

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 20/30, A01G 20/40; 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)}	1/106	. . . {in which the loosened or dislodged dirt is picked up, e.g. shoveling carts (E01H 1/108 takes precedence)}
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)}	1/108	. . {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)}
1/0854	. . . {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)}	1/12	. 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 })
1/0863	. . {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}	1/1206	. . {for picking up excrements (manure or urine pouches for animal husbandry A01K 23/00)}
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)}	1/1213	. . { in situ treatment of excrements}
2001/0881	. . {Details for pneumatically dislodging or removing not related to the mouth-piece}	2001/122	. . {Details}
2001/089	. . . {Suction-effect created through blowing, e.g. using the venturi effect}	2001/1226	. . . {characterised by way of removing material}
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)}	2001/1233 {by pressing a tool in the material to be removed}
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)}	2001/124 {Glove-like means}
1/103	. . . {in which the soiled loosening or washing liquid is removed, e.g. by suction (removing liquids in general E01H 1/108)}	2001/1246 {Double or multiple closing means making horizontal sliding movement (not applied for grabs)}
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)}	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> |