through all the layers, and flanges consisting of planks bound to the girder by bolts, as set forth. 2nd. A bridge girder having a web A, plank sheeting or strutting B and C, united by bolts D, flanges E and F, secured to the web by bolts G, and suspension rods I, and caps J, as set forth. 3rd. A bridge consisting of girders composed as set forth, and cross beams H, suspended to the lower flange by bolts, suspension rods I, secured to caps J, and braces K, with or without the sheeting L, substantially as set forth.

No. 34,362. Dental Plate. (*Plaque dentaire.*)

John J. Stedman, La Porte, Ind., U.S., 21st May, 1890; 5 years.

Claim.—1st. The method of preparing partial dentures, having a metal base plate and retaining clasps thereon, which method consists in fitting the clasps to the teeth in the mouth, mounting the previously shaped base plate in position therein, taking an impression with said plate and clasps *in situ*, removing the impression with the base plate and clasps together, forming a counter model and transferring the clasps thereto in parting the mould, applying soft rubber between the clasps and metal base, and vulcanising as usual, substantially as described. 2nd. As a new article of manufacture, partial dentures comprising a metal base plate, metal retaining clasps and the intermediate uniting vulcanite, substantially as described.

No. 34,363. Attachment to Centrifugal and other Pumps. (*Appareil pour les pompes centrifuges et autres.*)

Herbert K. Lee and Charles L. Bossé, Montreal, Que., 21st May, 1890; 5 years.

Claim.—1st. An attachment to centrifugal and other pumps, composed of a screening agitator G, having two or more arms B, bent upwards to conform to a half circumference with their cutting edges, dipping slightly downwards forming a lip J, shaft D and bracket E, substantially as described and for the purposes set forth. 2nd. The combination of an attachment to centrifugal and other pumps, composed of a screening agitator G, shaft D and bracket E, with the suction pipe A, substantially as described and for the purposes set forth.

No. 34,364. Pottery Machine.

(*Machine de poterie.*)

Charles McDonagh, Toledo, Ohio, U.S., 21st May, 1890; 5 years.

Claim.—1st. In a pottery machine, the rotary mold having segmental grooves *g* and faces *h*, substantially as described. 2nd. In a pottery machine, the rotary mold having segmental grooves *g*, faces *h* and corrugations or grooves *j*, substantially as described. 3rd. In a pottery machine, the combination, with the rotary mold, of a spring bearing for the top of the pot, substantially as described. 4th. In a pottery machine, the combination of the grooved collar *a*, spring *e* and pins *b*, substantially as described. 5th. In a pottery machine, the combination of the segmental corrugated rotary mold E, carrying the movable collar *a* slidingly engaging upon the pins *b* and springs *e*, substantially as described. 6th. In a pottery machine, a detachable lining for the mold, substantially as described. 7th. In a pottery machine, having a revolving former mold and a vertically reciprocating mold of a detachable lining of said mold, substantially as described. 8th. In a pottery machine, a detachable lining for the mold, having apertures *j*, substantially as described. 9th. In a pottery machine, the mold A, having groove *m*, and the detachable lining for the mold, having apertures *j*, substantially as described.

No. 34,365. Belt Fastener. (*Agrafe de courroie.*)

James Snow, Cleveland, Ohio, U.S., 21st May, 1890; 5 years.

Claim.—In a belt fastener, a plate having one or more teeth integral therewith and projecting from one side thereof, and one or more detachable teeth, each having an angular portion adapted to be removably secured in an angular opening formed in the plate, the rigid and detachable teeth, each having a chamfered side, the said chamfer commencing midway of a tooth and extending to the point thereof, and located on the side of the tooth opposite to where the draft of the belt comes, substantially as set forth.

No. 34,366. Portable Curtained Hammock Stand. (*Châssis portatif de hamac à rideau.*)

Alfred J. Weston, Toronto, Ont., 21st May, 1890; 5 years.

Claim.—A hammock stand, composed of two vertical posts A braced together by the detachable rails D and G, and laterally supported by the braces B, the whole being arranged, substantially as and for the purpose specified.

No. 34,367. Strap Fastener and Tightener.

(*Agrafe serre-courroie.*)

Charles Sparks, Sacramento, Cal., U.S., 21st May, 1890; 5 years.

Claim—1st. In a strap fastener and tightener, an axially rotary bar, which the adjacent ends of the strap engage, whereby as said bar is rotated, the ends of the strap are wound upon it, in combination with a removable key engaging the bar, and holding it in the position to which it is moved, substantially as described. 2nd. In a strap fastener and tightener, the combination of an axially rotary bar, having a longitudinal slot, through which the adjacent ends of the strap pass from opposite directions, whereby as said bar is rotated, the ends of the strap are wound upon it, and a key engaging the bar for holding it in the position to which it is moved, substantially as described. 3rd. In a strap fastener and tightener, the combination of an axially rotary bar, which the adjacent ends of the strap engage, whereby as said bar is rotated, the ends of the strap are wound thereon, and a bail shaped key, the ends of which are adapted to enter keyways in the ends of the bar, and the body of which passes over the strap thereby holding the bar in the position to which it is mounted, substantially as described. 4th. In a strap fastener and tightener, the combination of an axially rotary bar, having a slot or aperture in its body and keyways in its ends, said slot or aperture receiving the adjacent ends of the strap from opposite directions, whereby as said bar is rotated the strap is wound thereon, and the bail shaped key, the ends of which fit the key ways in the ends of the bar, the body of which passes across the strap, whereby the bar is held in the position to which it is moved, substantially as described. 5th. In a strap fastener and tightener, the combination of an axially rotary bar, having its ends perforated, and adapted to receive a wrench or spanner, by which it may be rotated, keyways in its ends, and a slot or aperture in its body for receiving the ends of the strap from opposite directions, whereby as said bar is rotated the strap is wound thereon, and a key for fitting the keyways and holding the bar in the position to which it is moved substantially as described. 6th. In a strap fastener and tightener, the combination of the bracket, having keyways, the axially rotary bar mounted in the bracket, and having keyways in its ends, and a slot or aperture in its body for receiving the ends of the strap, and a key fitting the keyways of the bracket and bar, whereby the bar is held in the position to which it is adjusted, substantially as described. 7th. The axially rotary bar of a strap fastener and tightener, having a slot in its body, grooves in its ends forming keyways and holes thereon also forming keyways, substantially as described.

No. 34,368. Telegraphy. (*Télégraphie.*)

Patrick B. Delany, New York, N.Y., U.S., 21st May, 1890; 5 years.

Claim.—1st. The combination of a line, relays in said line, a battery at each end in the line by which the circuit is made and broken for the transmission of impulses of current, and means for disconnecting the line from battery at each end after the transmission of an impulse. 2nd. The combination of a line, having terminal and way stations, a relay and a Morse key at each station, connected directly in the line, a battery, from which impulses of current corresponding to the signals to be transmitted, are thrown upon the line by any of said keys, and means for disconnecting the line from the battery at the receiving end, when the circuit is broken at the transmitting key. 3rd. The combination of a line, having terminal and intermediate or way stations, message or signal transmitting devices located at one or more stations in the line, a battery from which impulses of current are thrown upon the line for the sending of messages or signals by said transmitting devices, relays located at the terminal and intermediate stations, and means for disconnecting the line from the battery at a point removed from the transmitter, each time that the circuit is broken. 4th. The combination, substantially as set forth, of a line, a battery at each end thereof, with which the line is normally connected, transmitting and receiving devices at each end of the line, and line opening devices at each end of the line, said devices consisting of separable contacts included in the line, and contact separating devices controlled by the relays, which momentarily separate said contacts and leave the line open or disconnected from earth and battery for a brief period after each interruption of the main circuit. 5th. The combination, substantially as set forth, of a line, a battery, a transmitting key at one end thereof, a receiving relay in the line at a point removed from the transmitting station, and line opening devices controlled by said relay, said devices consisting of separable contacts in the line circuit which are briefly separated to disconnect the line from earth or battery upon the movement of the relay when the circuit is opened at the transmitter. 6th. The combination, substantially as set forth, of a line, a battery transmitting device and a receiving relay at each end thereof, line opening devices controlled by each relay, said devices consisting of separable contacts included in the line, which are briefly separated to disconnect the line from earth or battery, upon the movement of the relay, when the circuit is opened at a transmitter, a relay at an intermediate point in the line, and line grounding devices controlled by said relay, said grounding devices consisting of earth and line contacts, which are momentarily brought against each other upon the movement of the relay, each time that the circuit is broken at the transmitter. 7th. The combination, substantially as set forth, with a line, a battery at each end thereof, with which the line is normally connected, and electro-magnetic receiving devices, and transmitting keys directly in the line of a series of contacts connected with the battery at each terminal station, said contacts being separated by intervening spaces or insulation, a trailer or contact maker actuated by the electro-magnetic receiving devices, to pass from one battery contact across the intervening spaces or insulation, a trailer or contact maker actuated by the electro-magnetic receiving devices, to pass from one battery contact across the intervening space or insulation, thereby opening the line to the next battery contact each time the circuit is opened at a transmitter, and relays or electro-magnetic receiving devices connected in the line at intermediate or way stations.

No. 34,369. Match-Making Machine.

(*Machine à fabriquer les allumettes.*)

Charles J. Donnelly, Philadelphia, Penn., U. S., 21st May, 1890; 5 years.

Claim.—1st. In match-making machinery, a vibrating feed device, substantially as and for the purpose set forth. 2nd. In match-making machinery, the feed device, in combination with the operating crank G and a pocketed drum, substantially as described. 3rd. In match-making machinery, a pocketed drum, in combination with a blade for dividing the splints, said blade being adjustably mounted, substantially as described. 4th. In match-making machinery, a pocketed drum, having guides for the ends of the splints, substan-