

provided with recesses 13, in combination with an auxiliary piston socketed in the heads and provided with steam passages through which steam passes to said recesses, and a friction spring 31 engaging said automatic slide valve, whereby it is retained in any position in which it is placed. 6th. The combination with the steam chest, auxiliary piston and valve 15, of the cylinder having steam passages 17, and an exhaust passage 18, and the piston, said exhaust passage having an elongated opening 22 leading into the cylinder, so that steam is permitted to exhaust directly from the cylinder during the last portion of the stroke in either direction, and back pressure upon the piston is prevented at the instant the forward movement commences. 6th. The cylinder having steam passages 17 and an exhaust, in combination with a steam chest, a valve having an opening in its under side adapted to connect one of the steam passages with the exhaust, and a plate lying under the steam chest and valve, and having openings corresponding with the exhaust opening and steam passages 17, so that when said plate is moved in either direction steam is admitted at that end of the cylinder more quickly to drive the piston in the opposite direction, and at the opposite end of the cylinder the admission of steam is retarded, as and for the purpose set forth. 7th. In combination, the cylinder, the steam chest, the valve, steam passages 17 and 23, and the exhaust, and an adjusting plate having openings 35 corresponding with steam passages 17 and the exhaust opening, said plate being provided with slots so as to permit adjustment of openings 35 more or less out of alignment with steam passages 17 and the exhaust.

No. 37,923. Bread Knife. (*Couteau à pain.*)

Francis Hayes and Fred. J. Lewis, both of London, Ontario, Canada. 7th December, 1891; 5 years.

Claim.—As an article of manufacture, a handle H, in combination with a blade, B, sharpened on one side, and having notches, n, formed at intervals apart, in the cutting edge thereof, and portions, e, of the cutting edge between said notches, n, the sides of which notches are sharpened and form breasts or angular cutting edges, e, and the grooves, g, formed in one side of the blade only, and on a line with the notches, n, and extending back a short distance from the cutting edge of said blade, substantially as shown and described, and for the purpose specified.

No. 37,924. Barrel Hoop. (*Cercle de barril.*)

James Martin Conway, Spring Garden, Virginia, U.S.A., 7th December, 1891; 5 years.

Claim.—1st. A barrel-hoop consisting of a single piece of wire doubled to form a loop and bent around the barrel, and having the ends of the wire engaging the loop and secured by twisting them upon themselves, substantially as described. 2nd. A hoop for vessels, consisting of a doubled or bent wire having a loop, the ends of said wire being bent around said loop upon themselves and twisted around their immediate attached portions, substantially as and for the purpose set forth. 3rd. A hoop for vessels, consisting of a doubled or bent wire having a loop, double twists E, and a single twist F, made by bending the ends around said loop and winding them around their immediate attached portions, and then twisting them upon each other, substantially as and for the purpose set forth.

No. 37,925. Soot Pan. (*Casserole à suie.*)

Patrick Queenan, Oklahoma, Territory of Oklahoma, U. S.A., 7th December, 1891; 5 years.

Claim.—A soot-pan composed of a bottom, parallel sides and an enlarged front, and having its rear or inner end open, combined with the rectangular thimble snugly fitting the pan, substantially as described.

No. 37,926. Vegetable Reducer.

(*Coupe-légumes.*)

Thomas Walsh, Montreal, Quebec, Canada, 7th December, 1891, 5 years.

Claim.—1st. A reducer formed of a thin metallic sheet having inclined projecting cutters struck out of said sheet, substantially as described. 2nd. A reducer formed of a thin metallic sheet having inclined projections or cutters b, and depressions c, struck out of said sheet, substantially as described. 3rd. A reducer formed of a thin metallic sheet having inclined projections or cutters b, struck out of said sheet and having the cutting edges of said cutters swaged, with or without the depressions c, the whole substantially as described.

No. 37,927. Surgical Splint.

(*Eclisse de chirurgie.*)

Erastus Ranney Ellis, Detroit, Michigan, U.S.A., 7th December, 1891; 5 years.

Claim.—1st. Surgical splints consisting of perforated thin metal plates with conical-shaped flanges B, surrounding the apertures, substantially as described. 2nd. Surgical splints consisting of perforated thin metal plates, with conical-shaped flanges B around the apertures, and a marginal ridge or flange struck up from the metal of the plate, substantially as described. 3rd. Surgical splints consisting of curved thin metal plates with a ridge or flange around the edge struck up from the metal of the plate or splint, a series of perforations on the plate encompassed by conical-shaped flanges, and a brace-rod having its ends curved downwardly and rigidly secured to the outer face of the plate and arranged lengthwise thereof, substantially as described.

No. 37,928. Machine for Making Rivets.

(*Appareil pour faire les rivets.*)

Frank Danks, Troy, New York, U.S.A., 7th December, 1891; 5 years.

Claim.—1st. In a machine for making rivets, the combination with a die wheel operated at each movement to make a quarter turn with alternating periods of rest, of die-stocks arranged in the perimeter thereof so as to be diametrically opposite, sinks made in the die-stocks constructed to receive the rivet blanks, said sinks being provided with a shoulder against which the inner ends of the blanks abut, and a tubular passage way opening out from said sinks back of the shoulder therein, a header reciprocatingly operated to descend onto the rivet blanks where projecting from said sinks, and a plunger provided with pins adapted to enter the tubular passages of the die-stocks where back of the sinks, constructed and operated to push the rivets from the sinks, substantially in the manner as and for the purposes set forth. 2nd. In a machine for making rivets, the combination with the stocks d^2 , made with sinks d^3 , shoulders h^1 , and tube-form passages d^5 , said sinks being constructed and arranged to receive rivet blanks, with the inner ends thereof abutting against said shoulders while being headed, of the plunger l, made with pins adapted to enter said passages, and operated by said plunger to force the rivets from out said sinks, substantially in the manner as and for the purposes set forth. 3rd. The combination, with the die-wheel W, constructed and arranged to be operated substantially as described, of the stocks d^2 , made with the sinks d^3 , shoulders h^1 , and tubular passage ways d^5 , said stocks being arranged in the perimeter of said die-wheel, the recesses i^2 made in said die-wheel, the plungers l arranged in said recesses, constructed to move therein and provided with pins p^1 to enter the passages in said die-stocks, and the cam K arranged on each of the inner faces of the machine frame, adapted to engage with said plungers, substantially in the manner as and for the purposes set forth. 4th. The combination, with the die-wheel W, constructed with the die-stocks d^2 , having sinks d^3 , made with shoulders h^1 , and tube-form passages d^5 , said die-wheel being operated to make a quarter revolution, with alternating periods of rest at each rotation of the driving-shaft, substantially as described, of the header H, adapted to move in slides in the machine frame and made with a series of sinks v on its lower end, and the cam C² on the driving shaft, arranged to operate said header while the die-wheel is at rest, substantially in the manner as and for the purposes set forth. 5th. The combination, with the die-wheel W, constructed with die-stocks d^2 , having sinks d^3 , made with shoulders h^1 , and tube-form passages d^5 , said die-wheel being operated to make a quarter turn at each revolution of the driving shaft, substantially as described, of the header H, having a series of sinks v in its lower end and made with a recess r^1 in its rear face, the lever f^1 pivoted to the machine frame at p^1 and having an arm d^4 , adapted to enter the recess in the back of said header, and a spring S² connected the lower end of said lever with the machine frame, substantially in the manner as and for the purposes set forth. 6th. The combination, with the die-wheel W, made with lugs l and having rivet-form die-sinks in its perimeter, said wheel being constructed and operated to make a quarter turn, with regular intermittent periods of rest at each revolution of the driving shaft, substantially as described, of the rollers R² and R³, made with annular grooves g^1 , that are vertically in line in both rollers, said rollers being operated to rotate when the die-wheel is at rest and to cease rotating when the die-wheel is moving, and a blade B operated to engage with the lugs l of the die-wheel to rise vertically, and when such engagement with the die-wheel ceases to fall by gravity, substantially in the manner as and for the purposes set forth. 7th. The combination, with the die-wheel W, having rivet-form dies in its perimeter, said die-wheel being constructed and operated to make a quarter turn, with regular alternating periods of rest at each rotation of the driving shaft, substantially as described, of the rollers R² and R³, made with the encircling grooves g^1 and operated to rotate while the die-wheel is at rest and to cease rotating when the die-wheel is moving, substantially in the manner as and for the purposes set forth. 8th. The combination, with the die-wheel W, made with the lugs l and having rivet-form sinks in its perimeter, said die-wheel being constructed and arranged to make a quarter turn, with alternating periods of rest at each revolution of the driving shaft, substantially as described, of the rollers R² and R³, made with the encircling grooves g^1 and operated to rotate while the die-wheel is at rest and to cease rotating when the die-wheel is moving, the blade B, constructed with vertical slide-ways and operated to engage with the die-wheel, substantially as described, and the header H made with the sinks v in its lower end and constructed to be operated by the driving shaft while the die-wheel is at rest, substantially in the manner as and for the purpose set forth.

No. 37,929. Pen. (*Plume.*)

William Henry Bristol, Hoboken, New Jersey, U.S.A., 9th December, 1891; 5 years.

Claim.—1st. A pen provided with a sharpened edge to serve as an eraser, substantially as described. 2nd. A pen provided with an integral projecting portion having a sharpened edge to form an eraser, substantially as described.

No. 37,930. Apparatus for Blowing Sand from Railway Track Rails.

(*Appareil de soufflage du sable des rails de chemin de fer.*)

Emma Shepherd Briscoe, Toronto, Ontario, Canada, assignee of John F. Bevin, Indianapolis, Indiana, U. S. A., 9th December, 1891; 5 years.

Claim.—1st. The combination of a railway-track, a locomotive, an ordinary sanding device on said locomotive, an air-pumping apparatus also on said locomotive, and pipes connected with said air-pumping apparatus and leading to points above the track-rails in