into the fire-box, as described. 4th. The combination of boiler 22, fire-box 55, cold air pumps 8 and 9, valved pipes 11 and 12, hot air pumps 20 and 21, with valves 16 and 17, and 14 and 15, the petroleum or gas pump 40 and a walking-beam 34, connected to and operating all of said pumps, as and for the purpose described. 5th. In combination with a steam boiler, its furnace and valves for permitting the products of combustion to pass into the boiler from the furnace, the air pumps connecting with the furnace and automatic escape valves located between the pump and furnace, for preventing an excessive admission of cold air to the furnace, substantially as shown and described. 6th. In combination with a steam boiler, its furnace and valves for permitting the products of combustion to pass into the boiler from the furnace, a water pump having its inlet pipe communicating with the boiler below the water line and its outer pipe communicating with the furnace, to increase absorption of heat and promote the evaporation of the water and petroleum, substantially as shown and described. 7th. The combination, with the boiler and the furnace of the water pump P, its pipes and its operating mechanism, the said pump being arranged to take water from the boiler and force it into the furnace, as and for the purpose described. 8th. The combination, with the air pumps and the air-tight furnace, of the escape valves V adapted to automatically carry off an excess of air pressure, as described. 9th. The combination, with the boiler and the furnace, of the return pipe 61 connected to each of the same, as shown and described.

No. 22,253. Car-Coupling.

(Accouplage de Wagons.)

Patrick Ryan, Guelph, Ont., 17th August, 1885; 5 years.

Claim.—1st. In a car-coupling, the combination, with a draw-head of a coupling hook pivoted in the same, a transverse bar held under the draw-head, a bar pivoted to the middle of said bar, and of a spring for pressing the bars upward, substantially as herein shown and described. 2nd. In a car-coupling, the combination, with the draw-head A, of the pivoted coupling-hook H in the same, the bar K, pivoted to the car, the transverse bar L pivoted to the inner end of the bar K, the spring M on the bottom of the car, and of the link M1, connecting the free end of the lever M, substantially as herein shown and described. 3rd. In a car-coupling, the combination, with the draw-head A, of the pivoted coupling-hook H in the same, the transverse bar L under the draw-head, a spring M, for pressing it against the under side of the draw-head, the lever N, pivoted to the under side of the car, and connected with the bar L, and of the rod O, extending upward from the free end of the lever N, substantially as herein shown and described. 4th. The combination, with the draw-head A, of the spindle C having a forked end B within the draw-head, the coupling-hook H pivoted in the fork B, and the spring E, surrounding the spindle C, substantially as herein shown and described.

No. 22,254. Fire-Escape. (*Sauveteur d'Incendie.*)

George Ryer, Rooky Hill, Ct., U.S., 17th August, 1885; 5 years.

Claim.—1st. The padded safety strap *e*, combined with a slip noosed and knotted rope *d*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the ladder and the device composed of the padded strap *e*, and slip noosed and knotted rope *d*, substantially as and for the purpose hereinbefore set forth.

No. 22,255. Combined Washing and Wringing Machine. (*Laveuse-Essoreuse Mécanique.*)

Asa L. Burke, Stratford, Ont., 17th August, 1885; 5 years.

Claim.—1st. The box A, having a concave corrugated bottom *a*, a convex rubber B, formed of angular cross slats *d* secured to the ends *b*, the arms C fastened to the said ends *b*, and having vertical slots *e* made in them to fit over the pivot rod *d*, in combination with the levers *h*, pivoted to the arms C, and the levers F, which are pivoted at their bottom ends to the bars E, fastened to and extending below the bottom of the box A. 2nd. In a washing machine, in which a convex open slotted rubber B is pivoted within a concave corrugated bottom *a*, the pivot rod D passing through the vertical slots *e*, and journalled in the sides of the box A, in combination with the plates *f*, and collars *g*, arranged substantially as and for the purpose specified. 3rd. In a washing machine, in which an open slotted convex rubber B is pivoted on a rod D within the box A, and having a concave corrugated bottom *a*, the combination of the pivoted cap *h*, arranged substantially as and for the purpose specified. 4th. In a washing machine, in which a convex open-slotted washer B is operated within a box A having a concave corrugated bottom *a*, the roller *l*, journalled in the end pieces *m*, which are fixed to the box A, as shown, the roller *j* journalled in the uprights *k*, which are braced together by the spring cross-piece J, connected to the double spring bars L, by the bolts K, in combination with the side pieces *p*, arranged as specified above the shelf *o*, and forming a wringer, substantially as and for the purpose specified. 5th. A box A, formed substantially as specified, the combination of an adjustable tray M, fitting below the box A, and provided with a cleat N, arranged to engage with the cross-piece O, substantially as and for the purpose specified.

No. 22,256. Accoustic Telephone. (*Téléphone.*)

George E. Baker and Southworth Cole, Brantford, Ont., 17th August, 1885; 5 years.

Claim.—Condenser E, with coppered steel bar H soldered on it, in combination with diaphragm D, substantially as and for the purposes hereinbefore set forth.

No 22,257. Straw-Burning Furnace.

(Fourneau Consumant la Paille.)

Thomas A. Stevens, London, Ont., 19th August, 1885; 5 years.

Claim.—1st. A straw-burning furnace A, attached to an upright or horizontal boiler B, for the purpose specified. 2nd. The combination of a straw-burning furnace A, with the boiler furnace I, for the purpose specified. 3rd. The straw-burning furnace A, provided with one or more doors *o*, *o* hung in frames R, R, for the purpose specified. 4th. The shell of a straw-burning furnace A, constructed of two metal plates, with an air chamber between them, in combination with the corrugated bars J, J, and finger grate bar L, for the purpose specified.

No. 22,258. Yoked Hames for Double Harness. (*Attelles à Volée pour Double Attelage.*)

Charles F. Cone, Guyon, Que., 30th August, 1885; 5 years.

Claim.—1st. The draft yoke, herein described, consisting of the hames A and A1, loosely connected at bottom and top respectively by lower and upper bars E, H, and the vertical supporting bar I, for attachment of the draft, as set forth. 2nd. The hames A and A1 having respectively brackets B and B3 to keep the draft from the horses, and attached by bars C and C1 to adjustable clevices B and D, connecting with the ends of bar E, and the top of the hames A and A1 respectively, provided with hinged connecting bars F and F1 carrying clevices G and G1, bar H flexibly connected at both ends to said clevices G and G1, a bar I separating the bars E, H, and draft chain K attached thereto, as set forth.

No. 22,259. Coke Oven. (*Fourneau à Coke.*)

Arthur M. Chambers and Thomas Smith, Chapeltown, Eng., 20th August, 1885; 5 years.

Claim.—1st. A coke oven having the pipe *d* surrounding it, through which heated air is forced in through the open upturned end *i*, the perforated floor *l*, walls *m*, channels *o*, opening *t*, and inclined discharge pipes *u* and *w*, as set forth. 2nd. The combination, with the oven *a*, of the pipe *d*, perforated floor *l*, and discharge pipes *u* and *w*, of the condenser A, tanks B, *g*, E, and scrubber D, for cleaning and separating, as set forth. 3rd. The movable pipe *w*, in combination with discharge pipe H and the movable board or plate I, substantially as and for the purpose herein described and set forth.

No. 22,260. Combined Oat Cleaner and Grader. (*Nettoyeur-Trieur d'Avoine.*)

John E. Wilson, Galt, and Robert Thomson, Woodstock, Ont., 20th August, 1885; 5 years.

Claim.—A series of revolving cylinders, perforated substantially as described, separated by hopper-shaped partitions, in combination with spouts and revolving worm, arranged and operating substantially as and for the purpose specified.

No. 22,261. Invalid Bed. (*Lit d'Invalide.*)

John W. Jacobs, St. Thomas, Ont., 20th August, 1885; 5 years.

Claim.—1st. In an invalid bed, the combination of a mattress frame A, made in three sections hinged together and provided with slats B for springs, and on each outer side of centre section a pivot P, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, in an invalid bed, of the sectional frame mattress A, the movable support F, attached to the head section of mattress by the pins F1, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in an invalid bed, of the sectional mattress frame A, the bolt latches E, compound lever *c* and cross-piece D, substantially as and for the purpose hereinbefore set forth. 4th. In an invalid bed, the combination of the sectional mattress frame A, the seat I provided with cords and clasps K, and the adjustable slats I1 and the fastenings or staples L, substantially as and for the purpose hereinbefore set forth.

No. 22,262. System of Illumination.

(Système d'Eclairage.)

Charles Weiss, Neunkirchen, Austria, 20th August, 1885; 5 years.

Claim.—1st. The combination, with a lamp of any ordinary construction, of an enclosing cap, casing or hood C, arranged to prevent the free access to the burner from below of the surrounding air, and provided with an air inlet D, whereby air from a blower fan, or other similar source may be admitted to the frame from below, substantially as set forth. 2nd. The combination, with a blower fan or other well known source of air under pressure, of a series of lamps adapted for burning liquid hydro-carbons, said lamps being provided with hoods to cut-off access of air to the flame from below, and with inlets for the admission of forced currents of air from the source, whereby chimneys or globes may be dispensed with, as set forth. 3rd. The combination, with the lamps provided with the means, substantially as described, for admitting a forced current of air to the flame from below, of the foraminous or sieve-like diaphragm H, arranged between the air inlet and the burning point, whereby the air is admitted to the flame in thin streams or jets, and the flickering of the flame is avoided, substantially as set forth.

No. 22,263. Circular Saw. (*Scie Ronde.*)

Rudolph P. Gerlach and Frank Stahl, Cleveland, Ohio, U.S., 20th August, 1885; 5 years.

Claim.—1st. The combination of the slotted solid saw-plate, a bit-holder constructed with two jaws connected by a hinge and a steel bit or tooth held by said bit-holder through the medium of a tongue-and-groove joint, substantially as set forth. 2nd. The combination, with the solid saw-plate having slots or seats, curved as shown, and having the represented obliquits to the radius of the plate, of corresponding double-jawed bit-holders, and bits fitted therein, substantially as and for the purpose set forth. 3rd. The combination of the slotted solid saw-plate, with a bit-holder consisting of a rigid jaw, and a movable jaw hinged thereto at a suitable distance from the butt-end thereof, (whereby said jaws may be opened without com-