

2nd. The combination of the grating with the sliding damper upon it at S, between the air chamber D F and the ash box E, the stove pipe hole in the bottom plate of the air chamber D F, as seen at F, and the short pipe around the stove hole at F.

No. 9621. Improvements on Journal Bearings. (*Perfectionnements aux coussinets des tourillons.*)

James Graham and David Coray, (Assignees of John Sweeney,) New-Haven, Ct., U. S., 31st January, 1879, for 5 years.

Claim.—The combination of an imperforated outer casing of cheap metal with a longitudinal central rib of hard metal dovetailed into the inside of said casing, and an inner facing of anti-friction metal secured by flanges on the inside of said casing, the attachment of said rib to the shell being entirely independent of the anti-friction facing.

No. 9622. Improvements on Carriage Springs. (*Perfectionnements aux ressorts des voitures.*)

Jackson W. Hewitt and Willis J. Hewitt, Jackson, Mich., U. S., 31st January, 1879, for 5 years.

Claim.—The short auxiliary flat spring B B welded to the bars b b intermediate of the side half elliptic springs F and arranged in connection with the rear axle G.

No. 9623. Improvement in Potato-Planters. (*Perfectionnement aux traceurs-butteurs.*)

Henry Aston, Toronto, Ont., 31st January, 1879, for 5 years.

Claim.—A shaft A with a handle B, or its equivalent, and a step F, in combination with an arm D, point E and end C.

No. 9624. Improvements on Bark Cutting Machines. (*Perfectionnements aux machines à triturer l'écorce.*)

William Chloken, Boston, Mass., U. S., 31st January, 1879, for 5 years.

Claim.—1st. A cutting wheel or cylinder composed of the disks g g provided with V-shaped receding cutting teeth h h, 2nd. In combination with a cutting cylinder and feed roller, an inclined apron k, 3rd. In combination with a cutting cylinder and feed roller, an adjustable and yielding apron k, lever q and weight r, 4th. In combination with the cutting cylinder of a bark cutting machine, the apron k and the hinged shield S with its yielding mouth piece St.

No. 9625. Improvements in Stoves or Ranges. (*Perfectionnements aux poêles ou landiers.*)

Henry L. Howse, San Francisco, Cal., U. S., 31st January, 1879, for 5 years.

Claim.—1st. The water back, having the narrow vertical closed cell or chamber D extending to the bottom of the stove, in combination with the fuel grate B in front and the flue O behind, whereby it is heated upon both sides by the escaping products of combustion, 2nd. The oven F placed in the rear of the water back and having the flue or space O surrounding it, so that the heat from the fuel grate B shall pass around the water back D, then down in front beneath and up behind the oven successively, 3rd. The water back D and the oven F with the intervening flue O and the fuel grate B, in combination with the arched or inclined grate K, 4th. The grate B, water back D and the oven F, with its surrounding flue O, in combination with the diagonal partition or diaphragm G dividing the space upon the top of the oven and distributing and directing the heat, 5th. The fuel space and grate B with the diaphragm or water back D and oven F with its surrounding flue O, whereby the heat from the fuel acts upon both sides of the water back or diaphragm and passes under the bottom of the oven, in combination with the damper J, said damper serving to direct the heat beneath the oven or, when opened, allowing it to pass directly to the chimney, 6th. The fuel space and grate B, having the diaphragm or water back D extending to the bottom with the intervening flue O, whereby the heat passes over the diaphragm and then down between it and the oven, in combination with the oven F, said oven having its wall or walls N made double to regulate the side heat to the interior, 7th. In combination with the fuel space or grate B with the vertical diaphragm or water back D and the oven F with the intervening flue O, the independent ash pan L and the door M whereby this flue may be cleaned.

No. 9626. Machine for Cutting off Gelatine Capsules. (*Machine à couper les capsules en gelatine.*)

Frederick A. Hubel, Detroit, Mich., U. S., 31st January, 1879, for 5 years.

Claim.—1st. The combination of the series of moulds c, the platform D and F and rock shaft T operated by any suitable lever, for the purpose of regulating the length of the capsules; 2nd. The construction of the platform D, rod F and rock shaft T operated by a pinch bar or lever H which engages with a notch plate H' for the purpose of raising or lowering the platform D, 3rd. A series of rotary cutters operated by a crank and pinion acting upon pinions, one of which is attached to each of said cutters; 4th. The rotary cutters driven by gearing and supported upon spring arms; 5th. The combination of the plate G, lever M, shaft I and locking lever N, for the purpose of disengaging the centre heads from their contact with the moulds and locking the crank by which said cutters are rotated, 6th. A machine for cutting off gelatine capsules, wherein the parts are so arranged that capsules of varying lengths can be cut by means of a vertically adjustable platform which carries the moulds to the cutters, 7th. The platform D, carrying the plate C upon which are secured the moulds c, in combination with the rod F, rock shaft T, levers H M N, segment plate H', plate G, shaft I and pinions b to which are secured the drum b' carrying the cutters d.

No. 9627. Improvements on Harness. (*Perfectionnements aux harnais.*)

Charles S. Piersons and Charles Ferris, Sandy Hill, N. Y., U. S., 31st January, 1879, for 5 years.

Claim.—1st. The strap coupling formed of the outer plate D' provided with flanges along its side edges and with pins and rivets upon its inner

surface, and the inner or clamping plate E' for connecting the adjacent ends of straps, 2d. The breast piece formed of the plate Q' provided with the eye S', the notched flanges U' and the pins X', the loose key W', the hinged cover Y' and the clamping plate R' to adapt it to receive and hold the breast strap G', the neck strap T' and the tug V'; 3rd. The buckle holder formed of the plate M' bent together at its centre and provided with recesses to receive and hold the buckle O', the keeper N' and the strap I, 4th. The tug eye plate Z' provided with eyes to receive the eye or hook of the whiffletree and with a recess to receive the end of the tug and the clamping plate A', 5th. The breeching piece formed of the plate B' recessed at both ends, the clamping plate D' provided with the arms d', the cross bars d' d' d' and the pin d' for holding the ends of the side strap, the clamping plate F' for holding the end of the breeching strap and the brace G' provided with a recess, a stationary pin nut and a screw for receiving and holding the hip strap, 6th. The carrier N', made in two parts and provided with notches to receive the buckle P' and loop R', and a groove to receive the strap O', the plate S' provided with flanges along its side edges and the clamping plate T', in combination with each other and with the said buckle, loop and strap.

No. 9628. Improvements on Feed Cutters. (*Perfectionnements aux hache-paille.*)

Thomas Clark, Truro, N.S., 31st January, 1879, for 5 years.

Claim.—1st. The combination of a feed cutter and a grinding Mill, 2d. The combination of the fly wheel carrying the cutting knives, and having a grinding face with a grinding plate provided with a suitable hopper and discharge chute; 3rd. The combination of the feed roller C' having the crown wheels L L' upon its shaft with the lever N, worm M and the roller C, said rollers being connected by suitable gear, 4th. The combination of the reversible grinding plate R with the adjustable frame S' and the adjusting shaft V.

No. 9629. Improvements on Machines for Manufacturing Tobacco. (*Perfectionnements aux machines à fabriquer le tabac.*)

John L. Jones, Greensborough, N. C., U. S., 10th February, 1879, for 5 years.

Claim.—1st. In combination with the stationary bed provided with a longitudinal groove, a series of removable cutters and the gauge for holding them in place, said cutters being adapted to be adjusted at various intervals in said groove in order to vary the length of the plugs to be cut, 2nd. In combination with the stationary bed and its cutting knives, a series of inter changeable knife-gauges slotted at intervals at which the knives are arranged and varying in thickness according to the thickness of the plug to be cut, 3rd. A trough, mold or former, closed at one end and open at the other, in combination with the movable follower adapted to fit into said trough, whereby the nip or waste cut from the end of the bar may be removed in condition to form the end of the bar in the next succeeding freshly filled trough, mould or former, 4th. In combination with the movable plunger or follower for compressing the troughs, moulds or formers and the leading screw and the toggle lever for operating said plunger, the pulleys loosely mounted on the leading screw, the longitudinally moving clutch, the clutch lever and arm provided with tappets, and the tappet bar and slide operated by the rider of the toggle lever, whereby the motion of the leading screw is automatically arrested, 5th. In combination with the plunger and its operating mechanism, a lever adapted to be tripped by a pawl on the rider of the toggle lever, the vertically moving slide provided with a rack at its upper end, the pinion on the leading screw for operating said slide and the lever and vertically moving slides for elevating the trough adjoining the stationary bed, 6th. In combination for the mechanism for elevating the trough ad joining the stationary bed of the machine, the bevelled trip or trips for upsetting the elevated trough.

No. 9630. Improvements on Fountain Pens. (*Perfectionnements aux plumes-fontaines.*)

George Wells and George Staples, Montreal, Que., 10th February, 1879 for 5 years.

Claim.—1st. The combination of the tubes A B H and valve O; 2nd. The combination of the tubes B and H, valve O, apron A', said valve being adjustable, whereby the pen is rendered self-feeding; 3rd. The combination of the apron A' having slot C' and projection D'; 4th. The combination of the tube A, having opening E, with the tube B provided with valve G, whereby the tube B may be charged with ink; 5th. The combination of the tubes B and H, valve O, with the tube A having opening E, whereby the tube B may be charged with ink; 6th. The combination of the tube E having tube H attached thereto and provided with lugs G, with a rod or wire K having valve O and flange P and with spring R and plate S; 7th. The combination of the wire K, having valve O and actuated by the spring R, and having nut L and elastic washer M with the tubes A and B; 8th. The combination of the tubes A and B, tube H, projection W and valve O, 9th. The combination of the tube B, tube H and valve O, whereby the pen is held between the tubes H and B and fed by the operations of the valve O.

No. 9631. Improvements on Railway Switches. (*Perfectionnements aux aiguilles des railroutes.*)

John H. Ainsworth, Philadelphia, Pa., U. S., 10th February, 1879, for 10 years.

Claim.—1st. The combination, with the switch rails of a railroad switch, of mechanism for imparting a positive movement to the switch rails in opening and closing the switch, and retain them in a yielding position when either open or closed; 2nd. The combination, with the switch rails of a railroad switch, of a switch rod attached to one of the switch rails or switch rail, a spring located between sliding sleeves on the switch rod, a yoke provided with collars which form bearings for the sliding sleeves, and a link connecting the yoke with the crank shaft of the switch, 3rd. The combination, with the switch rails of a railroad switch and a switch rod provided with a yoke and a spring located on the rod between collars in opposite end of the yoke, of a guard plate for forming a rigid connection between the yoke and switch rod; 4th. The combination with the crank shaft, a yoke and link of a switch rod provided with sliding collars and a spring, the ends of which rest against the ends of said collars, 5th. The combination, with