

ings through or between them, and having beveled faces, substantially as described. 2nd. A centrifugal crusher and pulverizer comprising an exterior casing with dies arranged and secured around the periphery with discharge-openings, as shown, a shaft and hub with radial arms and shoes or beaters, slots opening into the sides of the casing for the admission of air, and plates or shutters by which the openings are regulated or closed, a yoke extending over these shutters and openings and a clamping-screw, whereby the shutters are secured or locked in place, substantially as described. 3rd. The rotary crusher having the exterior casing with the inlet and discharge-openings, the rotary arms or beaters, the feeding-chute and the hinged tilting box with its operating mechanism, the stationary table having the oscillating pushing-plate or feeder, the crank arm, connecting rod and eccentric by which said plate is actuated, so as to advance the ore toward the feed-chute of the pulverizer, substantially as described. 4th. A sectional exterior casing having dies fitted therein, bolts and nuts by which the sections of the case are secured together or separated at will, a disk mounted upon a shaft and rotating within the circle of the dies, said disk having shoes or beaters attached to its periphery, a feed-chute and mechanism, whereby the ore is delivered to the interior of the machine to be acted upon by the beaters and shoes, discharge-openings through which the pulverized ore may escape from the casing, and air-inlet openings with controlling gates or shutters, whereby the rate of discharge and degree of pulverization of the ore may be regulated, substantially as described.

No. 32,996. Road Cart. (*Désobligeante*)

Timothy Doland, Wellington, Ohio, U. S., 3rd December, 1889; 5 years.

Claim.—1st. In combination with a road cart, the seat bars H, H, having jointed connections J, J, with the shafts, loops L, L, engaging the notched plates attached to the seat bars, and a jointed connection with the spring G, attached to the cross bar of the foot rest supported by its hangers N, N, being fastened to the seat bars, and a jointed attachment to the spring G, respectively arranged as and for the purpose substantially as set forth. 2nd. In combination with a road cart, the foot rest hangers N, N, attached at one end to the seat bars H, H, and the opposite ends thereof jointedly connected to the seat bars, spring G arranged to co-operate conjointly with the seat and seat bars having a hinged connection with the shafts, substantially as and for the purpose set forth.

No. 32,997. Hand Car. (*Char à bras*.)

Albert F. Kuhl, Van Wert, Ohio, U. S., 3rd December, 1889; 5 years.

Claim.—1st. In a car provided with hand propelling mechanism, substantially as shown, brake levers B, B', one located to one side of the propelling mechanism and the other to the rear thereof, the lower ends of said brake levers being connected by a bar, and a link for connecting one of the levers to a crank rod carrying brake shoes, substantially as shown and for the purpose set forth. 2nd. In a hand car, a superstructure or housing therefor, consisting of a top connected to a frame for supporting and bracing the same, side strips D and E having grooves f, f, for supporting side sections, substantially as shown and for the purpose set forth. 3rd. In a car, a roof having front and rear portions which extend beyond the frame thereof, angular depending end pieces, the supporting corner posts and end doors hung to the corner posts and provided with angular bottom plates, the parts being organized substantially as shown. 4th. In a car, a removable superstructure supported upon corner posts, said corner posts being provided with eye-bolts, and doors hinged thereto, said doors being adapted to meet in front of the car, substantially as shown. 5th. In a car, end doors constructed substantially as shown, and provided with angular extensions which, when the doors are closed, form a continuation of the floor boards, for the purpose set forth. 6th. In combination with a car, the end doors supported upon hinges and provided at their lower ends with inwardly extended pieces, which are adapted to meet when the doors are closed, said doors having windows supported in angular frames, substantially as shown and for the purpose set forth. 7th. In combination with a housing for hand cars, end doors hinged to the side frames so as to meet beyond the car body, the doors being at an angle, as shown, with the sides of the car.

No. 32,998. Method of Combining Electricity with Gas for Illuminating, Heating and other purposes.

(*Mode de combiner l'électricité avec le gaz pour des fins d'éclairage, de chauffage et autres.*)

Eugène de Beauharnais, Delia L. M. Wilson, David A. Pender, Joseph F. Eby, Hugh Blain and William J. McMurtry, Toronto, Ont., 3rd December, 1889; 5 years.

Claim.—The union of electricity with illuminating gases of any nature, for the purposes of illuminating, heating and other uses, substantially as herein described for the purposes herein specified.

No. 32,999. Adjustable Crossing and Switch for Overhead Conductors. (*Traverse et commutateur mobiles pour les conducteurs suspendus.*)

Charles J. Van Depoele, Lynn, Mass., U. S., 3rd December, 1889; 10 years.

Claim.—1st. A crossing or switch for suspended electric conductors, comprising two or more adjustably connected members adapted for attachment to the respective conductors. 2nd. A crossing or switch for suspended electric conductors, comprising two or more adjustably connected members, and electric conductors secured to

the said members. 3rd. A crossing or switch for electric conductors, comprising a contact or surface members connected in adjustable relation thereto and extending from the surface, and ribs or extensions upon the members to which the conductors are attached. 4th. An adjustable switch for electric conductors comprising two or more adjustably connected members, each adapted to receive and be attached to a terminal of the conductor, and each provided with a depending rib to guide the contact wheel, and a pivot uniting the members, substantially as described.

No. 33,000. Overhead Contact and Switch.

(*Contacte et commutateur suspendus.*)

Charles J. Van Depoele, Lynn, Mass., U. S., 3rd December, 1889; 10 years.

Claim.—1st. In an electric railway, the combination, with an overhead conductor, a contact device making underneath contact with the conductor, and a switch plate attached to the conductor and provided with means for depressing the contact device. 2nd. In an electric railway, the combination, with an overhead conductor for receiving underneath contact, of a switch plate attached thereto and provided at its extremities with means for depressing the contact device. 3rd. A switch for suspended electric railway conductors, comprising a box attached to the conductor and formed with two or more branching compartments leading therethrough, one or more of the compartments having a contracted portion adjacent to its extremity. 4th. A switching device for electric railways consisting of an open bottom metallic box or frame secured to, and depending from the under side of a suspended conductor and formed with two or more branching compartments leading therethrough, the extremities of such compartments flaring outwardly toward the conductor to form lateral guides, and inwardly, if desired to facilitate the passage of the contact device. 5th. A switching device for electric railways, comprising an open bottom box conductors connected to the upper portion of the box, and a guide rib or ribs connecting the extremity or extremities of the switch box with the conductor. 6th. A switching device for electric railways, comprising an open bottom box, conductors leading to the upper closed portion of the box, and a guide rib connecting the interior of each extremity of the switch box with the conductor. 7th. A switch for suspended electric railway conductors, comprising a downwardly open frame or box having passages extending therethrough, the main conductor attached to the upper portion thereof, and a guide rib or strip extending from the inner under side of the box and against the under side of the conductor. 8th. A switching device for suspended electric railway conductors, comprising an open frame or box having branching compartments extending therethrough and suspended from the main conductor, and fixed guides at the extremities of said passages. 9th. A switching device for suspended electric conductors, comprising an open bottom box or frame formed with branching compartments and depending from the conductors, a rib or ridge at the under side of the conductor and extending into the switch box and lateral guides on each side of the rib. 10th. In an electric railway, the combination, with the car, of a post extending upward therefrom, a frame hinged and pivoted upon said post, and a longitudinally adjustable arm secured in said frame and pivoted at one end with a grooved contact wheel for engagement with a suspended conductor, and at the other with a tension spring for maintaining the contact wheel in operative position. 11th. The combination of a moving vehicle, a support or post extending upward therefrom, a frame hinged and pivoted therein, an arm longitudinally adjustable in the pivoted frame and provided at its outer end with a contact wheel arranged to bear against the under side of the conductor, and tension springs acting against the arm for holding the contact wheel in position. 12th. In an electric railway, the combination, with the car, of a post extending upwardly therefrom, a contact carrying arm hinged and pivoted upon said post, and a tension spring adjustably secured to the lower part of said arm, and connected with the car, said spring acting to hold the outer extremity of the arm, and the contact carried thereby upward against a suspended supply conductor. 13th. In an electric railway, the combination, with a car, of a post extending upwardly therefrom, a contact carrying arm hinged and pivoted upon said post, and provided at one end with a grooved contact wheel for engagement with the supply conductor suspended above the line of travel of the car, and a rope or other flexible connection secured near the outer end of said arm and connected with the car, and a rope or flexible connection secured at or near the lower end of said arm, whereby the outer extremity of the arm may be lowered by one rope and the arm moved into the desired position by the other rope.

No. 33,001. Switch for Suspended Electric Conductors. (*Commutateur pour les conducteurs d'électricité suspendus.*)

Charles J. Van Depoele, Lynn, Mass., U. S., 3rd December, 1889; 10 years.

Claim.—1st. A switch for electric conductors, comprising a rib or member for each conductor, the inner extremities of which are arranged to intersect or lap, and a bridge or body by which said members are connected. 2nd. A switch for electric conductors, comprising a rib or member for each conductor, and a bridge or body formed integral with said ribs by which they are connected. 3rd. A switch for electric conductors, comprising a rib or member for each conductor, the inner extremities of the ribs being arranged to intersect or lap. 4th. A switch for electric conductors, comprising a rib or member for each conductor, and a bridge or body by which said members are connected, the inner extremities of the several members being arranged to intersect or lap. 5th. A switch for electric conductors, comprising a plurality of arms or members to which the conductors are connected, the inner extremities of the members being arranged to intersect or lap a block located at the point of intersection of the several members, and ways or channels between the intersecting members. 6th. A switch or crossi g for electric conductors, comprising arms or members, the inner extrem-