

tween the former arranged in vertical series on opposite sides of a centrally located air passage, and inclosed from their inner to their outer edges and an intermediate continuous vertical partition dividing the air passage, the whole being arranged and combined to effect the purpose intended, substantially as set forth.

No. 18,425. Improvements on Lined Conduits and on Machinery for making the same. (*Perfectionnements aux conduits doublés et aux machines pour les fabriquer.*)

Calvin Detrich, Brooklyn, N. Y., U. S., 15th January, 1884; 5 years.

Claim.—1st. The mode herein described of forming conduits, the said mode consisting in clothing a lining pipe with cement compacted within a tubular casing by ramming it into the end thereof, as set forth, and advancing the casing from time to time all substantially as specified. 2nd. The within described conduit, the same consisting of a lining tubing clothed with a continuous coating of cement compacted to a defined external form, as set forth. 3rd. The combination of the casing A, its hopper, the ram B and mechanism for operating the same with the guiding tube H, substantially as set forth. 4th. The combination of the casing A, the ram B and operating lever D, with the duplex toggle joint devices, through the medium of which the ram is reciprocated by the said operating lever, substantially as described.

No. 18,426. Safety Gate for Railroad Cars, &c. (*Barrière de sûreté pour voitures de railroute, &c.*)

Edwin L. Tevis, Philadelphia, Pa., U. S., 15th January 1884; 5 years.

Claim.—1st. The combination of the platform and platform steps of a railway car, with the vertical guides D, D₁, the base A, sliding rail B and lazy-tong connections, substantially as set forth. 2nd. The combination of the system of lazy-tongs, levers and bars forming a safety gate, with the operating lever I, the shaft H having arm n, and the bar M, connected to said system of levers, and the bar n, as set forth. 3rd. The within described safety gate, the same comprising the base A, the opposite guides D, D₁, the sliding rail B and lazy-tongs connections between said rail and the base, as set forth.

No. 18,427. Telephonic Transmitter.

(*Transmetteur Téléphonique.*)

George E. Shaw, Chicago, Ill., U. S., 15th January 1884; 5 years.

Claim.—1st. In a microphone, a diaphragm carrying one electrode, in combination with a bar susceptible of magnetic induction freely supported, and carrying another electrode, and two other bars acting magnetically upon the supported bar, so as to attract or repel the same in opposite directions, substantially as described. 2nd. In a microphone, a bar magnet carrying an electrode and pivoted at one end so as to allow the other end to freely move, in combination with a diaphragm carrying another electrode, and one or more adjustable radial magnets arranged, as shown, to act on the free end of said bar magnet, so as to attract or repel the same in opposite directions, for the purposes described and substantially as set forth. 3rd. In a microphone, a diaphragm of mica pierced to receive an electrode, in combination with such electrode, a bar magnet carrying another electrode and pivoted at one end so as to allow the other end to freely move, and one or more adjustable radial magnets acting on the free end of said bar magnet, so as to attract or repel the same in opposite directions, substantially as described and for the purposes set forth.

No. 18,428. Printing Types.

(*Caractères d'imprimerie.*)

Linn B. Benton, Milwaukee, Wis., U. S., 15th January, 1884; 15 years.

Claim.—1st. A font of types, the bodies of the characters of which are runningwise all multiples of a unit, and the spaces of which are similarly equal to said unit and multiples thereof. 2nd. A font of types, the bodies of the characters of which are runningwise all multiples of a unit. 3rd. A font of types, the bodies of the characters of which are runningwise all multiples of a unit, and the spaces of which are equal to said unit.

No. 18,429. Apparatus for Carrying and Unloading Hay and Grain. (*Appareil pour transporter et décharger le foin et le grain.*)

Robert Griswold, Woody, Kas., U. S., 15th January, 1884; 5 years.

Claim.—1st. A hay rack consisting of a wagon having open work frame sides and e ds, the sides adapted to be readily removed, in combination with a lining net provided with loops at its edges, whereby the whole load may be lifted in a body from the wagon, as specified. 2nd. In apparatus for unloading hay and grain, the portable platform C constructed, substantially as herein shown and described, with ropes E₁ attached at one end to the upper edge of the platform, and provided with snap hooks F₁ at their lower ends, to engage with rings G₁ attached to the inner edge of the netting H₁ placed upon the wagon rack beneath the load, as set forth. 3rd. In an apparatus for unloading hay and grain, the draw rope I₁ constructed, substantially as herein shown and described, with the branches L₁ graded in length, each outer branch terminating sooner than its adjacent inner branch and provided with snap hooks M₁, to engage with the rings G₁ at the outer edge of the netting H₁, whereby the ends of the load will be made to move a little in advance of the body of the said load, as set forth. 4th. The combination, in an unloading apparatus, of the portable platform C having attached ropes E₁, F₁, the netting H₁ having rings G₁ and the draw-rope I₁, with branched end ropes L₁ having hooks M₁ arranged with the outer hooks nearer the point of draft than the successive adjacent inner hooks, substantially as shown and described.

No. 18,430. Ore Roasting Furnace.

(*Fourneau de grillage du minéral.*)

Thomas Walker and John F. Carter, Philadelphia, Pa., U. S., 15th January, 1884; 5 years.

Claim.—1st. In an ore roaster, the combination of one feed pipe I₁¹, retorts B B' B'' B'''¹, vanes or rakes D' D' D'¹, for spreading the ore in a thin sheet, passages I I' I''¹, for carrying the ore from one retort to another discharge passage I V¹, dust chamber N, air opening Q and a fume passage O¹, into dust chamber N in the ore discharge end of lower retort B''¹, and a fume passage and an air opening from the ore receiving end of upper retort B, into a contiguous dust chamber N, whereby the draft can be directed from the lower retort through the series to the upper, or vice versa, substantially as described. 2nd. In an ore roaster, a series of retorts B B' B'' B'''¹, connected one with the other by suitable ore passages I I' I''¹, the said retorts being provided at one or both ends with air passages Q, provided with suitable regulating covers Q''¹, and also provided near one or both ends with fume conduits or passages O O''¹ into a dust chamber N, said fume passages being capable of being closed or opened by dampers or valves P, whereby, by the opening of any fume passage O, when an air passage Q has been opened, a draft will be induced from the air passage to the fume passage, substantially as described. 3rd. In an ore roaster, a series of retorts B B' B'' B'''¹ connected one with the other by suitable ore passages I I' I''¹, the fume passages O O''¹, &c., located at ends of the successive retorts in each series and connecting the interiors of the retorts with a suitable dust chamber N, and provided with suitable mechanism P, to regulate draft or close the fume passages, substantially as described. 4th. In an ore roaster, a double vertical series of retorts B B' B'' B'''¹, the retorts in each series being connected one with the other by suitable ore passages I I' I''¹ and dust chambers N N''¹, each adjoining one of said two series of retorts and connected thereto by fume passages O O' O'' O'''¹, substantially as described. 5th. In an ore roaster, the combination of a retort B, centrally revolving longitudinal shaft D, rakes D', mounted in a series of longitudinal sections rigidly upon said shaft, by means of sectional rings E E', the sections of each of said rings being joined by ears and bolts, and the bases of the rake sections being secured to lugs projecting from said rings, by means of bolt screws or rivets, substantially as described.

No. 18,431. Ore Concentrator.

(*Concentrateur de minéral.*)

Jonathan Miller, Concord, N. H., U. S., 15th January, 1884; 5 years.

Claim.—1st. In an ore concentrator, the combination, with the frame A, of the ore pan D, an axle or rock shaft e, a rod d, sliding through said axle, rock shaft n, rod l, the rails c, a screw-rod m, adjusting nut r, the guide-rod q attached to the rock shaft n, and sliding through rod l, the cam I, springs k and concussion block or buffer K, all constructed to operate, substantially as set forth. 2nd. In an ore concentrator, the pan D provided with a series of laminae or overlapping plates i and having a discharge opening for the concentrates in a line with the point of concussion, in combination with a buffer K, and adjustable support or axle and suitable means for producing the concussion, substantially as set forth. 3rd. In an ore concentrator, the combination, with the ore pan D and the rod l, of the rod d secured to the end of the pan, the rock shaft e, the cylinder i attached to the shaft e, their flanged pistons h, springs k, the cross-head g and the guides f for the rod d, arranged to have a space 18 between the end of the rod and the guide, when the springs k have completed their movement, all constructed to operate, substantially as set forth. 4th. The pan D having its discharge opening d for the concentrates in a line with the point of concussion, and a series of their laminae i with overlapping edges forming its working bottom, substantially as herein described for the purpose set forth. 5th. In an ore concentrator, the pan D constructed as described, and provided with the yielding contact point 14 v, in combination with the actuating cam I, as set forth. 6th. In an ore concentrator, the combination, with the reciprocating ore pan D and the axle e capable of adjustment in the arc of a circle, of the concussion block or buffer K, having its surface 20 curved in the arc of a circle concentric to that described by the front end of the pan, when raised or lowered, substantially as and for the purpose described. 7th. In an ore concentrator, the combination, with the ore pan D constructed as described, and having the discharge outlet c, of the float L arranged in close proximity with the said discharge outlet c, for the purpose of catching the slimes or light metallic particles floating upon the water in the pan, substantially as set forth. 8th. In combination with an ore concentrating pan, the supporting device for the rear end thereof consisting of rod p, axle e, posts n, guides f, cross-head g, having attached to its opposite ends two flanged pistons h, cylinders i, secured to axle e, and springs k, substantially as set forth. 9th. The ore pan D, in combination with rails c, rod l, transverse rock shaft n, socket or boxes p, with vertical guide rod q, sliding through rod l, vertical m, provided with a screw thread and nut r, all arranged to operate substantially as described.

No. 18,432. Method of Recovering Metals. (*Méthode pour faire revenir les métaux.*)

Jonathan Miller, Concord, N. H., U. S., 15th January, 1884; 5 years.

Claim.—The improved method herein described for recovering metallic particles, slimes and similar material containing metal, from liquids, consisting essentially in conducting the liquid and metal bearing material to a settling tank, allowing the gangue to fall to the bottom, drawing off the liquid and forcing it under hydrostatic pressure through a filter press, and removing and drying the filtrate, as set forth.

No. 18,433. Car-Coupling. (*Accouplage des wagons.*)

John P. Lancaster, Goshen, Ind., U. S., 15th January, 1884; 5 years.

Claim.—1st. A draw-head having an open-front upper chamber above the link chamber, and communicating therewith by a longitudinal slot, in combination with a removable T-shaped pin journaled