carrier, and a cutter secured to said cutter carrier, substantially as described. 2nd. The combination, with a thrashing machine, of a folding grain carrier frame pivoted adjacent to the feed opening of the machine, a band-cutter carrier pivoted above and adjacent to the said feed opening, the grain carrier and cutter carrier being capable of folding up against the feed end of the machine, and means for holding the carriers in such position for transportation, substantially as described. 3rd. The combination, with a thrashing machine, of an endless travelling grain carrier, and an endless travelling band-cutter carrier converging toward each other, and both pivoted to the feed end of the machine, to fold up for transportation, and means for holding the carriers in such position, substantially as described. 4th. The combination, with the threshing machine, of the carrier having a jointed extension frame, and the bars supporting said frame having forked ends to receive the journals of the roll carrying the apron, substantially as described. 5th. The combination, with the grain carrier having inclined spikes, of the band-cutter and straw-spreader, said carrier and band-cutter converging toward each other, and the band-cutter travelling at a greater speed than the grain-carrier, substantially as described.

No. 18,755. Pipe Organ. (*Orgue.*)

William H. Young and Bernard MacMackin, Wilmington, Del., U.S., 1st March, 1884; 5 years.

Claim.—1st. In a pipe-organ, the combination, with the wind-chest situated at the bottom of the herein described bellows, consisting of a partition Q projecting diagonally upward from the wind-chest, and provided with a reservoir and feeders hinged on the sides of said partition, substantially as set forth. 2nd. In a pipe-organ, the combination, with the wind-chest situated at the bottom of the bass-pipes, situated above the wind-chest and arranged horizontally in a vertical row, with the smaller at the bottom and the larger successively above them, and the feet of said bass-pipes arranged to be within the vertical planes of said bass-pipes, substantially as set forth. 3rd. In a pipe-organ, a row of stopped bass-pipes arranged horizontally one above the other, to have their receiving ends in different vertical lines, in combination with a series of separate conveyances or feet respectively communicating with said bass-pipes, substantially as set forth.

No. 18,756. Hand Saw Filing Machine.

(*Machine pour Limer les Scies.*)

David Chambers and Sturgis S. Cushman, Hull., Que., 1st March, 1884; 5 years.

Claim.—1st. A bed having longitudinal slot for the admission of a saw blade, said bed provided with suitable gripping device or vice to hold the saw blade, and with leg or other suitable means for securing the same to a bench or other object, a carriage sliding upon said bed and carrying a shaft with spur wheel gearing into rack-teeth, at the underside of the bed, for moving the same, also a spring catch engaging notches in a bar adjustably secured to the bed, and the pitch of the notches corresponding to the pitch of the saw teeth, a file guiding device suspended from the upper part of said carriage and consisting of a swing bracket pivoted to a cross head having a screw stem passing through the bar of the carriage, and provided with nut and jam nut for adjustment for height and angle, a double handled file-holder consisting of a flat slotted bar guided longitudinally in said swing bracket and having vertical play, the file being clamped to the lower edge. 2nd. The bed A, consisting of the plates A^{o}, A^{oo} forming longitudinal slot a with raised lip a^{1}, to form abutment for the jaw B, to which a compound movement is imparted in drawing the same longitudinally by means of a nut b^{2} working upon the screw stem b^{1} projecting through the slotted end of the bed, and guided transversely by studs a^{2} projecting into oblique slots b_{1}, the under-side of the front part A^{oo} provided with rack teeth a^{4}, a notched bar A^{1} adjustably secured to the top by means of screws or bolts a^{5} passed through slots in the bar, said bed provided with a slotted trunk C having lugs c with eyes to admit bolts or screws. 3rd. The carriage D consisting of two branched legs d rigidly connected at the top, the rear branches d^{1} connected in rear of the bed, and the front branches d^{2} connected by a bracket D^{1}, projecting outwards and downwards. 4th. In combination with the carriage D, the basket D^{1} carrying the shaft E, spur-wheel E^{1} and hand wheel E^{2}, or equivalent, also bracket F with spring sliding catch f. 5th. In combination with the carriage D, the bracket D^{1} with the propelling shaft E journalled therein, and carrying the spring catch f, and the saw-set G G^{1} g. 6th. In combination with the carriage E, the file guiding device consisting of the cross head H, with screw spindle H adjustably secured for height and angle in the upper portion of the carriage by the nuts h, h^{1}, the swing guide bracket I pivoted to the cross head and adjustable for inclination by the nut h^{2} upon the screwed pivot, the file-holder K running in the slot i and having long wide slot k through which pass small pins i^{1}, i^{1}, and provided with the lever clips M adjusted by the set screws m. 7th. The file-holder K consisting of a flat bar, with handle at each end, provided with long slot k, the lever clips M pivoted near the handles and adjustable by set screws m, for holding a three-cornered file L to the lower edge of the holder, all substantially as described and for the purpose set forth.

No. 18,757. Boot. (*Botte.*)

Thomas Kennedy, jr., Henry C. Fortier and William H. Best, (Assignees of Samuel McCullough,) Toronto, Ont., 1st March, 1884; 5 years.

Claim.—1st. An upper A, lasted to a wooden sole B, in combination with a flexible shank C. 2nd. In a boot having a wooden sole lasted to the upper, a shank made of leather or other flexible material bound at one end to the wooden sole, its other end extending below the wooden heel D, which is secured to it, substantially as and for the purpose specified. 3rd. In a boot having a wooden sole lasted to the upper, the shank C made of leather or other flexible material, and having a flange a formed on its front end, in combination with the band E arranged to bind the shank C to the sole B, substantially as and for the purpose specified.

No. 18,758. Electrical Exercising Apparatus. (*Appareil Electrique de Gymnastique.*)

James H. Shaw, (Assignee of William T. McGinnis,) New York, N.Y., U. S., 1st March, 1884; 5 years.

Claim.—The combination of a sealed voltaic cell A, an induction coil G and a vibrating rheotome L M, inclosed within the body or handle of a dumb-bell, or other apparatus, adapted for manual use with conducting surfaces or strips K, K_{1}, K_{11} secured upon the handle in position to be clasped by the hand, and wires connecting the cell coil and rheotome with each other and with said strips K, K_{1}, K_{11}, all substantially in the manner and for the purposes herein set forth.

No. 18,759. Plastic Process for Metallizing Wood, &c. (*Procédé Plastique de Métallisation du Bois, &c.*)

Louis Brown, New York, and Lucy N. White, Rye, N.Y., U. S., 1st March, 1884; 5 years.

Claim.—1st. The art of surfacing wood or other material with metallic zinc, by means of a plastic composition of sublimed zinc and a suitable vehicle, substantially as described. 2nd. In the art of coating wood or other material with metallic zinc, the use of sublimed zinc applied to the surface of the wood or other material, as described, and then polished, all substantially as and for the purposes set forth. 3rd. In the art of applying metallic zinc to wood or other surfaces, the coating thereof with thin plastic composition containing zinc dust of the character described, and polishing said coating, as set forth, and then varnishing the same, all substantially as and for the purposes specified. 4th. The composition consisting of zinc dust, of the character described, mixed with any suitable vehicle and colored or not as specified, all substantially as and for the purposes set forth. 5th. As an improved article of manufacture, wood or other metallic surface covered with metallic zinc applied in a plastic state, all substantially as and for the purposes set forth. 6th. Wood or other material surface covered with metallic zinc applied in a plastic state and afterwards polished or burnished, all substantially as described.

No. 18,760. Grate. (*Grille.*)

Lemuel Bannister, Philadelphia, Pa., U. S., 3rd March, 1884; 5 years.

Claim.—1st. A grate-bar constructed, as described, with a flat top and the upper parts of its sides concave. 2nd. A grate-bar constructed, as described, with a flat top, vertical perforations therein, and the upper parts of its side concave. 3rd. A grate-bar constructed, as described, with a flat top, longitudinal grooves and vertical perforations therein, and the upper parts of its sides concave. 4th. A grate-bar constructed, as described, with a flat top, the upper parts of its sides concave, and downwardly tapering convex lower sides. 5th. A grate-bar constructed, as described, with a flat top, latterally projecting lugs or teeth, the upper parts of its sides concave between the teeth and downwardly tapering convex lower sides. 6th. A grate-bar constructed, as described, with a flat top, vertical perforations, laterally projecting lugs or teeth, the upper parts of its sides concave between the teeth, and downwardly tapering convex lower sides. 7th. A grate-bar constructed, as described, with a flat top, vertical perforations, laterally projecting vertically perforated lugs or teeth, the upper parts of its sides concave between the teeth and downwardly tapering convex lower sides, and a rounded bottom. 8th. The combination, substantially as herein set forth, of a series of grate-bars constructed, as described, with flat tops, vertical perforations, laterally projecting interlapping lugs or teeth, the upper parts of its sides concave between the teeth, and downwardly tapering lower sides. 9th. The combination, substantially as set forth, of the bar and the laterally projecting teeth, formed with a double bevel on each side. 10th. The combination, substantially as set forth, of the bar and the laterally projecting teeth formed on each side, with a bevel y and a concave bevel x. 11th. The combination of the bar formed with the upper parts of its sides concave, and the latterally projecting teeth formed with concave bevels x, substantially as and for the purpose specified. 12th. A grate-bar, having laterally-projecting perforated teeth made wide at their ends and curved from top to bottom.

No. 18,761. Machine for Cutting Sod.

(*Machine à Trancher le Gazon.*)

Alpheus Test, Richmond, Ind., U. S., 3rd March, 1884; 5 years.

Claim—1st. In a sod-cutter, the runners A, A, having bearing faces curved as described, in combination with the detachable supplemental runner or shoe of a corresponding shape, adapted to be secured to either of said bearing faces, for the purpose set forth. 2nd. In a sod-cutter, the crescent-shaped cutter D, the cutter B combined with the runners A, A, substantially as herein set forth and described. 3rd. The guide G, handle E and loop F, in combination with the runner A, as and for the purposes set forth.

No. 18,762. Vehicle Spring. (*Ressort de Voiture.*)

Morris W. Tucker, Sumner, Mich., U.S., 3rd March, 1884; 5 years.

Claim.—1st. A vehicle spring consisting of a semi-elliptic section A and an inverted semi-elliptic section A^{1}, the concavities being toward each other, and section A^{1} brought at its middle point in against, or nearly against the middle of the section A, substantially as described. 2nd. The combination, with a vehicle, of one or more semi-elliptic spring-sections A, and one or more inverted spring-sections A^{1}, the middle of the latter sections being brought up to, or nearly to, the vehicle-body and secured thereto, substantially as described. 3rd. The combination, with a semi-elliptic section A, of the inverted semi-elliptic section A^{1}, the middle of the latter being forced upward until its natural curvature is reversed, and there secured by an adjustable fastening, substantially as described.