and grain from the thrashing cylinder past the beater, of hook-shaped teeth suitably connected to an endless apron or belt suspended over the elevating belt between the thrashing cylinder and the beater, and caused to travel with the elevating belt so as to assist it in carrying the straw from the thrashing cylinder to the beater.

No. 12,616. Improvements on Potato-Diggers. (*Perfectionnements aux arrache-patates.*)

Edward Lane, New Perth, P.E.I., 11th April, 1881; for 10 years.

Claim.—The sole plate *a*, share *b* and steel prongs *f* and their combination with the shank *c*.

No. 12,617. Improvements on Duplex Telegraphs. (*Perfectionnements aux télégraphes à double courants.*)

Gerritt Smith, Astoria, N.Y., U.S., 11th April, 1881; for 5 years.

Claim.—1st. The combination of a main line, a differential receiving instrument, and two independent artificial or compensating lines, each permanently connected with the earth through the said receiving instrument, one of which lines acts to compensate the dynamic, and the other the static effects of the current transmitted from the home station. 2nd. The combination of a battery, a main line, an artificial or compensating line, a differential receiving instrument and two inductive surfaces separated from each other by a dielectric, one of said surfaces being included in or connected with the main line and the other permanently with the earth through the receiving instrument. 3rd. The combination of a transmitting key, a battery placed between said key and the earth, a main line extending from said key to the earth at the distant station, an artificial line extending from said key to the earth at the home station, and an auxiliary artificial line, one end of which is permanently connected to the earth at the home station, while the other end terminates in an inductive surface capable of receiving a charge from the main line. 4th. The combination of a transmitting key, a battery between said key and the earth, a main line extending from said key to the earth at the distant station, an artificial line extending from said key to the earth at the home station, an auxiliary artificial line, one end of which is permanently connected to the earth at the home station, while the other end terminates in an inductive surface capable of receiving a charge from the main line, and an adjustable resistance interposed in the last named artificial line at a point between said inductive surface and the earth. 5th. The combination of a main telegraph line, an artificial line permanently connected with the earth and capable of receiving a charge inductively from said main line, and differential electro-magnet having one of its coils included in said artificial line. 6th. The combination of an electro-magnet core and armature, three independent coils or helices capable of acting simultaneously thereon, which are included respectively in the circuit of a main line, an artificial line for compensating the dynamic effects of the main line currents, and an auxiliary artificial line for compensating the static effects of the main line currents. 7th. The combination of a battery, a main line, an artificial or compensating line, two inductive surfaces separated from each other by a dielectric, one of said surfaces being included in, or connected to the main line and the other to the earth, and means for disconnecting or rendering inoperative any required portion of one of said inductive surfaces.

No. 12,618. Revolving Book-Case. (*Bois de bibliothèque tournant.*)

John Danner, Canton, Ohio, U.S., 11th April, 1881; (Re-issue of Patent No. 6,371).

Claim.—1st. In combination with a revolving book case suspended from the top of a stationary post, having an oil cup bearing *h*, the pendent spindle *g* attached to the top shelf of the frame, and oil duct *i* constructed as described. 2nd. In a revolving book-case, the combination of a solid upper shelf, a pendent spindle *g* attached to said upper shelf, and a post having an oil cup bearing in its upper extremities. 3rd. In combination with a revolving book-case suspended from the top of a stationary post F, the series of vertical strips D located at the end of the shelves, adjacent to the corners of the book-case, to support the outer ends of the shelves, and keep books from falling off. 4th. In a revolving book-case, the combination of a series of quadriangular shelves, with a series of vertical strips located at the end, and adjacent to the corners of said shelves. 5th. In combination with the lower shelf or a series of shelves of a revolving book case, the series of horizontal bars or strips B_1 projecting above said shelves. 6th. The combination of a quadrangular platform, or solid upper shelf C_1, a series of shelves parallel with said platform, a central vertical hollow shaft *a* and a series of horizontal strips B_1. 7th. The combination of the quadrangular platform or solid upper shelf C_1, a series of shelves parallel with said platform and vertical strips at one end of said shelves adjacent to the corners. 8th. A revolving book-case suspended upon a post and having a series of shelves provided with horizontal strips projecting therefrom to retain books thereon, the quadrangular platform or solid upper shelf C_1 above said post.

No. 12,619. Improvements on Thrashing Machines. (*Perfectionnements aux machines à battre.*)

John H. Elward, Stillwater, Min., U.S., 13th April, 1881; for 15 years.

Claim.—1st. The combination, with the main frame of a thrashing machine, of a supplemental supporting frame hinged thereto and having the horizontal beams F, the vertical beams F_2 and the inclined braces F_3. 2nd. The combination, with the main frame and the cylinder of a thrashing machine, and a detachable supplemental frame hinged to the main frame, of the pulleys F_5 F_6 mounted in the detachable frame. 3rd. The combination, with the supplemental supporting frame F F_2 F_3 and the pulleys F_5 F_6, of the standard *f* pivoted to the frame, and the detachable rod f_4. 4th. The combination of a cylinder shaft, a sleeve coupling and a belt pulley attached to said sleeve coupling. 5th. The combination, with the cylinder shaft D_1, of the belt pulley K_1 having the inwardly projecting central boss K_3 and the sleeve coupling K formed with the laterally projecting flange K_2. 6th. A support for the outer end of the cylinder shaft consisting of a horizontal arm secured to but one end of the machine and having the said shaft mounted in its free end, in combination with a detachable brace pivoted beneath said arm. 7th. In combination with a vertical brace pivoted beneath the cylinder shaft, a mounting for the shaft recessed to receive and retain the upper end of said brace. 8th. The combination with the cylinder shaft, of a pivoted hook which retains the belt and relieves the shaft from strain. 9th. The combination, with the drive pulley, of a two part support for the cylinder shaft surrounding the pulley, which is separated to permit the removal or attachment of the belt. 10th. A revolving straw beater formed of blades or wings, which are arranged to form a closed central chamber, and of which one blade is divided longitudinally and is arranged to be detached from the beater to permit access to the chamber. 11th. The combination, with the cylinder, the feed trough A_2 and the tailings elevator, of the divider A_7, whereby the tailings and the straw may be conveyed to the cylinder separately from each other. 12th. The combination of the following elements, whereby power may be applied to the cylinder from a belt or from a tumbling rod interchangeably, namely: the belt pulley D_2 mounted on the cylinder shaft, the spur wheel i_2 also mounted on said shaft, outside of the belt pulley D_2, the short shaft I mounted entirely outside of the frame of the machine, the spur wheel I_1 and bevel pinion i_3, both attached to said shaft I, the tumbling rod shaft H_1 and the bevel wheel H_3. 13th. The combination, with a thrashing cylinder and the shaft D_1, of the shaft I mounted parallel to shaft D_1 and arranged to rotate the same, the shaft H_1 at right angles to shaft I, wheel H_3 on shaft H_1, and devices adapted to transmit motion in opposite directions alternately to shaft I from shaft H_1. 14th. The combination, with the frame of a thrashing machine, the feed trough a_2 and a divider a_7, of the adjusting hanger F_2. 15th. The combination, with the threshing cylinder, of the returning board D_6 provided with inclined ribs and the returning board D_9 having ribs inclined in directions opposite to those on the returning board D_6. 16th. The combination with the cylinder of the returning board or plate D_7 upon the front side of the cylinder, and provided with two sets of ribs inclined in directions opposite to each other. 17th. The combination, with the front concave C_7 having the ribs *c* serrated upon upper edges, and corrugated upon their vertical sides, of the removable rear concave C_8 having similar ribs, said concave being arranged to form a light wall below the cylinder, both in rear and in front thereof. 18th. The combination, with the permanent grating B_3 formed with continuous transverse bars, of the front removable concave C_7 and the rear removable concave C_8 arranged to rest upon said grating, and to close the passages between said bars. 19th. The combination, with the thrashing cylinder, of the returning plate D_6, situated behind the cylinder and constructed with spiral corrugations extending continuously from the top to the bottom of said plate. 20th. The combination, with the cylinder, of the returning plate D_7, in front of the cylinder and constructed with spiral corrugations extending continuously from the top to the bottom. 21st. The combination, with a thrashing cylinder, of a returning plate having spirally arranged corrugations formed by bending said plate. 22nd. The combination, with the concave and cross head, of the bell crank levers A_6, links *a*, links a_1 and the ratchet and pawl at a_3. 23rd. The main separating table P_2 and the supplemental tables F_7 situated obliquely to the main table and constructed with transverse slats. 24th. The combination, with the separating table P_2, of wires *f7* arranged to have their ends rest upon the table. 25th. In combination with the fan, the doors Q_1 Q_2 arranged on the front side of the fan, and the doors Q_3 Q_4 on the rear side. 26th. In a grain separator, the separating table constructed with the main table constructed with the main table P_2 lying in a continuous plane, and with inclines projecting upward from the table, and adapted to lift and temporarily retard the straw, in combination with a continuously rotating shaft, and eccentrically revolving devices which connect the shaft to the table. 27th. The combination, with the vibrating separating table having transverse slats and inclined above said transverse slats, of revolving eccentrics or cranks, beneath the table for imparting motion thereto. 28th. A revolving straw beater, constructed of wings or blades which are arranged to form a close central chamber, and of which one is constructed with detachable bevelled parts O O_1. 29th. In a thrashing machine, the combination with a reciprocating separator which receives the straw from the cylinder, of an adjustable revolving counterbalancing weight.

No. 12,620. Inoxidable Alloy to be Applied to Steel, and Process for Applying it with or without a Silver or other Coating. (*Alloi non-oxidable pour être appliqué à l'acier, et procédé pour l'appliquer sans enduit d'argent ou autre.*)

Peter de Villiers, St. Leonards-on-Sea, Eng., 13th April, 1881; for 5 years.

Claim.—1st. The alloy composed of tin, lead and silver combined. 2nd. The process whereby steel, iron or other metal is prepared by immersion in, or washing by an acid solution, or bath, and then subjected to the action of said alloy in such a manner as to be impregnated or permeated by the same, the process being either terminated at this point, or continued by the application of the amalgam, and a final coating or covering of silver or other metal.

No. 12,621. Improvements on Coin Pocket-Books. (*Perfectionnements aux porte monnaie.*)

John W. Meaker, Auburn, N.Y., U.S., 13th April, 1881; for 5 years.

Claim.—1st. In a pocket-book, a coin receptacle adapted to expose the coins loosely contained therein in a horizontal position, and having a rigid inclined side I extending from the bottom to the margin of the coin space. 2nd. A rigid coin receptacle R having an inclined inner face I. 3rd. In combination with the shallow coin receptacle R of a pocket book adapted to be uncovered so as to expose the combined coins in a horizontal position, the hood *m* overhanging the coin space. 4th. In combination with a pocket-book, the rigid coin drawer or slide S provided with one or more depressions *a* for the reception of coins, each having the hole H through its bottom at its outer end. 5th. As an article of manufacture, a pocket-book combining a bill department or pockets P and a drawer for coin. 6th. As an article of manufacture, the pocket-book combining a bill department or pockets P, a dish-shaped coin receptacle, means for covering and uncovering said receptacle, and a gravity stop arranged with the moving and stationary parts concerned in covering and uncovering said receptacle to prevent its being opened except when right side up. 7th. In combination with the spring catch *f*, the inclined passage r and shot *t* movable therein by gravity.