

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

- [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 [1/10D](#); 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 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 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 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 tramay 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](#) . {Roadside storage of gritting or solid thawing materials, e.g. grit or salt bins }
- [E01H 10/005](#) . {Permanently-installed devices for applying gritting or thawing materials, e.g. for preading grit, for spraying de-icing liquids }
- [E01H 10/007](#) . {Mobile apparatus specially adapted for preparing or applying liquid or semi-liquid thawing material or spreading granular material on wintry roads }

- [E01H 11/00](#)** **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](#))

- [E01H 12/00](#)** **Cleaning beaches { or sandboxes }**
- [E01H 12/002](#) . { Treatment in situ ([E01H 12/006](#) takes precedence) }
- [E01H 12/004](#) . { using floating devices }
- [E01H 12/006](#) . { Oil removal }
- [E01H 12/008](#) . { cleaning sandboxes }

- [E01H 13/00](#)** **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](#)) }

- [E01H 15/00](#)** **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](#))

- [E01H 2001/00](#)** **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 2001/08](#) . Pneumatically dislodging or taking-up undesirable matter { or small objects } ({ [E01H 1/006](#) and [E01H 1/005](#) take precedence; } suction cleaners in general

- 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 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 2001/12](#) . 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 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 2004/00](#) 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 2004/02](#) . 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 2004/026](#) . . for making half pipes