spring U, all arranged to operate substantially as described. 24th. The yielding tension yarn guide P, the rock arm R the spring tension lever Q, removably secured thereto, the coil spring U, the barrel T and the screw S having the milled head s and nut s1, all arranged substantially as described.

No. 30,135. Accoutrement. (*Accoutrement.*)

Charles G. Slade, London, and Nesbit W. Wallace, Southsea, Eng., 7th November, 1888; 5 years.

Claim.—1st. The combination, with the braces B and waist belt C, to which they are buckled at D, of the brace extensions E, substantially as specified, passing from the buckles D around the great coat, or other package carried at back of the waist belt, and buckled at their extremities to the braces, as and for the purpose described. 2nd The combination, with the braces B and with the runner loop at the crossing point thereof, of the strap H encircling both the great coat, or other package F, and the mess tin G. 3rd The mode of supporting the valise by carrying straps a, attached thereto and passing through loops a1 on the braces B over the shoulders, and secured to buckles I on the front of the braces, the straps a lying upon the said braces and being able to be disconnected for the purpose of removing the valise without disturbing the rest of the equipment, as specified. 4th. The combination, of the parts B, B1, of the braces, and the double ended buckles I, whereby the parts B, B1 are permanently connected together. 5th. The valise having its flap so cut and seamed to the body of the valise that the top of the closed valise will be slightly hollow or concave, as specified. 6th. The combination, with the parts B1 of the braces, and with the buckles I, and with the waist belt C, of the ammunition pouches provided with runners and loops through which the waist belt and the parts B1 of the braces respectively pass for supporting the weight of the pouch, as specified. 7th The herein described means of holding the flap of the expense pouch open when required, as specified. 8th. The combination, with the ammunition pouches, of outside loops at the ends of the pouch for holding cartridges for use on emergency, as specified. 9th. The construction of ammunition pouches with loops for loose cartridges, in combination with pockets for packets of ammunition, as described. 10th. The combination, with the breast flap, of the tunic, of loops to hold cartridges, for the purpose specified.

No. 30,136. Upsetting and Die Forging Enlarged Ends on Metal Bars. (*Mode de refouler et forger à l'étampe les bouts élargis des barres de metal.*)

Frederick H. Smith, Baltimore, Md., U. S., 7th November, 1888; 5 years.

Claim.—1st. In combination with an anvil, a horizontal receiving female die consisting of a shaping chamber, with a front channel, a vertical compressing male-die fitted to slide down and up within the shaping chamber, and means to drive the heated bar forward into the shaping chamber. 2nd. In combination with an anvil, a horizontal receiving female-die consisting of a shaping chamber, with a front channel, a vertical compressing male-die fitted to slide down and up within the shaping chamber, and a front gripping cross-head. 3rd. In combination with an anvil, a horizontal receiving female-die consisting of a shaping chamber, with a front channel, a vertical compressing male-die fitted to slide down and up within the shaping chamber, a front gripping cross-head, and a rear cross-head connected therewith by rods, a rear horizontal cylinder and piston fitted to actuate the rear cross-head and connecting rods, and front gripping cross head 4th. In combination with an anvil, a horizontal receiving female-die consisting of a shaping chamber with front and and rear channels for the bar, a vertical compressing male-die fitted to slide down and up within the shaping chamber, and means to drive the heat-softened end of a stationary bar backward into the shaping chamber. 5th. In combination with an anvil, a horizontal receiving female die consisting of a shaping chamber with front and rear channels for the bar, a vertical compressing male-die fitted to slide down and up within the shaping chamber, and a horizontal upsetting ram fitted to slide endwise within the rear channel of the female-die. 6th. The combination, of an anvil, and a horizontal female-die consisting of a shaping chamber with front and rear channels for the bar, of a vertical compressing male-die fitted to slide down and up within the shaping chamber, and means to drive both ends of the heated portion of the bar towards the centre of the die. 7th. The combination of an anvil, and a horizontal female-die consisting of a shaping chamber with front and rear channels for the bar, of a vertical compressing male-die fitted to slide down and up within the shaping chamber, a horizontal ram fitted to move within the said rear channel, and a front gripping cross-head to move the heated bar in the said front channel. 8th In combination with mechanism for ramming endwise a metal bar and thus upsetting its heat-softened end within a shaping chamber, of a bulbous protuberance projecting from the top or bottom, or both into the centre of the said shaping chamber, for the purpose set forth. 9th. In combination with mechanism for ramming endwise a metal bar and thus upsetting its heat-softened end within a shaping chamber, of a bulbous protuberance, one end of which is rounded and the opposite end tapered or wedge shaped, said protuberance projecting from the top or bottom, or both into the said shaping chamber 10th. As an improvement in the art of upsetting bridge bars, the hereinbefore described process consisting of first heating a portion of a metal bar, enclosing the heated portion within a die of any desired shape, and driving the heated bar forward into the shaping chamber. 11th As an improvement in the art of upsetting bridge bars, the hereinbefore described process consisting of first heating a portion of a metal bar, enclosing the heated portion within a die of any desired shape, and driving both ends of the heated portion of the bar towards the centre of the die, for the purposes described. 12th. As an improvement in the art of upsetting bridge bars, the hereinbefore described process consisting of enclosing the heated bar within a die, firmly fixing the heated bar at the point where the eye-seat will come, so as to prevent it from bending laterally when the upsetting pressure is applied, and upsetting the heated portions adjacent to the said fixed point by driving the heated bar forward. 13th As an improvement in the art of upsetting bridge bars, the hereinbefore described process consisting of enclosing the heated bar within a die, firmly fixing the heated bar at the point where the eye seat will come, so as to prevent it from bending laterally when the upsetting pressure is applied, and upsetting the heated portions adjacent to the said fixed point by driving the heat-softened end of the bar backward. 14th. As an improvement in the art of upsetting bridge-bars, the hereinbefore described process consisting of enclosing the heated bar within a die, firmly fixing the heated bar at the point where the eye-seat will come, so as to prevent it from bending laterally when the upsetting pressure is applied, and upsetting the heated portions adjacent to the said fixed point by driving the metal from opposite directions toward said fixed point 15th As an improvement in the art of upsetting bridge bars, the hereinbefore described process consisting of enclosing the heated bar within a die, penetrating one or both sides of the heated bar at the point where the eye-seat will come, so as to give an initial lateral expansive direction to the metal, and driving the heated metal into the die. 16th. As an improvement in the art of upsetting bridge bars, the hereinbefore described process consisting of enclosing the heated bar within a die, penetrating one or both sides of the heated bar at the point where the eye-seat will come, so as to give an initial lateral expansive direction to the metal, and driving the heated metal from opposite directions towards the said penetrated point.

No. 30,137. Machine for Rolling and Wrapping Cigars. (*Machine à rouler et envelopper les cigares.*)

Claes W. Bowman, New York, N. Y., U. S., 7th November, 1888; 5 years.

Claim.—1st. In cigar rolling machines, a cigar receiving mould formed of a set of spring closed individually yielding power driven rolls with an opening at one end for the endwise insertion and withdrawal of the cigar, in combination with a spreader individually connected to each roll, whereby all of said rolls are simultaneously spread apart at that end of the mould through which the cigar is inserted and withdrawn, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, with spring-closed yielding power driven rolls, inclosing a cigar mould space, access to which is had from one end of the rolls, and mechanism for spreading said rolls apart so as to open the mould at that end of a support, movable to and from said end to permit the cigar to be inserted in and withdrawn from the mould, and a tip forming thimble carried by said support, substantially as hereinbefore set forth. 3rd. The spring closed power driven cigar mould rolls, supported at one end only, and inclosing at their other end an opening through which the cigar is inserted and withdrawn from between them, and mechanism for spreading the rolls apart, in combination with a support movable to and from the said entrance end of the rolls, and a tip-forming thimble carried by said support, substantially as and for the purposes hereinbefore set forth. 4th. The combination, of the rolls D, the slotted standards B, C in which said rolls are supported at one end only, the spreader F, the driving shaft, and the gearing for communicating motion from said shaft to said rolls, substantially as and for the purposes hereinbefore set forth. 5th. The combination, with the spring-closed power-driven rolls inclosing a cigar mould space, access to which is had from one end of the rolls, and mechanism for spreading the rolls apart, of a support movable to and from this end of the rolls, and a tip-forming thimble, and a cutter for shaping the point end of the wrapper, both of which are carried by said supports, substantially as and for the purposes hereinbefore set forth 6th. The combination with the spring closed power-driven cigar mould rolls, inclosing at one end an opening through which the cigar is inserted endwise between them, and mechanism for spreading the rolls apart, of the thimble head stock located at this end of the rolls and movable therefrom so as to leave said opening unobstructed, and the thimble carried by and adjustable upon said head stock, substantially as and for the purpose hereinbefore set forth 7th. The combination of the rolls A, inclosing a mould space into which a cigar is inserted endwise from one end of the rolls, the support and tip-forming thimble carried thereby located at and movable from this end of the rolls so as to uncover the entrance end of the mould, and the ejector adapted to operate upon the cigar from the opposite end of said mould, said thimble support and ejector being connected to move simultaneously and together, substantially as and for the purposes hereinbefore set forth. 8th. The combination, of the rolls, the table and the guide plate pivoted or hinged above the plane of the table, and adapted to tilt with relation to the table, substantially as and for the purposes hereinbefore set forth.

No. 30,138. Apparatus for Standardising and Measuring Intensity of Color. (*Appareil pour titrer et mesurer l'intensité de la couleur.*)

Joseph W Lovibond, Salisbury, Eng., 7th November, 1888, 5 years.

Claim.—1st. An apparatus for standardising and measuring intensity of color, consisting of a tube or case with an eye aperture at one end and object apertures at the other end, and standard strips inserted between the eye aperture and one object aperture whilst the object to be examined is similarly inserted between the eye aperture and the other standard aperture, substantially as described. 2nd. An apparatus for standardising and measuring intensity of color, consisting of a tube or case with an eye aperture at one end and object apertures at the other, and a partition between the object apertures terminating in a knife edge bisecting the eye aperture, and provision for inserting standard pieces on one side and the object to be examined on the other side, substantially as described.

No. 30,139. Centreboard for Vessels. (*Semelle de vaisseau.*)

Henry W. Wells, Rowayton, Conn., U S, 7th November, 1888; 5 years.