give it rotary movements, a carriage in which the rollers are mounted, and a table for supporting the carriage, in combination with operative mechanism by which the table, carriage and rollers are moved backward and forward as the sliver is deposited on the cone, the longitudinal movements of the rollers not being in unison with the like movements of the head-stock or support on which the carriage or the rollers is supported, substantially as and for the purpose set forth. 5th. A pair of rollers for supporting the cone on which the boot, shoe or stocking is formed, said roller being mounted in a carriage or support and moving longitudinally in an opposite direction from that of the table on which the carriage is supported, and at a rate of speed which is not unifor with that of the table, substantially as described. 6th. The shaft H, crank J, pitman K, gears M, shaft C, gears E F, shaft Q, gears S S, shafts T T, gears U U W W¹ *d c*, table B and means for supporting and operating the rollers *l l*, substantially as set forth. 7th. The cone 6 for receiving the sliver, said cone having the leg-pieces 8 joined at 9, and provided with the feet 7 projecting in opposite directions, in combination with the rollers *l l*, constructed, combined and arranged to operate substantially as specified. 8th. The carriage Y provided with the rack 5, the rollers *l* provided with the gears *m*, and the shaft *g* provided with the gear *i*, in combination with means for giving said carriage longitudinal reciprocating movements on the headstock X, substantially as set forth. 9th. The shafts T T, each provided with a gear adapted to engage the rack 5 at regular intervals, in combination with operative mechanism, substantially as specified. 10th. The table B pivoted at N and provided with the head stock X, carriage Y and rollers *l l*, in combination with operative mechanism therefor, substantially as set forth.

No. 17,218. Button Setting Machine.

(*Machine à poser les boutons.*)

Samuel L. Pratt, Hingham, Mass., U.S., 12th July, 1883; 5 years.

Claim.—1st. In an apparatus for fastening buttons in place, the jaw *a* provided with the spring *c*, recess *e* and slot *l*, substantially as described. 2nd. The member *b* provided with the seat *d* having the grooved and overhanging edge adapted to hold the plate of the fastening firm in position, substantially as described. 3rd. The member *a* provided with the spring *c*, recess *e* and slots *l*, combined with the member *b* having the seat for the plate of the hook fastening, substantially as described. 4th. In an instrument for attaching buttons, the member *a* provided with a spring and a slot, whereby the button is held firmly in place by its shank only, while the button is being attached, substantially as shown and described.

No. 17,219. Improvement in Button Fastenings. (*Perfectionnement des queues de boutons.*)

Samuel L. Pratt, Hingham, Mass., U.S., 12th July, 1883; 5 years.

Claim.—A button fastening having the hook *a* provided with the point *e* and plate *b*, constructed and operated substantially as described.

No. 17,220. Improvements in Hydrocarbon Furnaces. (*Perfectionnements dans les fourneaux à hydrocarbures.*)

Byron Sloper, Chicago, Ill., U.S., 12th July, 1883; 5 years.

Claim.—1st. A steam boiler provided with a fire bridge, water legs and a bat-wing hydrocarbon injector slotted as described, whereby liquid fuel in connection with superheated steam may be projected into the fire box directly below the fire bridge in a broad thin stratum so as to heat the boiler throughout, substantially as specified. 2nd. In combination with a bat-wing injector and the water legs of the boiler, the steam pipes covered with refractory material and passing above the grate bars backward and forward horizontally directly through a body of incandescent material, whereby the steam is superheated and passed directly in a superheated state to the liquid fuel injector, and discharged in conjuction with the liquid hydrocarbon in a broad thin sheet forwardly and laterally immediately onto the incandescent fuel, directly beneath the fire bridge, substantially as and for the purposes specified. 3rd. The combination, with the outer cylindrical shell of the injector, of the inner cylindrical shell, the two having coincident transverse slots as described, for the purpose of delivering the combustible gases in a lateral as well as forward direction, or in a bat-wing jet to the water legs, as specified. 4th. In combination with the outer and inner shells of the injector having coincident transverse slots, as described, the nut embracing the inner shell and secured by a screw thread to the outer shell and the interposed packing, arranged as set forth.

No. 17,221. Improvements in Buttons for Gloves, etc. (*Perfectionnements aux boutons pour les gants, etc.*)

Eugene Pringle, Gloversville, N.Y., U.S., 12th July, 1883; 5 years.

Claim.—In a separable or detachable button, the combination, with the base section C having a stud which is provided with a sloping or semi-spherical head and annular concave groove *c* below said head of the head section D having a stud receiving tube provided with horizontal slot *o*, and the spring *n* having its limb *s* resting in said slot, and its body held within an inclosed chamber surrounding said slotted tube, all for operation substantially as and for the purpose set forth.

No. 17,222. Feeder for Mill Rolls.

(*Alimentation des cylindres de moulins.*)

Thomas Reid, Walkerville, Ont., 12th July, 1883; 5 year.

Claim.—1st. In a feeding device for mill rolls and in combination with such rolls, a feed roll hopper, a horizontal bar provided with a number of projecting fingers located within such hopper, an upright shaft having an eccentric to which the said bar is connected by a strap, and suitable gearing connecting the said upright shaft with the power, substantially as described. 2nd. In a feeding device for mill rolls, the combination, with the hopper gate, roll B, agitator C *c*, the shaft *d* having eccentric E, strap *e* connecting the eccentric with the agitator, and the gearing D connecting the shaft *d* with the shaft of the roll B, substantially as described.

No. 17,223. Stencil Printing Machines.

(*Machine à imprimer au patron.*)

Albert G. Shannon, Santa Rosa, Cal., U.S., 12th July, 1883; 5 years.

Claim.—1st. In a stencil press, the cylinder A¹ containing cylinder *a* and rod *d*, substantially as described and for the purposes set forth. 2nd. The cylinder A having perforations B, groove I and extensions E, substantially as described. 3rd. The cylinders A¹ and *a*, and rod *d*, in combination with the handle G and graduations C on extensions E, for the purposes set forth. 4th. In a stencil press, the combination of the cogs F, cloth covered cylinders A and A² and extensions E E, substantially as described and for the purposes set forth. 5th. In a stencil press, the combination of the frame M having end set screws O adjustable frame Q and roller P, substantially as described and for the purposes set forth. 6th. In combination with the stencil carrying cylinder A and A², the cloth holding screws J and the stencil-fastening springs K, for the purposes described and set forth. 7th. In a stencil press, the cylinder A having a longitudinal groove in combination with the paper cutting knife R, substantially as described and for the purposes set forth. 8th. In combination with the cylinder A, the bifurcated handle S substantially as described and for the purposes set forth. 9th. The cylinders A and A² having ink receiving holes H, which holes are closed by screw stoppers, said cylinders containing cylinder A¹ which are also provided with ink-receiving holes *h* so arranged that the holes H and *h* can be placed in a direct line when desired, substantially as described and for the purposes set forth. 10th. In a stencil printing machine, the cylinders A and A² having ink-receiving holes H which are closed by screw-stoppers, said cylinders containing cylinders A¹ which are also provided with ink-receiving holes *h* so arranged that the holes H and *h* can be placed in a direct line by means of the rod *d* having the handle G, which is designed to be turned when desired on the scale C, the latter indicating the relative position of the holes H and *h*, the perforations B *b* in the cylinders being so arranged as to be closed when H and *h* are opened, all substantially as described and for the purposes set forth. 11th. The cylinders A² A¹ having perforations B *b*, the former cloth-covered and provided with groove I, springs K and knife R, in combination with cylinders A A¹ similarly perforated, covered, grooved, and provided with springs, the groove in cylinder A being adapted for the working of the knife R, and said cylinders A A² geared together and adjustably mounted on frame M, in the manner and for the purposes set forth.

No. 17,224. Improvements in Grooming Machines. (*Perfectionements aux brosses à cheval.*)

Robert W. Thompson, East Rockport, Ohio, U. S., 12th July, 1883; 5 years.

Claim.—1st. A flexible grooming-glove having a brush surface conforming to the area of the human hand with or without picker or combing teeth secured to the tips of the fingers, substantially as set forth. 2nd. A flexible grooming brush or sandal conforming to the outline of the human hand with or without picker or combing teeth at the tips of the fingers, and provided with loops *c* and straps D for securing the brush to the hand of the operative, in grooming as set forth. 3rd. A flexible brush-glove or sandal having curry-combs F on the back of the fingers, or loops *c*, as set forth.

No. 17,225. Automatic Air Railroad Signal.

(*Signal atmosphérique automate de railroute.*)

John S. McLeod, Boston, Mass., J. S., 12th July, 1883; 5 years.

Claim.—1st. In a Railroad Signal an air bellows F having its stop and bottom made of wood or metal, or both, and flexible sides capable of being compressed and expanded to force air to operate signals at a distance, substantially as set forth. 2nd. The combination, with the rail of a railroad track, of chairs B₄ C6 or 28, incline bars B or W, fulcrum lever C, guide rod E₁, catch levers C C G₁ and *f* and bellows F, to force air to valve G to set the block signal H, and valve G¹ to set the train indicators H₁ and H², and sound gongs S₂, display sign K and lantern U by a passing train, substantially as and for the purpose set forth. 3rd. The combination, with the rail of a railroad track, of an incline bar and fulcrum levers, and an an air bellows from which air is forced to operate gates by a moving train, substantially as set forth. 4th. The connection, with the rail of a railroad track, of an incline bar or bars and actuating levers, by chairs fastened to the rail, as shown, either with or without the key C8, and the interlocking therewith of an incline bar B by a projection W, substantially as and for the purpose set forth. 5th. An air bellows F to operate a train of wheels actuated by the gravity of a suspended weight or spring force, and operated by a moving train to automatically announce its approach far in advance, substantially as and for the purpose set forth. 6th. The automatic locking of lever G when thrown up, and the combination therewith of the spring E to yield to the sudden action thereon by passing trains, substantially as and for the purpose set forth. 7th. The combination, with the bellows F, of the locking button *g* and arm *f* to lock the lever C until automatically released, substantially as set forth. 8th. The combination, with lever C, of a lever C C pivoted at the lower end, and the releasing thereof from lever G, substantially as set forth. 9th. An air bellows F made of iron having grooves, hinges, arms and adjustable guide roller, and a flexible covering *e*₄ made imperforable by rubber or other coating, and put together by hoops *e*₃ and hinge pin *e*₁ to blow air to operate railroad signals or for any other purpose, applicable substantially as set forth. 10th. An expansion or contraction air valve G having an imperforated flexible diaphragm made and put together, substantially as and for the purpose specified. 11th. A flexible covering for an air bellows or diaphragm valve made air tight by a coating of rubber or