

grate, outer side walls, inner perforated side and end walls, an air space between said outer and inner walls, and two brick arches interposed between the crown sheet and grate which overlaps each other and afford a combustion flue between them leading upward and away from the flue sheet, whereby the brick arches are maintained at a high degree of heat for aiding in burning the mixture of gas and air, and the combustion of solid and gaseous matter practically confined to the fire-box, beneath the crown sheet and prior to entering the boiler flues. 3rd. In a boiler furnace, a pair of brick arches, affording a combustion flue and having downwardly curved surfaces on each side of the entrance to said flue, whereby the flames and unconsumed combustible matter rising from or near the ends of the furnace are deflected toward the centre of the fire-bed and exposed to favourable mixing conditions, prior to entering the combustion flue. 4th. The combination, with a closed locomotive ash-pan, of the perforated fire-box walls, the air space surrounding said walls and communicating with the ash-pan, and a funnel pipe for conveying air under pressure into the ash-pan and air space.

No. 12,264. Power Apparatus for Churns, Pumps, &c. (*Appareil moteur pour les barattes, pompes, &c.*)

Virgil H. Winchell, Olive, N.Y., U.S., 25th January, 1881; for 5 years.

Claim.—1st. The combination, in a hand power apparatus, of two levers F H I and the connecting link or bar L, when the short arm of lever F is connected to the short arm of lever H I by the link L. 2nd. The combination of main lever F, link or bar L, elbow lever H I, dash rod K and spring P. 3rd. The combination of base B, connecting devices C D, standards E G, main lever E, link or bar L, elbow lever H I and spring P.

No. 12,265. Improvements on Steam Boilers. (*Perfectionnement aux chaudières à vapeur.*)

George H. Babcock, Plainfield, N.J., and Stephen Wilcox, Brooklyn, N.Y., (Assignees of Edwin H. Bennett, Bayonne, N. J.), U. S., 25th January, 1881; for 5 years.

Claim.—A steam boiler, or analogous construction, having castings B provided with tapering holes b, in combination with tubes A having tapered ends A' combined and adapted to serve as specified.

No. 12,266. Improvements on Pipe Joints. (*Perfectionnements aux joints des tuyaux.*)

John Page, Glasgow, Scotland, 27th January, 1881; for 5 years.

Claim.—1st. The joint for cast-iron pipes formed by placing a ring of lead in a groove in the mouth of the faucet, and subsequently forcing in the spigot. 2nd. The lead ring for forming the joints of cast iron pipes, such rings being formed apart and subsequently applied to the pipes.

No. 12,267. Improvements on Surgical Splints and Braces. (*Perfectionnements aux appareils orthopédiques.*)

Charles F. Stillman, Plainfield, N.J., U. S., 27th January, 1881; for 5 years.

Claim.—1st. The combination, with the longitudinally slotted overlapping bars a b, of the slotted overlapping or loose arc f, and the adjustable clamp screws c d e. 2nd. A surgical splint formed of two adjustably jointed supporting bars with terminal plates adapted to secure the splint to the limb, formed of sheet metal punched with protrudent punctures for the better adhesion of the attracting bandages. 3rd. A surgical brace or splint for the foot or leg or both, constructed with a horizontal lever bar pivoted at or about the back of the heel to the lower end of the leg-bar, and extending forward toward the toe, in combination with a spring connected to, and tending constantly to raise said lever bar, and a connection from said lever to the patient's shoe at or about the arch of the foot, whereby an increased leverage is obtained to assist the vertical ankle motion of the foot. 4th. A surgical brace of the described kind constructed with a branch passing under the sole of the patient's shoe, and pivoted on the arch of the sole, at or about the centre of horizontal motion of the foot, in combination with a spring or means of turning the shoe or foot on said pivot in the required direction. 5th. A surgical brace of the kind described, constructed with a branch arranged to pass under the patient's shoe sole and connected therewith at or about the centre of horizontal motion of the foot, by a movable pivot or fastening by which the brace may be attached to or removed from the shoe as required. 6th. A surgical brace for the leg and foot, constructed with a vertical bar attached to the leg and extending towards the heel, in combination with a horizontal bar pivoted at the back and to the lower end of the aforesaid bar, and having a branch pivoted on the arch of the shoe sole, and a spring tending to raise said double pivoted bar, and with it the foot, whereby the vertical ankle movement of the foot is assisted, and its horizontal movement allowed. 7th. A surgical brace of the described kind adapted to be attached to the patient's shoe and formed with a branch arranged to pass under the shoe sole with a slot or opening in said branch, in combination with a turnable pivot or fastening secured to the shoe sole and formed similar to said slot so as to freely admit the overpassage of the same in a parallel position to allow the attachment or detachment of the brace to the shoe and when turned at an angle thereto, to serve to retain the brace upon the shoe. 8th. The combination with a surgical brace or splint for the leg or foot, or both, of the over sliding plates v v' attachable to the shank of the patients shoe, having marginal claws to engage the edge of the sole, and a means of fastening the plates together, with a connection between one of the plates and the lower extremity of the leg or foot bars of the brace, whereby the same becomes detachably connected. 9th. The combination, with a surgical brace or splint for the foot or leg, or both, of a plate affixed to the patients shoe, and provided with a pivoted block, with a means of connecting the same to the lower extremities of the brace-bars and a movable fastening serving to hold said block in rigid position, or allow its free pivotal movements.

No. 12,268. Improvements on Fruit Driers. (*Perfectionnement aux séchoirs à fruits.*)

Oscar F. Tiffany, Buffalo, N.Y., U.S., 27th January, 1881; for 5 years.

Claim.—1st. The combination of a furnace e having a suitable smoke stack f₁ and a vapour stack a₁, with a series of two or more drying apartments B C or D provided with the movable floors M M₁ or M₂ and the ceil-

ing N₁ N₂ or N₃ arranged below them. 2nd. In a fruit drier provided with a series of ceilings N₁ N₂ or N₃, the combination of a furnace e, a vapour stack a₁ and a series of adjustable movable floors M M₁ M₂, for the purpose of regulating the flow of heated air between the floors and ceilings. 3rd. The combination of the apartments B C D, ceiling N₁ N₂ or N₃, with two or more dampers e₁ f for the purpose of controlling the direction of the currents of heated air, or for concentrating said heated air to any point desired. 4th. A fruit drier having the several compartments B C or D provided with the slide ways a a' or a₂, upon which the fruit trays a₂ are placed, in combination with the elevators E F provided with the slide ways b b₁ and a suitable hoisting apparatus, and arranged to slide in guide ways Er. 5th. The combination of a furnace e, a pipe f₁ and a hot box O, for the purpose of distributing the heat at the end of the drier near the hot box. 6th. A fruit drier provided with the friction rollers I I' and K, slide ways E, and elevator E, in combination with the chains G₁ H arranged on pulleys and connected together at K' so as to be adapted to be operated by a lever or crank.

No. 12,269. Improvements on Corn Planters. (*Perfectionnements aux semoirs à blé d'inde.*)

John W. Duval, Grimsby, Ont., 27th January, 1881; for 5 years.

Claim.—1st. The combination of the seed charger c' with the planting slide a' a'. 2nd. The position and the working of the stop blocks e' e' e'. 3rd. The distributing box k' k', wire spring i' i' and seed gauge b' b'.

No. 12,270. Improvements on Sugar Evaporators. (*Perfectionnements aux évaporateurs à sucre.*)

David H. Ingalls, Durham, Que., 27th January, 1881; for 5 years.

Claim.—1st. The combination, with a sugar evaporator, of the corrugated bottom B B with its longitudinal valves C C and clearing channel G, and the self-acting regulator valve H applied to the opening D in the partition E.

No. 12,271. Improvements on Machines for Unhairing and Fleshing Hides. (*Perfectionnements aux machines à débarrasser et écharner les peaux.*)

Archibald W. Reid, Shenectady, N.Y., U.S., 27th January, 1881; for 5 years.

Claim.—1st. The combination of revolving drum or wheel A, holders D, tools C and supporting stand E. 2nd. In machines for unhairing hides wherein the hides are held against moving tools, the tools of flexible material, such as vulcanized rubber or leather, held rigidly in holders of suitable form.

No. 12,272. Improvements on Blanket-Holders. (*Perfectionnements aux attache-couvertures.*)

William H. D. Newth, Detroit, Mich., U.S., 28th January, 1881; for 5 years.

Claim.—1st. In combination with a harness, a series of spring clips secured at suitable points thereto, as a means of holding a horse blanket or fly-net in place. 2nd. In a spring clip, the combination of the roller E journaled to the lever B, with the transverse channel d in the base A.

No. 12,273. Improvements on Potato-Diggers. (*Perfectionnements aux arrache-potatoes.*)

Robert Seldon, Stafford, N.Y., U.S., 28th January, 1881; for 5 years.

Claim.—1st. The wallower R open at its bottom and consisting of the inclined perforated sides r, connected together at their inner ends by the short top plate r₁, in combination with the plate D, cross bar S and chains S₁. 2nd. The combination of the sectional apron H with the travelling screen G, excavator F and guard plate F₁. 3rd. The combination of the sectional apron H with the excavator and travelling screen. 4th. The travelling screen composed of bars d, flat upon their upper faces and rounded on their under faces, and having flattened end d' with rounded edges e₁, embracing opposite sides of the rounded links e e and held in place by the open metallic clamps e'. 5th. The angular standard b provided near its lower end with the stud b₁ in combination with the roller o having the flanges f f₁, recess b₁ and nut b₁ and screw plug b₁.

No. 12,274. Improvements on Fluid Meters. (*Perfectionnements aux compteurs à fluides.*)

John R. Norfolk, Boston, Mass., U.S., 28th January, 1881; for 5 years.

Claim.—The valve mechanism set forth, the same consisting of the combination of the main valve E, casing F and supplementary valve M arranged to operate in the valve chamber B in the manner described.

No. 12,275. Improvements on Apparatus for Bleaching Fruit or other Materials. (*Perfectionnements aux appareils à blanchir les fruits ou autres objets.*)

Oscar F. Tiffany, Buffalo, N.Y., U.S., 28th January, 1881; for 5 years.

Claim.—1st. A chamber D for the bleaching material, and one or more boxes G having slotted or perforated bottoms for holding the material to be bleached, and allowing the bleaching gas to pass up through it, in combination with an inlet opening C, a curtain N and a suitable flue P for conducting the gas that may escape from said curtain to the smoke stack. 2nd. The combination of the bleaching material apartment D having a door E, one or more boxes G provided with a slatted bottom, and a gas chamber L provided with a permanent gas holding chamber K and a damper M. 3rd. The combination of one or more openings C, boxes G and the deflecting device S. 4th. The combination of the inlet openings C, curtains N N and flues O O'. 5th. The gas chamber L terminating in the flue L₁, in combination with the gas flues O O' P P.