jecting the latter to the action of a jet of volatile liquid until the nerve within the same is benumbed, subtantially as set forth. 6th. The combination of a prepared root having its natural terminal contour near the margin of the gum, with an enclosing cap attached thereto for supporting an artificial denture, substantially as described. 7th. The combination of a prepared root having its natural terminal contour near the margin of the gum, with an enclosing cap attached thereto, and with an artificial porcelain or other crown supported by said cap, substantially as described. 8th. The combination of a prepared root having its natural terminal contour near the margin of the gum, with an enclosing cap attached thereto, the said cap being attached to the root by a pine or suitable attaching contrivance passing upward and into a suitable cavity in the root, substantially as described. 9th. The combination of a tooth crown, a metallic backing soldered to said crown and a pin firmly soldered to said artificial backing and secured to and passing through a ferrule adapted to surround the root, substantially as described. 10th. The combination of the crown provided with a suitable attaching pin, the backing plate and the metallic backing united to ferrule and pin, substantially as described. 11th. The combination of the crown metallic backing united to protecting plate and pin, the root and cement uniting the pin to the root, substantially as described. 12th. The method of preparing an artificial denture, which consists in suitably preparing a root for the reception of a surrounding ferrule, retaining the natural terminal contour near the gum, in placing upon the back of a suitable tooth crown a backing of platinum or other suitable metal, in soldering said backing to the tooth crown by means of pins or clamps projecting through said backing and to the ferrule, substantially as described. 13th. The method of preparing an artificial denture, which consists in suitably preparing a root for the reception of a surrounding ferrule, in placing upon the back of a suitable tooth crown a backing of platinum or other suitable metal, in soldering said backing to the tooth crown by means of pins or clamps projecting through said backing and to the ferrule, in placing said prepared crown upon the tooth and in connecting the root with the crown, substantially as described. 14th. The combination of a prepared root, having attached to it permanently an enclosing cup with a removable denture or tooth crown, substantially as described. 15th. The combination of a root with an enclosing cap or covering, sealing the end of said root, said cap or covering having attached to it a threaded tube projecting upward into said root, substantially as described. 16th. The combination of the root *a* enclosing cap *l* and closed threaded screw *d*, with an artificial denture *a* or tooth crown F attached thereto by screw *g*, substantially as described. 17th. The combination of the root *a* enclosing cup *e*, artificial crown or denture *f* and screw *g*, the upper part of said denture *f* surrounding and fitting closely the ferrule at the cup *e*, substantially as described. 18th. The combination, with a natural root, of a metallic attachment covering the end of the root, a denture with a flat upper face adapted to fit the face of said attachment, and a connecting-screw, substantially as set forth. 19th. The combination of a denture comprising a metal bridge supporting two or more teeth, prepared roots or natural teeth with attachments secured thereto, and detachable receiving devices, whereby the denture is detachably connected to said roots or teeth at different points, as set forth. 20th. The combination of a root, and a hermetically closed cap placed over and enclosing the ends of said root or tooth, and a screw passing through the cap and root projecting substantially at right angles to the major axis of the tooth, substantially as described. 21st. An artificial denture consisting of a metallic bridge, artificial teeth supported thereby upon the outer side thereof, and two or more cups or caps adapted to natural roots or teeth and attached to the bridge, whereby the said teeth or roots are made the sole bearings of the denture, substantially as set forth. 22nd. An artificial denture, which consists of two cups or sockets adapted to fit over, and surround two teeth or roots connected together by an intermediate bar or support upon which artificial teeth are mounted, which bar constitutes the masticating portion of the denture, for the purpose of preventing the strain upon the artificial teeth, substantially as described. 23rd. The combination, with the fixed natural teeth or roots, of an intermediate bridge supporting artificial teeth, and provided with caps having their bearings upon the ends of such natural teeth and secured thereto by fastening means, substantially as set forth. 24th. The method of setting artificial porcelian teeth, which consists in drilling, through the hard supporting backing, one or more holes corresponding to a supporting pin or pins, and in then spreading or increasing the size of said pin or pins at its inner end, for the purpose of locking said porcelain teeth after they are in position, substantially as described. 25th. The combination of an artificial porcelain tooth with one or more tubular locking pins adapted to be spread at their inner ends, thereby locking the crown in position, substantially as described. 26th. The combination of an artificial porcelain tooth, and a tubular pin attached to a pin baked in the tooth, substantially as described. 27th. The combination of an artificial porcelain tooth with two holding devices consisting of flat strips of metal bent double, to form loops at the inner ends, one of said holding devices projecting at the top, and the other at the back of said artificial crown, substantially as described. 28th. The combination of the metallic bridge C, provided with sockets or holding devices D and extending between its support and free from contact with the gum, with the artificial tooth E and the artificial gum G extending above the bridge and covering the space between the latter and the natural gum, substantially as shown and described.

No. 19,548. Carpenter's Bevel.

(*Sauterelle de Charpentier.*)

Benjamin F. Van Amringe, (Co-inventor with James B. Cumming,) and Matilda Henderson, Oakland, Cal., U. S., 10th June, 1884; 5 years.

Claim.—1st. In a carpenter's bevel, a stock or handle having at each end an adjustable blade, said blades being pivoted in parallel planes, substantially as described. 2nd. In a carpenter's bevel, the horizontally slotted stock A, in combination with the adjustable blades B, B1 having each a bevelled end and pivoted in parallel planes in opposite ends of the stock, substantially as herein described. 3rd. In a carpenter's bevel, the slotted stock A, in combination with the adjustable blades B, B1 having each a bevyled end and an end cut to a point to form a right angle, said blades being pivoted in opposite ends of the stock, substantially as herein described.

No. 19,549. Hand Motive Power.

(*Moteur à Manivelle.*)

William H. S. Burgwin and Richard A. Dunlop, Richmond, Va., U. S., 10th June, 1884; 5 years.

Claim.—1st. In a sewing or other machine, the hand motor attachment consisting of the combination of the treadle, the projecting stud thereon, and the vertical rod or handle loosely pivoted thereto and having a vertical play, whereby motion is imparted to the treadle and the use of the feet to work the machine is obviated, substantially as set forth. 2nd. In a sewing or other machine, the hand motor attachment consisting of the combination of the treadle, the projecting stud thereon, the vertical rod or handle loosely pivoted thereto and projecting above the top of the table, whereby motion is imparted to the treadle, and the top of the table having the aperture D serving as guide to the vertical rod, and through which the vertical rod plays, substantially as set forth.

No. 19,550. Fence. (*Clôture.*)

Abraham C. Scarr, Maryborough, Ont., 10th June, 1884; 5 years.

Claim.—1st. A postless movable fence, composed of conveniently portable panels, each complete in itself, set in sill laid on the ground surface and supported in an erect position by suitable lateral braces extending diagonally from the sills to the upper part of said panels, substantially as shown and described. 2nd. In a postless movable fence, the wire braces F attached to the sills E and having formed in them the loops *a*, substantially as shown and specified. 3rd. In a fence composed of movable panels, the holding pins *b* passing through the stiles B and through the loop *a* of the wire braces F, as shown and described. 4th. In a fence, the arrangement and combination of the rails A, stiles B, wire bars C, cross wires D, sills E, with the wire braces F attached to said sills and having the loops *a*, substantially as shown and described and for the purpose set forth.

No. 19,551. Boot or Glove Fastener.

(*Agrafe de Botte ou de Gant.*)

George Valiant, Toronto, Ont., 10th June, 1884; 5 years.

Claim—1st. The bar or plate A, having a slot or groove *a* made in it, and a head *b* formed at one end, in combination with a pin or staple *c* secured to the material, substantially as and for the purpose specified. 2nd. A bar or plate A, having a slot or groove *a* made in it, and a groove head *b* formed at one end of it, in combination with a flat plate B fixed to the material C, and having jaws *d* between which the bar A is inserted, and a pin *c* to pass through the slot *a*, substantially as and for the purpose specified. 3rd. A bar A, having a groove or slot *a* formed in it, and heads *b* and *f* formed on it, in combination with a pin *c* arranged to connect the bar to the material, substantially as and for the purpose specified.

No. 19,552. Non-Conducting Covering.

(*Couverture non-Conducteur.*)

George Kelly, Chicago, Ill., U. S., 10th June, 1884; 5 years.

Claim.—1st. In a non-conducting covering, the casing A formed with a small fold *a*1 and a main fold *a*2, substantially as described and for the purpose set forth. 2nd. In a non-conducting covering, the casing A formed with a small fold *a*1, main fold *a*2 and overlap *a*3, substantially as described and for the purpose set forth. 3rd. The combination, with a non-conducting covering, of a staple or staples *c* having sunken bearing bars *c*1, as described and for the purpose set forth.

No. 19,553. Box. (*Boîte.*)

Henry A. Shaw and Edward D. Chidley, Toronto, Ont., 10th June, 1884; 5 years.

Claim.—1st. The box A provided with the headed pins or screws *h*, in combination with the cover B provided with the corresponding claw-plates *i*, substantially as and for the purposes set forth. 2nd. The box A provided with headed pins *h* on its upper edges, and formed with an offset *e* at the upper edge of one of the side pieces, in combination with the cover B provided with plates *i* having open slats thereon, and the locking springs *f* on the under side of the lid and arranged to engage the offset *e* when the cover is in place, substantially as set forth. 3rd. The box A, the end pieces of which are cut away on their upper edges at *b*, headed screws or pins *h* within said cut away portions and the offset *e* formed between the end piece and the side of the box, as shown, in combination with the cover provided with plates *i*, having flaring open slats bevelled on their under edges, and plate spring *f* on the under side of the cover at the corner, and constructed to engage the offset when the cover is in place, substantially as set forth.

No. 19,554. Buffer for Railways.

(*Tampon de Choc pour Chemins de fer.*)

John T. Schoffer, Rochester, N.Y., U.S., 10th June, 1884; 5 years.

Claim.—1st. In a buffer, the combination of the hydraulic and pneumatic cylinder, provided with passages for the admission of the outer air, the piston and the piston rod, whereby both air and liquid are at the same time utilized as cushions, both in colliding and in pulling, substantially as described. 2nd. The combination of the cylinder, the piston, the piston rod and the springs, the said springs arranged within the cylinder and one on each side of the piston to take up the shock in colliding or in pulling, and the air and liquid cushions, substantially as described. 3rd. In a buffer, the combination of the cylinder, the piston, the piston rod with a cut out portion, such as *b*, and the springs on opposite sides of the piston, substantially as described. 4th. The cylinder, provided with the passages for the