

CPC**COOPERATIVE PATENT CLASSIFICATION****A47L**

DOMESTIC WASHING OR CLEANING (brushes [A46B](#); cleaning quantities of bottles or of other hollow articles of one kind [B08B 9/00](#); laundry [D06F](#)); **SUCTION CLEANERS IN GENERAL** (cleaning in general [B08](#))

NOTE

Machines or implements which can be used for cleaning windows, window shades, window screens, venetian blinds, as well as floors, carpets, furniture, walls or wall coverings are classified in group [A47L 11/00](#) or [A47L 13/00](#).

Cleaning windows, window shades, window screens, venetian blinds**A47L 1/00****Cleaning windows**

- A47L 1/02 . Power-driven machines or devices
- A47L 1/03 . . cleaning both sides of a window simultaneously
- A47L 1/05 . . Hand apparatus with built-in electric motors
- A47L 1/06 . Hand implements (with built-in electric motors [A47L 1/05](#))
- A47L 1/08 . . with provision for supplying liquids, e.g. cleaning agents ([A47L 1/095](#), [A47L 1/13](#), [A47L 1/15](#) take precedence)
- A47L 1/09 . . for cleaning one side with access from the other side only
- A47L 1/095 . . . with provision for supplying liquids, e.g. cleaning agents
- A47L 1/12 . . for cleaning both sides simultaneously
- A47L 1/13 . . . with provision for supplying liquids, e.g. cleaning agents
- A47L 1/15 . . Cloths, sponges, pads, or the like, e.g. containing cleaning agents
- A47L 1/16 . Devices for defrosting window-panes ([H05B 3/84](#) takes precedence)

A47L 3/00**Safety devices for use in window-cleaning** (safety belts [A62B 35/00](#); for scaffolding in general [E04G](#); for ladders [E06C](#))

- A47L 3/02 . Cages; Platforms
- A47L 3/04 . Safety ropes

A47L 4/00**Cleaning window shades, window screens, venetian blinds** ([A47L 1/15](#) takes precedence; suction cleaner nozzles [A47L 9/02](#))

- A47L 4/02 . Hand implements for cleaning venetian blinds
- A47L 4/04 . Accessories facilitating cleaning, e.g. venetian blind separators, spreaders, or cleaning racks

Suction cleaners (pneumatically taking-up undesirable matter from roads or like surfaces [E01H 1/08](#))**A47L 5/00****Structural features of suction cleaners**

- A47L 5/02 . with user-driven air-pumps or compressors

- A47L 5/04 . . with pistons, bellows, or diaphragms, e.g. driven by the cleaner-supporting wheels
- A47L 5/05 . . . with driven dust-loosening tools
- A47L 5/06 . . with rotary fans
- A47L 5/08 . . . driven by cleaner-supporting wheels
- A47L 5/10 with driven dust-loosening tools
- A47L 5/12 . with power-driven air-pumps or air-compressors, e.g. driven by motor vehicle engine vacuum
- A47L 5/14 . . cleaning by blowing-off, also combined with suction cleaning
- A47L 5/16 . . with suction devices other than rotary fans
- A47L 5/18 . . . with ejectors, e.g. connected to motor vehicle exhaust
- A47L 5/20 . . . with bellows, diaphragms or pistons
- A47L 5/22 . . with rotary fans
- A47L 5/225 . . . {Convertible suction cleaners, i.e. convertible between different types thereof, e.g. from upright suction cleaners to sledge-type suction cleaners}
- A47L 5/24 . . . Hand-supported suction cleaners
- A47L 5/26 with driven dust-loosening tools
- A47L 5/28 . . . Suction cleaners with handles and nozzles fixed on the casings, e.g. wheeled suction cleaners with steering handle ([A47L 5/24 takes precedence](#))
- A47L 5/30 with driven dust-loosening tools, e.g. rotating brushes
- A47L 5/32 with means for connecting a hose ([hose couplings for suction cleaners A47L 9/24](#))
- A47L 5/34 with height adjustment of nozzles or dust-loosening tools
- A47L 5/36 . . . Suction cleaners with hose between nozzle and casing; Suction cleaners for fixing on staircases; Suction cleaners for carrying on the back
- A47L 5/362 {of the horizontal type, e.g. canister or sledge type}
- A47L 5/365 {of the vertical type, e.g. tank or bucket type}
- A47L 5/367 {Suction cleaners for fixing on staircases}
- A47L 5/38 . . . Built-in suction cleaner installations, i.e. with fixed tube system to which, at different stations, hoses can be connected

A47L 7/00 Suction cleaners adapted for additional purposes ([suction devices for removing ash F23J 1/02](#)); Tables with suction openings for cleaning purposes; Containers for cleaning articles by suction; Suction cleaners adapted to cleaning of brushes; Suction cleaners adapted to taking-up liquids

- A47L 7/0004 . {Suction cleaners adapted to take up liquids, e.g. wet or dry vacuum cleaners ([floor-scrubbing machines taking-up dirty liquid by suction A47L 11/30](#))}
- A47L 7/0009 . . {with means mounted on the nozzle; nozzles specially adapted for the recovery of liquid}
- A47L 7/0014 . . {with additional means or devices between nozzle and casing}
- A47L 7/0019 . . {Details of the casing}
- A47L 7/0023 . . {Recovery tanks ([for cleaning machines A47L 11/4013](#))}
- A47L 7/0028 . . . {Security means, e.g. float valves or level switches for preventing overflow}
- A47L 7/0033 . . . {with means for recycling the dirty liquid}

- A47L 7/0038 . . . {with means for emptying the tanks}
- A47L 7/0042 . . {Gaskets; Sealing means}
- A47L 7/0047 . {Furniture or stationary devices with suction openings (built-in suction cleaners [A47L 5/38](#))}
- A47L 7/0052 . {Containers for cleaning articles by suction}
- A47L 7/0057 . {Suction cleaners adapted for cleaning of brushes (shakers for dust-cloths or mops [A47L 13/502](#))}
- A47L 7/0061 . {adapted for disinfecting or sterilising}
- A47L 7/0066 . {adapted for removing nail dust, hair or the like}
- A47L 7/0071 . {with containers for ash, soot, contaminant or harmful materials (suction devices for removing ashes [F23J 1/02](#))}
- A47L 7/0076 . {adapted for vehicle cleaning (vehicle cleaning apparatus for interior of land vehicles [B60S 3/008](#))}
- A47L 7/008 . {adapted for mattresses or the like}
- A47L 7/0085 . {adapted for special purposes not related to cleaning}
- A47L 7/009 . {Details of suction cleaner tools for additional purposes}
- A47L 7/0095 . {Suction cleaners or attachments adapted to collect dust or waste from power tools}
- A47L 7/02 . with driven tools for special purposes (with floor-polishing tools [A47L 11/20](#))
- A47L 7/04 . for using the exhaust air for other purposes, e.g. for distribution of chemicals in a room, for sterilisation of the air (spraying or atomising in general [B05](#))
- A47L 7/06 . . for supporting the suction cleaner on the exhaust air
- A47L 7/08 . . with combustion of dust in exhaust air

- A47L 9/00** **Details or accessories of suction cleaners, e.g. mechanical means for controlling the suction or for effecting pulsating action; Storing devices specially adapted to suction cleaners or parts thereof; Carrying-vehicles specially adapted for suction cleaners**
- A47L 9/0009 . {Storing devices (winding devices for electric cables [A47L 9/26](#)); Supports, stands or holders}
- A47L 9/0018 . . {integrated in or removably mounted upon the suction cleaner for storing parts of said suction cleaner}
- A47L 9/0027 . . . {specially adapted for holding the suction cleaning tools}
- A47L 9/0036 . . . {specially adapted for holding the suction hose}
- A47L 9/0045 . . . {specially adapted for holding the suction tube}
- A47L 9/0054 . . {Stands or the like for temporary interruption of work}
- A47L 9/0063 . . {External storing devices; Stands, casings or the like for the storage of suction cleaners}
- A47L 9/0072 . {Mechanical means for controlling the suction or for effecting pulsating action}
- A47L 9/0081 . {Means for exhaust-air diffusion; Means for sound or vibration damping}
- A47L 9/009 . {Carrying-vehicles; Arrangements of trollies or wheels; Means for avoiding mechanical obstacles}
- A47L 9/02 . Nozzles (suction nozzles for fluid transport [B65G 51/00](#))
- A47L 9/04 . . with driven brushes or agitators
- A47L 9/0405 . . . {Driving means for the brushes or agitators}

A47L 9/0411	....	{driven by electric motor}
A47L 9/0416	....	{driven by fluid pressure, e.g. by means of an air turbine}
A47L 9/0422	....	{driven by the rotation of the supporting wheels on which the nozzle travels over the floor}
A47L 9/0427	...	{Gearing or transmission means therefor}
A47L 9/0433	....	{Toothed gearings}
A47L 9/0438	.....	{with gears having orbital motion, e.g. planetary gearing}
A47L 9/0444	....	{for conveying motion by endless flexible members, e.g. belts}
A47L 9/045	....	{Friction gearings}
A47L 9/0455	...	{Bearing means therefor}
A47L 9/0461	...	{Dust-loosening tools, e.g. agitators, brushes}
A47L 9/0466	....	{Rotating tools}
A47L 9/0472	.....	{Discs}
A47L 9/0477	.....	{Rolls}
A47L 9/0483	....	{Reciprocating or oscillating tools, e.g. vibrators, agitators, beaters}
A47L 9/0488	....	{Combinations or arrangements of several tools, e.g. edge cleaning tools}
A47L 9/0494	...	{Height adjustment of dust-loosening tools}
A47L 9/06	..	with fixed, e.g. adjustably fixed brushes or the like
A47L 9/0606	...	{rigidly anchored brushes, combs, lips or pads}
A47L 9/0613	....	{with means specially adapted for picking up threads, hair or the like, e.g. brushes, combs, lint pickers or bristles pads}
A47L 9/062	....	{Rigidly anchored edge brushes}
A47L 9/0626	....	{Rigidly anchored lips, e.g. nozzles adapted for picking up liquids}
A47L 9/0633	...	{with retractable brushes, combs, lips or pads}
A47L 9/064	....	{actuating means therefor}
A47L 9/0646	.....	{with pneumatic actuation}
A47L 9/0653	.....	{with mechanical actuation, e.g. using a lever}
A47L 9/066	...	{with adjustably mounted brushes, combs, lips or pads; Height adjustment of nozzle or dust loosening tools (for suction cleaners with handles and nozzles fixed on the casing A47L 5/34)}
A47L 9/0666	...	{with tilting, floating or similarly arranged brushes, combs, lips or pads}
A47L 9/0673	...	{with removable brushes, combs, lips or pads}
A47L 9/068	...	{Nozzles combined with a different cleaning side, e. g. duplex nozzles or dual purpose nozzles}
A47L 9/0686	...	{Nozzles with cleaning cloths, e.g. using disposal fabrics for covering the nozzle}
A47L 9/0693	...	{Specially shaped nozzles, e.g. for cleaning radiators, tubes, fans or the like; Dusters}
A47L 9/08	..	with means adapted for blowing
A47L 9/10	.	Filters (in general B01D ; cyclones B04C); Dust separators; Dust removal; Automatic exchange of filters {(for machines for cleaning floors A47L 11/40)}
A47L 9/102	..	{Dust separators (cyclones A47L 9/16)}

A47L 9/104	...	{Means for intercepting small objects}
A47L 9/106	..	{Dust removal}
A47L 9/108	...	{Dust compression means}
A47L 9/12	..	Dry filters
A47L 9/122	...	{flat}
A47L 9/125	...	{funnel-shaped}
A47L 9/127	...	{tube- or sleeve-shaped}
A47L 9/14	..	Bags or the like; {Rigid filtering receptacles;} Attachment of, or closures for, bags {or receptacles}
A47L 9/1409	...	{Rigid filtering receptacles (dust collecting receptacles for cyclones A47L 9/1683)}
A47L 9/1418	...	{Impermeable dust collecting bags}
A47L 9/1427	...	{Means for mounting or attaching bags or filtering receptacles in suction cleaners; Adapters}
A47L 9/1436	....	{Connecting plates, e.g. collars, end closures}
A47L 9/1445	.....	{with closure means}
A47L 9/1454	.....	{Self-sealing closures, e.g. valves}
A47L 9/1463	....	{specially adapted for rigid filtering receptacles}
A47L 9/1472	....	{combined with security means, e.g. for preventing use, e.g. in case of absence of the bag}
A47L 9/1481	...	{Means for removing bags in suction cleaners, e.g. ejecting means; Means for exchanging bags}
A47L 9/149	...	{Emptying means; Reusable bags}
A47L 9/16	..	Arrangement or disposition of cyclones or other devices with centrifugal action
A47L 9/1608	...	{Cyclonic chamber constructions}
A47L 9/1616	...	{Multiple arrangement thereof}
A47L 9/1625	....	{for series flow}
A47L 9/1633	.....	{Concentric cyclones}
A47L 9/1641	....	{for parallel flow}
A47L 9/165	...	{Construction of inlets}
A47L 9/1658	...	{Construction of outlets}
A47L 9/1666	....	{with filtering means}
A47L 9/1675	.....	{movable, revolving or rotary}
A47L 9/1683	...	{Dust collecting chambers; Dust collecting receptacles}
A47L 9/1691	...	{Mounting or coupling means for cyclonic chamber or dust receptacles}
A47L 9/18	..	Liquid filters
A47L 9/181	...	{Separating by passing the air through a liquid bath}
A47L 9/182	...	{Separating by passing the air over a liquid bath (arrangement of cyclones A47L 9/16)}
A47L 9/183	...	{Spray cleaning}
A47L 9/185	...	{Means for the mechanical control of flow of air, e.g. deflectors, baffles or labyrinths}

- A47L 9/186 . . . {Construction of outlets}
- A47L 9/187 {with filtering means, e.g. separators}
- A47L 9/188 {movable, revolving or rotary}
- A47L 9/19 . . Means for monitoring filtering operation
- A47L 9/20 . Means for cleaning filters
- A47L 9/22 . Mountings for motor fan assemblies
- A47L 9/24 . Hoses {or pipes}; Hose {or pipe} couplings (hoses or hose joints in general [F16L](#))
- A47L 9/242 . . {Hose or pipe couplings}
- A47L 9/244 . . . {for telescopic or extensible hoses or pipes}
- A47L 9/246 . . . {with electrical connectors}
- A47L 9/248 . . {Parts, details or accessories of hoses or pipes ([nozzles A47L 9/02](#))}
- A47L 9/26 . Incorporation of winding devices for electric cables (devices specially adapted for repeatedly paying-out or re-storing cables [B65H 75/34](#); arrangements of electrical cables or lines between relatively-movable parts [H02G 11/00](#))
- A47L 9/28 . Installation of the electric equipment, e.g. adaptation or attachment to the suction cleaner; Regulation of suction cleaners by electric means
- A47L 9/2805 . . {Parameters or conditions being sensed}
- A47L 9/281 . . . {the amount or condition of incoming dirt or dust}
- A47L 9/2815 {using optical detectors}
- A47L 9/2821 . . . {Pressure, vacuum level or airflow}
- A47L 9/2826 . . . {the condition of the floor}
- A47L 9/2831 . . . {Motor parameters, e.g. motor load or speed}
- A47L 9/2836 . . {characterised by the parts which are regulated}
- A47L 9/2842 . . . {Suction motors or blowers}
- A47L 9/2847 . . . {Surface treating elements}
- A47L 9/2852 . . . {Elements for displacement of the vacuum cleaner or the accessories therefor, e.g. wheels, casters or nozzles}
- A47L 9/2857 . . {User input or output elements for control, e.g. buttons, switches or displays}
- A47L 9/2863 . . . {Control elements activated by pivoting movement of the upright vacuum cleaner handle}
- A47L 9/2868 . . {Arrangements for power supply of vacuum cleaners or the accessories thereof}
- A47L 9/2873 . . . {Docking units or charging stations (for autonomous or robotic vacuum cleaners [A47L 2201/02](#))}
- A47L 9/2878 . . . {Dual-powered vacuum cleaners, i.e. devices which can be operated with mains power supply or by batteries}
- A47L 9/2884 . . . {Details of arrangements of batteries or their installation}
- A47L 9/2889 . . {Safety or protection devices or systems, e.g. for prevention of motor over-heating or for protection of the user}
- A47L 9/2894 . . {Details related to signal transmission in suction cleaners}
- A47L 9/30 . . Arrangement of illuminating devices
- A47L 9/32 . Handles
- A47L 9/322 . . {for hand-supported suction cleaners}

- A47L 9/325 .. {for wheeled suction cleaners with steering handle}
- A47L 9/327 .. {for suction cleaners with hose between nozzle and casing}

Cleaning floors, carpets, furniture, walls, or wall coverings

A47L 11/00 **Machines for cleaning floors, carpets, furniture, walls, or wall coverings**

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|--------------|-------|--|
| A47L 11/02 | · | Floor surfacing or polishing machines (polishing machines in general B24B 29/00) |
| A47L 11/03 | .. | characterised by having provisions for supplying cleaning or polishing agents
{ A47L 11/065 , A47L 11/085 , A47L 11/125 , A47L 11/145 , A47L 11/161 ,
A47L 11/1625 , A47L 11/185 , A47L 11/201 take precedence)} |
| A47L 11/04 | .. | hand-driven |
| A47L 11/06 | ... | with reciprocating or oscillating tools |
| A47L 11/065 | .... | {with supply of cleaning agents} |
| A47L 11/08 | ... | with rotating tools |
| A47L 11/085 | .... | {with supply of cleaning agents} |
| A47L 11/10 | .. | motor-driven |
| A47L 11/12 | ... | with reciprocating or oscillating tools |
| A47L 11/125 | .... | {with supply of cleaning agents} |
| A47L 11/14 | ... | with rotating tools |
| A47L 11/145 | .... | {with supply of cleaning agents} |
| A47L 11/16 | .... | the tools being disc brushes |
| A47L 11/161 | ..... | {with supply of cleaning agents} |
| A47L 11/162 | ..... | having only a single disc brush |
| A47L 11/1625 | ..... | {with supply of cleaning agents} |
| A47L 11/164 | ..... | Parts or details of the brushing tools |
| A47L 11/18 | .... | the tools being roll brushes |
| A47L 11/185 | ..... | {with supply of cleaning agents} |
| A47L 11/19 | ..... | Parts or details of the brushing tools |
| A47L 11/20 | .. | combined with vacuum cleaning devices |
| A47L 11/201 | ... | {with supply of cleaning agents} |
| A47L 11/202 | ... | having separate drive for the cleaning brushes |
| A47L 11/2025 | .... | {the tools being disc brushes} |
| A47L 11/204 | ... | having combined drive for brushes and for vacuum cleaning |
| A47L 11/205 | .... | for reciprocating brushes |
| A47L 11/206 | .... | for rotary disc brushes |
| A47L 11/2065 | ..... | {having only one disc brush} |
| A47L 11/22 | · | Floor-sweeping machines, hand-driven |
| A47L 11/24 | · | Floor-sweeping machines, motor-driven |
| A47L 11/26 | · | Floor-scrubbing machines, hand-driven (A47L 11/29 takes precedence) |
| A47L 11/28 | · | Floor-scrubbing machines, motor-driven (A47L 11/29 takes precedence) |
| A47L 11/282 | .. | having rotary tools |

- A47L 11/283 . . . the tools being disc brushes
- A47L 11/284 . . having reciprocating tools
- A47L 11/29 . Floor-scrubbing machines characterised by means for taking-up dirty liquid
- A47L 11/292 . . having rotary tools ([A47L 11/30 takes precedence](#))
- A47L 11/293 . . . the tools being disc brushes
- A47L 11/294 . . having reciprocating tools ([A47L 11/30 takes precedence](#))
- A47L 11/30 . . by suction
- A47L 11/302 . . . {having rotary tools}
- A47L 11/305 {the tools being disc brushes}
- A47L 11/307 . . . {having reciprocating tools}
- A47L 11/32 . Carpet-sweepers ([combined with suction cleaners A47L 7/02](#))
- A47L 11/325 . . {Shampoo devices for carpet-sweepers}
- A47L 11/33 . . having means for storing dirt
- A47L 11/34 . Machines for treating carpets in position by liquid, foam, or vapour, e.g. by steam
- A47L 11/36 . Machines for beating upholstery
- A47L 11/38 . Machines, specially adapted for cleaning walls, ceilings, roofs, or the like
- A47L 11/40 . Parts or details of machines not {provided for in} groups [A47L 11/02](#) to [A47L 11/38](#), {or not restricted to one of these groups}, e.g. handles, arrangement of switches, skirts, buffers, levers
- A47L 11/4002 . . {Installations of electric equipment}
- A47L 11/4005 . . . {Arrangements of batteries or cells; Electric power supply arrangements}
- A47L 11/4008 . . . {Arrangements of switches, indicators or the like}
- A47L 11/4011 . . {Regulation of the cleaning machine by electric means; Control systems and remote control systems therefor}
- A47L 11/4013 . . {Contaminants collecting devices, i.e. hoppers, tanks or the like}
- A47L 11/4016 . . . {specially adapted for collecting fluids}
- A47L 11/4019 {Fill level sensors; Security means to prevent overflow, e.g. float valves}
- A47L 11/4022 {with means for recycling the dirty liquid ([treatment of waste water C02F](#))}
- A47L 11/4025 . . . {Means for emptying}
- A47L 11/4027 . . {Filtering or separating contaminants or debris}
- A47L 11/403 . . . {Means for monitoring filtering operation}
- A47L 11/4033 . . . {Means for cleaning filters}
- A47L 11/4036 . . {Parts or details of the surface treating tools}
- A47L 11/4038 . . . {Disk shaped surface treating tools}
- A47L 11/4041 . . . {Roll shaped surface treating tools}
- A47L 11/4044 . . . {Vacuuming or pick-up tools; Squeegees}
- A47L 11/4047 . . . {Wound-up or endless cleaning belts}
- A47L 11/405 . . . {Machines using UV-lamps, IR-lamps, ultrasound or plasma cleaning}
- A47L 11/4052 . . {Movement of the tools or the like perpendicular to the cleaning surface}
- A47L 11/4055 . . . {for lifting the tools to a non-working position}
- A47L 11/4058 . . . {for adjusting the height of the tool}

- A47L 11/4061 .. {Steering means; Means for avoiding obstacles; Details related to the place where the driver is accommodated}
- A47L 11/4063 .. {Driving means; Transmission means therefor}
- A47L 11/4066 ... {Propulsion of the whole machine}
- A47L 11/4069 ... {Driving or transmission means for the cleaning tools}
- A47L 11/4072 .. {Arrangement of castors or wheels}
- A47L 11/4075 .. {Handles; levers}
- A47L 11/4077 .. {Skirts or splash guards}
- A47L 11/408 .. {Means for supplying cleaning or surface treating agents}
- A47L 11/4083 ... {Liquid supply reservoirs; Preparation of the agents, e.g. mixing devices}
- A47L 11/4086 ... {Arrangements for steam generation}
- A47L 11/4088 ... {Supply pumps; Spraying devices; Supply conduits}
- A47L 11/4091 .. {Storing or parking devices, arrangements therefor; Means allowing transport of the machine when it is not being used}
- A47L 11/4094 .. {Accessories to be used in combination with conventional vacuum-cleaning devices}
- A47L 11/4097 .. {Means for exhaust-air diffusion; Exhaust-air treatment, e.g. air purification; Means for sound or vibration damping}

A47L 13/00

Implements for cleaning floors, carpets, furniture, walls, or wall coverings
(brushes, their handles or fastenings [A46B](#), [B25G](#); scrapers for finishing work on buildings [E04F 21/00](#))

- A47L 13/02 . Scraping
- A47L 13/022 .. Scraper handles
- A47L 13/03 .. Scrapers having provisions for supplying cleaning agents
- A47L 13/04 .. with steel wool
- A47L 13/06 .. with wire brushes or wire meshes
- A47L 13/07 ... Metal sponges ([A47L 13/022](#), [A47L 13/03](#) take precedence)
- A47L 13/08 .. with scraping blades
- A47L 13/10 . Scrubbing; Scouring; Cleaning; Polishing
- A47L 13/11 .. Squeegees
- A47L 13/12 .. Implements with several different treating devices
- A47L 13/14 .. combined with squeezing or wringing devices
- A47L 13/142 ... having torsional squeezing or wringing action
- A47L 13/144 ... having squeezing rollers
- A47L 13/146 ... having pivoting squeezing plates
- A47L 13/16 .. Cloths; Pads; Sponges ([metal scraping sponges A47L 13/07](#))
- A47L 13/17 ... containing cleaning agents ([A47L 13/19](#) takes precedence; {chemical compositions [C11D 17/049](#)})
- A47L 13/18 ... Gloves; Glove-like cloths
- A47L 13/19 containing cleaning agents
- A47L 13/20 .. Mops

A47L 13/22	...	with liquid-feeding devices
A47L 13/225	....	{Steam mops }
A47L 13/23	....	connectable to the water mains
A47L 13/24	...	Frames for mops; Mop heads (handles B25G)
A47L 13/25	....	Wire frames
A47L 13/252	.....	for mops of textile fringes or the like
A47L 13/253	.....	of adjustable or foldable type
A47L 13/254	....	Plate frames
A47L 13/255	.....	for mops of textile fringes or the like
A47L 13/256	.....	for mops made of cloth
A47L 13/257	.....	for mops made of sponge material
A47L 13/258	.....	of adjustable or foldable type
A47L 13/26	..	Other cleaning devices with liquid supply arrangements (such arrangements on floor-polishing machines A47L 11/00 , on scrapers A47L 13/03 , on mops A47L 13/22 ; cloths, pads, or the like containing cleaning agents A47L 13/17 , A47L 13/19)
A47L 13/28	..	Polishing implements (polishing machines A47L 11/02)
A47L 13/282	...	mounted under footwear
A47L 13/284	...	having fixed or detachable weights
A47L 13/286	...	having containers for storing polishing material, e.g. polishing paper
A47L 13/29	...	having movable or detachable polishing or shining cloths
A47L 13/294	...	having invertible head, one side being used for dispensing polishing material and the reverse side for shining
A47L 13/30	...	Implements for polishing and waxing or oiling, with dispensers for wax or oil
A47L 13/31	....	having movable or detachable polishing or shining cloths
A47L 13/312	.....	supplied with liquid wax or oil
A47L 13/314	....	having invertible head, one side being used for dispensing wax or oil and the reverse side for shining
A47L 13/316	.....	supplied with liquid wax or oil
A47L 13/32	...	Wax dispensers with heating arrangements
A47L 13/34	..	Scouring implements for hearths or metal objects
A47L 13/36	..	Carpet-beaters
A47L 13/38	..	Other dusting implements ((using adhesive surfaces A47L 25/005))
A47L 13/40	..	Cleaning implements actuated by electrostatic attraction; Devices for cleaning same; Magnetic cleaning implements
A47L 13/41	...	Magnetic cleaning implements
A47L 13/42	..	Details
A47L 13/44	...	Securing scouring-cloths to the brush or like body of the implement
A47L 13/46	...	Securing scouring or polishing cloths or sponges to the handles by gripping means, tongs, or the like
A47L 13/48	...	Protective devices, such as bumpers or guard plates
A47L 13/50	..	Auxiliary implements (cleaning devices for brushes or the like A46B 17/06)

A47L 13/502	...	Shakers for dust-cloths or mops; Bumpers therefor
A47L 13/51	...	Storing of cleaning tools, e.g. containers therefor
A47L 13/512	....	Clamping devices for hanging the tools
A47L 13/52	...	Dust pans; Crumb trays
A47L 13/54	...	Racks for beating carpets
A47L 13/56	...	Implements for applying wax or oil
A47L 13/58	...	Wringers for scouring pads, mops, or the like, combined with buckets
A47L 13/59	....	with movable squeezing members
A47L 13/60	....	with squeezing rollers
A47L 13/62	...	Kneeling supports, especially wheeled (kneeling cushions attachable to knees A41D 13/06)

Cleaning or polishing household articles or the like

A47L 15/00	Washing or rinsing machines for crockery or tableware
A47L 15/0002	. {Washing processes, i.e. machine working principles characterised by phases or operational steps}
A47L 15/0005	.. {Rinsing phases, e.g. pre-rinsing, intermediate rinsing, final rinsing}
A47L 15/0007	.. {Washing phases}
A47L 15/001	.. {Drain phases, including initial, intermediate or partial draining phases}
A47L 15/0013	.. {Drying phases, including dripping-off phases}
A47L 15/0015	.. {other treatment phases, e.g. steam or sterilizing phase}
A47L 15/0018	. {Controlling processes, i.e. processes to control the operation of the machine characterised by the purpose or target of the control (for control of water softening or water softener regeneration A47L 15/4229 ; for control of water level A47L 15/4244 ; for control of bad smells or odours A47L 15/4276 ; for control of water temperature A47L 15/4287 ; for control of water pressure A47L 15/4289 ; for control of condition of crockery or tableware A47L 15/4295 ; for control of condition of washing water A47L 15/4297)}
A47L 15/0021	.. {Regulation of operational steps within the washing processes, e.g. optimisation or improvement of operational steps depending from the detergent nature or from the condition of the crockery}
A47L 15/0023	... {Water filling (A47L 15/4244 takes precedence)}
A47L 15/0026	... {Rinsing phases}
A47L 15/0028	... {Washing phases}
A47L 15/0031	... {Water discharge phases}
A47L 15/0034	... {Drying phases, including dripping-off phases}
A47L 15/0036	... {Steam or sterilizing phases}
A47L 15/0039	... {Filter cleaning phases}
A47L 15/0042	... {Desorption phases of reversibly dehydrogenated drying material. e.g. zeolite in a sorption drying system}
A47L 15/0044	.. {Operation time reduction}
A47L 15/0047	.. {Energy or water consumption, e.g. by saving energy or water}

- A47L 15/0049 .. {Detection or prevention of malfunction, including accident prevention (arrangements to prevent clogging of filters [A47L 15/4208](#); safety arrangements for preventing water damage [A47L 15/421](#))}
- A47L 15/0052 .. {Noise reduction}
- A47L 15/0055 .. {Metering or indication of used products, e.g. type or quantity of detergent, rinse aid or salt; for measuring or controlling the product concentration}
- A47L 15/0057 .. {Cleaning of machines parts, e.g. removal of deposits like lime scale or proteins from piping or tub}
- A47L 15/006 .. {using wireless communication between internal components of the machine}
- A47L 15/0063 .. {using remote monitoring or controlling of the dishwasher operation, e.g. networking systems}
- A47L 15/0065 . {specially adapted for drinking glasses}
- A47L 15/0068 .. {with brushes or similar scraping members}
- A47L 15/0071 .. {the glasses being placed on conveyers}
- A47L 15/0073 ... {of the rotary table type}
- A47L 15/0076 . {of non-domestic use type, e.g. commercial dishwashers for bars, hotels, restaurants, canteens or hospitals (machines specially adapted for drinking glasses [A47L 15/0065](#); drawer-type dishwashers [A47L 15/0084](#); in-sink dishwashers [A47L 15/0086](#); miniature dishwashers [A47L 15/0089](#); conveyer-type dishwashers [A47L 15/24](#); machines with crockery cleaned by brushes [A47L 15/37](#))}
- A47L 15/0078 .. {with a plurality of fluid recirculation arrangements, e.g. with separated washing liquid and rinsing liquid recirculation circuits}
- A47L 15/0081 .. {with vertical sliding closing doors, e.g. hood-type dishwashers}
- A47L 15/0084 . {of drawer-type}
- A47L 15/0086 . {In-sink dishwashers}
- A47L 15/0089 . {of small size, e.g. portable mini dishwashers for small kitchens, office kitchens, boats, recreational vehicles (specially adapted for drinking glasses [A47L 15/0065](#))}
- A47L 15/0092 . {specially adapted to wash large items like pots, trays, baking trays, cooking grids}
- A47L 15/0094 . {cleaning with abrasive solid particles, e.g. by blasting the crockery with liquid containing granules}
- A47L 15/0097 . {Combination of dishwashers with other household appliances}
- A47L 15/02 . with circulation and agitation of the cleaning liquid in the cleaning chamber containing a stationary basket {(for drinking glasses [A47L 15/0065](#))}
- A47L 15/04 .. by reciprocating movement of the cleaning chamber
- A47L 15/06 .. by means of an impeller in the chamber
- A47L 15/08 .. by application of a pressure effect produced by pumps
- A47L 15/10 .. by introducing compressed air or other gas into the liquid
- A47L 15/12 .. by a boiling effect
- A47L 15/13 .. using sonic or ultrasonic waves
- A47L 15/14 . with stationary crockery baskets and spraying devices within the cleaning chamber {(for drinking glasses [A47L 15/0065](#))}
- A47L 15/16 .. with rigidly-mounted spraying devices
- A47L 15/18 .. with movably-mounted spraying devices
- A47L 15/20 ... Swingable spraying devices

- A47L 15/22 . . . Rotary spraying devices
- A47L 15/23 moved by means of the sprays
- A47L 15/24 . with movement of the crockery baskets by conveyers {(for drinking glasses [A47L 15/0071](#))}
- A47L 15/241 . . {the dishes moving in a horizontal plane}
- A47L 15/242 . . . {in a closed loop}
- A47L 15/243 {with conveyers of the rotary table type}
- A47L 15/245 . . . {the dishes being placed directly on the conveyers, i.e. not in dish racks ([A47L 15/242](#) takes precedence)}
- A47L 15/246 . . {the dishes moving in a vertical plane, e.g. in a closed loop}
- A47L 15/247 . . {Details specific to conveyer-type machines, e.g. curtains}
- A47L 15/248 . . . {relating to the conveyers}
- A47L 15/26 . with movement of the crockery baskets by other means {(for drinking glasses [A47L 15/0065](#))}
- A47L 15/28 . . by lowering and lifting only
- A47L 15/30 . . by rotating only
- A47L 15/32 . . . rotated by means of spraying water
- A47L 15/33 . . . with moving baskets submerged in the cleaning fluid
- A47L 15/34 . . by lowering and lifting combined with a rotating movement
- A47L 15/36 . . by a sideways motion
- A47L 15/37 . with crockery cleaned by brushes {(for drinking glasses [A47L 15/0068](#))}
- A47L 15/39 . . with brushes on movable supports
- A47L 15/42 . Details

NOTE

Details specific to a particular type of dishwasher should also get a classification symbol for the relevant type of dishwasher

- A47L 15/4202 . . {Water filter means or strainers}
- A47L 15/4204 . . . {Flat filters}
- A47L 15/4206 . . . {Tubular filters}
- A47L 15/4208 . . . {Arrangements to prevent clogging of the filters, e.g. self-cleaning}
- A47L 15/421 . . {Safety arrangements for preventing water damage}
- A47L 15/4212 . . . {Detection of water leaks; Collection of leaked water, e.g. in the casing}
- A47L 15/4214 . . {Water supply, recirculation or discharge arrangements; Devices therefor}
- A47L 15/4217 . . . {Fittings for water supply, e.g. valves or plumbing means to connect to cold or warm water lines, aquastops}
- A47L 15/4219 . . . {Water recirculation ([A47L 15/0078](#) takes precedence)}
- A47L 15/4221 {Arrangements for redirection of washing water, e.g. water diverters to selectively supply the spray arms ([A47L 15/0078](#) takes precedence)}
- A47L 15/4223 . . . {Devices for water discharge, e.g. devices to prevent siphoning, non-return valves}
- A47L 15/4225 . . . {Arrangements or adaption of recirculation or discharge pumps}

A47L 15/4227	....	{with macerator arrangements for chopping entrained food particles}
A47L 15/4229	..	{Water softening arrangements}
A47L 15/4231	...	{Constructional details of the salt container or the ion exchanger}
A47L 15/4234	..	{Steam generating arrangements}
A47L 15/4236	..	{Arrangements to sterilize or disinfect dishes or washing liquids (A47L 15/4234 takes precedence)}
A47L 15/4238	...	{by using electrolytic cells}
A47L 15/424	...	{by using ozone}
A47L 15/4242	...	{by using ultraviolet generators}
A47L 15/4244	..	{Water-level measuring or regulating arrangements}
A47L 15/4246	..	{Details of the tub (A47L 15/4272 takes precedence)}
A47L 15/4248	...	{Arrangements for dividing the tub compartment, e.g. for simultaneous washing of delicate and normal crockery}
A47L 15/4251	..	{Details of the casing (collecting leaked water in the casing for preventing water damage A47L 15/4212)}
A47L 15/4253	...	{Supporting arrangements for the casing, e.g. rollers or supporting legs}
A47L 15/4255	...	{Insulation arrangements, e.g. for sound damping or heat insulation}
A47L 15/4257	...	{Details of the loading door}
A47L 15/4259	....	{Arrangements of locking or security/safety devices for doors, e.g. door latches, switch to stop operation when door is open}
A47L 15/4261	....	{Connections of the door to the casing, e.g. door hinges}
A47L 15/4263	....	{Door sealing arrangements}
A47L 15/4265	....	{Arrangements of door covering/decoration panels or plinths, e.g. for integrated dishwashers}
A47L 15/4268	...	{Arrangements for transporting or moving, e.g. stiffening}
A47L 15/427	...	{Arrangements for setting the machine, e.g. anti-tip devices therefor, fixing of integrated machines}
A47L 15/4272	...	{Supporting arrangements for the tub}
A47L 15/4274	...	{Arrangement of electrical components, e.g. control units or cables (A47L 15/4293 takes precedence)}
A47L 15/4276	..	{Arrangements to detect or remove bad smells or odours}
A47L 15/4278	..	{Nozzles}
A47L 15/428	...	{Rotary nozzles}
A47L 15/4282	...	{Arrangements to change or modify spray pattern or direction}
A47L 15/4285	..	{Water-heater arrangements (Steam generating arrangements A47L 15/4234)}
A47L 15/4287	..	{Temperature measuring or regulating arrangements}
A47L 15/4289	..	{Spray-pressure measuring or regulating arrangements (nozzles A47L 15/4278)}
A47L 15/4291	..	{Recovery arrangements, e.g. for the recovery of energy or water}
A47L 15/4293	..	{Arrangements for programme selection, e.g. control panels; Indication of the selected programme, programme progress or other parameters of the programme, e.g. by using display panels}
A47L 15/4295	..	{Arrangements for detecting or measuring the condition of the crockery or tableware, e.g. nature or quantity}

- A47L 15/4297 .. {Arrangements for detecting or measuring the condition of the washing water, e.g. turbidity}
- A47L 15/44 .. Devices for adding cleaning agent; {Devices for dispensing cleaning agents, rinsing aids or deodorants}
- A47L 15/4409 ... {by tipping containers or opening their lids, e.g. with the help of a programmer}
- A47L 15/4418 ... {in the form of liquids ([A47L 15/4409](#), [A47L 15/4436](#), [A47L 15/4445](#) take precedence)}
- A47L 15/4427 {entrained in the water supply line by a pressure drop, e.g. resulting from a Venturi throat}
- A47L 15/4436 ... {in the form of a detergent solution made by gradually dissolving a powder detergent cake or a solid detergent block}
- A47L 15/4445 ... {Detachable devices}
- A47L 15/4454 {with automatic identification means, e.g. barcodes, RFID tags or magnetic strips}
- A47L 15/4463 ... {Multi-dose dispensing arrangements}
- A47L 15/4472 ... {Blister packaging or refill cartridges}
- A47L 15/4481 ... {Deodorants, perfumes or odor removals ([A47L 15/4276](#) takes precedence)}
- A47L 15/449 ... {Metering controlling devices ([A47L 15/4229](#) takes precedence)}
- A47L 15/46 .. Devices for the automatic control of the different phases of cleaning; {Controlling devices ([A47L 15/449](#) takes precedence)}
- A47L 15/48 .. Drying arrangements
- A47L 15/481 ... {by using water absorbent materials, e.g. Zeolith}
- A47L 15/483 ... {by using condensers}
- A47L 15/485 ... {by using alternative heat sources, e.g. microwave or infrared}
- A47L 15/486 ... {Blower arrangements}
- A47L 15/488 ... {Connections of the tub with the ambient air, e.g. air intake or venting arrangements}
- A47L 15/50 .. Racks
- A47L 15/501 ... {Baskets, e.g. for conveyer-type, in-sink type or hood-type machines}
- A47L 15/502 ... {Cutlery baskets}
- A47L 15/503 ... {with foldable parts}
- A47L 15/504 ... {Arrangements for changing the height of racks}
- A47L 15/505 ... {Inserts, e.g. for holding baby bottles, stemware or cups}
- A47L 15/506 ... {Arrangements for lifting racks for loading or unloading purposes}
- A47L 15/507 ... {Arrangements for extracting racks, e.g. roller supports}
- A47L 15/508 ... {Hydraulic connections for racks}
- A47L 17/00** **Apparatus or implements used in manual washing or cleaning of crockery, table-ware, cooking-ware or the like ([foam-making devices A47K 5/14](#))**
- A47L 17/02 . Basins ([dish-washing tables A47B 33/00](#); [sanitary basins A47K 1/04](#); [basins connected to waste pipe E03C 1/12](#))
- A47L 17/04 . Pan or pot cleaning utensils
- A47L 17/06 .. Scrapers

A47L 17/08	.. Pads; Balls of steel wool, wire, or plastic meshes
A47L 17/10	. Tongs for crockery
A47L 19/00	Drying devices for crockery or table-ware, e.g. tea-cloths
A47L 19/02	. Draining-boards
A47L 19/04	. Crockery baskets; Draining-racks
A47L 21/00	Polishing of table-ware, e.g. knives, forks, spoons
A47L 21/02	. Machines
A47L 21/04	. Hand implements
A47L 21/06	. Supports or rests for use while polishing
A47L 23/00	Cleaning footwear
A47L 23/02	. Shoe-cleaning machines, with or without applicators for shoe polish
A47L 23/04	. Hand implements for shoe-cleaning, with or without applicators for shoe polish (ordinary brushes, with or without containers, A46B 11/00)
A47L 23/05	.. with applicators for shoe polish
A47L 23/06	.. with electric drive
A47L 23/08	.. Special hand implements for cleaning and recolouring footwear, e.g. powder pads
A47L 23/10	.. Cloth or collapsible cleaning pads; Glove-like cleaning cloths (glove-like washing cloths A47K 7/02)
A47L 23/12	.. Cleaning devices for suede
A47L 23/14	.. Implements for use during shoe-cleaning, to guard against spoiling
A47L 23/16	. Shoe-shine stands; Foot-rests with guides for the polishing cloths
A47L 23/17	.. Foot-rests with guides for the polishing cloths
A47L 23/18	. Devices for holding footwear during cleaning or shining (shoe-lasts A43D 3/00); Holding devices with stretching effect
A47L 23/20	. Devices or implements for drying footwear, also with heating arrangements (cabinets for shoes A47B 61/04)
A47L 23/205	.. {with heating arrangements}
A47L 23/22	. Devices or implements resting on the floor for removing mud, dirt, or dust from footwear (built-in gratings , e.g. foot-scrapers , E04F 19/10)
A47L 23/24	.. Rigid cleaning-gratings; Tread plates or scrapers for cleaning the soles of footwear (floor mats in general A47G 27/02)
A47L 23/26	.. Mats or gratings combined with brushes; {Mats}
A47L 23/263	... {with moving or driven parts, also combined with suction cleaning}
A47L 23/266	... {Mats}
A47L 23/28	. Receptacles for shoe-cleaning equipment
A47L 25/00	Miscellaneous cleaning devices (for cleaning spectacles G02C 13/00)
A47L 25/005	. {using adhesive or tacky surfaces to remove dirt, e.g. lint removers}
A47L 25/02	. for buttons, clasps, or military insignia
A47L 25/04	. for door-knobs

- A47L 25/06 . Guard plates for use while cleaning butts, door-knobs, or the like
 - A47L 25/08 . Pads or the like for cleaning clothes [\(\(using adhesive surfaces A47L 25/005\)\)](#)
 - A47L 25/12 . Devices or implements for cleaning lamp chimneys
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A47L 2201/00 Robotic cleaning machines, i.e. with automatic control of the travelling movement or the cleaning operation

- A47L 2201/02 . Docking stations; Docking operations
- A47L 2201/022 . . Recharging of batteries
- A47L 2201/024 . . Emptying dust or waste liquid containers
- A47L 2201/026 . . Refilling cleaning liquid containers
- A47L 2201/028 . . Refurbishing floor engaging tools, e.g. cleaning of beating brushes
- A47L 2201/04 . Automatic control of the travelling movement; Automatic obstacle detection
- A47L 2201/06 . Control of the cleaning action for autonomous devices; Automatic detection of the surface condition before, during or after cleaning

A47L 2301/00 Manual input in controlling methods of washing or rinsing machines for crockery or tableware, i.e. information entered by a user

- A47L 2301/02 . Consumable products information, e.g. information on detergent, rinsing aid or salt; Dispensing device information, e.g. information on the type, e.g. detachable, or status of the device
- A47L 2301/023 . . Quantity or concentration of the consumable product
- A47L 2301/026 . . Nature or type of the consumable product, e.g. information on detergent, e.g. 3-in-1 tablets, rinsing aid or salt
- A47L 2301/04 . Operation mode, e.g. delicate washing, economy washing, reduced time, sterilizing, water softener regenerating, odor eliminating or service
- A47L 2301/06 . Crockery or tableware details, e.g. material, quantity, condition
- A47L 2301/08 . Other manual input

A47L 2401/00 Automatic detection in controlling methods of washing or rinsing machines for crockery or tableware, e.g. information provided by sensors entered into controlling devices

- A47L 2401/02 . Consumable products information, e.g. information on detergent, rinsing aid or salt; Dispensing device information, e.g. information on the type, e.g. detachable, or status of the device
- A47L 2401/023 . . Quantity or concentration of the consumable product
- A47L 2401/026 . . Nature or type of the consumable product, e.g. information on detergent, e.g. 3-in-1 tablets, rinsing aid or salt
- A47L 2401/03 . Operation mode, e.g. delicate washing, economy washing, reduced time, sterilizing, water softener regenerating, odor eliminating or service
- A47L 2401/04 . Crockery or tableware details, e.g. material, quantity, condition
- A47L 2401/06 . Water supply, circulation or discharge information [\(water level A47L 2401/09; water pressure or flow rate A47L 2401/14\)](#)
- A47L 2401/07 . Status of hydraulic components, e.g. open/close status of water inlet/outlet valves, operating position of water diverters
- A47L 2401/08 . Drain or recirculation pump parameters, e.g. pump rotational speed or current absorbed by the motor

A47L 2401/09	. Water level
A47L 2401/10	. Water cloudiness or dirtiness, e.g. turbidity, foaming or level of bacteria
A47L 2401/11	. Water hardness, acidity or basicity
A47L 2401/12	. Water temperature
A47L 2401/14	. Water pressure or flow rate
A47L 2401/17	. Air pressure
A47L 2401/18	. Air temperature
A47L 2401/19	. Air humidity
A47L 2401/20	. Time, e.g. elapsed operating time
A47L 2401/22	. Number of operational cycles
A47L 2401/24	. Spray arms status, e.g. detection of spray arm rotation
A47L 2401/26	. Loading door status, e.g. door latch opened or closed state
A47L 2401/28	. Conveyor belt parameters, e.g. velocity of conveyor belts
A47L 2401/30	. Variation of electrical, magnetical or optical quantities
A47L 2401/32	. Vibration or sound detection
A47L 2401/34	. Other automatic detections
A47L 2501/00	Output in controlling method of washing or rinsing machines for crockery or tableware, i.e. quantities or components controlled, or actions performed by the controlling device executing the controlling method
A47L 2501/01	. Water supply, e.g. opening or closure of the water inlet valve
A47L 2501/02	. Water discharge, e.g. opening or closure of discharge valve
A47L 2501/03	. Water recirculation, e.g. control of distributing valves for redirection of water flow
A47L 2501/04	. Water pressure or flow rate
A47L 2501/05	. Drain or recirculation pump, e.g. regulation of the pump rotational speed or flow direction
A47L 2501/06	. Water heaters
A47L 2501/07	. Consumable products, e.g. detergent, rinse aids or salt
A47L 2501/10	. Air circulation, e.g. air intake or venting arrangements
A47L 2501/11	. Air heaters
A47L 2501/12	. Air blowers
A47L 2501/14	. Steam generators
A47L 2501/16	. Sterilisers (Steam generators A47L 2501/14)
A47L 2501/18	. Water softening devices
A47L 2501/20	. Spray nozzles or spray arms
A47L 2501/22	. Loading doors, e.g. door latches, inflatable door seals
A47L 2501/24	. Conveyor belts, e.g. conveyor belts motors
A47L 2501/26	. Indication or alarm to the controlling device or to the user
A47L 2501/265	. . . about the number of remaining operation cycles or the remaining operation time
A47L 2501/28	. Machine starting, e.g. normal start, restart after electricity cut-off or start scheduling

- A47L 2501/30 . Regulation of machine operational steps within the washing process, e.g. performing an additional rinsing phase, shortening or stopping of the drying phase, washing at decreased noise operation conditions
- A47L 2501/32 . Stopping or disabling machine operation, including disconnecting the machine from a network, e.g. from an electrical power supply
- A47L 2501/34 . Change machine operation from normal operational mode into special mode, e.g. service mode, resin regeneration mode, sterilizing mode, steam mode, odour eliminating mode or special cleaning mode to clean the hydraulic circuit
- A47L 2501/36 . Other output
- A47L 2601/00 Washing methods characterised by the use of a particular treatment**
- A47L 2601/02 . Pressurised cleaning liquid delivered by a pump
- A47L 2601/03 . Pressurised, gaseous medium, also used for delivering of cleaning liquid
- A47L 2601/04 . Steam
- A47L 2601/06 . Electrolysed water
- A47L 2601/08 . Ozone
- A47L 2601/10 . Ultraviolet radiation
- A47L 2601/12 . Microwaves
- A47L 2601/14 . Infrared
- A47L 2601/16 . Agitation of cleaning liquid by impeller
- A47L 2601/17 . Sonic or ultrasonic waves
- A47L 2601/18 . Liquid and granule
- A47L 2601/20 . Other treatments, e.g. dry cleaning