

No. 9392. Mill Stone Driver. (*Chasoir de meule de moulin.*)

William Johnson, John Kerner and George W. Marling, Milwaukee, Wis. U. S. A., 22nd November, 1878, for 10 years.

Claim.—1st. The link E with dogs FFFF pivoted to the same, so as to rock up and down. 2nd. The lower plate of the driver A with raised rim C and projections B B, in combination with link E and dogs FFFF. 3rd. The link E, with dogs FFFF pivoted so as to oscillate up and down in combination with flueings HHHH and yielding substances I to prevent vibrations. 4th. The lower plate B and rollers N, in combination with link E.

No. 9393. Improvements on Shirts. (*Perfectionnements aux chemises.*)

Alfred L. Edwards, New York, U. S. A., 22nd November, 1878, for 5 years.

Claim.—1st. The detachable neck band for a shirt, provided with a skirt. 2nd. A woollen shirt having the lower ends of its sleeves made with the wrist bands, or cuffs of linen or cotton, and detachable. 3rd. The woollen shirt provided with the detachable neck band, with shirt bosom and sleeve ends.

No. 9394. Improvements on Hoisting Machines. (*Perfectionnements aux elevateurs.*)

John Fensom, Toronto, Ont., 22nd November 1878 for 5 years

Claim.—1st. A hydraulic hoist in which the discharge water from the cylinder is forced or pumped into a high level tank, or against pressure, when lifting light loads or by the weight of a descending load. 2nd. In hydraulic hoists, the combination of appliances whereby the surplus power of the pressure of the water over that required for elevating the load or the weight of a descending load is utilized for the purpose of elevating the discharge water from the cylinder, or for pumping water to a high level tank or into an accumulator or for forcing a portion of it back into the water main. 3rd. A hydraulic hoist in which the discharge water when the hoist is lifting light loads, is forced or pumped into a high level tank against pressure, by the surplus power of the water over the load, and so arranged that when heavy loads, requiring the full pressure of the water, are to be elevated the discharge water will be passed into a low level tank, the change of the discharge being governed either automatically from the weight of the load or by the operator. 4th. A hydraulic hoist in which the weight of the load in connection with a tilting lever, or its equivalent, placed on the hoist rope automatically, governs the lifting power of the hoist and the consumption of water. 5th. A tilting lever or its equivalent, placed in connection with the hoist rope and adjusted to operate in proportion to the load on the hoist car, in connection with the discharge valve or valves of the water cylinder, which valve or valves and connections are arranged to permit the discharged water to be forced to a high level tank or against pressure when the load on the hoist is light, or to permit the discharge water to pass into a low level tank or to waste when the load on the hoist is sufficient to operate said tilting lever. 6th. In hydraulic hoists, the combination of appliances whereby the discharge water is introduced behind the working face of piston. 7th. A tilting lever, or its equivalent, placed in connection with the hoist rope of an elevator, in combination with a valve or valves on the discharge pipe of the water cylinder. 8th. A working valve for hydraulic hoists, having independent inlet and discharge valves, which valves are placed in water chambers which communicate, and which valves are operated from a cam shaft connected to the check rope. 9th. The combination of appliances whereby the discharge water of a hydraulic hoist may be passed in whole or part to a high or low level tank, either by the automatic action of a tilting lever, or its equivalent, from the weight on the hoist or by the movement of valves by an operator.

No. 9395. Improvements on Safety Valves. (*Perfectionnements aux soupapes de sûreté.*)

Charles McWilliam, Stanstead, Que., 22nd November, 1878, for 5 years.

Claim.—1st. The combination of valve K, casing L and pipe U, with the lever R and weight T. 2nd. The combination of the valve K, lever F and weight O with the casing L and pipe U. 3rd. The combination of the valve K, levers F and R, weights O and T, with the casing L and pipe U.

No. 9396. Vessel for Heating Liquids. (*Vaisseau pour chauffer les liquides.*)

William H. Bennett, New York, and Willard C. Vail, Poughkeepsie, N. Y., U. S., 22nd November, 1878, for 5 years.

Claim.—A vessel for heating liquids, the bottom whereof consists of a plate of metal formed so as to provide the bearing surface A and hollow chamber F projecting therefrom into the interior of the body of the vessel.

No. 9397. Improvements on Fire Engines. (*Perfectionnements aux pompes à incendie.*)

Hiram H. Hill, and Frank Moorten, Augusta, Me., U. S., 22nd November, 1878, for 5 years.

Claim.—A vertically-working steam fire engine the half walking beam F the links E, the piston rod C and cross head D, in combination with pistons of the steam cylinder A and the water cylinder B, and with the connecting rod G and the cranks H of the eccentric shaft I.

No. 9398. Improvements on Steam Generators. (*Perfectionnements aux generateurs de vapeur.*)

Thomas F. Butterfield, De Witt, Iowa, U. S., 22nd November, 1878, for 5 years.

Claim.—1st. The barrel A, the cast metal head thereof provided with the circular flange h, and the suspended furnace B attached to the underside of the head. 2nd. The cast metal head for the barrel A, the same having the circular flange h formed in one piece therewith, and a central opening or aperture.

No. 9399. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

Nathan Hayden, Chicago, Ill., U. S., 22nd November, 1878, for 5 years.

Claim.—1st. In a double neck attachment for sewing machines, the collar B provided with set screw c, in combination with the needle bar A having grooves for the reception of the needles a. 2nd. The combination of the needle bar A, the adjustable collar B having apertures b b, with the needles a. 3rd. The needle plate D having the elongated opening d, in combination with the needles a.

No. 9400. Improvements on Car Axles. (*Perfectionnements aux essieux des wagons.*)

Samuel McGee, Madison and Thomas Nugent, Whippany, N. J., U. S., 22nd November, 1878, for 5 years.

Claim.—1st. The axle or line of shafting, divided lengthwise into two or more parts, having collars mounted on the journals, and all or the inner ends carried in bushing boxes contained in oil-preserving cases. 2nd. In combination with the axle A provided with the collars C, the bushing boxes F having braces f.

No. 9401. Improvements in Vapour Burners. (*Perfectionnements aux becs à gaz.*)

Henry S. Belden, Canton, Ohio, U. S., 22nd November, 1878, for 5 years.

Claim.—1st. A heating orifice and an illuminating orifice arranged as described, so that the gas jets can be regulated independently of each other and can be supplied from a mixing chamber. 2nd. A retort composed of a horizontal tube B having an annular flange c, in combination with a vertical gas feed tube D; 3rd. In combination with the horizontal tube B and vertical gas tube D, the orifice I contiguous to said tubes B D, and the screw valve N passing horizontally through the mixing chamber. 4th. The retort tube B formed with a flange C and vertical feed tube D, in combination with a mixing chamber G having a horizontal orifice I adapted to supply a flame against all of said parts. 5th. A vapour burner provided with the vertical mixing chamber G and the vertical feed tube D connected at their lower ends by the throat E, in combination with the vertical screw plugs K L, which serve to regulate the flow of oil and the flow of gas into chamber G.

No. 9402. Improvements on Grates. (*Perfectionnements aux grilles.*)

Walter M. Shanks, Denmark, Mich., U. S., 22nd November, 1878, for 5 years

Claim.—1st. A self righting pivoted grate having the centre of gravity below the axis and constructed in sections, whereby an automatically determined opening is always made at the top of the grate. 2nd. A pivoted grate having a horizontal axis and constructed of independent movable sections forming an incomplete cylinder, said sections being movable concentrically about the axis. 3rd. The combination of two pivoted end plates d rigidly connected, and a number of independent horizontal segments b pivoted thereto, the whole constituting a revolving grate and smoke consumer. 4th. The combination of segments b having the pins c with the pivoted end plates d provided with a circular series of openings or bearings for the pins. 5th. The combination of segments b having the pins c with feathers f, with the pivoted end plate d having bearings with the concentric recesses g.

No. 9403. Process of Producing Sulphate of Ammonia. (*Procédé de production de sulfate d'ammoniaque.*)

William Growen, Leipsic, Germany, 22nd November, 1878, for 10 years.

Claim.—1st. The mixture of moor or bog with a certain quantity of meadow chalk, for conversion of the sulphur contained in the moor in considerable quantities to sulphuret of calcium during reduction to ashes and gasification, of the moor or bog in the cineriferous furnace. 2nd. In combination with the above mentioned preparation of the moor mass, the regulation of the amount of moisture in the moor mass, for the purpose of obtaining such a quantity of water vapour as is necessary for this procedure. 3rd. In combination with the above named preparation of the moor mass, its complete reduction to ashes in the cineriferous furnace without a vestige of disengaged nitrogen gas being thereby formed or produced. 4th. The composition, production and application of the contact mass, its periodical generation as described. 5th. In combination with the processes of reducing the ashes and gasification of the moor mass in the cineriferous furnace, the total conversion of the azotic organic vapours by means of the contact mass and the other conditions of the ammonium furnace into carbonate of ammonia, carbonic acid, oxide of carbon and hydrogen gas. 6th. The pyrometer composed of a porcelain tube closed at one end with a cork and filled to any desired extent with powdered charcoal, having interposed in the mass pieces of alloy of copper and antimony, varying in proportion as used in ammonium and cineriferous furnaces and an asbestos stopper. 7th. The separation of the produced carbonate of ammonia in the refrigerator into a condensed and a gaseous part, in combination with the conversion of both products into sulphate of ammonia. 8th. The composition and production of the chalk gypsum balls, or marbles, and their application for the conversion of the portion of not condensed carbonated ammonia gas derived from the gasification of the moor mass into sulphate of ammonia in certain degrees of temperature, in quantities, proportions, &c. 9th. The utilization of chalk gypsum marbles, composed as described and saturated with sulphate of ammonia in the process of converting carbonate of ammonia into sulphate of ammonia. 10th. The process of gathering nitrogen from moor mass and producing sulphate of ammonia from the same base, by excavating and treating the moor mass, converting the same into ashes, steam, gas and vapours, excluding the air therefrom meanwhile; decomposing the said steam in combination with the gases by the use of a contact mass subjected to different degrees of heat, thereby forming carbonate of ammonia in a gaseous form, the condensation of the ammonia gas and its conversion into a solution of sulphate of ammonia, the filtration and evaporation of the solution and the production of dry sulphate of ammonia. 11th. The cineriferous furnaces for reducing the moor mass to ashes and gasifying the same, constructed as described and having any suitable number of cylinders a b c d e with covers a', slides b', burning space c', accumulation space d', horizontal