

the crude gas by itself, between the place of its generation and the washer : 2nd. The process of converting the sulphur, or sulphur compounds contained therein, into soluble compounds of sulphur readily removable from the gas, which consists in introducing into the gas, a gas, vapour or vaporisable substance which will form, with the sulphur of the gas, soluble sulphur compounds upon the application of heat and then heating the mixture; 3rd. The process of purifying illuminating gas, freeing it from sulphur and ammonia, which consists in introducing into the gas, a gas or vapour, such as air or caustic ammonia, which will form, with the sulphur of the gas, soluble sulphur compounds, heating the mixture and then washing as set forth.

**No. 10,866. Method and Machinery for Manufacturing Cheese.** (*Méthode de fabrication du fromage et appareil pour cet objet.*)

Archibald H. Brintnell, Belleville, Ont., 22nd January, 1880; for 5 years.

*Claim.*—1st. The combination, with the curd vat or vats, in the process of cheese making, of rotating, travelling or reciprocating agitators, said agitators being adjustable, removable and operated by machinery; 2nd. The combination with the vat agitator shafts C<sub>1</sub>, of the frame C connecting bar C<sub>5</sub>, pulley C<sub>2</sub> C<sub>3</sub> and belt C<sub>4</sub>; 3rd. The combination, with the frame C and mechanism connected thereto, of the bevel wheels F<sub>2</sub> F<sub>3</sub>, shafts F<sub>4</sub> F<sub>5</sub>, gearing F<sub>1</sub> and the main line shaft E; 4th. In combination with the shaft E, counter shaft F, frame F<sub>5</sub> and mechanism for operating the agitators, the slotted wedge f, or its equivalent; 5th. The circular curd sink B provided with the well B<sub>1</sub> and strainer B<sub>2</sub>; 6th. The combination, with the sink B with well and strainer, of the rotating agitators J; 7th. A rotating agitator J provided with the arms J<sub>1</sub> and detachable teeth K having spurs k; 8th. The combination of curd vats provided with mechanical agitators and circular sinks provided with agitators, said vat and sink mechanisms being connected and operated from a line shaft, so that the agitators may be worked intermittently, independently or collectively.

**No. 10,867. Improvements on Feed Water Heaters.** (*Perfectionnements aux Chauffeurs de l'eau d'alimentation.*)

William Baragwanath, Chicago, Ill., U. S., 22nd January, 1880; for 15 years.

*Claim.*—1st. The hand plate g in combination, with the cap opening j, j, pipe space b and cases or cylinders A B; 2nd. The combination of the case A, case or cylinder B having one or more pipes or flues, with the lower steam chamber and the steam pipes D C, both located and operating at or near the bottom; 3rd. The combination of the heater B and water pipes E F, with the case A, flues a and pipes C D arranged to force the steam up through the pipes, and around between the cases; 4th. The combination of the heater B with an outer case or jacket and a scum chamber; 5th. The scum chamber H in combination with the water cylinder B, for removing the scum from the upper part of the heater; 6th. The combination of the scum chamber H, water cylinder B, connecting pipe G, flow off pipe M, for removing the lighter impurities; 7th. The combination of the scum chamber H, water cylinder B, pipe G connecting the scum chamber and water cylinder, and blow off pipe L, for removing the heavy sediment from the bottom of the scum chamber.

**No. 10,868. Improvements in Gates.** (*Perfectionnements aux barrières.*)

William J. Watson (Assignee of Alexander Nicol), Ayton, Ont., 22nd January, 1880; for 5 years.

*Claim.*—1st. The combination of the rocking standards e f and the suspension bars or rods g h, with the horizontal beam d and diagonal brace i.

**No. 10,869. Improvements on Mowing and Reaping Machines.** (*Perfectionnements aux faucheuses-moissonneuses.*)

Daniel B. Campbell, Palisade, Nev., U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. As an improvement in means for operating the cutter bars of reaping and mowing machines, the roller A formed with the continuous spiral groove a, and fitted to give motion to the cutter bar, by means of a lever; 2nd. The spirally grooved roller A, lever b and cutter bar d; 3rd. The spirally grooved roller A fitted on the main axle and the lever b fulcrumed on the frame of the machine, combined for operation together and with the cutter bar.

**No. 10,870. Sash Support and Lock.** (*Support arrête-croisée.*)

Addison Richardson, Port Perry, Ont., 22nd January, 1880; for 5 years.

*Claim.*—1st. The use and application of the ratchet F formed with a weight on the short arm k; 2nd. The stop E in connection with the ratchet F.

**No. 10,871. Improvements on Stove Castors.** (*Perfectionnements aux roulettes de poêles.*)

James M. Harper, El Paso, Ill., U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. The portable cup-caster consisting of the cup A adapted to receive the foot of a stove or other like leg, the said cup having the radial arms A<sub>1</sub> and rollers B.

**No. 10,872. Improvements on Vehicle Springs.** (*Perfectionnements aux ressorts des voitures.*)

John J. Cobb, Grand Rapids, Mich., U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. A single perpendicular coil D formed near the centre of a bar or rod of steel, the two projecting ends of which, extending in the same direction from upper arm H, (the end of which is shaped at angle G into rest F for the box seat, &c.) and lower arm E longer than arm H and bent, near the end, to a perpendicular elbow C and, upon the end, having eyes or ears B; 2nd. A single perpendicular coil D having upper arm H with angle G

and rest F; also having arm E with elbow C and eyes or ears B, in combination with clip ties A.

**No. 10,873. Improvements in Broom Handles.**

(*Perfectionnements aux manches des balais.*)

David A. Scott, Boston, Mass., U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. The expansive broom stock holder A, with its female screw b arranged to extend within it, from its rear end, a portion only of the length of the bore of the said holder, or to, or about to the slits a<sub>1</sub> of the holder, in combination with the handle B having the male screw c, the unthreaded cylindrical extension d and the cone or frustum e.

**No. 10,874. Improvements on Hay Loading Machines.** (*Perfectionnements aux machines à charger le foin.*)

Simeon B. Castle, Syracuse, N. Y., U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. The combination of the frame A; guard rail A<sub>1</sub> and the plate F, the latter provided with slots f; 2nd. The carrier frame E in combination with the link B provide l with sleeve C, the roller R and bolt d; 3rd. In combination with the frame A, guide rails A<sub>1</sub> and pivoted carrier frame E having flexible rake teeth e, the rod b connecting the guide rails, and the inclined platform H attached to the upper part of the frame; 4th. The rake tooth e when formed of sheet metal and with a gradually tapering width.

**No. 10,875. Improvements on Pipe Couplings.**

(*Perfectionnements aux manchons des tuyaux.*)

William J. Stevens, New York, U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. A coupling, the two parts of which correspond in shape, each being half male and half female and are each provided with a cylindrical socket, a partly tubular extension adapted to enter the cylindrical socket of the other part, a ball valve and a pocket or cavity for the reception of such valve when the latter is open; 2nd. The combination, with a coupling composed of the two parts A corresponding in shape with each other, each furnished with a ball valve E and provided with a pocket or cavity F, of a semi-tubular stop G made separate from and extending from each of said parts, and adapted to be inserted within the other of said parts, whereby the said valves are retained in said pockets or cavities and the parts of the coupling prevented from turning independently of each other.

**No. 10,876. Improvements in Telephones.**

(*Perfectionnements aux téléphones.*)

Frank Shaw, New York, U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. The signal wire W extending to a series of subscriber stations, in combination with direct private wires W W<sub>1</sub>, each extending to one or more subscriber stations; 2nd. Placing a receiving operator at the central office end of a signal wire, common to a series of subscriber stations, to repeat the directions received by telephone to a switch board operator who, thereupon, connects the two private wires of the two subscribers between whom communications are to pass; 3rd. The signal wires W W<sub>1</sub> of two or more central offices or stations and the private wires W<sub>1</sub> W<sub>1</sub> of the same offices, or stations, connected by the intermediate wire A<sub>1</sub> A<sub>2</sub> or A<sub>3</sub>; 4th. The signal wires W, the private wires W<sub>1</sub>, the receiving instruments R, the receiving instruments C, the switch devices S, the central switch board S<sub>1</sub>, the connecting ends E and bar B; 5th. The switch S, in combination with the call wire W and private wire W<sub>1</sub>; 6th. The designation of subscribers by numbers to be announced between the subscribers and the central office, to indicate the connections desired, and between subscribers to call and identify the parties with whom conversation is to be had.

**No. 10,877. Improvements on Incubators.**

(*Perfectionnements aux fours d'incubation.*)

Harris W. Oxford, Chicago, Ill., U. S., 22nd January, 1880; for 5 years.

*Claim.*—1st. The incubating oven, composed of straw board or like material, with a perforated bottom; 2nd. An incubating oven provided with a perforated bottom C and turn table F; 3rd. An incubating oven provided with a perforated bottom C, turn table F and trays H, and curtains J suspended over the inside of the door way; 4th. The combination of the incubating oven constructed with the heater K, flame chamber W, cold air chamber N and smoke flue R; 5th. The electro-thermostat provided with regulating screw l and screw P, with the wires L<sub>1</sub> M<sub>1</sub> P<sub>1</sub>, in combination with the incubating oven and the heater; 6th. The combination of an incubating oven with heater K and heat generator consisting of reservoir A<sub>1</sub>, stop cock C<sub>1</sub>, cup E<sub>1</sub>, pipe D and lamp Q.

**No. 10,878. Mode of Raising Bodies in Water or Air and Apparatus therefor.**

(*Mode d'élever les corps dans l'eau ou l'air et appareil pour cet objet.*)

Wilhelm Raydt, Hanover, Germany, 26th January, 1880; for 5 years.

*Claim.*—1st. The raising of bodies in water and air by balloons filled with gas kept in a condensed state in portable or other reservoirs, and the recovery of said gas, or some of it after use, by pumping it back into the reservoir; 2nd. The connection c between the reservoir containing the condensed gas and the balloon to be filled; 3rd. The connection between the reservoir and balloon together with the perforated tube b and the plates a<sub>1</sub>; 4th. The air valves in plate a; 5th. The auxiliary connection g for filling the reservoir with liquid gas, together with the screw attachment to screw on a pressure gauge; 6th. In the inflated balloon, the communication of all the carrying straps p connected to the metal ring l, the rods m, together with the shackle n.

**No. 10,879. Improvements on Window Screens.** (*Perfectionnements aux écrans des fenêtres.*)

George Hartig, Brixton, Eng., 26th January, 1880; for 5 years.

*Claim.*—1st. In combination with the extension screen composed of the pivoted slats and provided with the rigid end bars respectively; 2nd. The