CPC  COOPERATIVE PATENT CLASSIFICATION

B  PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B60  VEHICLES IN GENERAL

(NOTE omitted)

B60S  SERVICING, CLEANING, REPAIRING, SUPPORTING, LIFTING, OR MANOEUVRING OF VEHICLES, NOT OTHERWISE PROVIDED FOR

NOTE

Attention is drawn to the Note following the title of class B60.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00  Cleaning of vehicles (by apparatus not integral with vehicle B60S 3/00; cleaning in general B08B; de-icing of aircraft B64D; heating arrangements specially adapted for transparent or reflecting areas H05B 3/84)

1/02  . . . Cleaning windscreens, windows or optical devices [wind deflectors specially adapted for preventing soiling of windows or windscreens B60J 1/2002]

1/023  . . . [including defroster or demisting means]

1/026  . . . [using electrical means]

1/04  . . . Wipers or the like, e.g. scrapers

1/0402  . . . [completely or partially concealed in a cavity]

1/0405  . . . . . . . . . . . . . . . . . [the cavity being equipped with a movable cover]

1/0408  . . . . . . . . . . . . . . . [Means for influencing the aerodynamic quality of wipers, e.g. clip-on wind deflectors (B60S 1/32 takes precedence)]

1/0411  . . . . . . . . . . . . . . . [the windscreens, windows or optical devices being movable with respect to fixed wipers]

1/0413  . . . . . . . . . . . . . . . [Modular wiper assembly]

1/0416  . . . . . . . . . . . . . . . [including other vehicle fittings]

1/0419  . . . . . . . . . . . . . . . [the support structure being integrally molded]

1/0422  . . . . . . . . . . . . . . . [having a separate transverse element]

1/0425  . . . . . . . . . . . . . . . [characterised by the attachment of the wiper shaft holders to the transverse element]

1/0427  . . . . . . . . . . . . . . . [characterised by the attachment of the wiper motor holder to the transverse element]

1/043  . . . . . . . . . . . . . . . [Attachment of the wiper assembly to the vehicle]

1/0433  . . . . . . . . . . . . . . . [Attachment of a wiper modular assembly to the vehicle]

1/0436  . . . . . . . . . . . . . . . [Attachment of separate wiper shaft holders to the vehicle (B60S 1/0425 takes precedence)]

1/0438  . . . . . . . . . . . . . . . [Attachment of separate wiper motor assembly to the vehicle]

1/0441  . . . . . . . . . . . . . . . [characterised by the attachment means]

1/0444  . . . . . . . . . . . . . . . [comprising vibration or noise absorbing means]

1/0447  . . . . . . . . . . . . . . . [non-screw fixation, (e.g. snap-in, bayonet-type..)]

1/045  . . . . . . . . . . . . . . . [having a pre-attachment device (i.e. to hold elements in position during mounting)]

1/0452  . . . . . . . . . . . . . . . [Position of the wipers relative to the vehicle]

1/0455  . . . . . . . . . . . . . . . [Device for lifting the wipers off the screen in its parking position or at extremes of wipe]

1/0458  . . . . . . . . . . . . . . . [Arrangement wherein the windscreen frame cooperates with the wipers]

1/0461  . . . . . . . . . . . . . . . [Arrangement of the side pillars]

1/0463  . . . . . . . . . . . . . . . [Arrangement of the cow]

1/0466  . . . . . . . . . . . . . . . [Arrangement of wipers on openable windows]

1/0469  . . . . . . . . . . . . . . . [Devices for assisting the wiper positioning on the vehicle]

1/0472  . . . . . . . . . . . . . . . [Arrangement of the wipers on right or left-hand drive vehicles]

1/0475  . . . . . . . . . . . . . . . [Cleaning of wiper blades]

1/0477  . . . . . . . . . . . . . . . [Arrangement for deicing or for removing debris from wiper blades (heated wiper blade B60S 1/3805)]

1/048  . . . . . . . . . . . . . . . [with a heating device for the wiper parking position]

1/0483  . . . . . . . . . . . . . . . [the cleaning device being separated from the vehicle (renovating blade rubbers B60S 2001/3846)]

1/0486  . . . . . . . . . . . . . . . [the cleaning device being integrated with the vehicle]

1/0488  . . . . . . . . . . . . . . . [Wiper arrangement for crash protection or impact absorption]

1/0491  . . . . . . . . . . . . . . . [Additional elements being fixed on wipers or parts of wipers not otherwise provided for, e.g. covers, antennae or lights]

1/0494  . . . . . . . . . . . . . . . [Wipers actuated by wind force only]

1/0497  . . . . . . . . . . . . . . . [Wiper units as items separate from vehicle, e.g. for emergency use or retro-fittable]
than swinging movement B60S 1/44

Characterised by the drive (producing other than swinging movement B60S 1/44)

Electrically driven (conjoint control of windscreen wiper motor and liquid supply of windscreen washer B60S 1/482; conjoint control of windscreen wiper motor and means for cleaning parts on parts other than windscreens or front windows B60S 1/56, B60S 1/58, B60S 1/606)

Intermittent control circuits

Using electronic control means, e.g. tubes, semiconductors (B60S 1/0818, B60S 1/0896 take precedence)

Combined with mechanical control means, e.g. thermal relays

Using several drive motors; motor synchronisation circuits

Including control systems responsive to external conditions, e.g. by detection of moisture, dirt or the like

Characterised by the arrangement or type of detection means

Capacitive rain sensor

Oscillator-resonator rain sensor

Optical rain sensor

With a particular arrangement of the optical elements

Including a hologram

Including a camera

Cleaning devices for cameras on vehicle

Resistive rain sensor

Ultrasonic rain sensor

Other types of detection of rain, e.g. by measuring friction or rain drop impact

Including additional sensors (vehicle speed sensors B60S 1/0896)

Including a temperature sensor (heating devices for windshield B60H)

Including an ambient light sensor (control of vehicle lights B60Q)

Characterised by the position of the sensor on the windshield

At least part of the sensor being positioned between layers of the windshield

Characterised by the attachment means on the windshield

The sensor being integrated in a rear-view mirror module

Characterised by the attachment of the elements in a unit

Testing and production of rain sensors

Including control systems responsive to a vehicle driving condition, e.g. speed

Pneumatically driven

With means for stopping or setting the wipers at their limit of movement

Hydraulically driven

With means for stopping or setting the wipers at their limit of movement

Personally driven

Means for transmitting drive

With means for stopping or setting the wipers at their limit of movement

Characterised by the combination of a motor-reduction unit and a mechanism for converting rotary into oscillatory movement

Mechanically (B60S 1/166 takes precedence)

With means for stopping or setting the wipers at their limit of movement

By cable drives; by flexible shafts

By rotary cams

By rotary cranks

With particular rod arrangements between the motor driven axle and the wiper arm axle

By toothed gearing

Characterised by a plurality of wipers (B60S 1/06 takes precedence)

Arranged both outside and inside

Characterised by constructional features of wiper blade arms (or blades)

Wiper arms; Mountings therefor (wiper arms provided with liquid spreading means B60S 1/522; with gas spreading means B60S 1/544)

With means for obtaining particular wiping patterns (by varying the effective length of the angularly oscillating arm B60S 1/365)

With the wiper blades being moved substantially parallel with themselves

With the wiper blades being rotated with respect to the wiper arms around an axis perpendicular to the wiped field (B60S 1/3404 takes precedence)

With the wiper arms consisting of two or more articulated elements

With means for varying wiper-blade pressure on windshield during operation

With means for holding the arm off the glass in an intermediate position between the working position and the fully folded back position

With means for supplying cleaning fluid to windscreen cleaners, e.g. washers (arrangement of nozzles B60S 1/52)

With means for additionally adjusting the wiper arm working position with respect to the surface to be wiped

With means for temporarily uncoupling the wiper arm from the drive

Means arranged in the wiper structure to lift the arm at extremes of wipe (means arranged on the vehicle body B60S 1/0455)

Constructional aspects of the arm

Arm piece, link piece and mounting head formed as one element

Arm pieces

Link pieces

Manufacturing details thereof
gas spreading means B60S 1/546

Means, or measures taken, for influencing the aerodynamic quality of the wiper blades

[Criterion 1/3808]

{ Means of supporting or holding the squeegee or blade rubber }

{ characterised by a support harness consisting of several articulated elements }

[Criterion 2001/3812]

{ characterised by the joint between elements }

[Criterion 2001/3815]

{ characterised by a backing strip to aid mounting of squeegee in support }

[Criterion 2001/3817]

{ the backing strip being a channel-like element, e.g. not continuous }

[Criterion 2001/3818]

{ the backing strip being an essentially planar reinforcing strip, e.g. vertebra }

[Criterion 2001/382]

{ characterised by additional means to prevent longitudinal sliding of squeegee in support, e.g. clips }

[Criterion 2001/3822]

{ the blade or squeegee pivoting about an axis parallel to blade longitudinal axis }

[Criterion 2001/3824]

{ the squeegee mounted directly to or in wiper blade arm }

[Criterion 2001/3825]

{ characterised by the squeegee or blade rubber or wiping element }

[Criterion 2001/3827]

{ characterised by the material of the squeegee or coating thereof }

[Criterion 2001/3829]

{ cleaning by scrubbing or abrasive action }

[Criterion 2001/3831]

{ cleaning by rigid or semi-rigid scraping elements, e.g. for removing ice }

[Criterion 2001/3832]

{ equipped with brush-like elements }

[Criterion 2001/3834]

{ characterised by cross-sectional shape }

[Criterion 2001/3836]

{ with more than one wiping edge or lip }

[Criterion 2001/3837]

{ with longitudinally split squeegee, with squeegee parts }

[Criterion 2001/3839]

{ Squeegee modifications to prevent longitudinally sliding of squeegee in support structure }

[Criterion 2001/3841]

{ equipped with removable cover or protective elements }

[Criterion 2001/3843]

{ Devices for renewing or renovating blade wiping edges, e.g. cutters }

[Criterion 2001/3846]

{ Flat-type wiper blade, i.e. without harness }

[Criterion 1/3848]

{ Connectors therefor; Connection to wiper arm; Attached to blade }

[Criterion 1/3849]

{ Mounting of connector to blade assembly }

[Criterion 1/3851]

{ Snap-fit, e.g. elastic connection }

[Criterion 1/3853]

{ by welding, gluing or the like }

[Criterion 1/3855]

{ Gripping the blade }

[Criterion 1/3856]

{ with protrusions cooperating with holes }

[Criterion 1/3858]

{ made in two halves }

[Criterion 1/386]

{ Transport of liquid there through }

[Criterion 1/3862]

{ Connectors having a spoiler }

[Criterion 1/3865]
1/3867 . . . . . . . . . . . . [pin formed on the interior of side walls]
1/3868 . . . . . . . . . . . . [pin formed on the exterior of side walls]
1/387 . . . . . . . . . . . . {the connector being suitable for receiving different types of adapter}
1/3872 . . . . . . . . . . . . {without connector, e.g. connection to wiper arm via squeegee or vertebra}
1/3874 . . . . . . . . . . . . {with a reinforcing vertebra}
1/3875 . . . . . . . . . . . . {rectangular section}
1/3877 . . . . . . . . . . . . {embedded in the squeegee}
1/3879 . . . . . . . . . . . . {placed in side grooves in the squeegee}
1/3881 . . . . . . . . . . . . {in additional element, e.g. spoiler}
1/3882 . . . . . . . . . . . . [C-shape section]
1/3884 . . . . . . . . . . . . [Wire-shaped section]
1/3886 . . . . . . . . . . . . [End caps]
1/3887 . . . . . . . . . . . . {Mounting of end caps}
1/3889 . . . . . . . . . . . . {cooperating with holes in the vertebra}
1/3891 . . . . . . . . . . . . {with locking device}
1/3893 . . . . . . . . . . . . {cooperating with holes in the squeegee}
1/3894 . . . . . . . . . . . . {having a particular shape}
1/3896 . . . . . . . . . . . . {with openings at the longitudinal extremities}
2001/3898 . . . . . . . . . . . . {method for manufacturing wiper blades}
1/40 . . . . . . . . . . . . Connections between blades and arms
1/4003 . . . . . . . . . . . . {Multi-purpose connections for two or more kinds of arm ends}

NOTE
Multi-aspect classification is applied for technical subjects relating to the arms and covered by subgroups B60S 1/4006 - B60S 1/4083

1/4006 . . . . . . . . . . . . {for arms provided with a hook-shaped end}
1/4009 . . . . . . . . . . . . {comprising a detachable intermediate element mounted on the hook-shaped end}
2001/4012 . . . . . . . . . . . . {the element being provided with bearing surfaces on its side walls}
1/4016 . . . . . . . . . . . . {the element being provided with retention means co-operating with the hook-shaped end of the arm}
1/4019 . . . . . . . . . . . . {the retention means being protrusions or holes}
2001/4022 . . . . . . . . . . . . {the element being provided with a locking element moveable thereon}
2001/4025 . . . . . . . . . . . . {the element being able to receive pivot pins of different diameters}
2001/4029 . . . . . . . . . . . . {the element being able to receive arms of different widths}
2001/4032 . . . . . . . . . . . . {the element being able to receive arms with hooks of different radiiuses}
2001/4035 . . . . . . . . . . . . {the connection being covered by a removable cover mounted on the blade}
1/4038 . . . . . . . . . . . . {for arms provided with a channel-shaped end}
1/4041 . . . . . . . . . . . . {the channel-shaped end comprising a pivot pin mounted between the side walls}
1/4045 . . . . . . . . . . . . {comprising a detachable intermediate element mounted on the channel-shaped end}
1/4048 . . . . . . . . . . . . {the element being provided with retention means co-operating with the channel-shaped end of the arm}
2001/4051 . . . . . . . . . . . . {the intermediate element engaging the side walls of the arm}
2001/4054 . . . . . . . . . . . . {the intermediate element engaging the back part of the arm}
2001/4058 . . . . . . . . . . . . {comprising a separate locking element, e.g. in addition to an intermediate element}
2001/4061 . . . . . . . . . . . . {covered by a removable cover mounted on the blade}
1/4064 . . . . . . . . . . . . {the channel-shaped end being provided with protrusions on, or holes in, the side walls to create a pivot}
1/4067 . . . . . . . . . . . . {for arms provided with a side pin}
1/407 . . . . . . . . . . . . {with means provided on the arm for locking the side pin}
1/4074 . . . . . . . . . . . . {with means provided on the blade for locking the side pin}
1/4077 . . . . . . . . . . . . {characterised by the connecting part of, or an intermediate element mounted on, the wiper blade (means for locking the side pin B6OS 1/4074)}
2001/408 . . . . . . . . . . . . {the connecting part or the intermediate element being provided with holes for different diameters of pivoting pin}
1/4083 . . . . . . . . . . . . {for arms provided with a flat end}
1/4087 . . . . . . . . . . . . {the end being provided with protrusions or holes}
2001/409 . . . . . . . . . . . . {characterised by the arm or connecting part mounted on the arm presenting a shaped opening for bearing the pivot axis}
2001/4093 . . . . . . . . . . . . {characterised by the mounting of the pivot on the main yoke of the blade}
2001/4096 . . . . . . . . . . . . {Connections between arm and blade not using a cylindrical pivot axis on the blade}
1/42 . . . . . . . . . . . . resilient
1/44 . . . . . . . . . . . . the wiper blades having other than swinging movement, e.g. rotary (the wiper blade support member, e.g. arm, having a swinging movement B6OS 1/32)}
1/46 . . . . . . . . . . . . using liquid; Windscreen washers
1/48 . . . . . . . . . . . . Liquid supply therefor
1/481 . . . . . . . . . . . . {the operation of at least part of the liquid supply being controlled by electric means (electrical washing liquid warming-up means B60S 1/488)}
1/482 . . . . . . . . . . . . {combined with the operation of windscreen wipers}
1/483 . . . . . . . . . . . . {using a supply pump driven by the windscreen-wiper motor}
1/485 . . . . . . . . . . . . {including control systems responsive to external conditions, e.g. by detection of moisture, dirt or the like}
1/486 . . . . . . . . . . . . {including control systems responsive to a vehicle driving condition, e.g. speed}
1/487 . . . . . . . . . . . . {the liquid being heated (nozzles provided with heating means B6OS 1/52)}
1/488 . . . . . . . . . . . . {electrically}
3/00

Vehicle cleaning apparatus not integral with vehicles (cleaning in general B08B; cleaning peculiar to waterborne vessels B63B 57/00, B63B 59/00; ground equipment for cleaning aircraft B64F 5/30)

3/002 . . . {Vehicle drying apparatus}
3/004 . . . {Conveyors for vehicle cleaning apparatus}
3/006 . . . {specially adapted for railway vehicles (B60S 3/008 takes precedence)}
3/008 . . . {for interiors of land vehicles (B60S 3/002, B60S 3/004 take precedence; specially adapted for railway vehicles B60S 3/006)}
3/04 . . . {for exteriors of land vehicles (B60S 3/002, B60S 3/004 take precedence; specially adapted for railway vehicles B60S 3/006)}
3/041 . . . {specially adapted for two-wheeled vehicles}
3/042 . . . {Wheel cleaning devices (integral with vehicle B60S 1/000}

3/044 . . . (Hand-held cleaning arrangements with liquid or gas distributing means (B60S 3/004 takes precedence))
3/045 . . . (Other hand-held cleaning arrangements, e.g. with sponges, brushes, scrapers or the like (brushes per se A46B)
3/047 . . . {using liquid or gas distributing means (B60S 3/004 takes precedence)
3/048 . . . {with rotary or vibratory bodies contacting the vehicle
3/06 . . . with rotary bodies contacting the vehicle {{hand-held B60S 3/0048)
3/063 . . . {the axis of rotation being approximately vertical
3/066 . . . {the axis of rotation being approximately horizontal

5/00

Servicing, maintaining, repairing or refitting of vehicles (collecting or removing exhaust gases in workshops B08B 15/002; straightening vehicle body parts B21D 1/12 - B21D 1/14); vehicles adapted to carry a workshop for servicing or maintenance B60P 3/14; servicing rail locomotives B61K; registering or indicating the working of vehicles G07C 5/00; testing of vehicles G01M 17/00; arrangements for electrical testing G01R 31/00; devices for monitoring or checking brake systems B60T 17/22; filling or draining lubricant F01M 11/04; means for collecting, retaining, or draining-off lubricant F16N 31/00; draining of lubricant from gearing F16H 57/0406; assembly or repair of springs or dampers F16F 9/3271; tool, instrument or work supports or storage means used in association with vehicles B25H 5001)

5/02 . Supplying fuel to vehicles; General disposition of plant in filling stations (apparatus for transferring measured quantities of petrol, oil, or the like from storage space to vehicles B67D)
5/04 . Supplying air for tyre inflation (arrangement of tyre inflating devices on vehicles B60C 23/00; tyre pressure gauges G01L 17/00; pumps actuated by muscle power F04B 33/00)
5/043 . . . {characterised by the inflation control means or the drive of the air pressure system]
5/046 . . . {using electrical or electronic means]
5/046 . Supplying batteries to, or removing batteries from, vehicles (exchanging batteries for electric propulsion of vehicles B60L 53/80)

WARNING

Group B60S 5/06 is impacted by reclassification into group B60L 53/80. Groups B60S 5/06 and B60L 53/80 should be considered in order to perform a complete search.

9/00

Ground-engaging vehicle fittings for supporting, lifting, or manoeuvring the vehicle, wholly or in part, e.g. built-in jacks (props for vehicle draw bars B00D 1/06; anti-theft devices acting on vehicle jacking means B60K 25/001]; lifting devices in general B66F; supports in general F16M)
9/02 . . . for only lifting or supporting
9/04 . . . mechanically
9/06 . . . of screw-and-nut type
9/08 . . . the screw axis being substantially vertical
by fluid pressure
of telescopic type
for both lifting and manoeuvring
for operating only on one end of vehicle
(B60S 9/205 takes precedence)
mechanically
. . . with fluid-pressure lift
. . . Power driven manoeuvring fittings, e.g.
reciprocably driven steppers or rotatably driven
cams (vehicles with ground-engaging propulsion
means, e.g. walking members, B62D 57/02)
. . . comprising a rotatably driven auxiliary
wheel or endless track, e.g. driven by ground
wheel (track vehicles with additional or
alternative ground wheels B62D 55/02,
B62D 55/04; auxiliary drives from a ground
wheel B60K 25/08)
driven by an auxiliary motor
Means for attaching lifting, supporting, or
manoeuvring devices to vehicles (for separate
devices B60S 11/00)
Vehicle modifications for receiving separate lifting,
supporting, or manoeuvring devices
Vehicle-manoeuvring devices separate from the
vehicle (vehicle lifting {, e.g. liftable turntables} or
pushing devices B66F; {workshop equipment B25H})
. Turntables; Traversers (incorporated in vehicle-
storng garages E04H {; rotary display stands
A47F 5/02})