

shafts and adapted for engagement with the loops substantially as described. 3rd. In a road cart, the combination, with the shafts, of the plate K attached to the inner face of the shaft and provided with hooks k , said plate passed beneath the ends of the shafts k^1 and up along the opposite sides at k^2 , substantially as described. 4th. In a road cart, the combination, with the shafts and the crate or body, of springs fastened to the under side of the shafts, said springs at their heels constituting the forward shaft, irons for stiffening and strengthening the shafts, and at their forward ends secured to and supporting the forward end of the crate or body, substantially as described. 5th. In a road cart, the combination, with the shafts, and the crate or body, of springs located beneath the shafts and fastened thereto, said springs at their forward ends engaged with, and supporting the forward end of the crate or body, and at their rear ends constituting the forward shaft irons, and with their extreme ends passed through the brace rods and constituting a part of the clips, by which the shafts are engaged with the axle.

No. 32,526. Galloping Rocking Horse.

(*Cheval à buscule galopant.*)

George W. Wade, Cadillac, Mich., U.S., 15th October, 1889; 5 years.

Claim.—1st. The attachment to rocking horses, of one or more rods or braces C loosely bolted or pinned to the horse at the upper end, substantially as and for the purpose specified. 2nd. The short movable rocker g attached to the horse by means of one or more rods or braces, as and for the purposes specified. 3rd. A rocking horse provided with one or more extra swinging rockers attached by means of rods or braces, as and for the purposes specified. 4th. The swinging rods or braces C, in combination with the rockers e attached to rocking horse, substantially as described.

No. 32,527. Combined Latch and Lock.

(*Loquet-serrure.*)

Charles Sandford, William Feeney and Arthur Coe, Madoc, Ont., 16th October, 1889; 5 years.

Claim.—1st. In a combined latch and lock, the combination of a casing having studs C and C^1 , a latch bolt having a latch head, an eye b^1 by which it is pivoted eccentrically on the stud C, an elongated slot b^{111} engaging the stud C^1 , and means for engagement by the latch lever, and a latch lever engaging said latch, substantially as set forth. 2nd. In a combined latch and lock, the combination of a casing having studs C and C^1 , a latch bolt having a latch head, an eye b^1 by which it is pivoted eccentrically on the stud C, an elongated slot b^{111} engaging the stud C^1 , a face b^2 for the night latch, and means for engagement by the latch lever, a latch lever engaging said latch, and a night latch F, substantially as set forth. 3rd. In a combined latch and lock, the combination of a casing having studs C and C^1 , a latch bolt having a latch head, an eye b^1 by which it is pivoted eccentrically, the stud C, an elongated slot b^{111} engaging the stud C^1 , means for engagement by the latch lever, square ended elongated slot b^{1111} , having a square notch b^2 and a square ended shoulder, a latch lever adapted to engage the latch bolt, and tumblers E having square projections e^1 adapted to engage the slot b^{1111} , and notch b^2 , substantially as set forth. 4th. In a combined latch and lock, the combination of the casing A, a having studs C, C^1 , a latch bolt B having latch head b , eye b^1 , lug b^{11} , slot b^{111} , notch b^2 , recess b^3 , and facing b^4 , latch lever D, having facing d pivoted in the casing and engaging a spindle, its free end engaging the lug b^{11} , spindle S engaging the eye in said lever, night latch F engaging the facing b^4 , tumblers E having projections e^1 engaging the slot b^{111} , and notch b^2 , and the key K, substantially as set forth. 5th. In a combined latch and lock, the combination of the casing A, a^1 having studs C, C^1 , latch bolt B' having latch head b , eye b^1 , slot b^{111} engaging stud C^1 , having means for engagement by a latch lever, night latch F', and plate f^1 , substantially as set forth.

No. 32,528. Insulator for Electric Batteries.

(*Isoloir pour piles électriques.*)

The United Electric Improvement Company, Gloucester, N. J. (assignee of Stanley C. C. Currie, Philadelphia, Penn.), U. S., 16th October, 1889; 15 years.

Claim.—1st. A perforated corrugated insulating plate or diaphragm, permitting of the free passage of the current, as well as the free circulation of the liquid and gases in or through the perforations, and around or along the grooves or recesses of the corrugations thereof, substantially as and for the purposes set forth. 2nd. A perforated corrugated insulating plate or diaphragm, having the lines of corrugation lying in a vertical plane, substantially as and for the purposes set forth. 3rd. A perforated insulating plate or diaphragm formed with corrugations, substantially as and for the purposes set forth.

No. 32,529. Steam Engine. (*Machine à vapeur.*)

George Dalton (assignee of John H. Dales), Leeds, Eng., 16th October 1889; 5 years.

Claim.—1st. In combination with centrifugal steam engine governors, the application and use of anti-friction balls or rollers to the joints and bearings, for the purpose of increasing their sensitiveness. 2nd. In the construction of centrifugal steam engine governors, the application and use of ball or roller bearings to the joints, and the combination therewith of the power and cataract cylinders, substantially as and for the purposes hereinbefore described and illustrated by the drawings. 3rd. The construction of centrifugal steam engine governors, of the right angular lever arm, spring load type fitted with ball or roller bearings, in combination with the power and cataract cylinders and other apparatus, substantially as and for the purpose hereinbefore described and illustrated by the drawings. 4th. In combination with centrifugal steam engine governors, the

application and use of the special arrangement of the power cylinder and cataract cylinder, substantially as hereinbefore described and illustrated by the drawings. 5th. The general construction, combination and arrangement of the several and respective part together, constituting my improvements in steam engines, substantially as hereinbefore described and illustrated by the drawings.

No. 32,530. Railway Switch.

(*Aiguille de chemin de fer.*)

Walter N. Knight, Boardman, and William H. Smith, Evinston, Fla., U.S., 16th October, 1889; 5 years.

Claim.—The improvement in railway switches herein described, consisting of the main line having section B¹, the side track having section h , provided with portion h^2 and shoulder h^3 , the intermediate rail I, having section I¹ and extension i , the bar or beam J, the main shaft having crank-like portions, and the rods for connecting such portions with the sections to be operated, substantially as set forth.

No. 32,531. Ditching Plough.

(*Charrue à fossoyer.*)

Russell H. Nogar, Dundee, Mich., U.S., 18th October, 1889; 5 years.

Claim.—1st. The combination, with the ditching plough, of a carrier mounted on a truck at the rear of the plough, and having a hinged connection at its forward end with the scoop or plough, and the adjustable draft connection with the rear end of the plough beam, said connection being pivoted at one end to the plough beam, substantially as described. 2nd. In a ditching machine, the combination, with the ditching plough, of the carrier mounted on the truck at the rear of the plough, and having pivotal connections at its forward end therewith, and the adjustable draft connection being pivoted at one end to the plough beam and under the control of the operator, substantially as described. 3rd. In a ditching machine, the combination, with the ditching plough, of a carrier pivotally secured at its forward end to the scoop or plough, and mounted with its rear end upon the truck, and a draft connection between said truck and the rear end of the plough in the line of draft, consisting of the foot lever t and the draft connection u , substantially as described. 4th. In a ditching machine, the combination of the following elements, the ground wheel mounted on a vertical standard, the draft devices applied thereto, the plough beam, provided at its forward end with the vertical bearing engaging with the standard of the ground wheel, the scoop or plough secured to the rear end of the plough beam, the raising and lowering device mounted upon the plough beam, the carrier pivotally secured at its forward end to the plough and mounted at its rear end upon the truck, and the adjustable connection between the rear end of the plough and the truck, said connection consisting of the foot lever t and the draft connection u , substantially as described. 5th. The combination, with the plough of a ditching machine, of the endless carrier pivotally secured at its forward end to the rear end of the plough and mounted at its rear end upon a truck, a carrier pulley mounted upon the truck and to which motion is applied, and a friction pulley mounted below such carrier pulley and pressing the belt against the face of the carrier pulley, substantially as described. 6th. The combination, with the plough of a ditching machine, of a carrier, consisting of the endless belt M, secured at its forward end to the plough, and mounted at its rear end upon a truck, the belt pulley O mounted in suitable hearings upon the frame of the truck, the adjustable friction pulley S mounted in contact with the belt pulley, the shaft V of the belt pulley, and the grooved drive pulley W, substantially as described. 7th. The combination, with the ditching plough, the carrier mounted in the rear thereof and supported upon the truck, the drive shaft V, of the carrier, the grooved pulley W upon said drive shaft and the wire rope Y, the parts being arranged to operate substantially as and for the purpose described. 8th. In a ditching machine, the combination of the following elements: the ground wheel D, the vertical standard E carrying such ground wheel, the draft bar H, the draft connection adjustably secured to the draft bar, the plough beam provided at the forward end with the bearing I, into which the standard E engages, the raising and lowering lever J pivotally mounted on top of the plough beam, and engaging by its forward end with the standard E, the adjusting devices of the lever, the scoop C mounted on the standard B, the endless carrier M, the roller N mounted in the scoop of the plough, the truck upon which the rear end of the carrier is mounted, the carrier pulley O, over which the rear end of the carrier belt passes, the friction pulleys S, the drive pulley W and the seat R mounted on the rear truck in proximity to the rear end of the plough, substantially as described. 9th. In a ditching machine, the plough, consisting of the plough beam, the standard secured thereto, and the scoop secured to the lower end of the standard, and having the digging portions a , b , and c , substantially as described. 10th. In a ditching machine, the combination of the ditching plough, the carrier pivotally secured to the rear end of the ditching scoop and mounted with its rear end upon the truck, a flexible draft connection between the plough and the truck, the loop w secured to the plough beam, the lever z and the hanger v , substantially as and for the purpose described.

No. 32,532. Manufacture of Metallic Sulphates in Solution. (*Production des sulphates métalliques en solution.*)

Lucius O'Brien, Sydney, N.S.W., 18th October, 1889; 5 years.

Claim.—1st. The use of sulphurous acid under pressure for the purpose of forming metallic sulphates in solution. 2nd. The use of sulphurous acid under pressure, in combination with nitrous oxide, oxygen and other substances yielding oxygen, for the purpose of forming metallic sulphates in solution.