

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E01 CONSTRUCTION OF ROADS, RAILWAYS, OR BRIDGES (of tunnels [E21D](#))

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](#))

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| <p>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 - A47L 13/00})</p> <p>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)}</p> <p>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)}</p> <p>1/005 • {Mobile installations, particularly for upkeeping <u>in situ</u> road or railway furniture, for instance road barricades, traffic signs; Mobile installations particularly for upkeeping tunnel walls (built-in cleaning devices E21D 11/003)}</p> <p>1/006 • {Specially adapted for removing excrements (hand implements E01H 1/12)}</p> <p>1/008 • . {<u>in situ</u> treatment of excrements}</p> <p>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 - 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})</p> <p>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)}</p> | <p>1/042 • . . . {the loading means being an endless belt or an auger}</p> <p>1/045 • . . . {the loading means being a rotating brush with horizontal axis (E01H 1/042 takes precedence)}</p> <p>1/047 • . . . {Collecting apparatus characterised by the hopper or by means for unloading the hopper}</p> <p>1/05 • . with driven brushes (E01H 1/04 takes precedence {rotary brushes for snow removal E01H 5/092})</p> <p>1/053 • . . . {having vertical axes}</p> <p>1/056 • . . . {having horizontal axes}</p> <p>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 - 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 <u>in situ</u> 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})</p> <p>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)}</p> <p>1/0818 • . . . {in apparatus with mechanical loosening or feeding instruments, e.g. brushes, scrapers (brushing devices <u>per se</u> E01H 1/02, other loosening devices <u>per se</u> E01H 1/105)}</p> <p>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}</p> |
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- 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](#))}
- 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](#))}
- 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](#))}
- 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}
- 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](#))}
- 2001/0881 . . {Details for pneumatically dislodging or removing not related to the mouth-piece}
- 2001/089 . . . {Suction-effect created through blowing, e.g. using the venturi effect}
- 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](#))}
- 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](#) - [A47L 11/30](#))}
- 1/103 . . . {in which the soiled loosening or washing liquid is removed, e.g. by suction (removing liquids in general [E01H 1/108](#))}
- 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](#))}
- 1/106 . . . {in which the loosened or dislodged dirt is picked up, e.g. shoveling carts ([E01H 1/108](#) takes precedence)}
- 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](#))}
- 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](#))}
- 1/1206 . . {for picking up excrements (manure or urine pouches for animal husbandry [A01K 23/00](#))}
- 1/1213 . . {[in situ](#) treatment of excrements}
- 2001/122 . . {Details}
- 2001/1226 . . . {characterised by way of removing material}
- 2001/1233 {by pressing a tool in the material to be removed}
- 2001/124 {Glove-like means}
- 2001/1246 {Double or multiple closing means making horizontal sliding movement (not applied for grabs)}
- 2001/1253 {by using shoes to remove the material}
- 2001/126 {the implement being for single use but not glove-like}
- 2001/1266 . . . {having lighting means}
- 2001/1273 . . . {having a dog leash}
- 2001/128 . . . {having means for storing bags or the like}
- 2001/1286 {storing used bags}
- 2001/1293 . . . {Walking cane or the like, i.e. implements allowing handling while in an upright position}
- 1/14 . . Removing by magnetic effect ({general household magnetic cleaning implements [A47L 13/41](#); as equipment for road vehicles [B60R 19/00](#))}
- 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](#))}
- 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](#))}
- 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](#))}
- 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](#))

- 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](#))
- 4/023 . . {Maintaining surfaces for ice sports, e.g. of skating rinks}
- 2004/026 . . {for making half pipes}
- 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](#))**
- 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](#)})
- 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)
- 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](#))}
- 5/06 . . dislodging essentially by non-driven elements, e.g. scraper blades {, snow-plough blades, scoop blades}
- 5/061 . . . {by scraper blades}
- 5/062 {by scraper blades displaceable for shock-absorbing purposes}
- 5/063 . . . {by snow-plough blades tiltable for shock-absorbing purposes}
- 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)}
- 5/066 {Snow-plough blade accessories, e.g. deflector plates, skid shoes}
- 5/067 . . . {by side-wing snow-plough blades}
- 5/068 . . . {by backblades ([scraper blades mounted on the rear of a tractor E02F 3/7622](#))}
- 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](#)})
- 5/073 {by belt or chain conveyors ([dislodging by means of elements secured to endless belts or chains E01H 5/08](#))}
- 5/076 {by rotary or pneumatic conveying means, e.g. impeller wheels ([dislodging by rotary means E01H 5/09](#))}
- 5/08 . . dislodging essentially by driven elements, {(e.g. [vibrated; removing and melting E01H 5/104](#); with [heated instruments E01H 5/10](#))}
- 5/09 . . . the elements being rotary or moving along a closed circular path, e.g. rotary cutter, digging wheels
- 5/092 {Brushing elements}
- 5/094 {about vertical or substantially vertical axes}
- 5/096 {about axes parallel or substantially parallel to the direction of clearing}
- 5/098 {about horizontal or substantially horizontal axes perpendicular or substantially perpendicular to the direction of clearing}
- 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}
- 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](#))}
- 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](#))}
- 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](#))}
- 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](#))}
- 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](#))}
- 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)}**
- 8/00 Removing undesirable matter from the permanent way of railways; Removing undesirable matter from tramway rails ([E01H 1/00](#) - [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](#))}**
- 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](#))}

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| 8/04 | <ul style="list-style-type: none"> 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} | 10/005 | <ul style="list-style-type: none"> {Permanently-installed devices for applying gritting or thawing materials, e.g. for spreading grit, for spraying de-icing liquids} |
| 8/06 | <ul style="list-style-type: none"> 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} | 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} |
| 8/08 | <ul style="list-style-type: none"> by application of heat, {e.g. by means of heated clearing instruments, melting <u>in situ</u>} ({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} | 11/00 | <p>Control of undesirable vegetation on roads {or similar surfaces} or permanent ways of railways, {e.g. devices for scorching weeds or for applying herbicides} (destruction of undesirable vegetation in general A01M 7/00 - 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> |
| 8/10 | <ul style="list-style-type: none"> 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) | 12/00 | <p>Cleaning beaches {or sandboxes}</p> |
| 8/105 | <ul style="list-style-type: none"> {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)} | 12/002 | <ul style="list-style-type: none"> {Treatment <u>in situ</u> (E01H 12/006 takes precedence)} |
| 8/12 | <ul style="list-style-type: none"> specially adapted to grooved rails, flangeways, or like {parts of the permanent way, e.g. level crossings or switches} | 12/004 | <ul style="list-style-type: none"> {using floating devices} |
| 8/125 | <ul style="list-style-type: none"> {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)} | 12/006 | <ul style="list-style-type: none"> {Oil removal} |
| 10/00 | <p>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})</p> | 12/008 | <ul style="list-style-type: none"> {cleaning sandboxes} |
| 10/002 | <ul style="list-style-type: none"> {Roadside storage of gritting or solid thawing materials, e.g. grit or salt bins} | 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> |
| | | 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> |