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CONTENTS.

INVENTIONS PATENTED.

No. 3876. THRUSTANS GROOM, Guelph, Ont., 30th September, 1874, for 5 years. "Cooking Range." (Landier de cuisine.)

Claim.—1st. The application to cooking ovens of the inlet air pipe F, in combination with the damper F1, arranged and operating as described, 2nd. The grate bars I, in combination with the grate bar holders I1, I2, with slots i1, arranged as described; 3rd. The flue doors A., with handle a2 counter balance a3, and lip a4, arranged as described; 4th. The application to cooking ranges of the hot air chambers x, arranged as described. 5th. The sliding smoke disperser H, with sliding door *h* and rack *h*1, arranged as described.

No. 3877. GEORGE B. DURKEE, Alden, N. Y., U. S., 30th September, 1874, for 5 years: "Axle Box." (Boite d'essieu.)

Claim.—1st. The combination with the box B, provided with oil reservoir *b* of the cylindrical nut c, screw-cap D, and packing *d*1: the whole constructed as set forth, 2nd. The combination with the journal A, provided with shoulder *g*, and flange *h*, of the box B, provided with groove *i*, flanges *k*, *l*, and packing *m*, 3rd. The combination with the subject matter of the preceding claim P, constructed as set forth.

No. 3878. CARLOS L. PAGE, Cambridge, Mass., U. S., 30th September, 1874, for 5 years: "An Elevator." (Un élévateur.)

Claim.—The mechanism or combination for checking or preventing descent or fall of the elevator platform, and its supporting frame in case of accidental breakage of the lifting rope, such mechanism consisting of the toothed racks *c*, *c*, gears E, E, inclined planes F, F, locking racks G, G, cross head H, and spring *h*, *h*, all arranged and applied to the platform frame as specified, in combination with the platform frame, and the guides or guideracks, the hooked fingers, and the grooves or their equivalent as specified.

No. 3879. MOSES G. CRANE, Newton, Mass., U. S., 30th September, 1874, for 5 years: "Automatic Signal Boxes for Electro-Magnetic Fire Alarm Telegraph." (Boite de signaux automatiques pour les télégraphes électro-magnétiques d'alarme à feu.)

Claim.—1st. A fire alarm signal box, the lever G, with its lug V, and hook *t*, the flange *p*, and its notches V1, the lever *b*, insulated plate *c*, and magnet D, all combined and operating as specified, 2nd. The combination of the lever H, lever G, and wheel F, whereby the said wheel is liberated and allowed to revolve under the stress of the motor C, as specified.

No. 3880. EPHRAIM F. HERRINGTON, West-Horsick, N. Y., U. S., 30th September, 1874, for 5 years: "Improvements on Harvesters." (Perfectionnements aux moissonneuses.)

Claim.—1st. The combination of the clip A, the moveable guide E, and the catch F, or its equivalent, to permit the removal or replacement of the pitman while holding it securely in position, 2nd. The combination of the clip A, the post I, cast thereon, the shoulder *i*, on the post, guide turning thereon, and the bolt *a*, passing through the clip post and guide, and the nut K, which holds down the guide; 3rd. The combination of the nut lock J, nut K, guide E, and clip A; 4th. The arm E, movably attached to a fixed base plate, and held by a suitable catch F.

No. 3881. JOHN E. THOMPSON, Stanbridge, Que., 30th September, 1874, for 5 years: "Apparatus for Cooking Vegetables." (Appareil à cuire les légumes.)

Claim.—1st. The combination of the boiler A, plate H, with openings therein and dampers I, I1, I2, and I3, steamer C, provided with adjustable diaphragms E, and lid F, with or without the saucepan G, and lid G1, 2nd. The combination of the boiler A, steamer C, provided with adjustable diaphragms E, and lid F, with or without the saucepan G, and lid G1, 3rd. The steamer C, with perforated bottom D, and divided up into two or more chambers, the size of which may be varied by means of the adjustable diaphragms E, 4th. In combination with any steamer the Plate H, having openings formed therein and provided with dampers as set forth.

No. 3882. AUSTIN V. M. SPRAGUE, Rochester, N. Y., U. S., 30th September, 1874, for 5 years: "Can Opener." (Outil pour ouvrir les boites métalliques.)

Claim.—1st. The combination with the slotted fulcrum A, of the blade B, pivoted to lugs *b*, *b*, and playing in the slot *d*, of the fulcrum, 2nd The blade B, formed with the cavity *f*, and convex cutting edge *g*.

No. 3883. THOMAS A. WILLIAMSON, Knowlton, Que., 30th September, 1874, for 5 years: "Milk Vat." (Jatte à lait.)

Claim.—1st. The milk pan A, constructed with a bottom C, sloping from each end towards the centre, The milk pan A, having exterior chambers F, to contain saw dust applied within a water tank B.

No. 3884. HARVEY A. MANDERSON, Maria, Que., 30th September, 1874, for 5 years: "Combined Sleigh and Carriage." (Voiture mixte.)

Claim.—1st. The frame B, having slotted ends, receiving the axle F, and secured transversely to the runner A; 2nd. The combination of the removeable top E, spring C, and axle F, with the frame B, wheels K, and runners A, 3rd The blocks H, bolts I, and slides J, for securing the adjustable parts fixedly, 4th. The bar L, pivoted to the runner for changing the elevation of the shafts M.

No. 3885. JOHN LUND, East-Oxford, Ont., 30th September, 1874, for 5 years: Corn Husker." (Egrenoir à blé-d'inde.)

Claim.—1st. The knife carriage C, and spring ejector H, combined with a frame B, and detent bar G, operating as set forth, 2nd The pawl J, in combination with the spring ejector H, operating as set forth.

No. 3886. CHARLES BARLOW, Cookshire, Que., 30th September, 1874, for 5 years: "Machine for Turning Cheeses." (Machine à retourner les fromages.)

Claim.—1st. The rotatory arms C, C, with shafts B, and swinging shelves D, with loops E, E, and studs F, F; 2nd. The standards H, H, with short revolving arms G, G, and cheese holder K, K, with their bearings I, I, and gauge holes S, S; 3rd The spring L, with catch holder M, catch P, and posts A, A.

No. 3887. ALEXANDER RODGERS, Muskegon, Mich., U. S, 30th September, 1874, for 5 years: "Circular Saw Mill." (Moulin à scies circulaires.)

Claim.—1st. The frame composed of the hollow columns B, and B^1, the pipes C and C^1, having inlet and outlet pipes *a*, and *a*, and the rods *a*, provided with screw threads and nuts upon their ends; 2nd. The hollow columns E, in combination with the pipes C, caps E^1, and bearing plate G, provided with the lugs *b*, and tamper screws for changing the position of the column upon the pipe; 3rd. The journal box F, in combination with the column E, and intervening elastic material; 4th. The grooved bed plate I, the journal boxes H^1, and H^2, in combination with the pipes C; 5th. The moveable journal box P, in combination with the springs K, collars *c*, and pipe C; 6th The moveable journal box P, in combination with the rods *h*, reciprocated by eccentrics or equivalent devices and operated by the hand lever R; 7th The friction pulley O, consisting of the side pieces A, and connected in the manner specified; 8th. In combination with the pulley O, constructed as shown, the friction wheels L^1, and K, their wearing surfaces being formed of paste-board in the manner described; 9th. The flanged column S, carrying the saw-guides in combination with the pipe C, and bar *b*; 10th The guide bars *o* and *p*, provided with the jaws *j*, and *j*, for holding the material which forms the saw-guides; 11th The bearing roll U, provided with a splitting wheel V, in combination with the hooded journal boxes T, and T^1; 12th. The bearing roll U, supported in the adjustable frame in combination with the adjusting device V^1. 13th. The recessed pulley J, arranged with relation to the main driving pulley and belt; 14th. A machine composed of the various mechanisms described, all the parts being constructed, combined and arranged in the manner as set forth

No. 3888. JOSEPH W. JONES, London, Ont., 30th September, 1874, for 5 years: "Preservation of Eggs." (Conservation des œufs.)

Claim. A compound composed of salt, lime, magnesia, alum, salt-petre, gum-arabic and water placed in contact with a bag, containing charcoal, as set forth.

No. 3889. WILLIAM W. CLAY, JOHN KAY & THOMAS MCCOSH, Paris, Ont., 30th September, 1874, for 5 years: "Wool Drying Apparatus." (Appareil à sécher la laine)

Claim.—1st. The shaft A and furnace H for drying wool; 2nd The lift or elevator D, in combination with the shaft A; 3rd. Providing the furnace H with a covering I.

No. 3890. ANSON O. KITTRIDGE, WILLIAM H. CLARK, and WILLIAM J. CLARK, Salem, Ohio, U. S., 30th September, 1874, for 5 years: "Machine for Marking Lines of Bend of Sheet Metal for Moulding." (Machine à marquer les lignes de courbure des feuilles métalliques pour les moulures.)

Claim.—1st. The beam F, having therein a groove *b*, the lower side whereof is perforated with two or more longitudinal rows of holes, pricks at more or less in number, fillet e in combination with the bed or table K, 2nd The shaft C, and pitman D, in combination with the beam F, for operating the same in the manner described: 3rd. The table K, having its surface directly under the beam F, and longitudinally therewith inlaid with soft metal, hard wood or other equivalent material, as described.

No. 3891. GEORGE SCOTT, Montreal, Que., 30th September, 1874, for 5 years: "Carriage Lifting Jack." (Chevre à élever les voitures.)

Claim—1st. The vertical sliding bar B, with tooth gear and ratchet combined as set forth, 2nd. The combined sectional pinion and lever C, as set forth; 3rd. The slotted bearings E, E^1, and E, E, in the lugs D, D, for the purpose set forth: 4th. The ratchet pawl F, with spring in combination with the standard A, the sliding bar B, sectional pinion lever C, lugs D.D, with slotted bearings E,E^1, and E.E. the whole combined as described.

No. 3892. THEODORE M. FOOTE, and CHARLES A. RANDALL, New York, U. S., 30th September, 1874, for 5 years: "Improvement in Telegraph Instruments." (Perfectionnement des instruments de télégraphie.)

Claim.—1st. The fillet of paper or other non-conducting material, for direct recording chemical telegraphs, provided with the extra row of perforations, when the perforations in the extra row come directly after each and every perforation in the row or rows corresponding to the message; 2nd. The fillet of paper or other non-conducting material, perforated with an extra row of perforations between each and every perforation in the row or rows corresponding to the message in combination with an extra pen or styler, connected to pole of battery opposite to the recording battery for the purpose of discharging or freeing a telegraph line or cable of unavailable and surplus electricity; 3rd. The fillet of paper, or other non-conducting material, perforated with an extra row of perforations between each and every perforation in the row or rows, corresponding to the message, in combination with an extra pen or styler, connected to earth for the purpose of discharging or freeing a telegraph line or cable of unavailable and surplus electricity; 4th A fillet of paper perforated with an extra row of perforations, in combination with an extra pen or styler connected to earth, in combination with a discharging or extra battery at the receiving end of a line for the purpose of discharging or freeing a telegraph line or cable of unavailable and surplus electricity. 5th. The method of working automatic or chemical telegraphs, consisting in the transmission of alternating currents of opposite polarities, one current effecting the recording, the other acting as a discharging or freeing current; and being thrown upon the line immediately after each break in the circuit of the recording current as described; 6th. In automatic or chemical telegraphs the method of obviating "tailings" or blurs, and of effecting a ready discharge or freeing of the line, the same consisting in throwing upon the line immediately upon each and every break in the circuit of the recording current, a current or impulse of opposite polarity; 7th. The combination with the transmitting drum of a recording and receiving drum and circuits connecting them and the lines, the transmitted current being thereby thrown through the recording drum, and a copy of the message sent taken: 8th The combination with the motive power driving the receiving and transmitting drums of an automatic telegraph apparatus of an adjustable governor; 9th. In combination with the transmitting drum of an automatic or chemical apparatus, of two or more styluses, insulated from each other, and connected to opposite battery poles; 10th. The combination of the armature *a* provided with a polarizing helix or helices M, and the electro-magnets MM^2, having electrical circuit connections as described, and arranged to act *a*, on said armature in the manner set forth; 11th The combination of the electro-magnets M^2, provided with the extended cores *e e*, the electro-magnets M and helix M^1, the helix M^1 being arranged transversely to the magnets MM^2, and between the cores *e e*, 12th. The method of transmitting electrical signals, the same consisting in sending over the line, regularly alternating currents of opposite polarity, and of equal duration, the dots and dashes being distinguished by the space left after the transmission of any single impulse as described, and 13th. A fillet of paper perforated for telegraphic transmission in two rows each row serving to transmit currents of a polarity opposite to those transmitted by the other row, the perforations in both rows being of equal size, and in each row intervening between those in the other row as set forth.

No. 3893. GEORGE PYE, St. John, N. B., 1st October, 1874, for 5 years: "Improvements on Harvesters." (Perfectionnements aux moissonneuses.)

Claim.—1st. The wheel E, having peripheral transverse graduated flutes and rocker F, having anti-friction rollers G, operating in combination for imparting by means of lever mechanism the ordinary motion to the knife; 2nd. The frame A, mounted on the axle B, for attachment of the draught pole, and bearings for the operating parts; 3rd The frame A, constructed in two sections, hinged together, the moveable section supporting the shoe K, for elevating the knife perpendicularly, 4th The cam N, applied to the rocker shaft P, to withdraw the rocker arms from engagement with the concaves of the wheel; 5th. The knife bar B hinged to the drag bar M, pivoted to the frame A, the cut of the knife being in line with the axle B, centrally of the wheels, as set forth.

No. 3894. CLARK S. FULLER, ORVILLE M. MORSE and HARVEY J. BURDICK, Oswego, and SIMEON HOWES, ALPHEUS BABCOCK, NORMAN BABCOCK and CARLOS EWELL, Silver Creek, N.Y., U. S., 1st October, 1874, for 5 years. "Middlings Purifier." (Epurateur des gruaux).

Claim.—1st A reel bolt composed of hinged segments which open and close, and thereby form apertures at the top of the reel for the escape of the impurities as the reel revolves; 2nd. The combination with an exhaust chamber communicating at the top with the eye of the fan, of the hinged segmental reel B, B^1, 3rd. The combination with the tail end of the reel and the outlet formed therein, of the shield and deflector B^4, as set forth,

No. 3895. ORVILLE M. MORSE, CLARK S. FULLER and HARVEY J. BURDICK, Oswego, and SIMEON HOWES, ALPHEUS BABCOCK, NORMAN BABCOCK and CARLOS EWELL, Silver-Creek, N. Y., U. S., 1st October, 1874, for 5 years: "Middling's Purifier." (Epurateur des gruaux.)

Claim.—1st. The combination with the exhaust case A, of an elevating wheel provided with buckets *d*, arranged so as to scoop up and elevate the material from the bottom of the case and discharge it, at or near the top thereof, so as to be subjected to action of an air current in its descent for separating and removing the impurities therefrom, 2nd. The combination of the elevating

wheel D, *d*, with the exhaust case A, provided with two feed and two discharge apertures arranged for purifying two grades of material at the same time and separately discharging the purified middlings thereof, 3rd The combination with the exhaust case, and elevating wheel of the disintegrator *p*, *vi*, as set forth.

No. 3896. HENRY J. LINGENFELTER, Glen, N.Y., U. S., 6th. October, 1874, for 5 years: "Portable Furnace." (Fourneau portatif.)

Claim.—1st The portable furnace constructed with double walls with an annular air space B, between ports *a* for the admission of air to the said air space and ports *c*, in the exit flue D, permitting the heated air to escape in the said exit-flue without coming in contact with the fire in the fire-chamber, as set forth

No. 3897. ALBERT F. ANDREWS, New Haven, Ct., U. S., 6th October, 1874, for 15 years: "Improvements in Annealing and Toughening Iron." (Perfectionnements dans le recuisage et durcissage du fer.)

Claim.—1st. The charcoal box B, in connection with the narrow tube G, and the box or series of boxes F; 2nd. The retort A, in combination with the charcoal box B, narrow tube G, side supports A, and the box or series of boxes F. 3rd. The construction of the box F, in separate or detachable pieces; 4th. The retort A, in connection with the charcoal box B, and broad perforated tube G, for treating bar iron or steel. 5th. The construction of the charcoal receptacle in the form of a series of Boxes B_1, B_2, B_3, as shown in figure 1. 6th The described treatment of wrought iron and steel, by subjecting it to a slow current of free hydrogen; 7th The treatment of wrought iron and steel with a mixture of free hydrogen and accompanying permanent gases, and with a small proportion of undecomposed watery vapour: 8th In combination with a retort A, having provision for decomposing steam at the point B, and for treating heated iron or steel therewith in another position, the two separate and distinct furnaces O, and P, arranged and adapted to serve as set forth.

No. 3898. ALEXANDER RODGERS, Muskegon, Mich., U. S., 6th October, 1874, for 5 years: "Device for Moving and Barking Logs." (Appareil à transporter et écorcer les billots.)

Claim.—1st. The conveying and barking screws D; 2nd. The conveying screws B, in combination with their operative mechanism; 3rd The end rest V, in combination with the conveying screws; 4th. The arrangement of the log carrying and barking devices, and the log turning levices, for continuous operation; 5th. The toothed bar, pivoted at its lower end between blocks which are adapted to slide in vertical ways in combination with its operating mechanism as described, whereby the said bar is rendered vertically movable and capable of adjustment to suit logs of different sizes as set forth.

No. 3899. ALEXANDER RODGERS, Muskegon, Mich., U. S., 6th October, 1874, for 5 years: "Grate Bar." (Barre de grille.)

Claim—1st. A grate bar perforated with the conical orifices for the passage of air and otherwise constructed, as set forth; 2nd. The tubular grate bar having alternate sections of its upper and lower sides removed, as described.

No. 3900 PETER K. DEDERICK, Albany, N. Y., U. S., 6th October, 1874, for 5 years: "Improvements in Horse Powers and Hoisting Machines." (Perfectionnements aux manèges et aux élévateurs.)

Claim.—1st. The hollow journal or circle C; 2nd The combination of the stationary circle or hollow journal C, diagonal shaft B, and drive wheel A; 3rd. The combination of the hollow journal C, diagonal shaft B, and drum F. 4th The hollow stationary journal C and returning pawl M, in combination with the drive wheel, as specified.

No. 3901. ANSON O. KITTRIDGE, WILLIAM H. CLARK, and WILLIAM J. CLARK, Salem, Ohio. U. S., 6th October, 1874, for 5 years: "Mallet for Smoothing Sheet Metal." (Maillet pour doucir les feuilles de métal.)

Claim.—1st The mallet C, consisting of the shell D, cap E, with or without the adjusting screw G, wooden block E, and rubber cushion *a*, or its equivalent in the manner described; 2nd. The crank wheel N, sliding-box O, plates *e* and springs *f*, *f*, in combination with the vibratory beam I, as specified; 3rd The combination of the mallet handle H, with or without the side springs K, mallet C vibratory beam I, sliding box O, and crank wheel N, as specified. 4th A wooden block E, when the same is operated by a mechanical power for the purpose specified.

No. 3902. JOHN BRADLEY, and WILLIAM H. PEARSON, Lowell, Mass., U. S., 6th October, 1874, for 5 years: "Knitting Machine." (Machine à tricotter.)

Claim.—1st. A filling wheel *n*, provided with irregular oblique teeth *o*, *o*, having a vertical groove *r*, and a horizontal notch or groove *s*, and operating so as to divide the needles *e*, *e*, *e*, *e*, and deposit the thread or yarn in front of one needle and then behind several so as to form wide and narrow stripes; 2nd. A knitting machine provided with a filling wheel *n*, having regular oblique teeth *o*, in combination with two plain ribbed loop-wheels *p*, and p_1, and two guides *w*, and w_1, operating with a circle of needles *e*, clearing wheel *m*, presser-wheel *y*, landing wheel *c*, and knock over wheel *d*, with the other usual devices of a knitting machine, so as to produce various mixed and striped fabrics, cloth or hosiery constructed and arranged as described, 3rd. The plain loop wheel *p*, with diagonally curved teeth, in combination with a loop wheel *n*, having a series of diagonally curved teeth formed with a notch or recess *x* and placed alternately between a series of diagonally curved teeth formed with nibs and operating in connection with a series of short bearded needles *e*, *e*, *e*, *e*, arranged alternately between a series of long bearded needles *e*, *e*, attached to a circular head, and with the other usual devices connected with the machine so as to form either a plain or mixed coloured upright stripe in a stocking or other article specified.

No. 3903. AUGUST SCHULTE, and MYER STERN, New York, U. S., 6th October, 1874, for 5 years: "Head Protector." (Couvre-tête.)

Claim.—Envelope A, with opening B, said opening being one or subdivided, as set forth.

No. 3904. HENRY J. HATCHKISS, Rock Island, Que., 6th October, 1874, for 5 years: "Mop Wringer." (Tordeuse de torchon.)

Claim—1st. A cone frame wringer composed of the wring A, and spiral bars B, terminating in a socket, as set forth; 2nd. A holder formed of the stud C, bracket D, clip E, and thumb-screw F, for removeably attaching the wringer to a pail or tub, as set forth.

No. 3905. JOHN C. FORD, and HUBERT R. IVES, Montreal, Que., 6th October, 1874, for 5 years: "Carriage Jack." (Chèvre à voiture.)

Claim.—1st. An improved carriage jack having the cut-casting A, cast in two pieces E, F, with projections and opening W, W_1, and constructed in the form described; 2nd. The combination of the slide bar G, cast in one or two pieces, provided with the friction roller J, at the lower extremity and with the lifting bar L, having projections *e*, *f*, and grooves X, X, to receive the lock-cam P, 3rd The lock-cam P, secured to the collar I, of the slide bar G, to hold up the adjustable bar L, at the height required; 4th. The combination of that part of the lever Q, from the axle to the toe U, with the roller J, to equalize the strain upon the lever Q, and lessen the friction; 5th. The concave notch V, in the toe U, of the lever Q, which acts in combination with the roller J, as a stop to hold down the handle or lever Q, while the jack is in use; 6th. The friction roller J, placed in the lever end of the slide-bar G, acting in combination with the lever Q, and notch V; 7th. The projection boss K, acting in combination with the slot W_1, and the projections *e*, *f*, on the adjustable bar L, to prevent the same from being entirely withdrawn.

No. 3906. FRANK G. JOHNSON, Brooklyn, N.Y., U. S., 6th October, 1874, for 5 years: "Railway Snow Remover." (Chasse-neige de railroute.)

Claim.—The combination of a blast generating and snow disintegrating wheel, conducting tube supporting truck, and driving engine or engines with locomotive, in the manner specified.

No. 3907. ALEXANDER RODGERS, Muskegon, Mich., U. S., 6th October, 1874, for 5 years: "Balance Slide-valve." (Tiroir à vapeur d'équilibre.)

Claim.—1st. The valve provided with the pin *d*, cast thereon, in combination with the spring K, and piston E; 2nd The valve provided with the cylindrical case *c*, in combination with the piston E, packing ring *f*, and junk ring *g*; 3rd. A balance valve having its various parts constructed and arranged for joint operation, as described.

No. 3908. JAMES D. FRASER, Pictou, N. S., 6th October, 1874, for 5 years: "Propeller for Vessels." (Propulseur de vaisseaux.)

Claim—1st The combination of a vertical crank shaft C, arms D, and F, and hinged buckets E, the said arms being arranged to shift the arms F, and provided with devices for so shifting them, as specified, 2nd. The combination with the hollow crank shaft C, and arms D, of the pinion G, toothed bars H, and adjusting nuts K.

No. 3909. SPENCER B. PEUGH, Salem, Ind., U. S., 6th October, 1874, for 5 years: "Plough Carriage." (Porte-charrue)

Claim.—1st The arrangement of the wheels B, rocking posts C, connecting rods E, and lever F; 2nd The wheels B, when arranged under the carriage A, so as to run the said carriage either straight forward or obliquely; 3rd. The arms *b*, when arranged so as to be adjustable as to height, as described.

No. 3910. JOHN SANDALL, Charlottetown, P. E. I., 6th October, 1874, for 15 years: "Link Motion." (Levier de renversement.)

Claim.—A link made of two parts and forming a flexible whole, the combination of the flexible link A, and the eccentric rod E, as described.

No. 3911. ALBA WYMAN, Barnston, Que., 6th October, 1874, for 5 years: "Horse Hoe, Weed Cutter and Potato Digger Combined" (Houe à cheval, sarcleur et extracteur à patates combinés.)

Claim.—1st. The combination of the braces H, screw or pin I, and standard G, with the frame pieces A, and C, C, for adjusting the extension of the pieces C, C, laterally as set forth; 2nd. The combination of the arms L, L, and diagonal braces M, with the shafts B, and piece A, for securing the shafts to the frame by a pivot bolt; 3rd The nosing O, siding P, and wings Q, applied removeably as a vestment to the cultivator frame A, C, C; 4th. The rake head attachment S, combined with the pieces C, C.

No. 3912. FREDERICK LEADBETER, Detroit, Mich., U. S., 6th October, 1874, for 5 years: "Grain Separator." (Séparateur des grains.)

Claim.—The combination of the endless raddle K, with the chute D, and screen H, as specified.

No. 3913. ELWOOD GRIMSHAW, Minneapolis, Ma., U. S., 6th October, 1874, for 5 years: "Carriage and Waggon Spring." (Ressort de voiture et de wagon.)

Claim.—The bar B, having one arm of the springs A, A_1, fastened to its ends by the clips C, C_1, in combination with the bar B_1, having the other arms of the springs A, A_1, fastened to its ends with one end resting on the rear axle and the other end on the head-block, all constructed to operate in the manner set forth.

No. 3914. JAMES W. MCPHERSON, McGillivray, WILLIAM GRUNDY, and CYRUS COSENS, Lucan, Ont., 6th October, 1874, for 5 years: "Movable Fence." (Clôture portative.)

Claim.—1st The driving of square pickets *a*, *a*, *a*, into round holes, 2nd. The hanging of the several sections together by the use of rounded pickets *r*, *r*, with square tops, 3rd. The attaching the movable fence to posts C, C, set firmly in the ground by the use of slots *d*, *d*, and cleats *c*, *c*, as represented in the diagram.

No. 3915. FRIEDRICK WEGMANN, Naples, Italy, 6th October, 1874, for 5 years: "Machine for Preparing Meal." (Machine à traiter la farine.)

Claim.—1st. In one or more rolls *a*, and *c*, and corresponding rolls *d*, and *e*, the latter being pressed against the former as set forth; 2nd. The application of squeezing rolls having a surface consisting of material containing so much silica as not to colour the meal or flour and so as to have the hardness required for the purpose set forth, 3rd. The scrapers as shewn in figure 5.

No. 3916. WALTER J. F. LIDDELL, Milwaukee, Wis., 6th October, 1874, for 5 years: "Horse Power." (Manège.)

Claim.—1st. The enclosing case H, provided with an internal gear and a centre shaft or axle upon which the frame carrying the gearing revolves, constructed, arranged and operating as set forth; 2nd. the revolving frame composed of the plate C, made as described, connected with an upper plate in such manner that an intermediate space is formed for gearing, and the mounting of the same in suitable bearings, the said gearing and frame with connections travelling together around one common centre, by the direct application of the power applied to the levers when used in connection with a stationary master wheel, as described, 3rd. The movable circular bearings provided with lugs to prevent displacement secured in position and adjusted as described; 4th. The adjustable hanger or bracket in which the driving shaft is mounted in combination with the casing when arranged and operating in the manner described, 5th. The combination of the revolving frame C, C^1, case B, with gear attached, spur wheels and pinions D, D_1, pinion F, and shaft F_1, all working together for the purpose of driving machinery, in the manner set forth; 6th. The novel combination of the plates C, C_1, gear wheels D, D^2, case B, circular plate H_2, with hangers attached, bearings E, made and secured as described, pinion F, shaft F_1, bevel wheel pinion G, G_1, and shaft H, all working together in the manner set forth.

No. 3917. ELLIS ROWLAND and GEORGE E. ROWLAND, Manchester, Eng., 8th October, 1874, for 5 years: "Furnace Bars" (Barres de fourneau.)

Claim.—The combination of the "bell crank" shaped oscillating fire bars *b*, *b*, with the ordinary fixed fire bars carrying snugs *c*, *c*, when mounted, operated, or arranged as described.

No. 3918. ORVILLE M. MORSE, CLARK, S. FULLER and HARVEY J. BURDICK, Oswego, and SIMEON HOWES, ALPHEUS BABCOCK, NORMAN BABCOCK, and CARLOS EWELL, Silver Creek, N. Y., U. S., 8th October, 1874, for 5 years, "Middlings Purifier." (Epurateur des gruaux.)

Claim.—The combination with the case A, communicating at its top with the eye of a fan of an elevating wheel composed of extended open buckets *d*, which successively elevate the material and discharge the same from one bucket to the other, whereby the material is repeatedly subjected to the separating action of the air current as set forth.

No. 3919. WILLIAM H. BENNETT, New York, U. S., 8th October, 1874, for 5 years: "Paper Fyle and Binder." (Serre-papier.)

Claim.—1st. The head A, constructed as described and secured to the base, B, in the manner specified and provided with detachable face and end plates *c*, and *d*, as described; 2nd. In combination with the head A, and base B, both being constructed and attached in the manner specified, the flanges *f*, as set forth; 3rd The needles E, constructed as described in combination with the binding bar H, and bar J, for the purpose specified; 4th. The head A, and spring C, both being constructed as described in combination with the clamping bar E, as set forth; 5th. The combination of the strips *a*, elastic band L, and plate M, as set forth.

No. 3920. OLIVER A. HOWLAND, Toronto, Ont., 8th October, 1874, for 5 years: "Mode of Carriage on Allied Land and Water Routes." (Mode de transport par voie mixte de terre et d'eau)

Claim.—1st. The system of carriage on allied land and water routes, consisting of a method of carrying freight on vessels over water, and upon railway trucks on railway overland, wherever obstructions interrupt the navigation; the cargo being first placed in or upon a series of uniform boxes or platforms, which will be proportioned in shape and size, so as either to form the platform, box or body of the car resting directly on the trucks, or a platform, frame or box resting on a platform attached to the trucks forming uniform segments of such boxes or platforms, such boxes, frames or platforms being transferred from boat to trucks and from trucks to boats by hoisting tackle, 2nd. The crane A, with arms A, and A_1, mounted on a turntable B, and travelling car B_1, arranged and operating as described; 3rd. The revolving drums C, C, cables a^1, chains *a*, and Bars A^2, attached, friction rollers I and D_1, in combination with and driven from the revolving drums F, F, by the belts G, and G_1, arranged and operating as described, 4th The sliding shaft F_3, with drums F, and bevel gearing F_1, attached in combination with the bevel wheel F_2, attached to the upright revolving shaft R; 5th. The friction brakes I_1, operated by the lever and screw I, in combination with the revolving drums F; 6th. The pivoted levers F, in combination with the sliding shaft F^3, 7th The sliding friction wheel C, W, in combination with the drums A, W, B, W; 8th. The bevelled wheel T, on the revolving shaft R, in combination with the friction brake Q, and lever B_1, arranged, operating as described; 9th. The endless travelling belt *x*, in combination with the drums A, W, and B, W, as described.

No. 3921. JOSEPH L. JOYCE, New Haven, Ct., U. S., 9th October, 1874, for 10 years: "Improvements on Boots and Shoes." (Perfectionnements aux chaussures.)

Claim.—1st. A recess formed between the sole, upper and insole into which the insole and upper are imbedded, so that the edge which forms the said recess will extend up around the edge of the insole and upper for the protection of the same as described; 2nd. The welt *a*, for the protection of the upper of boots and shoes formed from a strip of material, rabbetted or recessed on the upper side and made to conform to the shape of the sole as set forth, 3rd. The insole bevelled from the lower side back toward the top, and from the upper, so as to form a space between the edge of the insole and the upper as described; 4th. In combination with the insole bevelled so as to form a space between the edge and upper as described, the outsole formed with a recess or upwardly projecting edge as described; 5th. A boot or shoe having the sole of full thickness except in the channel a^2, and upper sunk in said channel, and an insole overlapping the channel as described.

No. 3922. ASHER S. BABBIT, Keesville, and HARRY L. ISHAM, Plattsburgh, N. Y., U. S., 9th October, 1874, for 5 years: "Washing Machine." (Machine à laver.)

Claim.—1st. The combination of the roller *j*, rollers *m*, and cloth *p*, all working together as described, 2nd. The combination of the roller *f*, rollers *m*, cloth *p*, and scraper-bar *k*, all working together as set forth; 3rd The rollers *m*, and bearer *l*, in combination with cloth *p*, having hems as set forth.

No. 3923 JOSEPH SEARS, Chicago, Ill., U. S., 9th October, 1874, for 5 years: "Soldering Apparatus." (Appareil à souder.)

Claim.—An were gas soldering apparatus, consisting essentially of a gas pipe L, an air pipe N, a flexible mixing tube and conductor J, a tubular handle B, C, an internal coupling-plug or nipple D, and a tip A, having a cavity which encloses the flame and locates the same completely within the hollow tip; 2nd. An imperforate hollow tip A, having an internal screw-thread or its equivalent and longitudinal escape passages; 3rd. The imperforate hollow-tip having inward radial projections to form an internal coupling and longitudinal escape passages; 4th. A copper tip A, having a sheathing or coating *a*, applied to its rear end as described to protect the same temporarily against oxidation. 5th. A coupling plug or nipple D, consisting of a short section of "gas pipe" in combination with a small handle-tube C, and hollow tip A, having an internal screw thread or its equivalent; 6th. A coupling plug or nipple D, applied to the tip, in combination with a coupling collar E, applied to handle tube as described, for attaching the former to the handle tube so that the plug and tip may be readily removed and replaced together in the manner set forth, 7th. In combination with the hollow tip, having a flame cavity and open rear end the shield or deflector F, applied behind the tip, to protect the hand and throw back the products of combustion, so as to cause them to envelop the tip and to heat the work; 8th. The combination of a hollow tip A, a plug or nipple D, applied to the tip or handle tube C, a coupling collar E, and a shield or deflector F, the latter being formed on said collar, and supported thereby as described; 9th A rest or holder H, constructed and operating as described in combination with a soldering tool having a hollow-tip A, with a heating jet within the same and a shield or deflector F, behind the tip, and 10th The process described of condensing the points of copper tips for soldering apparatus by swaging or pressing them within suitable dies after they have been cast or otherwise formed in proper or approximately proper shape.

No. 3924. JOSEPH E. BILLINGS, Boston, Mass., U.S., 9th October, 1874, for 5 years: "Improvements on Bricks." (Perfectionnements de la brique.)

Claim.—A new article of manufacture in bricks for angles of walls, constructed as described.

No. 3925. ELIJAH WESTON, Buffalo, N. Y., U. S., 9th October, 1874, for 5 years: "Improvements on Steam Boilers." (Perfectionnements aux chaudières à vapeur.)

Claim—1st The novel combination of the shell A, B, the fire box C, door E, F, water bridge G, combustion chamber H, bridge J, flues T, T, and circular N, O, P, Q, all as described, 2nd The combination of the combustion chamber H, drop-water-bridge J, and circulating plates P, as set forth; 3rd. The combination with the rear or end wall of the fire-box C, of the circulating plate N, as described; 4th. The combination with the drop water bridge J, of the circulating plates P, P, as described, 5th The furnace door D, E, constructed as described with the graduated slots *a*, the wire gauze or perforated material *b*, and the segmental winged valve *c*, in combination with the fire-box C, water-bridge G, combustion chamber H, and drop water-bridge J, as specified, and 6th. The combination with the combustion chamber H, of the man-hole M, and its covering plate as set forth.

No. 3926. GEORGE M. ROBINSON, St. Armand, Que., (Assignee of J. Bacon & G. Bacon), 13th October, 1874, for 10 years: "Weather Strip." (Bourrelet de porte.)

Claim.—The triangular piece A. B, hinged together and having spring D, rubber E, *g* and hook J, combined and arranged on a door with the lug I, as described.

No. 3927. DAVID FRANCIS, Birkenhead, Eng., 13th October, 1874, for 5 years: "Apparatus Convertible into a Desk, a seat or a table." (Meuble pouvant servir de pupitre, chaise ou table.)

Claim—Improved arrangements or apparatus convertible into a desk, a seat and a table as described, in which the use of wrought iron and the mode of formation are important points.

No. 3928. ADOLPH AUGST. Zurich, Switzerland, 13th October, 1874, for 5 years: "Improvements in Knitting Machines." (Perfectionnements aux machines à tricotter.)

Claim.—1st. The employment of tongue or spring needles *f* with inclined needle beds A, A, and. The needle pressers B^1, B^1, and the apparatus D, D^1 for pressing down the tongues of the needles, 3rd. The lock C, C^1, moving between the two fixed rails C, C^1; 4th. The alternating or reciprocating change of the thread guide E, parallel with the position of the needles, 5th The needle beds A, A, composed of separate stamped plates attached together as described.

No. 3929. EDWARD WASELL, London, Ont., 13th October, 1874, for 5 years: "Improvements in Bridge Building" (Perfectionnements dans la construction des ponts.)

Claim.—1st. The combination of the rigid arched tube A, as shown in figure 1, or the rigid arch, as shown in figure 1^a, with suspended chains B; 2nd. The combination of the rigid arched tube A, the suspended chains B, and the chord E, connected or hinged to a pin O, through the truck G, standing upon rollers Q in such a manner that the different forces or strains shall be balanced or in equilibrium and the floor of the bridge be perfectly level at all times, as set forth.

No. 3930. LYMAN D. HURD, and FRANCIS G. BUTLER, Bellows Falls, Vt., U. S., 13th October, 1874, for 5 years: "Clothes Pin" (Epingle à linge.)

Claim.—The enlarged side slots C, C, central tongue D, and recess B, of a wooden clothes pin, all as described.

No. 3931. JOHN N. GAMEWELL, Hackensack, N. J., MOSES G. CRANE, Newton, and EDWIN RODGERS, Boston, Mass., U. S., 13th October, 1874, for 5 years: "Electro-telegraphic Non-interference Repeater" (Répétiteur électro-télégraphique à double action.)

Claim—1st. The combination with the break circuit wheel of a telegraph repeater, upon which the lines of two or more circuits converge, of a governor, whereby, when a signal is being given over any one of the circuits and repeated over the other circuits, the armatures of the magnets in such other circuits are locked in position thereby preventing interference between several circuits, as specified: 2nd The auxiliary escapement movement in combination with the governor J, and the break circuit wheel, whereby the reverse movement of the governor is not permitted to take place during several successive revolutions of the said wheel. 3rd The auxiliary escapement movement, the circuit wheel and its shaft and the lever 25, combined and operating as described, whereby after the winding up of the escapement by the revolution of the circuit wheel shaft, the reverse motion of the said lever is prolonged and graduated as specified; 4th. The combination in an electro-telegraph repeater of two electro magnets in the same circuit one of which has a larger core than the other whereby there results an appreciable difference in the periods required for them to be charged and discharged respectively as specified, 5th. The devices described whereby the breaking of any one of several circuits connected with the repeater for the purpose of signalling occasions the break circuit wheel to be cut out from that circuit by closing the same over auxiliary fingers *x*, *x*, all combined and operating as specified, 6th. The auxiliary magnets with their armatures and hooked lever M, in combination with the armature lever H, and swinging lever D; 7th. The combination of the swinging lever H, with its two stop pins and the arm *l*, with its two fingers *s*, *s*, upon the break circuit wheel shaft as specified 8th. The combination of the cam 28, levers 22, and 25, and sliding bar 18; 9th. The combination of the governor J, bar 18 lever 25, and latch 37, 10th. The lever I, with its short arm 10, the armature *e*, lever H, and lever D, combined and operating as specified 11th The auxiliary escapement *p*, *p*, with its train 31, 32, in an electro-telegraph repeater employed to graduate the movement of the mechanism by which said train is actuated relatively to the movement of another telegraphic repeating mechanism

No. 3932. WILLIAM CAHILL, Syracuse, N. Y., U. S., 13th October, 1874, for 5 years: "Combined Reversible Kneeling and Foot Bench" (Un tabouret à bascule.)

Claim—1st. The footstool described having a reversible top cushion on one side and plain on the other, pivoted within a frame in such a manner that either side may be turned upward as may be desired; 2nd. A stool consisting of a series of swinging tops, constructed as described and pivoted in a long frame, so as to move independently of each other.

No. 3933 MARK ATTENBOROUGH, Sherbrooke, Que., 13th October, 1874, for 5 years: "Machine for Ventilating Rooms." (Appareil à ventiler les appartements.)

Claim.—The combination of the regulator B, nut C, and ears D. D, with the rove F, as described.

No. 3934. WILLIAM T. BUNNELL, and ANSON G. RONAN, Ottawa, Ont., 13th October, 1874, for 5 years: "Clothes Wringer." (Tordeuse à linge.)

Claim —1st. The combination of the legs B, styles E, with hinge rod I, and tie-rod M, forming the iron frame A, Fig. 1; 2nd. The combination of the obtuse angles B_1, and attachment C_1, with hinge rod I_1, forming the iron frame A_1, Fig. 7; 3rd. The combination of the washers L_1, and fastenings M_1, with rubber rollers J, F, and J_1, E_1; 4th The combination of the twisted shafts K, G, K_1, F, tinned or galvanized with the rubber-rollers J, F, and J_1, E_1; 5th The combination of the friction rollers N, N_1, with coil springs O, O_1; 6th. The combination of the jag R, R_1, lever Q_1, Q_2, coil springs O, O_1, with the tie bar M, and hinge bars I, I_1; 7th. The combination of the coil springs O, O_1, with moveable handle P, and stationary handle P_1; 8th. The combination of the shaft K, with elongated slots L; 9th. The combination of the frames A, A_1, hinge bars I, I_1, tie-rod M, curved bar S, or fasteners N_2, friction rollers N, N_1, washers L_1, coil-springs O, O_1, cranks H, G_1, with rubber rollers J, F, J_1, E_1, and shafts K, G, K_1, F_1, as set forth.

No. 3935. HENRY A. WHITING, New York, U. S., 13th October, 1874, for 5 years: "Machine for Binding and Wiring Hat Frames." (Machine à border et garnir de fil de fer les carcasses des chapeaux.)

Claim —1st. The swinging arm J, carrying a braid guide I, in combination with a suitable binding mechanism substantially and for the purpose described: 2nd. The combination of a moistening apparatus H, with the braid guide I, and pressing rollers C, D; 3rd. The heating chamber K, in combination with the pressing rollers C, D.

No. 3936. JOHN ABELL, Woodbridge, Ont., 13th October, 1874, for 5 years: "Improvements on Threshing Machines." (Perfectionnements aux machines à battre.)

Claim.—1st. The application to threshing machines of a revolving grate H, constructed, arranged and operating as described, 2nd The bars G, with corrugated or indented faces, in combination with the drum G, with flanges *g*, arranged as described; 3rd. The revolving grate H, with cups or buckets X, in combination with the cylinder B, concave plate C, and bolt E, arranged and operating as described

No. 3937. HENRY C. KERSTINE, Cleveland, Ohio, U. S., 13th October, 1874, for 5 years: "Grate Bars." (Barres de grilles.)

Claim.—The combination of stationary bars D, D, D, and moveable bars C, C, C, C, forming together a grate and having teeth arranged in opposite directions, upon their tops, so as to break and grind the clinkers or other substances resting upon them as described.

No. 3938. DAVID W. BAIRD, Geneva, N. Y., U. S., 13th October, 1874, for 5 years: "Concealed Jointed Brace for Carriage Tops." (Gousset à joint caché de soufflet de voiture.)

Claim.—1st. The brace or stay B, consisting of the two levers *a*, *a*, and the handle *h* located between the cover and lining of the carriage top and arranged to "break" downward as specified, 2nd The enlarged heads *c*, and sockets *d*, formed upon the ends of the brace or stay, and serving the double purpose of a bearing in the wood and an attachment for the screws, as described.

No. 3939. GEORGE W. VOSBURGH, Eau-Claire, Wis., U. S., 13th October, 1874, for 5 years: "Collar Pad." (Bourrage de collier de cheval.)

Claim.—A harness-pad composed of an iron or other equivalent metallic body covered or plated with a coating of lead on the under or bearing side as specified.

No. 3940. HENRY GNOSILL, Hamilton, Ont., 13th October, 1874, for 5 years: "Beer Faucet." (Robinet à bière.)

Claim.—The triangular valve rod *f*, head of cap *c*, in combination with the valve seat *d*, rubber packing *l*, spring *i*, pin *j*, operated by the tap handle *e*, and chain *g*, all arranged as specified.

No. 3941. MATHEW H. COWELL, Buffalo, N. Y., U. S., 16th October, 1874, for 5 years: "Improvements on Games to be Played with Picture Cards." (Perfectionnements des jeux à jouer avec des cartes à figures.)

Claim. The described "game" consisting of the pack of sixty-four picture cards, illustrated as set forth, and to be played according to the rules and directions as specified.

No 3942 EDWARD CLIFF, and RICHARD VOSE, New York, U. S., 16th October, 1874, for 5 years: "Elliptic Spring." (Ressort elliptique.)

Claim.—1st. An elliptical spring composed of the endless bar A, and auxiliary V, or U shaped leaf or leaves placed interiorly at each end of the spring bound together for clamping devices, all constructed to operate as specified, 2nd. An elliptical spring composed of the endless bar A, and V, or U shaped leaf or leaves at each end of the spring with the centre auxiliary leaves E, F, E_1, F_1, bound together by clamping devices all combined to operate as specified; 3rd. The combination in an elliptical spring with the endless bar A, of the leaves D, and D_1, and the wedge shaped binding bar *b*, the interior surface of the said leaves being formed to fit and act upon the said bar *b*, as described.

No. 3943. JOHN EATON, Mill Island, Ont., 16th October, 1874, for 5 years: "Suspended Rail Fence." (Cloture en perches suspendues.)

Claim.—The combination of the posts A, rails B, with the suspension wires C, as set forth

No. 3944. JACOB SHUPE, Berlin, Ont., 16th October, 1874, for 5 years: "Improvements on Knives for Straw-Cutting Machines." (Perfectionnements aux couteaux des coupe-paille.)

Claim —Constructing or forming the cutting edges of knives for straw cutting machines, with a series of serrated edges or small cutting teeth *a*, as described.

No. 3945. STEPHEN K. ELLIS, Waltham, Mass., 16th October, 1874, for 5 years: "Skirt Supporter." (Porte-jupon.)

Claim.—The pin D constructed as described in connecting the straps A, A together in the back by the band C, as described.

No. 3946. AUSTIN D. CABLE, Montreal, Que., 16th October, 1874, for 5 years. "Lifting Jack." (Cric.)

Claim.—1st. The bar *f* with wrench or wrenches *e*, formed as described; 2nd. The bar *f*, and head *i* having hammer face *a*, and claw *b*, as described.

No. 3947. GEORGE E. DERING, Lockleys, near Welwyn, Eng., 16th October, 1874, for 5 years: "Rails and Rail Joints." (Rails et joints de rails.)

Claim —1st. The construction of compound rails consisting partly of cast and partly of wrought metals of any suitable kind, and comprising the like employment of appropriate mixtures, combinations or alloys whether or not wholly metallic, in the manner and by the means described, including the use for the purpose of such manufacture, whether the rails be of the exact descriptions hereby claimed or otherwise of the various foundry arrangements indicated, the constructions of and modes of working the moulds as described; especially the use in making rails by the process of running cast in connection with wrought metals of moulds transversely divided in any manner or otherwise constructed or manipulated after the modes indicated, so as to form such cast portion or portions of the rail in separate sections, and the method of extracting from the moulds the compound rails or cast-bars to be used in the construction thereof, also the combined employment in the manufacture of one and the same rail of any of the different methods of associating the cast and wrought metals as set forth; and the mode of protecting the ends of rails as described. 2nd. The combined use of the modified sectional form of "double-headed" and "flange" rails of whatever materials made, with the joint for the same as described and shewn on sheet 5, of the drawings; 3rd. The improved joint for "double-headed" and "flange" rails as described (of whatever materials the parts composing it may be formed) and shewn on sheet 5 of the drawings.

No. 3948. DAVID B. HERRINTON, Detroit, Mich., U. S., 16th October, 1874, for 5 years: "Sewing Machine Motor and Brake." (Moteur et frein de machine à coudre.)

Claim.—1st. The coil spring E, in combination with the shafts *b*, *d*, *d*, ratchet *c*, spur-wheel F, pinions *e*, *e*, cranks *f*, *f*, parallel rod G, and arm *g*, constructed and arranged to rotate a driving pulley B, as specified; 2nd. The combination of the lever H, brake block *i*, pin *k*, and spring *l*, for controlling the motion of the driving pulley B, as set forth.

No. 3949. EDGAR A. JONES, and CHARLES W. JONES, Centreville, Mich., U. S., 16th October, 1874, for 5 years: "Fruit Drier." (Séchoir à fruit.)

Claim.—1st. The combination with the air heating furnace C, and exhaust fan D, of the air-trunk E, and a series of independent drying chambers F, connected therewith and with the exhaust trunk H, H_1, the said chambers being provided with the valves *b*, b_1, in the manner set forth, 2nd. The valves *b*, b_1, frame *c* and rod *d*, arranged with relation to the openings *d*, d_1, of each chamber F as set forth; 3rd. The combination of the self acting valve I

with the exhaust trunk H¹, and hot air trunk E for the purpose specified; 4th. The arrangement of the valve D², in the blast pipe D¹, of the exhaust fan D, with relation to the exhaust-trunk H, and furnace C, as set forth; 5th. The hand-hole plate *k* in the door of each chamber F, as set forth; 6th. The slides *i* over the openings in the lower part of the chambers F, for the purpose specified· 7th. The combination of the jacket K, and pipe L, with the smoke-stack of the furnace C, fan D, and blast pipe D¹, as set forth.

No. 3950. JOSIAH H. BAUER, Scranton, and BENJAMIN G. MORGAN, Hyde Park, Pa., U. S., 16th October, 1874, for 5 years: "Process for Treating Sounding Boards." (Procédé pour préparer les tables d'harmonie.)

Claim.—The process described of treating the sounding boards of musical instruments to divest them of all impurities by first boiling and then saturating them with liquid glue, for equalizing strengthening and purifying the tone of the instrument as set forth.

No. 3951. EDWARD GURNEY and CHARLES GURNEY, Hamilton, Ont., 16th October, 1874, for 5 years. "Cooking Range." (Fourneau de cuisine.)

Claim.—The arrangement and combination of the moveable dampers G, and H, on one spindle F, with a cooking range operated simultaneously from the outside of the range A, as specified.

No. 3952. AUSTIN CHAMBERS, London, Eng., 16th October, 1874, for 5 years: "Railway Signal Apparatus." (Disc de chemin de fer.)

Claim.—1st. The application and use of air or other elastic fluid in pipes, tubes, passages or vessels in lieu of wires or metal rod connections for effecting the necessary movements or changes of position of the signalling objects or bodies for regulating the passage of trains or rolling stock; 2nd. The combination with a semaphore lamp and lenses or equivalent object or body, or objects or bodies for signalling on railways of a pipe tube passage or vessel charged with air or elastic fluid, and a pump or compressor for compressing the air or elastic fluid, in the said pipe, tube, passage or vessel so as by increasing the pressure to effect the required movements or changes of position of the semaphore and lenses or signalling objects or bodies; 3rd. The combination with a semaphore lamp and lenses or equivalent object or body, or objects or bodies for signalling on railways of a pipe, tube, passage or vessel charged with air or elastic fluid and apparatus for rarefying such air or elastic fluid so as by reducing the pressure to effect the required movements or changes of position of the signalling object or body or objects or bodies; 4th. The combination with a semaphore lamp and lenses or equivalent object or body, or objects, or bodies for signalling on railways, of a pipe, tube, passage or vessel charged with air or elastic fluid and a reservoir of compressed air or elastic fluid furnished with a suitable cock or device for opening and closing communication between the pipe, tube, passage or vessel and the reservoir of compressed air or elastic fluid as specified; 5th. The combination with a semaphore lamps and lenses or equivalent object or body or objects or bodies for signalling on railways of a pipe tube or passage charged with air or elastic fluid and an exhauster or vessel in which a partial vacuum or reduced pressure is maintained such pipe tube or passage being furnished with a suitable cock or device for opening and closing communication between it and the exhauster or vessel in which the partial vacuum or reduced pressure is maintained as specified; 6th. So combining a semaphore lamp and lenses or equivalent object or body, or objects or bodies for signalling on railways with a pipe tube passage or vessel charged with air or elastic fluid, and apparatus for changing the pressure of such air or elastic fluid that when its pressure is the same as that of the external atmosphere the signalling object or body, or objects or bodies shall be in the position indicative of danger; 7th. So combining two or more pumps or compressors and suitable actuating levers or handles with a single semaphore lamp and lenses, or equivalent body, or single set of bodies for signalling on railways, and a pipe tube passage or vessel charged with air or elastic fluid as to maintain communication between the interior of the said pipe tube passage or vessel and the external atmosphere, and so to prevent the giving of a safety or pass on signal until both or all of the aforesaid actuating levers or handles have been moved into the proper position for indicating that a train may proceed; 8th. The combination with a semaphore lamp and lenses or equivalent object or body, or objects or bodies for signalling on railways, a pipe tube or passage charged with air or elastic fluid and apparatus for changing its pressure, of cocks, valves or equivalent means arranged in the said pipe tube or passage between the signalling object or body and the apparatus for changing the pressure, so as to enable communication to be established by opening the said cock or equivalent means between the said pipe, tube passage or vessel and the external atmosphere, and thereby to prevent the moving of the signalling object or body to, or its retention in the safety or "pass-on" position; 9th. The combination with a semaphore *b*, lamp *e*, lenses *c*, *d*, and pipe *i*, charged with air or elastic fluid, and apparatus for changing its pressure of a collapsible vessel *h*, rod *g*, and arm *f*, as specified; 10th. The combination with a lantern *e*, lenses *c*, *d*, pipe *i*, charged with air or elastic fluid and apparatus for changing its pressure of a collapsible vessel *h*, connected to a moveable burner u^*; 11th. The combination with a lantern *e*, slotted division *e*, lenses *c*, *d*, pipe *i*, charged with air or elastic fluid and apparatus for changing its pressure of a collapsible vessel *h*, burner u^*, flexible tube *u*, weight *v*, cord or chain *w*, pulley *x*, and bracket *y*, all as specified.

No. 3953. ROBERT MCINTOSH, Montreal, Que., 16th October, 1874, for 5 years; "Combined Refrigerator and Show-case." (Montre-réfrigérant.)

Claim.—The combination with any show-case A, of a refrigerating chamber C, as set forth.

No. 3954. CHARLES A. HUSSEY, New York, U. S., 16th October, 1874, for 5 years: "Journal Bearing." (Coussinet de tourillon.)

Claim.—1st. A journal bearing having grooves or cavities (one or more) to allow of the passage of a current or currents of water or other liquid or air, or other fluid for the purposes described; 2nd. The combination of the tubes H, H, and F, G, (or their equivalents) with the bearing D, for the purpose described.

No. 3955. CHARLES A. HUSSEY, New York, U. S., 16th October, 1874, for 15 years: "Self Supplying Mucilage Brush." (Pinceau à alimentation automatique pour le mucilage.)

Claim.—A self supplying mucilage brush consisting of a flexible handle B, having a tube D, in the neck thereof and shield of covering G, arranged in connection with the brush proper A, as described, in the follower E, in combination with the handle B, as described.

No. 3956. CHARLES SCHULENBERG, Detroit, Mich., U. S., 16th October, 1874, for 5 years: "Billiard Table." (Table de billiard.)

Claim.—1st. A billiard table supported by four legs, the arrangement of said legs at the middle of the sides and ends of the frame; 2nd. The combination with the legs B, of the braces C, for supporting the frame A; 3rd. In combination with the legs B, arranged with relation to the frame A, the gird D, and joists D_1, or D, constructed and arranged in the manner set forth.

No. 3957. ALEXANDER CAMERON, Colborne, Ont., 16th October, 1874, for 5 years: "Horse Rake." (Râteau à cheval.)

Claim.—1st. The axle I formed of two sections *a*, a_1 each having an independent movement as set forth; 2nd. The rack K, and cog-wheel L, operating as set forth, in combination with the axle I, and brake Q, for lifting the rake head; 3rd. The brake Q, and spring R, arranged as set forth for operating the raok K, in the manner specified; 4th. The bars D, bolted to the frame A, and having pivotal connection with the rake head, as set forth; 5th. The bar E, composed of two parts *e*, e_1, suitably grooved and bolted together for securing the bent ends of the teeth in the manner set forth.

No. 3958. AUSTIN S. BROOKS, Orid, Mich., U. S., 16th October, 1874, for 5 years: "A Halter." (Un licou.)

Claim.—1st. A halter, the body of which is made of a single strap; 2nd. The combination of the single strap S, with the loops A, B, C, D, F, G, and pins *a*, *a*, as set forth.

No. 3959. GORDON W. LLOYD, Detroit, Mich., U. S., 16th October, 1874, for 5 years: "Process for Hardening Bricks." (Procédé pour durcir la brique.)

Claim.—The process for hardening bricks and other artioles made from earthy, calcareous and cementatious substances by treatment with coal tar as set forth.

No. 3960. GREENLEAF STACKPOLE, Elizabeth, N. J., U. S., 16th October, 1874, for 5 years: "Steam Flash Engine." (Machine à vapeur instantanée.)

Claim.—1st. The combination of the injector G, and reservoir E, and chamber I, or their equivalents as set forth; 2nd. The spindle valve or water cut off J, in combination with the cam K, and lever L, as set forth; 3rd. The generator B, attached below and the crank shaft above the bed plate of the engine as set forth.

No. 3961. ROBERT H. FENWICK, Boston, Mass., U. S., 16th October, 1874, for 5 years: "Folding Household Articles." (Meubles pliantes.)

Claim.—1st. The combination of the dove-tailed slide C, rock shaft D, and guides B, B, with the board A, base-frame and standards E, G, all being arranged and applied as specified; 2nd. The adaptation of folding legs to a table or settee as shown in figures 5 and 6 of the drawings as stated; 3rd. The folding back *m*, and arms *n*, *n*, as applied to the seat or base a^2, of the settee represented in figure 8, of the drawings, as stated.

No. 3962. HERBERT BEAUMONT, Toronto, Ont., 16th October, 1874, for 5 years: "Car-Coupling." (Attelage de wagon.)

Claim.—The combination of mechanism (for catching and releasing the link) referred to as the swinging pin (*h*, *i*, *l*, *m*, V, *n*, fig 1) and the trigger (*o*, *p*, *q*, *r*, *s*,) pivoted in a slot in the lower side of a tubular drawhead (A, B, C, D, Fig 1), as set forth.

No 3963. ROBERT W. McGEE, East-Oxford, Ont., 16th October, 1874, for 5 years: "Brick Machine." (Machine à brique.)

Claim.—1st. The combination of the endless link chain A, with the gearing wheels B, and C, and the adjusting roller D, revolving arms E, and friction roller F, as set forth: 2nd The pressing shaft G, with the adjusting plate I, in combination with the endless link chains A, gearing wheels B, and C, adjusting roller D, revolving arms E, and friction roller F, as set forth, 3rd The attachment of the cross bar K, to the covering plates L, in combination with the lever O, weight P, and connecting chain N, as set forth.

No 3964 EDWARD H. ASHCROFT, Lynn, Mass., U. S., 16th October, 1874, for 5 years: "Safety Valve." (Soupape de sûreté.)

Claim—The combination of a safety valve having a curved lip for deflecting the escaping steam downwards with chambers surrounding the valve with the exception of its upper and lower ends and provided with one or more communicating passages as described, so as to direct the steam first downwards and then upwards in the manner set forth.

No. 3965 THOMAS JONES, Harewood-House, near Tavistock, Eng., 16th October, 1874, for 5 years: "Process of Preventing Dry Rot and Decay in Timber, and for Rendering the same Uninflammable." (Procédé pour empêcher la pourriture sèche et la carie du bois et le rendre incombustible.)

Claim—The process of rendering timber for building and other purposes more durable and uninflammable by impregnating it with a solution of Tungstate of soda, without other substances which neutralize or destroy its effects, as described.

No. 3966. JOHN T. HENNAMAN, Baltimore, Md., and DANIEL O. SALMON, Syracuse, N. Y., U. S, 16th October, 1874, for 5 years: "Cigar Machine." (Machine à cigares.)

Claim.—1st. The combination with the apron I, of a roller F, supported above the table without any connection from below the latter on that side, on which the point of the cigar is formed, the whole arranged as described, to wrap a cigar while its head or point projects beyond the table and apron in convenient position for manipulation by the operator during the rolling process; 2nd. The combination of the roller F, the apron I, adapted to form a bight on either side of said roller, and the cavities M, M1, all arranged as described for the purpose of wrapping right or left hand cigars by a movement in either direction; 3rd. The gauge plate H, in combination with a table, roller, and apron, constructed, arranged, and operating as specified.

No. 3967. NOE LEMIZRE, Montreal, Que., 16th October, 1874, for 5 years: "Mortising, Boring and Drilling Machine." (Machine à mortaiser, percer et forer.)

Claim.—1st. The projecting driving head C, 2nd. The spring check-bolt or stop F, 3rd. The combination of the driving head C, and spring check-bolt, or stop F, with the standard A, treadle B, spindle D, boxes E, E, and E, stop bars G, G, table H, screw wheel K, gears L, L, cone-pulley M, and crank O, the whole combined and arranged as described.

No. 3968. JOHN I THORNYCROFT, London, Eng., 16th October, 1874, for 5 years: "Vessel Propeller." (Propulseur de vaisseaux.)

Claim.—The improved form of screw propeller described and illustrated in the drawing.

No. 3969. JOSEPH L. O. VIDAL, Lotbinière, Que, 22nd October, 1874, (Extension of Patent No. 109,) for 5 years: "Improvements on Ploughs" (Perfectionnements aux charrues.)

Claim.—A model or pattern to cast mould boards of ploughs having a widened base with the plough itself or separately, that is to say, it enables to cast a mould board having a widened base (over half an inch) in one piece, or to make the mould board and the widened base separately and then adapting the one to the other by means of cleats and nuts.

No 3970 WILLIAM MUIR, Montreal, Que., 14th October, 1874, (Extension of Patent No. 94,) for 5 years: "Multiple Sewing Machine." (Machine à coudre multiple.)

Claim.—1st. The entire machine in its novel arrangement of frame *a*, driving shaft *b*, cams *c*, and *d*, pattern disc d^1, rod d^2, ratchet wheel d^3, shaft d^4, bevelled wheel d^5, cam e, ratchet wheel e^1, slotted rods e, multiple catch e^3, shaft e^4, elongated bars e^5, pinion wheel e^6, feed rollers e^7, break e^8, skeleton ring e^9, moveable frame f, rollers f^1, brackets f^2, braces f^3, tension rollers f^4, frame f^5, pattern disc g, sliding bar g^1, slotted lever g^2, rod g^3, brace g^4, wedge h, sliding rod h^1, fixed arms h^2, brace h^3, shuttle carriage i, carrying rollers i^1, fixed plates i^2, end frames i^3, angle iron supports for shuttles i^5, shuttle frame k, castings k^1 division plates k^2, spring k^3, grooves k^4, slots k^5, cover plates k^6, stud pins k^7, shuttles k^8, needle bar l, guides l^1, friction rollers l^2, connecting rods l^3, needles m, tension frame n, friction bearings n^1, shaft n^2, left rods n^3, bar n^4, spools n^5, brackets n^6, friction loop wire n^7, spool rack o, feed roller p, chain p^1, take up roller q, groove pulley q^1, friction rollers q^2; 2nd. The novel improvement in the shuttle carriage i, by the movement or direct motion frame cams c, c, placed on driving shaft b, and timed to suit needle bar movement, 3rd. The novel improvement and combination in the shuttle frame k, of cast pieces k^1, k^1, division plates k^2, k^2, springs k^3, k^3, grooves k^4, k^4, slots k^5, cover plates k^6, k^6, stud pins k^7, k^7; 4th. The improvement in feeding apparatus in its novel arrangement of cam e, roller and multiple ratchet wheel e^1, with an enlarged and elongated boss e^5, moving with the internal frame f, laterally provided with double feathers and geared to the front feed rollers e^7: 5th. The improved apparatus consisting of rod d^2, ratchet wheel d^3, shaft d^4, bar g^1, lever g^2, etc., for producing a side or lateral movement for varying the pattern by means of discs d, and g; 6th. The improved apparatus consisting of pattern disc g, sliding bar g^1, slotted lever g^2, etc., for moving the whole internal frame f, laterally which also carries the cloth tension rollers f^4, feed movement rollers e^7, for the purpose of of giving the pattern in its novel arrangement of discs d^1, and g, on one and the same shaft driven by one motion and at the same time regulating the feed; and automatically varying the pattern, and 7th. The novel wedge h, or its equivalent in any other position for regulating the feed, in its peculiar action.

No. 3971. ROBERT W. SOPER, London, Ont., 26th October, 1874, for 5 years: "Breech-loading Rifle and Gun." (Carabine et fusil chargeant par la culasse.)

Claim.—1st. The combination in a breech loading rifle or gun of the iron frame B, with the stock A; 2nd The metal cap S, attached to the gun barrel and covering end of stock; 3rd. The plunger O, constructed as described, when fixed inside and protected by the frame and stock of a breech loading gun or rifle; 4th. The tumbler P, of the gun lock when constructed as described in combination with the plunger O, as set forth

No. 3972. JAMES G SCOTT, St. Thomas, Que., 26th October, 1874, for 5 years: "Safety Car-coupler" (Attelage de wagons de surete.)

Claim.—The hinged connecting link D, raised or lowered by means of the articulated arms attached at one end to the rocking shaft C, in combination with the pins b^1, and b^2, fixed upon the draw heads of the platforms, the whole constructed and operating as set forth

No. 3973. WILLIAM H. COLLINS, Whitby, Ont., 26th October, 1874, for 5 years: "Stove-pipe Coupler." (Lien de tuyaux de poele.)

Claim.—1st The application of the spring C, for the purposes described: 2nd The grooves d^1, d^2; 3rd. The combination of the spring C, grooves d^1 d^2, with projecting ends of the spring passing through holes in the pipes for the purposes described.

No. 3974. WILLIAM B. FRUE, Silver Islet, Ont., 26th October. 1874, for 5 years: "Machine for Washing or Separating the Heavier Ores or Metals." (Machine à laver ou séparer les minerais ou métaux lourds.)

Claim—1st The combination with the progressive motion of the endless travelling apron B^4, of a secondary agitating or shaking motion as described; 2nd. The outer frame F, with bearings L, in combination with the inner vibrating apron frame B, arranged and operating as described; 3rd. The apron frame B, yokes H, sliding shafts B^1, and collars I^1, in combination with the revolving crank shafts E, and connecting rods E^1, arranged and operating as described; 4th. The application to the endless travelling apron B^4, of raised flexible rubber flanges *b*, arranged and operating as described. 5th. The combination with the endless travelling apron B^2, of the driving drum C, and regulating pulley G, arranged and operating as described.

No. 3975. JACOB W. NEADS, Toronto, Ont., 26th October, 1874, for 5 years: "Boring Bar." (Tige de foret.)

Claim.—1st. The combination of boring bar with a turning lathe; 2nd. The combination and arrangement of mandrel *a*, hand wheel *b*, pulley *c*, ferrule *d*, connecting rods *n*, *n*, *n*, *n*, collars *f*, *f*, and ring *g*, as specified; 3rd. The head *e*, either with a bar S, or

with a feather x, as described; 4th. The mandrel a, either constructed with the slot b, or with the groove c, as described, 5th. The combination and arrangement of pulley V, V, C, and y, as specified.

No. 3976. JOHANN NOSSIAN, Sztrazsa, Hungary, 26th October, 1874, for 5 years: "Process of Making Rock Candy." (Procédé de fabrication du sucre candi.)

Claim.—1st. The process of reducing the syrup to proper consistency for the manufacture of candy by evaporating the same at a temperature of 80 Reaumur in a vacuum, 2nd. In combination with an ordinary vacuum pan, the improved testing device by means of which the syrup may be tested from time to time during the process of evaporation; 3rd. The method of testing and determining the consistency of the syrup during the process of evaporation, by drawing a portion of it from the vacuum pan, into a testing tube, where it may be tested by means of an acrometer or hygrometer, as set forth.

No. 3977. JOHANN NOSSIAN, Sztrazsa, Hungary, 26th October, 1874, for 5 years: "Process of Clarifying Sugar." (Procédé de clarification du sucre.)

Claim.—1st The improved process of purifying sugar by first packing the same in moulds and draining and drying until it is formed into blocks and then subjecting the blocks removed from the moulds to the action of the steam in a centrifugal machine; 2nd. The segmental moulds G, arranged around the inside of the revolving wire cylinder and provided with apertures at the top and open bottom.

No. 3978.—WILLIAM TUCKER, Fiskedale, Mass., U. S., 29th October, 1874, for 5 years: "Machine for Twisting Augers and Auger-Bits." (Machine à tordre les hélices et les méches de tarrières.)

Claim.—1st. An oscillating hollow twisting shaft T, driven with long stokes from a rotary main shaft S, by means of a sliding rack R, and a pinion P_2; 2nd. In combination with an oscillating hollow-shaft T, for twisting bits and augers, the stationary crimp die I, and the reciprocating crimp die I^2, arranged in line with the axis of the shaft and operating together to hold or to hold and straighten the bit or auger, said reciprocating die serving also to alternately clamp, and loosen the bit or auger, and said stationary die operating as a half nut for feeding the loosened bit or auger during the backward movements of the twisting shaft; 3rd. The combination of the hand lever V, the cam C, on the driving shaft and retracting-springs s for projecting and retracting the holding and straightening dies I^2 respectively in the manner set forth; 4th. The hand wheel H, applied to the rotary driving shaft S, carrying the crank arm or disk D, and cam C, in combination with the oscillating twisting shaft T, operated by said crank, the reciprocating holding and straightening die I^2, projected by said cam, and the driving-pulley P, and fly wheel F, attached to the driving shaft by clutch L so as to be disconnected at will, for setting the twisting shaft and die by hand, to receive the blank, and to discharge the twisted bit or auger.

No. 3979 LEWIS F. BAILEY, Maitland, N. S., 26th October, 1874, for 5 years: "Potato-digger." (Extracteur à patates.)

Claim.—1st. The combination of an elevating apron E, forward, and a tail riddle K, having a longitudinal shaking motion rearward of the ground wheels C, C, both within a frame A, mounted on the axle B, as set forth; 2nd. The combination of cylindrical roller D, having teeth L, cog-wheel M, M, wheel N, pinion O, and pitman P, with the frame A, and axle B, for operating the apron E, and riddle frame K, simultaneously by the ground wheel C, as set forth.

No. 3980. JOHN W. HANMORE, Newburgh, N. Y., U. S., 26th October, 1874, for 5 years: "Improvements in Steam Boiler Jackets." (Perfectionnements aux chemises des chaudières à vapeur.)

Claim.—The triple covering or filling B, C, D, combined and arranged as described.

No. 3981. JOHN PLUMMER, London, Ont., 26th October, 1874, for 5 years: "Improvements on Spoke-lathes." (Perfectionnements aux tours à rais de roues.)

Claim.—The triangular iron block C, having the three iron weights H, H_1, H_2, hinged thereto in combination with the reel A, of a spoke lathe using three centres as set forth.

No. 3982. GEORGE J. WARDWELL, Rutland, Vt., 26th October, 1874, for 5 years: "Oscillating Steam Engine." (Machine à vapeur oscillante.)

Claim.—1st. The combination of a reciprocating and circularly vibrating piston having steam ports with an oscillating engine cylinder having passages as described, 2nd The device consisting of a guide rod, a slide, and a coupling pin for vibrating a piston (having steam ports as described) within an oscillating cylinder having passages as described, 3rd. The combination of the connecting strap or box made of two halves, with the crank shaft and piston rod of the engine as set forth.

No. 3983. CHARLES V. MITCHELL, Pickering, Ont., 26th October, 1874, for 5 years: "Machinery for Unloading Roots, &c." (Appareil pour décharger les légumes, etc.)

Claim.—The peculiar combination and application of the racks B, B, and C, within the two additional side pieces A, A, so as to form a temporary bottom to the waggon box, &c., in manner and form described.

No. 3984. LOUIS A. DESSAULLES, (Assignee of H. H. d'Abrigeon,) Montreal, Que., 28th October, 1874, for 5 years. "Mill-stone Equilibrating Apparatus." (Appareil à équilibrer les meules de moulins.)

Reclame.—1o. L'appareil B, pour équilibrer les meules de moulin au moyen du poids mobile F; 2o L'appareil modifié B_1, construit tel qu'indiqué avec un pied H, un support D_1, et un poids F_1, pour les fins décrites.

Claim.—1st The apparatus B, to equilibrate mill stones by means of a moveable weight F; 2nd. The improved apparatus B_1, constructed as described, with a foot H, a support D_1, and a weight F_1, for the purpose described.

No. 3985. JAMES G. SCOTT, St. Thomas, Que 28th October, 1874, for 5 years: "Car-brake Self-acting Coupler." (Ajustage automatique des freins de wagons.)

Claim.—The coupling head A, the prong a^1, the recess a_1, in combination with the head B, constructed and operating as set forth.

No. 3986. DAVID L. NEWCOMB, Kenton, Ohio, U. S., 28th October, 1874, for 5 year "Well-boring Apparatus." (Appareil à cer les puits.)

Claim.—1st A setter for lowering and adjusting the lining of wells, composed of the cross-head L, and side pieces N, provided with hook O, and used in the manner set forth; 2nd Securing the pod of the auger to the shafting E, by four spiders E, fixed to the ring C; 3rd. A well boring auger composed of the two side pieces A, A^1, connected to the upper ring C, and to the lower notched disc B, having the inclined cutting lip D; 4th The shaft coupling formed by rectangularly notching the ends G, and application of a sliding ferrule H, to the joint, as described; 5th. The hinged coupling formed by the combination of the ring K, pins J, and attaching jaws I, 6th The combination of the rings S, bar T, and bevelled top poles R, for supporting the derrick; 7th. The double lever brakes U, connected by rod or chain W, pivoted to the derrick frame and arranged to operate against the windlass shaft, for braking the same.

No. 3987. JAMES H. COWHERD, and FREDERICK COWHERD, Brantford, Ont., 28th October, 1874, for 5 years: "Improvement on Eaves-Trough and Machines for making the same." (Perfectionnement des dalles de toitures et aux machines pour les fabriquer.)

Claim.—1st. A combined eaves-trough machine in which the frame or bed A, external formers I, J, K, thumb screws L, steel rod D, with its grooves E, in combination with the internal formers M, N, O, and back flap B, are attached, arranged, and operated as set forth; 2nd. The rivetting of the sheets together of which the eaves-trough is composed in addition to the ordinary mode of soldering, either before or after the sheets are pressed into the desired form as set forth.

No. 3988. CYRUS KINNEY, Dereham, Ont., 28th October, 1874, for 5 years: "Automatic Sash-Holder and Fastener." (Arrête-croisée automatique.)

Claim.—The metal strips A, A^1, constructed as shewn and moving freely on the screws B, B^1, with the catches E, E^1 E^2 E^3, when attached to the sash and sash stop as set forth.

No. 3989. ELISHA E. EVERITT, Philadelphia, Pa., and WILLIAM S. HAYWOOD, Rochester, N. Y., U. S., 28th October, 1874, for 5 years: "Improvements on bedsteads." (Perfectionnements aux couchettes.)

Claim —1st. The novel construction of the head board A, posts A, A, base board B, brackets *b, b*, side rails C, C, hinges c^1 c^1 bottom-board D, catches *d, d*, hooks, d^1 d^1, foot board E, post brackets E^1, hook *e*, end rails F, F^1, spring G, and crib rail H, all working together as described. 2nd. In combination with the side rails of a folding bed, open hinges c^1, c^1.

No. 3990. JARED MUNSON, Collingwood, Ont., 28th October, 1874, (Extension of Patent No. 113) for 5 years: "A Beehive." (Une ruche.)

Claim.—The perforated side partitions F, end casings D, and buttons G, to allow the hive to be divided for the reception of the side boxes H, in the guides K, in the notched piece J, for retaining the frames E, in the glass side pannels I, and in the stand B, whose top is adjustable to the bottom of the hive by the moveable piece M, and clamps N, or having drawers O, as shown in fig. 1.

No. 3991. JAMES CALL, and JOHN J. ROBINSON, Richmond, Me., U. S., 29th October, 1874, for 5 years: "Centre-Board for Vessels." (Quille mobile de vaisseaux.)

Claim —The combination of the keel A, with a T shaped centre-board, 2nd The T shaped centre board C, having the oblique curved slots H, in combination with the guide pins K, pivoted arms D, D, and operating rod G, as specified.

No. 3992. WILLIAM TUCKER, Fiskedale, Mass., U. S., 29th October, 1874, for 5 years: "Saw Gummer." (Affuteur de Scie.)

Claim.—1st. A cutting disc or washer C, of tempered steel for application to the face of a punch to form its cutting edges, as described: 2nd. The cutting disc or washer, C, in combination with a punch P, the same being interposed between the face of the punch and the plate to form the cutting edges of the former, and to provide for renewing the same after each cut in the manner set forth; 3rd. The combination of a cylindrical punch P, a cutting disc or washer C, of slightly greater diameter, applied loosely to the lower end of the punch so as to be discharged with the clip, and a die D, having an orifice, *d*, through which the washer and punch are discharged with the clip, 4th. The combination of a punch P, having an axial projection, *p*, on its face, and an annular cutting disc or washer C, supported concentrically by said projection to form the cutting edges of the punch as described.

No. 3993. WILLIAM TUCKER, Fiskedale, Mass., U. S., 26th October, 1874, for 5 years: "Apparatus for dropping the Cuts of Augers." (Appareil à forger les hélices des tarrières.)

Claim.—1st. The dies F, F^1, G, constructed and operating as described, for forming the heads of augers and auger-bits having side-cuts, by dropping the same end wise: 2nd. The improved upper die G, for attachment to the hammer or drop, said die being constructed with the spiral inclines *x*, notches *r*, and central depression *u*, and provided with the ring H, having cylindrical interior, to form the outer surfaces of the side cuts and spurs, and to strengthen the die and to constitute a bruise as described: 3rd. The bifurcated hand lever J, and links K, K, in combination with the pivots *s, r, q*, and adjustable stops *o*, for opening and closing the dies, and for supporting them when closed; 4th. The adjusting nuts *p*, applied to the links K, in combination with the hand-lever J, die holders E, E^1, and dies F, F^1, for taking up lash, in the manner set forth; 5th, The combination of the base A, the diagonal stock B, having the recess C, the ways D, D, on the horizontal top of the stock, and the fixed and movable die supports E, E^1, their appurtenances as described.

No. 3994. GEORGE F. GODLEY, Philadelphia, Pa., U .S., 29th October, 1874, for 5 years: "Improvement in Spiral Springs. (Perfectionnement des ressorts spiraux.)

Claim.—1st. A metal car spring having flat surfaces *a, b*, and a web or webs *c*, having a lesser thickness beyond such surfaces as described; 2nd. A spiral metal car spring formed of a bar having a part of itself thinner in cross section than the rest, and then coiled with such thin part in the interior or exterior of the coil; 3rd. A spiral spring made of a bar of metal rolled into any of the irregular shapes or form described.

No. 3995. LEONARD CROFOOT, Pavilion, N. Y., U. S., 29th October, 1874, for 5 years: "Bag-Holder." (Porte-sac.)

Claim.—1st. The combination with the spout B and frame A, the open notches *m, m*, the frame and the pivots *r, r*, and stops S, S, of the spout; 2nd. The frame consisting of the two standards C, C, with open notches *m, m*, the platforms E, and G, and the feet D with truck wheels *a, a*, combined and arranged to operate in the manner specified.

No. 3996. LEWIS S. CHICHESTER, New-York, U.S., 29th October, 1874, for 15 years: "Hulling, Cooking and preparing Cereals." (Art d'égrener, cuire et préparer les céréales.)

Claim— 1st. The method of preparing cereals for use by the action of heat and moisture upon the meal or crushed grain and then drying previous to packing; 2nd. The revolving bitters *a, a*, and grating *g*, in combination with the adjustable deflectors K, and trunk K; 3rd. The apparatus for cooking crushed or ground cereals consisting of the perforated cylinder revolving within a heated chamber and the steam supply pipe; 4th. The cereals prepared by moisture and heat and then dried as set forth.

No. 3997. GEORGE J. WARDWELL, Rutland, Vt., U. S., 29th October, 1874, for 5 years: "Reciprocating Cross-Head Engine." (Machine à galets mobiles.)

Claim.—1st. The longitudinally reciprocating and circularly vibrating piston proper of a steam engine, constructed with two reverse working steam ports on one side, and with two reverse exhaust ports on the other side as described; 2nd. The combination of a steam engine cylinder having receiving and exhaust ports about midway of its length, and a longitudinally reciprocating and circularly vibrating piston constructed with two reverse working ports in one of its sides, and with two reverse exhaust ports in the other side, as described; 3rd. The coupling between the pitman and the longitudinally reciprocating and circularly vibrating piston having reverse operating exhaust ports for turning the piston in its cylinder as described: 4th. The receiving steam ports formed in a longitudinally reciprocating and circularly vibrating piston partly enclosed along their length, in combination with the exhaust ports open along their whole length, whereby the working of the steam on the expansion, when the receiving passage is closed, is effected while the piston is balanced as described.

No. 3998. AMOS WILKER, Augusta, Me., U. S., 29th October, 1874, for 5 years: "Oil-Cloth." (Toile cirée.)

Claim.—1st. An oil cloth having an exposed ornamental brush coat forming a large portion of the design of the finished article: 2nd. An oil cloth having the brush-coat broken, clouded or marked by lines and printed with designs in various colours, leaving a portion of the brush-coat exposed as set forth,

No. 3999. NATHAN STEPHENS, Brooklyn, N. Y., U. S., 29th October, 1874, for 5 years: "Cement Lined Pipe." (Tuyau doublé en ciment.)

Claim.—1st. The lined tube having a coating of water proof material, covered with a lining of cement as specified.

No. 4000. MICHAEL S. SCHARIO, Sunderland, Ont., 29th October, 1874, for 5 years: "Spring Bed Bottom." (Fond de lit à ressorts.)

Claim.—1st. The inverted tapering springs B attached to the cross bar A, in combination with the slats C, arranged and operating as described: 2nd. The tenon end *b*, of the springs B, in combination with the hole C bored in the slats C, arranged as described: 3rd. The method of weaving the webbing to the slats; the said method consisting in passing the webbing over the slats C, attached to springs, and under the alternate unattached slats C^1, arranged as described; 4th. The webbing D, with slats C, and C^1, attached, in combination with the bars E, attached to the cross rails A, arranged and operating as described.

No. 4001. ISAIE FRECHETTE, and LOUIS COTÉ, St. Hyacinthe, Que., 29th October, 1874, for 5 years: "Boot and Shoe Crimping Machine." (Machine à faire les cambrures des chaussures.)

Reclâme —1o. Le couteau *f* montant et descendant au moyen d'un excentrique ou d'un mouvement analogue dans le but de produire l'effet décrit, construit et fonctionnant comme il est dit dans la spécification: 2o. Le couteau *f* montant et descendant, combiné avec les rouleaux c^2 et b^2, construit et fonctionnant à peu près comme il est dit dans la spécification; 3o. Le couteau *f* montant et descendant combiné avec les rouleaux c^2, et b^2, ou leurs équivalents, et la trappe de départ H, fonctionnant de concert avec les autres parties de la machine dans le but et de la manière indiqués. 4o. Le regulateur à bascule G, combiné avec le couteau *f*, dans le but d'ajuster sa position par rapport aux rouleaux c^2 et b^2, construit et fonctionnant tel que décrit et pour les fins indiquées.

Claim.—1st. The knife *f*, by means of an eccentric or analogous movement, is made to rise or fall producing the effect described, constructed and operating as stated; 2nd. The knife *f* rising and falling in combination with the wheels c^2 and b^2 constructed and operating approximately as stated: 3rd. The knife *f* rising and falling in combination with the wheels c^2 and b^2, or their equivalents and the flap door H working in concert with the other parts of the machine for the purpose and in the manner described, 4th. The swivel regulator G combined with the knife *f* for the purpose of adjusting its position in relation to the wheels c^2 b^2 constructed and operating in the manner and for the purposes described.

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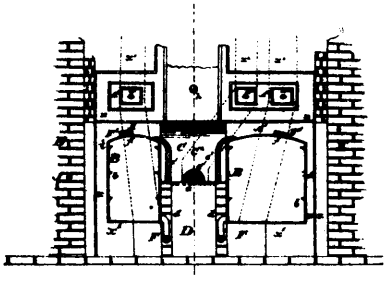

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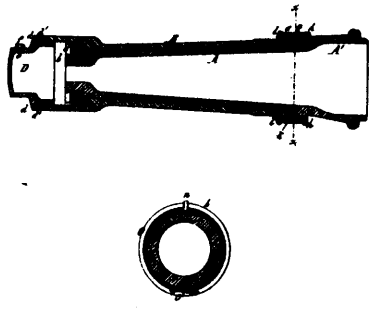

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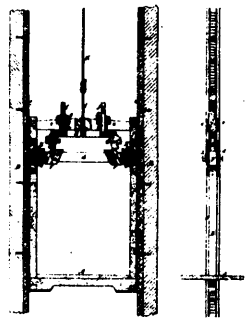

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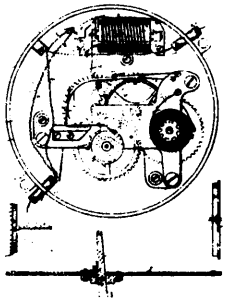

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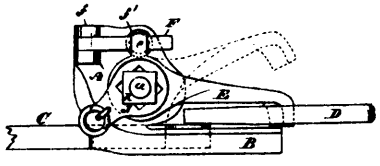

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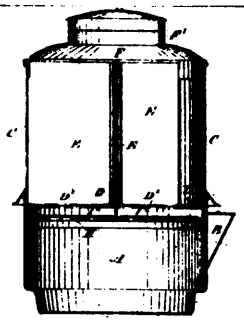

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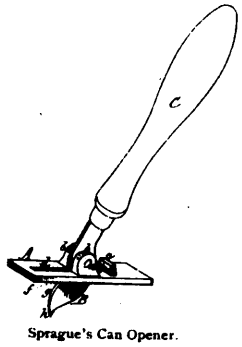

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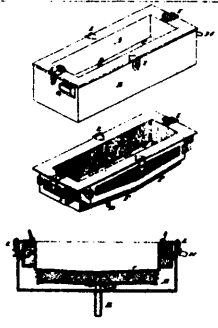

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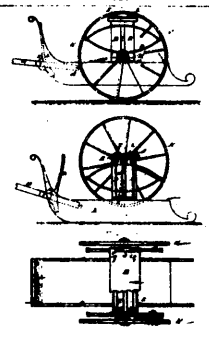

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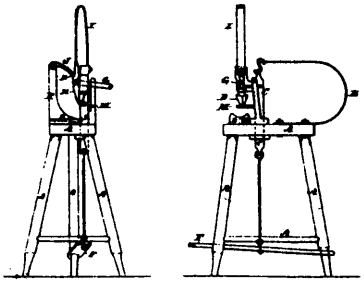

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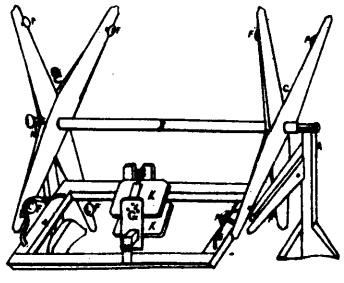

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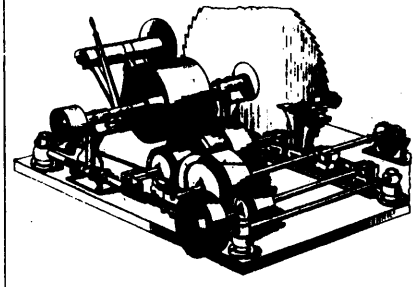

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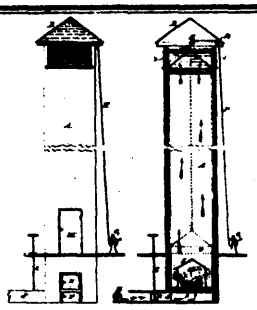

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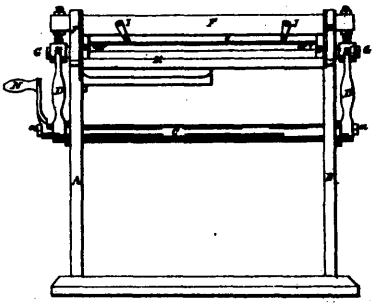

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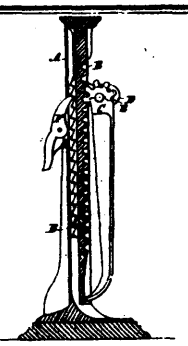

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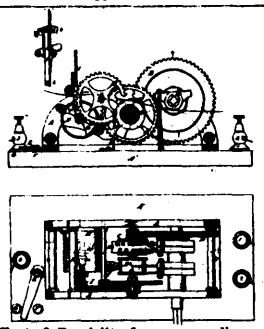

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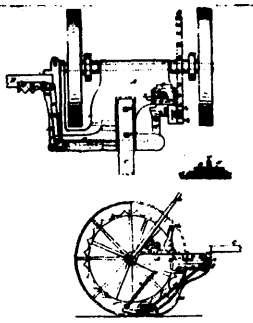

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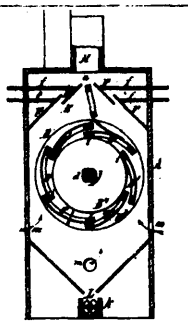

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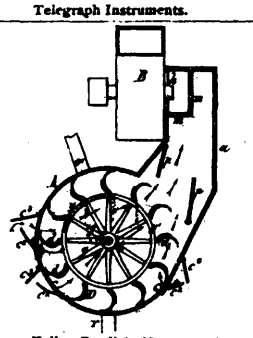

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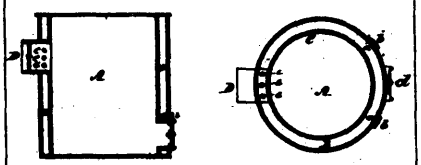

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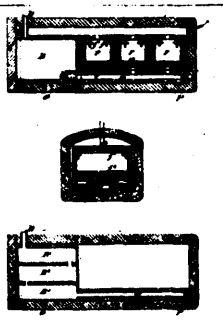

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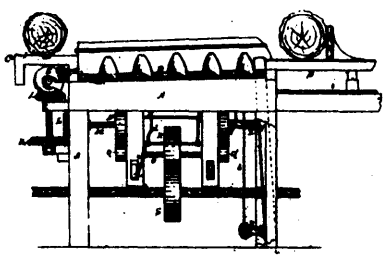

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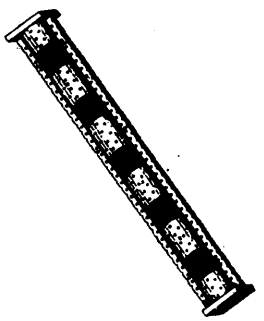

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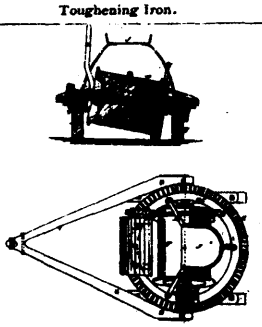

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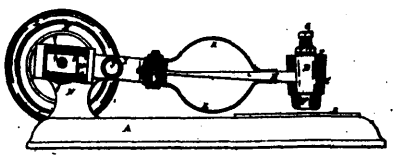

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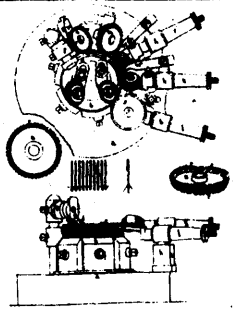
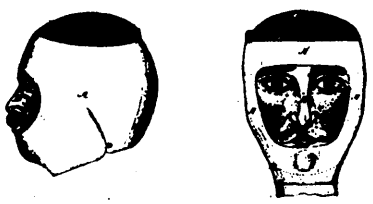
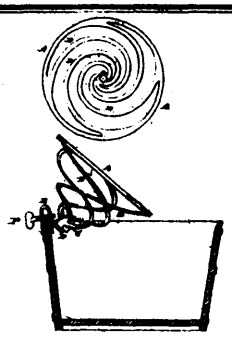


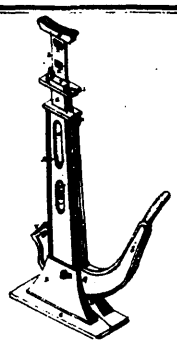
3902 Bradley & Pearson's Knitting Machine.



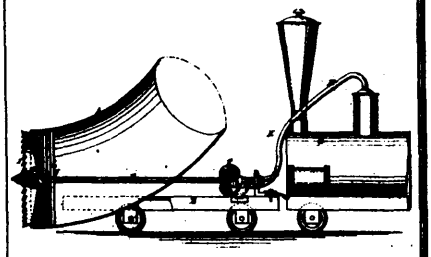
3903 Schulte & Stern's Head Protector.



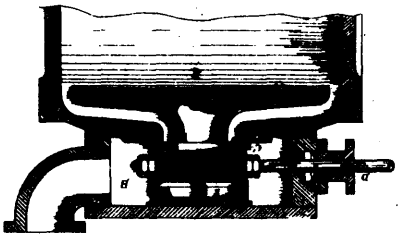
3904 Hatchkiss' Mop Wringer.



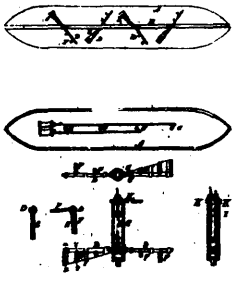
3905 Ford & Ives' Carriage Jack.



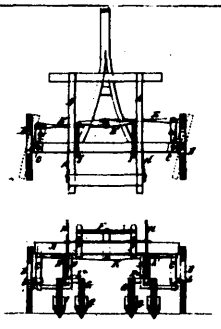
3906 Johnson's Railway Snow Remover.



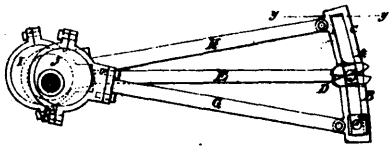
3907 Rodger's Balance Slide-valve.



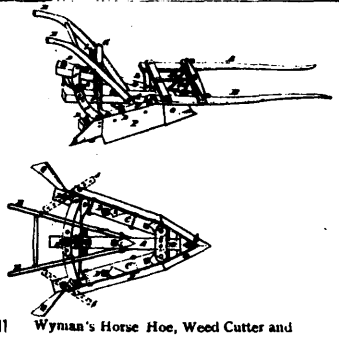
3908 Fraser's Propeller for Vessels.



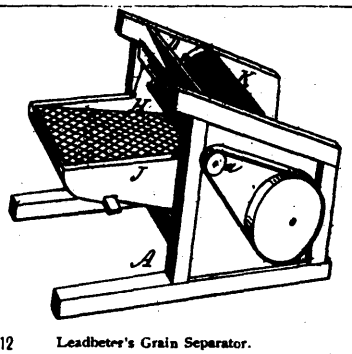
3909 Peugh's Plough Carriage.



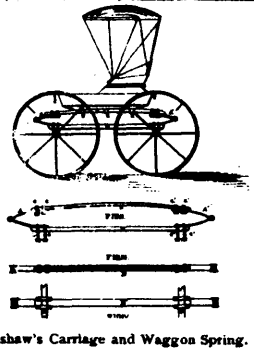
3910 Sandall's Link Motion.



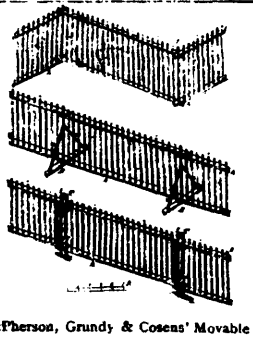
3911 Wyman's Horse Hoe, Weed Cutter and Potato Digger Combined.



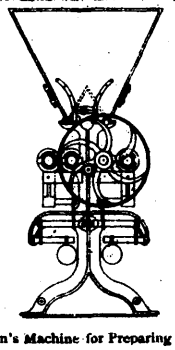
3912 Leadbeter's Grain Separator.



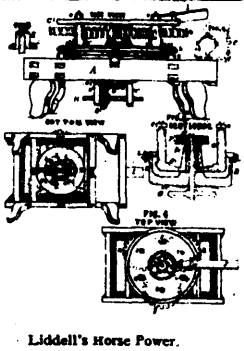
3913 Grimshaw's Carriage and Waggon Spring.



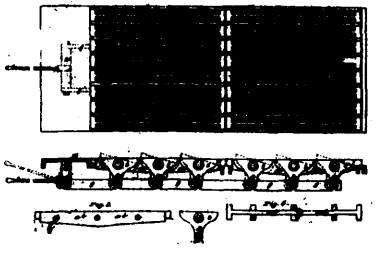
3914 McPherson, Grundy & Cosens' Movable Fence.



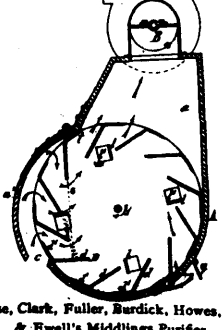
3915 Wegmann's Machine for Preparing Meal.



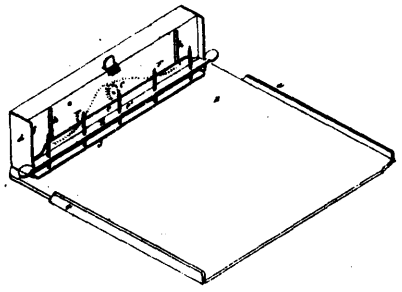
3916 Liddell's Horse Power.



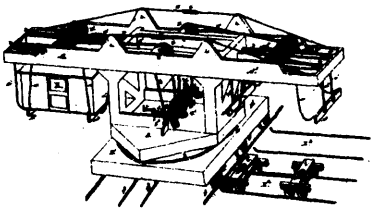
3917 Rowland's Furnace Bars.



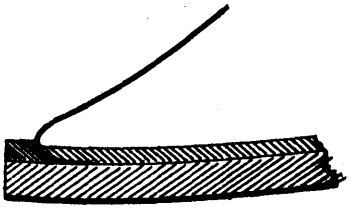
3918 Morse, Clark, Fuller, Burdick, Howes, Babcock & Ewell's Middlings Purifier.



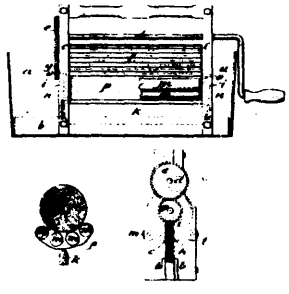
3919 Bennett's Paper Fyle and Binder.



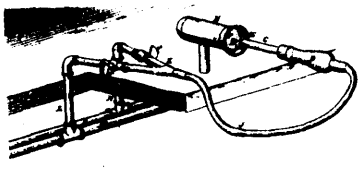
3920 Howland's Mode of Carriage on Allied Land and Water Routes.



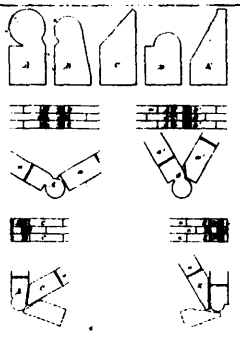
3921 Joyce's Improvements on Boots and Shoes.



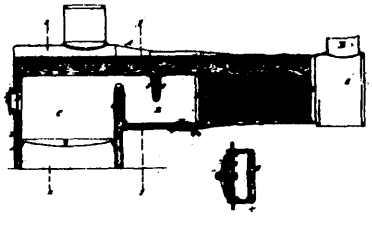
3922 Babbit & Isham's Washing Machine.



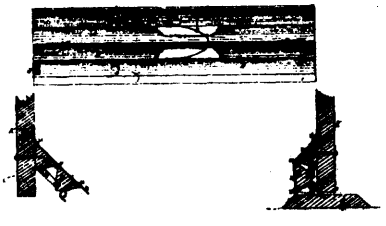
3923 Sears' Soldering Apparatus.



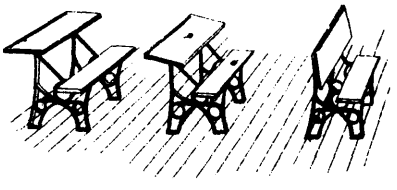
3924 Billings' Improvements on Bricks.



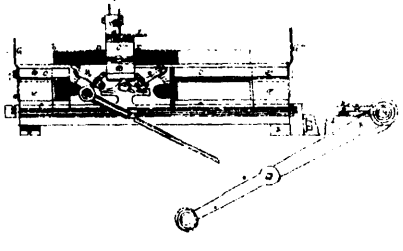
3925 Weston's Improvements on Steam Boilers.



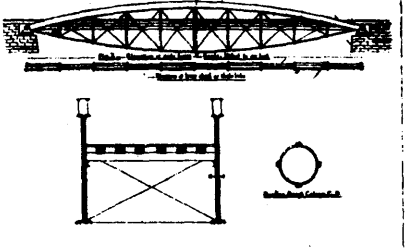
3926 Bacon's Weather Strip.



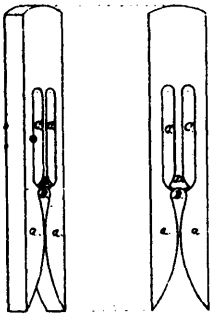
3927 Francis' Apparatus Convertible into a Desk, a Seat or a Table.



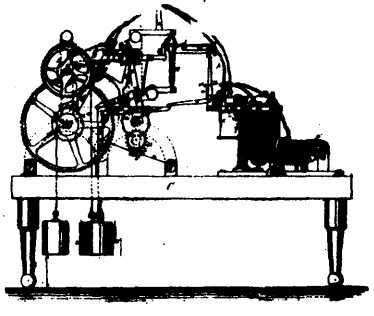
3928 Augst's Improvements in Knitting Machines.



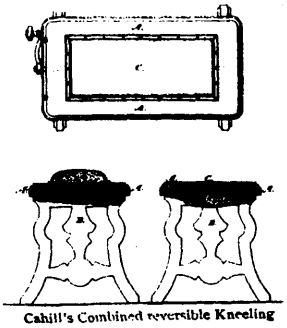
3929 Wasell's Improvements in Bridge Building.



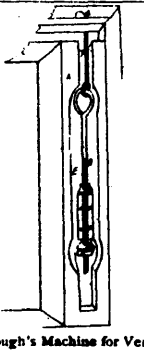
3930 Hurd & Butler's Clothes Pin



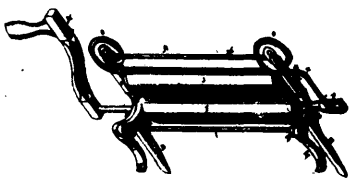
3931 Gamewell, Crane & Rodgers' Electro-telegraphic Non-interference Repeater.



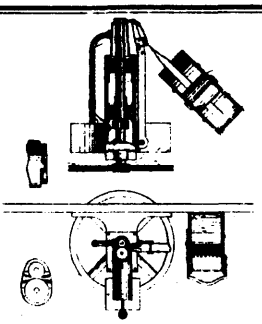
3932 Cahill's Combined reversible Kneeling and Foot Bench.



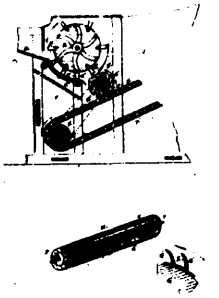
3933 Attenborough's Machine for Ventilating Rooms.



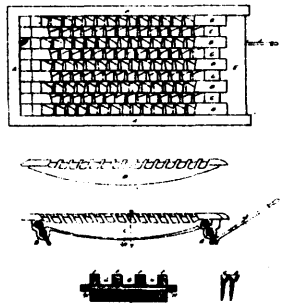
3934 Bunnell & Ronan's Clothes Wringer.



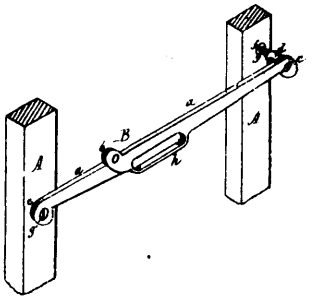
3935 Whiting's Machine for Binding and Wiring Hat Frames.



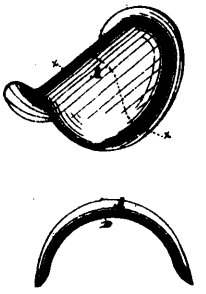
3936 Abell's Improvements on Threshing Machines



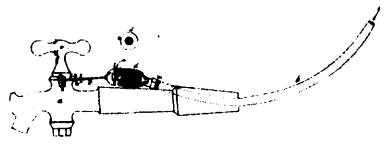
3937 Kerstine's Grate Bars.



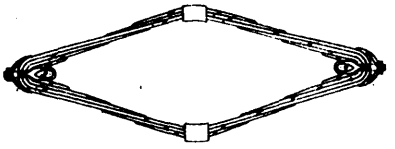
3938 Baird's Concealed Jointed Brace for Carriage Tops.



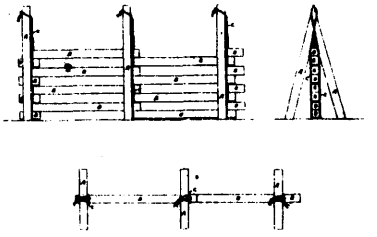
3939 Vosburgh's Collar Pad.



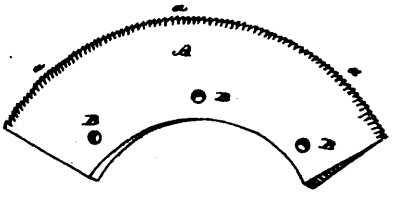
3940 Gaosill's Beer Faucet.



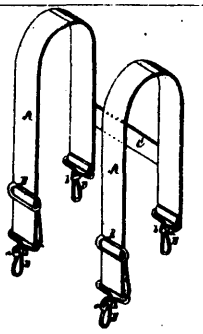
3942 Cliff & Vose's Elliptic Spring.



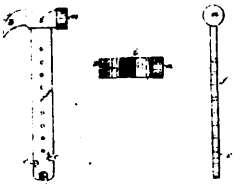
3943 Eaton's Suspended Rail Fence.



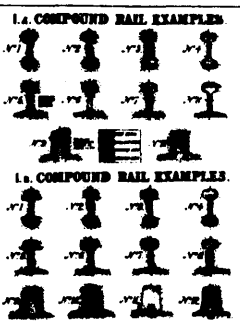
3944 Shupe's Improvements on Knives for Straw-cutting Machine.



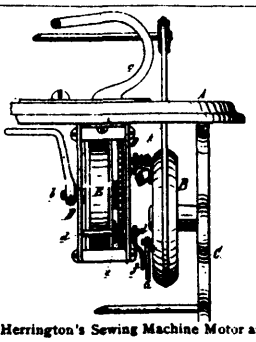
3945 Ellis' Skirt Supporter



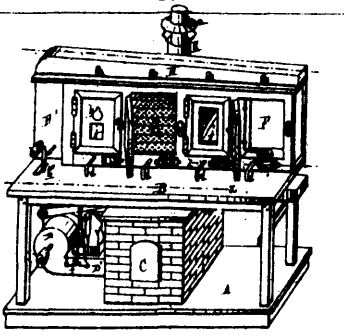
3946 Cable's Lifting Jack



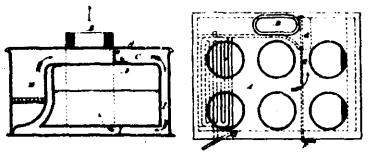
3947 Dering's Rails and Rail Joints.



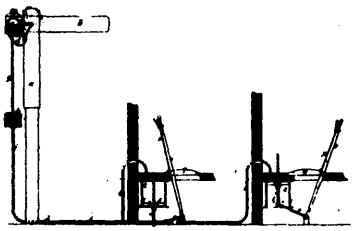
3948 Herrington's Sewing Machine Motor and Brake.



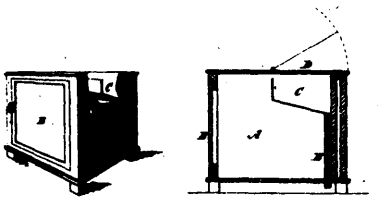
3949 Jones' Fruit Drier.



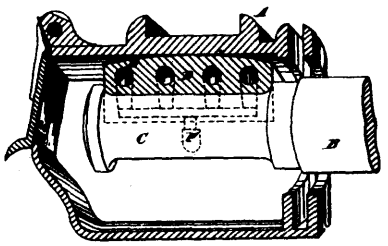
3951 Gurney's Cooking Range.



3952 Chambers' Railway Signal Apparatus.

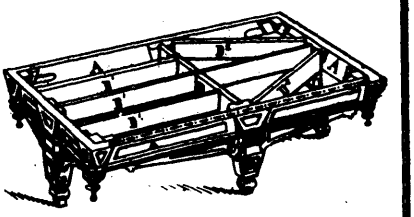


3953 McIntosh's Combined Refrigerator and Show-case.

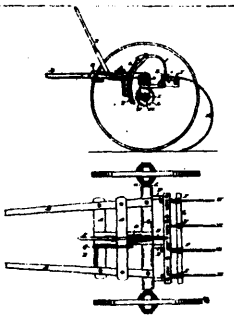


3954 Hussey's Journal Bearing.

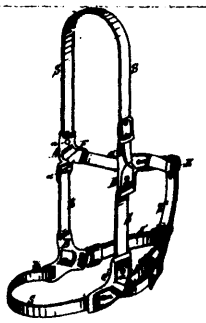
3955 Hussey's Self-supplying Mucilage Brush.



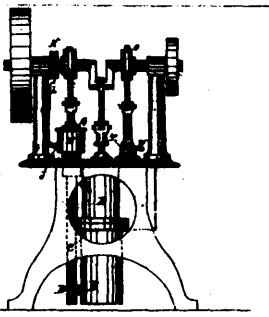
3956 Schulenberg's Billiard Table.



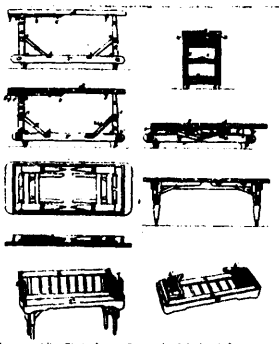
3957 Cameron's Horse Rake.



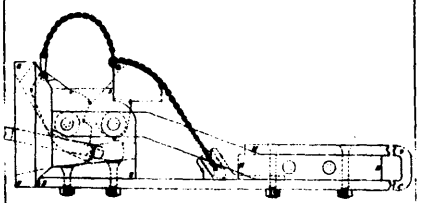
3958 Brooks' Halter.



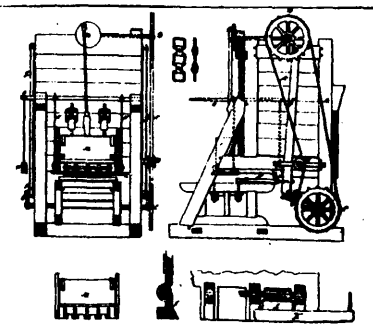
3960 Stackpole's Steam Flash Engine.



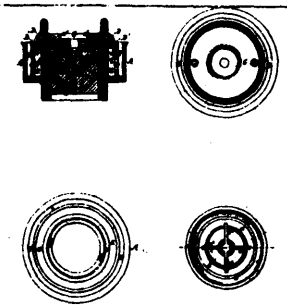
3961 Fenwick's Folding Household Articles.



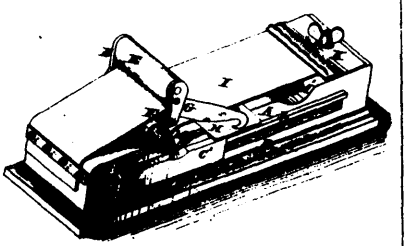
3962 Beaumont's Car-coupling.



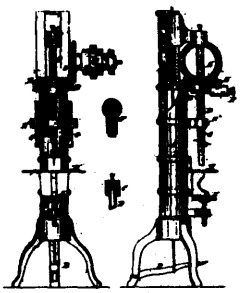
3963 McGee's Brick Machine.



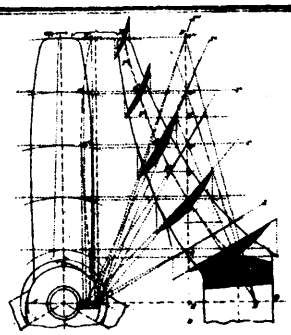
3964 Ashcroft's Safety Valve.



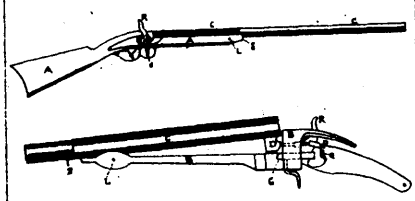
3966 Hennaman & Salmon's Cigar Machine.



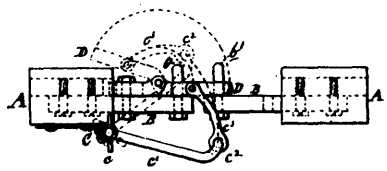
3967 Lemire's Mortising, Boring and Drilling Machine.



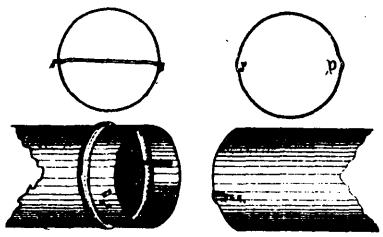
3966 Thornycroft's Vessel Propeller.



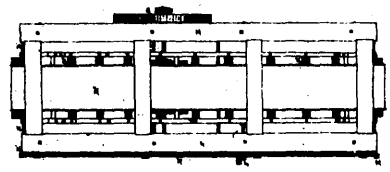
3971 Soper's Breech-loading Rifle and Gun.



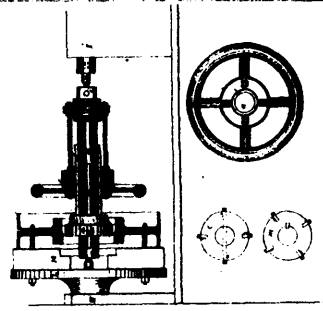
3972 Scott's Safety Car-coupler.



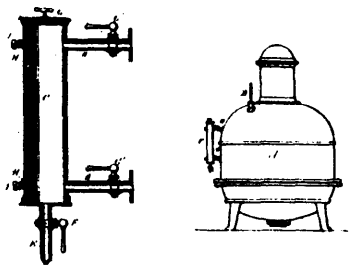
3973 Collins' Stove-pipe Coupler.



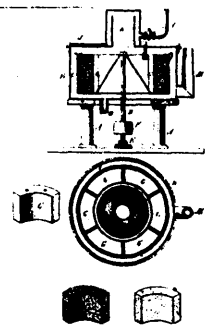
3974 Frue's Machine for Washing or Separating the Heavier Ores or Metals.



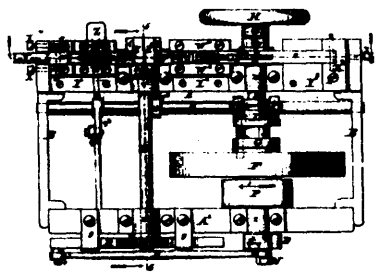
3975 Neads' Boring Bar.



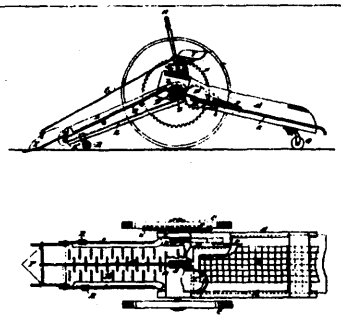
3976 Nossian's Process of Making Rock Candy.



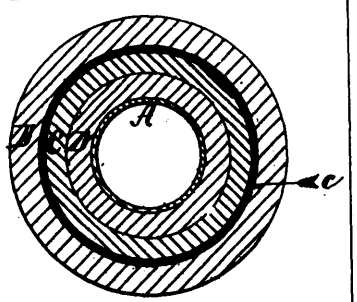
3977 Nossian's Process of Clarifying Sugar.



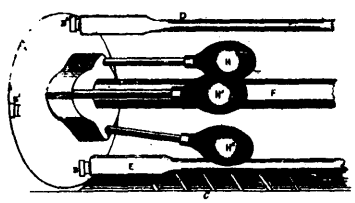
3978 Tucker's Machine for Twisting Augers and Auger-bits.



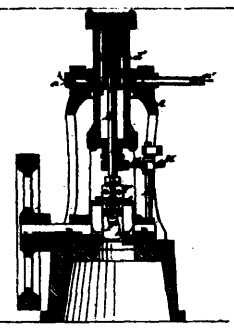
3979 Bailey's Potato-digger.



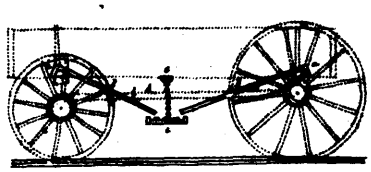
3980 Hanmore's Improvements in Steam Boiler Jackets.



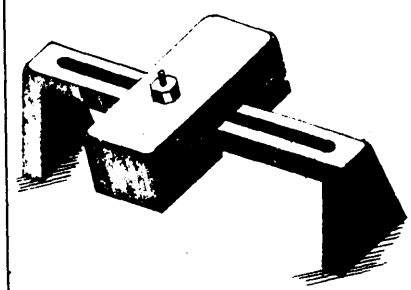
3981 Plummer's Improvements on Spoke-lathes.



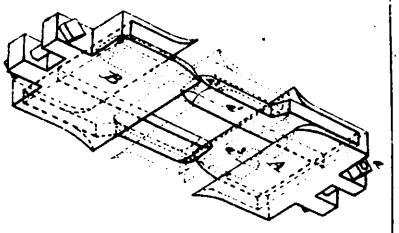
3982 Wardwell's Oscillating Steam Engine.



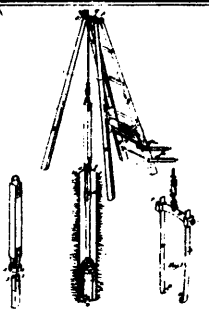
3983 Mitchell's Machinery for Unloading Roots, &c.



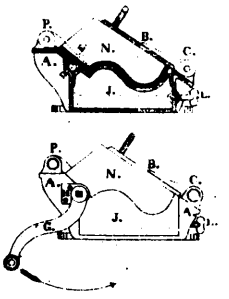
3984 D'Abrigeon's Mill-stone Equilibrating Apparatus.



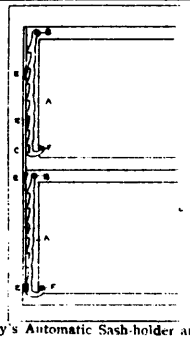
3985 Scott's Car-brake Self-acting Coupler.



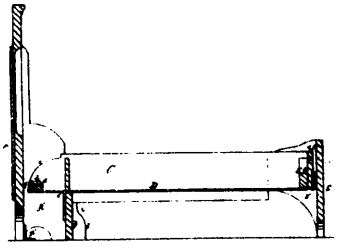
3986 Newcomb's Well-boring Apparatus.



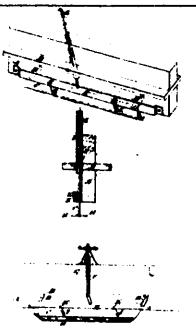
3987 Cowherd's Improvement on Eaves-trough and Machines for making the same.



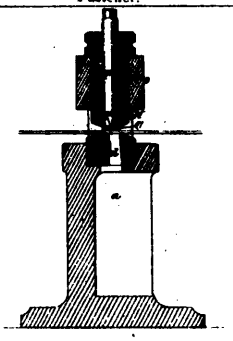
3988 Kenney's Automatic Sash-holder and Fastener.



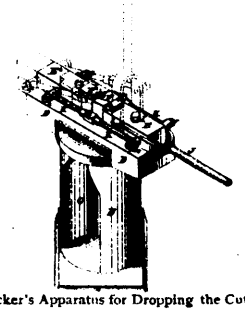
3989 Everitt & Haywood's Improvements on Bed steads.



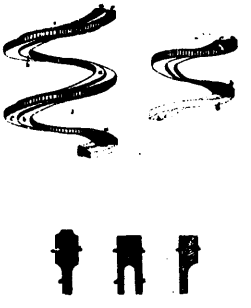
3991 Call & Robinson's Centre-board for Vessels.



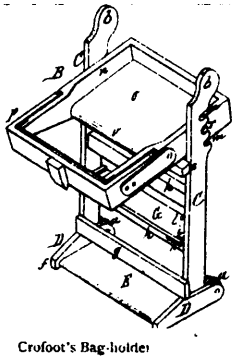
3992 Tucker's Saw Gummer.



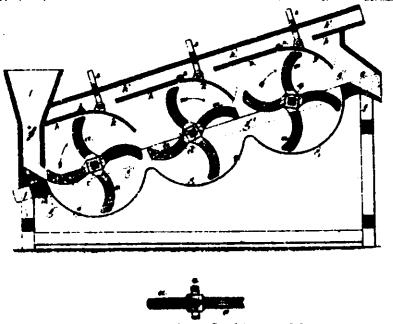
3993 Tucker's Apparatus for Dropping the Cuts of Augers.



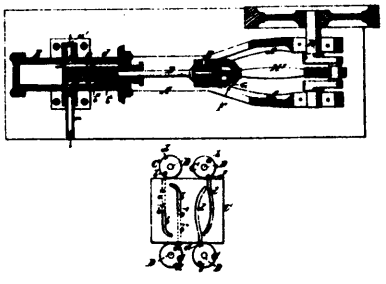
3994 Godley's Improvement in Spiral Springs.



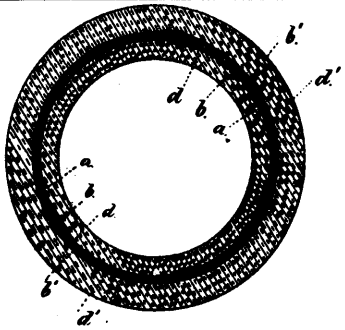
3995 Crofoot's Bag-holder.



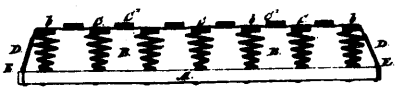
3996 Chichester's Hulling, Cooking and Preparing Cereals.



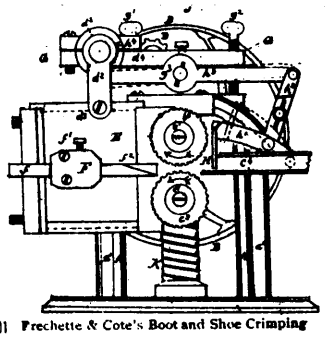
3997 Wardwell's Reciprocating Cross-head Engine.



3999 Stephens' Cement Lined Pipe.



4000 Schario's Spring Bed-bottom.



4001 Frechette & Cote's Boot and Shoe Crimping Machine.