

above, in combination with the holes *i* in the collar under the cone of the burner, for the purpose of admitting atmospheric air to mix with the rarified air pressing down the tubes which causes a perfect combustion.

No. 14,978. Improvements on Button Hole Attachments for Sewing Machines. (*Perfectionnements aux machines à coudre faisant les boutonnières.*)

Samuel J. Baird, Covington, Ky., U. S., 19th June, 1882; for 5 years.

Claim.—1st. In combination, the elongated spring cloth clamp, the clamp spring D provided with a thumb piece pin C provided with the head *C*, and the curved end B providing for the abrupt descent of the clamp spring D and quick opening of the clamp pieces A and B. 2nd. In combination, the clamp spring D provided with the vertical thumb piece D², pin C provided with the head *C* and the curved edge B¹. 3rd. A springless double pawl T laterally adjustable with a pin traversing the slot *m*, in a guide piece, in combination with a ratchet wheel F and clamp slide. 4th. A slide pawl U adjustable to the ratchet *m*, by a slot and pin, in combination with the ratchet and cam wheels and clamp slide. 5th. The ratchet wheel M and cam wheel N, in combination with the adjustment plate. 6th. The ratchet wheel M and cam wheel N, in combination with flanges or posts on the clamp slide. 7th. The combination of the ratchet wheel and cam wheel, the clamp slide being provided with flanges or posts *tt*, the plate K provided with a pin *g*, and slide pawl U provided with the slot *u*. 8th. The combination of plate K and lever J *j* fitting in notches J⁵ *j*⁶ *j*⁷. 9th. The steadying bar S.

No. 14,979. Improvements in the Art of Weaving Cloth. (*Perfectionnement dans l'art de tisser.*)

Thomas Isherwood, Westerly, R.I., U.S., 19th June, 1882; for 5 years.

Claim.—1st. Inter-weaving strengthening strips with the cloth, by means interlaving warp threads and separate shuttles for laying the weft for the strips and the weft for the cloth. 2nd. As a new article of manufacture, a cloth having strengthening strips interwoven with the cloth at intervals, so that the cloth is made thicker and stronger at these strips than at the spaces between the strips.

No. 14,980. Improvements on Bench Clamps. (*Perfectionnements aux vis d'établi.*)

James Murphy, San Antonio, Texas, U. S., 19th June, 1882; for 5 years.

Claim.—The combination, with the grooved plate A provided with head B and inclined and serrated toe C, of the adjustable screw E provided with head D, ratchet wheel F and ratchet lever D.

No. 14,981. Improvements on Calculators. (*Perfectionnement aux tables d'arithmétiques.*)

Robert T. Martin, Toronto, Ont., 19th June, 1882; for 5 years.

Claim.—Two rows of the nine digits and nine movable sliding blocks placed in the numeral frame, in such a way that, by a simple movement of the blocks on which the digits are placed, to produce the possible variations of the nine digits, taking two at a time.

No. 14,982. Improvements in Bolt and Rivet Cutters. (*Perfectionnements aux machines à couper les boulons et les rivets.*)

Christopher W. Levalley, St. Paul, Minn., U.S., 19th June, 1882; for 5 years.

Claim.—1st. In a bolt cutter, the combination of the following elements, namely: the yoke or supporting part A having the central opening *a*, the cutter C adapted to slide therein, the screw jaw or head D¹ engaging with the sliding cutter, the toggle levers G G connected by a single pivot to the said part D¹, and the levers E E pivoted to the part A and to the levers G G. 2nd. In a bolt cutter, the combination of the following elements, namely: the yoke part A having a central opening, the cutter C adapted to slide therein, the levers E E pivoted to the yoke, the screw head D¹ engaging on a central line with the cutter C, and the toggle levers G G connected by one pin or screw to the head D¹, and the other end of the toggle levers connected to the levers E E.

No. 14,983. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

William Davison, Hoboken, N. J., U.S., 19th June, 1882; for 5 years.

Claim.—1st. An elliptic or semi-elliptic spring, made of plates having concavo-convex form in cross section, and arranged with the convex sides of said plates towards the chords of the longitudinal bend or bow, the plate which forms the back at *c* made convex on its inside, and flat on its top or outside. 2nd. In an elliptic or semi-elliptic spring made of plates having concavo-convex form in cross section, and arranged with the convex sides of said plates towards the chord of the longitudinal bend or bow, the combination of the back plate C made convex on its inside and flat on its outside, with the inside and intermediate plates *ab* and with the band *d*, said band being made straight in the part crossing said plate C.

No. 14,984. Improvements in Devices for Converting Reciprocating into Rotary Motion. (*Perfectionnements aux appareils pour transformer le mouvement alternatif en mouvement rotatoire.*)

Abraham G. Smyth, Hamilton, and John Smith, Brantford, Ont., 19th June, 1882; for 5 years.

Claim.—1st. An opening or recess B placed in a shaft, so constructed and arranged that a pawl may be used on either side of said shaft, and engage the central portion of rack wheel E. 2nd. A lock or clutching device, composed of a recess and pawl contained in a shaft upon which a loose wheel may be placed, in combination with a rack pitman for the purpose of converting reciprocating motion into rotary. 3rd. A rack pitman having the side pieces I I made long, so that a piece *j* may be securely fastened between them. 4th. In a rack pitman, one or more cogs *d* left wider than the others for retaining the rack in gear. 5th. In combination with a locking device and gear wheels E E for converting reciprocating motion into rotary, an adjustable rack pitman. 6th. A guard frame provided with the opening L or its equivalent. 7th. A nib N or projection formed on block K, in combination with pin *i* or its equivalent for the purpose of retaining the guard frame in position.

No. 14,985. Improvements on Earth Augers. (*Perfectionnements aux sondes à trépan.*)

Charles D. Pierce, Philadelphia, Penn., U. S., 19th June, 1882; (Extension of Patent No. 7846.)

No. 14,986. Improvements on Earth Augers. (*Perfectionnements aux sondes à trépan.*)

Charles D. Pierce, Philadelphia, Penn., U.S., 20th June, 1882; (Ext of Pat. No. 7846.)

No. 14,987. Improvements on Fence Posts. (*Perfectionnements aux pieux des clôtures.*)

Jacob Frazier, Centralia, Ill., U.S., 20th June, 1882; (Ext. of Pat. No. 10,483.)

No. 14,988. Improvements in Metal Packages. (*Perfectionnements dans les boîtes métalliques.*)

John F. Ross, Toronto, Ont., 20th June, 1882; (Ext. of Pat. No. 8807.)

No. 14,989. Improvements on Ammunition Cases. (*Perfectionnements aux boîtes à ammunition.*)

Edward G. Parkhurst, Hartford, Ct., U. S., 20th June, 1882; for 5 years.

Claim.—1st. In combination with the box A and contained cartridges the exterior case composed of the two rectangular pasteboard parts B and C, each bent to form three sides of the box, and turned with their open sides toward each other over the cartridges and the box A, and the binding E covering the corners. 2nd. In combination with the box or casing composed of two parts arranged respectively to each other, the detaching strip D arranged between the two parts of the casing and having projecting portion to be grasped by the hand.

No. 14,990. Improvements on Boots and Shoes. (*Perfectionnements aux chaussures.*)

Edwin L. Sprague, Boston, Mass., U. S., 20th June, 1882; for 5 years.

Claim.—As an improved article of manufacture, a box toe composed of sheet metal having its edge flanged or bent over upon itself.

No. 14,991. Improvements on Devices for Forming Threads on Sheet Metal Cylinders. (*Perfectionnements aux machines à faire les pas de vis sur les cylindres en feuille de métal.*)

Jacob F. Brower, Coral, Mich., U. S., 20th June, 1882; for 15 years.

Claim.—1st. In a screw-thread bending machine, the base A provided with bifurcated standards B C in which are placed the bearings D H I L and the shafts E M, in combination with the stationary bearings D D¹, sliding bearings H I, rocking bearings L L, rotating shafts E M and the spirally grooved wheels F N. 2nd. A device for forming screw threads upon sheet metal cylinders, wherein the upper shaft is supported near its forward end within an oscillating box which is, in turn supported within a vertically reciprocating box. 3rd. In a screw thread bending machine, and in combination with the standards B C and shafts E M carrying the worm wheels F N, the vertically adjustable boxes H I, oscillating boxes L, gear wheels O G and the springs *a b*. 4th. In a device for forming screw-threads upon sheet metal cylinders and in combination with the standards B C and shafts E M carrying the worm wheels F N, the vertically adjustable boxes H I and oscillating boxes L.

No. 14,992. Improvements on Car Seats. (*Perfectionnements aux sièges des chars.*)

Isaac M. Van Wagner, Nyack, N. Y., U. S., 20th June, 1882; for 5 years.

Claim.—1st. The combination of a car seat with the movable partition which is placed under the seat for the purpose of preventing draughts of cold air around the feet of the passengers. 2nd. In a car, the combination of the seats with the partitions placed under them, and connected together, by means of rods, cords, or wires, in such a manner that the partitions can be raised and lowered. 3rd. The combination of the car seats, with the hinged or pivoted partitions placed under the seats and the rubber strips I, the parts being arranged and combined to operate as described. 4th. The combination of a car seat with a suitable partition loosely attached thereto, and having an elastic material attached to its lower edge, the partitions being adapted to be worked backward and forward over the floor, for the purpose of assisting in cleaning the car under the seat.