

sequently applying to them a mold and casting therein and upon and within them, fusible metal; 4th. The clamps made for compressing together the parts to be covered by fusible metal and for enabling the welding wire to be applied to the said parts, while they may be within the clamps.

### No. 10,532. Railway Car Ballast and Earth Unloader. (*Wagon de railroute pour décharger le gravier et la terre.*)

George P. Merrill and Patrick Dowling, Toledo, O., U. S., and Elisabeth A. Gossage, St. Thomas, Ont., 8th October, 1879, for 5 years.

**Claim.**—1st. The combination of the plough, the jack-screw for hoisting and reversing plough on car, the friction rollers to lighten draft while the plough is in operation, the nose casting formed in one piece and forming radii for side sheets, as a plough made entirely of iron; 2nd. The aprons to fasten between cars, to prevent gravel and earth from falling on the track, between the cars A, T, rails fastened to car, for guiding plough, extended twelve inches beyond car and sharpened to a point, so as to receive the nose casting travelling from one car to another.

### No. 10,533. Improvements in Nail Forging Machines. (*Perfectionnements aux machines à forger le clou.*)

David Armstrong, Chicago, Ill., U. S., 8th October, 1879, for 5 years.

**Claim.**—1st. The combination of two revolving series of separately rotary die heads N and the anvil b; 2nd. The combination, with the separately revolving die heads, of the die w; 3rd. The combination, with the separately rotating die heads and dies w, of the chisel for clipping the points of the nails; 4th. The combination, with the rotating die heads, of the nail holding devices, the cutters for severing the nails from the rod; 5th. The combination of the rotating die heads, the dies and the chisels with the anvil b, and the forging hammers; 6th. The double pinions O p combined with the shaft M, springs v v, bushing n, nuts L, sleeve b b and rotating heads N; 7th. In combination with rotary heads N, having cutters thereon, the nipper 9 and seat 7 for grasping the nail 11 and carrying it to the discharge spout 16; 8th. The nipper 9, pivoted to a rotating and concentrically revolving cutter head, in combination with the cutter 5, for severing the nail from the rod, and with the punch 12, for removing the nail from under the nipper 9; 9th. The cylinder D, having holes through it, radially, to receive the shanks d, for the support of the ear lugs h g, in combination with screw sleeve c, nut and screw f, for adjusting the rotary dies.

### No. 10,534. Clothes Wringer. (*Essoreuse à linge.*)

William T. Bunnell, Ottawa, Ont. (Assignee of Anson G. Roman), 10th October, 1879 (Extension of Patent No. 3934), for 5 years.

### No. 10,535. Grate Bars. (*Barres de grilles.*)

Henry C. Kerstine, Cleveland, Ohio, U. S., 10th October, 1879. (Extension of Patent No. 3937), for 5 years.

### No. 10,536. Improvements on Thrashing Machines. (*Perfectionnements aux machines à battre.*)

John Abell, Woodbridge, Ont., 10th October, 1879, (Extension of Patent No. 3936), for 5 years.

### No. 10,537. Improvements on Fishways. (*Perfectionnements aux passes migratoires.*)

Marshall McDonald, Lexington, Va., U. S., 13th October, 1879, for 5 years.

**Claim.**—1st. The method of utilizing the velocity of a head of water, at the dam for the ascent of the fish, which consists in directing said head of water through a series of openings upon an incline discharging upwardly; 2nd. A way, for the ascent of fish, consisting of a series of upwardly inclined plates forming discharging openings, a set of subjacent chambers communicating therewith, and a parallel series of buckets opening into the general level of the way, at the top, and into the subjacent chambers of the discharge-openings, at the bottom; 3rd. The combination, with the walls and bottom of the way, of the cross-bars or cleats a, the longitudinal partition D resting thereupon, the reversely inclined partitions G and F forming buckets and chambers communicating with each other beneath the partition D and the inclined plates E.

### No. 10,538. Improvements on Rail Joints. (*Perfectionnements aux joints des rails.*)

Thomas H. Tracy, London, Ont., 13th October, 1879, for 5 years.

**Claim.**—The tapering bolt or key, passing through the fish plates, and the slots in the rails.

### No. 10,539. Improvements on Rail's Brakes. (*Perfectionnements aux freins des chemins de fer.*)

Henry Empey, Detroit, Mich., U. S., 13th October, 1879, for 5 years.

**Claim.**—The combination of the rods H, their coupling chains M and the chains I for connecting the same with the drums F, whereby the latter can be operated by a motor at the end of the train.

### No. 10,540. Improvements on Boots. (*Perfectionnements aux bottes.*)

Owen T. Jones, Port Dinorwic, Wales, 13th October, 1879, for 5 years.

**Claim.**—1st. The top of that portion of the boot which covers the leg being double or about double the size of the bottom; 2nd. One or more vertical creases in the side, back or other part of that portion of the boot which covers the leg; 3rd. The back or forward fold or folds caused by the said crease or creases.

### No. 10,541. Improvements in Pumps.

(*Perfectionnements aux pompes.*)

Alexander Porteous and John Irvin, Port Perry, Ont., 13th October, 1879, for 5 years.

**Claim.**—1st. The combination of the rock shaft D, having crank sector F, and rack bar K attached to the pump rod I, for operation by the handle G; 2nd. The combination of the shaft D, crank sector F, rack bar K and anti-friction roller M with the boxed slides B C of the pump; 3rd. The combination of the rack bar K, connected to pump rod I, working in guide J, and to rod O, sliding in guide L, anti friction roller M and rock shaft D having crank sector F operated by the handle G.

### No. 10,542. Improvements on Ventilators.

(*Perfectionnements aux ventilateurs.*)

William H. Loop, Joseph James and Enoch James, Montreal, Que., 13th October, 1879, for 5 years.

**Claim.**—The combination of the cones B C B and B H B and the convex band D, also part of cone E with channel F and outlets K K.

### No. 10,543. Machine for Making Lacing Hooks for Boots and Shoes. (*Machine à faire les agrafes pour les lacets des chaussures.*)

Stephen N. Smith, Providence, R. I., U. S., 13th October, 1879, for 5 years.

**Claim.**—1st. First necking and indenting a narrow strip of metal and punching lengthwise therefrom, end to end, a series of flat blanks, each embracing at opposite ends a neck and an indented portion; 2nd. First preparing the stock in narrow strips with tubular necks at regular distances apart; secondly, indenting the strips, thirdly, punching the blanks lengthwise from the strip, so that each embraces one of the necks and one of the indented portions, and lastly, bending the blanks into shape and indenting them on the back; 3rd. The combination of the scouring, indenting and cutting punches and a feed mechanism, arranged to move the prepared stock from the first two punches to the last; 4th. The combination of the cutting punch, the carrier, the sliding anvil and the vertically and horizontally moving slides, arranged to act successively and bend the blank over the anvil; 5th. The combination of the anvil O and the two slides, arranged to act successively and double the blank thereon; 6th. In combination with the carrier slide and the sliding anvil, the yielding presser foot, arranged to act upon and hold the blank; 7th. In combination with the blank forming device, the presser foot, the bar having a spring connection with the foot and means for imparting a reciprocating movement to the bar; 8th. The blank carrier, having the notched end to receive the tubular necks of the blanks, in combination with the tongue adapted to close said notch and sustain the blank; 9th. In combination with the scouring and cutting punches and the feeding finger, the grooved guide H provided with the hole g and spring h; 10th. The anvil, having the notched or recessed end, in combination with the bending slide having a rounded or pointed shoulder to indent the back end of the hook; 11th. A punch arranged to indent the stock, to give roundness to the end of the hook, previous to the punching of the blank therefrom.

### No. 10,544. Improvements on Pumping Machinery. (*Perfectionnements aux mécanismes des pompes.*)

George H. Corliss, Providence, R. I., U. S., 13th October, 1879, for 5 years.

**Claim.**—1st. A steam pumping apparatus; 2nd. The oscillating lever D, having a fixed axis, at one end, and a connection with a crank and fly-wheel, at the other end, in combination with a reciprocating pump piston or plunger connected to said lever at a convenient point between its ends, whereby to give to the crank and its connection an increased throw, as compared with that of the pump; 3rd. The receiver H, connecting the high and low pressure cylinders A A of a compound engine, in combination with the regenerator H; 4th. The receiver H, connecting the high and low pressure cylinder A A of a compound engine together with the regenerator H, in combination with the subtracting apparatus H<sup>6</sup> H<sup>7</sup>; 5th. The regenerator pipes, receiver and pump with suitable operating means for the latter, in combination with additional circulating means, whereby the regenerator may be used for heating feed or other water; 6th. The curved tubes H<sup>2</sup> H<sup>3</sup> with contracted necks h<sup>1</sup>, the end chambers H<sup>5</sup> and holding bolts h<sup>3</sup>; 7th. The hand lever I<sup>5</sup>, with suitable holding means and having a slotted bearing I<sup>8</sup>, in combination with a speed governor and the valve gear of a steam engine, so arranged and constructed that, when the hand lever is clamped, the speed governor I<sup>7</sup> may independently operate to shorten the cut-off, but cannot lengthen it beyond the point fixed by the hand lever I<sup>6</sup>; 8th. The hand lever I<sup>5</sup>, with suitable holding means and having a slotted bearing I<sup>8</sup>, in combination with a pressure governor I<sup>5</sup> and the valve gear of a steam engine, so arranged and constructed that, when the hand lever is clamped, the pressure governor may independently operate to shorten the cut-off, but cannot lengthen it beyond the point fixed by the hand lever; 9th. The hand lever I<sup>5</sup>, with suitable holding means and having a slotted bearing I<sup>8</sup>, in combination with the valve gear of a steam engine and with both a speed governor and a pressure governor, so arranged that, when the hand lever is clamped, either of the governors may independently operate to shorten the cut-off, but neither can lengthen it beyond the point fixed by the hand lever or other governor; 10th. The two adjustable differently formed cams i i<sup>1</sup> in combination with the liberating valve gear of a steam engine, so arranged and constructed that this difference of profile of the cams shall be operative to compensate for the peculiar irregularities in the movement of the steam piston, and thereby secure the liberation of the steam valves at points equally distant from the commencement of the in and out strokes of the said piston; 11th. The two adjustable differently formed cams i i<sup>1</sup> in combination with each other and with the swivel guides K<sup>10</sup>, the steel pointed followers K<sup>1</sup> K<sup>2</sup>, the springs K<sup>12</sup>, for keeping each cam and its followers in contact, and the liberating valve gear of a steam engine; 12th. The rocking lever K<sup>16</sup>, carrying the light lever K<sup>5</sup> with the steel shoulder K<sup>9</sup> engaging with the catch piece K<sup>10</sup> on the valve arms K<sup>14</sup>, the whole moving on a common axis with the valve to be operated, in combination with the adjustable stop K<sup>6</sup>; 13th. The circular sliding exhaust valves L<sup>2</sup>; 14th. A steam cylinder and an outer casing, joined at or near the ends by flexible flanges a<sup>1</sup> a<sup>2</sup>, in combination with the screw thread joints a<sup>3</sup> a<sup>4</sup>, compressing bands a<sup>5</sup> a<sup>6</sup>; 15th. The com-