

**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 [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 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](#); [N: 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 [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 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