]
25/002 . . . [Packages specially adapted therefor (combined with means for introducing catheters, e.g. dispensers, A61M 25/0113); catheter kit packages (for surgical articles A61B 50/30)]
25/0021 . . . [characterised by the form of the tubing (A61M 25/0054 takes precedence)]
25/0023 . . . [by the form of the lumen, e.g. cross-section, variable diameter]
25/0024 . . . . [Expandable catheters or sheaths]
25/0025 . . . . [having a collapsible lumen]
25/0026 . . . [Multi-lumen catheters with stationary elements (catheter assemblies comprising a catheter in combination with a guide tube, sheath or sleeve A61M 20250681; catheters comprising telescoping coaxial elements A61M 20250175)]
25/0028 . . . . [characterized by features relating to at least one lumen located at the proximal part of the catheter, e.g. alterations in lumen shape or valves (catheter hubs A61M 25/0097)]
Probes; Catheters; Dilators; Drainage appliances for wounds

2025/0029 . . . . [characterized by features relating to least one lumen located at the middle part of the catheter, e.g. slots, flaps, valves, cuffs, apertures, notches, grooves or rapid exchange ports (catheter shaft surface irregularities A61M 2025/006)]

2025/003 . . . . . [characterized by features relating to least one lumen located at the distal part of the catheter, e.g. filters, plugs or valves (catheter tips A61M 25/0067)]

2025/0031 . . . . . [characterized by lumina for withdrawing or delivering, i.e. used for extracorporeal circuit treatment]

2025/0032 . . . . . [characterized by at least one unconventionally shaped lumen, e.g. polygons, ellipsoids, wedges or shapes comprising concave and convex parts]

2025/0034 . . . . . [characterized by elements which are assembled, connected or fused, e.g. splittable tubes, outer sheaths creating lumina or separate cores (making of catheters A61M 25/0009)]

2025/0035 . . . . . [characterized by a variable lumen cross-section by means of a resilient flexible septum or outer wall]

2025/0036 . . . . . [with more than four lumina]

2025/0037 . . . . . [characterized by lumina being arranged side-by-side]

2025/0039 . . . . . [characterized by lumina being arranged coaxially]

2025/004 . . . . . [characterized by lumina being arranged circumferentially]

25/0041 . . . . . (pre-formed, e.g. specially adapted to fit with the anatomy of body channels (urethral catheters A61F 20/04)]

2025/0042 . . . . . [Microcatheters, cannula or the like having outside diameters around 1 mm or less]

2025/0043 . . . . . [characterised by structural features]

2025/0045 . . . . . [multi-layered, e.g. coated (coating materials A61L 29/08)]

2025/0046 . . . . . [Coatings for improving slidability]

2025/0047 . . . . . [the inner layer having a higher lubricity]

2025/0048 . . . . . . . . . [with an outer layer made from silicon]

2025/005 . . . . . [with embedded materials for reinforcement, e.g. wires, coils, braids]

2025/0051 . . . . . [made from fenestrated or weakened tubing layer]

2025/0052 . . . . . [Localized reinforcement, e.g. where only a specific part of the catheter is reinforced, for rapid exchange guidewire port]

2025/0053 . . . . . [having a variable stiffness along the longitudinal axis, e.g. by varying the pitch of the coil or braid]

2025/0054 . . . . . [with regions for increasing flexibility]

2025/0056 . . . . . [provided with an antibacterial agent, e.g. by coating, residing in the polymer matrix or releasing an agent out of a reservoir]

2025/0057 . . . . . [Catheters delivering medicament other than through a conventional lumen, e.g. porous walls or hydrogel coatings]

2025/0058 . . . . . [having an electroactive polymer material, e.g. for steering purposes, for control of flexibility, for locking, for opening or closing]

2025/0059 . . . . . [having means for preventing the catheter, sheath or lumens from collapsing due to outer forces, e.g. compressing forces, or caused by twisting or kinking]

2025/006 . . . . . [having a special surface topography or special surface properties, e.g. roughened or knurled surface]

2025/0062 . . . . . [having features to improve the sliding of one part within another by using lubricants or surfaces with low friction (coatings A61M 2025/0046)]

2025/0063 . . . . . [having means, e.g. styles, mandrils, rods or wires to reinforce or adjust temporarily the stiffness, column strength or pushability of catheters which are already inserted into the human body]

2025/0064 . . . . . [which become stiffer or softer when heated]

2025/0065 . . . . . [which become stiffer or softer when becoming wet or humid, e.g. immersed within a liquid]

2025/0067 . . . . . [characterised by the distal end, e.g. tips (A61M 2025/0054, A61M 25/004 take precedence; balloon catheters A61M 25/10)]

2025/0068 . . . . . [Static characteristics of the catheter tip, e.g. shape, atrumatic tip, curved tip or tip structure]

2025/0069 . . . . . [Tip not integral with tube]

25/007 . . . . . [Side holes, e.g. their profiles or arrangements; Provisions to keep side holes unblocked]

2025/0071 . . . . . [Multiple separate lumens (multiple separate lumens throughout the catheter A61M 25/0026)]

2025/0073 . . . . . [Tip designed for influencing the flow or the flow velocity of the fluid, e.g. inserts for twisted or vortex flow (general flow characteristics A61M 2206/10)]

2025/0074 . . . . . [Dynamic characteristics of the catheter tip, e.g. openable, closable, expandable or deformable]

2025/0075 . . . . . [Valve means]

2025/0076 . . . . . [Unidirectional valves]

2025/0078 . . . . . [Separate lumens throughout the catheter]

2025/0079 . . . . . [Separate user-activated means, e.g. guidewires, guide tubes, balloon catheters or sheaths, for sealing off an orifice, e.g. a lumen or side holes, of a catheter]

2025/008 . . . . . [Strength or flexibility characteristics of the catheter tip]

2025/0081 . . . . . [Soft tip]

2025/0082 . . . . . [Catheter tip comprising a tool]

2025/0084 . . . . . [being one or more injection needles]

2025/0085 . . . . . [Multiple injection needles protruding axially, i.e. along the longitudinal axis of the catheter, from the distal tip]

2025/0086 . . . . . [the needles having bent tips, i.e. the needle distal tips are angled in relation to the longitudinal axis of the catheter]

2025/0087 . . . . . [Multiple injection needles protruding laterally from the distal tip]

2025/0089 . . . . . [Single injection needle protruding axially, i.e. along the longitudinal axis of the catheter, from the distal tip]

2025/009 . . . . . [the needle having a bent tip, i.e. the needle distal tip is angled in relation to the longitudinal axis of the catheter]

2025/0091 . . . . . [the single injection needle being fixed]
### Probes; Catheters; Dilators; Drainage appliances for wounds

<table>
<thead>
<tr>
<th>Class Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25/0092</td>
<td>[Single injection needle protruding laterally from the distal tip]</td>
</tr>
<tr>
<td>25/0093</td>
<td>[Wherein at least one needle is a microneedle]</td>
</tr>
<tr>
<td>25/0095</td>
<td>[Being one or more needles protruding from the distal tip and which are not used for injection nor for electro-simulation, e.g. for fixation purposes]</td>
</tr>
<tr>
<td>25/0096</td>
<td>[Being laterally outward extensions or tools, e.g. hooks or fibres]</td>
</tr>
<tr>
<td>25/0097</td>
<td>[Characterised by the hub (connectors A61M 39/10)]</td>
</tr>
<tr>
<td>25/0098</td>
<td>[Having a strain relief at the proximal end, e.g. sleeve]</td>
</tr>
<tr>
<td>25/0010</td>
<td>Introducing, guiding, advancing, emplacing or holding catheters (A61M 25/10 takes precedence)</td>
</tr>
<tr>
<td>25/0012</td>
<td>Insertion or introduction using an inner stiffening member, e.g. stylet or push-rod</td>
</tr>
<tr>
<td>25/0015</td>
<td>Steering means as part of the catheter or advancing means: Markers for positioning (systems for detection of markers A61B)</td>
</tr>
<tr>
<td>25/0016</td>
<td>Self-propelled, e.g. autonomous robots (A61M 25/0122 takes precedence)</td>
</tr>
<tr>
<td>25/0019</td>
<td>Eversible catheters</td>
</tr>
<tr>
<td>25/0022</td>
<td>With fluid drive by external fluid in an open fluid circuit</td>
</tr>
<tr>
<td>25/0025</td>
<td>Catheters carried by the bloodstream, e.g. with parachutes; Balloon catheters specially designed for this purpose</td>
</tr>
<tr>
<td>25/0027</td>
<td>Magnetic means; Magnetic markers</td>
</tr>
<tr>
<td>25/0033</td>
<td>Tip steering devices</td>
</tr>
<tr>
<td>25/0036</td>
<td>Handles therefor</td>
</tr>
<tr>
<td>25/0038</td>
<td>Having flexible regions as a result of weakened outer material, e.g. slots, slits, cuts, joints or coils</td>
</tr>
<tr>
<td>25/0041</td>
<td>Having flexible regions as a result of using materials with different mechanical properties</td>
</tr>
<tr>
<td>25/0044</td>
<td>Having flexible regions as a result of inner reinforcement means, e.g. struts or rods</td>
</tr>
<tr>
<td>25/0047</td>
<td>Having movable mechanical means, e.g. pull wires</td>
</tr>
<tr>
<td>25/0048</td>
<td>[Details of the distal fixation of the movable mechanical means]</td>
</tr>
<tr>
<td>25/0051</td>
<td>[With pre-shaped mechanisms, e.g. pre-shaped styles or pre-shaped outer tubes]</td>
</tr>
<tr>
<td>25/0055</td>
<td>[With hydraulic or pneumatic means, e.g. balloons or inflatable compartments]</td>
</tr>
<tr>
<td>25/0056</td>
<td>[With magnetic or electrical means, e.g. by using piezo materials, electroactive polymers, magnetic materials or by heating of shape memory materials]</td>
</tr>
<tr>
<td>25/0061</td>
<td>[Wherein the distal tips have two or more deflection regions]</td>
</tr>
<tr>
<td>25/0063</td>
<td>Looped catheters</td>
</tr>
<tr>
<td>25/0066</td>
<td>Sensors, electrodes or the like for guiding the catheter to a target zone, e.g. image guided or magnetically guided</td>
</tr>
<tr>
<td>25/0069</td>
<td>Exchanging a catheter while keeping the guidewire in place</td>
</tr>
<tr>
<td>25/0072</td>
<td>Exchanging a guidewire while keeping the catheter in place</td>
</tr>
<tr>
<td>25/0075</td>
<td>Having telescopic features, interengaging nestable members movable in relations to one another</td>
</tr>
<tr>
<td>25/0077</td>
<td>Having external means for receiving guide wires, wires or stiffening members, e.g. loops, clamps or lateral tubes</td>
</tr>
<tr>
<td>25/0078</td>
<td>Catheters having a lateral opening for guiding elongated means lateral to the catheter</td>
</tr>
<tr>
<td>25/0083</td>
<td>Rapid exchange or monorail catheters</td>
</tr>
<tr>
<td>25/0086</td>
<td>Catheters with fixed wires, i.e. so called “non-over-the-wire” catheters”</td>
</tr>
<tr>
<td>25/0088</td>
<td>Having slitted or breakaway lumens</td>
</tr>
<tr>
<td>25/0091</td>
<td>Suprapubic catheters</td>
</tr>
<tr>
<td>25/0094</td>
<td>Tunnelling catheters</td>
</tr>
<tr>
<td>25/0097</td>
<td>[For creating an artificial passage within the body, e.g. in order to go around occlusions]</td>
</tr>
<tr>
<td>25/0102</td>
<td>Holding devices, e.g. on the body</td>
</tr>
<tr>
<td>25/0106</td>
<td>[Where the catheter is secured by using devices worn by the patient, e.g. belts or harnesses]</td>
</tr>
<tr>
<td>25/0113</td>
<td>[Where the catheter is attached by means specifically adapted to a part of the human body]</td>
</tr>
<tr>
<td>25/0119</td>
<td>Specifically adapted for the mouth</td>
</tr>
<tr>
<td>25/0126</td>
<td>Specifically adapted for the nose</td>
</tr>
<tr>
<td>25/0123</td>
<td>Specifically adapted for attaching to a body wall by means which are on both sides of the wall, e.g. for attaching to an abdominal wall</td>
</tr>
<tr>
<td>25/0124</td>
<td>Having a clip or clamp system</td>
</tr>
<tr>
<td>25/0126</td>
<td>Fixed on the skin having a cover for covering the holding means</td>
</tr>
<tr>
<td>25/0128</td>
<td>[Where the catheter is attached by straps, bands or the like secured by adhesives]</td>
</tr>
<tr>
<td>25/0126</td>
<td>[Where the straps are releasably secured, e.g. by hook and loop-type fastening devices]</td>
</tr>
<tr>
<td>25/0126</td>
<td>Using pads, patches, tapes or the like</td>
</tr>
<tr>
<td>25/0126</td>
<td>[Having slits to place the pad around a catheter puncturing site]</td>
</tr>
<tr>
<td>25/0128</td>
<td>[Having a mainly rigid support structure]</td>
</tr>
<tr>
<td>25/0128</td>
<td>[Anchored in the skin by suture or other skin penetrating devices]</td>
</tr>
<tr>
<td>25/0128</td>
<td>[Catheter, guide wire or the like with means for holding, centering, anchoring or frictionally engaging the device within an artificial lumen, e.g. tube (natural lumen, e.g. vessels A61M 25/04)]</td>
</tr>
<tr>
<td>25/0129</td>
<td>In the body, e.g. expansible {([A61M 25/10, A61M 16/0488 take precedence])}</td>
</tr>
<tr>
<td>25/0166</td>
<td>Body-piercing guide needles or the like</td>
</tr>
<tr>
<td>25/0166</td>
<td>[&quot;Over-the-needle&quot; catheter assemblies, e.g. I.V. catheters]</td>
</tr>
<tr>
<td>25/0172</td>
<td>Devices for protecting the needle; Devices to help insertion of the needle, e.g. wings or holders</td>
</tr>
<tr>
<td>25/0172</td>
<td>Having means for protecting only the distal tip of the needle, e.g. a needle guard</td>
</tr>
<tr>
<td>25/0172</td>
<td>With a permanent connection to the needle hub, e.g. a guiding rail, a locking mechanism or a guard advancement mechanism</td>
</tr>
</tbody>
</table>
Probes; Catheters; Dilators; Drainage appliances for wounds

A61M

25/0631 . . . . [having means for fully covering the needle after its withdrawal, e.g. needle being withdrawn inside the handle or a cover being advanced over the needle]

25/0637 . . . . [Butterfly or winged devices, e.g. for facilitating handling or for attachment to the skin]

25/0643 . . . . [Devices having a blunt needle tip, e.g. due to an additional inner component]

25/065 . . . . [Guide needles]

25/0662 . . . . [Guide tubes]

25/0668 . . . . [splitable, tear apart]

25/0675 . . . . [Introducing-sheath slitters]

25/0681 . . . . [Systems with catheter and outer tubing, e.g. sheet, sleeve or guide tube]

25/0687 . . . . [having means for atraumatic insertion in the body or protection of the tip of the sheath during insertion, e.g. special designs of dilators, needles or sheaths]

25/0693 . . . . [Flashback chambers]

25/09 . . . . Guide wires

25/09008 . . . . [having a balloon]

25/09016 . . . . [with mandrils]

25/09025 . . . . [with sliding mandrils]

25/09033 . . . . [with fixed mandrils, e.g. mandrils fixed to tip; Tensionable wires]

25/09041 . . . . [Mechanisms for insertion of guide wires]

25/0905 . . . . [extendable, e.g. mechanisms for extension]

25/09058 . . . . [Basic structures of guide wires]

25/09066 . . . . [having a coil without a core possibly combined with a sheath]

25/09075 . . . . [having a core without a coil possibly combined with a sheath]

25/09083 . . . . [having a coil around a core]

25/09091 . . . . [where a sheath surrounds the coil at the distal part]

25/091 . . . . [having a lumen for drug delivery or suction]

25/09108 . . . . [Methods for making a guide wire]

25/09116 . . . . [Design of handles or shafts or gripping surfaces thereof for manipulating guide wires]

25/09125 . . . . [Device for locking a guide wire in a fixed position with respect to the catheter or the human body]

25/09133 . . . . [having specific material compositions or coatings; Materials with specific mechanical behaviours, e.g. stiffness, strength to transmit torque]

25/09141 . . . . [made of shape memory alloys which take a particular shape at a certain temperature]

25/0915 . . . . [having features for changing the stiffness]

25/09158 . . . . [when heated]

25/09166 . . . . [having radio-opaque features]

25/09175 . . . . [having specific characteristics at the distal tip]

25/09183 . . . . [having tools at the distal tip]

25/09191 . . . . [made of twisted wires]

25/10 . . . . Balloon catheters ([A61M 25/0125 takes precedence; embolectomy A61B 17/22032; retractors A61B 17/02;] inflatable balloons for placing stents or stent-grafts A61F 2/958; ; stomach balloons for treatment of obesity A61F 5/0003; oesophageal tubes A61J 15/001)]

25/1002 . . . . [characterised by balloon shape (A61M 25/1006, A61M 25/1009 take precedence)]

2025/1004 . . . . [Balloons with folds, e.g. folded or multifolded]

25/1006 . . . . [Balloons formed between concentric tubes]

25/1009 . . . . [Balloons anchored to a disc or plate]

25/1011 . . . . [Multiple balloon catheters]

25/1013 . . . . [with concentrically mounted balloons, e.g. being independently inflatable]

2025/1015 . . . . [having two or more independently movable balloons where the distance between the balloons can be adjusted, e.g. two balloon catheters concentric to each other forming an adjustable multiple balloon catheter system]

25/1018 . . . . [Balloon inflating or inflation-control devices]

25/10181 . . . . [Means for forcing inflation-control devices into the balloon]

25/10182 . . . . [Injector syringes]

25/10183 . . . . [Compressible balloons]

25/10184 . . . . [Means for controlling or monitoring inflation or deflation]

25/10185 . . . . [Valves]

25/10186 . . . . [One-way valves]

25/10187 . . . . [Indicators for the level of inflation or deflation]

25/10188 . . . . [Inflation or deflation data displays]

2025/102 . . . . [driven by a solenoid-activated pump]

2025/1022 . . . . [driven by a rotary motor-activated pump]

25/1025 . . . . [Connections between catheter tubes and inflation tubes]

25/1027 . . . . [Making of balloon catheters]

25/1029 . . . . [Production methods of the balloon members, e.g. blow-moulding, extruding, deposition or by wrapping a plurality of layers of balloon material around a mandril]

25/1031 . . . . [Surface processing of balloon members, e.g. coating or deposition; Mounting additional parts onto the balloon member's surface]

25/1034 . . . . [Joining of shaft and balloon]

25/1036 . . . . [Making parts for balloon catheter systems, e.g. shafts or distal ends (A61M.25/1029 takes precedence)]

25/1038 . . . . [Wrapping or folding devices for use with balloon catheters]

25/104 . . . . [used for angioplasty]

2025/1043 . . . . [with special features or adapted for special applications]

2025/1045 . . . . [for treating bifurcations, e.g. balloons in y-configuration, separate balloons or special features of the catheter for treating bifurcations]

2025/1047 . . . . [having centering means, e.g. balloons having an appropriate shape]

NOTE

This group also covers balloon catheters with centering means other than centering means using balloons

25/105 . . . . [having a balloon suitable for drug delivery, e.g. by using holes for delivery, drug coating or membranes]

25/1052 . . . . [for temporarily occluding a vessel for isolating a sector]

25/1054 . . . . [having detachable or disposable balloons]
2025/1056 . . . [having guide wire lumens outside the main shaft, i.e. the guide wire lumen is within or on the surface of the balloon]

2025/1059 . . . [having different inflatable sections mainly depending on the response to the inflation pressure, e.g. due to different material properties (with different compartments A61M 2025/1072)]

2025/1061 . . . [having separate inflations tubes, e.g. coaxial tubes or tubes otherwise arranged apart from the catheter tube]

2025/1063 . . . [having only one lumen used for guide wire and inflation, e.g. to minimise the diameter]

2025/1065 . . . [having a balloon which is inversely attached to the shaft at the distal or proximal end]

2025/1068 . . . [having means for varying the length or diameter of the deployed balloon, this variations could be caused by excess pressure]

2025/107 . . . [having a longitudinal slit in the balloon]

2025/1072 . . . [having balloons with two or more compartments]

2025/1075 . . . [having a balloon composed of several layers, e.g. by coating or embedding]

2025/1077 . . . [having a system for expelling the air out of the balloon before inflation and use]

2025/1079 . . . [having radio-opaque markers in the region of the balloon]

2025/1081 . . . [having sheaths or the like for covering the balloon but not forming a permanent part of the balloon, e.g. retractable, dissolvable or tearable sheaths]

2025/1084 . . . [having features for increasing the shape stability, the reproducibility or for limiting expansion, e.g. containments, wrapped around fibres, yarns or strands]

2025/1086 . . . [having a special balloon surface topography, e.g. pores, protuberances, spikes or grooves]

2025/1088 . . . [having special surface characteristics depending on material properties or added substances, e.g. for reducing friction]

2025/109 . . . [having balloons for removing solid matters, e.g. by grasping or scraping plaque, thrombus or other matters that obstruct the flow]

2025/1093 . . . [having particular tip characteristics]

2025/1095 . . . [with perfusion means for enabling blood circulation while the balloon is in an inflated state or in a deflated state, e.g. permanent bypass within catheter shaft]

2025/1097 . . . [with perfusion means for enabling blood circulation only while the balloon is in an inflated state, e.g. temporary by-pass within balloon]

27/00 Drainage appliances for wounds or the like, {i.e. wound drains, implanted drains} (implements for holding wounds open A61B 17/02; {middle ear drainage A61F 11/002; other drainage devices A61M 1/001})

27/002 . . . [Implant devices for drainage of body fluids from one part of the body to another (intracocular A61F 9/00781; middle ear A61F 11/002)]

27/004 . . . [with at least a part of the circuit outside the body]

27/006 . . . [Cerebrospinal drainage; Accessories therefor, e.g. valves]

27/008 . . . [pre-shaped, for use in the urethral or ureteral tract]

29/00 Dilators with or without means for introducing media, e.g. remedies (instruments for performing visual medical inspections of cavities or tubes of the body A61B 1/00)

29/02 . . . Dilators made of swellable material (balloon catheters for angioplasty A61M 25/104)

31/00 Devices for introducing or retaining media, e.g. remedies, in cavities of the body (A61M 25/00 takes precedence ; introducing or retaining ophthalmic products into the ocular cavities A61F 9/0008)

31/002 . . . [Devices for releasing a drug at a continuous and controlled rate for a prolonged period of time (artificial gland structures or devices A61F 2/022; intra-uterine contraceptive devices A61F 6/14; tampons for introducing into the vagina A61F 13/20; A61L 15/00; suppositories or bougies for intra-vaginal or intra-uterine application A61K 9/02; physical forms of medicinal preparations for sustained or differential drug release A61K 9/20, A61K 9/50)]

31/005 . . . [for contrast media]

31/007 . . . [Injectors for solid bodies, e.g. suppositories]

35/00 Devices for applying (e.g. spreading), media, e.g. remedies, on the human body (devices for handling toilet or cosmetic substances A45D; for medical use, A61F 13/15)

WARNING

Group A61M 35/00 is impacted by reclassification into groups A61M 35/10, A61M 35/20, A61M 35/25, and A61M 35/30.

All groups listed in this Warning should be considered in order to perform a complete search.

35/003 . . . [Portable hand-held applicators having means for dispensing or spreading integral media (hand-held massage devices with liquid delivery A61H 7/003)]

35/006 . . . [using sponges, foams, absorbent pads or swabs as spreading means]

35/10 . . . [Wearable devices, e.g. garments, glasses or masks]

WARNING

Group A61M 35/10 is incomplete pending reclassification of documents from group A61M 35/00.

Groups A61M 35/00 and A61M 35/10 should be considered in order to perform a complete search.

35/20 . . . [Non-portable devices, e.g. spraying booths]

WARNING

Group A61M 35/20 is incomplete pending reclassification of documents from group A61M 35/00.

Groups A61M 35/00 and A61M 35/20 should be considered in order to perform a complete search.
35/25 . . . (specially adapted for the application of sunscreen, tanning or self-tanning lotions)

**WARNING**

Group A61M 35/25 is incomplete pending reclassification of documents from group A61M 35/00.

Groups A61M 35/00 and A61M 35/25 should be considered in order to perform a complete search.

35/30 . . . (Gas therapy for therapeutic treatment of the skin)

**WARNING**

Group A61M 35/30 is incomplete pending reclassification of documents from group A61M 35/00.

Groups A61M 35/00 and A61M 35/30 should be considered in order to perform a complete search.

37/00 Other apparatus for introducing media into the body (for reproduction or fertilisation A61B 17/425; apparatus for iontophoresis or capathoresis A61N 1/30); Percutany, i.e. introducing medicines into the body by diffusion through the skin (salt baths A61H 33/04)

2037/0007 . . . [having means for enhancing the permeation of substances through the epidermis, e.g. using suction or depression, electric or magnetic fields, sound waves or chemical agents]

37/0015 . . . [by using microneedles]

2037/0023 . . . [Drug applicators using microneedles]

2037/0023 . . . [having a lumen]

2037/0038 . . . [having a channel at the side surface]

2037/0046 . . . [Solid microneedles]

2037/0053 . . . [Methods for producing microneedles]

2037/0061 . . . [Methods for using microneedles]

37/0069 . . . [Devices for implanting pellets, e.g. markers or solid medicaments (for introducing of radioactive sources for interstitial radiation therapy, i.e. brachytherapy A61N 5/1027)]

37/0076 . . . [Tattooing apparatus (apparatus for marking animals A01K 11/00); vaccine applicators having needles or other puncturing means A61B 12/205)]

37/0084 . . . [Tattooing apparatus with incorporated liquid feeding device]

37/0092 . . . [using ultrasonic, sonic or infrasonic vibrations, e.g. phonophoresis]

39/00 Tubes, tube connectors, tube couplings, valves, access sites or the like, specially adapted for medical use (for respiratory devices, e.g. tracheal tubes A61M 16/00; artificial heart valves A61F 2/24)

**WARNING**

Not complete, see A61J 1/14

2039/0009 . . . [Assemblies therof for designed for particular applications, e.g. contrast or saline injection, suction or irrigation]

2039/0018 . . . [designed for flushing a line, e.g. by a by-pass]

2039/0027 . . . [for mixing several substances from different containers]

2039/0036 . . . [characterised by a septum having particular features, e.g. having venting channels or being made from antimicrobial or self-lubricating elastomer]

2039/0045 . . . [Radiopaque indicia]

2039/0054 . . . [Multiple layers]

2039/0063 . . . [Means for alignment of the septum, e.g. septum rim with alignment holes]

2039/0072 . . . [Means for increasing tightness of the septum, e.g. compression rings, special materials, special constructions]

2039/0081 . . . [Means for facilitating introduction of a needle in the septum, e.g. guides, special construction of septum]

2039/009 . . . [Means for limiting access to the septum, e.g. shields, grids]

39/02 . . . Access sites

2039/0202 . . . [for taking samples]

2039/0205 . . . [for injecting media]

2039/0208 . . . [Subcutaneous access sites for injecting or removing fluids (transcutaneous access sites A61M 39/0247; implantable infusion devices A61M 5/14276)]

2039/0211 . . . [with multiple chambers in a single site]

2039/0214 . . . [some or all chambers sharing a single septum]

2039/0217 . . . [at least some chambers being stacked separated by another septum]

2039/022 . . . [being accessible from all sides, e.g. due to a cylindrically-shaped septum]

2039/0223 . . . [having means for anchoring the subcutaneous access site]

2039/0226 . . . [having means for protecting the interior of the access site from damage due to the insertion of a needle]

2039/0229 . . . [having means for facilitating assembling, e.g. snap-fit housing or modular design]

2039/0232 . . . [having means for facilitating the insertion into the body]

2039/0235 . . . [having an additional inlet, e.g. for a guidewire or a catheter tube]

2039/0238 . . . [having means for locating the implanted device to insure proper injection, e.g. radio-emitter, protuberances, radio-opaque markers]

2039/0241 . . . [having means for filtering]

2039/0244 . . . [having means for detecting an inserted needle]

2039/0247 . . . [Semi-permanent or permanent transcutaneous or percutaneous access sites to the inside of the body (peritoneal dialysis catheters A61M 1/288; trachostomy devices A61M 16/0465; measuring pressure within the body A61B 5/036; colostomy devices A61M 5/445; gastrostomy feeding tubes A61J 15/0015; means for fixing a feeding tube outside of the body A61J 5/0053)]

2039/025 . . . [through bones or teeth, e.g. through the skull]

2039/0252 . . . [for access to the lungs]

2039/0255 . . . [for access to the gastric or digestive system]

2039/0258 . . . [for vascular access, e.g. blood stream access]

2039/0261 . . . [Means for anchoring port to the body, or ports having a special shape or being made of a specific material to allow easy implantation/ integration in the body]

2039/0264 . . . [with multiple inlets or multiple outlets]

2039/0267 . . . [comprising sensors or electrical contacts]
A61M

2039/027 . . . [having a particular valve, seal or septum (septum A61M 2039/0036)]
2039/0273 . . . [for introducing catheters into the body]
2039/0276 . . . [for introducing or removing fluids into or out of the body]
2039/0279 . . . [for introducing medical instruments into the body, e.g. endoscope, surgical tools]
2039/0282 . . . [with implanted tubes connected to the port]
2039/0285 . . . [with sterilisation means, e.g. antibacterial coatings, disinfecting pads, UV radiation LEDs or heating means in the port]
2039/0288 . . . [protectors, caps or covers therefor]
2039/0291 . . . [method or device for implanting it in the body]
2039/0294 . . . [having a specific shape matching the shape of a tool to be inserted therein, e.g. for easy introduction, for sealing purposes, guide]
2039/0297 . . . [at least part of it being inflatable, e.g. for anchoring, sealing or removing]
39/04 . . . having pierceable self-sealing members
2039/042 . . . [Shrouds encircling the access needle preventing accidental needle-stick]
39/045 . . . [pre-slit to be pierced by blunt instrument]
2039/047 . . . [the self-sealing member being a viscous fluid]
39/06 . . . Haemostasis valves, i.e. gaskets sealing around a needle, catheter or the like, closing on removal thereof
39/0606 . . . [without means for adjusting the seal opening or pressure (A61M 39/0693 takes precedence)]
39/0613 . . . [with means for adjusting the seal opening or pressure (A61M 39/0693 takes precedence)]
2039/062 . . . [used with a catheter]
2039/0626 . . . [used with other surgical instruments, e.g. endoscope, trocar]
2039/0633 . . . [the seal being a passive seal made of a resilient material with or without an opening]
2039/064 . . . [Slit-valve]
2039/0646 . . . [Duckbill-valve]
2039/0653 . . . [Perforated disc]
2039/066 . . . [Septum-like element]
2039/0666 . . . [Flap-valve]
2039/0673 . . . [comprising means actively pressing on the device passing through the seal, e.g. inflatable seals, diaphragms, clamps]
2039/068 . . . [having a seal being made of or coated with a special material]
2039/0686 . . . [comprising more than one seal]
39/0693 . . . [including means for seal penetration]
39/08 . . . Tubes; Storage means specially adapted therefor
2039/082 . . . [Multi-lumen tubes]
2039/085 . . . [external enteral feeding tubes (feeding tubes inside the stomach or intestines A61J 15/00)]
2039/087 . . . [Tools for handling tubes, e.g. crimping tool for connecting tubes to a connector]
39/10 . . . Tube connectors; Tube couplings (A61M 39/02 takes precedence; connecting needles to syringes or hubs A61M 5/34; connecting catheter tubes to hubs A61M 25/0014)
2039/1005 . . . [Detection of disconnection]
39/1011 . . . [Locking means for securing connection; Additional tamper safeties (A61M 39/16 takes precedence)]
2039/1016 . . . [Unlocking means providing a secure or comfortable disconnection]
2039/1022 . . . [additionally providing electrical connection]
2039/1027 . . . [Quick-acting type connectors]
2039/1033 . . . [Swivel nut connectors, e.g. threaded connectors, bayonet-connectors]
2039/1038 . . . [Union screw connectors, e.g. hollow screw or sleeve having external threads]
2039/1044 . . . [Verifying the connection, e.g. audible feedback, tactile feedback, visual feedback, using external light sources]
39/105 . . . [Multi-channel connectors or couplings, e.g. for connecting multi-lumen tubes (multi-channel connectors in general F16L 37/56)]
39/1055 . . . [Rotating or swivel joints (in general F16L 27/00)]
2039/1061 . . . [Break-apart tubing connectors or couplings]
2039/1066 . . . [having protection means, e.g. sliding sleeve to protect connector itself, shrouds to protect a needle present in the connector, protective housing, isolating sheath]
2039/1072 . . . [with a septum present in the connector]
2039/1077 . . . [Adapters, e.g. couplings adapting a connector to one or several other connectors]
2039/1083 . . . [having a plurality of female connectors, e.g. Luer connectors]
2039/1088 . . . [having a plurality of male connectors, e.g. Luer connectors]
2039/1094 . . . [at least partly incompatible with standard connectors, e.g. to prevent fatal mistakes in connection]
39/12 . . . for joining a flexible tube to a rigid attachment
39/14 . . . for connecting tubes having sealed ends (needle sets A61M 5/162; having valves closing automatically on disconnection of line A61M 39/26)
39/143 . . . [both tube ends being sealed by meltble membranes pierced after connection by use of heat, e.g. using radiant energy]
39/146 . . . [by cutting and welding]
39/16 . . . [having provision for disinfection or sterilisation (A61M 39/14 takes precedence; methods or apparatus for disinfection or sterilisation A61L 20/00)]
39/162 . . . [with antiseptic agent incorporated within the connector]
39/165 . . . [Shrouds or protectors for aseptically enclosing the connector]
2039/167 . . . [with energizing means, e.g. light, vibration, electricity]
39/18 . . . [Methods or apparatus for making the connection under sterile conditions, i.e. sterile docking]
39/20 . . . [Closure caps or plugs for connectors or open ends of tubes]
2039/205 . . . [comprising air venting means]
39/22 . . . [Valves or arrangement of valves (A61M 39/02, A61M 39/0247, A61M 39/16 take precedence; regulating valves in infusion systems A61M 5/1688; in devices worn by the patient for the reception of urine, faeces, catamenial or other discharge, or in colostomy devices A61F 5/4405)]
39/221 . . . [Frangible or pierceable closures within tubing (A61M 39/14 takes precedence; frangible closures for containers A61J 1/14)]
2039/222 . . . [frangible within tubing or bags]
... (check valves A61M 39/24)

39/261 . . . [where the fluid space within the valve is increasing upon disconnection]
39/262 . . . [having a fluid space within the valve remaining the same upon connection and disconnection, i.e. neutral-drawback valve]
39/263 . . . [where the fluid space within the valve is decreasing upon disconnection]
39/265 . . . [electrically operated, e.g. a male connector closing an electrical circuit upon connection to a female valve portion]
39/266 . . . [where the valve comprises venting channels, e.g. to insure better connection, to help decreasing the fluid space upon disconnection, or to help the fluid space to remain the same during disconnection]
39/267 . . . [having a sealing sleeve around a tubular or solid stem portion of the connector]
39/268 . . . [wherein the stem portion is moved for opening and closing the valve, e.g. by translation, rotation]
39/28 . . . [Clamping means for squeezing flexible tubes, e.g. roller clamps (tube stripers A61M 1/0078)]
39/281 . . . [Automatic tube cut-off devices, e.g. squeezing tube on detection of air]
39/282 . . . [including severing of the tube]

2202/00 Special media to be introduced, removed or treated (applying radioactive material A61N 5/1028)

NOTE

The classification symbols A61M 2202/0007 - A61M 2202/0092 are not listed first when assigned to patent documents.

They are used only when associated to other subgroups of A61M 2202/00 in combination sets.

Example:

A61M 2202/0417, A61M 2202/0057

2202/0007 . . . introduced into the body
2202/0014 . . . removed from the body
2202/0021 . . . removed from and reintroduced into the body, e.g. after treatment
2202/0028 . . . fluid entering a filter
2202/0035 . . . fluid leaving the cross-flow filter without having passed through the filtering element
2202/0042 . . . filtrate, i.e. the fluid passing through the filter
2202/005 . . . residue retained by the filter due to size
2202/0057 . . . retained by adsorption
2202/0064 . . . changed by biological action
2202/0071 . . . product to be retained or harvested, e.g. by pheresis
2202/0078 . . . changed by chemical action
2202/0085 . . . product washed out
2202/0092 . . . starting product created by centrifuging
2202/02 . . . Gases
2202/0208 . . . Oxygen
2202/0216 . . . Ozone
2202/0225 . . . Carbon oxides, e.g. Carbon dioxide
2202/0233 . . . Carbon monoxide
2202/0241 . . . Anaesthetics; Analgesics
2202/025 . . . Helium
2202/0258 . . . Krypton (KR)
2202/0266 . . . Nitrogen (N)
2202/0275 . . . Nitric oxide [NO]
2202/0283 . . . Nitrous oxide (N₂O)
2202/0291 . . . Xenon
2202/0293 . . . Gases in liquid phase, e.g. cryogenic liquids
2202/04 . . . Liquids
2202/0401 . . . Ascitics
2202/0403 . . . Gall; Bile
2202/0405 . . . Lymph
2202/0407 . . . Lymphocytes
2202/0409 . . . B-Lymphocytes
2202/0411 . . . T-Lymphocytes
2202/0413 . . . Blood
2202/0415 . . . Plasma
2202/0417 . . . Immunoglobulin
2202/0419 . . . Immunoglobulin G
2202/0421 . . . Beta-2-microglobulin
A61M

2202/0423 . . . Serum; Human serous fluid, i.e. plasma without fibrinogen
2202/0425 . . . Thrombin
2202/0427 . . . Platelets; Thrombocytes
2202/0429 . . . Red blood cells; Erythrocytes
2202/0431 . . . Gerocytes
2202/0433 . . . Free haemoglobin
2202/0435 . . . Neocytes, e.g. reticulocytes
2202/0437 . . . Blood stem cells
2202/0439 . . . White blood cells; Leucocytes (lymphocytes A61M 2202/0407)
2202/0441 . . . Granulocytes, i.e. leucocytes containing many granules in their cytoplasm
2202/0443 . . . Macrophages, e.g. monocytes
2202/0447 . . . Glycoproteins
2202/0449 . . . Fibrinogen, also called factor I
2202/045 . . . Fibrin
2202/0452 . . . Factor VIII
2202/0454 . . . Fibrinase, i.e. Factor XIII
2202/0456 . . . Lipoprotein
2202/0458 . . . High-density lipoprotein
2202/046 . . . Low-density lipoprotein
2202/0462 . . . Placental blood, umbilical cord blood
2202/0464 . . . Cerebrospinal fluid
2202/0466 . . . Saliva
2202/0468 . . . non-physiological
2202/047 . . . cardioplegic
2202/0472 . . . cryo-cardioplegic
2202/0474 . . . haemodiluting
2202/0476 . . . Oxygenated solutions
2202/0478 . . . Heparin
2202/048 . . . Anaesthetics (see also A61M 19/00)
2202/0482 . . . Enteral feeding product
2202/0484 . . . Alcohol
2202/0486 . . . Glucose
2202/0488 . . . Surfactant, e.g. for the lung
2202/049 . . . Toxic
2202/0492 . . . Pleural
2202/0494 . . . Obstetrical, amniotic fluid
2202/0496 . . . Urine
2202/0498 . . . Urea
2202/06 . . . Solids
2202/062 . . . Desiccants
2202/064 . . . Powder
2202/066 . . . made from a compacted product by abrading
2202/068 . . . Faeces; Excretions
2202/07 . . . Proteins
2202/08 . . . Lipoids
2202/09 . . . Body tissue
2202/092 . . . Sweat glands
2202/095 . . . Collagen
2202/097 . . . endothelial cells
2202/10 . . . Bone-marrow
2202/20 . . . Pathogenic agents
2202/203 . . . Bacteria
2202/206 . . . Viruses
2202/30 . . . Vaccines

2205/00 General characteristics of the apparatus
2205/02 . . . characterised by a particular materials
2205/0205 . . . Materials having antiseptic or antimicrobial properties, e.g. silver compounds, rubber with sterilising agent
2205/0211 . . . Ceramics
2205/0216 . . . Materials providing elastic properties, e.g. for facilitating deformation and avoid breaking
2205/0222 . . . Materials for reducing friction
2205/0227 . . . Materials having sensing or indicating function, e.g. indicating a pressure increase
2205/0233 . . . Conductive materials, e.g. antistatic coatings for spark prevention
2205/0238 . . . the material being a coating or protective layer
2205/0244 . . . Micromachined materials, e.g. made from silicon wafers, microelectromechanical systems [MEMS] or comprising nanotechnology
2205/025 . . . Materials providing resistance against corrosion
2205/0255 . . . in acidic environments or acidic fluids
2205/0261 . . . in alcalic environments or alcalic fluids
2205/0266 . . . Shape memory materials
2205/0272 . . . Electro-active or magneto-active materials
2205/0277 . . . Chemo-active materials
2205/0283 . . . Electro-active polymers [EAP]
2205/0288 . . . Electro-rheological or magneto-rheological materials
2205/0294 . . . Piezoelectric materials
2205/04 . . . implanted
2205/05 . . . combined with other kinds of therapy
2205/051 . . . with radiation therapy
2205/052 . . . infra-red
2205/053 . . . ultra-violet
2205/054 . . . with electrotherapy
2205/055 . . . with electrophoresis
2205/056 . . . with active exercise
2205/057 . . . with magnetotherapy
2205/058 . . . with ultrasound therapy
2205/07 . . . having air pumping means
2205/071 . . . hand operated
2205/073 . . . Syringe, piston type
2205/075 . . . Bulb type
2205/076 . . . mouth operated
2205/078 . . . foot operated
2205/10 . . . with powered movement mechanisms
2205/103 . . . rotating
2205/106 . . . reciprocating
2205/11 . . . with means for preventing cross-contamination when used for multiple patients
2205/12 . . . with interchangeable cassettes forming partially or totally the fluid circuit
2205/121 . . . interface between cassette and base
2205/122 . . . using evacuated interfaces to enhance contact
2205/123 . . . with incorporated reservoirs
2205/125 . . . with incorporated filters
2205/126 . . . with incorporated membrane filters
2205/127 . . . with provisions for heating or cooling
2205/128 . . . with incorporated valves
2205/13 . . . with means for the detection of operative contact with patient, e.g. lip sensor
2205/14 . . . Detection of the presence or absence of a tube, a connector or a container in an apparatus
2205/15 . . . Detection of leaks
Communication with radio-opaque indicia preventing use

Constructional features of carpules, syringes or blisters

Avoiding coring, e.g. preventing formation of particles during puncture

by the needle tip shape

by the seal material

insensitive to tilting or inclination, e.g. spill-over prevention

Tilt detection, e.g. for warning or shut-off

preventing use, e.g. of disposables

preventing unwanted use

with radio-opaque indicia

Pressure; Flow

Measuring means

Electromagnetic, inductive or dielectric measuring means

Optical measuring means

used as turbidity change detectors, e.g. for priming-blood or plasma-hemoglobin-interface detection

used specific wavelengths

Electromagnetic, inductive or dielectric measuring means

Force measuring means

PH measuring means

Measuring

Pressure; Flow

Pressure measurement using a water column

Controlling upstream pump pressure

Controlling downstream pump pressure

Measuring barometric pressure, e.g. for compensation

with minimised length of fluid lines; Taking into account the elastic expansion of fluid lines to increase accuracy

Rotational speed

Temperature

Temperature compensation

Acoustical, e.g. ultrasonic, measuring means

Masses, volumes, levels of fluids in reservoirs, flow rates

Upper level detectors

Low level detectors

Continuous level detection (A61M 2205/3393 takes precedence)

by weighing the reservoir

Reservoirs being alternately filled and emptied for measuring flow rate or delivered volume

Communication

with implanted devices, e.g. external control

using magnetic means
Characteristics of a physical parameter; associated device therefor

Flow characteristics
A61M

2210/1035 . . . Bronchi
2210/1039 . . . Lungs
2210/1042 . . . Alimentary tract (A61M 2210/0618 takes precedence)
2210/1046 . . . Pharynx
2210/105 . . . Oesophagus
2210/1053 . . . Stomach
2210/1057 . . . Duodenum
2210/106 . . . Small intestine
2210/1064 . . . Large intestine
2210/1067 . . . Anus
2210/1071 . . . Liver; Hepar
2210/1073 . . . Gall bladder
2210/1082 . . . Kidney
2210/1085 . . . Bladder
2210/1089 . . . Urethra
2210/1092 . . . Female
2210/1096 . . . Male
2210/12 . . . Blood circulatory system
2210/122 . . . Pericardium
2210/125 . . . Heart
2210/127 . . . Aorta
2210/14 . . . Female reproductive, genital organs
2210/1408 . . . Ovaries
2210/1416 . . . Ova, ovum
2210/1425 . . . Uterine tubes
2210/1430 . . . Uterus
2210/1441 . . . Ovocytes
2210/145 . . . Embryo, fetus
2210/1458 . . . Placenta
2210/1466 . . . Umbilical cord
2210/1475 . . . Vagina
2210/1483 . . . Labia
2210/1491 . . . Clitoris
2210/16 . . . Male reproductive, genital organs
2210/161 . . . Testis
2210/162 . . . Epididymis
2210/163 . . . Ductus deferens
2210/164 . . . Seminal vesicles
2210/165 . . . Sperm ducts
2210/166 . . . Prostate
2210/167 . . . Penis
2210/168 . . . Scrota, Scrotums

Parts of the body

2230/00  Measuring parameters of the user

NOTE

{In this group, symbol A61M 2230/005 is only used as subsequent symbol in C-sets and should not be allocated as single symbols.}

2230/005  . Parameter used as control input for the apparatus
2230/04  . Heartbeat characteristics, e.g. ECG, blood pressure modulation
2230/05  . Heartbeat rate only
2230/08  . Other bio-electrical signals
2230/10  . Electroencephalographic signals
2230/14  . Electro-oculogram [EOG]
2230/16  . Visual evoked potential [VEP]
2230/18  . Rapid eye-movements [REM]