or shortened to accommodate varying sized signatures, constructed in the manner substantially as herein set forth. 6th. In a book sewing machine, the combination, with the needle carrier, of a pivotal take-up frame Y, beaving rock-pins Y_2 which travel in irregular slots Y_3, to adapt it for simultaneous operation upon all the twines, and a series of spring tension and take-up devices one for each of said twines, arranged, constructed and operating, substantially as herein set forth. 7th. In a book sewing machine, the combination, with the sewing needle twines, of spring arms U, take-up hooks u_1, plates U_2 and cams U_3, mounted upon a shaft provided with pendent arms V, and adapted to be operated for the forward movement of the needle-frames by springs V_1, and for the backward movement thereof by stops H_2, substantially as herein set forth. 8th. In a book sewing machine, a needle composed of a grooved bar curved or bowed upwardly a portion of its length, and depressed or bent downwardly at its eye end or point to form a dip therein, substantially as herein set forth. 9th. In a book sewing machine, the combination, with the feed-table, of the signature slitting knife-bars M, adapted to be operated at the termination of the stroke of said feed-carriage, to slit the signature and automatically retracted to their normal position, substantially as herein set forth. 10th. In a book sewing machine, the combination, with the feed-table and knife-bars M, of adjustable plates M_1 upon which the said knife-bars are pivotally mounted, and adapted to operate in connection with varying sized signatures, substantially as herein set forth. 11th. In a book sewing machine, the combination, with the feed-table knife-bars M and adjustable plates M_1, of the signature guides N, adjustably secured upon said plates M_1 to adapt the machine to accommodate various sizes of signatures, substantially as herein set forth. 12th. In a book sewing machine, the combination, with the feed-carriage cable having tenoned edges fitting in grooves in the side-frames and provided with notches, of vertical bars L thrust upwardly into locking engagement with said feed-table by cams l on the driving-shaft and disengaged, substantially as herein specified. 13th. In a book sewing machine, the combination, with the feed-table, of a transverse rod 8 suspended beneath the toothed edge of the table, and adapted to support the shuttle thread during the passage of the shuttle across the machine, to insure its proper connection with the needle twines and obviate any entanglement thereof, substantially as herein set forth. 14th. In a book sewing machine, the combination, with the feed-table, of the presser-heads 8_1, 8_{11} attached beneath the edge of the toothed plate J, the end or outer bumpers 8_1 being provided with overhanging springs 9, to guide the shuttle-thread into the slits in the ends of the signatures, substantially as herein specified. 15th. In a book sewing machine, the shuttle race-ways provided at their inner ends with oblique offsets or shoulders 7 and pins 7_1, the off-sets being adapted to form receptacles for the shuttle thread to prevent its jamming between the feed-table and either race-way when stretched between the shuttle and the piled up signatures and the pins to serve as positive stops for the feed-carriage, substantially as herein specified. 16th. In a book sewing machine, the combination, with the feed-table, of a transverse bar T rigidly mounted upon the main frame and provided with adjustable springs T_1, t, t_1, which closely set the fold of the signature upon the toothed edge of said feed-table, and press it down firmly during the slitting and sewing operations, substantially as herein specified. 17th. In a book sewing machine, the combination, with the main needle-frame O, of a hinged bar or bars S_1, provided with open thread passages s, and attached to the fore end of said needle-frame, being locked in position and adapted to be opened for the adjustment of the needles while threaded, substantially as herein specified. 18th. In a book sewing machine, the combination, with the "kettle" stitch frames P, P, of upright arms or hooks S, each adapted to receive one or more turns of the "kettle" stitch twines, and form a take-up for the twine which is not to be looped with the shuttle-thread, substantially as herein specified.

No. 21,643. Electric and other Railways.

(*Chemins de fer Electriques et autres.*)

Theophilus P. Chandler, jr., Philadelphia, Pa., U.S., 12th May, 1885; 5 years.

Claim.—1st. The rails A, A_1 made of wire rope and supported at different levels above the ground, in combination with an electric generator, wires connecting the positive and negative currents of said generator with said rails respectively, and an electric car or motor arranged to run upon said rails and receive its electric current therefrom, substantially as and for the purpose specified. 2nd. The combination of rails A, A_1 and car D consisting of wheel E, frame F, F, and wheels G, I and I_1, substantially as and for the purpose specified. 3rd. The combination of rails A, A_1 and car D, consisting of wheel D, frame F, F_1, wheels G, I and I1 and springs H, J and K, substantially as and for the purpose specified. 4th. The combination of electric conducting rails A, A_1 and car D, consisting of wheels E, frame F, F_1, wheels G, I and I_1, electric motor M, and gearing connecting said motor with said wheel E, substantially as and for the purpose specified. 5th. Two or more supporting and guiding cables or flexible rails, arranged at two or more different levels from the ground, in combination with a car having supporting drive and guide wheels arranged to run upon said rails, and a motor to propel said car, substantially as and for the purpose specified. 6th. Two or more supporting and guiding cables or flexible rails, arranged at two or more different levels from the ground, in combination with an electric generator to supply position and negative currents of electricity to said cable or rails, a car having supporting drive and guide wheels arranged to run upon said rails, and an electric motor to propel said car, substantially as and for the purpose specified. 7th. Rails A, A_1 made of wire rope and supported at different levels from the ground, in combination with supporting posts B and suitable bracing or trussing by which said rails are prevented from spreading apart and vibrating, substantially as and for the prupose specified.

No. 21,644. Pendulum Scales.

(*Balance à Pendule.*)

Henry C. Keeler and John Hobbs, Ogden, Utah, U.S., 12th May, 1885; 5 years.

Claim.—1st. The combination, in a weighing-scale, of the weigh-beam a, having the multiplying-weight u, balance-weight v, and pendulum-weight k, and the supporting-bar e, having the scoop d, and the platform lever connecting-extension h, substantially as described. 2nd. In a weighing-scale having the pointer q for recording the weights on a dial, the said dial having separate dial-scales for the scoop and platform, in combination with a double weigh-beam, substantially as described. 3rd. The weigh-beam a journalled in the main frame, the weight k journalled in the frame at 1, and provided with arm j and the rod i, connecting arms a and j, in combination with the index or pointer q independently journally in the frame, and provided with the crank arm o, and the rod w connecting arm o with arm a, as and for the purpose specified.

No. 21,645. Door and Shutter.

(*Porte et Contrevent.*)

Emerson Belden and Albert Crampton, Green Island, N.Y., U.S., 12th May, 1885; 5 years.

Claim.—1st. In a panelled door or shutter, a yielding stop between the edge of a panel, and a bottom of a panel, inclosing groove in a stile rail or mullion, substantially as described and for the purposes set forth. 2nd. In a panelled door or shutter, a projecting fillet or tongue of wood in the bottom of a panel, inclosing groove in a stile rail or mullion integral with said stile rail or mullion, substantially as and for the purposes set forth.

No. 21,646. Device for Manifold Copying.

(*Machine à Copies Multiples.*)

Herman G. Barlow, John B. Barlow and John J. Sours, Grand Rapids, Mich., U.S., 12th May, 1885; 5 years.

Claim.—An improved blank for manifold copying, consisting of a sheet of paper divided into three equal sections by lines of perforations, and printed in the same manner herein shown and described, whereby the sections may be folded upon each other with a single sheet of copying paper, in such manner that matter written upon one section will be reproduced upon the other two, substantially as set forth.

No. 21,647. Neck Yoke. (*Volée de Devant.*)

Nicholas Hiatt and James W. Cummings, Independence, Ks., U.S., 12th May, 1885; 5 years.

Claim.—The loop F with its bar J, for holding the leather H, the neck e and the ball D, all cast in one piece, in combination with the divided sleeve provided with a shell, in which is a globe-shaped socket, to receive and retain the ball D, substantially as and for the purpose set forth.

No. 21,648. Adjustable Anchor Gate.

(*Barrière Mobile à Ancre.*)

Joseph DuBois, Waverley, N.Y., U.S., 12th May, 1885; 5 years.

Claim.—1st. A gate, the pivot post of which has perforated shoulders, one of which is secured to the stay post by a collar, the other passing through a plank secured to the anchor-box, substantially as described and for the purpose specified. 2nd. A gate, the pivot posts of which have two shoulders passing through a collar and anchor-box board, as described, and perforated to receive a holding pin, whereby said gate is vertically adjustable, substantially as and for the purpose set forth. 3rd. An anchor-box for gates, provided with a bottom plate extending beyond the box, and having openings therein to receive the shouldered end of the gate post, the space between the posts being secured by a panel secured to the stay posts, as and for the purpose set forth. 4th. The combination, with the gate adjustably secured to the anchor-box, of the collar H secured to the gate post and stay post, substantially as described and for the purpose set forth.

No. 21,649 Portable Anchor Fence.

(*Clôture Mobile à Ancre.*)

Joseph DuBois, Waverly, N.Y., U.S., 12th May, 1885; 5 years.

Claim.—1st. In a portable fence, the combination, with the posts having strips a, a_1 secured thereto, of the removable panels, each panel having one or more notches cut in one of the vertical end boards near the top, substantially as and for the purpose set forth. 2nd. In a portable fence, the combination, with the posts A and cross strips a, a_1, of a removable panel having notches s and resting on pins passing horizontally through the posts near the bottom, substantially as and for the purpose set forth. 3rd. In a portable fence, the combination of the posts having the strips a, a_1, the panels having the notches s, and the anchor boxes provided with inclined interior strips d and pins p, substantially as and for the purpose set forth. 4th. In a fence, the combination, with the panels B having the notches s, of the posts having strips a, a_1, pins f, g, anchor boxes C and the stakes h, as set forth.

No. 21,650. Hame Tug and Buckle.

(*Mancelle et Boucle de Mancelle d'Attelle.*)

Henry J. Bickle, Dungannon, Ont., 12th May, 1885; 5 years.

Claim.—1st. A metallic hame-tug A, constructed as described, with a flange a on each upper edge of its face a_1, and provided with a clip B on the forward end thereof, and at the rear end provided with a back band holder a_2 and a belly band holder a_3 and curved bar a_4, also apertures a_5 in the under face thereof, substantially as shown and described and for the purpose set forth. 2nd. In a metallic hame tug, constructed as shown and described, the combination of a buckle C, with plate C_1 having a flange c_3 on each edge of its under face c_2, which face having two prongs c_4 protruding therefrom to occupy two corresponding apertures e, c in the trace E, and secure the buckle