

ducing in the auxiliary diaphragm the vibrations of the main diaphragm, substantially as described. 7th. In combination with the vibratory diaphragm and adjusting lever and screw of an ordinary Blake transmitter (so called), the hereinbefore described hollow button containing granular carbon, and closed in front by a metal elastic vibrating plate constituting an auxiliary diaphragm, the said hollow button being mounted upon the central portion of the adjusting lever in line with the centre of the main diaphragm, the centre of the auxiliary diaphragm having a mechanical connection with the centre of the main diaphragm, so as to participate in its vibrations, and the hollow button being provided with suitable electrical connections, whereby it is adapted for inclusion in an electric circuit, substantially as described. 8th. In a telephone transmitter, a shallow chamber containing granular current-carrying material enclosed between two metal plates constituting the electrodes of an electric circuit, and uniting the same electrically, one of the said plates being rigid and the other elastic, an adjustable lever supporting the said chamber vertically by means of the rigid plate thereof, a vibratory diaphragm loosely mounted to vibrate freely in a vertical plane, a rod extending outwardly from the elastic plate of the said chamber, an adjusting screw controlling the said lever, and adapted to adjust the same and to bring the free end of the rod into contact with the said vibratory diaphragm for the purpose of forming a mechanical connection between the said diaphragm and the front of the carbon containing chamber and electrical connections, whereby the granulations and their enclosing plates may be included in an electrical circuit, substantially as described.

No. 29,837. Wheeled Scraper. (*Grattoir à roues.*)

Francis W. Kimball, Milwaukee, (assignee of Frank A. Addison, Beloit, Wis., U.S., 8th September, 1888; 5 years.

Claim.—1st. In a wheeled scraper, the combination of a crank-axle and a pan, with suspending bars rigidly secured to the sides of the pan and having their upper ends journaled to the shaft of the crank-axle, a tongue or its equivalent, and double connections between the tongue and pan, the points of connection with the pan being one above the other, substantially as and for the purpose specified. 2nd. In a wheeled scraper, the combination, of a crank-axle, bars loosely journaled on the shaft thereof, and a pan rigidly secured to the lower ends of said bars, with a tongue or its equivalent, hinged secured to the tongue and pivoted to the pan, and a bar pivotally connected with the tongue and with the upper ends of the suspending bars, substantially as and for the purpose specified. 3rd. In a wheeled scraper, the combination of a crank-axle and a pan suspended therefrom, with drag-bars pivoted to the pan and connected with the tongue, and a hooked bar adjustably connected with the tongue, and adapted to hook over the shaft of the crank-axle, substantially as and for the purpose specified. 4th. In a wheeled scraper, the combination of a crank-axle, and a pan suspended therefrom, with drag-bars pivoted to said pan and secured to the tongue, a hand-lever pivoted to the tongue, and a hooked bar pivoted at one end to the lower end of the lever, and having its other end adapted to hook over the shaft of the crank-axle, substantially as and for the purpose specified. 5th. In a wheeled scraper, the combination of a crank-axle, a pan suspended therefrom, and means for raising said pan above the ground, with a bar pivotally connected with the tongue having a hook on its rear end adapted to engage with the shaft of said crank-axle, and a lever pivoted to said bar behind the shaft and adapted to rest on said shaft, substantially as and for the purpose specified. 6th. In a wheeled scraper, the combination, of a crank-axle, and a pan suspended therefrom having pins upon its sides, with sockets on the inner sides of the crank-arms to receive said pins, and dogs for retaining said pins in the sockets, substantially as and for the purpose specified. 7th. In a wheeled scraper, the combination, of a crank-axle, and a pan suspended therefrom having flanged pins on its sides, with sockets in the crank-arms having interior grooves adapted to receive said flanges, substantially as and for the purpose specified. 8th. In a wheeled scraper, the combination, of a crank-axle, and a pan suspended therefrom, with pins on the sides of said pan, sockets in the crank-arms adapted to receive said pins, and dogs pivoted to said crank-arms adapted to automatically engage with said pins to hold them in the sockets, substantially as and for the purpose specified. 9th. In a wheeled scraper, the combination of a crank-axle, a pan suspended therefrom, and pins on the sides of said pan with sockets on the inner sides of the crank-arms, dogs to hold said pins in the sockets, arms mounted on the shaft, a yoke connecting said arms, chains connecting said yoke and dogs, and a lever for moving said yoke, substantially as and for the purpose specified. 10th. In a wheeled scraper, the combination of the ground wheels, a crank-axle and a pan suspended therefrom, with arms mounted on the shaft of said crank-axle adapted to engage with the wheels, a yoke connecting said arms, an arm rigidly secured to the shaft of the said crank-axle, a lever secured to the yoke, and mechanism for engaging and disengaging said arm and yoke or lever, substantially as and for the purpose specified. 11th. In a wheeled scraper, the combination of the ground wheels, a crank-axle and a pan suspended therefrom, with arms mounted on the shaft of the crank-axle, and adapted to engage with the rim of said wheels, a yoke connecting said arms, and arms secured to said pan and adapted to strike said yoke, substantially as and for the purpose specified. 12th. In a wheeled scraper, the combination of a pan having its rear end pivotally connected to the sides, and mechanism to raise the pan from the ground in a substantially horizontal position, with mechanism which automatically opens said rear end when the pan is tipped backward, and closes it when it is returned to the horizontal position, substantially as and for the purpose specified. 13th. In a wheeled scraper, the combination of a pan adapted to be raised above the ground having its rear end pivotally secured to the sides, with an arm secured to said rear end, a bar pivotally connected with the tongue, a link-bar pivotally connected to said arm and bar, and means for tipping said pan backward, substantially as and for the purpose specified. 14th. In a wheeled scraper, the combination of a crank-axle, a pan suspended therefrom, and means for raising and retaining said pan above the ground, with an arm rigidly secured to the shaft of the crank-axle, and a lever adapted to engage with said arm, substantially as and for the purposes specified. 15th. In a

wheeled scraper, the combination of a crank-axle, a pan suspended therefrom, and means for raising and retaining above the ground in a substantially horizontal position with an arm having a notch in its upper edge, and a shoulder on the rear end of said upper edge rigidly secured to the shaft of the crank-axle, and a lever with a spring catch adapted to engage with said arm, substantially as and for the purpose specified. 16th. In a scraper, the combination of a crank-axle having a socket with raised sides, and the ribs on its inner side, with the dog pivoted to said crank arm and having the pin adapted to engage with said rib and the sides of the socket, substantially as and for the purpose specified.

No. 29,838. Post Hole Digger.

(*Trepan pour clôture.*)

Frank P. Stanley, Spencer, Iowa, U.S., 11th September, 1888; 5 years.

Claim.—1st. The combination, with the base, of the drill carrying frame mounted over the same, and the bit cleaning knives secured to the side of the base, as set forth. 2nd. The combination, with the base and the standard erected thereon, of the swinging frame hinged to the standard, and the sliding frame mounted on the swinging frame and carrying the drill, as set forth. 3rd. The combination, with the frame having a slot X, of the shaft passing through said slot, the lever pivoted below said slot and connected to said shaft, and the rack bar pivoted to the lever and adapted to engage a stud on the frame, as set forth.

No. 29,839. Rotary Engine. (*Machine rotatoire.*)

James C. Robertson, Morrisdale Mines, Penn., U.S., 11th September, 1888; 5 years.

Claim.—1st. The combination, in a rotary engine, of the cylindrical case A having the exhaust openings G, the rotary pistons journaled in the case A arranged between the exhaust opening, and having the peripheral groove, the shoulder or abutment M having the cam faces N, O extending in opposite directions, the latter being provided with the opening P, and the said rotary piston being provided with the openings R communicating with the opening P, the valve case to which fluid pressure is introduced, and the valve pivoted in the valve case and bearing in the peripheral groove of the rotary piston, substantially as described. 2nd. The combination, of the circular case A having the exhaust openings G, and the channel H communicating therewith, the rotary piston journaled in the case A and having the peripheral groove, the shoulder or abutment M, with the cam faces N, O extending in opposite directions, the latter having the opening P, and the rotary piston, being vertically divided with the openings R communicating with the openings P, the circular valve case secured to the case A, and having the openings X on the face of the piston, the inlet opening A and the opening Z, communicating with channel H, and the valve B pivoted in the valve case near its centre, the shorter end of the said valve bearing against the inner side of the valve case, and the outer end thereof being adapted to bear in the bottom of the peripheral groove, substantially as described.

No. 29,840. Railroad Rail Joint.

(*Joint de rail de chemin de fer.*)

James M. Moody and Sidney B. Moody, Harwich, Mass., U.S., 11th September, 1888; 5 years.

Claim.—1st. The combination, with a railway rail, of the chair provided with tapered side flanges B, B, having inclined grooves H, H in their inner sides the single wedge F arranged between the rail and each side flange, and provided with a series of inclined grooves K in their outer sides adapted to register successively with the grooves H, the upper ends of the said grooves being flush at their inner sides with the outer edges of the wedges, whereby the grooves K are invisible except when registering with the grooves H and K, substantially as and for the purpose specified. 2nd. The combination, with the railway rail, of the chair provided with a depression or groove C, and the apertures I, I, the vertical side flanges B, B having grooves H therein, the wedges arranged between the rail and the side flanges, and having grooves in their outer sides adapted to register with the grooves H, and the railway spikes arranged in the aligned grooves and apertures I, and engaging notches in the base or flanges of the rail, all substantially as and for the purpose specified.

No. 29,841. Metal Wheel. (*Roue métallique.*)

Eli Charbonneau, Toledo, Ohio, 11th September, 1888; 5 years.

Claim.—1st. In a metal wheel, a hub, a collar thereon having transverse perforations through the right angled portion, in combination with return spokes passed through the perforations and embracing the intermediate metal, as and for the purpose set forth. 2nd. In a metal wheel, a hub, a collar having an annular portion formed with an integral key or lug in parallel relation, a flange having perforations, spokes passed through the perforations, and a cap formed with grooves coincident with the keys or lugs, as and for the purpose set forth. 3rd. In a metal wheel, a hub, collars upon each end thereof having radial flanges formed with an annular depression, perforations through the flanges opening into the annular depression, and radial grooves from the perforations to the periphery thereof, in combination with caps secured upon the end of the collars, and having radial grooves corresponding with the grooves in the flange, as and for the purpose set forth.

No. 29,842. Toy. (*Jouet.*)

Otto E. Rooper, Mooresville, Ind., U.S., 11th September, 1888; 5 years.

Claim.—1st. A toy horse adapted to be straddled and ridden by children, comprising two portions having in their meeting faces, concavities which form an interior chamber that receives and protects the operative mechanism, a crank-axle mounted at the rear of the chamber and provided with wheels, a crank-shaft mounted at the front