CLASS 246, RAILWAY SWITCHES AND SIGNALS

SECTION I - CLASS DEFINITION

This class includes patents relating to the following means for the safeguard and control of traffic upon or across railways (that is, fixed tracks for occupant- controlled vehicles) or which by structure are especially adapted for such use, viz:

A. Signals, including those used for communication between occupants of a car or train.

B. Indicators, recorders, telegraphic, telephonic, or other similar apparatus when especially designed for use in connection with car or train movements, except manually-set devices, such as train and engine signs and markers capable of general use.

C. Devices on the roadway, such as signals, switches, circuit closures, gates, etc., actuated or controlled from or by the moving vehicles, except circuit-controllers actuated by the vehicle for the purpose of energizing sectionalized conductors used for supplying propulsion-current thereto.

D. Automatic train stop and speed control means, the actuation of which is initiated by agencies not on the train or by wheel derailment or defects in train structure and mechanism, the automatic stop, for classification purposes, being considered an equivalent of and substitute for a railway signal; but train stopping and control mechanism cooperating with obstacles fixed in position upon the track which have no moving parts are excluded from this class except when they cooperate with speed-responsive devices on the train.

E. Safety devices, including derailing switches and blocks, used for preventing accidents caused by the misplacement of switches, disregard of signals etc.

F. The structure of signals, switches, frogs, and crossings and their appurtenances.

G. Mechanism for the manual or other actuation of any of the devices of the class.

INDEX TO TECHNICAL LITERATURE

In many of the subclasses there have been placed upon the official search-cards references to such literature as appears to relate to the subject-matter of such subclass; but no attempt has been made to make these references complete. It has not been deemed advisable to print these references in connection with the respective subclass definitions; but they can be inspected in the Public Search-Room in connection with the Chief Draftsman's classified copies of patents. The list of works indexed is given below.

Literature in Scientific and Technical Information Center

Alternating Current Signaling, 1915, The Union Switch and Signal Co., Swissvale, Pa. Automatic Block Signal and Signal Circuits, Scott, New York, 1908. Block and Interlocking Signals, Elliott, New York,1896. Block System of Signaling on American Railroads, The, Adams, New York, 1901. First to Fifth Annual Reports Block Signal and Train Control Board, Interstate Commerce Commission,1909 to 1913. Locking, Laverack, New York, 1907. Mechanical Railway Signaling, second edition, Wilson, London, about 1909. Notes on Track Construction and Maintenance, Camp, Chicago, 1903. Perfect Railway Signaling, Spang, 1902. Power Railway Signaling, Wilson, 1908. Railroad Signal Dictionary, The, Adams & Hitt, New York, 1908. Railroad Signal Dictionary, The revised edition, New York, 1911. Railway Appliances, Barry, New York, 1896. Railway Block Signaling, Pigg, London. Railway Engineer, The, (about 1909). Railway Signal Association, Digest of Proceedings, Vol.1, 1895-1905; Vol.2, 1905; Vol.3, 1906; Vol.4, 1907; Vol.5, 1908; Vol.6, 1909. Railway Signal Association, Journal, 1910, Vol.XIII; 1911, Vol.XIV; 1912, Vol.XV; 1913, Vol.XVI; 1914, Vol.XVII; 1915, Vol.XVIII; 1916, Vol.XIX;1917, Vol.XX. Railway Signal Engineering, L. P. Lewis, London,1912. Railway Signaling, Pittsburgh, 1908. Railway Signaling in Theory and Practice, Latimer, Chicago, 1909. Railway Track and Track Work, Tratman, New York, 1908. Safe Railway Working, Stretton, 1886. Signal Engineer, The, 1908, Vol.1; 1909, Vol.2; 1910, Vol.3; 1911, Vol.4; 1912, Vol.5, 1913, Vol.6; 1914, Vol.7; 1915, Vol.8; 1916, Vol.9. Street Railway Road Bed, Pratt and Alden, New York, 1898.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

MEANS PECULIAR TO SPECIAL TYPES OF RAILWAYS

Means peculiar to special types of railway, such as mono-rail, rack-rail, electric, pneumatic, logging, cash-carrier, elevated, cable, suspended, etc., and not of general utility or if claimed in connection with structure of

such special types of railway will be found in the appropriate subclasses of other classes, for which see References to other Classes, below. But when such means are directed to the structure or operating mechanism of the switches of this class (246) subclass 415, they will be found in this class (246) subclass 419, indented thereunder.

SIGNALS AND INDICATORS IN OTHER CLASSES

For signals used for communication between occupants of a car or train see References to Other Classes, below.

For manually-set devices, such as train and engine signs, and markers capable of general use see references to Other Classes, below.

Where a semaphore is of the well known conventional railway type, (which is more fully described in the definition of subclass 479 of this class), the patent is classified here, but otherwise is some subclass of Class 116, Signals and Indicators, or Class 340, Communications: Electrical, unless claimed for railway use, in which case it is here classified.

SPEED CONTROL IN OTHER CLASSES

For speed control vehicles, when all of the mechanism is upon the vehicle and there is no cooperation with devices on the track or roadway, see References to Other Classes, below.

TRAIN STOPPING IN OTHER CLASSES

For train stopping and control mechanism cooperating with obstacles fixed in position upon the track which have no moving parts see References to Other Classes, below.

Closures (gates) when performing a stopping rather than a signalling function will be found elsewhere, except that railway-gates and mine-doors actuated by the energy of a moving vehicle or electrically controlled therefrom will be found in subclasses 125 and 292 of this class (246) and in the various subclasses indented thereunder.

TRACK STRUCTURE

For track structure other than as indicated above, see the Search Class references below.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

14, Bridges, appropriate subclasses for track structure.

40, Card, Picture, or Sign Exhibiting, for manually-set devices, such as train and engine signs, and markers capable of general use

40, Card, Picture, or Sign Exhibiting, see the obstacle-operated, obstacle-controlled, and electrically-controlled subclasses of the changeable exhibitors for station, street and similar annunciators and card, picture and sign exhibitors not especially adapted for use as cab-signals, when placed in vehicles and actuated or controlled by obstacles or electrical contacts upon the track, except when there are claims upon the structure of the track-obstacle or intermittent electrical contact and no claims upon the structure of the annunciator or exhibitor in which case they are placed in this class (246).

49, Movable or Removable Closures, for Closures (gates) when performing a stopping rather than a signalling function.

91, Motors: Expansible Chamber Type, appropriate subclasses for speed control vehicles, when all of the mechanism is upon the vehicle and there is no cooperation with devices on the track or roadway.

104, Railways, for train stopping and control mechanism cooperating with obstacles fixed in position upon the track which have no moving parts.

104, Railways, appropriate subclasses for means peculiar to special types of railway.

104, Railways, for track structure.

116, Signals and Indicators, for signals used for communication between occupants of a car or train.

116, Signals and Indicators, for manually-set devices, such as train and engine signs, and markers capable of general use

116, Signals and Indicators, subclasses 28+ and 200+, for hand actuated train-indicators or signals and indicators placed on moving trains or cars to indicate their motion or the speed or direction of their motion or which perform merely an identifying function, such as train or engine markers.

123, Internal-Combustion Engines, appropriate subclasses for speed control vehicles, when all of the mechanism is upon the vehicle and there is

no cooperation with devices on the track or roadway.

178, Telegraphy, for telegraph systems, note especially subclass 43 for space induction systems which are oftentimes used in train communication; (signals used for communication between occupants of a car or train).

180, Motor Vehicles, subclasses 167+ for a motor vehicle provided with means for controlling its operation which is responsive to electromagnetic radiation, magnetic force, or sound waves received from a source, or reflected from an object or surface, which is located apart from the vehicle; and subclasses 170+, for a motor vehicle provided with means which is responsive to the speed of the vehicle for maintaining its speed at, or preventing it from exceeding, a particular value.

180, Motor Vehicles, subclasses 170+, appropriate subclasses for speed control vehicles, when all of the mechanism is upon the vehicle and there is no cooperation with devices on the track or roadway.

186, Merchandising, appropriate subclasses for means peculiar to special types of railway.

186, Merchandising, for train stopping and control mechanism cooperating with obstacles fixed in position upon the track which have no moving parts.

191, Electricity: Transmission to Vehicles, for the transmission of electricity to a moving vehicle, where no claims are made upon the apparatus actuated by the current or covering the uses to which the current is applied; subclasses 16 through 21 for circuit controllers actuated by the vehicle for the purpose of energizing sectionalized conductors used for supplying propulsion current thereto.

238, Railways: Surface Track, for track structure.

318, Electricity: Motive Power Systems, for speed control vehicles, when all of the mechanism is upon the vehicle and there is no cooperation with devices on the track or roadway.

333, Wave Transmission Lines and Networks, note particularly subclasses 24+ for coupling networks which may be used in railway-signaling systems, and subclasses 1+ for plural-channel systems including such coupling networks.

343, Communications: Radio Wave Antennas, for pertinent subclass(es) as determined by schedule rewew.

375, Pulse or Digital Communications, for pulse communication systems; (signals used for communication between occupants of a car or train).

379, Telephonic Communications, for telephone systems, note subclass 55 for space induction systems; (signals used for communication between occupants of a car or train) and Class.

381, Electrical Audio Signal Processing Systems and Devices, especially subclasses 77+ and 86 for one-way electrical audio signal transmission systems for trains (signals used for communication between occupants of a car or train).

388, Electricity: Motor Control Systems, subclasses 800+ and 825+ for speed control vehicles, when all of the mechanism is upon the vehicle and there is no cooperation with devices on the track or roadway.

414, Material or Article Handling, for train stopping and control mechanism cooperating with obstacles fixed in position upon the track which have no moving parts.

414, Material or Article Handling, appropriate subclasses for means peculiar to special types of railway.

418, Rotary Expansible Chamber Devices, appropriate subclasses for speed control vehicles, when all of the mechanism is upon the vehicle and there is no cooperation with devices on the track or roadway.

455, Telecommunications, for modulated carrier wave and light wave communications. (Signals used for communication between occupants of a car or train).

701, Data Processing: Vehicles, Navigation, and Relative Location, subclasses 1+ for vehicle indication, operation, or guidance which requires a mathematical calculation. Note, where significant vehicle structure is recited, classification is in the appropriate vehicle class.

SUBCLASSES

1 MISCELLANEOUS:

This subclass is indented under the class definition. Systems and devices not otherwise classifiable.

2 TRAIN DISPATCHING:

This subclass is indented under the class definition. Systems and devices specially adapted for the control of train movements by train-

orders or by their equivalents transmitted from a central or directing station.

SEE OR SEARCH CLASS:

40, Card, Picture, or Sign Exhibiting, subclasses 541+ for number-display devices and similar markers displayed on trains to indicate car or train numbers or give other information useful to the train-dispatcher or other officials.

116, Signals and Indicators, subclass 30 for train-markers referred to above, and subclass 173 for flags used as train-markers and for supports for such flags.

178, Telegraphy, appropriate subclasses for miscellaneous electric telegraph systems.

258, Railway Mail Delivery, appropriate subclasses indented thereunder, for devices for delivering train-orders to moving trains.

340, Communications: Electrical, subclass 825.72 for radio remote control.

362, Illumination, subclasses 253 and 459+ for signal and indicating lights carried by engines and cars, and 253, and 478+ for illuminated train and engine markers.

379, Telephonic Communications, appropriate subclasses for miscellaneous electric telephone systems.

455, Telecommunications, subclasses 500+ for miscellaneous radio systems comprising a plurality of transmitter and/or receiver means with a central control station.

3 Central signal control:

This subclass is indented under subclass 2. Systems and devices in which the train-dispatcher can set or control the operation of railway-traffic-controlling devices from a distance.

SEE OR SEARCH THIS CLASS, SUBCLASS:

135, 137, 141, 142, and 162, for indication that the signals, switches, etc., are properly actuated.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclass 298 for signal box systems having answer back or return call provision, and subclasses 313+ for miscellaneous signaling systems having answer back provision.

379, Telephonic Communications, subclass 418 for telephone-call systems having a return call indicator or answer back.

4 Cab signal or train control:

This subclass is indented under subclass 3. Systems having the signals given upon the engine cab or car or having mechanism which is actuated to stop the train or to control its motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and the subclasses specified in the Notes thereto, for other systems within the class definition for a cab signal or train-control means.

5 Selective:

This subclass is indented under subclass 3. Systems having means so that any one of a plurality of signals may be independently set or controlled from a distance, the number of linewires used being less than the number of signals controlled.

SEE OR SEARCH THIS CLASS, SUBCLASS:

156, 157, 164, 165, 424, 425, and 426, for selective mechanism and devices and all subclasses in the titles of which the words “Cab and control” appear, for means for actuating signals on trains.

SEE OR SEARCH CLASS:

178, Telegraphy, subclasses 23+ for printing telegraph systems.

250, Radiant Energy, subclasses 200+ and the classes specified in the Notes thereto for photo-sensitive electric systems for controlling a device.

307, Electrical Transmission or Interconnection Systems, subclasses 112+ for switching arrangements for distribution systems, particularly subclass

140 in which a remote switch is controlled by the exercise of control over the power current supplied to the switch.

335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, subclasses 108+ for selective telephone-type switches of general utility.

340, Communications: Electrical, subclasses 825+ for selective signaling systems in which signals may be selectively controlled; and subclass 825.72 for radio-wave systems for controlling a device.

342, Communications: Directive Radio Wave Systems and Devices (e.g., Radar, Radio Navigation), subclasses 73+ for miscellaneous systems for controlling a device by means of reflected or otherwise returned radio waves (radar).

370, Multiplex Communications, appropriate subclasses for multiplexing systems.

379, Telephonic Communications, subclasses 242+ for automatic telephone systems which usually involve selecting means; and subclasses 350+ for call transmitters for telephone systems.

6 Train-order cab signal or train control:

This subclass is indented under subclass 2. Systems having devices placed upon the train to insure the observance of train orders.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167+, and the subclasses specified in the Notes thereto, for details of cab signal or train-control mechanism.

7 Train telegraphy or telephony:

This subclass is indented under subclass 2. Telegraphic or telephonic systems specially adapted for communication between trains and the dispatcher or other stations.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167+, and all subclasses mentioned in the search notes appended thereto, for cab- signal systems giving only one or a limited number of indications.

SEE OR SEARCH CLASS:

375, Pulse or Digital Communications, for miscellaneous pulse communications.

455, Telecommunications, subclasses 500+ for miscellaneous analog modulated carrier wave communications.

8 Inductive:

This subclass is indented under subclass 7. Systems in which an inductive relation is established between the train and line, no physical connection being established.

SEE OR SEARCH THIS CLASS, SUBCLASS:

63, and 194, for inductive transmission of signals to moving trains.

SEE OR SEARCH CLASS:

178, Telegraphy, subclass 43 for inductive-telegraph systems.

191, Electricity: Transmission to Vehicles, subclass 10 for induction systems for transmitting electric power to a vehicle.

336, Inductor Devices, appropriate subclasses, for the structure of transformers and inductive reactors.

379, Telephonic Communications, subclass 55 for inductive telephone systems.

9 Continuous contacts:

This subclass is indented under subclass 7. Systems in which a current is transmitted to or from the train by one or more continuous contacts with line conductors other than the traction rails, which may or may not be sectionalized.

SEE OR SEARCH THIS CLASS, SUBCLASS:

65, through 68, 73 and 86, all disclosing means for the transmission of signals to moving trains through electrical contacts continuously maintained.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+ for removing ice, snow and dirt from continuous and intermittent electric contacts.

191, Electricity: Transmission to Vehicles, for structure of the conductor and collector.

10 Traction rail return:
This subclass is indented under subclass 9. Systems in which a single continuous contact is used, current being returned by the traction rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:
67, 68, 71, 73, and 86, for system using the traction-rails or the return of the signal-current to the car, also the foregoing subclasses and in addition subclasses 65 and 66 for continuous-contact systems.

SEE OR SEARCH CLASS:
191, Electricity: Transmission to Vehicles, for structure of the conductor and the collector.

11 Multiple contact:
This subclass is indented under subclass 10. Systems in which two or more continuous contacts are used.

(1) Note. See the search note to subclass 10 for continuous-contact systems and also for systems disclosing the return of the current through the traction-rail.

SEE OR SEARCH CLASS:
191, Electricity: Transmission to Vehicles, for structure of the conductor and the collector.

12 Instruments in series:
This subclass is indented under subclass 9. Systems in which each train has its instruments cut constantly into the line in series with those of other trains or stations.

SEE OR SEARCH CLASS:
191, Electricity: Transmission to Vehicles, subclass 11 for structure of the conductor and the collector.

13 Emergency signal stations:
This subclass is indented under subclass 7. Emergency stations without operators, located along the permanent way between regular stations, at which trains may stop or be stopped for communication by telegraph or telephone with the dispatcher or other trains or stations or from which in an emergency signals may be controlled.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 287+ for signal-box signaling systems.
379, Telephonic Communications, subclasses 56+ for portable telephone systems.
439, Electrical Connectors, for an electrical connector, per se, see especially subclasses 477+ for an electrical connector of the overhead line type having a handle, tool or manipulating means.

14 Station, block, or train-order signals:
This subclass is indented under subclass 2. Day or night signals or combinations of same used for the purpose mentioned and usually adapted to be supported by or attached to the roof or outer wall of a station or signal cabin and provided with means for operating them from within the same.

(1) Note. This subclass also includes devices used at stations for holding train orders.

SEE OR SEARCH THIS CLASS, SUBCLASS:
473+, for signal structure.

SEE OR SEARCH CLASS:
40, Card, Picture, or Sign Exhibiting, subclass 462 for frames and clips for the holding and display of the train order.

15 Safety systems:
This subclass is indented under subclass 14. Systems for insuring the proper display of the signal or the due delivery of the train order.

SEE OR SEARCH THIS CLASS, SUBCLASS:
6, for devices placed upon the train to insure the observance of train orders.

16 Holders:
This subclass is indented under subclass 15. Devices for holding the train order, or train order blank, form part of the safety system.

SEE OR SEARCH THIS CLASS, SUBCLASS:
473+, for the signal structure.

SEE OR SEARCH CLASS:
24, Buckles, Buttons, Clasps, etc., appropriate subclasses, for the structure of clips for holding orders.
40, Card, Picture, or Sign Exhibiting, subclass 462 for frames and clips for the holding and display of the train orders.

17 Rotary, vertical axis:
This subclass is indented under subclass 14. Signals which rotate upon a vertical axis.

SEE OR SEARCH THIS CLASS, SUBCLASS:
473+, for signal structure.

18 Double semaphore:
This subclass is indented under subclass 14. Signals having two semaphore-arms which extend on opposite sides from a common support.

SEE OR SEARCH THIS CLASS, SUBCLASS:
479+, for semaphore structure.

19 STAFF AND TABLET SYSTEMS:
This subclass is indented under the class definition. Systems in which the physical possession by an officer of the train of a train staff, ticket, tablet, or other token is a prerequisite to entrance upon the section or block.

SEE OR SEARCH THIS CLASS, SUBCLASS:
77, through 80 and 247, for train-counting mechanism.
133, 134, 135, 141, 146, and 159, for details of electric locking and return-release indication.

20 BLOCK-SIGNAL SYSTEMS:
This subclass is indented under the class definition. Systems in which a space interval is maintained between trains on the same track, usually by the subdivision of the way into definite sections termed “blocks”, the movement of traffic being governed by cab or wayside signals or devices which control the brakes or motive power, or both.

(1) Note. Home signals indicate the presence or absence of trains within the block about to be entered. Distant signals (usually semaphores having notched blades) indicate the condition of adjacent or distant blocks other than the block about to be entered. The combined functions of the home and distant signals are sometimes performed by a three-position signal, indicating by its three positions, respectively, the presence of a train in the block ahead, the second block ahead, or that both blocks are clear.

SEE OR SEARCH THIS CLASS, SUBCLASS:
19, for systems closely related in function where the physical possession by an officer of the train of a staff ticket or other token is a prerequisite to entrance upon the block.

21 Semi-automatic:
This subclass is indented under subclass 20. Systems in which the train automatically cooperates with human agency in the actuation or control of the elements of the system.

(1) Note. These systems are sometimes called “controlled Manual”. The electric control by trains of manually-actuated signals or vice versa is an example of such cooperation.

SEE OR SEARCH THIS CLASS, SUBCLASS:
105, 106, 112, 160, 164, 165, and 183, for manual-control features.

22 Electromanual:
This subclass is indented under subclass 21. Systems in which the train uses electrical means in performing its automatic function.

(1) Note. This subclass includes the so-called "controlled-manual-block" systems.

SEE OR SEARCH THIS CLASS, SUBCLASS:

105, 106, 112, 160, 164, 165, and 183, for manual-control features.

23 Cab signal or train control:

This subclass is indented under subclass 22. Systems in which means are provided for actuating audible or visual signals upon the cab or train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

24 Circuit controllers:

This subclass is indented under subclass 22. Systems in which use is made of train-actuated circuit controllers.

SEE OR SEARCH THIS CLASS, SUBCLASS:

72, through 80, 82-84, 88, 90, 91, 126, 127, 246-252 and 259, for train-actuated circuit-closers. See also search mote to subclass 246.

25 Lock and block:

This subclass is indented under subclass 22. Systems in which the signal clearing operations require the cooperation of the operators at each end of the block and also the absence of trains from the block, which when present, by electrical means, render it impossible to clear the signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, and 106, for manually-controlled block signaling systems of the lock and block type.

131+, and the subclasses specified in the Notes thereto, for details of locking and interlocking, and switching, signaling, and similar systems.

26 Track-circuit control:

This subclass is indented under subclass 25. Systems in which track circuits are used for controlling the devices of the system.

SEE OR SEARCH THIS CLASS, SUBCLASS:

34, 41, 58, 95, and 98, for block-signaling systems having specific track circuits.

128+, and 130, for automatic-highway signal systems, mine door and/or gate systems having specific track circuits.

27 Automatic:

This subclass is indented under subclass 20. Systems having train-control devices which operate automatically without direct human intervention.

SEE OR SEARCH THIS CLASS, SUBCLASS:

21, and appropriate indented subclasses for automatic systems in combination with manually-actuated signals.

28 Electric:

This subclass is indented under subclass 27. Systems in which the traffic- controlling devices are actuated and controlled only by electrical means.

(1) Note. The means employed upon the train for operating cab signal and train-control mechanism may by of any type--e.g., electrical, fluid-pressure, mechanical, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

22, for semi-automatic block signaling systems in which electrical means are used for performing the automatic function.

114+, for automatic grade-crossing protection systems having electrical means for operating the protecting means.

SEE OR SEARCH CLASS:

104, Railways, subclass 238 for vehicle propulsion control by block system wherein a peculiar type of guideway is claimed (e.g., cable, model, overhead, etc.).

29 Radiant energy:

This subclass is indented under subclass 28. Systems in which the traffic- control devices are actuated and controlled by waves of radiant energy as heat, light, etc.

SEE OR SEARCH CLASS:

398, Optical Communications, subclasses 106 through 114 for remote control communication systems utilizing light waves.

455, Telecommunications, subclasses 200.1+ and the classes and subclasses specified in the Notes thereto for photocell-controlled electric circuits and photocell apparatus.

30 Hertzian wave:

This subclass is indented under subclass 29. Systems in which the signals or automatic-stop devices are actuated or controlled by the methods of so-called "wireless telegraphy", making use of Hertzian waves.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclasses 825.69 and 825.72 for radio-wave systems for controlling a device.

342, Communications: Directive Radio Wave Systems and Devices (e.g., Radar, Radio Navigation), appropriate subclasses for miscellaneous radio-signaling and teledynamic systems, particularly subclasses 61+ for the miscellaneous systems for controlling a device by means of reflected or otherwise returned radio wave energy; See the classes under "SEARCH CLASS" in the class definitions of Class 343 for the other classes which provide for radiant-energy systems for controlling a device.

31 Propulsion-current control:

This subclass is indented under subclass 28. Systems in which means not on the car or train are provided whereby under conditions of danger the supply of propulsion current is cut off or is so reduced that the car is stopped or its speed controlled..

(1) Note. The control of the supply of propulsion current is most cases will be by other cars or trains which constitute a hazard to the controlled car or train.

SEE OR SEARCH THIS CLASS, SUBCLASS:

187, and the subclasses specified in the Notes thereto, for train-control devices located on the train whereby the motor of an electric car is deprived of propulsion current.

SEE OR SEARCH CLASS:

104, Railways, subclass 238 for vehicle propulsion control by block system wherein a peculiar type of guideway is claimed (e.g., cable, model, overhead, etc.).

191, Electricity: Transmission to Vehicles, subclasses 16 through 21 for conductor-supply systems for railways wherein the conductor is provided with a plurality of sections, one or more of the sections being manually de-energized and the system having means for connecting the de-energized section to the supply feeder.

32 Current consumption:

This subclass is indented under subclass 31. Systems in which the flow of propulsion current to one car or train under conditions of danger controls the flow to other cars or trains.

33 Single track:

This subclass is indented under subclass 28. Systems in which signals are so arranged as to give danger or caution indications to trains running in both directions on the same track.

(1) Note. The so-called "A. P. B." or absolute-permissive block systems are here included.

(2) Note. Only systems controlled by track-circuits are here included.

34 Varying-current track circuit:

This subclass is indented under subclass 28. Systems in which an alternating or pulsating current used for actuating or controlling the traffic controlling devices and derived from a source not on the train uses both traction rails as conductors in series for the major portion of the block.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

176, and 253, for switch or signal actuated circuit-breakers in track-circuits.

449, 450 and 451, for tie-bars with insulated joints.

SEE OR SEARCH CLASS:

238, Railways: Surface Track, subclass 164 for the structure of rail bonds and subclass 152 for insulated rail joints.

35 Propulsion-current return:

This subclass is indented under subclass 34. Systems in which super-imposed propulsion current, either direct or alternating, is returned through one of the traction rails which is not sectionalized.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

34, 38, 39, and 40, for alternating track-circuits showing one unbroken traction-rail, its use for return of propulsion-current not being specified.

42, 43 and 61, for the use of propulsion-current in other systems.

36 Double rail:

This subclass is indented under subclass 35. Systems in which both traction rails are used for the return of the super-imposed propulsion current, neither rail being sectionalized.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

35, and 37, for superposition of propulsion-current on an alternating or varying track-circuit current.

42, 43 and 61, for the superposition of propulsion-current on a direct track-circuit current.

37 Impedance bond:

This subclass is indented under subclass 36. Systems in which one or both of the traction-rails are divided into sections by insulated joints, the rails being made continuous for the return of the super-imposed direct propulsion-current by inductance-bonds or similar devices, which by impedance prevent the passage of the alternating signal-circuit.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

35, and 36, for the superposition of propulsion-current upon alternating track-circuit currents.

42, 43 and 61, for the superposition of propulsion-current upon direct track-circuit currents.

38 Wireless distant control:

This subclass is indented under subclass 34. Systems in which the home indication is actuated or controlled by the presence or absence of current and the distant indication by the change of some characteristic of the track-circuit current.

(1) Note. As line-wire distant control is dispensed with, the system is sometimes referred to in the art as “wireless”, but should not be confused with the true or Hertzian-wave “wireless” of subclass 30.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

35, 44, 45, and 60, for means for the actuation of the signals.

52, 224 and 481, for home and distant type.

53, and 223, for three-position type of semaphore.

SEE OR SEARCH CLASS:

335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, subclasses 230+ for polarized electromagnets and subclasses 266+ for differential electromagnets.

340, Communications: Electrical, subclasses 825+ for selective signaling systems of general application.

39 Line-wire distant control:
This subclass is indented under subclass 34. Systems in which one or more line-wires extending back for at least the entire length of the block are used for controlling or actuating the distant signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
46+, and 60, for line-wire control systems.
52, and 224, for the structure of or means for the actuation of the signals.
53, and 223, for three-position type of semaphore.
52, 224 and 481, for home and distant type.

40 Single block:
This subclass is indented under subclass 34. Systems in which the blocks are independent, trains only controlling the devices at the entrance of the blocks in which they are running.

SEE OR SEARCH THIS CLASS, SUBCLASS:
26, 34+, 41+, 58+, 95, 98, 128, and 130, for track-circuit systems.
54, and the appropriate indented subclasses for single-block systems.

41 Direct current, normally closed, track circuit:
This subclass is indented under subclass 28. Systems in which a direct, normally closed, continuous current, either actuating or controlling traffic-controlling devices and derived from a source not on the train, uses both traction-rails in series as conductors for the major portion of the block.

(1) Note. This type is known to the Railway Signal Association by the title "D.C. automatic block".

SEE OR SEARCH THIS CLASS, SUBCLASS:
26, 34+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
70, for cab signal or train-control systems similar to that in this subclass.
130, for highway signals, gates, and doors actuated or controlled through closed track-circuits.
160, for switch-locks controlled by electric track-circuits.
253, for devices for breaking the continuity of the circuit when a switch is misplaced or a signal goes to danger.
449, 450 and 451, for tie-bars with insulated joints.

SEE OR SEARCH CLASS:
238, Railways: Surface Track, subclass 164 for the structure of rail-bonds and subclass 152 for insulated rail-joints.

42 Propulsion-current return:
This subclass is indented under subclass 41. Systems in which a direct propulsion-current is returned by and super-imposed upon one or both of the track-rails in which the signal controlling current flows.

SEE OR SEARCH THIS CLASS, SUBCLASS:
26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
35+, 43 and 61, for superimposed propulsion-current.

43 Varying:
This subclass is indented under subclass 42. Systems in which the super-imposed propulsion-current is either alternating or pulsating.

SEE OR SEARCH THIS CLASS, SUBCLASS:
26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
35+, and 61, for superimposed propulsion-current.

44 Wireless distant control:
This subclass is indented under subclass 41. Systems in which the distant signal is controlled by the change of some characteristic of the track-circuit current.

(1) Note. As the use of external line-wires is dispensed with, the system has long been known in the art as "wireless", although not wireless in the sense of the teles:graphic art or of subclass 30 of this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+ 95, 98, 128+, and 130, for track-circuit systems.

38, 50 and 60, for wireless systems.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclasses 825+ for selective-signaling systems of general application.

45 Current reversal:

This subclass is indented under subclass 44. Systems in which a reversal of the direction of current flow is used for controlling the distant signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

38, 50 and 60, for wireless systems.

46 Line-wire distant control:

This subclass is indented under subclass 41. Systems in which one or more line wires extending back the entire length of the block are used for controlling or actuating the distant signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

39, 47 to 53 and 60, for line-wire systems of control.

47 Cab signal or train control:

This subclass is indented under subclass 46. Systems in which means are provided for actuating traffic-controlling devices placed upon the train or car.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

39, 46, 48 to 53 and 60, for line-wire systems of control.

167+, and all subclasses noted in the search notes appended thereto, for details relating to the control of signals placed upon a moving car or train or to the control of its motion.

48 Bridged insulated rail joint:

This subclass is indented under subclass 47. Systems in which an electric circuit on the train, normally closed through the track-rails, is broken by the passage of the train over one or more insulated rail-joints when a condition of danger exists, the break in the rails being electrically bridged under conditions of safety.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

39, 46, 49 to 53 and 60, for line-wire systems of control.

57, 75 and 179, for bridged-insulated-rail-joint systems.

167+, and all subclasses noted in the search Notes appended thereto, for cab and control features.

49 Intermittent contact:

This subclass is indented under subclass 47. Systems in which an electric current is transmitted from the track into the cab or a local cab-circuit is closed by means of so-called “ramp rails” or intermittent contact plates or rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.

39, 46, 48 to 53, and 60, for line-wire systems of control.

56, 69+, 74, 85, 92, 195, 229, and 233+, for other systems characterized by an intermittent contact similar to that in this subclass.

167+, and all subclasses noted in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+ for devices for cleaning ice, snow, and dirt from continuous and intermittent electrical contacts.

50 Current characteristic:

This subclass is indented under subclass 46. Systems in which the distant signal is actuated or controlled by changes in the direction of current-flow or in some other characteristic or the current in a circuit other than the track-circuit.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
38, 44, 45 and 60, for current characteristic control.
39, 46 and 60+, for line-wire systems of control.

51 Overlapped blocks:

This subclass is indented under subclass 46. Systems in which the signal at the entrance to any block is retained in its danger position until after a train has entered the next block ahead and has proceeded therein a certain predetermined distance.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
39, 46 to 50, 52, 53, and 60, for line-wire systems of control.

52 Home and distant:

This subclass is indented under subclass 46. Systems in which two signals, “home” and “distant” so called, usually having a common support, are placed at the entrance to each block and respectively indicate the condition of the block about to be entered and or the next block ahead.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 128+, and 130, for track-circuit systems.
33, 38, 39, 44+, 51, 224, and 481, for motors for actuating home and distant signals.
39, 46+, 53 and 60, for line-wire systems of control.

53 Three position:

This subclass is indented under subclass 46. Systems in which a so-called “three-position signal” is placed at the entrance to each block and indicates by its three different aspects the occupancy of the first or second blocks ahead or that both blocks are clear.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
33, 38, 39, 44, 45, 51, 223, and 479, for detail of three-position signal mechanism.
39, 46 to 52, and 60, for other methods of line-wire distant control.

54 Single block:

This subclass is indented under subclass 41. Systems in which the blocks are independent, trains only controlling the devices of the blocks in which they are running.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
40, for single-block systems.

55 Cab signal or train control:

This subclass is indented under subclass 54. Systems in which the traffic-controlling devices are placed upon the car or train.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
40, for single-block systems.
167+, and all subclasses referred to in the search notes appended thereto, for details of the cab and control mechanism.

56 Intermittent contact:

This subclass is indented under subclass 55. Systems in which intermittent contacts or so-called “ramp-rails” are used for establishing electrical connection with the moving train.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+ 95, 98, 128+, and 130, for track-circuit systems.
40, for single-block systems.
49, 69, 70, 71, 74, and 195, for intermittent contacts controlling cab-signals and train movements.
85, and 92, for such contacts used with other types of block systems.
167+, and all subclasses given in the search notes appended thereto, for cab and control features.
229, 233, 234, and 235, for intermittent contacts in motor systems.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+ for devices for cleaning ice, snow, and dirt from continuous and intermittent electrical contacts.

57 Bridged insulated rail joint:

This subclass is indented under subclass 55. Systems in which an electric circuit upon the train, normally closed through the track rail or rails, is broken by the passage of the car over one or move insulated rail-joints, the break in the rails being electrically closed under conditions of safety.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
40, for single-block systems.
48, 75 and 179, for bridged-insulated-rail-joint systems.
167+, and all subclasses given in the search notes appended thereto, for cab and control features.

58 Direct-current, normally open, track circuit:

This subclass is indented under subclass 28. Systems in which a direct continuous current used for actuating and controlling traffic-controlling devices, normally open and derived from a source not on the train, uses both traction-rails in series as conductors in opposite directions for the major portion of the block.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 95, 98, 128+, and 130, for track-circuit systems.
449, 450 and 451, for tie-bars with insulated joints.

SEE OR SEARCH CLASS:

238, Railways: Surface Track, subclasses 14.1+, for the structure of rail-bonds and subclass 152, for insulated rail-joints.

59 Cab signal or train control:

This subclass is indented under subclass 58. Means are provided for actuating audible or visual signals upon the cab or train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

7+, for the transmission of teles:graphic and telephonic communications to and from moving cars.
26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

60 Distant-signal control:

This subclass is indented under subclass 58. Means are provided for the control of distant or three-position signals or for the control of a single signal from a plurality of blocks.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+, 95, 98, 128+, and 130, for track-circuit systems.
35+, 38, 39, 44+, and 46+, for systems of distant-signal control.

61 Superimposed propulsion current:

This subclass is indented under subclass 28. Propulsion-current is superimposed upon the current controlling the signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26, 34+, 41+, 58+ 95, 98, 128+, and 130, for track-circuit systems.

35, 36, 37, 42, and 43, for propulsion-current superimposed upon track-circuits.

62 Cab signal or train control:

This subclass is indented under subclass 28. Systems in which means are provided for actuating traffic-control devices upon the cab or train.

(1) Note. The use of fluid-pressure means upon the cab or train for operating or controlling brake and throttle valves or electrical controllers or for operating brakes and audible or visual signals is not considered as combined fluid-pressure and electric in the sense of subclass 93, and therefore systems using such means have been herein included.

SEE OR SEARCH THIS CLASS, SUBCLASS:

7+, for systems which disclose or claim means for the teles:graphic or telephonic transmission of written matter or speech.

31, for automatic-stop systems in which electrical propulsion-current is cut out from trolly-wire or third-rail sections.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

63 Inductive:

This subclass is indented under subclass 62. Systems in which an inductive relation is established between the train and the line, no physical connection being maintained between them.

SEE OR SEARCH THIS CLASS, SUBCLASS:

8, and 194, for inductive systems.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

336, Inductor Devices, appropriate subclasses for the structure of transformers and inductive reactors.

64 Train-carried current supply:

This subclass is indented under subclass 62. Systems in which the source of current is a battery or dynamo placed upon the train.

(1) Note. Systems in which train-batteries actuate local train-circuits or supply current used for purposes other than signal actuation or control are not here included, but will be found in the appropriate line-battery classes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

86, for train-battery systems from which the cab and control feature is absent.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+, for devices for cleaning ice, snow and dirt from continuous and intermittent electrical contacts.

307, Electrical Transmission or Interconnection Systems, subclasses 9.1+ for electrical systems mounted on a vehicle.

322, Electricity: Single Generator Systems, appropriate subclasses, for miscellaneous single-generator systems. See subclass 1 for portably mounted single-generator systems.

65 Multiple continuous contacts:

This subclass is indented under subclass 64. Systems in which continuous contacts are maintained by shoes, brushes, and their equivalents between two or more metallic conductors extending parallel to the track. The traction-rails may or may not form part of the circuit.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9+, 66-68, 73, and 86, for continuous-contact systems.

167+, and all subclasses mentioned in the search notes appended thereto, for cab control and features.

SEE OR SEARCH CLASS:

191, Electricity: Transmission to Vehicles, appropriate subclasses, for details of the electric conductors and collectors.

66 Sectional:

This subclass is indented under subclass 65. Systems in which the continuous-contact rails, the traction-rails, or both, are divided into sections or blocks insulated from each other.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9+, 65, 67, 68, 73, and 86, for continuous-contact systems.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

67 Single continuous contact:

This subclass is indented under subclass 64. Systems in which a single continuous contact is maintained by shoes, brushes, or other equivalents between the moving vehicle and a metallic conductor extending parallel with the track.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9+, 65, 66, 68, 73, and 86, for continuous-contact systems.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

191, Electricity: Transmission to Vehicles, appropriate subclasses, for details of the electric conductors and collectors.

68 Sectional:

This subclass is indented under subclass 67. Systems in which the conductor, the traction-rails, or both, are divided into sections or blocks insulated from each other.

SEE OR SEARCH THIS CLASS, SUBCLASS:

10, and 71, for traction-rail return.

66, for two or more independent single-continuous-contact-sectional systems upon the same train, the same being, in effect, mere duplications of systems otherwise properly classifiable in this subclass.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

69 Intermittent contact:

This subclass is indented under subclass 64. Systems in which the train-current passes out by or returns through the medium of one or more intermittent contacts or “ramp-rails”, so-called.

SEE OR SEARCH THIS CLASS, SUBCLASS:

49, 56, 70, 71, 74, 85, 92, 122, 195, 229, 233, 234, and 235, for intermittent-contact systems from which cab and control features are absent.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

70 Rail circuit:

This subclass is indented under subclass 69. Systems in which the traction-rails form part of the circuit, the current passing through them in both directions.

SEE OR SEARCH THIS CLASS, SUBCLASS:

49, 56, 69, 74, 85, 92, 122, 195, 229, 233, 234, and 235, for intermittent-contact systems from which cab and control features are absent.

71 Rail return:

This subclass is indented under subclass 69. Systems in which the traction-rails form part of the circuit, the current passing through them in one direction only.

SEE OR SEARCH THIS CLASS, SUBCLASS:

49, 56, 69, 70, 85, 92, 122, 195, 229, 233, 234, and 235, for intermittent-contact systems from which cab and control features are absent.

72 Propulsion-current signaling:

This subclass is indented under subclass 62. Systems in which the electrical energy is derived from the propulsion-current.

SEE OR SEARCH THIS CLASS, SUBCLASS:

81+, for propulsion-current signaling.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

73 Continuous contact:

This subclass is indented under subclass 62. Systems in which the current is conducted from the track through the cab or car by means of a continuous contact maintained with one or more line conductors, not traction-rails, for the major portion of the block.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9+, 65+, 67+, and 87, for continuous-contact systems.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+, for devices for cleaning ice, snow, and dirt from continuous and intermittent electrical contacts.

191, Electricity: Transmission to Vehicles, appropriate subclasses, for details of the electric conductors and collectors.

74 Intermittent contact:

This subclass is indented under subclass 62. Systems in which the current is conducted from the track through the cab or car by means of intermittent contacts, periodically established, with contact-plates, ramp-rails, or similar devices other than traction-rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:

56, 69, 70, 71, 85, 92, 195, 229, 233, 234, and 235, for systems with intermittent contacts from which cab signal and train-control features are absent.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+ for devices for cleaning ice, snow and dirt from continuous and intermittent electrical contacts.

75 Bridged insulated rail joint:

This subclass is indented under subclass 62. Systems in which an electrical circuit upon the train, normally closed through the track rail or rails, is broken by the passage of the car over one or more insulated rail-joints, the break in the rails being electrically closed under conditions of safety.

SEE OR SEARCH THIS CLASS, SUBCLASS:

48, 57 and 179, for systems disclosing bridged-insulated rail-joints or analogous features.

76 Track trip:

This subclass is indented under subclass 62. Systems includes electrically-actuated track-detents or obstacles mechanically actuate mechanism on moving trains, such as brake-valves, levers, circuit-closers, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167+, and all subclasses mentioned in the search notes appended thereto, for track-detents used in various systems of block, frequently for actuating the cab and control mechanism.

201+, for the structure of the track-detent.

77 Counting in and out:

This subclass is indented under subclass 28. Counting and cancelling mechanism, usually of the step-by-step variety, is provided, whereby as many trains or car-wheels as enter must leave the block before the signal can be restored to safety.

SEE OR SEARCH THIS CLASS, SUBCLASS:

19, 72, 81, and 247, for systems using propulsion-current, but lacking counting and canceling devices.

19, 78+ and 247, for counting mechanism.

246+, and subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

78 Ratchet wheel:
This subclass is indented under subclass 77. Subject matter having ratchet-wheels which are actuated and controlled by pawls or escapements.

SEE OR SEARCH THIS CLASS, SUBCLASS:
19, 72, 77+, and 247, for details of the counting and canceling devices.

79 Double opposed pawls:
This subclass is indented under subclass 78. Subject matter having a single ratchet-wheel which is actuated by two opposed pawls moving in the same plane and tending to turn it in opposite directions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
19, 72, 77+, and 247, for details of the counting and canceling devices.

80 Parallel teeth:
This subclass is indented under subclass 79. Subject matter having two ratchet-wheels which are placed in parallel on the same arbor or a single wheel having two sets of teeth in parallel is actuated by opposed pawls to produce rotation in opposite directions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
19, 72, 77+, and 247, for details of the counting and canceling devices.

81 Propulsion-current signaling:
This subclass is indented under subclass 28. Subject matter having the propulsion-current used to actuate or control the signals of the block.

SEE OR SEARCH THIS CLASS, SUBCLASS:
72, for propulsion-current signaling.

82 Rotary controller:
This subclass is indented under subclass 81. Subject matter having one or more circuit-controllers continuously rotated in one direction, which are actuated either electrically or mechanically, but which do not perform a counting and canceling function.

SEE OR SEARCH THIS CLASS, SUBCLASS:
246+, and the subclasses mentioned in the search notes appended thereto for various types of circuit-controllers.

83 Car-actuated controller:
This subclass is indented under subclass 81. Subject matter in which circuit-controllers are provided which are mechanically actuated by the moving car.

SEE OR SEARCH THIS CLASS, SUBCLASS:
72, 77, and appropriate indented subclasses, and 81, for systems making use of propulsion-current.
246+, and the subclasses mentioned in the search notes appended thereto, for the structure of the controller.

84 Trolley or plow:
This subclass is indented under subclass 83. Subject matter having circuit-controllers actuated by the trolley-arm plow or other current-collector.

SEE OR SEARCH THIS CLASS, SUBCLASS:
72, 77, and appropriate indented subclasses, and 81, for systems making use of propulsion-current.

85 Intermittent contact:
This subclass is indented under subclass 81. Subject matter having traffic-controlling devices actuated or controlled by circuits closed through intermittent contacts established between the moving vehicle and stationary conductors.

SEE OR SEARCH THIS CLASS, SUBCLASS:
56, 69, 74, 92, and 195, for systems using intermittent contacts.
77+, for systems making use of the propulsion-current.
229, 233, 234+, 254, and 255, for structure of such contacts.

SEE OR SEARCH CLASS:
104, Railways, subclasses 279+, for devices for cleaning ice, snow, and

dirt from continuous and intermittent electrical contacts.

86 Train-carried current supply:
This subclass is indented under subclass 28. Systems in which the source of the current is carried upon the train.

SEE OR SEARCH THIS CLASS, SUBCLASS:
9+, 65, 68, and 73, for continuous-contact systems.
64+, for train-current-supply systems.

87 Line-current supply:
This subclass is indented under subclass 28. Systems in which the source of the current is not carried on the train.

88 Intermediate signal:
This subclass is indented under subclass 87. Systems in which a plurality of signals, usually electric lamps, are displayed within the block.

SEE OR SEARCH THIS CLASS, SUBCLASS:
246+, and the subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

89 Short sectional rail closure:
This subclass is indented under subclass 87. Systems in which the circuit for actuating or controlling the signals is opened of closed by car-wheels bridging two short parallel insulated track-sections.

SEE OR SEARCH THIS CLASS, SUBCLASS:
129, for short-sectional-rail-closure systems.

SEE OR SEARCH CLASS:
104, Railways, subclasses 279+, for devices for cleaning ice, snow and dirt from continuous and intermittent electrical contacts.

90 Car-actuated controller:
This subclass is indented under subclass 87. Systems in which the circuit for actuating or controlling the signals is opened or closed by controllers actuated by the energy of the moving train.

SEE OR SEARCH THIS CLASS, SUBCLASS:
246+, and the subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

91 Relay:
This subclass is indented under subclass 90. Systems in which the car-actuated controllers governs the action of one or more controllers of other circuits, which perform the function of a relay.

92 Intermittent contact:
This subclass is indented under subclass 87. Systems in which the circuit is closed by devices carried by the train, which make electrical connection with short rails, contact-plates, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
49, 56, 69, 70, 71, 74, 85, 195, 229, 233, 234, 235, and 254, for intermittent-contact systems.

SEE OR SEARCH CLASS:
104, Railways, subclasses 279+, for devices for cleaning ice, snow and dirt from continuous and intermittent electrical contacts.

93 Combined fluid pessure and electric:
This subclass is indented under subclass 27. Subject matter having electrical and fluid-pressure means used in combination for the actuation and control of roadway-signals, track-detents, contacts, and similar devices, irrespective of the means employed upon the train for actuating the cab and control mechanism.

SEE OR SEARCH THIS CLASS, SUBCLASS:
140+, for interlocking mechanism actuated by electric fluid-pressure means.
257+, and the subclasses mentioned in the search notes appended thereto, for fluid-pressure-motor structure.
258, and 259, for electric fluid-pressure motors for actuating switches and signals generally.

94 **Cab signal or train control:**
This subclass is indented under subclass 93. Subject matter in which means are provided for actuating signals upon the train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 140, and 141, for interlocking mechanism actuated by electric fluid-pressure means.
- 167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
- 257+, and all subclasses mentioned in the search notes appended thereto, for fluid-pressure-motor structure.
- 258, and 259, for electric fluid-pressure motors for actuating switches and signals generally.

95 **Track-circuit control:**
This subclass is indented under subclass 93. Systems which are controlled through track-circuits.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 26, 34+, 41+, 58+, 70, 94, 98, 128, 129, and 130, for track-circuit control.
- 257+, and all subclasses mentioned in the search notes appended thereto, for fluid-pressure-motor structure.

96 **Electromechanical:**
This subclass is indented under subclass 27. Subject matter having electrical and mechanical means used in combination for the actuation and control of roadway-signals, detents, and other track devices, irrespective of any means employed upon the train for actuating cab and control mechanism. The mechanical means may or may not utilize the energy of the moving vehicle.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 97, through 99 and 263, for electromechanical systems.
- 102, 103 and 262, for mechanical-motor systems.

97 **Cab signal or train control:**
This subclass is indented under subclass 96. Subject matter having means provided for actuating audible or visible signals upon the car or train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 96, 98, 99, and 263, for electromechanical systems.
- 102, 103 and 262, for mechanical-motor systems.
- 167+, and subclasses specified in the notes thereto for cab and control features.

98 **Track-circuit control:**
This subclass is indented under subclass 96. Subject matter having track circuits to control the traffic-controlling devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 26, 34+, 41+, 58+, 70, 95, 128, 129, 130, and 160, for the control of signals through track-circuits.
- 96+, and 263, for the electromechanical actuation of signals.
- 102, 103 and 262, for mechanical-motor systems.

99 **Clockwork:**
This subclass is indented under subclass 96. Subject matter having clockwork or similar trains of gearing which are made use of and are provided with electrically-actuated escapement or latch-release devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 96, 97, 98, and 263, for mechanical switch and signal motors electrically controlled.
- 102, 103 and 262, for mechanical-motor systems.
- 110, and 262+, for signals actuated by clockwork.

100 **Fluid pressure:**
This subclass is indented under subclass 27. Subject matter having fluid-pressure means used for actuating and controlling roadway-signals, detents, and other track devices, irrespec-

tive of the means employed upon the train for actuating the cab and control mechanism.

SEE OR SEARCH THIS CLASS, SUBCLASS:

93+, 116, 139, 142, 257+, and 361, for fluid-pressure actuation of signals.

140, 141, 258, and 259, for electrically-controlled, for fluid pressure actuation of signals.

257, see search notes appended thereto, for fluid-pressure structure.

101 Cab signal or train control:

This subclass is indented under subclass 100. Subject matter having means provided for actuating audible or visible signals upon the cab or train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

257+, and all subclasses mentioned in the search notes appended thereto, for fluid-pressure-motor structure.

102 Mechanical:

This subclass is indented under subclass 27. Subject matter having roadway-signals, detents, and other track devices actuated and controlled solely by mechanical means, usually involving direct contact with the moving train or some device attached thereto, and irrespective of the means employed upon the train, if any, for actuating the cab and control mechanism.

SEE OR SEARCH THIS CLASS, SUBCLASS:

110, 113 and 262, for mechanical systems.

201+, for the track-detent.

103 Cab signal or train control:

This subclass is indented under subclass 102. Subject matter having means provided for actuating audible or visible signals upon the cab or train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

102+, and all subclasses mentioned in the search notes appended thereto, for mechanical-motor systems.

167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

104 Manual:

This subclass is indented under subclass 20. Subject matter having traffic-controlling devices actuated either by manual power or by manually-controlled power mechanism.

(1) Note. So-called “manual-block systems” are here included.

SEE OR SEARCH THIS CLASS, SUBCLASS:

21, and appropriate indented subclasses, for systems of manual actuation in combination with automatic signals.

112, and 117, for manual systems at grade-crossing.

118, and 119, for manual systems at drawbridges.

143, through 158, for manual systems of interlocking.

105 Electric:

This subclass is indented under subclass 104. Subject matter having signals either actuated or controlled by electric means or having electricity used for performing some function other than transmitting telephonic or code messages to the signalmen.

SEE OR SEARCH THIS CLASS, SUBCLASS:

22+, for electromanual systems automatically controlled by the trains or cars.

104, for systems which are otherwise manual and which use electrical means for the purposes of communication between signalmen in cabins. Also see search notes appended thereto.

106 Lock and block:

This subclass is indented under subclass 105. Subject matter having a signal which cannot be cleared at one end of the block until it has been

electrically unlocked by the operator at the other end.

(1) Note. The so-called "manual lock and block systems" are here included.

SEE OR SEARCH THIS CLASS, SUBCLASS:
25, 26 and 131+, for locking features.

107 Recorders:
Subject matter under subclasss 20 having devices which are used for permanently recording the movements of trains, signals, or other movable units or indicating the disregard of signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:
123, and 185, for recording systems.

SEE OR SEARCH CLASS:
346, Recorders, appropriate subclasses for recorder structure.

108 TIME INDICATION, AUTOMATIC:
This subclass is indented under the class definition. Systems and devices which include means for giving a time indication concerning trains which have previously passed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
109, 110 and 123, for time-indication systems.

109 Flow retarded:
This subclass is indented under subclass 108. Systems and devices in which the retarded flow of gases, liquids, or finely-divided particles of solids is utilized for giving the time indication.

110 Time limit expired:
This subclass is indented under subclass 108. Systems and devices in which a visual indicator set by the last train which passed is suddenly obscured or reset at the expiration of a predetermined time-limit.

SEE OR SEARCH THIS CLASS, SUBCLASS:
96, 98, 102, 108, 109, 248, and 262, for systems and devices more or less analogous.

111 GRADE-CROSSING TRACK PROTECTION:
This subclass is indented under the class definition. Systems and devices which include any arrangement of train-controlling means--such as signals, derails, interlocking, automatic stops, etc., --designed to prevent collisions where two or more lines of railway cross at grade.

SEE OR SEARCH THIS CLASS, SUBCLASS:
118, for similar systems used at drawbridges.
125, 260, 293, and 473, and appropriate indented subclasses for signal structure.
465, and the subclasses indicated in the search notes appended thereto, for the structure of the crossing.

112 Semi-automatic:
This subclass is indented under subclass 111. Subject matter in which the train automatically cooperates with human agency in the actuation or control of the traffic devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
21+, for semi-automatic block-signaling systems.
111, 125, 260, 293, and 473, and appropriate indented subclasses for signal structure.

113 Automatic:
This subclass is indented under subclass 111. Subject matter having means actuated or controlled automatically by the approaching train and without the intervention of human agency.

SEE OR SEARCH THIS CLASS, SUBCLASS:
21, 27 and 125+, which have automatic actuation or control of the type required, for systems of automatic actuation and control.
111, 125, 260, 293, and 473, and appropriate indented subclasses for signal structure.
118, for drawbridge protection is general.

114 Electric:
This subclass is indented under subclass 113. Subject matter having electric means for the actuation or control of the traffic-controlling devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
111, 125, 260, 293, and 473, and appropriate indented subclasses, for signal structure.

115 Cab signal or train control:
This subclass is indented under subclass 114. Subject matter having means provided for giving indications upon the train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

116 Fluid pressure:
This subclass is indented under subclass 113. Subject matter having fluid-pressure means for the actuation or control of the signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:
93, 100, 101, 139, 142, 257, 271, 272, and 361, for systems using fluid-pressure means.
111, 125, 260, 293, and 473, and appropriate indented subclasses, for signal structure.

117 Cab signal or train control:
This subclass is indented under subclass 111. Subject matter having means provided for actuating audible or visual signals upon the cab or train or for stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

118 DRAWBRIDGE PROTECTION:
This subclass is indented under the class definition. System of train-controlling means designed to prevent trains and cars from running into an open drawbridge.

SEE OR SEARCH THIS CLASS, SUBCLASS:
111+, for analogous systems of grade crossing protection.
125, 260, 293, and 473, and appropriate indented subclasses for signal structure.

SEE OR SEARCH CLASS:
14, Bridges, subclasses 30, 41, 46, 55, 57, 59, 61, 63, 65, 67, and 69, for bridges having movable parts such as drawbridges and having locking devices and 49 and 50+ for gates and signals operated or controlled by the opening of the bridge.

119 Cab signal or train control:
This subclass is indented under subclass 118. Subject matter having means provided for actuating signals on approaching trains or for stopping them or controlling their motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

120 ROADWAY-DEFECT PROTECTION:
This subclass is indented under the class definition. Subject matter having signals, indicators, and train-controlling devices which are automatically set at “danger” by the occurrence of any defect in the permanent way, including bridges.

SEE OR SEARCH THIS CLASS, SUBCLASS:
111+, 118 and 220, for analogous systems.

121 Electric:
This subclass is indented under subclass 120. Subject matter having roadway-defect signals which are actuated or controlled by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

246+, and appropriate subclasses mentioned in the search notes appended thereto, for structure of the circuit-controllers.

473+, and appropriate subclasses mentioned in the search notes appended thereto, for signal structure.

122 TRAIN-POSITION INDICATION:

This subclass is indented under the class definition. Systems and devices in which the train automatically indicates its position upon the line as by lights, indicators, moving diagrams, etc.

SEE OR SEARCH CLASS:

116, Signals and Indicators, appropriate subclasses for miscellaneous nonelectrical signals.

235, Registers, appropriate subclasses for registering apparatus and systems.

123 Automatic time recording:

This subclass is indented under subclass 122. Systems in which a permanent record is automatically made at a distant station of the time at which a train passes a given point.

SEE OR SEARCH THIS CLASS, SUBCLASS:

4, 5 and 108+, for automatic-signal or time indication.

SEE OR SEARCH CLASS:

346, Recorders, appropriate subclass.

124 Train annunciators or indicators:

This subclass is indented under subclass 122. Systems in which an audible or visual indication is given, usually in a tower or station, of the approach of a train, and in some cases also of its number, its intended route, or other necessary information.

SEE OR SEARCH THIS CLASS, SUBCLASS:

107, 162 and 220, for switch and block-system signal indicators or recorders.

125 ELECTRIC AUTOMATIC HIGHWAY SIGNALS, MINE DOORS, AND GATES:

This subclass is indented under the class definition. Systems in which highway-crossing signals, gates, and mine-doors are actuated or controlled from the moving train or vehicle by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

111, 260, 293, and 473, and appropriate indented subclasses for signal structure.

221, and the appropriate indented subclasses, for the electric actuation of switches and signals other than those used at highway-crossing.

246+, and all subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

261, and 272, for gate structure.

SEE OR SEARCH CLASS:

49, Movable or Removable Closures, appropriate subclasses, for closures (gates) and closure-actuating mechanism.

126 Car-actuated controller:

This subclass is indented under subclass 125. Subject matter having car-actuated circuit-controllers located on the right of way.

SEE OR SEARCH THIS CLASS, SUBCLASS:

246, and the subclasses specified in the Notes thereto for various types of circuit-controllers.

246+, 253 and 255, for systems using circuit-controllers.

127 Gates and doors:

This subclass is indented under subclass 126. Subject matter where the actuated devices are either crossing-gates, mine-doors, or curtains.

SEE OR SEARCH THIS CLASS, SUBCLASS:

111, 125, 260, 293, and 473, and appropriate indented subclasses for signal structure.

128 Normally open track circuit:
This subclass is indented under subclass 125. Subject matter where the primary or controlling track-circuit is normally open.

SEE OR SEARCH THIS CLASS, SUBCLASS:
58+, for systems of open-track-circuit control.
111, 125, 260, 293, and 473, and appropriate indented subclasses, for signal structure.

129 Short sectional rail closure:
This subclass is indented under subclass 128. Subject matter where an open circuit is closed by the car-wheels bridging two short parallel insulated sections of the traction-rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:
89, for systems using short sectional rail-closures.
111, 125, 260, 293, and 473, and appropriate indented subclasses, for signal structure.

130 Normally closed track circuit:
This subclass is indented under subclass 125. Subject matter where the controlling track-circuit is normally closed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
26, 41, and appropriate indented subclasses, and 98, for normally closed track-circuits.
111, 125, 260, 293, and 473, and appropriate indented subclasses, for signal structure.

131 INTERLOCKING:
This subclass is indented under the class definition. Subject matter having means for actuating switches, signals, locks, derails, and similar independently-movable units of this class in such manner as to insure predetermined sequences of operation so far as they may be needed to restrain the movement of all other devices which, if actuated, would give rise to a condition of danger.

SEE OR SEARCH THIS CLASS, SUBCLASS:
25, 26 and 106, for locking in connection with block systems.
253, for switch or signal actuated controllers in which a plurality of circuits are closed or broken by the movement of the switch or signal and in which a predetermined sequence of operations is sometimes provided for.
401, for switch stands having rail lock and position indicating means.

132 Electric actuation:
This subclass is indented under subclass 131. Subject matter where electrical means are provided for actuating the movable units.

SEE OR SEARCH THIS CLASS, SUBCLASS:
22, 28, 93, 96, 105, 114, 121, 125, 193, 202, 220, and 221, and appropriate indented subclasses, for the electric actuation of signals.

133 Electric locking:
This subclass is indented under subclass 132. Subject matter having electrical means provided for actuating the locks.

SEE OR SEARCH THIS CLASS, SUBCLASS:
15, 19, 25, 26, 106, 130, and 146, and appropriate indented subclasses under subclass 131, for various types of interlocking.

134 Route locking:
This subclass is indented under subclass 133. Subject matter in which a definite route or itinerary is set up through a system of tracks by a smaller number of actuating levers or devices than would usually be required.

(1) Note. The term “program-locking” is sometimes applied to this system in foreign practice.

SEE OR SEARCH THIS CLASS, SUBCLASS:
155, 156 and 157, for rod-saving devices.

135 Return-release indication:
This subclass is indented under subclass 133. Subject matter in which the actuating lever or device is prevented by electric locks from completing its movement, and from thereby releasing the other devices which it controls, until the actuated unit is in full normal or reversed position, whereupon a return-release-indication current is sent back, unlocking the actuating-lever and either effecting or permitting the completion of its movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:
137, 138, 141, and 142, for return-release-indication.
222, for return-indication-current generation.

136 Mechanical locking:
This subclass is indented under subclass 132. Subject matter in which the locking is effected by mechanical connections between the actuating levers or devices.

(1) Note. This type of interlocking is known to the Railway Signal Association by the title “electromechanical interlocking”.

SEE OR SEARCH THIS CLASS, SUBCLASS:
147, and appropriate indented subclasses for mechanical locking.

137 Return-release indication:
This subclass is indented under subclass 136. Subject matter in which the actuating lever or device is prevented by electric locks from completing its movement, and from thereby unlocking the other devices which it controls, until the actuated unit is in full normal or reverse position, whereupon a return-release-indication current is sent back, unlocking the actuating-lever and permitting or effecting the completion of its movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:
135, 138, 141, and 142, for return-release-indication.
222, for return-indication-current generation.

138 Locked slide:
This subclass is indented under subclass 137. Subject matter in which the release-locking is applied to sliding members which actuate the circuit-closers.

SEE OR SEARCH THIS CLASS, SUBCLASS:
135, 137, 141, and 142, for return-release indication.
222, for return-indication-current generation.

139 Fluid-pressure actuation:
This subclass is indented under subclass 131. Subject matter in which fluid-pressure means are used for actuating the movable units.

SEE OR SEARCH THIS CLASS, SUBCLASS:
93, 100, 101, 116, 257, 271, 272, and 361+, for systems using fluid-pressure.

SEE OR SEARCH CLASS:
60, Power Plants, subclass 399 for a fluid- pressure actuator of general utility in which unsafeness, unreadiness or disarray prevents a manual change in the operative state of the system.
91, Motors: Expansible Chamber Type, appropriate subclasses, for the structure of the motor.
188, Brakes, subclass 153, for fluid-pressure-operated brakes applied to rail vehicles.
303, Fluid-Pressure and Analogous Brake Systems, appropriate subclasses, for systems for distributing fluid to brake motors.
418, Rotary Expansible Chamber Devices, appropriate subclasses, for rotary expansible-chamber devices, per se.

140 Electrically controlled valve:
This subclass is indented under subclass 139. Subject matter in which the units are actuated by electrically-controlled fluid-pressure means.

(1) Note. This type is known to the Railway Signal Association as “electro pneumatic interlocking”.

SEE OR SEARCH THIS CLASS, SUBCLASS:

93, 94, 95, 258, and 259, for electro-fluid-pressure systems.

SEE OR SEARCH CLASS:

303, Fluid-Pressure and Analogous Brake Systems, subclasses 15+, and 20 for railway-brakes actuated by electrically-controlled fluid-pressure means.

141 Return-release indication:

This subclass is indented under subclass 140. Subject matter in which the actuating lever or device is prevented by electric locks from completing its movement and thereby unlocking the other device which it controls, until the actuated unit is in full normal or reverse position, whereupon a return-release-indication current is sent back, unlocking the actuating-lever and permitting or effecting the completion of its movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:

135, 137, 138, and 142, for return-release indication.

222, for return-indication-current generation.

257, see search notes appended thereto, for fluid-pressure-motor structure.

142 Return-release indication:

This subclass is indented under subclass 139. Subject matter in which the actuating lever or device is prevented by electric locks from completing its movement, and from thereby unlocking the other devices which it controls, until the actuated unit is in full normal or reversed position, whereupon a return-release indication current is sent back, unlocking the actuating-lever and permitting or effecting the completion of its movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:

135, 137, 138, and 141, for return-release indication.

222, for return-indication-current generation.

257, see the search notes appended thereto, for fluid-pressure-motor structure.

143 Manual actuation:

This subclass is indented under subclass 131. Subject matter in which units are actuated by manual power transmitted from the signal-cabin by rods or cables.

SEE OR SEARCH THIS CLASS, SUBCLASS:

111, through 119, for manual interlocking at grade-crossings, and drawbridges.

144, and 145, for interlocked switchstands.

393+, for devices located at switches for their manual actuation.

489, for miscellaneous mechanism for manually operating switches or signals.

SEE OR SEARCH CLASS:

74, Machine Element or Mechanism, subclasses 469+ for miscellaneous control lever and linkage systems.

144 Signal-actuating:

This subclass is indented under subclass 131. Subject matter having switch-stands where the signal and switch do not move simultaneously, but independently, in a prearranged sequence of operation.

SEE OR SEARCH THIS CLASS, SUBCLASS:

111, through 119, for manual interlocking at grade-crossings and drawbridges.

278, 284, 290, and 393, and the appropriate indented subclasses, for switch-stand structure.

SEE OR SEARCH CLASS:

74, Machine Element or Mechanism, subclass 483 for mechanism for the interlocking of two or more levers or cranks.

145 Double lever:

This subclass is indented under subclass 144. Subject matter in which the switch stands are provided with separate levers for the switch and the target or signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

278, 284, 290, and 393+, for switch-stand structure.

SEE OR SEARCH CLASS:

74, Machine Element or Mechanism, subclass 483 for mechanism for the interlocking of two or more levers or cranks.

146 Electrical locking:

This subclass is indented under subclass 143. Subject matter in which the locking mechanism is effected by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

15, 19, 25+, 106, 133+, 139, 159, and 165, for details of electric locking.

147 Mechanical locking:

This subclass is indented under subclass 143. Subject matter in which the locking mechanism is effected by mechanical connections between the operating levers.

SEE OR SEARCH THIS CLASS, SUBCLASS:

15+, 112, 113, 116, 117, 118+, 131, 132, 136+, 139, 142, 144+, 156, 160, and 164, for details of mechanical locking.

SEE OR SEARCH CLASS:

74, Machine Element or Mechanism, subclasses 519+, and 543+, for details of hand-levers secured to quandrants by hand-actuated latches.

148 Preliminary:

This subclass is indented under subclass 147. Subject matter in which the actuation of the quandrant-latch or its equivalent completely actuates the locking mechanism before the lever can begin its movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:

136, 139 and 140, for various types of interlocking.

149 Tappets:

This subclass is indented under subclass 148. Subject matter in which a parallel system of tappet-rods, each directly connected to an operating-lever, cooperates with tappets in actuating a parallel system of locking-rods moving at right angles thereto.

SEE OR SEARCH THIS CLASS, SUBCLASS:

150, for tappet-interlocking.

150 Tappets:

This subclass is indented under subclass 147. Subject matter having locking and unlocking mechanism in which the locking and unlocking is performed by the motion of the lever itself instead of by the motion of its latch, a system of parallel tappet-rods cooperating, through tappets, with a system of parallel locking-rods moving at right angles thereto.

SEE OR SEARCH THIS CLASS, SUBCLASS:

149, for tappet-interlocking.

151 Detector bars:

This subclass is indented under subclass 147. Subject matter having devices by which any attempt to unlock and shift a switch, signal, or other movable unit of an interlocking plant is restrained by the contact, with one or more wheels of a passing car, of a movable bar longer than the greatest distance between such wheels.

SEE OR SEARCH THIS CLASS, SUBCLASS:

21, 102, 112, 113, 158, 203, 304+, 310, 311, 313, and 358, for devices of similar structure.

152 Compensators:

This subclass is indented under subclass 147. Subject matter having devices for compensating for the expansion and contraction of wires, rods and similar connections used between signals, switches, etc., and their operating means.

SEE OR SEARCH CLASS:

74, Machine Element or Mechanism, subclasses 111+ for details of intermittent-grip devices, and subclass 501.5 for constant-tension-sustaining devices for flexible cable operators.

368, Horology: Time Measuring Systems or Devices, subclass 182 for compensation devices used with pendulums.

153 Counterweight:
This subclass is indented under subclass 152. Subject matter having compensators in which the slack is taken up by means of one or more counterweights.

154 Intermittent grip:
This subclass is indented under subclass 153. Subject matter having counterweight-compensators in which the actuating-lever is normally detached from the connecting cable or rod and connected therewith by grip devices only during the period of actuation.

SEE OR SEARCH CLASS:
74, Machine Element or Mechanism, subclasses 111+, for details of intermittent-grip devices.

155 Rod-saving devices:
This subclass is indented under subclass 147. Subject matter having devices used in the mechanical actuation of switches and signals, whereby the functions of several connecting-rods are performed by a smaller number of rods.

156 Selectors:
This subclass is indented under subclass 155. Subject matter having devices for connecting single operating-levers, wheels, etc., with any one of two or more rods, cables, or operating devices used for actuating switches, signals, derailing-blocks, and other movable units of the class.

(1) Note. Selectors are often used in connection with so-called "route-indicators."

SEE OR SEARCH THIS CLASS, SUBCLASS:
5, 157, 164, and 165, for selective mechanism.

157 Electric:
This subclass is indented under subclass 156. Subject matter actuated or controlled by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
5, 156, 164, and 165, for selective mechanism.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 825+ for electric selective-signaling systems of general application.

158 Switch and lock movements:
This subclass is indented under subclass 155. Subject matter having rod-saving devices whereby the movement of one lever both actuates the switch and also either locks it, indicates or detects its motion, shifts a detector or locking bar, or performs both of these additional functions.

(1) Note. This subclass includes most of the so-called "detectors" and "point-locks" of English inter locking practice.

159 Detached locking, check locking, or key control:
This subclass is indented under subclass 131. Subject matter having mechanism spatially separated from but interlocked with the mechanism of the central tower and usually located near switches and signals, whereby they can be shifted by others than the tower operator, provided the conditions are safe for such movement, in which case the full protection of the entire interlocking system is afforded until the switches and signals are properly replaced.

(1) Note. This subclass includes the so-called "Annette's key" and similar movable devices and also what is known as "check-locking", whereby the levers in two adjacent interlocking plants are so interlocked temporarily as to permit train movements between them to be made safely against the current of traffic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
19, for staff and tablet block systems.
131, and appropriate indented subclasses.
160, for systems having means to lock the switch or signal in position upon the approach of a train.

160 Approach locking:
This subclass is indented under subclass 131. Systems, mostly electric, wherein upon the approach of a train to the switch or signal the switches, signals, or other movable elements are automatically locked in position.

(1) Note. The systems in this subclass are sometimes referred to in the art under the term “electric detectors”.

SEE OR SEARCH THIS CLASS, SUBCLASS:
25+, for semi-automatic electro manual lock-and-block signal systems.
106, for manually controlled electrically actuated lock-and-block signaling systems.

161 Retarded-release mechanism:
This subclass is indented under subclass 131. Subject matter having mechanism for preventing the reversal of a switch or signal movement until after the lapse of a definite interval of time.

SEE OR SEARCH CLASS:
70, Locks, subclasses 267 through 274, for mechanically or electrically-operated time-interval controlled locks.

162 Switch or signal indicators:
This subclass is indented under subclass 131. Subject matter having devices for indicating the position or motion of a distant switch, signal, or similar movable element.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107, 124, 135, 137, 141, 142, 162, 176, 217, 220, 253, and 476, for other switches and signals provided with indicating means.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 825+ for electric selective-signaling systems of general application, subclass 298 for signal box type signaling systems having answer back provision, and subclasses 313+ for answer-back-electric signaling systems.
346, Recorders, appropriate subclasses for recorder systems and recorders.

163 Derails:
This subclass is indented under subclass 131. Blocks or similar movable devices which can be placed upon or near the track for derailing such trains as disregard a signal.

(1) Note. Switches used as details in place of derailing-blocks are classified under the specific type of switch unless accompanied by operating mechanism especially adapted for actuating them as derails, in which case they are classified here.

SEE OR SEARCH CLASS:
104, Railways, subclasses 262+, for devices for replacing car wheels on the rails when they have been derailed.

164 SLOTTING AND CONTROL:
This subclass is indented under the class definition. Subject matter including devices which require the cooperation of two or more operators or moving elements for effecting a movement, as in clearing a signal, while any one of them can independently effect the reverse movement, as setting it to “danger”. Includes “replacers” and “reversers”, so-called, and coupling devices for disconnecting signals, switches, etc., from their operating means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
5, 156, 157, 165, for selective mechanisms.

165 Electric:
This subclass is indented under subclass 164. Subject matter which is electrically controlled in whole or in part.

166 PILOT OR SIGNAL CARS:
This subclass is indented under the class definition. Subject matter having pilot-cars and compression buffers in front of a train or car or designed to run ahead or behind the train and provided with means for operating signals upon the train, stopping it, controlling its motion, or signaling danger to other approaching cars or trains.

SEE OR SEARCH CLASS:
213, Railway Draft Appliances, subclasses 220+ for buffer structure for railway trains.

166.1 SIGNALLING BETWEEN OCCUPANTS OF A TRAIN:
This subclass is indented under the class definition. Subject matter including systems which permit a conductor, or other occupant, of a car or train to signal or communicate with the engineer, or another occupant, along the car or train.

SEE OR SEARCH THIS CLASS, SUBCLASS:
7+, for railroad-telephony systems utilized for dispatching.

SEE OR SEARCH CLASS:
379, Telephonic Communications, appropriate subclasses for telephonic communication systems which may be used for communication along a train.

167 CAB SIGNAL OR TRAIN CONTROL:
This subclass is indented under the class definition. Subject matter for the automatic actuation of signals and changeable exhibitors upon the cab or train or for stopping it or controlling its speed, usually by cooperation with means not on the train, but not disclosing a complete block system.

(1) Note. This subclass includes cooperating devices on both roadway and train, (the former including the traction-rail itself, when so used); but where all devices are located on the train this subclass and the indented subclasses are limited to means for preventing railway accidents by automatic signals or train control in cases of derailment, broken parts, improperly-adjusted parts, etc.; ordinary signaling between train occupants or train control exercised by train occupants being excluded. Such signaling will be found in the appropriate subclasses of Class 116, Signals and Indicators, and in this class (246), subclass 166.1.

(2) Note. For similar train control or cab-signaling devices in combination with block-signal systems see "Cab and control" subclasses under the preceding types of block-signal systems.

(3) Note. For motor control automatically exercised by the speed of the vehicle and without cooperating with track devices or axle-driven mechanism search the specific motor classes--e.g., 91, Motors: Expansible Chamber Type, 318, Electricity: Motive Power Systems.

SEE OR SEARCH THIS CLASS, SUBCLASS:
4, 6, 23, 47 to 49, 55 to 57, 59, 62 to 76, 94 to 97, 101, 103, 115, 117, 119, and 394, for cab signal or train control.
7, and appropriate indented subclasses, for teles:graphic or telephonic communication between the train and a roadway-office or other point not on the train.

SEE OR SEARCH CLASS:
40, Card, Picture, or Sign Exhibiting, subclasses 370 and 463+ for changeable exhibitors on the train electrically actuated or controlled by obstacles upon the track.
91, Motors: Expansible Chamber Type, (see (3) Note).
116, Signals and Indicators, subclass 28 for nonelectric means of communication between occupants of the train or vehicle. (Also see (1) Note).
178, Telegraphy, and 379, Telephonic Communications, appropriate subclasses for electrical means of communication between occupants of the train or vehicle.
293, Vehicle Fenders, subclasses 5, 6 and 7.
318, Electricity: Motive Power Systems, (see (3) Note).
340, Communications: Electrical, appropriate subclasses.
379, Telephonic Communications, (see Class 178 above).
381, Electrical Audio Signal Processing Systems and Devices, subclasses 82+ for a public-address system for a train,

and subclass 86 for other electrical one-way audio signal transmission in a train.

168 Train parting:

This subclass is indented under subclass 167. Subject matter designed for avoiding accidents by the use of automatic train-signals or train control when trains part through the breaking or uncoupling of the couplers.

(1) Note. Most of the train-signal systems of Class 116, Signals and Indicators and Class 340, Communications: Electrical, will incidentally give a signal upon the parting of a train, but even when a different kind of audible signal is given upon such parting from the signal given in the ordinary use of Class 116 or Class 340 devices, the systems are placed in those signaling classes and not here included unless there is some special modification of the mechanism for actuating this different kind of signal. Also when a train parts, brakes are usually automatically applied by the discharge of train-pipe pressure; but unless some special modification of the system is made, i.e., as when the brakes are applied on the rear and not on the front portion of the train, the devices are classified in the appropriate subclasses of Class 188, Brakes, and Class 303, Fluid-Pressure and Analogous Brake Systems, and not here included.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, all subclasses mentioned in the search notes appended thereto, for other systems having cab and control features.

SEE OR SEARCH CLASS:

116, Signals and Indicators, (See Note 1).
188, Brakes, (See Note 1).
303, Fluid-Pressure and Analogous Brake Systems, (See Note 1).
340, Communications: Electrical, (See (1) Note).

168.1 Wheel slip:

This subclass is indented under subclass 167. Subject matter including means for generating a cab.

169 Train defect:

This subclass is indented under subclass 167. Subject matter having means automatically actuated by defects in or breakage of parts of the rolling-stock or by improper adjustment of appliances, which are liable to cause disaster, such as broken wheel-flanges, fallen brake-beams, defects in running-gear and brake systems, improper coupling of air-brake pipes, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for other systems having cab and control features.

170 Derailment:

This subclass is indented under subclass 167. Subject matter having means actuated by the derailment of one or more wheels of the train.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for other systems having cab and control features.

171 Contact trips:

This subclass is indented under subclass 170. Subject matter having a trip which on derailment comes into contact with the road-bed or traction-rail.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

172 Frangible:

This subclass is indented under subclass 171. Subject matter having a frangible closure for the train-pipe of an airbrake system, broken upon derailment or other condition of danger, usually by contact with the roadway, whereby the brakes are automatically applied.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

199, for other subject matter under subclass 167 having a frangible closure for the train-pipe.

173 Inertia trips:

This subclass is indented under subclass 170. Subject matter where the control is effected by the inertia of the trip, as when the vehicle is severely jolted.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, subclass 52 for inertia operated switches.

174 Highway or station, automatic:

This subclass is indented under subclass 167. Subject matter having a signal, bell or whistle, which is automatically sounded upon the train as it approaches the high-way-crossing, station, tunnel, curve, or other place for which a signal should be given.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

175 Code signal:

This subclass is indented under subclass 174. Subject matter, the signal consists of a succession of long and short whistle-blasts or their equivalent, resembling a letter of the Morse telegraphic code.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:

178, Telegraphy, subclasses 79+ for telegraph-code transmitters.

176 Switch signals:

This subclass is indented under subclass 167. Subject matter having switches provided with means whereby signals are given upon the approaching train or the train is stopped or its speed controlled when the switch is in a dangerous position.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

177 Block entrance initiated:

This subclass is indented under subclass 167. Subject matter where the actuation of the cab signal or train-control devices is automatically prevented under prearranged conditions, for the most part those of safety, having been previously initiated by automatic means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

178 Electric or magnetic control:

This subclass is indented under subclass 177. Subject matter where the control devices are of an electric or magnetic nature.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

179 Bridged insulated rail joint:

This subclass is indented under subclass 178. Subject matter having control devices whose actuation is initiated by an electric circuit on the train normally closed through the track-rails and which is broken by the passage of the train over one or more insulated rail-joints placed at the point of initiation and which are electrically bridged or connected when the cab

signal or train-control mechanism is not to be actuated.

SEE OR SEARCH THIS CLASS, SUBCLASS:
48, 57 and 75, for the insulated-rail-joint feature.
167, and all subclasses mentioned in the search notes thereto appended, for cab and control features.

180 Cab-circuit controller:
This subclass is indented under subclass 178. Subject matter having control devices whose actuation is initiated by breaking a normally closed circuit placed on the train, which contains a circuit-controller actuated by contact with track-trips at the point of initiation.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
246, and all subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

181 Mechanical actuation:
This subclass is indented under subclass 178. Subject matter having control devices whose actuation is initiated by mechanical means, such as track-trips directly or indirectly acting upon the cab-signals and train-control devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and subclasses mentioned in the search notes appended thereto, for cab and control features.

182 Speed-control systems:
This subclass is indented under subclass 167. Subject matter having speed-control means which is inoperative below but operative above predetermined speeds when predetermined points are reached.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
206, for structure of fixed track-trips.

SEE OR SEARCH CLASS:
73, Measuring and Testing, subclasses 488+ for a speed-responsive device, per se.

183 Manual-control systems:
This subclass is indented under subclass 167. Systems in which the engineer or motorman can pass the track device without receiving the signal or having his train stopped or its speed reduced, by manually preventing the train mechanism from cooperating with the track device.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107, for recording devices in block-signaling systems.
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

184 Serivce stop:
This subclass is indented under subclass 167. Subject matter in which a “service-stop” so called, is made, as distinguished from an emergency-stop, the brakes being applied gradually and not suddenly.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

185 Recording devices:
This subclass is indented under subclass 167. Subject matter having recording devices to be used in connection with cab signal and train-control mechanism for making a record in case an employee disregards the signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107, for recording devices in block-signaling systems.
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
199, for frangible pipe-closures, the breaking of which indicates a disregard of the signals.

SEE OR SEARCH CLASS:

346, Recorders, appropriate subclasses for recording devices and systems for recording motion and position of signals.

186 Motive-power control:

This subclass is indented under subclass 167. Subject matter having means placed upon the train for controlling the motive power used for propelling the train or vehicle.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31, 182, 184, and 185, for devices not on the train whereby an electric car is deprived of propulsion-current under conditions of danger.

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

187 Electric:

This subclass is indented under subclass 186. Subject matter having electric means for controlling the motive power.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

218, and appropriate indented subclasses for electric-motor means for actuating switches or signals.

SEE OR SEARCH CLASS:

104, Railways, subclasses 295+ for external control of vehicle-carried propulsion means wherein a peculiar type of guideway is claimed (e.g., cable, model, overhead, etc.).

188 Fluid-pressure-actuated throttle:

This subclass is indented under subclass 186. Subject matter having the throttle-valve of a steam-locomotive directly actuated by fluid-pressure.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

257, and appropriate indented subclasses for fluid-motor means for actuating switches or signals.

189 Engineer's brake-valve actuation:

This subclass is indented under subclass 167. Subject matter having means provided for actuating the engineer's brake-valve instead of a train-pipe valve.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

184, 185, 186, and 190, for other engineer's-brake-valve actuation within the class definition.

190 Train-pipe-valve structure:

This subclass is indented under subclass 167. Subject matter relating to the structure of the vent-valve of the air-brake train-pipe when especially adapted to be operated or controlled by track devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

182, and 184, for other train-pipe-valve structure under subclass 167.

191 Visual cab signals:

This subclass is indented under subclass 167. Subject matter having visual signals provided which are especially adapted for use in the engine-cab or on the train.

SEE OR SEARCH THIS CLASS, SUBCLASS:

167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

182, through 190, for other systems under subclass 167 having visual cab signals.

192 Train mechanism:
This subclass is indented under subclass 167. Subject matter having devices placed on the train which cooperate with track devices in actuating cab signal and train-control mechanism.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:
40, Card, Picture, or Sign Exhibiting, subclasses 482+, for obstacle operated station and route indicators placed on moving vehicles.

193 Electric or magnetic:
This subclass is indented under subclass 192. Subject matter having train mechanism actuated or controlled by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
202, for track trips actuated or controlled by magnetic means.
249, for electric or magnetic car actuated circuit controllers.
360, for electric or magnetic train trips.

194 Inductive:
This subclass is indented under subclass 193. Subject matter where the track device acts upon the train mechanism by electric induction and without physical contact between them.

SEE OR SEARCH THIS CLASS, SUBCLASS:
8, and 63, for inductive block-signaling systems.
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:
336, Inductor Devices, appropriate subclasses for the structure of transformers and inductive reactors.

195 Intermittent contact:
This subclass is indented under subclass 193. Subject matter having intermittent contacts or so-called “ramp-rails” used for conducting electric current from the roadway to the vehicle.

SEE OR SEARCH THIS CLASS, SUBCLASS:
49, 56, 69+, 74, 85, 92, 122, 229+, and 233+, for other systems and devices within the class definition having intermittent-contact systems.
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

SEE OR SEARCH CLASS:
40, Card, Picture, or Sign Exhibiting, subclasses 463+, for circuits on trains completed through intermittent-contact devices on the track.
104, Railways, subclasses 279+, for devices for cleaning ice, snow and dirt from continuous and intermittent electrical contacts.

196 Cab-circuit controller:
This subclass is indented under subclass 193. Subject matter having circuit-controlling devices upon the train for opening or closing train-circuits are actuated by track devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and all subclasses referred to in the search notes appended thereto, for cab and control features.
246, and all subclasses mentioned in the search notes appended thereto, for various types of circuit closers.

SEE OR SEARCH CLASS:
40, Card, Picture, or Sign Exhibiting, subclasses 463+, for circuit-controllers on cars actuated by track devices.
104, Railways, subclasses 117.1, and 295+, for circuit controllers on trains actuated by trips or other devices on or adjacent the track or guideway when claimed in combination with a peculiar type of track or guideway (e.g., cable, model, overhead, etc.).

197 Magnetically actuated:
This subclass is indented under subclass 196. Subject matter having the train mechanism actuated from the roadway by magnetic means and without physical contact between the train-trip and track-detent.

SEE OR SEARCH THIS CLASS, SUBCLASS:
8, 63, 194, 202, 249, and 265, for other inductive systems within the class definition.
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
246+, and all subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

198 Single-direction actuation:
This subclass is indented under subclass 192. Subject matter having the train mechanism actuated only when the car or train is moving forward and not when moving backward.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167+, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
250, and 298, for single-direction actuation.

199 Frangible:
This subclass is indented under subclass 192. Subject matter having frangible devices, usually closures, for train-pipes which are broken by contact with track-detents and so either vent the train-pipe of the air-brake system or actuate stop or signal mechanism, their fracture indicating that a signal has been disregarded.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107, 123 and 185, for recording devices indicating the disregard of signals.
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
172, for frangible pipe-closures which are broken by the derailment of one or more wheels.

200 Lever actuated:
This subclass is indented under subclass 192. Subject matter having a lever carried by the train moved by contact with a track-trip.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
308, 339, 341, 352, 353, 354, 355, and 365, for other lever actuation within the class definition.

201 Track trips:
This subclass is indented under subclass 167. Devices placed upon the track and which cooperate with mechanism upon the train in actuating signals thereupon or stopping it or controlling its speed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
76, 297 and 322, and appropriate indented subclasses, for other track devices within the class definition.
167, and all subclasses mentioned in the search notes appended thereto, for cab and control features.

202 Electric or magnetic:
This subclass is indented under subclass 201. Track-trips actuated or controlled by electrical or magnetic means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
300, for automatic electric actuation by track mechanism of signals and gates.

203 Pivoted:
This subclass is indented under subclass 201. Track-trips composed of a single pivoted member.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, 341+, 344+, and 351+, for automatic switch actuation by means of pivoted members.

204 Vertical motion:
This subclass is indented under subclass 201. Track-trips moving vertically into operative position.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167+, for lower number than 201, and all subclasses mentioned in the search notes appended thereto, for cab and control features.
307, 310 and 313, for automatic signal or gate actuation controlled by means of similar mechanism.
351+, for automatic switch actuation controlled by means of similar mechanism.

205 Lateral motion:
This subclass is indented under subclass 201. Track-trips moving laterally into operative position.

206 Fixed:
This subclass is indented under subclass 201. Track-trips having no moving parts and permanently fixed in operative position.

SEE OR SEARCH THIS CLASS, SUBCLASS:
182, for fixed track-trips in speed-control systems.

207 Portable:
This subclass is indented under subclass 201. Portable track-trips without moving parts for use in emergencies by trainmen and others and which can be temporarily secured in operative position at any point required.

SEE OR SEARCH THIS CLASS, SUBCLASS:
477, for means of attachment of visual signals to the track.

208 CAR-DISPLAYED CROSSING SIGNALS:
This subclass is indented under the class definition. Signals, usually visual, displayed upon or given from a standing or moving car or train to warn those attempting to cross the track behind it that a car is approaching from the opposite direction.

SEE OR SEARCH CLASS:
116, Signals and Indicators, subclass 30 for car and train markers.

209 PASSENGERS' STATION SIGNALS:
This subclass is indented under the class definition. Station-signals for the use of passengers in signaling for stopping trains, usually provided with means by which they are automatically reset when the train departs.

SEE OR SEARCH THIS CLASS, SUBCLASS:
14+, for station, block or train-order signals.
473+, for miscellaneous signal structure within the class definition.

210 TORPEDO MECHANISM:
This subclass is indented under the class definition. Subject matter having means actuated by the movement of a switch, signal, drawbridge, etc., for placing detonating signals where a train can explode them.

SEE OR SEARCH THIS CLASS, SUBCLASS:
487, for the structure of the detonating signal (e.g., torpedo).

211 Electric:
This subclass is indented under subclass 210. Subject matter where the means is electrically-actuated.

212 Magazine:
This subclass is indented under subclass 210. Subject matter having a plurality of torpedoes stored in a magazine.

SEE OR SEARCH CLASS:
221, Article Dispensing, appropriate subclasses for article dispensers not otherwise provided for, including many in which the source of supply is a magazine for the articles.

213 Vertical:
This subclass is indented under subclass 212. Subject matter having the torpedoes fed by gravity from a vertical magazine.

214 Rotary:
This subclass is indented under subclass 212. Subject matter having a rotary magazine for the storage of the torpedoes.

SEE OR SEARCH CLASS:
221, Article Dispensing, subclasses 113 and 119+ for rotatably mounted article dispensing structures not otherwise provided for, and see the search notes thereto.

215 Car attached:
This subclass is indented under subclass 210. Subject matter having car-attached mechanism for placing the torpedo upon the rail while the car is in motion.

216 Hand placing devices:
This subclass is indented under subclass 210. Hand-held mechanism for placing torpedoes upon the track from the rear platform of a moving car.

217 AUDIBLE SWITCH AND SIGNAL INDICATORS:
This subclass is indented under the class definition. Audible indicators, such as bells and torpedoes, indicating that visual signals or switches are at the danger position or that dangerous conditions exist ahead.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167+, for cab signals placed upon the train.
210+, for mechanism for placing torpedoes upon the tracks in response to the movement of a switch signal or drawbridge.

218 ELECTRIC ACTUATION:
This subclass is indented under the class definition. Systems and mechanism for the electrical actuation of switches, signals and other elements of the class.

219 Control circuits:
This subclass is indented under subclass 218. Circuits and systems of circuits especially adapted for controlling the operation of switch and signal motors, but not equivalent to a complete block, crossing, or other system.

220 Switch signals:
This subclass is indented under subclass 218. Subject matter, having signals which are electrically controlled or actuated for indicating the position of track-switches.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107, 122+, 162, 176, 217, and 476, for signals and indicators.
111+, 118+, 120+, and 476, for related systems and devices.

221 Motor systems:
This subclass is indented under subclass 218. Subject matter having electric-motor means placed upon the roadway and especially adapted for actuating switches, signals, and other similar movable elements of this class.

222 Return-indication-current generation:
This subclass is indented under subclass 221. Subject matter whereby when the switch or signal movement has been accomplished a return-indication current is generated and sent back to the actuating devices to operate indicators, release operating-levers, locks, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
135, 137+, 141, and 142, for other devices and systems having means for indicating the operation of a switch or signal.

223 Three-position signals:
This subclass is indented under subclass 221. Subject matter especially adapted for actuating three-position signals.

SEE OR SEARCH THIS CLASS, SUBCLASS:
38, 44 and 45, for so-called “wireless” controls” in block-signaling systems.
39, and 46+, for line-wire control in block signaling systems.
53, for details of three-position-signal actuation in block signaling systems.
60, for general schemes of three-position-signal control.
224, for motor means for actuating home and distant signals upon the same mast.
479+, for the structure of semaphores.

224 Home and distant signals:
This subclass is indented under subclass 221. Subject matter especially adapted for the operation of two signals- a home and a distant-placed upon the same mast.

SEE OR SEARCH THIS CLASS, SUBCLASS:
33, 38, 39, 44, and 46+, for block-signaling systems having means for controlling home and distant signals.
481, for the home and distant semaphore, per se.

225 Reciprocating armature:
This subclass is indented under subclass 221. Subject matter in which the motor armature reciprocates or oscillates in a substantially straight line.

SEE OR SEARCH CLASS:
310, Electrical Generator or Motor Structure, subclasses 15+ for reciprocating electrical motors or generators.
318, Electricity: Motive Power Systems, subclasses 119+ for systems for controlling reciprocating or oscillating electric motors.

226 Controller-actuated switches:
This subclass is indented under subclass 225. Subject matter having means for actuating track-switches by manipulation of the controller of an electrically-propelled car, current being either used or cut out, while passing an insulated section of third rail or trolley-wire connected to the switch-motor.

SEE OR SEARCH THIS CLASS, SUBCLASS:
415+, and all subclasses mentioned in the search notes appended thereto, for switch structure.

227 Opposed magnets:
This subclass is indented under subclass 226. Subject matter in which an armature or double core of the motor reciprocates between two opposed magnets or solenoids.

SEE OR SEARCH THIS CLASS, SUBCLASS:
231+, for similar motor actuation of switches where the motor is not controller actuated.

228 Circuit changers:
Subject matter under subclasss 227 having a circuit-changer which is moved electrically or mechanically.

SEE OR SEARCH THIS CLASS, SUBCLASS:
232, and 242, for similar motor actuation of switches where the motor is not controller-actuated.
246+, and all subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

SEE OR SEARCH CLASS:
361, Electricity: Electrical Systems and Devices, subclasses 245+ for polarity reversing.

229 Tandem contacts:
This subclass is indented under subclass 227. Subject matter in which two successive or tandem contacts or insulated sections of track or trolley-wire are connected to the two magnets or solenoids.

SEE OR SEARCH THIS CLASS, SUBCLASS:
233, for similar subject matter where tandem-contact switches are used.

230 Alternate throw:
This subclass is indented under subclass 226. Subject matter in which each motion of a reciprocating member alternately throws the track-switch first in one direction and then in the other.

SEE OR SEARCH THIS CLASS, SUBCLASS:
236, 327, 328, 342, 347, 348, 350, and 354, for other alternate-throw switch or signal actuation and for similar devices in this class.

231 Opposed magnets:
This subclass is indented under subclass 225. Subject matter in which an armature or double core moves between two opposed electromagnets or solenoids.

SEE OR SEARCH THIS CLASS, SUBCLASS:
227+, for similar subject matter having controller-actuated switches.

232 Circuit changers:
This subclass is indented under subclass 231. Subject matter having devices by which the circuit connections are changed during or at the completion of the given movement.

SEE OR SEARCH THIS CLASS, SUBCLASS:
228, and 242, for other circuit-changer systems in this class.
246+, and all subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

SEE OR SEARCH CLASS:
361, Electricity: Electrical Systems and Devices, subclasses 245+ for polarity reversing.

233 Tandem contacts, switches:
This subclass is indented under subclass 231. Subject matter for switches provided with and which have a separate contact device for each magnet, the same being arranged in tandem or succession, usually in front of the switch to be actuated.

SEE OR SEARCH THIS CLASS, SUBCLASS:
229, for similar tandem-contact systems which have controller-actuated switches in this class.

234 Parallel contacts, switches:
This subclass is indented under subclass 231. Subject matter for switches and which have a pair of contact plates, conductors, or ramp-rails (one for each magnet) placed together in parallel in front of the switch, and provided with means on the car for making electrical connection with either one of same, as desired.

SEE OR SEARCH THIS CLASS, SUBCLASS:
49, 56, 69 to 71, 74, 85, 92, 195, 229, 233, and 235, for other systems using intermittent contacts in this class.
246+, and all subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

235 Circuit controller:
This subclass is indented under subclass 234. Subject matter for switches and having an electric switch or shunt circuit controller mechanism on the car, whereby the proper solenoid or magnet may be energized.

236 Alternate throw:
This subclass is indented under subclass 225. Subject matter having mechanical means arranged so that each motion of a reciprocating member alternately throws the track-switch first in one direction and then in the other.

SEE OR SEARCH THIS CLASS, SUBCLASS:
230, 327, 328, 342, 347, 348, 350, and 354, for other alternate-throw mechanism and similar devices in this class.

237 Fly-back:
This subclass is indented under subclass 225. Subject matter in which the elements actuated are set and held against gravity or a spring, which restores them to their original position upon the cessation of current.

SEE OR SEARCH THIS CLASS, SUBCLASS:
238, 239, 243, 244, 290, 291, and 310 to 321, for other fly-back systems in this class.

238 Latch or clutch release:
This subclass is indented under subclass 237. Subject matter in which the elements actuated are set and held in position against gravity or a spring by latches, clutches, or brakes, or their equivalents, which are released by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

237, 239, 243, 244, 290, 291, 319, 320, and 321, for other fly-back mechanism in this class.

244, 258+, 263, 300, and 325, for electric latch-release in this class.

299+, (except 300), 324 and 396, for mechanical latch-release in this class.

SEE OR SEARCH CLASS:

192, Clutches and Power-Stop Control, appropriate subclasses, for clutch structure.

239 Switches:

This subclass is indented under subclass 237. Switch-actuating mechanism of the type stated.

240 Rotary armature:

This subclass is indented under subclass 221. Subject matter in which the armature rotates or oscillates in a curvilinear path.

241 Opposed motors:

This subclass is indented under subclass 240. Subject matter in which the action of one rotary-armature motor opposes that of another.

SEE OR SEARCH THIS CLASS, SUBCLASS:

227, and 231, and appropriate indented subclasses for opposed reciprocating-armature motors.

242 Circuit changers:

This subclass is indented under subclass 240. Subject matter in which automatic means are provided for changing or modifying the circuits.

SEE OR SEARCH THIS CLASS, SUBCLASS:

228, and 232, for reciprocating-armature circuit-changer systems.

246+, and all subclasses mentioned in the search Notes appended thereto, for various types of circuit-controllers.

SEE OR SEARCH CLASS:

361, Electricity: Electrical Systems and Devices, subclasses 245+ for polarity reversing.

243 Fly-back:

This subclass is indented under subclass 240. Subject matter in which a rotary armature is set and held against gravity or a spring, which restores it to its original position upon the cessation of current.

SEE OR SEARCH THIS CLASS, SUBCLASS:

237, for similar subject matter used with a reciprocating armature.

244 Latch or clutch release:

This subclass is indented under subclass 243. Subject matter in which a rotary armature is set and held in position against gravity or a spring by latches, clutches, or brakes, or their equivalents, which are released by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

238, 258, 259, 263, 300, and 325, for electric latch and clutch release.

299, 301, 302, 324+, and 396, for mechanical latch and clutch release.

SEE OR SEARCH CLASS:

192, Clutches and Power-Stop Control, appropriate subclasses for, clutch structure.

245 Car-actuated generators:

This subclass is indented under subclass 218. Subject matter by which the energy of the moving vehicle is converted, by mechanism on the track, into electrical energy, which is used for actuating switches and signals.

SEE OR SEARCH CLASS:

310, Electrical Generator or Motor Structure, subclasses 75+ for drive mechanism for electrical generators or motors.

322, Electricity: Single Generator Systems, appropriate subclasses, for electric-generator systems.

417, Pumps, subclasses 229+, for pumps operated by a passing vehicle.

246 Car-actuated circuit controllers:

This subclass is indented under subclass 218. Subject matter in which circuit closing or breaking devices are actuated by the wheels or

tappets of moving cars, including the so-called "track instruments" and "treadles" of railway signaling.

SEE OR SEARCH THIS CLASS, SUBCLASS:

22, 24 and 77 to 80, for manually actuated circuit controllers.

72, through 80, 82 to 84, 88, 90, 91, 126, 127, 247 to 252, for circuit-controllers.

180, 196 and 197, for circuit controllers located on the moving vehicle.

228, 232, 235, 242, and 253, for circuit controllers actuated by the movement of switches or signals.

259, for circuit controllers actuated by the moving vehicle.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, appropriate subclasses, for the structure of the circuit closer or breaker.

247 Wheel or train counting:

This subclass is indented under subclass 246. Subject matter provided with mechanism, usually of the step-by-step variety, by means of which as many trains or car-wheels as enter must leave the block before the signal is restored to safety.

SEE OR SEARCH THIS CLASS, SUBCLASS:

19, and 77+, for counting mechanism.

248 Retarded action:

This subclass is indented under subclass 246. Subject matter in which the return of the circuit-controller to normal condition is retarded after the passage of the train, usually for a predetermined interval of time.

SEE OR SEARCH THIS CLASS, SUBCLASS:

108+, for time-control mechanism.

161, for time-control mechanism used in interlocking.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, subclasses 33+ for retarded-action circuit closers and breakers.

249 Electric or magnetic:

This subclass is indented under subclass 246. Subject matter in which circuit controllers are actuated in whole or in part by electric or magnetic means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

63, 194, 197, 202, and 211, for devices actuated by electric or magnetic means.

250 Single-direction actuation:

This subclass is indented under subclass 246. Subject matter in which a circuit controller is actuated by trains moving in one direction only.

SEE OR SEARCH THIS CLASS, SUBCLASS:

198, and 298, for devices actuated by cars moving in one direction only.

251 Vertically sprung rail:

This subclass is indented under subclass 246. Subject matter in which a circuit controller is actuated by the vertical yielding of the rail under the weight of the passing train.

252 Trolley or plow actuated:

This subclass is indented under subclass 246. Subject matter in which a circuit controller is supported by the trolley-wire or third rail and actuated mechanically by the current-collector.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31, 72, 81, 84, 90, 91, 126, and 246+, for circuit-controllers actuated by the wheels or other devices, not trolleys, carried by the car.

SEE OR SEARCH CLASS:

200, Electricity: Circuit Makers and Breakers, appropriate subclasses for the structure of switches, and particularly subclasses 52+ for circuit makers and breakers of special application.

253 Switch or signal actuated controllers:
This subclass is indented under subclass 218. Subject matter in which a circuit controller is actuated by the motion of signals, switches, and other movable elements, sometimes known in the art as "switch-boxes".

(1) Note. In some of the multiple-circuit switch-boxes contained in this subclass a predetermined sequence of operation of the switches, signals, and other movable elements thereby controlled is provided for.

SEE OR SEARCH THIS CLASS, SUBCLASS:
107, 124, 131+, 176, and 220, for predetermined sequences of actuation.
246+, and all subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.

254 Trolley-completed circuits:
This subclass is indented under subclass 218. Subject matter in which a trolley or plow, its wheel, or some member attached to the trolley makes a temporary electrical contact with one or more contact-surfaces.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31, 72, 77+, 81, 85, 92, 229, 233, and 234, for trolley-completed-circuit systems.

SEE OR SEARCH CLASS:
40, Card, Picture, or Sign Exhibiting, subclasses 463+ for incidental disclosure of trolley-contacts.

255 Car-wheel-completed circuits:
This subclass is indented under subclass 218. Subject matter in which a car-wheel or a special wheel carried by a car makes a temporary electrical contact between two or more contact-surfaces.

256 Relays:
This subclass is indented under subclass 218. Subject matter having electrically-actuated circuit closing and breaking devices especially adapted for use in controlling circuits actuating railway switches and signals and not of general application.

SEE OR SEARCH CLASS:
335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, appropriate subclasses, for relay structure; subclasses 160+ for interlocked electromagnetic relays; and subclasses 5 and 50 for other types of interlocked electric circuit makers and breakers. See also, appropriate subclasses for electromagnetically operated switches of general application.

257 FLUID-MOTOR ACTUATION:
This subclass is indented under the class definition. Actuating mechanism operated by fluid-pressure.

SEE OR SEARCH THIS CLASS, SUBCLASS:
93+, 100+, 116, 139+, 258 to 261, 271+ and 361, for fluid-pressure-motor structure.

258 Electric control:
This subclass is indented under subclass 257. Subject matter having valves which are electrically controlled.

SEE OR SEARCH THIS CLASS, SUBCLASS:
238, 244, 259, 263, 300, and 325, for electric latch and clutch release.

259 Car-controlled switches:
This subclass is indented under subclass 258. Subject matter having valves electrically controlled by a moving car or train.

SEE OR SEARCH THIS CLASS, SUBCLASS:
238, 244, 258, 263, and 325, for details of electric latch and clutch release.
246, and the subclasses mentioned in the search notes appended thereto, for various types of circuit-controllers.
415+, and all subclasses mentioned in the search notes appended thereto, for switch structure.

260 Signals:
This subclass is indented under subclass 257. Subject matter which actuates a signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

111, 125, 293, and 473, and appropriate indented subclasses, for signal structure.

261 Gates:

This subclass is indented under subclass 257. Subject matter which actuates a gate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

125+, and 272, for gate structure.

SEE OR SEARCH CLASS:

49, Movable or Removable Closures, subclass 334 for a fluid-motor actuated closure (gate) and see the search notes thereto for the loci of other motor operated closures.

262 MECHANICAL-MOTOR ACTUATION:

This subclass is indented under the class definition. Subject matter in which a spring or weight motor is used for actuating switches, signals, or analogous devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:

102, and 108+, for systems using mechanical motors.

263 Electric control:

This subclass is indented under subclass 262. Subject matter , the operation of which is controlled by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

96+, and 262, for the mechanical motors.

108, 238, 244, 258+, 300, and 325, for electric latch and clutch release mechanism.

264 POINT THROWERS:

This subclass is indented under the class definition. Devices attached to and operated from the car, and sometimes utilizing its energy of motion, for throwing the unmodified or but slightly-modified points of ordinary tongue or point switches by direct contact therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:

359+, for devices which actuate track mechanism by utilizing the energy of the moving vehicle.

265 Magnetic:

This subclass is indented under subclass 264. Subject matter having a permanent or an electromagnet, which moves the point by magnetic attraction.

SEE OR SEARCH THIS CLASS, SUBCLASS:

249, for magnetic point movers controlled from a car.

325, for electrically-controlled track mechanism.

266 Modifier switch:

This subclass is indented under subclass 264. Subject matter adapted for throwing the points of switches of special construction, in which the point is only slightly modified, if at all, on the special switch construction used in cooperation with the particular point-thrower.

SEE OR SEARCH THIS CLASS, SUBCLASS:

359+, for train-trips of similar structure actuating track mechanism.

415+, and all subclasses mentioned in the search notes appended thereto, for switch structure.

267 Directing-grooves:

This subclass is indented under subclass 266. Subject matter in which the point throwers are directed into contact with the switch-point by fixed grooves in the switch.

(1) Note. This subclass also includes the special switch structure.

SEE OR SEARCH THIS CLASS, SUBCLASS:

359+, for analogous devices.

415+, and all subclasses mentioned in the search notes appended thereto, for switch structure.

268 Wedging wheel:
This subclass is indented under subclass 264. Subject matter having a wheel with sharp edges, designed for operating on and wedging over the points of point and tongue switches of ordinary construction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
366, 369 and 372, for analogous devices.

269 Sliding shoe:
This subclass is indented under subclass 264. Subject matter having a wedge-shaped shoe sliding longitudinally in the flangeways and designed to wedge over the points of unmodified point and tongue switches.

SEE OR SEARCH THIS CLASS, SUBCLASS:
365, 368 and 371, for analogous devices.

270 VEHICLE-ENERGY ACTUATION:
This subclass is indented under the class definition. Subject matter in this subclass by which signals, switches, gates, and other movable elements of this class are actuated by the energy of the moving vehicle; either by direct mechanical connection with the train- actuated track-trip or indirectly by means of power stored up in springs, counterweights, and trains of clockwork by the moving vehicle through the medium of track-trips.

SEE OR SEARCH THIS CLASS, SUBCLASS:
245, for car-actuated generators of electricity.
246, for car-actuated circuit-closers.
252, for trolley or plow actuated circuit-closers, these devices not being included in this subclass.

271 Fluid transmission:
This subclass is indented under subclass 270. Subject matter in which power is transmitted from a track-trip to the device actuated by means of a column of fluid.

272 Gates:
This subclass is indented under subclass 271. Subject matter which actuates a railway gate.

SEE OR SEARCH THIS CLASS, SUBCLASS:
125+, 261 and 292+, for gate structure.

SEE OR SEARCH CLASS:
49, Movable or Removable Closures, subclass 334 for actuating means, employing a fluid transmission, for operating a closure and see the search notes thereto for the loci of other such operated closures.

273 Continuous-rail crossings:
This subclass is indented under subclass 270. Subject matter having a grade-crossing of two lines of railway provided with means, actuated automatically by an approaching train, so as to secure for the train an unbroken line of rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:
465, and appropriate indented subclasses and the subclasses mentioned in the search notes appended thereto, for the structure of the crossing.

274 Switch-connected frogs:
This subclass is indented under subclass 270. Subject matter having a switch actuated by a track-trip and mechanically connected with one or more movable-rail frogs, so as to secure for the train an unbroken line of rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:
275, 382+ and 468+, for frog structures.
382, and apparatus indented subclasses, for movable-rail frogs.

275 Continuous-rail frogs:
This subclass is indented under subclass 270. Subject matter having movable-rail frogs which are set automatically by an approaching train, so as to secure unbroken line of rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, 382+ and 468+, for frog structure.
375, and 382, and appropriate indented subclasses for movable-rail frogs.

276 Spring rail:
This subclass is indented under subclass 275. Subject matter having continuous-rail frogs which yield against the action of springs or the resilience of the moving rails, to the lateral pressure of trailing wheels.

277 Automatic turnouts:
This subclass is indented under subclass 270. Subject matter having turnouts or passing-sidings provided with vehicle-energy-actuated switches placed at the ends of same for automatically switching two approaching trains upon the proper tracks for passing.

(1) Note. The stationary turnouts of subclass 427 perform the same function, although those switches have no movable parts.

SEE OR SEARCH THIS CLASS, SUBCLASS:
319+, for analogous switch structure.

278 Facing setting:
This subclass is indented under subclass 270. Subject matter having means for manually actuating switches combined with means for automatically actuating the same by the energy of a vehicle approaching the same, facing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
144, 284, 290, and 393+, for switch-stand structure.
317, for facing-setting mechanism.
393, and appropriate indented subclasses, for special types of mechanisms for manual actuation of switches.

279 Manual control:
This subclass is indented under subclass 278. Subject matter having switch-actuating mechanism by which a train can enter a siding only when the automatic setting mechanism is held by the switchman in an inoperative position against gravity or springs, which return the switch to its original position when the switchman releases it.

SEE OR SEARCH THIS CLASS, SUBCLASS:
397, for hand-restrained resetting-switch-stands.

280 Resetting:
This subclass is indented under subclass 278. Subject matter having switch-actuating mechanism by means of which the switch, having been set for the siding by the approaching train, is automatically reset for main line after the train has entered the siding.

SEE OR SEARCH THIS CLASS, SUBCLASS:
281, 315, 316, and 395+, for resetting devices.

281 Vehicle restrained:
This subclass is indented under subclass 280. Subject matter having switch-actuating mechanism in which the vehicle upon entering the switch maintains contact with a yielding member until clear of the main track, whereupon the switch is automatically reset, by spring or counterweight, to “mainline clear”.

SEE OR SEARCH THIS CLASS, SUBCLASS:
304, for vehicle-restrained doors or gates.
315, for vehicle-restrained switch-resetting devices.

282 Trailing setting:
This subclass is indented under subclass 278. Subject matter having switch-actuating mechanism in which a switch wrongly set is automatically reset by trains running in either direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
284, and appropriate indented subclasses, and 318, for related structure.

283 Yielding rail:
This subclass is indented under subclass 282. Subject matter including switch-actuating mechanism enabling a switch to be set from a train approaching it facing, and also when approaching it trailing, by the lateral pressure, in the latter case, of the wheel-flanges of the train against a yielding switch-rail.

284 Trailing setting:
This subclass is indented under subclass 270. Subject matter including mechanism for the manual actuation of switches combined with mechanism for the actuation of same by the energy of a moving vehicle approaching the same trailing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
144, 278, 290, and 393+, for switch-stand structure.
282+, 284 and 318, for trailing-setting mechanism.

285 Yielding rail:
This subclass is indented under subclass 284. Subject matter including a yielding section of the traction-rail which is sprung or actuated by a wheel of the moving train.

286 Spring-clutch:
This subclass is indented under subclass 285. Subject matter in which a resisting force is furnished by the compression of a spring, caused by the slipping of a clutch or cam actuated by the pressure, upon the switch rail, of a car-wheel trailing through the switch.

287 Coaxial spring:
This subclass is indented under subclass 286. Subject matter including a compressed spiral spring, concentric with the revolving spindle of the stand, the so-called “Ramapo” type of stand being here included.

288 Counterweight:
This subclass is indented under subclass 285. Subject matter including mechanism whereby a switch-stand is held closed against ordinary manual force, but is capable of being automatically thrown and secured, against the action of a counter-weight, by the passage of the first wheel trailing through the switch.

289 Frangible:
This subclass is indented under subclass 285. Subject matter including mechanism whereby a switch stand is normally locked against ordinary manual force, but is capable, by the breaking of some frangible part or the yielding of the lock, of being automatically thrown, and sometimes locked, by the passage of the first wheel trailing through the switch.

290 Trailing fly-back:
This subclass is indented under subclass 270. Subject matter including a switch stand provided with means for allowing the switch-rails to move apart and fly back against the resistance of the mechanism of the stand upon the passage of each trailing wheel.

SEE OR SEARCH THIS CLASS, SUBCLASS:
144, 278, 284, and 393+, for switch-stand structure.
237+, and 243+, for fly-back mechanism.
319+, for trailing-fly-back mechanism.

291 Spring actuated:
This subclass is indented under subclass 290. Subject matter provided with means for allowing the switch-rails to spring apart and fly back against the compression or distention of a spring located in the stand upon the passage of each trailing wheel through the switch.

292 Signals and gates, automatic:
This subclass is indented under subclass 270. Subject matter including signals or gates which are automatically actuated by the energy of a moving vehicle.

SEE OR SEARCH THIS CLASS, SUBCLASS:
144, 278, 284, 290, and 393+, for switch-stand structure.

SEE OR SEARCH CLASS:
49, Movable or Removable Closures, appropriate subclasses, for closure-actuating means.

293 Highway crossing:
This subclass is indented under subclass 292. Subject matter including signals specially adapted and intended for use at highway-crossings of railways.

SEE OR SEARCH THIS CLASS, SUBCLASS:
111, 125+, 260, and 473, and appropriate indented subclasses, and also under this subclass, for signal structure.

294 Visual and audible:
This subclass is indented under subclass 293. Subject matter including combined visual and audible signals.

(1) Note. In some cases the audible signals of this subclass are electrically-actuated bells controlled by the movement of the visual signal.

295 Audible:
This subclass is indented under subclass 293. Subject matter including audible highway-crossing signals.

296 Bells, single stroke:
This subclass is indented under subclass 295. Subject matter including a bell, in which a single stroke of the bell is given by the action of each wheel of the train.

297 Track mechanism:
This subclass is indented under subclass 292. Subject matter including signals and gates which are automatically actuated by the energy of the moving vehicle, the devices of this subclass and of the subclasses indented thereunder being classified upon either the mechanism connecting the gate or signal with the track mechanism or upon the function or structure of such mechanism.

SEE OR SEARCH THIS CLASS, SUBCLASS:
111, 125, 260, 293, and 473, and appropriate indented subclasses, for signal structure.
273, 274, 275, 314, and 322+, for various types of track-trips used for actuating movable devices of various kinds.

298 Single direction:
This subclass is indented under subclass 297. Subject matter including track devices for actuating signals and gates, operated by vehicles moving in one direction only.

SEE OR SEARCH THIS CLASS, SUBCLASS:
198, and 250, for single-direction actuation devices.

299 Latch or clutch release:
This subclass is indented under subclass 297. Subject matter including signals or gates which are set and latched in position by moving trains against the force of a spring or gravity, the latch or clutch being released by an approaching or departing train.

SEE OR SEARCH THIS CLASS, SUBCLASS:
238, 244, 258+, 263, 300, and 325, for electric latch and clutch-release mechanism.
301, 302, 324, and 396, for mechanical-latch and clutch-release mechanism.

SEE OR SEARCH CLASS:
192, Clutches and Power-Stop Control, appropriate subclasses, for clutch-release mechanism.

300 Electric:
This subclass is indented under subclass 299. Subject matter having a latch or clutch which is released by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
202, for electrically-controlled track trips.

301 Longitudinal motion:
This subclass is indented under subclass 299. Subject matter having a track device which actuates the latch or clutch and which moves in the direction of the traffic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
306, 311+ and 336+, for longitudinally-moving track devices.

302 Vertical motion:
This subclass is indented under subclass 299. Subject matter having a track device which moves the latch or clutch and which moves vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:
200, 204, 307, 313, and 351+, for vertically-moving track devices.

303 Longitudinal spiral cam:
This subclass is indented under subclass 297. Subject matter including a track device which is revolved on an axis parallel to the rails by the action of a car-tappet upon a screw, helix, cam or spiral groove.

SEE OR SEARCH THIS CLASS, SUBCLASS:
333, and 405, for similar switch-actuating mechanism.

304 Vehicle-restrained gates and doors:
This subclass is indented under subclass 297. Subject matter including a gate or door which is held against gravity or a spring by contact with the moving vehicle.

SEE OR SEARCH THIS CLASS, SUBCLASS:
281, 315 and 398, for vehicle-restrained mechanism.
397, for hand-restrained mechanism.

305 Parallel swing:
This subclass is indented under subclass 304. Subject matter including track devices in the form of bars, which always remain parallel to the traction-rails, while swinging vertically or horizontally about axes or pivot-points.

SEE OR SEARCH THIS CLASS, SUBCLASS:
151, 203, 246, 281, 304+, 310, 344, and 358+, for the structure of the track mechanism.

306 Longitudinal motion:
This subclass is indented under subclass 304. Subject matter including a restraining device which moves longitudinally in the direction of the traffic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
301, 311+, and 336+, for longitudinally-moving track trips.

307 Vertical motion:
This subclass is indented under subclass 304. Subject matter including a restraining device which moves vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:
302, 313, 351+, and 368+, for vertically-moving track-trips.

308 Swinging:
This subclass is indented under subclass 307. Subject matter including a restraining device which swings vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:
352, and 353+, for vertically-moving longitudinal levers.

309 Yielding rail:
This subclass is indented under subclass 308. Subject matter including a track-rail which yields vertically under the weight of the train, thereby actuating the gate or door.

310 Parallel swing:
This subclass is indented under subclass 297. Subject matter including track devices which move with a vertical or horizontal swinging motion parallel to and in the direction of the rails, similar to that of a parallel-ruler.

SEE OR SEARCH THIS CLASS, SUBCLASS:
151, 160, 201+, 246+, 305, 308+, 314+, and 358, for similar track mechanism.

311 Longitudinal motion:
This subclass is indented under subclass 297. Subject matter having track devices which move longitudinally in the direction of the traffic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
301, 306, 312, and 336+, for similar track mechanism.

312 Rectilinear:
This subclass is indented under subclass 311. Subject matter having track devices which move in right lines parallel to the traction-rails.

313 Vertical motion:
This subclass is indented under subclass 297. Subject matter having track devices which move vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:

204, 246+, 307+, and 351+, for similar track mechanism.

314 Switches, automatic:

This subclass is indented under subclass 270. Subject matter having track switches which are automatically set or reset by the energy of the moving vehicle, acting directly on the switch through the vehicle-wheels or some fixed member in advance of the wheels or through a separate track instrument connected to the switch by motion-transmitting mechanism.

SEE OR SEARCH THIS CLASS, SUBCLASS:

264, and 359+, for means under the control of an occupant of the vehicle, adapted to be placed in position to act directly on the switch, so as to move it either by manual power or by the energy of the moving vehicle.

278, 284 and 290, and various indented subclasses, for mechanism of the type stated used in connection with means for manual actuation.

415+, and all subclasses mentioned in the search notes appended thereto, for switch structure.

315 Resetting, vehicle restrained:

This subclass is indented under subclass 314. Subject matter having switches usually actuated by the approaching vehicle which during its passage maintains contact with a yielding member until clear of the main track, whereupon the switch is automatically reset by spring or counterweight to “main-line clear”.

SEE OR SEARCH THIS CLASS, SUBCLASS:

280, 281, 316, and 395+, for resetting mechanism.

281, and 398, for vehicle-restrained mechanism.

316 Wheel resetting:

This subclass is indented under subclass 314. Subject matter including a switch which is usually actuated by the approaching vehicle, which after its passage onto the side track automatically closes the switch resetting it for the main line by the action of the car-wheels upon trips or rails other than the laterally- moving switch-rails forward of their pivot.

317 Facing setting:

This subclass is indented under subclass 314. Subject matter including a switch which, if set for siding, is automatically reset for main line by a train approaching it facing, provided the resetting mechanism is not intentionally temporarily withdrawn from actuating position.

SEE OR SEARCH THIS CLASS, SUBCLASS:

278, and appropriate indented subclasses for facing-setting mechanism.

304, and 398, for vehicle-restrained mechanism.

397, for hand-restrained mechanism.

318 Trailing setting:

This subclass is indented under subclass 314. Subject matter including a switch locked against ordinary force, but capable of being automatically thrown and locked by the pressure, upon the moving rail or point, of the first wheel trailing through the switch.

SEE OR SEARCH THIS CLASS, SUBCLASS:

282, and 284, and appropriate indented subclasses, for switches of the type stated connected with switch-stands.

319 Trailing fly-back:

This subclass is indented under subclass 314. Subject matter including a switch, usually point or tongue, which is forced open, generally against springs or counterweights, by direct contact of each wheel of a train trailing through the switch and which flies back or is automatically moved back after the passage of same.

SEE OR SEARCH THIS CLASS, SUBCLASS:

282+, 284, and appropriate indented subclasses, for switches of the trailing-setting type connected with switch-stands.

290+, for trailing-fly-back type connected with switch-stands.

SEE OR SEARCH CLASS:
267, Spring Devices, appropriate subclasses, for details of compression and tension devices.

320 Spiral spring:
This subclass is indented under subclass 319. Subject matter in which the switch is returned automatically to its original position by the power on one or more spiral springs.

321 Tie or connecting rod:
This subclass is indented under subclass 320. Subject matter having a single spiral spring located upon either the tie-rod or the connecting-rod.

322 Track mechanism:
This subclass is indented under subclass 314. Subject matter not above classified whereby track-switches are actuated by the energy of an approaching vehicle.

SEE OR SEARCH THIS CLASS, SUBCLASS:
273, 274, 275, 278+, and 297+, for various types of track-trips used for actuating movable devices of various kinds.

323 Selective:
This subclass is indented under subclass 322. Subject matter including car-actuated switch-shifting mechanism for automatically directing a plurality of cars to various tracks in predetermined order or for automaticaly actuating the necessary switches along the route of a car.

SEE OR SEARCH THIS CLASS, SUBCLASS:
156, 157 and 162, for selective mechanism.

324 Latch or clutch release:
This subclass is indented under subclass 322. Subject matter including car-actuated switches which are reset for main line automatically by latch or clutch release devices cooperating with springs or counterweights.

SEE OR SEARCH THIS CLASS, SUBCLASS:
238, 244, 258+, 263, 300, and 325, for electrical latch and clutch release.
299+, for mechanical latch and clutch release.

SEE OR SEARCH CLASS:
192, Clutches and Power-Stop Control, appropriate subclasses, for clutch mechanism.

325 Electric control:
This subclass is indented under subclass 324. Subject matter in which the latch or clutch is operated by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
202, and 415+, and all subclasses mentioned in the search notes appended thereto, for switch structure.
238, 244, 258+, 263, and 300, for electric latch and clutch release.
299, 301, 302, 324, and 396, for mechanical latch and clutch release.

326 Electric control:
This subclass is indented under subclass 322. Subject matter including switch-operating track mechanism controlled by electrical means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
300, for electric control.

327 Alternate throw:
This subclass is indented under subclass 322. Subject matter including a switch actuated by a single-track device, the successive operation of which in the same manner alternately sets the switch for siding or main line.

SEE OR SEARCH THIS CLASS, SUBCLASS:
230, 236, 328, 342, 347, 350, and 354, for alternate-throw mechanism and similar devices.

328 Tappet wheel:
This subclass is indented under subclass 327. Subject matter in which a tappet-wheel is used as the track device.

329 Three and multiple throw:
This subclass is indented under subclass 322. Subject matter including an automatic switch for three or more tracks diverging from the same point.

SEE OR SEARCH THIS CLASS, SUBCLASS:
403, for three or multiple throw switch stands.
440, for three throw switches.

330 Traffic protected:
This subclass is indented under subclass 322. Subject matter including track mechanism normally withdrawn from actuating position, so that ordinary street traffic has no power to either throw the switch or damage the mechanism, the track device being automatically placed in actuating position by the approaching car, so that it can be actuated by the switch-throwing means.

331 Rotary longitudinal connecting shaft:
This subclass is indented under subclass 322. Subject matter including a track device and a switch which are connected by a longitudinal rotary connecting-shaft.

332 Cable and pulley connection:
This subclass is indented under subclass 322. Subject matter including a track device and a switch which are connected by a system of cables and pulleys.

333 Longitudinal sprial cam:
This subclass is indented under subclass 322. Subject matter including switches which are actuated by devices which are revolved on an axis parallel to the rails by the action of a car device upon a screw, helix, cam, or spiral groove.

SEE OR SEARCH THIS CLASS, SUBCLASS:
303, and 405, for similar mechanism actuating signals and gates.

334 Rack and pinion:
This subclass is indented under subclass 322. Subject matter including switches which are actuated by star and pinion wheels or their equivalents, the train-trip being either a toothed rack, a brush, a friction-bar, or some equivalent device.

335 Bow spring:
This subclass is indented under subclass 322. Subject matter including devices of the bow-spring type used for actuating switches.

SEE OR SEARCH THIS CLASS, SUBCLASS:
313, for bow-spring type of track-trip.

336 Longitudinal motion:
This subclass is indented under subclass 322. Subject matter including switches actuated by track devices which move longitudinally in the direction of the traffic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
301, 306, 311+, and 336+, for longitudinally-moving track mechanism.

337 Train-trip elevation:
This subclass is indented under subclass 336. Subject matter in which the track device releases the train-trip by causing its elevation.

338 Track-mechanism depression:
This subclass is indented under subclass 336. Subject matter in which the track device is released from the train-trips by being depressed.

339 Perpendicular swing:
This subclass is indented under subclass 336. Subject matter in which the track device swings in a perpendicular plane parallel to the direction of the traffic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
346, and 353, and appropriate subclasses indented thereunder, for swinging track mechanism.

340 Double:
This subclass is indented under subclass 339. Subject matter in which pairs of connected track devices are used, each moving the switch in a direction opposite from the other.

(1) Note. Both devices of the pair must be located either in front of or behind the

switch, for when placed in tandem, with the switch between them, they are not double, but become independent means for switch setting and resetting, respectively.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, 346 and 353, and appropriate indented subclasses for swinging track mechanism.
343, 349, 355, and 356+, for double trips.

341 Horizontal swing:
This subclass is indented under subclass 336. Subject matter including switches actuated by track devices which swing in a horizontal plane.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, 346, and 353, and appropriate indented subclasses, for swinging track mechanism.

342 Double acting:
This subclass is indented under subclass 341. Subject matter including track devices which can be acted upon at two different contact-points, whereby the switch can be thrown in either direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
230, 236, 297, 327, 347, 350, and 354, for double-acting track devices.

343 Double:
This subclass is indented under subclass 341. Subject matter in which pairs of track devices are used, each moving the switch in a direction opposite from the other.

(1) Note. Both devices of the pair must be located either in front of or behind the switch, for when placed in tandem, with the switch between them, they are not double, but become independent means for switch setting and resetting, respectively.

SEE OR SEARCH THIS CLASS, SUBCLASS:
340, 349, 355, 356, and 357, for double-track devices.

344 Transverse motion:
This subclass is indented under subclass 322. Subject matter having track devices which move at right angles to the direction of traffic.

345 Duplex lever:
This subclass is indented under subclass 344. Subject matter having a switch which is actuated by a plurality of levers moving transversely and which coact at the ends opposite their fulcrums.

SEE OR SEARCH THIS CLASS, SUBCLASS:
352, for levers moving vertically.

346 Swinging:
This subclass is indented under subclass 344. Subject matter having track mechanism which swings transversely to the direction of the traffic.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, and 353, and appropriate indented subclasses, for swinging track mechanism.
353+, for levers moving vertically.

347 Double acting:
This subclass is indented under subclass 346. Subject matter having track devices which can be acted upon at two different contact-points, whereby the switch can be thrown in either direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
230, 236, 297, 327, 342, 348, 350, and 354, for double-acting track devices.

348 Guiding tail:
This subclass is indented under subclass 347. Subject matter having a track device which is provided with a tail or extension behind the pivot, the function of which is to guide the train-trip into proper contact with the track device.

349 Double:
This subclass is indented under subclass 346. Subject matter having pairs of track devices, each moving the switch in a direction opposite from the other.

(1) Note. Both devices of the pair must be located either in front of or behind the switch, for when placed in tandem, with the switch between them, they are not double, but become independent means for switch setting and resetting, respectively.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, 346 and 353, and appropriate indented subclasses, for swinging track mechanism.
340, 343, 355, and 356+, for double trips.
355, for levers stated moving vertically.

350 Double acting:
This subclass is indented under subclass 344. Subject matter having track devices which can be acted upon at two different contact-points, whereby the switch can be thrown in either direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
230, 236, 297, 327, 342, 347+, and 354, for double-acting track-trips.

351 Vertical motion:
This subclass is indented under subclass 344. Subject matter having switches which are actuated by vertically-moving track devices.

SEE OR SEARCH THIS CLASS, SUBCLASS:
302, 307+, 313, 351+, for vertically-moving track devices.

352 Duplex lever:
This subclass is indented under subclass 351. Subject matter having switches which are actuated by one or more sets of end-pivoted double levers, which coact at their ends opposite their fulcrums.

SEE OR SEARCH THIS CLASS, SUBCLASS:
345, for duplex longitudinal levers, with end fulcrum moving transversely.

353 Swinging:
This subclass is indented under subclass 351. Subject matter having switches which are actuated by track mechanism swinging vertically.

SEE OR SEARCH THIS CLASS, SUBCLASS:
339, and 346, and appropriate indented subclasses, for swinging track mechanism.

354 Double acting:
This subclass is indented under subclass 353. Subject matter having trail devices which can be acted upon at two different contact-points, whereby the switch can be thrown in either direction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
230, 236, 297, 327, 342, 347+, and 350, for double-acting.

355 Double:
This subclass is indented under subclass 353. Subject matter having pairs of track devices each moving the switch in a direction opposite from the other.

(1) Note. Both devices of the pair must be located either in front of or behind the switch, for when placed in tandem, with the switch between them, they are not double, but become independent means for switch setting and resetting, respectively.

SEE OR SEARCH THIS CLASS, SUBCLASS:
340, 343, 349, and 356+, for double trips.

356 Double:
This subclass is indented under subclass 351. Subject matter having pairs of connected track-trips, each moving the switch in a direction opposite from the other.

(1) Note. Both devices of the pair must be located either in front of or behind the switch, for when placed in tandem, with the switch between them, they are not double, but become independent means for switch setting and resetting, respectively.

SEE OR SEARCH THIS CLASS, SUBCLASS:

313, and 350, for track-trips moving transversely.

340, 343, 349, and 355, for double trips.

357 Transverse lever connection:

This subclass is indented under subclass 356. Subject matter having track devices which are transversely connected by a horizontal lever.

358 Switch locks, automatic:

This subclass is indented under subclass 270. Subject matter having train-actuated devices, sometimes called "lock-bars", by which a moving train can lock or secure in place a switch over which it is passing or is a about to pass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

322+, appropriate subclasses for track mechanism.

359 Train trips:

This subclass is indented under subclass 270. Subject matter having devices upon cars by which track mechanism is actuated.

SEE OR SEARCH THIS CLASS, SUBCLASS:

264+, for point throwers mounted on cars.

360 Electric or magnetic:

This subclass is indented under subclass 359. Subject matter having train-trips which are moved into operative position by electric or magnetic means or moving track devices by magnets attraction.

SEE OR SEARCH THIS CLASS, SUBCLASS:

121, 193, 202, 249, 265, and 326, for electrically or magnetically actuated devices.

361 Fluid pressure:

This subclass is indented under subclass 359. Subject matter having train-trips which are moved into operative position by fluid-pressure means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

257+, and all subclasses mentioned in the search notes appended thereto, for a fluid-motor structure.

362 Resilient:

This subclass is indented under subclass 359. Subject matter having train-trips which yield after the switch or signal has been actuated, thus allowing the car to pass on without injury to the mechanism.

363 Hooks:

This subclass is indented under subclass 359. Subject matter having means whereby a car-carried hook engages with and actuates a ring, loop, or similar device upon the track.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+, for details of mechanism for bringing track-cleaners into operative position and more or less adapted for bringing car-tappets also into operative position.

364 Racks or friction bars:

This subclass is indented under subclass 359. Subject matter having train trips whose contacting members are either toothed racks, brushes, friction-bars, or their equivalents.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+, for details of mechanism for bringing track-cleaners into operative position and more or less adapted for bringing car-tappets also into operative position.

365 Pivoted:

This subclass is indented under subclass 359. Subject matter having train trips wheel swing upon pivots into operative position.

SEE OR SEARCH CLASS:

104, Railways, subclasses 279+, for details of mechanism for bringing track-

cleaners into operative position and more or less adapted for bringing car-tappets also into operative position.

366 Wheel:
This subclass is indented under subclass 365. Subject matter having a wheel which is used as the contacting element.

SEE OR SEARCH THIS CLASS, SUBCLASS:
264, 369 and 372, for wheels used as car-tappets.

367 Rod:
This subclass is indented under subclass 365. Subject matter having a rod which is used as the contacting element.

368 Vertical motion:
This subclass is indented under subclass 359. Subject matter having a trip which is moved vertically into operative position.

SEE OR SEARCH CLASS:
104, Railways, subclasses 279+, for details of mechanism for bringing track-cleaners into operative position and more or less adapted for bringing car-tappets also into operative position.

369 Wheel:
This subclass is indented under subclass 368. Subject matter having vertically-moving trips which use a wheel as the contacting element.

SEE OR SEARCH THIS CLASS, SUBCLASS:
268, 366 and 372, for wheels used as car-tappets, moving, respectively, radially and laterally into operative position.

370 Rod:
This subclass is indented under subclass 368. Subject matter having vertically-moving trips which use a rod as the contacting element.

SEE OR SEARCH THIS CLASS, SUBCLASS:
264+, 367 and 373, for rods used as car-tappets, moving respectively, radially and laterally into operative position.

371 Lateral motion:
This subclass is indented under subclass 359. Subject matter having a train trip which moves laterally into operative position.

SEE OR SEARCH CLASS:
104, Railways, subclasses 279+, for details of mechanism for bringing track-cleaners into operative position and more or less adapted for bringing car-tappets also into operative position.

372 Wheel:
This subclass is indented under subclass 371. Subject matter having a wheel which is used as the contacting element.

SEE OR SEARCH THIS CLASS, SUBCLASS:
264, 366 and 369, for wheels used as car-tappets, moving, respectively, radially and vertically into operative position.

373 Rod:
This subclass is indented under subclass 371. Subject matter having a rod which is used as the connecting element.

SEE OR SEARCH THIS CLASS, SUBCLASS:
264, 367 and 370, for rods used as car-tappets, moving, respectively, radially and vertically into operative position.

374 SAFETY SIDINGS:
This subclass is indented under the class definition. Subject matter having a siding in which the main-track switch is mechanically connected to a derailing-block or safety-switch in the siding, the derailing-block or safety-switch being opened when the main-track switch is closed, so that cars on the siding are prevented from fouling the main line.

(1) Note. For structure of the derailing block, a search should be made in subclass 163 of this class, and Class 104, Railways, subclasses 262+.

375 CONTINUOUS-RAIL CROSSING:
This subclass is indented under the class definition. Subject matter having a crossing of two or more lines of railway-track in which there is always preserved an unbroken rail for each line of road when a train is passing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
465+, and the subclasses referred to in the search notes appended thereto, for the structure of the crossing.

376 Overlapped main:
This subclass is indented under subclass 375. Subject matter having single rails or sections of track which swing or fold over upon and overlap other lines of rail.

SEE OR SEARCH THIS CLASS, SUBCLASS:
273, and 383+, for overlapped-main-line crossings.

377 Pivoted rail:
This subclass is indented under subclass 375. Subject matter having pivoted rails which are placed at the points of intersection.

SEE OR SEARCH THIS CLASS, SUBCLASS:
273, 387, 388, and 418, for pivoted-rail structure.

378 Rotary block:
This subclass is indented under subclass 375. Subject matter having rotary blocks which carry rail-sections at the crossing-points.

SEE OR SEARCH THIS CLASS, SUBCLASS:
273, and 388, for similar devices.

379 Movable point:
This subclass is indented under subclass 375. Subject matter having crossings in which two adjacent point-switches facing each other are mechanically connected, so as to move in unison, but in opposite directions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
273, and 416, for similar devices.

380 Sliding rail:
This subclass is indented under subclass 375. Subject matter having blocks, rails, or track-sections which slide into place.

SEE OR SEARCH THIS CLASS, SUBCLASS:
273, 392 and 430, for similar devices.

381 Longitudinal:
This subclass is indented under subclass 380. Subject matter in which the rails slide in a direction longitudinal with reference to the traffic.

382 SWITCH-CONNECTED FROGS:
This subclass is indented under the class definition. Subject matter having a switch which is combined with various types of movable-rail substitutes for rigid frogs, insuring an unbroken rail at the frog-point, and which is provided with mechanism for the simultaneous actuation of the switch and the frog substitute.

(1) Note. The subclass also includes movable-rail frogs intended to be used as an element in a frogless switch.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, and 275+, for similar frog structure.

383 Overlapped main:
This subclass is indented under subclass 382. Subject matter , having switch-connected frogs in which sections of the siding rail slide, swing, or fold into position, overlapping the main-line rail.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, 376 and 429, for similar frog structure.

384 Double rail:
This subclass is indented under subclass 383. Subject matter having switch-connected frogs in which two sections of the siding-rail meet over the main-line rail.

385 Swinging tongue:
This subclass is indented under subclass 382. Subject matter having a pivoted tongue or pointed double rail which swings between two fixed wing-rails.

386 Stub end:
This subclass is indented under subclass 385. Subject matter in which the tongue or double rail is not pointed, but has one or more stub or beveled ends.

387 End-pivoted rail:
This subclass is indented under subclass 382. Subject matter in which an end-pivoted rail is placed at the frog-point.

SEE OR SEARCH THIS CLASS, SUBCLASS:
377, for pivoted rail continuous rail crossings.

388 Center-pivoted rail:
This subclass is indented under subclass 382. Subject matter in which a center-pivoted rail under subclass 382 is placed at the frog-point.

SEE OR SEARCH THIS CLASS, SUBCLASS:
377, for pivoted rail continuous rail crossings.

389 Swinging rail:
This subclass is indented under subclass 382. Subject matter in which two or more rails are simultaneously swung into position.

390 Opposed swing:
This subclass is indented under subclass 389. Subject matter in which two or more moving stub-rails swing, with reverse motion, into connection with each other.

391 Wing:
This subclass is indented under subclass 389. Subject matter in which switch-connected frogs are provided with a fixed frog-point and swinging wing-rails.

392 Transversely sliding rail:
This subclass is indented under subclass 382. Subject matter having moving rails which slide laterally into position.

SEE OR SEARCH THIS CLASS, SUBCLASS:
380+, and 430, for sliding rail crossings or switches.

393 SWITCH STANDS:
This subclass is indented under the class definition. Subject matter having means located at switches for their manual actuation, usually provided with a target or other visual signal.

SEE OR SEARCH THIS CLASS, SUBCLASS:
21+, 104+, 111+, 118+, and 143+, for manual actuation in connection with block and other systems.
144, 278, 284, and 290+, for switch-stand structure.
489, for manual-actuation devices.

394 Cab signal or train control:
This subclass is indented under subclass 393. Subject matter having switch stands equipped with mechanism for actuating cab signal or train-control mechanism on approaching train when the switch is open.

SEE OR SEARCH THIS CLASS, SUBCLASS:
115, 117, 119, 120, and 167, and appropriate indented subclasses, and all subclasses referred to in the search notes appended thereto.

395 Resetting:
This subclass is indented under subclass 393. Subject matter having stands which insure the resetting of the switch to “unbroken main” after the passage of the train, either automatically by energy other than that of the moving vehicle or by alarms or other devices insuring manual actuation.

SEE OR SEARCH THIS CLASS, SUBCLASS:
280+, 315, 316, and 317, for resetting mechanism and devices.

396 Latch release, automatic:
This subclass is indented under subclass 395. Subject matter having switch-actuating mechanism provided with train-actuated latch-release mechanism, permitting the switch to be thrown

to "main-line clear" by the force of springs or counterweights as the train approaches.

SEE OR SEARCH THIS CLASS, SUBCLASS:

238, 244, 258+, 263, 300, and 325, for electric latch and clutch release.

299, 301, 302, and 324, for mechanical latch and clutch release.

397 Hand restrained:

This subclass is indented under subclass 395. Subject matter having a switch stand in which the switch is held open by the switchman against the action of springs, counterweights, etc., the switch automatically closing when released.

SEE OR SEARCH THIS CLASS, SUBCLASS:

279, 281, 304+, and 315, for vehicle or hand restrained devices.

398 Vehicle restrained:

This subclass is indented under subclass 395. Subject matter having a switch stand in which the switch, after being opened manually, is held open, by the action of the car-wheels upon treadles and other devices, against springs or counterweights or their equivalents, the switch automatically closing after the passage of the train.

SEE OR SEARCH THIS CLASS, SUBCLASS:

281, 304+ and 315, for vehicle-restrained devices.

399 Detention devices:

This subclass is indented under subclass 395. Subject matter having means for detaining the switchman at the switch until it is properly closed and locked, either by confinement in cages or by means of handcuffs, shackles or other body-locks.

SEE OR SEARCH CLASS:

340, Communications: Electrical, subclass 304 for electric signal box systems having detention devices at the signal boxes.

400 Key retaining:

This subclass is indented under subclass 395. Subject matter having switch keys which cannot be removed from the switch-lock until the switch has been properly reset and locked.

SEE OR SEARCH THIS CLASS, SUBCLASS:

414, for locks built into the structure of the switch-stand.

SEE OR SEARCH CLASS:

70, Locks, subclasses 389 and 441 for lock and latch structure.

401 Rail lock and position indication:

This subclass is indented under subclass 393. Subject matter having switch stands with special locks acting directly on the switch-rails or on moving parts other than the operating-rod and connected to the switch-stand proper through the switch-rails.

(1) Note. In many cases the lock does not operate and permit the actuating-lever to complete its throw until the switch comes home into position, thereby indicating when, because of an obstruction or from any other cause, the switch is not fully thrown.

SEE OR SEARCH THIS CLASS, SUBCLASS:

15, and 131+, appropriate subclasses for interlocking devices.

402 Transverse rotary locking shaft:

This subclass is indented under subclass 401. Subject matter having a switch stand in which the lock is actuated by the rotation of a shaft placed transversely to the switch-rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:

448, for locking switches.

403 Three and multiple throw:

This subclass is indented under subclass 393. Subject matter having a switch stand specially adapted for the actuation of three and multiple throw switches.

SEE OR SEARCH THIS CLASS, SUBCLASS:

329, and 440, for three throw switches and track mechanism.

404 Adjustable throw:

This subclass is indented under subclass 393. Subject matter having a switch stand provided with means for adjusting the throw of the switch.

SEE OR SEARCH THIS CLASS, SUBCLASS:

450+, for adjustable tie bars.

405 Spiral-cam actuated:

This subclass is indented under subclass 393. Subject matter having a spiral cam for transmitting motion to the switch-rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:

303, and 333, for similar switch-actuating mechanism.

406 Gear actuated:

This subclass is indented under subclass 393. Subject matter having gearing for transmitting motion to the switch-rails.

407 Structural types:

This subclass is indented under subclass 393. Subject matter having stands not hereinbefore classified as to function, and defined by structural characteristics.

408 Depressed mechanism:

This subclass is indented under subclass 407. Subject matter having stands without projections above the pavement liable to be damaged by street traffic, and so especially adapted for use by street-railways in cities and towns.

409 High semaphore stands:

This subclass is indented under subclass 407. Subject matter having switch stands provided with an elevated semaphore-signal usually used at the entrance to main-line sidings.

SEE OR SEARCH THIS CLASS, SUBCLASS:

479+, for semaphores.

410 Vertical lever:

This subclass is indented under subclass 407. Subject matter having switch stands which are actuated by a vertical lever.

SEE OR SEARCH THIS CLASS, SUBCLASS:

278+, 284+ and 290+, for automatic switch stands.

411 Ground stands:

This subclass is indented under subclass 410. Subject matter having switch stands of low construction specially adapted for use in yards.

SEE OR SEARCH CLASS:

70, Locks, appropriate subclasses, particularly subclasses 193 through 197 for lever guide locks.

412 Horizontal lever:

This subclass is indented under subclass 407. Subject matter having a switch stand actuated by a horizontal lever and usually also having a horizontal locking-segment.

SEE OR SEARCH THIS CLASS, SUBCLASS:

278+, 284+ and 290+, for automatic switch stands.

413 Drop arm:

This subclass is indented under subclass 412. Subject matter having a switch stand which has a pivoted arm, which drops into a notch in the locking-segment, forming an automatic lock.

SEE OR SEARCH THIS CLASS, SUBCLASS:

144+, for signal-actuating interlocking switch stand.

314, for vehicle-actuated switches.

414 Automatic key-lock:

This subclass is indented under subclass 413. Subject matter having an automatic spring key-lock built into the body of the stand or lever.

SEE OR SEARCH THIS CLASS, SUBCLASS:

400, for key-retaining switch stands.

SEE OR SEARCH CLASS:
70, Locks, appropriate subclasses, particularly 193-197 for locks and lever guide locks.

415 SWITCHES:
This subclass is indented under the class definition. Subject matter having means for enabling a succession of cars to pass to a selected one of several diverging lines of track.

SEE OR SEARCH THIS CLASS, SUBCLASS:
144+, 158, 162, 176, 217, 220, 226+, 233, 234, 239, 253, 259, 266+, 277, and 314+, for the structure of switches generally.
319+, for spring switches which yield to the car-wheels while passing through them trailing, and are hence actuated by the energy of the vehicle.

SEE OR SEARCH CLASS:
104, Railways, subclass 195 for slot-switch structure approximating to railway-switch structure.
186, Merchandising, subclasses 19+, disclosing switches for cash-carrier and store-service railways.

416 Slip:
This subclass is indented under subclass 415. Subject matter having switches and connecting-tracks placed at diagonal crossings and permitting a change of direction from one line to another, as well as a continuance upon the same line.

SEE OR SEARCH THIS CLASS, SUBCLASS:
273, and 379, for continuous rail crossings.

417 Frog obviating:
This subclass is indented under subclass 415. Subject matter having a switch so constructed as to obviate the use of rigid or spring rail frogs or movable-rail substitutes for frogs, one or more movable devices performing the double function of a frog and a switch.

418 Single ral:
This subclass is indented under subclass 417. Subject matter having a single movable switch-rail extending from the switch-point to the point where the frog would normally be placed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, for switch-connected frogs operated by vehicle energy.

419 Conduit, third rail or trolley:
This subclass is indented under subclass 415. Subject matter having a switch which is more or less modified in construction by the presence of conduits, third rails, and cables and conducting-wires of cable and electric railways.

(1) Note. Includes some devices which operate automatically.

420 Nonderailing, trailing:
This subclass is indented under subclass 415. Subject matter having a switch through which, however set, an ordinary train can be run trailing without derailment and without moving any parts of the switch.

SEE OR SEARCH THIS CLASS, SUBCLASS:
290+, and 319+, for spring-switches which also accomplish this function by springing the switch aside.

421 Risers:
This subclass is indented under subclass 420. Subject matter having a switch provided with one or more devices, called “risers”, upon which the wheels are carried over the top of the stock-rail and are guided into position by the action of the guard rail or grooves.

SEE OR SEARCH THIS CLASS, SUBCLASS:
432, 455 and 469, for switch and crossing risers.

422 Moving guard rail:
This subclass is indented under subclass 420. Subject matter having a switch provided with fixed points and moving guard-rails, the func-

tion of the latter being to direct the wheels to the proper track.

423 Facing, rerailing:
This subclass is indented under subclass 415. Subject matter having point switches provided with devices for rerailing cars running facing when derailed or split by the failure of the points to come fully home.

424 Facing, selective:
This subclass is indented under subclass 415. Subject matter having switches without movable parts, the direction taken by the car being determined in various ways, some of which are specified in the following subclasses.

SEE OR SEARCH CLASS:
186, Merchandising, subclasses 20+, for selective switches.

425 Side draft:
This subclass is indented under subclass 424. Subject matter having a switch of such construction that the car can be drawn over and directed to the main or branch track by the side draft or internal traction of a team of draft-animals.

426 Modified wheel:
This subclass is indented under subclass 424. Subject matter having a switch in which wheels of special construction (as, for example, when provided with extra flanges) determine the direction which the car is to take.

427 Stationary turnout:
This subclass is indented under subclass 415. Subject matter having switches without moving parts which divert trains running facing onto the siding and allow trains running trailing to continue, underailed, upon the main line, or vice versa.

(1) Note. The vehicle-energy-actuated switches of subclasses 319+ all perform an identical function, but are provided with moving parts actuated by the passing wheels when trailing.

428 Snow protected:
This subclass is indented under subclass 415. Subject matter having switches so constructed as not to be readily clogged by snow and ice, which is usually either melted or automatically removed by the movement of the switch.

SEE OR SEARCH THIS CLASS, SUBCLASS:
444, for self-cleaning switches.

429 Overlap:
This subclass is indented under subclass 415. Subject matter having continuous main-line rails and switch-points which overlap same when set for siding.

SEE OR SEARCH THIS CLASS, SUBCLASS:
445+, for stub switches.

430 Sliding:
This subclass is indented under subclass 415. Subject matter having a switch in which a plate carrying a section of track-rail slides laterally.

SEE OR SEARCH THIS CLASS, SUBCLASS:
380, and 392, for sliding rail structure.

431 Oscillating, longitudinal axis:
This subclass is indented under subclass 415. Subject matter having switches in which the moving rails revolve or oscillate about an axis parallel to the rails.

432 Risers:
This subclass is indented under subclass 415. Subject matter having a switch in which the wheel rides upon a riser block or rail, and is thereby lifted and drawn over the top of a gauge-rail by the action of guard rails or grooves.

(1) Note. Includes switches of the so-called "Wharton" type.

SEE OR SEARCH THIS CLASS, SUBCLASS:
421, 455 and 469, for switch and crossing risers.

433 Vertical motion:
This subclass is indented under subclass 415. Subject matter having a switch which moves vertically instead of horizontally and with points usually rising and falling alternately.

434 Flexible rail:
This subclass is indented under subclass 415. Subject matter having a switch in which one or both of the main-line rails are sprung laterally, often against a fixed point-rail.

435 Point:
This subclass is indented under subclass 415. Subject matter having a switch in which the ends of one or both of the movable switch-rails terminate in points, as opposed to stub ends, the stationary rail being unbroken.

SEE OR SEARCH CLASS:
104, Railways, subclass 195, for slot-switch structure which approximates to railway-switch structure.
186, Merchandising, subclass 19, for switch structure.

436 Recessed rail:
This subclass is indented under subclass 435. Subject matter having point switches in which the stock-rail is recessed to receive the point-rail.

437 Renewable and reenforced:
This subclass is indented under subclass 435. Subject matter having a point switch which has renewable or reinforced points.

438 Point and mate:
This subclass is indented under subclass 435. Subject matter having a switch with a fixed frog or switch mate in one rail and a moving point in the other.

439 Tandem:
This subclass is indented under subclass 435. Subject matter having point switches in which one point is placed in advance of the other.

(1) Note. These switches are known in the art as the "Vaughn" type, from the name of the inventor.

440 Three throw:
This subclass is indented under subclass 435. Subject matter having a point switch for passing to one of three different tracks.

SEE OR SEARCH THIS CLASS, SUBCLASS:
329, and 403, for three throw switches.

441 Tread guard rail:
This subclass is indented under subclass 435. Subject matter having a point switch provided with a guard-rail, which by contact with the rim of the tread of the wheel forces the flange of the wheel away from the switch-points.

SEE OR SEARCH THIS CLASS, SUBCLASS:
456, for similar structure in crossings.

442 Tongue:
This subclass is indented under subclass 435. Subject matter having triangular-shaped and comparatively short pivoted single points extensively used on the sharp turnouts of street-railways and placed in one of the gauge-rails, a fixed point or switch mate being placed in the other rail.

SEE OR SEARCH CLASS:
104, Railways, subclass 195, for slot-switch structure which approximates to railway-switch structure.

443 Bed lock:
This subclass is indented under subclass 442. Subject matter having locking devices of various kinds placed in the beds of tongue-switches for holding the point in position.

444 Self-cleaning:
This subclass is indented under subclass 442. Subject matter having point switches usually of the tongue type, so designed as to automatically remove the accumulated dirt, which tends to obstruct their motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:
428, for snow-protecting point switches.

445 Stub:
This subclass is indented under subclass 415. Subject matter having switches in which the ends of the moving rails are squarely truncated.

446 Double rail:
This subclass is indented under subclass 445. Subject matter having stub switches composed of pairs of parallel instead of single moving rails.

447 Anti-creep or jar:
This subclass is indented under subclass 445. Subject matter having stub switches provided with devices for preventing the creeping of the switch or the jar of wheels passing over gaps at the stub ends of the switch-rails.

448 Lock:
This subclass is indented under subclass 415. Subject matter having means other than portable padlocks or tower-operated bolts which lock the switch-rails, switch-rods, or connecting-bars in place, but do not lock parts of the switch-stand.

SEE OR SEARCH THIS CLASS, SUBCLASS:
401+, for rail lock and position indication.

449 Tie bars:
This subclass is indented under subclass 415. Subject matter having rods connecting the two moving rails of a switch and determining their spacing.

450 Adjustable:
This subclass is indented under subclass 449. Subject matter in which the tie rods are provided with means for adjusting the position of the switch-rails with reference to the stock-rails.

SEE OR SEARCH THIS CLASS, SUBCLASS:
403, for three or multiple throw switch stands.
404, for adjustable throw switch stands.

SEE OR SEARCH CLASS:
74, Machine Element or Mechanism, subclass 586, for longitudinally adjustable rods or pitmans.

451 Eccentric:
This subclass is indented under subclass 450. Subject matter having tie-bars in which the adjustment is made by means of eccentrics.

452 Connecting rods:
This subclass is indented under subclass 415. Subject matter having a rod connecting the switch or signal to the actuating stand or rod and by means of which the switch is thrown.

453 Chairs and plates:
This subclass is indented under subclass 415. Subject matter having means designed for supporting the moving rails of switches.

SEE OR SEARCH THIS CLASS, SUBCLASS:
467, for crossing chairs.

SEE OR SEARCH CLASS:
29, Metal Working, subclass 16, for incidental disclosure of railway chair and plate structure.
238, Railways: Surface Track, subclass 187, for rail joint chairs.

454 CROSSINGS, FROGS, AND MATES:
This subclass is indented under the class definition. Subject matter having means placed at the common point of two or more traction-rails or opposite a tongue-switch and arranged to permit the passage of the wheel-flanges.

SEE OR SEARCH CLASS:
238, Railways: Surface Track, subclass 151, for filler-blocks and other devices used as foot-guards in crossings, frogs, and mates.

455 Outer-tread-supported wheel:
This subclass is indented under subclass 454. Subject matter having crossings, frogs and mates in which an outer rail member with riser ends is employed, upon which the unguttered or rim portion of the wheel-tread runs, thereby obviating the jolting due to guttered wheels.

SEE OR SEARCH THIS CLASS, SUBCLASS:
421, 432 and 469, for switch and crossing risers.

456 Tread guard rail:
This subclass is indented under subclass 454. Subject matter having crossings, frogs, and mates provided with a guard-rail acting on the rim of the wheel-tread, and thereby guiding the

wheel-flanges past the frog and crossing points.

SEE OR SEARCH THIS CLASS, SUBCLASS:
441, for switch-tread guard rails.

457 Flange-supported wheel:
This subclass is indented under subclass 454. Subject matter having crossings which have a hard filler, with end risers, placed at the crossing-point between the gauge and guard rails, affording a bearing-surface upon which the flange of the wheel runs, carrying the wheel-tread clear of the gap in the gauge-rail.

(1) Note. The subclass contains a few patents in which a flange-bearing is obtained without the use of a riser by lowering the tread of the rail until the flange of the wheel strikes the bottom of the frog.

458 Frogs:
This subclass is indented under subclass 457. Subject matter having frogs provided with flange-bearing risers.

459 Hot filled:
This subclass is indented under subclass 454. Subject matter having crossings, frogs, and mates whose components, often pieces of rail, are joined by hot metal, usually iron or steel, cast around them, which usually enters cavities therein, binding the entire structure, partly by bonding and partly by a welding action.

460 Central inserts:
This subclass is indented under subclass 454. Subject matter having crossings, frogs, and mates provided with centrally-inserted pieces of manganese or other hard steel adapted especially for resisting wear and for being replaced when worn down or destroyed.

461 Cast bound:
This subclass is indented under subclass 460. Subject matter in which the inserts are secured in position, in whole or in part, by casting hot and comparatively soft metal (as spelter) or cement, which enters sundry cavities and on cooling secures the block in position or prevents the bolts, wedges, or other fastenings used from working loose under stress.

462 Plate or plate bolted:
This subclass is indented under subclass 454. Subject matter having crossings, frogs, and mates in which the rail-pieces are riveted or bolted through their flanges to a foundation-plate, usually of wrought-iron. There may or may not in addition be filler-blocks and bolts through the web of the rails.

463 Bolted:
This subclass is indented under subclass 454. Subject matter having crossings, frogs, and mates built up from rail-pieces spaced by filler-blocks and secured by bolts passing through the fillers and through the webs of the rails.

464 Solid:
This subclass is indented under subclass 454. Subject matter having crossings, frogs, and mates of solid cast or wrought construction or those whose component parts are joined by welding, (other than cast-welding).

465 Crossings:
This subclass is indented under subclass 454. Subject matter having means placed at the crossings of the rails of two intersecting tracks and consisting, in their simplest form, of four solid frogs joined together with rails to form a connected system.

(1) Note. Only structure peculiar to crossings will be found in this subclass and its minor subdivisions. Structures common to frogs and crossings alike will be found in the preceding subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:
111+, 273 and 375+, for the structure of the crossing.

SEE OR SEARCH CLASS:
238, Railways: Surface Track, subclass 151 for filler-blocks and other devices used as foot-guards in crossings, frogs and mates.

466 Street and steam:
This subclass is indented under subclass 465. Subject matter having crossings placed at the intersection of steam with street railway tracks

and in which the former have unbroken lines of rail.

467 Chairs:
This subclass is indented under subclass 465. Subject matter having means in the nature of rail-supports for holding and supporting the ends of rail-pieces in building up a crossing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
453, and also see the search notes appended thereto, for chairs and plates.

468 Frogs:
This subclass is indented under subclass 454. Subject matter having means placed at the intersection of two gauge-rails of railway-track in order to afford flangeways for the wheels.

(1) Note. Only structure peculiar to frogs will be found in this subclass and its minor subdivisions. Structure common to frogs and crossings alike will be found in the subclasses preceding subclass 465.

SEE OR SEARCH THIS CLASS, SUBCLASS:
274, 275+ and 382+, for frog structure.

469 Unbroken main:
This subclass is indented under subclass 468. Subject matter having a frog in which the wheels are raised and carried over the unbroken main track by means of fixed elevated side rails or risers.

SEE OR SEARCH THIS CLASS, SUBCLASS:
421, 432 and 455, for risers.

470 Clamped:
This subclass is indented under subclass 468. Subject matter having rail frogs which have spacing-fillers whose parts are secured in position by clamps or clamps and wedges.

471 Composite:
This subclass is indented under subclass 468. Subject matter having frogs of composite (mostly horizontal) structure built up in various ways from pieces of wrought or cast metal other than pieces of rail.

472 Details:
This subclass is indented under subclass 454. Subject matter having details relating to the construction of various types of crossings, frogs and mates.

473 SIGNALS:
This subclass is indented under the class definition. Subject matter having audible or visual means of communication especially adapted and intended for directing and controlling the traffic over and upon railways.

SEE OR SEARCH THIS CLASS, SUBCLASS:
14, 111, 125, 209, 260, and 292+, for signal structure.

473.1 Highway crossing:
This subclass is indented under subclass 473. Subject matter including devices which indicate to pedestrians or highway vehicle operators that a train is approaching a highway crossing.

SEE OR SEARCH THIS CLASS, SUBCLASS:
125+, for systems which control highway crossing indicators by automatic train actuation.

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclass 928 for traffic control systems or devices of a similar nature used in other than a railroad crossing context.

473.2 Wigwag type:
This subclass is indented under subclass 473.1. Subject matter in which the device includes an oscillating member (e.g., swinging arm, scanning light beam).

SEE OR SEARCH CLASS:
340, Communications: Electrical, subclasses 481 and 932.1 for devices of a similar nature used in a road vehicle or traffic context other than railroad type.

473.3 Light beam projecting:
This subclass is indented under subclass 473. Subject matter including devices which give an indication by means of a projected beam of light.

474 Track reflectors:
This subclass is indented under subclass 473. Subject matter having signals on the track or roadway provided with reflectors, which reflect light from the headlight either back to the engineer or forward, as around curves, etc., to notify an approaching train.

SEE OR SEARCH THIS CLASS, SUBCLASS:
20, for track-reflectors used in block-signal systems.

SEE OR SEARCH CLASS:
359, Optical: Systems and Elements, subclasses 515+ for signal reflectors, per se, and subclasses 838+ for mirrors, per se.
362, Illumination, subclass 296 for reflectors in combination with illuminating means.

475 Dwarf or pot:
This subclass is indented under subclass 473. Subject matter having "drawf" or "pot" signals, so called which are low compact signals placed at switches and used mostly in yards where switches are operated from towers.

476 Switch or switch stand:
This subclass is indented under subclass 473. Subject matter having switch-position indicators such as signals, lamps, and targets actuated by the movement of a switch or switch-stand.

SEE OR SEARCH THIS CLASS, SUBCLASS:
212+, for detonating signals placed in position by the motion of a switch or switch-stand.
220, for electrically-actuated switch signals.
393+, for switch signals, targets, etc., actuated by the switch-stand.

477 Roadway, visual, and portable:
This subclass is indented under subclass 473. Subject matter having visual signals adapted to be temporarily placed upon or secured to the permanent way to advise approaching trains of danger ahead.

SEE OR SEARCH THIS CLASS, SUBCLASS:
207, for portable track trips.

478 Enclosed:
This subclass is indented under subclass 473. Subject matter having signals whose moving parts are for the most part enclosed or boxed in for protection from the weather-as, for example, the disk and circular-box or banjo type of signal.

479 Semaphore:
This subclass is indented under subclass 473. Subject matter having visual signals of the well-known railway- semaphore type--viz., a blade with parallel or but slightly-diverging edges, pivoted upon one side of a post or mast and capable of being rotated to a vertical, inclined, or horizontal position. They are usually provided with signal-lamps and spectacles set with colored glasses, corresponding to the various aspects which they can present.

(1) Note. Signals of this well-known type are here included even when the claims do not specifically involve other elements of railway signaling. "Semaphores", so called, of special or unusual shape, if claimed in connection with railway apparatus and appliances, will be found in subclass 473 of this class; if not so claimed, in Class 116, Signals and Indicators, subclasses 200+.

SEE OR SEARCH THIS CLASS, SUBCLASS:
473, (see Note 1).

SEE OR SEARCH CLASS:
116, Signals and Indicators, (see Note 1).

480 Upper quadrant:
This subclass is indented under subclass 479. Subject matter having semaphores which are operated in the upper quadrant and moved

upward instead of downward when passing from horizontal to vertical position, so that deposits of ice on the arm will increase rather than decrease the tendency to assume the stop or danger position. They are not usually provided with counterweights.

(1) Note. Pivoted-arm signals, not strictly semaphores within the definition of subclass 479, are here included, provided they work in the upper quadrant.

481 Home and distant:
This subclass is indented under subclass 479. Double semaphores on the same mast, usually operated by one lever in succession.

SEE OR SEARCH THIS CLASS, SUBCLASS:
33, 38, 39, 44+, 51, and 52, for semaphores in block-signal stems.
224, for home and distant signal semaphores.

482 Arms:
This subclass is indented under subclass 479. Subject matter having semaphores in which the novelty resides in the arm or blade or in its mode of mounting.

483 Illuminated:
This subclass is indented under subclass 482. Subject matter having semaphores in which the novelty resides in means for illuminating the arm or blade by either natural or artificial light not emanating from the train.

(1) Note. Pivoted-arm signals, not strictly semaphores within the definition of subclass 479, are here included, provided they disclose means for illuminating the arm-or blade. Signal-arms or targets illuminated by light from the train will be found in subclass 474.

SEE OR SEARCH THIS CLASS, SUBCLASS:
474, and 479, (see Note 1).

484 Lamp and spectacles:
This subclass is indented under subclass 479. Subject matter having semaphores with lamps or spectacles of special structure or provided with means for holding or moving the lamp or its parts.

(1) Note. For means for mounting the lenses see Class 362 Illumination, subclasses 455+.

SEE OR SEARCH CLASS:
362, Illumination, subclasses 257+ for lamps which may be used for signalling (see Note 1).

485 Post mechanism:
This subclass is indented under subclass 479. Subject matter having means located at or upon the post for actuating, locking, or controlling the movements of the semaphore.

SEE OR SEARCH THIS CLASS, SUBCLASS:
3, 14, 20, 111, 118, 120, 125, 209, 220, 221, and various indented subclasses (except the “switch” subclasses thereunder) for various means for controlling semaphores.
257, 262 and 292, for various means for actuating semaphores.

486 Bridge warnings:
This subclass is indented under subclass 473. Subject matter having means placed at the approach to overhead or highway bridges as a warning to brakemen on the roofs of cars that there is not sufficient clearance for safety. They are usually yielding obstructions, such as hanging cords, rods resiliently mounted, etc.

487 Torpedoes:
This subclass is indented under subclass 473. Subject matter having means adapted to be placed on or near the track-rails, so as to be exploded by a passing train as a warning of danger ahead.

(1) Note. Only the structure of the container which holds the explosive substance is here classified. The explosive itself will be found in Class 149, Explosive and Thermic Compositions or Charges.

SEE OR SEARCH THIS CLASS, SUBCLASS:

210+, for detonating signals placed in position by the movement of a switch, switch-stand, or visual signal.

SEE OR SEARCH CLASS:

102, Ammunition and Explosives, appropriate subclasses for containers not specially designed for railway use and subclass 336 for red fire fuses used by brakeman and others in railway signaling.

149, Explosive and Thermic Compositions or Charges, appropriate subclasses for explosive or ignitable compositions which may be useful for signal purposes.

488 Trainmens' kits:

This subclass is indented under subclass 473. Subject matter having collections of signal devices for the use of brakemen in protecting their trains--such as flags, lanterns, torpedoes etc.,--fastened or otherwise kept together until needed for use.

SEE OR SEARCH CLASS:

206, Special Receptacle or Package, subclasses 223+ for a container for a railway signal kit. Where the container forms part of the signal device or is particularly configured to such railway signals, classification is in this (246) class.

489 MANUAL ACTUATION:

This subclass is indented under the class definition. Subject matter having means for manually or pedally actuating signals, switches and other movable elements.

SEE OR SEARCH THIS CLASS, SUBCLASS:

393+, and all subclasses mentioned in the search notes appended thereto for manually actuated switch stands.

END