

through the filters and perforations thereof, and having pipes through which the flow of such liquids or compressed air may be reversed from the said hollow compartment or stand-pipe into the said annular space and be forced by pressure to pass inwardly through the perforations and filters of said tank.

772,723—Blast Furnace. Andrew Batto and James C. Callan, Braddock, Pa.—The combination with a blast furnace, of a conduit communicating with the blast furnace near the top thereof, and a dust collector composed of a curved elbow, a downwardly-extending tube, angularly disposed plates arranged in said elbow and having spaces between the plates communicating with the open air.

772,846—Gas-Seal for Metallurgical Furnaces. Samuel Stewart, Brighton, and Harry Highes, Woodward, Ala.—A gas-seal for metallurgical furnaces, comprising a plurality of sliding gates tapered at the end to fit snugly together when in the closed position, a series of shafts geared together, and a crank on each shaft pivotally connected to one of said gates, and means for rocking one of said shafts.

772,925—Roasting and Smelting Furnace. Harvey Cockell and William H. Fish, Columbus, Ohio.—An ore roasting and smelting apparatus, a furnace, an outlet for the products of combustion therefrom, an ore feeding and roasting chamber located in said outlet having a separate discharge into said furnace, and a fuel-supply communicating with said discharge.

773,266—Amalgamating Machine. Gerard C. Scott, Columbus, Ohio.—The combination of a substantially horizontal tapered mercury-containing casing closed at its larger end and open at its smaller end with an inlet for its larger end, a steam-jacket for the lower portion of the casing, a longitudinal substantially horizontal shaft journaled within the casing, and a closed amalgamating-body carried axially upon the shaft, tapered with the casing and provided with longitudinal substantially radial blades, means for rotating said amalgamating-body and an inclined tailings-discharge chute located adjacent to the smaller end of said tapered amalgamating-body forming a continuation of the tapered casing.

773,246—Magnetic Separator. John W. Carnoghan, Silvercreek, N. Y., assignor of one-half to Albert B. Chapman, Silvercreek, N. Y.—The combination with a downwardly-tapering mill-hopper, of a magnetic separator comprising a downwardly-tapering funnel, which is seated loosely in the mill-hopper, and separating-magnets supported on the funnel at the outlet thereof.

773,310—Mining Machine. William O. Wood and John H. Miller, South Hetton, England.—A mining machine comprising a stationary principal frame, a sliding frame supported in guides upon the principal frame, means for supplying motive power, means for cutting and a drill, said means and said drill being all mounted on said sliding frame, a drill-spindle, bearings for said drill-spindle adapted to swivel and to be adjusted to any position, a semi-circular guideway and means for clamping said bearings in position in said guideways and a swiveling steadying-block upon the stationary frame for the drill also adapted to be pivotally adjusted to any desired position.

773,809—Coke-Oven. George S. Ramsay, St. Marys, Pa.—A coke-oven having a stack, and provided with a main bottom flue communicating at one end with the stack, front and rear upstanding flues communicating at the upper ends with the interior of the oven, and the independent front and rear bottom flues connecting the upstanding flues with the main flue, the flues on each side of the main bottom flue being independent of the flues on the opposite side and also independent of each other.

774,560—Conveyer. Gabriel Carlson, Springfield, Mass.—A conveyer-belt consisting of two parallel edge strips of flexible material, and separate parallel wires extending from one strip to the other to constitute the supporting surface of the conveyer and means to secure the ends of the wires to said strips in separated relation to hold them against lateral or endwise displacement.

774,304—Metallurgical Process. Martin P. Ross, San Francisco, Cal.—A method of producing steel direct from iron

ore, which consists in subjecting the ore to the reducing action of a hydrocarbon-flame, and at the same time to the combining action of a hydrocarbon vapor.

774,387—Hoisting Apparatus for Blast Furnaces. Harry Heffrin, Pittsburg, Pa., assignor to Thomas H. Martin, trustee, Pittsburg, Pa.—A hoisting mechanism for blast furnaces having in combination a skipway, a constant-speed motor, a car movable along the skipway, and means for moving said car operated by said motor and having a slower speed as the car approaches the ends of its travel than between intermediate points.

774,704—Ore Washing Machine. Gustav Seberg, Racine, Wis.—An ore washing machine, a main receptacle, a sluiceway surrounding said receptacle, the floor and outer wall thereof being formed integral with said receptacle, said floor-section being slightly inclined toward said main receptacle, an inner wall and means to adjustably secure said inner wall above said floor-section.

774,731—Portable Conveyer. Jesse Ainsworth, Lyons, Kans.—The combination of a truck-frame mounted on wheels, a conveyer-frame mounted on said truck-frame, and projecting outward therefrom, a conveyer-belt and supporting-rollers on said conveyer-frame, the outer end of said conveyer-frame being divided and hinged transversely to adapt said outer section to fold over upon the main section, a suspending device connected to the conveyer-frame inside of said hinged section, and means on the truck-frame for driving the conveyer.

774,786—Gold Saving Apparatus. Louis Sachse, Oroville, Cal.—The combination with a tank having upper and lower compartments arranged one above the other and having a floor between them, said compartments inter-communicating through an opening in said floor, means restricting the outflow from the upper compartments, means vertically over the opening adapted and arranged to intercept the precipitates from such liquid through the opening into the lower compartment, and means for supplying a current of water in opposition to the downward current of water above said opening in said floor.

775,147—Ore-Roasting Furnace. Andrew P. O'Brien, Richmond, Va.—A roasting furnace comprising a casing, a hollow shaft mounted therein, vertically arranged parallel flat partitions dividing the shaft into vertical compartments, rabble arms extending into said shaft and through the compartment walls, the said rabble-arms having internal air-passages for leading air from one compartment in the shaft through the rabble-arms to another compartment in the shaft.

774,788—Charging Apparatus for Blast-Furnaces. Karl Schneider, Koblenz, Germany.—The combination with adjacent blast-furnaces, of apparatus adapted to supply both of said furnaces from a single hoist, said apparatus consisting of combined charging-receptacle and conveyer receiving the charge of material from the hoist and normally occupying a position above the top of one of the furnaces, and a runway for said receptacle-conveyor leading to a corresponding position above the top of the other furnace.

The problem of long-distance transmission of electric power has come down to the question of insulators for supporting the wires. Very rapid strides have been made in this work during the past year or two, until 40,000 is a common voltage, and now 60,000 is being successfully applied, one such line being in operation in the State of Washington, while another is being installed in California, in both instances bringing water power many miles to the consumer in the form of electricity, to be distributed at a low potential for electric lighting, traction, and general power purposes. The electrical experts are now looking to see the 100,000-volt current in practical and economical service before a great while, which will mean that power may be transmitted from 800 to 1,000 miles. Electric machinery is ready to furnish this voltage to the wire, and to step it down to commercial voltages at the other end. Everything, says *The Iron Age*, is in readiness but the insulator.