

lance wheel and a lever, and a sliding bar which operates to unstrip said clutch whenever the end of the feed bar is reached. 2nd. In combination with sliding rod S, levers T U Q and suitable retracting spring, a sliding clutch, its operating lever and the driving shaft and balance wheel. 3rd. In a metal working machine having pressure rolls and guide tubes, a set of guide tubes made displaceable at will without separation from the machine. 4th. In combination with block I, and the set of tubes carried thereby, a yielding support or attachment for said block, a lever operated by the withdrawal of said block from the rolls, and a spring operated bar which unstrips the balance wheel clutch. 5th. In combination with pressure rolls, a series of guide tubes and plungers arranged to feed the blanks through said rolls, and to return them also through said rolls. 6th. In combination with guide tubes and plungers feeding and returning the blanks through the rolls, a pair of rolls having the die-grooves shaped in such manner as to prevent the blanks thus returned from again entering the grooves, until the larger forward end of the die-groove comes round again. 7th. In combination with a pair of pressure rolls, a set of tubes H H¹ H² arranged to travel from one pair of die-grooves to another and provided with plungers, which force the blank through the rolls to the receiving tubes. 8th. In combination with a pair of pressure rolls, a travelling set of tubes H H¹ H², all but the last of which are provided with gear wheels, in combination with a relatively fixed rack for partly turning said tubes. 9th. In combination with pressure rolls, a set of receiving tubes G G¹ G² provided with spring pressed plungers having conical recesses. 10th. In combination with blocks I, 12 carrying the oscillating or travelling tubes and rack, the rod N, spring n, rock-shaft I and the prismatically slaved tube 13 carrying arm a below said block 12. 11th. In combination with a retracting spring and a cam on the driving shaft, the rock-shaft I having arms i i¹, whereby block I is caused to vibrate or travel as stated. 12th. In combination with tubes H H¹ H² and plungers h h, tent lever L, link l, lever K having additional arm k, a retracting spring and a cam on the driving shaft. 13th. In a machine for compressing and shaping bars of metal, a pair of pressure rolls having both die-grooves and channel grooves, the latter all wing the blanks to return through the said pressure rolls. 14th. In combination with the die-grooves, pressure rolls and suitable transferring devices, a system of inclined guide tubes arranged so that the lower end of each lower tube shall be directly under the upper end of each upper tube. 15th. In combination with the discharge tube H², a supplemental guide tube arranged to be automatically moved out of the way, whenever said discharge tube is lowered. 16th. In combination with the movable set of discharge tubes H H¹ H² and their supporting block I, a supplemental guide tube suspended by an arm pivoted to said supporting block, said arm being provided with a rigid finger adapted to engage with a fixed stop whenever said block I descends. 17th. In combination with compressing devices and guide tubes, a dropping block arranged to receive the blanks in the line of discharge, and rock so as to deliver them in position to be transferred to the gripping, heading and trimming devices. 18th. In combination with the locking block, the slide covering the channel thereof and devices for automatically moving the slide from the channel as the block is rock'd. 19th. In combination with the trimming plunger having a bevelled rear end, a correspondingly bevelled blade or bar operating at right angles therewith. 20th. A pair of pressure rolls having their die-grooves provided at one end with flaring guide ways F₃ which direct the blanks into proper position. 21st. A curved guide way conducting from the feeding devices, and provided with a detachable cover Z₃ and spring raised section Z₃ to facilitate the passage of the blanks.

No. 11,435. Improvements on Feather Renovators. (*Perfectionnements aux appareils à rafraîchir la plume.*)

John W. Butcher, Jr., (Assignee of Horace E. Rowe,) Hamilton, Ont., 28th June, 1880; for 5 years.

Claim—1st. The cylinder B and its jacket C mounted on a frame D, to tilt. 2nd. The removable ends E of the cylinder B, constructed in half sections, one perforated and the other solid. 3rd. The cover F of the jacket C having capped apertures with removable wire cloth shells and inclosing the ends E. 4th. The combination, with the cylinder B, of a fan. 5th. The rock shaft G having an agitating frame t, in combination with the fan.

No. 11,436. Improvements on Pumps. (*Perfectionnements aux pompes.*)

George W. McKenzie, Harrington, Me., U.S., 28th June, 1880; for 5 years.

Claim—A pump, the combination with a piston rod, of a foot lever to depress and a spring attached to the piston rod adapted to retract it.

No. 11,437. Improvements in Valves. (*Perfectionnements dans les soupapes.*)

William Wilson, Oakland, Cal., U.S., 28th June, 1880; for 5 years.

Claim—1st. A collapsible tube C suspended in a waste pipe E. 2nd. The short tube B secured in the upper end of the conical pipe section, or enlargement E, and having its upper end connected with the waste pipe above, by means of the collapsible tube D, and having the short collapsible tube C secured to its lower end, in the chamber of the enlargement E. 3rd. A collapsible tube consisting of two flat strips of India-rubber, or other pliable material, placed together and having their edges secured together. 4th. An improved collapsible tube valve to be placed in pipes, and passages for admitting a flow of water, steam, air or gas, in one direction, and preventing a back flow in the other direction.

No. 11,438. Improvements in Heel Counter Machines. (*Perfectionnements aux machines à contrefoir des talons.*)

Joseph Kieffer, Montreal, Que., 28th June, 1880; for 5 years.

Claim—1st. The combination of the feed and corrugating rollers K K, with the male and female dies E F F, all being constructed and provided with mechanism for operating them. 2nd. The combination of the delivering slide I with its supporting abutments s, the feed rollers K K and the male and female dies E F F, constructed and provided with me-

chanism for operating them. 3rd. The combination of the stud K, with the delivery slide I, the feed rollers K K, and the male and female dies E F F, arranged and provided with mechanism for operating them. 4th. The combination of the feeding apron G and the delivery slide I provided with mechanism for operating them, with the feed and corrugating rollers K K and the male and female dies E F F. 5th. The combination of two expellers u v and their operative springs s₁ s₂, with the male and female dies E F F. 6th. The guide plates m n provided with the notches o₂ p₁ q₁ t₁ arranged in them. 7th. The male die grooved on its flanks. 8th. The corrugating feed rollers K K provided with the movable feeding segments or arcs z z arranged and combined with such rollers. 9th. The female dies provided with the tapering recess a₂ arranged in or at their mouth.

No. 11,439. Improvements in Locomotives.

(*Perfectionnements dans les locomotives.*)

William Mason, Taunton, Mass., U.S., 28th June, 1880; for 5 years.

Claim—1st. The side levers C provided with the axle boxes u and fulcrum pivots g. 2nd. The combination of the side levers C and the cross or brace bars F I K. 3rd. The combination of the controlling springs M and their housings L, with the levers C and with the recessed boxes B thereof. 4th. The combination and arrangement of a leading truck, with the steam bogie of a bogie locomotive steam engine. 5th. The combination of the pocketed pieces B, with the truck and with the rocker levers C and the cross and brace bars F J and K. 6th. The combination of the controlling springs M and their adjusting bolts q s and nuts thereof, with the cross bar F, brace bars J K, levers C and their recessed or pocketed bearings B, applied to the bogie and leading trucks. 7th. The combination of the two sets of springs o M, with the bogie truck and with the levers C, connected by means and with the leading truck axle and applied to the bogie truck, such springs being adapted and arranged essentially as specified.

No. 11,440. Improvements on Grain Binders.

(*Perfectionnements aux lieuses à grain.*)

Philip C. Evans, Philip J. Evans, Brinscombe, and Henry J. H. King, Newmarket, Eng., 28th June, 1880; for 5 years.

Claim—1st. The arranging or combining together of parts, in the improved manner. 2nd. The mode of arranging or combining together of the gathering arms with the needle or binder arm and parts moving each arms, so that as the gathering arm moves the bundle of crop from the back to the front of the needle or binder arm, it protects and forms a clear space for the latter and at the same time makes a good separation between each bundle or sheaf. 3rd. The cam slotted bell-crank lever acted on by a revolving crank pin, for working the needle or binder arm with the upward movement quicker than the downward movement, and the consequent comparatively slow tightening of the binding material. 4th. The application of parts to clamp or nip the strings or binding material at a point between the sheaf and the knot or tie, in order to maintain the tightness of the binding material round the sheaf, after the cutting of the end or ends whilst the tie is being made. 5th. The clamping or nipping of the strings or binding material close to the sheaf by means of the needle or binder arm. 6th. The constructing, arranging and working of the needle or binder arm, so that it reciprocates in a straight line or nearly so. 7th. The lever or wedge action nipper at the end of the needle or binder arm, for preventing the severed end of the binding material from slipping back. 8th. Constructing and arranging or combining together the knotting mechanism and its actuating details. 9th. The method of winding the string to form the loop of the knot, round a mandrel consisting of two bars, by the use of a single hook. 10th. The application of the pointed projection (68) for keeping the loop of the knot from being drawn into the tube (54) into which the ends are drawn and for insuring the tying of the knot close to the sheaf. 11th. The arranging of the knotting mechanism to form the knot loop, after the severing of the end or ends of the binding material. 12th. The curved bottom of the support, or cradle, on which the sheaf rests whilst being bound, in combination with the relative position of the tying or knotting point, the parts being thus arranged for the purpose of retaining the circular form of the sheaf whilst forming the knot close to it. 13th. The multiple cam plate (11) of a disc shape which enables it to be moulded, simply constructed and combined with the knotting mechanism. 14th. The means of retaining the loose end of the string in the ascent of the needle or binder arm. 15th. The method of sharpening the rotating knife or knives without necessitating the removal thereof from the machine. 16th. The combination of main and supplementary gathering arms and the stationary cam groove plate

No. 11,441. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

John M. Fair, Buffalo, N. Y., (Assignee of David Leib, Columbus, Ohio,) U.S., 30th June, 1880; for 5 years.

Claim—1st. The combination, with the treadle, of the separate slotted carrying bar a and the separate heel plate b, arranged across the top of the treadle and clamped thereon and to the slotted bar by screws c c passing through the treadle and the slot of said bar a, and secured by nuts. 2nd. A hanging and swinging treadle device for sewing machines, the slotted bar a and the suspension arms d having slotted lower angular terminations d₁, and adjustably secured to said bar by the bolts e. 3rd. The suspension arms d having a series of holes f in their upper ends, in combination with the pivot bearings g g, and a clamping device by which said pivoted arm bearings are secured to the side frames of the machine, whereby to effect the adjustment of the angle of the treadle. 4th. The combination, with a treadle for sewing machines having both a swinging and a rocking movement to operate the driving shaft and in which the axis of said treadle is in line with the ankle joints of the operator's feet, of springs k k having fixed connections at their upper ends, and their free ends extending downward and exerting a force in the direction of the swing of the treadle upon its suspension arms d d. 5th. The slotted treadle bar a, the suspension swinging arms d d₁ having a series of holes f at their upper ends, the pivot bearings g, the slotted and clamping bracket plates h j and reacting springs K.