

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](#) . { 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](#))