

### No. 19,048. Process and Apparatus for the Manufacture of gas. (*Procédé et Appareil de Production du Gaz.*)

James A. Leadley, Camden, N.J., U.S., 3rd April, 1884; 5 years.

*Claim.*—1st. The process of manufacturing gas, which consists in raising a body or bodies of fuel to an incandescent temperature by blasts of air, and burning the resulting gaseous products, and storing the heat in the fixing chamber containing refractory material, and also heating oil retorts, then dropping a charge of bituminous coal upon the bed of hot fuel and distilling it by the direct heat, and at the same time decomposing steam in the bed of incandescent fuel and passing the resulting gases up through the distilling coal, conducting a portion of the gas to the oil retorts, and thereby carrying the oil into the retort and the vapours through the retorts into the fixing chamber, and finally combining the water gas, the coal gas and the oil gas, and converting them into a fixed homogeneous gas, in the heated fixing chamber. 2nd. The generator having a hollow wall C, having baffle-plate C, forming an air heater, in combination with an air pipe entering the top of the air chamber and the pipes or flues c, c', connecting the base of the air heater with the ash pit and a gas escape flue. 3rd. The generating furnace having air and steam inlet pipes at or near its base, and the connected oil vapourising retort placed in its upper part, in combination with a fixing chamber, and pipes connecting the generating chamber and the retort with the fixing chamber. 4th. The connected retorts placed in the top of the generating chamber, in combination with the pipes g', g'', connecting the chamber with the side retorts, and the oil supply pipe connecting with the gas pipes entering the retorts. 5th. The charging apparatus consisting of two or more cylinders secured to a revolving pivoted base plate having openings corresponding to the cylinders, and a supporting base having an opening and discharge pipe, in combination with the generating furnace having the chute f connecting with the discharge pipe of the charging cylinders. 6th. The charging apparatus, consisting of the cylinders mounted on a revolving plate, as described, in combination with the hollow supporting base having inlet and outlet water pipes, and a discharge chute leading into the furnace. 7th. The generating furnace having inlet air and steam pipes connecting with both sides thereof, in combination with a fixing chamber, a gas pipe F connecting the upper portion of the generator with the fixing chamber, and the gas flues I, II, connecting the ash pits of the generator with the fixing chamber. 8th. In combination with the generator and its eduction gas pipes, the water cooled valves having hollow slides or gates, and circulating tubes, connected as described, and the surrounding water box. 9th. The single chambered decomposing and generating furnace, having two ash-pits, in combination with the hollow wall C, rising a short distance into the decomposing chamber and having baffle plate c forming a zig-sag air heating passage, and air flues c', c'' connecting with the ash pits, the air blast pipe connecting with the top of the air passage and a gas escape flue, as described. 10th. The process of generating gas, which consists in charging bituminous coal into a heated generating chamber containing two bodies of fuel at an incandescent heat, and thereby distilling the rich gas from the coal and reducing it to coke, then decomposing steam by passing it up through one body of the hot coke, and converting any carbonic acid in the resulting gases into carbonic oxide by passing such gases down through the other body of hot coke, and at the same time passing a portion of the hot gas to a heated retort, and thereby spraying oil into such retort and carrying forward the resulting vapours preventing the formation of carbon, and finally combining and fixing all the resulting vapours and gases, in a heated chamber, as described.

### No. 19,049. Churn. (*Baratte.*)

Robert R. Shive, Oxford, Miss., U.S., 3rd April, 1884; 5 years.

*Claim.*—1st. The combination of the cylindrical churn body having a suitable cap or cover, with the dasher, having its staff passing through the cover and formed with perforations, the butter lifter comprising the perforated disk adapted to rest upon the bottom of the churn body, and having its lifting rod passing up through one of the perforations in the dasher and out through the cover, as set forth. 2nd. In a churn, the body A having a flaring mouth B and a cap or cover C, of the base E, chamber G, chambers H, H' and openings I, I', and a cock or faucet K arranged and operating so that the hot or cold water, supplied to the chambers H, will communicate with the chamber G beneath the churn, and be drawn off, as desired, with the chamber set forth. 3rd. The combination of the churn body A, of a casing J secured to the same and having an open or transparent face M, and a thermometer N placed within and protected by the casing, as and for the purpose set forth. 4th. In a churn, the combination of the churn body A, the dasher Q provided with a staff O and formed with perforations, and the butter lifter resting on the bottom of the churn and having its lifting rod arranged parallel with the dasher-staff, arranged and operating, so that the lifter will raise the butter to the top of the churn while the milk will be strained back into the body, as set forth.

### No. 19,050. Railway Rail Chair.

(*Coussinet de Rail de Chemin de Fer.*)

George Weeks, East Oakland, Cal., U.S., 3rd April, 1884; 5 years.

*Claim.*—The combination, with the rails A, A', ties B, B' and fish-plates C, C', of the side plates D, D' having apparatus I, F, chair E having upwardly-extending ends and provided with apertures H, H', locking-block G having aperture K, and angle locking-block F provided with apertures J, J', and having its outer surface at either end bevelled or rounded, and its sides of such a height that when placed in aperture position, its upper edge will be flush with the top of the rails A, A', all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

### No. 19,051. Loom. (*Métier de Tisserand.*)

Arthur M. Rice, Toronto, Ont., 4th April, 1884; 5 years.

*Claim.*—In a weaving loom, a belt E made of canvas or other suitable material, connected at one end to the beam A, and having hooks

F attached to its other end, in combination with a rod G, arranged to form a connection between the warp D and belt E, substantially as and for the purpose specified.

### No. 19,052. Machine for Holding Coal Oil Cans While in Use. (*Machine pour Soutenir les Bidons à Pétrole en Usage.*)

Henry G. Waterson, Victoria, B.C., 4th April, 1884; 5 years.

*Claim.*—The combination of tilting box F, with pivots C, C' and hook B. The adjustable spring strap A, which holds the oil-can in the tilting box. The combination frame J to be used as a frame for supporting tilting box F, and as a stand or table, substantially as and for the purpose hereinbefore set forth.

### No. 19,053. Process and Apparatus for the Manufacture of Gas. (*Procédé et Appareil de Production du Gaz.*)

James E. Leadley, Camden, N.J., U.S., 4th April, 1884; 5 years.

*Claim.*—1st. The process of generating gas, which consists in superheating steam, then passing it down through a body of incandescent or highly heated fuel where it is decomposed, resulting in the production of hydrogen, carbonic oxide and a small per cent. of carbonic acid, then passing these gases up through a separate body of heated fuel, thereby converting the carbonic acid into carbonic oxide and passing them through a charge of distilling soft coal for carrying off the rich gases therefrom, and finally converting them into a homogeneous fixed gas in a heated chamber. 2nd. The process of manufacturing gas, which consists in decomposing and superheating steam by passing it through a bed of heated iron scrap and heated brick work, and then down through a body of incandescent or highly heated fuel, then passing the resulting gases through a second body of heated fuel for converting any contained carbonic acid into carbonic oxide, then enriching the gases by passing them through a charge of distilling soft coal and by mixing with them the vapors of liquid hydro-carbon, and finally converting them into a fixed gas by passing them through a heated fixing chamber. 3rd. In a gas generating apparatus, a generator having a fuel chamber in its base, and a superheating chamber filled with brick work, and a body of iron scrap in its upper part, and having a coal chute passing through its upper heater, in combination with the blast pipes, the steam and oil inlet pipes, connected as described, and the coal charging apparatus, as and for the purpose described. 4th. The generator constructed with a fuel chamber, a superheating chamber, as described, and having the connected air blast steam and oil inlet pipes, in combination with the fixing chamber, the connecting pipe water box and water cooled valve, as and for the purpose described. 5th. A gas generating chamber having a fuel chamber in its base, and a superheating chamber containing refractory material in its upper part, in combination with steam and oil pipes and a coal charging apparatus connecting with the superheater at the base and, a gas eduction pipe connecting with the superheater, as and for the purpose described. 6th. The combination of two generators, each having a fuel chamber in its base, a superheater and charging chute in its upper portion with a pipe connecting them at the base, gas outlet pipes having valves connecting the superheaters with the fixing chamber, means for charging coal and the air and steam connecting pipes, as and for the purpose described. 7th. The two fuel chambers connected by a pipe at their base, and each having steam inlet pipes connecting with them at their charging above the fuel, in combination with the chutes and coal charging apparatus, the gas fixing chamber and the connecting gas pipes from each fuel chamber, as and for the purpose described. 8th. The combination of the two fuel chambers connected by a pipe at their base and each having air and steam inlet pipes, with the chutes and coal charging apparatus, the gas fixing chamber and the connecting gas pipes from each fuel chamber, as and for the purpose described.

### No. 19,054. Process and Apparatus for the Manufacture of Gas. (*Procédé et Appareil de Production du Gaz.*)

James E. Leadley, Camden, N.J., U.S., 4th April, 1884; 5 years.

*Claim.*—1st. The process of generating gas, which consists in, first, raising a body of fuel to an incandescent state by a blast of air, heating a separate body of bituminous coal by the resulting hot gaseous products, and burning the gaseous products in the mixing and fixing chambers, then decomposing steam in the first body of incandescent fuel, passing the resulting hot gases through the body of bituminous coal and thereby distilling and carrying off the carburetted hydrogen and therefrom, carburetting the gases with liquid hydro-carbon and finally combining the gases and vapours in a separate chamber, and finally converting them into a fixed gas in a separate heated fixing chamber. 2nd. The generating furnace, consisting of the lower decomposing arch or chamber B, the upper distilling chamber B', the perforated pipe for partition between them, in combination with connecting pipes for the steam and air, and an eduction pipe for gas, as described. 3rd. The generating furnace, consisting of the upper and lower fuel chambers separated by a perforated partition in combination with the mixing chamber, and the two connecting pipes H and I, one from each chamber, as described. 4th. The generating furnace supply pipes, the lower decomposing chamber, having air and steam supply pipes, the upper distilling chamber and a perforated arch or partition between them, in combination with a fuel charging apparatus connected with the upper chamber, and a gas outlet pipe, as and for the purpose described. 5th. The generating furnace divided into an upper and lower chamber by a perforated partition, in combination with mixing charging apparatus connected with each, the vapourising and mixing chamber having an oil inlet pipe, and a pipe connecting the latter chamber with one of the chambers of the generator, as described. 6th. The generating furnace constructed with two chambers and provided with air and steam inlet pipes, in combination with the charging apparatus, the mixing and vapourising chamber, the fixing chamber and the connecting pipes, as described.