

annular valve ways each made to intersect the piston chamber as two several points and form a segmental passage through the inner wall of said chamber, cylindrical abutment valves geared with the shaft and revolving in said valve ways and having peripheral openings to permit of the passage of the piston through them, and separate supply and exhaust ports governed by said valves, substantially in the manner and for the purpose herein set forth. 4th. The combination in a rotary engine with the circumferentially divided casing, the shaft mounted transversely therein, the annular abutment chambers formed within the casing, and the annular abutment valves made to revolve in said chambers, and a drum of equal width secured within the casing upon the shaft and geared to both valves by a double toothed gear, substantially in the manner and for the purpose herein set forth. 5th. The combination in a rotary engine, with a central shaft, a cylindrical chamber encircling the shaft, a drum fitted upon the shaft to revolve in said chamber, a separate annular piston chamber concentric with the shaft and drum, circular in cross section and having a circumferentially slotted inner wall, a cylindrical piston moving in said chamber, a radial plate projecting from the shaft transversely to its axis through the slotted wall of the piston chamber and connecting the shaft and piston, cylindrical abutment valves of like diameter with the drum, geared thereto and mounted to revolve in peripheral contact therewith in annular valve ways intersecting the piston chamber, and supply and exhaust ports communicating with said valve ways, substantially in the manner and for the purpose herein set forth.

**No. 34,031. Shaft Loop.** (*Bracelet de harnais*)

Isaiah Best, Mount Pleasant, and John J. Sadler, Toronto, Ont., 1st April, 1890; 5 years.

*Claim.*—1st. A metal loop A, fixed to the loop strap B, and having a hinged section a, acted upon by a spring or other locking device, substantially as and for the purpose specified. 2nd. A metal loop A, fixed to the loop-strap B, and having a recess f made in it to receive a piece of rubber, leather, or similar material, in combination with a spring, or other locking device, arranged to act upon a hinged section made in the loop A, substantially as and for the purpose specified.

**No. 34,032. Cigar Bunch Slitting Machine.**

(*Machine à enciser les cigares.*)

Edward Martyn, Detroit, Mich., U.S., 1st April, 1890; 5 years.

*Claim.*—1st. A device for slitting the end of cigar bunches, consisting of a table to which is secured an upright frame, said frame supporting the vertical guide rods V, the cross-head G arranged upon the rods and adapted to slide up and down, and having elongated slots S, the knives located in the slots S in the cross-head, and means for adjusting them laterally therein, the coiled springs W, the angle rod P having its ends secured to the cross-bar and being connected with the foot-lever L, L', the connecting rods secured to the cross-bar and to the cross-head G, substantially as and for the purposes specified. 2nd. In a device for slitting the end of cigar bunches, the combination of the table, the upright frame, the guide-rods V and coiled springs W, with the cross-head having the slots S carrying the knives O, the arched spring arms n bolted to said cross-head and attached at their outer ends to the cross-piece R, the connecting rods secured to the cross-head and to the cross-bar T, the rod P having its ends secured to said cross-bar, and its downward extending loop to the inner end of the part L of the foot-lever, the duplex foot-lever consisting of the parts L, L' pivoted in the frame T, for the purposes specified. 3rd. The combination of the table and gages thereon, the upright frame, the guide rods and springs, the cross-head having slots S, carrying the knives O, the spring arms, the cross piece R, having blocks 3, the rods P, and P', and the duplex lever, arranged and operating as and for the purposes specified.

**No. 34,033. Set of Two and Three Horse Whiffletrees.** (*Palonniers pour deux ou trois chevaux.*)

Thomas A. Jackson, Mount Pleasant, Ont., 1st April, 1890; 5 years.

*Claim.*—The double or treble whiffletree, consisting of the bar A, brace B, the ties E, E, the draw-bar C, the clevis D, the clevises G, G, supporting the pulley wheels J, I, the pulley z within the draw-bar C, the hooks at the outer ends 1, 1, the hooks in pairs 2, 2, and 4, 4, numbering from right to left, and the staples F, F, at the ends to hold the hooks in place, all formed and combined, substantially as and for the purpose hereinbefore set forth.

**No. 34,034. Pail, Tub, etc.** (*Seau, cuvette, etc.*)

Robert S. Stratton, Orillia, Ont., 1st April, 1890; 5 years.

*Claim.*—The combination, with a pail, tub, or other cylindrical utensil, of a wire hoop or hoops bent inwardly at certain intervals, so as to indent and imbed itself at these points into the staves of the pail or other utensil, and the perforated sleeve C, the ends of the wire of which the hoop is composed passing through these perforations and being imbedded in the pail, as set forth.

**No. 34,035. Combined Bit-Stock, Nut Wrench, Bolt Cutter and Screw Cutter.** (*Vilbrequin, clé à écrou, cisailles à boulon et à vis combinés.*)

Charles Wies and James M. Lockey, Faulkton, S.D., U.S., 1st April, 1890; 5 years.

*Claim.*—1st. The combination, with the bit-stock A, having parallel cheeks D, D', provided with converging slots E, of the parallel jaws F, F', provided with pins G, traversing the slots, as and for the purpose set forth. 2nd. The combination, with the bit-stock A, having

parallel cheeks D, D', provided with the converging or inclined slots E, of the parallel jaws F, F', having pins G traversing the slots, screw-cutting dies K, K, and a cutter L, as set forth.

**No. 34,036. Indelible Print or Picture.** (*Impression ou image indélébile.*)

Joseph R. France, New York, N.Y., and Frederick C. Colborn, Arlington, N.J., U.S., 2nd April, 1890; 5 years.

*Claim.*—1st. As an article of manufacture, a picture, print, or the like of any kind or color and on any material with a transparent or semi-transparent sheet of pyralin or other pyroxyline compound securely united to its front or face, substantially as and for the purpose set forth. 2nd. As an article of manufacture, a picture, print, or the like of any kind or color and on any material securely fastened or united between two sheets of pyralin or other pyroxyline compound, substantially as and for the purpose set forth. 3rd. As an article of manufacture, a picture, print or the like of any kind or color, and on any material securely fastened or united between two sheets of pyralin or other pyroxyline compound, said sheets being a little larger in length and width than the picture or print to which they are to be united and having their edges joined or united together, thereby completely enclosing the picture or print, substantially as and for the purpose set forth. 4th. As an article of manufacture, a picture, print or the like of any kind or color on paper, silk or other fibrous or textile material securely fastened or united between two sheets of pyralin or other pyroxyline compound, said sheets being a little larger in length and width than the picture or print to which they are to be united and having their edges joined or united together, thereby completely enclosing the picture or print, and the one of said sheets on the front or face of said picture or print being transparent and the other of any desired color, substantially as and for the purpose set forth. 5th. As an article of manufacture, an indelible waterproof and polished picture, print or the like, consisting of a picture print or the like of any kind or color, and on any material securely fastened or united between two sheets of pyralin or other pyroxyline compound, said sheets being polished and also a little larger in length and width than the picture or print to which they are to be united, and having their edges joined or united together, thereby completely enclosing the picture or print, and the one of said sheets on the front or face of said picture or print being transparent, and the other of any desired color, substantially as and for the purpose set forth. 6th. The method of manufacturing an indelible picture, print or the like, which consists in securely uniting to the front or face of any print, picture or the like a sheet of pyralin or other pyroxyline compound, substantially as set forth. 7th. The method of manufacturing an indelible waterproof picture, print or the like, which consists in securely uniting any picture, print or the like, between two sheets of pyralin or other pyroxyline compound, substantially as set forth. 8th. The method of manufacturing an indelible water-proof picture, print or the like, which consists in securely uniting any picture, print or the like, between two sheets of pyralin or other pyroxyline compound, and uniting or joining together the edges of said sheets, so as to completely enclose the interposed picture, print or the like, substantially as set forth. 9th. The method of manufacturing an indelible waterproof and polished picture, print or the like, which consists in securely uniting any picture, print or the like, between two sheets of pyralin or other pyroxyline compound, and uniting or joining together the edges of said sheets, so as to completely enclose the interposed picture, print or the like, and polishing said sheets of pyralin or other pyroxyline compound, substantially as set forth. 10th. The method of manufacturing an indelible water-proof and polished picture, print or the like, which consists in securely uniting any picture, print or the like between two sheets of pyralin or other pyroxyline compound, by wetting the surfaces of the picture, print or the like, with alcohol or other solvent of pyroxyline, and applying heat and pressure to said sheets after the picture or print has been placed between them and at the same time and by the same operation uniting or joining the edges of said pyralin sheets together, which sheets are a little larger in length and width than the interposed picture, print or the like, so as to completely enclose the interposed picture and then polishing said sheets of pyralin or other pyroxyline compound, substantially as set forth.

**No. 34,037. Car Coupling.**

(*Attelage de chars.*)

William Ulery, Briscoe, Mo., U.S., 2nd April, 1890; 5 years.

*Claim.*—1st. A car coupling, consisting of a spring and spring-actuated block located in the rear of the draw-head, a link raiser and guider secured in the foremost part of the draw-head, having an arm extending through the side of the same and having its arm weighted, an inclosing cap for the pin screw on the stud or projection above the draw-head, and a lever and rod fastened to and operated from the top of the car, substantially as described. 2nd. The herein described car coupling, consisting of the draw-head, having the pin hole extending through its top and the threaded extension, a pin located in said hole, and an inclosing cap, having an internal thread on said extension and an opening extending therethrough to receive the pin, and provided with an internal shoulder at its upper end to prevent the pin being drawn out of the casing, and a trigger suitably secured in a groove in the rear of the draw-head, its upper end adapted to engage the collar of the pin and to hold the same in place while the cars are being coupled, substantially as described. 3rd. The herein described car-coupling, consisting of a spring and spring-actuated block located in the rear of the draw-head, a link raiser and guider consisting of a block journaled in the lower front end of the draw-head upon the link rests, provided with an arm extending through the side of the draw-head, and having a lateral extension provided with a weighted end, an inclosing cap for the pin screwed on the stud or projection above the draw-head, having the pin hole extending through its top and the threaded extension, an internal shoulder at the upper end of said extension, and a trigger located in a groove in the rear of the draw-head, its upper end adapted to engage the collar of the pin, for the purpose set forth.