

the fish-plate F_1 , projections F_{11} thereon, and the bolts B and B_1 , substantially as shown and described. 3rd. A railway rail R having the end of its head and web cut bevel or oblique in a lateral direction as on line A , having a portion of the foot severed from the web and cut off square some little distance back of the heel of the bevel end, substantially as set forth. 4th. The combination of a fish-plate F , foot f_1 , f_{11} , corresponding to the rail foot, and swell f , substantially as shown and described. 5th. The combination of the fish-plate F_1 and the projections F_{11} , substantially as shown and described. 6th. The combination of the fish-plate F_1 , foot f_1 , rails R , and recesses formed by the shortening of the rail foot, substantially as set forth. 7th. The combination of the rails R , each having its foot shortened square, the fish-plate F_1 , foot f_1 , f_{11} , fish-plate F , projections F_{11} , and bolts B , B_1 .

No. 25,689. Electromotor or Dynamo-Electric Machine. (*Electromoteur ou Machine Dynamo-Electrique.*)

William Main, Brooklyn, N.Y., U.S., 11th January, 1887; 5 years.

Claim.—1st. The combination, to form a dynamo-electric machine or electromotor, of a revolving armature consisting of a core having polar projections, stationary pole-pieces arranged on opposite sides of the armature to receive the magnetic reaction of said polar projections, as the latter alternately approach and recede with the rotation of the armature, and a stationary exciting-coil surrounding said core and arranged with its axis coincident with the axis of rotation of said armature, whereby the armature is caused to revolve within its exciting-coil, substantially as set forth. 2nd. The combination of an exciting-coil, a revolving armature consisting of a core arranged in the axis of said coil and polar projections outside thereof, stationary pole-pieces arranged on opposite sides of the armature, and corresponding in position to the polar projections thereon, whereby, as the armature revolves, its polar projections alternately approach and recede from said pole portions, and a commutator adapted to shunt said coil into circuit while said polar projections are approaching said pole portions, and cut it out of circuit while they are receding therefrom, substantially as set forth. 3rd. The combination of an exciting-coil, a revolving armature consisting of a core arranged in the axis of said coil, and polar projections outside thereof, a stationary magnet arranged outside of said coil and within the inductive influence thereof, and having pole portions corresponding in position to the polar projections on the armature, and a commutator adapted to shunt said coil into circuit while said polar projections are approaching said pole portions, and cut it out of circuit while they are receding therefrom, substantially as set forth, whereby said pole portions and polar projections mutually attract each other during the approach of the latter, and cease to attract each other during the recession thereof. 4th. The combination of a revolving armature, two or more exciting-coils surrounding said armature and arranged with their axis coincident with its axis of rotation, a stationary magnet arranged outside of said coils and a commutator, substantially as set forth, adapted to cause an alternate or successive excitation of said coils. 5th. The combination of a stationary magnet B having pole portions, a revolving armature A having polar projections corresponding to, and alternating in arrangement with said pole portions, two or more exciting coils C , C , surrounding said armature with their axes coincident with its axis of rotation, and a commutator, substantially as described, adapted to alternately connect each coil in the circuit and cut it out therefrom, and to direct the current alternately or successively through the respective coils, as set forth, whereby each coil receives its current in the same direction relatively to the external circuit. 6th. In an electromotor, the combination of a revolving armature, two or more coils surrounding said armature with their axes coincident with its axis of rotation, and arranged to magnetize each a separate portion of said armature, and a commutator adapted to direct the current successively through said coils in the same direction, substantially as set forth, whereby each coil receives the current during not more than half the time, and during the remainder of the time it is severed from the circuit and receives no current. 7th. The combination of revolving armature A having polar projections, stationary magnet B having corresponding pole portions, and a magnetic inductive connection between said armature and magnet, arranged remote from said polar projections, and pole portions with one or more exciting-coils C inclosing said armature, substantially as set forth. 8th. The combination of stationary magnet B , revolving armature A , coils C , C , and iron disk D , mounted on said armature and revolving therewith, with its periphery in inductive proximity to the magnet B , substantially as set forth. 9th. In an electromotor, the combination of a revolving armature having polar projections, a stationary magnet having corresponding pole portions, exciting-coils inclosing said armature with their axes coincident with its axis of rotation, and the commutator F , constructed substantially as set forth, with the roller or conductor G through which the current enters the commutator, and a controlling-lever (l), carrying the conductor g and adapted to move the same to different positions around the commutator, and thereby to stop, start, or reverse the motor, as set forth. 10th. The combination of a stationary tubular magnet B , cut away to form pole portions c , c , revolving armature A arranged concentrically within it, and exciting-coil C inclosing the core of said armature and inclosed within said tubular magnet, whereby it magnetizes simultaneously said armature and magnet, substantially as set forth. 11th. The combination of a stationary tubular magnet B cut away to form pole portions c , c , and divided longitudinally between the pole portions, as described, with a revolving armature A arranged concentrically within it, and the exciting-coil C inclosing the core of said armature and enclosed within said tubular magnet, whereby it magnetizes simultaneously said armature and magnet, substantially as set forth. 12th. In an electromotor, the combination, with stationary magnet B having pole portions and exciting-coil C , of revolving armature A , arranged in the axis of said coil and consisting of an iron core a , subdivided into distinct longitudinal members for the avoidance of Foucault currents, and pole-pieces b , b , made up of separated laminae, substantially as set forth. 13th. In an electromotor, the combination, with stationary magnet B , having pole portions and exciting-coil C , of revolving armature A arranged in the

axis of said coil and consisting of a core a , constructed of a longitudinally slitted iron tube l , and iron wires m arranged longitudinally in said tube, and laminated pole-pieces b , b , substantially as set forth. 14th. The combination, with stationary magnet B , having pole portions and exciting-coil C , of revolving armature A consisting of iron core a longitudinally subdivided, and the pole-pieces b , b , each consisting of a series of iron plates separated by intervening layers of non-magnetic material and provided with pole caps c , c , substantially as set forth. 15th. The combination, with armature A , exciting-coils C , C and tubular magnet B , of disk-shaped end frames E , E and non-magnetic tubular envelope or casing I , substantially as set forth, whereby the magnetic parts are inclosed and protected from dust. 16th. The combination of revolving armature A , consisting of core a and three pole-pieces b set at equal angular distances apart, magnet B having pole portions c , c , corresponding to said pole-pieces, and three exciting-coils C , C , with a commutator F adapted to direct the current into said coils successively, whereby each coil receives the current during its proportionate fraction of the revolution, substantially as set forth. 17th. The combination of revolving armature A , stationary magnet B and two or more coils C , C , with a commutator F having as many members as there are coils, and adapted to direct the current into said coils successively, with roller or conductor g by which the current enters the commutator, and another roller or conductor g' angularly adjustable relatively to the roller g , whereby the duration of the current through each coil may be prolonged, and the interval before being cut off from the preceding coil, substantially as set forth. 18th. The combination, with the coils C , C , of the commutator F having as many members as there are coils, the roller or conductor g , the controlling lever G carrying said conductor, the roller or conductor g' , the lever G' , carrying the latter, and the screw H for angularly adjusting said levers G , G' , relatively to each other, substantially as set forth.

No. 25,690. Railway Signal.

(*Signal de Chemin de Fer.*)

John A. Leonard, Glenvale, Ont., 11th January, 1887; 5 years.

Claim.—The combination, with the track B , of two or more levers D , F , pivoted endwise together and fulcrumed between their ends, one end of the series of levers provided with a tread E in proximity to the rail, and the opposite end of the series of levers connected to a bell rope or chain K , supported by post M and leading to a bell or gong at the place of danger, whereby the wheels of a passing train will depress the thread and cause an alarm to be sounded, as set forth.

No. 25,691. Water Heater for Locomotive Boilers. (*Réchauffeur d'Eau pour Chaudières de Locomotives.*)

Thomas Clifford, Mount Savage, Md., U.S., 11th January, 1887; 5 years.

Claim.—1st. The combination, with a smoke-box, of an encircling water-jacket provided with inwardly-extending pockets and with longitudinal water tubes extending through the smoke-space, and connecting the inwardly-extending packets, substantially as and for the purposes described. 2nd. A smoke-box which is provided with an exterior longitudinal water chamber, which encircles the sides and partially encloses the ends of such smoke-box, and which has longitudinal water-tubes, which extend across the path of the escaping products of combustion, and which connect the oppositely-placed enclosing end portions of the water-chamber. 3rd. The combination, with a smoke-box, of an encircling water-chamber, which has inwardly-extending oppositely-placed end portions, and water-tubes which connect such end portions, and an end plate or head, which is provided with orifices, which are coincident with the water-tubes, and with screw-nuts for closing such orifices.

No. 25,692. Holder for Photographs, Pictures, etc. (*Porte-Photographie, Image, etc.*)

Edward Pachtmana, Dresden, Germany, 11th January, 1887; 5 years.

Claim.—As a new article of manufacture, a holder for photographs and other similar objects consisting of the frames b , attached to the inclined base c , by means of loops of a suitable durable fabric, folded in such a manner that the forward edge of the open loop of fabric is attached to the rear surface of one of the frame b , whereas the rear edge of the said fabric is attached to the forward surface of the next adjoining frame, substantially as and for the purpose hereinbefore set forth.

No. 25,693. Cylindrical Wooden Package.

(*Boîte Cylindrique de Bois.*)

James Tomlinson, Detroit, Mich., U.S., 11th January, 1887; 5 years.

Claim.—1st. A cylindrical package, the walls of which are composed of two layers of veneer, or wood sheeting, and a layer of water-proof fabric interposed between them, as described. 2nd. A cylindrical package, the walls of which are composed of two thicknesses of wood, wound in a continuous coil from one piece and having a water-proof fabric interposed between them, substantially as described. 3rd. In a veneer package, the combination, with the walls, of a cover having a bevelled edge, for the purpose specified.

No. 25,694. Elastic Pen and Penholder.

(*Plume et Porteplume Elastiques.*)

Ernst Mögel, Dresden, Germany, 11th January, 1887; 5 years.

Claim.—1st. The arrangement and application of a spirally coiled spring a to a stem-handle or holder c , for rendering the pen or writing instrument flexible in all directions, and the device for rendering the said spring inoperative by screwing the stem or handle c , into the