

CPC**COOPERATIVE PATENT CLASSIFICATION****E01H**

**STREET CLEANING; CLEANING OF PERMANENT WAYS;
CLEANING BEACHES; DISPERSING {OR PREVENTING} FOG IN
GENERAL {CLEANING STREET OR RAILWAY FURNITURE OR
TUNNEL WALLS}** (cleaning in general [B08B](#))

E01H 1/00

Removing undesirable matter from roads or like surfaces, with or without moistening of the surface (for snow or ice [E01H 5/00](#); cleaning tramway rails [E01H 8/00](#); obstruction removers on vehicles [B60R 19/00](#); in combination with application of bitumen or the like [E01C 19/16](#); in combination with application of traffic line [E01C 23/16](#); {Sweeping apparatus, particularly for lawns [A01G 1/12](#); Removing undesirable matter from floors and similar surfaces [A47L 5/00](#) to [A47L 13/00](#)})

E01H 1/001

- {Treatment of dispersed oil or similar pollution on roads, for instance devices for applying treating agents (hydraulic loosening or removal of liquids [E01H 1/10](#); from surface of open water [E02B 15/04](#))}

E01H 1/003

- {Upkeep of road sides along the pavement, for instance cleaning devices particularly for side strips (control of undesirable vegetation [E01H 11/00](#); mowers for embankments [A01D 34/86](#); soil working [E02F](#); trimming pavement edges [E01C 23/09](#))}

E01H 1/005

- {Mobile installations, particularly for upkeeping in situ road or railway furniture, for instance road barricades, traffic signs; Mobile installations particularly for upkeeping tunnel walls (built-in cleaning devices [E21D 11/003](#))}

E01H 1/006

- {Specially adapted for removing excrements (hand implements [E01H 1/12](#))}

E01H 1/008

- . {in situ treatment of excrements}

E01H 1/02

- Brushing apparatus, {e.g. with auxiliary instruments for mechanically loosening dirt} ({[E01H 1/003](#), [E01H 1/005](#), [E01H 1/006](#) and} [E01H 1/08](#) to [E01H 1/14](#) take precedence; {loosening by means of gas jets or streams [E01H 1/0818](#), [E01H 1/0872](#); with brushes functioning under vacuum or combined with independent suction nozzles [E01H 1/0827](#); loosening by means of liquid streams [E01H 1/101](#); mechanical loosening instruments other than brushes [E01H 1/105](#); for railway tracks [E01H 8/00](#)}; brushes in general [A46B](#); {for floors or similar surfaces [A47L 11/22](#), [A47L 11/24](#)})

E01H 1/04

- . taking- up the sweepings, e.g. for collecting, for loading {(with dust collector; [E01H 1/0854](#) takes precedence; suction machines with brushes [E01H 1/0845](#), [E01H 1/0872](#); taking- up devices with other mechanical loosening instruments [E01H 1/106](#))}

E01H 1/042

- . . {the loading means being an endless belt or an auger}

E01H 1/045

- . . {the loading means being a rotating brush with horizontal axis ([E01H 1/042](#) takes precedence)}

E01H 1/047

- . . {Collecting apparatus characterised by the hopper or by means for unloading the hopper}

E01H 1/05

- . with driven brushes ([E01H 1/04](#) takes precedence {rotary brushes for snow removal [E01H 5/092](#)})

E01H 1/053

- . . {having vertical axes}

E01H 1/056

- . . {having horizontal axes}

- E01H 1/08
 - Pneumatically dislodging or taking-up undesirable matter {or small objects} ({E01H 1/006 and E01H 1/005 take precedence;} suction cleaners in general A47L 5/00 to A47L 9/00; {sucking-off liquids or semi-liquids E01H 1/108}); Drying by heat only or by streams of gas (permanently-installed heating or blowing devices E01C 11/26; heating or drying for road- building or repairing E01C 23/14; {devices for melting snow or ice in situ E01H 5/10, E01H 8/08; for scorching undesirable vegetation E01H 11/00}); Cleaning by projecting abrasive particles (sand-blasting in general B24C; {roughening of road surfaces E01C 23/08; cleaning of road joints E01C 23/0906})
- E01H 1/0809
 - • {Loosening or dislodging by blowing (with steam E01H 1/10 combined with suction E01H 1/0863; removing snow by blowing E01H 5/106; removing fog by blowing E01H 13/00; cleaning rails by blowing E01H 8/105, E01H 8/125; cleaning joints in road construction by blowing E01C 23/0906); Drying by means of gas streams (by heat only E01H 1/08; combined with snow or ice melting E01H 5/10, E01H 5/106, E01H 5/108)}
- E01H 1/0818
 - • • {in apparatus with mechanical loosening or feeding instruments, e.g. brushes, scrapers (brushing devices per se E01H 1/02, other loosening devices per se E01H 1/105)}
- E01H 1/0827
 - • {Dislodging by suction; Mechanical dislodging-cleaning apparatus with independent or dependent exhaust, e.g. dislodging-sweeping machines with independent suction nozzles (combined with blowing E01H 1/0872); Mechanical loosening devices working under vacuum}
- E01H 1/0836
 - • • {Apparatus dislodging all of the dirt by suction (liquids or semi-liquids E01H 1/108; combined with loosening by blowing E01H 1/0863; for cleaning rails E01H 8/105, E01H 8/125; removing snow by suction E01H 5/106, E01H 8/08); Suction nozzles (independent suction nozzles in mechanical dislodging-cleaning devices E01H 1/0827; suction and blowing nozzles E01H 1/0863)}
- E01H 1/0845
 - • • • {with mechanical loosening or feeding instruments for the dirt to be sucked- up, e.g. brushes, scrapers (brushing installations per se E01H 1/02; other loosening devices per se E01H 1/105)}
- E01H 1/0854
 - • • {Apparatus in which the mechanically dislodged dirt is partially sucked-off, e.g. dislodging- sweeping apparatus with dirt collector in brush housing or dirt container (mechanical dislodging machines with independent suction nozzles E01H 1/0827; combined with blowing and suction E01H 1/0872)}
- E01H 1/0863
 - • {Apparatus loosening or removing the dirt by blowing and subsequently dislodging it at least partially by suction (liquids or semi-liquids E01H 1/108); Combined suction and blowing nozzles}
- E01H 1/0872
 - • • {with mechanical loosening or feeding instruments for the dirt to be removed pneumatically, e.g. brushes, scrapers (brushing installations per se E01H 1/02; other loosening devices per se E01H 1/105)}
- E01H 2001/0881
 - • {Details for pneumatically dislodging or removing not related to the mouth-piece}
- E01H 2001/089
 - • • {Suction-effect created through blowing, e.g. using the venturi effect}
- E01H 1/10
 - Hydraulically loosening or dislodging undesirable matter (stationary flushing devices E01H 3/04); Raking or scraping apparatus (hand implements E01H 1/12); {Removing liquids or semi-liquids e.g., absorbing water, sliding-off mud (removing pneumatically E01H 1/08; steam-cleaning E01H 11/00)}

- E01H 1/101
 - • {Hydraulic loosening or dislodging, combined or not with mechanical loosening or dislodging, e.g. road washing machines with brushes or wipers ([E01H 1/005](#) takes precedence; cleaning rails [E01H 8/105](#), [E01H 8/125](#); applying liquids in general [E01H 3/00](#); scrubbing machines for floors or similar surfaces [A47L 11/26](#) to [A47L 11/30](#))}
- E01H 1/103
 - • • {in which the soiled loosening or washing liquid is removed, e.g. by suction ([removing liquids in general E01H 1/108](#))}
- E01H 1/105
 - • {Raking, scraping or other mechanical loosening devices, e.g. for caked dirt (loosening ice or hard snow [E01H 5/12](#); working the road surface [E01C 23/08](#)); Apparatus for mechanically moving dirt on road surfaces, e.g. wipers for evacuating mud (wipers as accessories for road washing machines [E01H 1/101](#); of devices for removing liquids or semi-liquids [E01H 1/108](#); of snow scrapers for evacuating wet snow [E01H 5/06](#); wipers for spreading bitumen or the like [E01C 19/16](#), [E01C 19/178](#))}
- E01H 1/106
 - • • {in which the loosened or dislodged dirt is picked up, e.g. shoveling carts ([E01H 1/108](#) takes precedence)}
- E01H 1/108
 - • {Removing liquids or semi- liquids, e.g. absorbing rain water, sucking-off mud (in road washing machines [E01H 1/103](#); in snow melting [E01H 5/108](#); applying absorbing agents on oil or the like [E01H 1/001](#); constructional measures for draining roads [E01C 11/224](#))}
- E01H 1/12
 - Hand implements, e.g. litter pickers ({blowing or suction instruments [E01H 1/08](#); spraying instruments [E01H 1/101](#); rakes [A01D 7/00](#); {brushes or brooms [A46B](#), [A46D](#); floor scrapers [A47L 13/02](#); floor squeegees [A47L 13/11](#))}
- E01H 1/1206
 - • {for picking up excrements (manure or urine pouches for animal husbandry [A01K 23/00](#))}
- E01H 1/1213
 - • {in situ treatment of excrements}
- E01H 2001/122
 - • {Details}
- E01H 2001/1226
 - • • {characterised by way of removing material}
- E01H 2001/1233
 - • • • {by pressing a tool in the material to be removed}
- E01H 2001/124
 - • • • {Glove-like means}
- E01H 2001/1246
 - • • • {Double or multiple closing means making horizontal sliding movement (not applied for grabs)}
- E01H 2001/1253
 - • • • {by using shoes to remove the material}
- E01H 2001/126
 - • • • {the implement being for single use but not glove-like}
- E01H 2001/1266
 - • • {having lighting means}
- E01H 2001/1273
 - • • {having a dog leash}
- E01H 2001/128
 - • • {having means for storing bags or the like}
- E01H 2001/1286
 - • • • {storing used bags}
- E01H 2001/1293
 - • • {Walking cane or the like, i.e. implements allowing handling while in an upright position}
- E01H 1/14
 - Removing by magnetic effect {(general household magnetic cleaning implements [A47L 13/41](#); as equipment for road vehicles [B60R 19/00](#))}
- E01H 3/00**

Applying liquids to roads or like surfaces, e.g. for dust control; Stationary flushing devices (combined with removal of undesirable matter [E01H 1/00](#); spray heads, other outlets [B05B](#); {applying hot water for melting snow [E01H 5/10](#); applicators for melting liquids [E01H 10/00](#); weed destruction [E01H 11/00](#))}

- E01H 3/02
 - Mobile apparatus, e.g. watering-vehicles (vehicle features [B60P 3/22](#); {moistening combined with the removal of undesirable matter [E01H 1/00](#); mobile flushing or washing installations [E01H 1/101](#)} applying liquid materials for road paving materials [E01C 19/16](#) {applying curing agents on concrete roads [E01C 23/03](#); applying marking-out agents [E01C 23/16](#); Road moistening devices in cleaning machines per se; mobile apparatus specially adapted for applying liquid or semi-liquid thawing materials [E01H 10/007](#)})
- E01H 3/04
 - Fixed devices, e.g. permanently- installed flushing means ({fixed applicators for defrosting agents [E01H 10/00](#); fixed flushing installations for tramway rails [E01B 21/02](#); built-in irrigation devices for sports grounds [E01C 13/02](#)}; hydrants [E03B 9/00](#))
- E01H 4/00**

Working on surfaces of snow or ice in order to make them suitable for traffic or sporting purposes, e.g. by compacting snow (production of artificial snow [F25C 3/04](#))
- E01H 4/02
 - for sporting purposes, e.g. preparation of ski trails; {Construction of artificial surfacings for snow or ice sports (construction of ice skating rinks [E01C 13/102](#)); Trails specially adapted for on-the-snow vehicles}, e.g. devices adapted for ski-trails (production of snow or ice for winter sports or similar recreational purposes [F25C 3/00](#))
- E01H 4/023
 - . {Maintaining surfaces for ice sports, e.g. of skating rinks}
- E01H 2004/026
 - . {for making half pipes}
- E01H 5/00**

Removing snow or ice from roads or like surfaces; Grading or roughening snow or ice (by applying de-icing agents [E01H 10/00](#); obstruction removers on vehicles [B60R 19/00](#); sand, gravel or salt spreaders [E01C 19/20](#))
- E01H 5/02
 - Hand implements ([E01H 5/04](#), [E01H 5/10](#), [E01H 5/12](#) take precedence {shovels or spades in general [A01B 1/02](#); brooms, brushes [A46B](#)})
- E01H 5/04
 - Apparatus propelled by animal or engine power; Apparatus propelled by hand with driven dislodging or conveying {levelling} elements, conveying pneumatically {for the dislodged material} ([E01H 5/10](#), [E01H 5/12](#) take precedence)
- E01H 5/045
 - . {Means per se for conveying or discharging the dislodged material, e.g. rotary impellers, discharge chutes (dislodging apparatus provided therewith [E01H 5/07](#), [E01H 5/08](#), [E01H 5/104](#), [E01H 5/12](#))}
- E01H 5/06
 - . dislodging essentially by non-driven elements, e.g. scraper blades, {snow-plough blades, scoop blades}
- E01H 5/061
 - . . {by scraper blades}
- E01H 5/062
 - . . . {by scraper blades displaceable for shock-absorbing purposes}
- E01H 5/063
 - . . . {by snow-plough blades tiltable for shock-absorbing purposes}
- E01H 5/065
 - . . . {characterised by the form of the snow-plough blade, e.g. flexible, or by snow-plough blade accessories ([E01H 5/061](#), [E01H 5/063](#) take precedence)}
- E01H 5/066
 - {Snow-plough blade accessories, e.g. deflector plates, skid shoes}
- E01H 5/067
 - . . . {by side-wing snow-plough blades}
- E01H 5/068
 - . . . {by backblades (scraper blades mounted on the rear of a tractor [E02F 3/7622](#))}

- E01H 5/07
 - • • and conveying dislodged material by driven or pneumatic means
{(removing and melting [E01H 5/104](#); picking-up installations scraping off dirt [E01H 1/105](#))}
- E01H 5/073
 - • • • {by belt or chain conveyers (dislodging by means of elements secured to endless belts or chains [E01H 5/08](#))}
- E01H 5/076
 - • • • {by rotary or pneumatic conveying means, e.g. impeller wheels (dislodging by rotary means [E01H 5/09](#))}
- E01H 5/08
 - • dislodging essentially by driven elements, {(e.g. vibrated; removing and melting [E01H 5/104](#); with heated instruments [E01H 5/10](#))}
- E01H 5/09
 - • • the elements being rotary or moving along a closed circular path, e.g. rotary cutter, digging wheels
- E01H 5/092
 - • • • {Brushing elements}
- E01H 5/094
 - • • • {about vertical or substantially vertical axes}
- E01H 5/096
 - • • • {about axes parallel or substantially parallel to the direction of clearing}
- E01H 5/098
 - • • • {about horizontal or substantially horizontal axes perpendicular or substantially perpendicular to the direction of clearing}
- E01H 5/10
 - by application of heat {for melting snow or ice, whether cleared or not, combined or not with clearing or removing mud or water, e.g. burners for melting in situ, heated clearing instruments} {(drying by heat [E01H 1/0809](#); melting by application of defrosting agents [E01H 10/00](#); weed scorching devices which can also melt snow [E01H 11/00](#);} stationary blowing or paving heating means [E01C 11/26](#)); {Cleaning snow by blowing or suction only}
- E01H 5/102
 - • {Self-contained devices for melting dislodged snow or ice, e.g. built-in melting chambers, movable melting tanks (combined with removing devices [E01H 5/104](#))}
- E01H 5/104
 - • {Removing devices for dislodging snow or ice; followed by melting the removed material (removing by suction only and subsequent melting [E01H 5/106](#))}
- E01H 5/106
 - • {Clearing snow or ice exclusively by means of rays or streams of gas or steam, or by suction with or without melting ([E01H 5/108](#) takes precedence; drying by means of gas streams, blowing- off dirt [E01H 1/0809](#); sucking-off dirt [E01H 1/0827](#))}
- E01H 5/108
 - • {Devices for melting snow or ice in situ and removing subsequently for the mud or melting water (melting in situ [E01H 5/10](#); by means of hot gases or steam [E01H 5/106](#); removing water or mud [E01H 1/108](#))}
- E01H 5/12
 - Apparatus or implements specially adapted for breaking, disintegrating, or loosening layers of ice or hard snow {with or without clearing or removing ([E01H 5/10](#) takes precedence); Roughening ice or hard snow by means of tools (by means of gritting materials [E01H 10/00](#); roughening or breaking-up pavements [E01C 23/08](#),[E01C 23/12](#))}
- E01H 6/00
 - Apparatus equipped with, or having provisions for equipping with, both elements {for especially} removal of refuse or the like and elements for removal of snow or ice ([E01H 8/10](#) takes precedence)

- E01H 8/00** **Removing undesirable matter from the permanent way of railways;**
Removing undesirable matter from tramway rails ([E01H 1/00](#) to [E01H 6/00](#) take precedence; {controlling vegetation [E01H 11/00](#); removing ballast from rails or sleepers [E01B 27/023](#); removing, cleaning the ballast itself [E01B 27/04](#), [E01B 27/06](#)})
- E01H 8/02** . Methods or apparatus for removing ice or snow from railway tracks, e.g. using snow-ploughs {Devices for dislodging snow or ice which are carried or propelled by tramway vehicles} (operating only on rails or flange grooves [E01H 8/10](#)); {Moving or removing ballast; ([E01B 27/02](#), [E01B 27/04](#) take precedence; removing snow or ice in general [E01H 5/00](#))}
- E01H 8/04** . . essentially by non-driven elements {Clearing instruments, e.g. scraping blades, scoop plates (with oscillating or vibrating tools [E01H 8/06](#); with heated instruments or combined with melting [E01H 8/10](#); ballast ploughs [E01B 27/025](#); track clearing devices [B61F 19/06](#))}
- E01H 8/06** . . essentially by driven tools {clearing instruments, e.g. rotary cutting tools or brushes (with heated instruments or combined with melting [E01H 8/08](#); for spreading or redistributing ballast [E01B 27/026](#))}
- E01H 8/08** . . by application of heat, {e.g. by means of heated clearing instruments, melting in situ} ({weed scorching devices which may also melt snow [E01H 11/00](#); heated track [E01B 19/00](#)); {Clearing devices which melt the dislodged snow; Clearing exclusively by means of rays or streams or gas or stream, or by suction}
- E01H 8/10** . Removing undesirable matter from rails, flange grooves, or the like {railway parts}, e.g. removing ice from contact rails, removing mud from flange grooves (heating, blowing, or fluid-applying devices installed in the track [E01B 19/00](#); built-in draining devices for rails [E01B 21/02](#); removing ballast from rails [E01B 27/04](#))
- E01H 8/105** . . {Pneumatically or hydraulically loosening, removing or dislodging undesirable matter, e.g. removing by blowing, flushing, suction; Application of melting liquids; Loosening or removing by means of heat, e.g. cleaning by plasma torches, drying by burners ([E01H 8/125](#) takes precedence; drying, blowing or liquid-applying devices incorporated in the permanent way [E01B 19/00](#); heating or cooling rails during construction or maintenance [E01B 31/18](#); wetting or lubricating rails [B61K 3/00](#); plasma torches [H05H 1/26](#))}
- E01H 8/12** . . specially adapted to grooved rails, flange-ways, or like {parts of the permanent way, e.g. level crossings or switches}
- E01H 8/125** . . . {Pneumatically or hydraulically loosening, removing or dislodging undesirable matter, e.g. removing by blowing, suction or flushing (flushing devices incorporated in tramway tracks [E01B 21/02](#)); Loosening or removing by means of heat (built-in heating, blowing or liquid applying devices for switches [E01B 7/24](#))}
- E01H 10/00** **Improving gripping of ice-bound or other slippery traffic surfaces, e.g. using gritting or thawing materials** {Roadside storage of gritting or solid thawing materials; Permanently installed devices for applying gritting or thawing materials; Mobile apparatus specially adapted for treating wintry roads by applying liquid, semi-liquid or granular materials} (roughening ice by means of tools [E01H 5/12](#); applying de-icing agents to rails [E01H 8/10](#); thawing materials [C09K 3/18](#); by constructional features [E01C 11/24](#); {apparatus for distributing granular materials for road building purposes [E01C 19/20](#); treatment of dispersed oil or similar pollution on roads [E01H 1/001](#)})

E01H 10/002	<ul style="list-style-type: none"> • {Roadside storage of gritting or solid thawing materials, e.g. grit or salt bins}
E01H 10/005	<ul style="list-style-type: none"> • {Permanently-installed devices for applying gritting or thawing materials, e.g. for preading grit, for spraying de-icing liquids}
E01H 10/007	<ul style="list-style-type: none"> • {Mobile apparatus specially adapted for preparing or applying liquid or semi-liquid thawing material or spreading granular material on wintry roads}
E01H 11/00	<p>Control of undesirable vegetation on roads {or similar surfaces} or permanent ways of railays, {e.g. devices for scorching weeds or for applying herbicides} (destruction of undesirable vegetation in general A01M 7/00 to A01M 15/00, A01M 21/00; weeding involving working the ballast E01B 27/00; mowers for embankments A01D 34/86; hedge shearing machines A01G 3/04); Applying liquids, e.g. water, weed-killer bitumen, to permanent ways (specially to rails E01H 8/10 {E01H 8/105, E01H 8/125}; for preserving sleepers E01B 31/20)</p>
E01H 12/00	<p>Cleaning beaches {or sandboxes}</p>
E01H 12/002	<ul style="list-style-type: none"> • {Treatment in situ (E01H 12/006 takes precedence)}
E01H 12/004	<ul style="list-style-type: none"> • {using floating devices}
E01H 12/006	<ul style="list-style-type: none"> • {Oil removal}
E01H 12/008	<ul style="list-style-type: none"> • {cleaning sandboxes}
E01H 13/00	<p>Dispersing {or preventing} fog in general, e.g. on roads, on airfields {(condensing atmospheric humidity in general A01G 15/00; obtaining drinking water from atmospheric humidity E03B 3/28; heating or blowing devices for keeping roads or the like free from snow or ice E01C 11/26)}</p>
E01H 15/00	<p>Removing undesirable matter, e.g. rubbish, from the land, not otherwise provided for (gatherers for removing stones, roots or the like from the soil A01B 43/00)</p>