

the axle and bolster, and the hounds passing under the castings on the axle, and provided with braces passing over said castings, substantially as and for the purpose set forth. 2nd. The combination, with the rear axle and the arms of the reach, of the castings D, D with grooved bases, the helical springs D₁, D₁, the grooved castings E₁, E₁ with cross-bars E₃ and the securing bolts passed through the bolster and the rear axle, substantially as specified. 3rd. The combination, with the double tree bar, of the spring S, guards S₁, hooks T and the coiled springs T₁, substantially as specified.

No. 20,517. Land Roller. (*Rouleau d'Agriculture.*)

Kinzy W. Jones, Lemoore, Cal., U.S., 7th November, 1884; 5 years.

Claim.—1st. The spring I, for the seat, consisting of a single leaf, one end of which is riveted fast and the other is curved inwardly on itself, and has a play by reason of a slot *j* and guide-pin J, substantially as herein described. 2nd. The rear frame A, having rollers B and connecting arms *b*, in combination with the frame C having roller D, curved bar G, seat spring I having a raised rear portion under which and over the bar G, the arms *b* are pivoted, substantially as herein described.

No. 20,518. Sewing Machine. (*Machine à Coudre.*)

David L. Keeler, Grand Rapids, Mich., U.S., 7th November, 1884; 5 years.

Claim.—The face plate of a sewing machine, formed with ways *h, h*, in combination with the needle-bar, the cross-head H secured to said needle-bar, and two screws *f, f* on the two ends of the said cross-head, which screws bear against the ways *h, h*, of the face plate and are adjustable thereto, whereby the rear may be taken up in both ends or either end of the cross-head between the screws *f, f* and the ways *h, h*, substantially as set forth.

No. 20,519. Stencil. (*Patron.*)

Benjamin Walker, Detroit, Mich., U.S., 7th November, 1884; 5 years.

Claim.—1st. A stencil plate, cut from any suitable material and secured to wire cloth, whereby a perfectly formed letter or design is produced, substantially as described. 2nd. The combination of a stencil plate, with a wire cloth front, the parts being secured together, substantially as and for the purposes specified.

No. 20,520. Fence Post. (*Pieu de Clôture.*)

John W. Davy, Kingston, Ont., 7th November, 1884; 5 years.

Claim.—1st. The post A, having loops B, B₁ to incline in opposite directions, and pins C inserted through the loops and driven into the ground intersectingly, holding the post erect, as set forth. 2nd. In combination, with the post A, having loops B, B₁ and intersecting pins C, the stay or brace D, having socket E fitting in the post and fastened thereto by a wedge and secured to the ground by a pin or staple G, as set forth. 3rd. The combination of the post A, having notches A₁, fence wire A₂ and wedge A₃ to hold the wire in the notch, as set forth. 4th. The combination of the post A, block H sleeved thereon, and having mortices inclining in opposite directions, and pins C driven through the mortices and into the ground for holding the block H and post A, as set forth. 5th. The combination of the post A, fixed cross-bar I having loops at the ends inclining in opposite directions, and pins C driven through the loops into the ground, as set forth.

No. 20,521. Dust Collector.

(*Aspirateur de Poussière.*)

Barnim F. Ortman, Buffalo, N. Y., and Horatio R. Taylor, Leavenworth, Kas., U.S., 7th November, 1884; 5 years.

Claim.—1st. In a dust collector, the combination of a bent or curved air passage constructed with a perforated wall, which deflects the dust-laden air out of its course, and a dead air chamber which receives the dust particles which are driven through the said perforated wall by their momentum, while the air passes off through said passage in another direction, substantially as described. 2nd. In a dust collector, the combination, with a spiral passage having an outer perforated wall, of a spiral dead air chamber, arranged on the outer side of said perforated wall, substantially as described. 3rd. In a dust collector, the combination, with a bent or curved air passage, constructed with a perforated wall which deflects the dust laden air out of its course, a dead air chamber arranged on the outer side of said perforated wall, and partitions arranged in said dead air chamber, whereby its continuity is broken, substantially as described. 4th. In a dust collector, the combination, with a bent or curved air passage, constructed with a perforated outer wall, which deflects the dust laden air out of its course, and with a perforated bottom, of a dead air chamber arranged on the outer side of said perforated wall and below said perforated bottom, substantially as described. 5th. The combination, with the spiral air passage B, having an outer perforated wall *b*, inlet spout A and discharge spout D, of the spiral dead air chamber E open at the bottom, and a receiver K arranged below the said chamber E, substantially as set forth. 6th. The combination, with the spiral air passage B having an outer perforated wall *b*, inlet spout A and discharge spout D, of the spiral dead air chamber E provided with partitions *f*, and receiving hopper K, substantially as described.

No. 20,522. Method of Electrically Detecting and Locating Mineral Veins. (*Méthode de Recherche et de Localisation des Filons par l'Electricité.*)

August P. Lighthill, Boston, Mass., U.S., 7th November, 1884; 5 years.

Claim.—1st. In an apparatus for detecting, finding and locating mineral deposits, a battery or other source of electricity, a galvanometer, electrodes E x E, helices H, H, H₁, H₁ having polarized cores and connections as specified, whereby said battery galvanometer,

electrodes and helices are included in one and the same circuit. 2nd. In an apparatus for detecting, locating and finding mineral veins, electrodes E x E, formed of magnetizable metal and connected through a battery and galvanometer, as specified, and helices C, C, surrounding said electrodes, with connections through a battery and key, whereby said electrodes may be magnetized when desired. 3rd. In an apparatus for detecting, finding and locating mineral veins, the combination of a battery or other source of electricity, a galvanometer electrodes E x E, and insulating bridge block to which said electrodes are secured, and electrical connections, substantially as described. 4th. The method of electrically detecting, locating and finding mineral veins, which consists in applying the terminals of an electric circuit, including indicating devices to the earth's surface, but without contact with said veins, the presence or absence of said veins being shown by changes in the indicating apparatus. 5th. The method of electrically detecting and locating mineral veins, which consists in applying the terminals of an open electric circuit containing indicator devices to the earth, but not in contact with the said veins, the presence or absence of said vein being indicated by the variations in the electric circuit due to the presence of said veins.

No. 20,523. Car-Coupling. (*Accouplage de Wagons.*)

Joseph B. Willaman, Charles Stratton, Henry S. Lynch and Harvey Bumbaugh, Salem, Mass., U.S., 7th November, 1884; 5 years.

Claim.—1st. The combination of the head D, having the recesses *g₁*, bore *d* and passages *d₃* and the recess *b₁*, of the draw-bar B, having the enlargement *b₂*, the bolt F and the flanges G with the lever H, links *h₄* and with means for operating one of the flaps, substantially as specified. 2nd. The combination of the flaps G, lever H, screw or bolt *h*, spring *h₁*, connecting links *h₄* and the head D, substantially as specified. 3rd. The combination of the flap G, having the depression *g₂*, and the pintle *g₃*, with the bolt F, having the slots *f₁*, *f₂*, substantially as shown and described. 4th. The combination of the connecting link E, constructed as described, with the head D having the conical mouth *d₁*, the central bore *d*, the transverse passage *d₃* and the recess *b₁*, with the draw-bar B, having the enlargement *b₂*, the flaps G having the depressions *g₂*, pintles *g₃*, bolts F, having the concavities *f* and curved slots *f₁*, the links *h₄*, lever H, chain I and lever J, substantially as shown and described.

No. 20,524. Attaching the Strings to the Tuning Pins of Piano Fortes. (*Méthode d'Attacher les Cordes aux Chevilles des Pianos.*)

Thomas J. Brinsmead, London, Eng., 7th November, 1884; 5 years.

Claim.—1st. In a pianoforte, the combination, with each string, of a screw-threaded wrest pin or tuning pin in line with the string, a nut screwing on said pin and bearing against the frame, means to prevent the pin turning whilst permitting its longitudinal motion, and means, substantially as described, of attaching the string to the pin at a point beyond the nut, and at or near the outer or farther end of the pin, in such manner that the stress of the string shall be in the longitudinal direction of the pin, substantially as shown and described. 2nd. In a pianoforte, the combination, with the wrest plank formed of a rib projecting from, and cast in one piece with the frame at about right angles with the plane of the framing, of screw pins *a*, in line with the strings, nuts *b*, washers *c*, the means of attaching the strings to the outer ends of the pins, and the means of preventing the pins from turning, substantially as shown and described. 3rd. In a pianoforte, the mode of attaching the string to the outer end of a screw-threaded wrest pin, or tuning pin, placed in line with and string by bending the string around a succession of at least two and preferably three corners or bends formed on the pin, substantially as shown and described. 4th. In a pianoforte, the combination, with each string, of a screw pin in line with the string and having a longitudinal groove at one side, and means of attaching the string to the outer end of the pin, a nut screwing on the pin and supporting the tension of the string, a washer having a feather engaging in the groove of the pin and engaging with the wrest plank so as to be prevented from turning, substantially as and for the purpose specified. 5th. In a pianoforte, the combination, with a screw-threaded wrest or tuning pin placed in line with, and provided with a longitudinal passage for the string, a transverse hole for receiving the end of the strings, a string passing lengthwise of the pin and bent across the outer end of the pin, and a cap ferrule, or its equivalent, for retaining the end of the string in said hole, substantially as shown and described.

No. 20,525. Mowing and Reaping Machine. (*Faucheuse-Moissonneuse.*)

James Marr, Simcoe, Ont., 7th November, 1884; 5 years.

Claim.—1st. The combination of the serpentine wheel A, swivel C, pitmans E, E, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the pitmans E, E, and the levers F, F, and the knives K, substantially as and for the purpose hereinbefore set forth.

No. 20,526. Railway Track. (*Voie de Railroute.*)

George Cowdery, Sidney, N.S.W., 7th November, 1884; 5 years.

Claim.—1st. A railway rail composed of two sections, each having one or more bearing surfaces and adapted to be interchanged, substantially as described. 2nd. A railway rail, composed of two sections, each having two treads or bearing surfaces, such sections being interchangeable and each independently reversible, substantially as described. 3rd. The combination of two independently reversible and interchangeable rail sections, with a chair having a base plate C and a central supporting rib *d* for the rail sections and fastening devices, all substantially as described. 4th. The combination, with the chairs, having a central rib *d*, the lugs *f₁*, *f₂* of the rail sections, each composed of an inclined web and two treads and the lateral bolts, all substantially as described. 5th. The combination of the chair having