

**No. 11,319. Improvements on Harrows.** (*Perfectionnements aux herses.*)

William Vallely, jr., (Assignee of Adolph Lajeunesse), San Francisco, Cal., U. S., 5th June, 1880; for 5 years.

*Claim*—The teeth B having tapering shanks and screw-threaded ends, in combination with the frame A and metal lined sockets d and nuts e; 2nd. The combination with the harrow-frame A and clearing-frame C, of the racks G toothed sectors H, rockshaft J, arm K, connecting bar M and lever L.

**No. 11,320. Improvements on Churns.** (*Perfectionnements aux barattes.*)

James L. Sprague, Minneapolis, Min., U. S., 5th June, 1880; for 5 years.

*Claim*—1st. The concave cover B and the three air tubes set in its crown or top; 2nd. The bands I, having the terminal screws d and their nuts e, the bars G having recessed and perforated ends c, and the churn legs H and body A, all combined.

**No. 11,321. Composition for Protecting Ships Bottoms.** (*Composé pour protéger les fonds des navires.*)

Robert H. Seaton, Weston Super Mare, Robert W. Hart, Wakefield, and Ernest B. B. George, Notting Hill, Eng., 5th June, 1880; for 5 years.

*Claim*—The employment of naphtha, linseed or other boiled oil, and gutta percha, in conjunction with ordinary colors or paints, or in conjunction with litharge, vegetable oil, methylated finish, shellac and resinous matter.

**No. 11,322. Apparatus for Securing Boiler Tubes.** (*Appareil pour assujétir les tubes des chaudières.*)

William Tully, London, Eng., 5th June, 1880; for 5 years.

*Claim*—The apparatus or implement adapted to operate by hydraulic power, atmospheric air, or other elastic fluids, for expanding boiler tubes or similar articles; 2nd. In an apparatus for expanding boiler tubes and for similar purposes, a cylinder provided with a mandrel and with lugs or segments arranged to slide laterally outward, under the pressure of the mandrel; 3rd. In an apparatus designed to operate by hydraulic power for expanding boiler tubes, and for similar purposes, a cylinder A made in three sections a b c, provided with a mandrel e having a conical end, lugs or segments f and with a rod d, and suitable valves and passages, whereby the liquid may be caused to force the mandrel forward or withdraw the same; 4th. In combination with the rod d, provided with the aperture d', the pipe d<sub>2</sub> and valve d<sub>3</sub>, the channels g h i, in the cylinder A, the covering b<sub>2</sub>, provided with the apertures h h<sub>1</sub>, the space h<sub>2</sub>, the screw plugs i i<sub>1</sub>, and the plug a<sub>2</sub> fitted with the valve a<sub>3</sub>; 5th. Providing the cylinder A with the chambers a<sub>1</sub> b<sub>1</sub>, and with the covering b<sub>2</sub> and diaphragm b<sub>3</sub>; 6th. The cylinder m open at one end, in combination with the hollow mandrel e, the lugs or segments f and the rod d; 7th. In an apparatus for expanding boiler tubes and similar articles by hydraulic power, the employment of a hollow mandrel e, provided at its rear portion with a chamber e<sub>0</sub>, and with means for causing the liquid to pass from this chamber to the interior of the cylinder and from the cylinder to the chamber, as required; 8th. Providing the hollow mandrel e, with a channel o in its wall, to afford communication between the interior of the cylinder m and the chamber e<sub>0</sub>, so that the liquid, after having been forced into the cylinder m, may be readily returned to the chamber e<sub>0</sub>, to allow the mandrel to descend and relieve the segments f from pressure; 9th. In an apparatus for expanding tubes or similar articles, the nut f<sub>1</sub> for producing an outward movement of the sliding segments f, in combination with the hollow mandrel e which, in its backward movement, imparts a rotary motion to such segments; 10th. In an apparatus or implement designed to be operated by means of a screw or other suitable means for expanding tubes or similar articles, and consisting of a cylinder A in two parts or sections b c, a mandrel e with a conical end, sliding lugs or segments f, screw-rod p and collar p<sub>2</sub>; 11th. The combination with the subject matter of the preceding claim, of the screw-rod p<sub>3</sub> for imparting a preliminary lateral movement to the segments f, before applying excessive pressure upon the same, through the medium of the screw-rod p; 12th. The modified forms of the improved apparatus; 13th. The modification of the apparatus, consisting in the cylinder A, the screw-rod q, the expanding pieces f and the collar or cap r; 14th. A mandrel provided with inclined projections, or ribs e\*, arranged in combination with a cylinder, a portion of which has corresponding grooves e<sup>c</sup>.

**No. 11,323. Improvements on Looms.** (*Perfectionnements aux métiers à tisser.*)

Christopher Cross, Manchester, Eng., 5th June, 1880; for 5 years.

*Claim*—1st. The apparatus for the positive and accurate delivery of the "lap welt," or "whip threads," for forming the colored borders; 2nd. The apparatus for stopping the loom when either of the "lap threads" break; 3rd. Weaving piled or plush borders to "loongees" or other ornamental fabrics, by so arranging the "tie up" that the drams for cutting the pile be across the cloth, instead of lengthwise; 4th. Weaving ornamental cashmere borders to "loongees" or other ornamental fabrics, by the employment of "tie ups," which show the warp thread only and conceal the welt; 5th. The method of weaving either fringed or scalloped selvages; 6th. The method and apparatus for weaving ornamental colored headings across the fabric.

**No. 11,324. Improvements on Cotton Canvas Belts and Machinery for their Manufacture.** (*Perfectionnements aux courroies en toile de coton et machine pour les fabriquer.*)

Maurice Gandy, Liverpool, Eng., 5th June, 1880; for 5 years.

*Claim*. 1st. A belt possessing the following composition and character-

istics: 1st. A foundation consisting of cotton canvas, composed of warp stouter than the welt, both warp and welt hard spun, and the canvas hard or light woven; 2nd. A foundation composed of canvas thus made, folded upon the line of its warp, and the folds united by rows of longitudinal stitching and stretched to kill the elasticity; 3rd. The interstices and fibre of a structure thus made, saturated with a d full of linseed oil, or any mixture of linseed oil, or a compound of oil and resin, or tallow and resin; 4th. The structure thus saturated and pressed, full of oil, or other compound, pressed and stretched rigid, hard and even, and the elasticity nullified or killed. 2nd. The mechanical process of manufacturing canvas belts, the sewing the belt while under tension and the pressing and stretching of the belt, after its treatment with oil, between rollers in combination with stretching nippers, or between double sets of rollers running at differential speeds for the purpose of forcing the oil into the interstices and fibre of the fabric and for the purpose of stretching and pressing the belt, hard, even and rigid, and nullifying and killing elasticity; 3rd. The mechanical appliances for sewing belts under tension; 4th. The mechanical appliances for oiling, stretching and pressing belts.

**No. 11,325. Improvements on Leather Finishing Machines.** (*Perfectionnements aux machines à finir le cuir.*)

Fred B. Batchelder, East Boston, Mass., U. S., 5th June, 1880; for 5 years.

*Claim*. 1st. The combination with the cylinder B, of a spring pressed knife or scraper Z, provided with a receiving channel Cr, so that any mixture or substance that adheres to the surface of the cylinder will be removed, and the under side of the leather thus kept clean; 2nd. The combination with the cylinder B and the knife Z, of a spring pressed trough D<sub>1</sub>, provided with a wiping plate Er, of leather, rubber or other suitable material, to wipe off and receive any substances that may escape the knife Z; 3rd. The combination with the roller L, brush M and cylinder B, of the springs G, so that the roller L and brush M will have a yielding pressure against the leather on the cylinder B; 4th. The combination with the cylinder B, roller L, brush M and springs G, of the screws H, hand nuts I and springs J, so that the pressure of the springs G may be regulated as required; 5th. The combination with the brush M that applies the mixture to the leather of the hopper O, having open forward end, and the roller N, whereby the mixture is taken from the hopper O and applied to the brush M; 6th. The combination with the hopper O, the roller N and the brush M, of the guard plate R, whereby any drippings from the hopper O or roller N are conducted to the brush M; 7th. The combination with the brush M, of the curved guard plate W—having channel or trough X, whereby the splatterings of the mixture from the brush M are received and guided to a receiver; 8th. The combination with the brush M, of the wheel or collar S, having cam groove and the pin T, to give the rotating M, a reciprocating longitudinal movement; 9th. The combination with the cylinder B, of the endless belt brush U, to smooth off the applied mixture and remove impurities; 10th. The combination of the cylinder B, roller L, brush M, roller N, hopper O, endless belt brush U, and cleaning devices Z Cr Er D<sub>1</sub>, so that a blacking or other mixture can be applied to surfaces of leather while the opposite surfaces are kept practically clean.

**No. 11,326. Improvements on Shirt Buttons.** (*Perfectionnements aux boutons des chemises.*)

Charles Robinson and Samuel W. Downey, Toronto, Ont., 5th June 1880; for 5 years.

*Claim*. 1st. The combination with a fixed retaining prong formed of a movable prong; 2nd. The combination with the fixed retaining prong B and stud head provided with the projections C D, of the movable prong Br provided with the spring arm B; 3rd. A retaining cross bar for studs, one half of which is fixed and the other half movable.

**No. 11,227. Improvements on Shoes.** (*Perfectionnements aux souliers.*)

Charles M. Lee, Athol, Mass., U.S., 5th June, 1880; for 5 years.

*Claim*.—1st. A shoe-vamp provided at its toe-end with a projecting tongue Q and having, at each side of the said tongue, a concavity extended backward and terminating at the point X; 2nd. A vamp provided with a projecting toe-tongue Q, crimped upon the bottom of the inner sole or last at its toe-end, and with spaces at each side of the said toe-end, a tip b connected with the vamp by a row of stitches, the end Q of the said vamp being connected with the sole and tip by the line of stitches uniting them at the extreme end of the toe part of the sole, the vamp from each side of the toe-tongue Q, to the point where the vamp and tip are united, being left unattached to the sole by the line of stitches connecting it and the tip.

**No. 11,328. Improvements on Steam Engines.** (*Perfectionnements aux machines à vapeur.*)

John Haggart and Roderick Cochrane, Brampton, Ont., (assignees of John E. Sweet, Syracuse, N. Y., U. S.), 5th June, 1880; for 5 years.

*Claim*—1st. A double ended piston slide valve having ground chilled wearing surfaces; 2nd. A double ended piston slide valve having ground chilled wearing surfaces on the heads D and chambers B within the said head; 3rd. A double ended piston slide valve having ground chilled wearing surfaces on the heads D and chambers within the said heads, in combination with the spindle C passing loosely through the body piece D and provided with jamb nuts E.

**No. 11,329. Improvements on Heel Stiffeners.** (*Perfectionnements aux contreforts des talons.*)

Hiram G. Farr, Brandon, Vt., and Henry C Copeland, New-York, U. S., 5th June, 1880; for 5 years.

*Claim*.—The parts A B C D, the part B being intermediate and of wood, arranged with its fibre running longitudinally of the stiffener, all cemented together.