SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B61 RAILWAYS

B61L GUIDING RAILWAY TRAFFIC; ENSURING THE SAFETY OF RAILWAY TRAFFIC (brakes or auxiliary equipment B61H, B61K; point or crossing construction E01B)

Note(s)

This subclass covers:
- devices along the route interacting with trains;
- signals;
- operation of points and signals;
- interlocking;
- block systems;
- level crossings.

Subclass index

DEVICES ALONG THE ROUTE ACTUATED BY, OR ACTING ON, THE TRAIN AT ITS PASSAGE.....1/00, 3/00
RAILWAY SIGNALLING, SWITCHING, BLOCKING, AND INTERLOCKING
Signals
per se, local operation mechanisms; remote control; control by passage of vehicles.....5/00, 7/00, 13/00
Points
local operation mechanisms; remote control; control by passage of vehicles.....5/00, 7/00, 11/00
switching systems of classification yards.....17/00
points and signals interlocking by a single device.....19/00
Scotch-blocks: local operation mechanisms; remote control.....5/00, 7/00
Station blocking.....21/00
TRAFFIC
Central control systems; recording and indicating traffic data; self-signalling.....27/00, 25/00, 15/00
Safety: means concerning railway traffic; protection of road crossings.....23/00, 29/00
ILLUMINATION OF POINTS, FORM SIGNALS, AND GATES.....9/00
SUBJECT MATTER NOT PROVIDED FOR IN OTHER GROUPS OF THIS SUBCLASS.....99/00

1/00 Devices along the route controlled by interaction with the vehicle or vehicle train (detonators B61L 5/20; operation of points or signals by passage of the vehicle B61L 11/00, B61L 13/00; operation of gates, or gates and signals, by approaching vehicle B61L 29/18)

1/02 • Electric devices associated with track

1/04 • • mechanically actuated by a part of the vehicle

1/06 • • actuated by deformation of rail; actuated by vibration in rail

1/08 • • magnetically actuated; electrostatically actuated

1/10 • • actuated by electromagnetic radiation; actuated by particle radiation

1/12 • Electric devices associated with overhead trolley wires

1/14 • Devices for indicating the passing of the end of the vehicle or vehicle train

1/16 • Devices for counting axles; Devices for counting vehicles

1/18 • Railway track circuits (rail joints E01B 11/00, e.g. insulated rail joints E01B 11/54)

1/20 • Safety arrangements for preventing or indicating malfunction of the device, e.g. by leakage current, by lightning

3/00 Devices along the route for controlling devices on the vehicle or vehicle train, e.g. to release brake, to operate a warning signal

3/02 • at selected places along the route, e.g. intermittent control

3/04 • • controlling mechanically

3/06 • • controlling by electromagnetic or particle radiation, e.g. by light beam

3/08 • • controlling electrically

3/10 • • • using current passing between devices along the route and devices on the vehicle train

3/12 • • • using magnetic or electrostatic induction; using radio waves

3/14 • • to cut-off the power supply to traction motors of electrically-propelled vehicles

3/16 • Continuous control along the route

3/18 • • using electric current passing between devices along the route and devices on the vehicle or vehicle train

3/20 • • • employing different frequencies or coded pulse groups
3/22 • • using magnetic or electrostatic induction; using electromagnetic radiation
3/24 • • • employing different frequencies or coded pulse groups

5/00 Local operating mechanisms for points or track-mounted scotch-blocks; Visible or audible signals; Local operating mechanisms for visible or audible signals (B61L 11/00 takes precedence)
5/02 • Mechanical devices for operating points or scotch-blocks
5/04 • Fluid-pressure devices for operating points or scotch-blocks
5/06 • Electric devices for operating points or scotch-blocks
5/08 • Underground actuating arrangements, e.g. for tramways
5/10 • Locking mechanisms for points; Means for indicating the setting of points
5/12 • Visible signals
5/14 • • Form signals, e.g. semaphore arms
5/16 • • • Local operating mechanisms for form signals
5/18 • • Light signals; Mechanisms associated therewith, e.g. blinders
5/20 • Audible signals, e.g. detonator
5/22 • • Devices for initiating the release of detonators in a certain position of a signal
5/24 • • Replacement of detonators

7/00 Remote control of local operating means for points, signals, or track-mounted scotch-blocks (B61L 11/00, B61L 13/00 take precedence; interlocking arrangements B61L 19/00)
7/02 • using mechanical transmission, e.g. wire, lever
7/04 • using fluid-pressure transmission
7/06 • using electrical transmission
7/08 • • Circuitry
7/10 • • • for light signals, e.g. for supervision, back-signalling

9/00 Illumination specially adapted for points, form signals, or gates
9/02 • non-electric
9/04 • electric

11/00 Operation of points from the vehicle or by the passage of the vehicle
11/02 • using mechanical interaction between vehicle and track
11/04 • • Trailable point locks
11/06 • • with fluid-pressure transmission
11/08 • using electrical or magnetic interaction between vehicle and track

13/00 Operation of signals from the vehicle or by the passage of the vehicle
13/02 • using mechanical interaction between vehicle and track
13/04 • using electrical or magnetic interaction between vehicle and track

15/00 Indicators provided on the vehicle or vehicle train for signalling purposes
15/02 • Head or tail indicators, e.g. light

17/00 Switching systems for classification yards
17/02 • Details, e.g. indicating degree of track filling

19/00 Arrangements for interlocking between points and signals by means of a single interlocking device
19/02 • Interlocking devices having mechanical or fluid-pressure operation
19/04 • • Details, e.g. hand lever, back-signalling device
19/06 • Interlocking devices having electrical operation
19/08 • • Special arrangements for power supply for interlocking devices
19/10 • • with mechanical locks
19/12 • • • Details
19/14 • • with electrical locks
19/16 • • • Details

21/00 Station blocking between signal boxes in one yard
21/02 • Mechanical locking and release of the route; Repeat locks; Coupling of semaphores
21/04 • Electrical locking and release of the route; Electrical repeat locks
21/06 • Vehicle-on-line indication; Monitoring locking and release of the route
21/08 • Order transmission and reception arrangements for giving or withholding permission
21/10 • Arrangements for trains which are closely following one another

23/00 Control, warning or like safety means along the route or between vehicles or vehicle trains [4]
23/02 • for indicating along the route the failure of brakes
23/04 • for monitoring the mechanical state of the route
23/06 • for warning men working on the route
23/08 • for controlling traffic in one direction only
23/10 • • manually operated
23/12 • • partly operated by train
23/14 • • automatically operated
23/16 • • • Track circuits specially adapted for section blocking
23/18 • • • specially adapted for maintaining a safe distance between vehicles or vehicle trains depending upon speed and traffic density **[1, 2006.01]**
23/20 • • • with transmission of instructions to stations along the route
23/22 • for controlling traffic in two directions over the same pair of rails
23/24 • • using token systems, e.g. train staffs, tablets
23/26 • • with means for actuating signals from the vehicle or by passage of the vehicle
23/28 • • using non-automatic blocking from a place along the route
23/30 • • using automatic section blocking
23/32 • • • with provision for the blocking of passing sidings
23/34 • for indicating the distance between vehicles or vehicle trains by the transmission of signals therebetween **[4]**

25/00 Recording or indicating positions or identities of vehicles or vehicle trains or setting of track apparatus
25/02 • Indicating or recording positions or identities of vehicles or vehicle trains
25/04 • • Indicating or recording train identities
25/06 • Indicating or recording the setting of track apparatus, e.g. of points, of signals
25/08 • • Diagrammatic displays

27/00 Central traffic control systems

27/02 • Manual systems
27/04 • Automatic systems, e.g. controlled by train; Change-over to manual control

29/00 Safety means for rail/road crossing traffic
29/02 • Guards or obstacles for preventing access to the route (cattle guards connected to the permanent way E01B 17/00)
29/04 • Gates for level crossings
29/06 • • yielding to vehicles in one direction but operated in a different direction
29/08 • Operation of gates; Combined operation of gates and signals
29/10 • • Means for securing gates in their desired position
29/12 • • Manual operation
29/14 • • • mechanically
29/16 • • • electrically
29/18 • • Operation by approaching rail vehicle or rail vehicle train
29/20 • • • mechanically
29/22 • • • electrically
29/24 • Means for warning road traffic that a gate is closed or closing, or that rail traffic is approaching, e.g. for visible or audible warning
29/26 • • mechanically operated
29/28 • • electrically operated
29/30 • • • Supervision, e.g. monitoring arrangements
29/32 • • • Timing, e.g. advance warning of approaching train

99/00 Subject matter not provided for in other groups of this subclass [2006.01]