No. 20,143. Process and Apparatus for the Manufacture of Gas. (*Appareil à faire le Gaz.*)

John Hanlon, New York, N. Y., U. S., 6th September, 1884; 5 years.

Claim.—1st. The process of manufacturing gas, which consists in heating up the generating and fixing chambers by the combustion of fuel in the former, and of products from such fuel in the latter, thereby heating a large body of refractory material in the fixing chamber then decomposing steam in the fuel, enriching the resulting gases with hydro-carbons, then combining and fixing the carburetted gas by passing it through a small portion of the heated refractory material and to the seal box, then as the first portion is cooled passing the succeeding volume of gas through another heated portion of refractory material and out to the seal box or main, and thus passing successive volumes of gas as produced through succeeding bodies of heated refractor material, whereby destructive decomposition of the hydro-carbons is prevented and a uniform quality of gas as to candle power is produced. 2nd. The closed generating chambers having a single grate common to both, and communicating with each other at their bases above the grate, in combination with a gas discharge pipe connecting with the top of one of the chambers. 3rd. In combination with a gas generator, the sleeve, and the sliding oil supply pipe fitting in such sleeve, so that the oil pipe may be protected beyond the furnace wall internally when oil is supplied and withdrawn when the supply of oil is shut off. 4th. The two reciprocating generators having a connecting base, in combination with the grate, and one or more vertical partitions in the ash pit for causing the gases to pass from one chamber into the other above the grate. 5th. The two generating chambers connected by a common base, in combination with steam supply pipe connecting with their upper portions, the connecting air blast pipes and the gas outlet pipes leading from the upper portion of each chamber. 6th. The two generating chambers connected at their bases, in combination with the steam superheating chambers placed above them, the gas outlet pipes leading from the generators below, the steam superheating and decomposing chambers, and the air, steam and oil supply pipes, as described. 7th. The two generating chambers having a connecting base, in combination with the steam superheating and decomposing chambers mounted above them, the gas outlet pipes leading from the upper portions of the generators, the outlet pipes for products of comoustion leading from the superheating, and decomposing chambers and supply pipes for air and steam connected, as and for the purpose described. 8th. The two closed reciprocating gas generating chambers having a connecting base, and an arch extending from front to rear above the bottom of the chamber, so as to form a passage from one chamber to the other and support the wall or walls separating the two generating chambers, in combination with connecting air blast pipes and gas discharge pipes, as described. 9th. The two generating chambers connected at their bases, in combination with the steam superheating and decomposing chambers above them, the gas outlet pipes from the upper portions of the generators, the outlet pipes from the superheaters and decomposers for products of combustion, a fixing chamber and pipes connecting the outlet pipes from the generators and superheaters with the fixing chamber. 10th. A gas generator, in combination with a fixing chamber having gas outlet pipes leading from it at different distances from the gas inlet pipe, whereby a small portion of the fixing chamber may be used at one period for fixing the gas and another portion used at a succeeding period, and destructive decompo-ition of hydro-carbon thereby prevented and gas of a uniform candle power produced. 11th. A gas-fixing chamber containing a filling of refractory material and having gas outlet pipes provided with controlling valves or seals, and connecting therewith at different distances from the gas inlet pipe, for the purpose described. 12th. A gas-fixing chamber, in combination with a hydraulic seal box, pipes connecting different sections or portions of the fixing chamber with the seal box, and the valves for closing the pipes, arranged in the seal box for the purpose described. 12th. The combination of a gas eduction pipe of a gas apparatus, with a hydraulic main or box, said pipe projecting into the box, a valve for closing the end of the pipe connected to one end of a pivoted lever in the box, and a rod connected to the other end of the lever and passing up through the top of the box for operating the valve. 14th. A gas generator, in combination with a fixing chamber containing refractory material separated into different sections or bodies by intervening spaces, gas outlet pipes communicating with the spaces between the bodies of material, and a pipe connecting the generator with one end of the fixing chamber, for the purpose described. 15th. In combination with a gas generator, a fuel-feeding hopper having a valve in its bottom, a charge chamber holding a single charge of coal, a storage chamber adapted to hold several charges of coal, a slide for separating its charge chamber from the storage chamber, and a tight fitting lid or cover closing the top of the storage chamber. 16th. The charging hopper having a water-cooled valve in its bottom, a grated slide between the charge chamber and the storage chamber, in combination with a furnace. 16th. The charging hopper having a water-cooled valve at its bottom, a grated slide between its charge chamber and its storage chamber, and a tight-fitting lid closing its top, in combination with a gas generator. 18th. The two reciprocating generators united to a common base freely communicating with each other. 19th. The process of manufacturing gas, which consists in decomposing and superheating steam by passing it through a bed of heated iron scrap, and then through a body of incandescent fuel, substantially as described. 20th. The process of manufacturing gas, which consists in decomposing and superheating steam by passing it through a bed of heated iron scrap, thereby oxidizing said scrap, and then through a body of incandescent fuel, and of alternately reducing the oxidized scrap to a metallic condition by subjecting it to the action of nascent carbonic oxide, thereby enabling the continued use of said scrap without removal from the apparatus, substantially as described.

No. 20,144. Sorghum Evaporator.

(*Chaudière Evaporatoire pour le Sorghum.*)

Philo S. Ewins, West Berkshire, Vt., U. S., 6th September, 1884; 5 years.

Claim.—1st. The evaporating pan divided into sections by means of partitions, and provided with crimps H in its bottom which meet the lower edges of said partitions, and are bevelled near the front and rear walls of the pan, and the partitions each having an extension or lip at one end, substantially as described. 2nd. The evaporating pan divided into sections by means of partitions, each section being provided with one or more flues G, said pan having crimps in its bottom, as specified, and the partitions, substantially as described. 3rd. The combination, with a furnace having a smoke box over its front wall, of an evaporating pan provided with a number of internal flues, the boiler in rear of the pan and a frame provided with the deflector M having the opening *n*, as and for the purpose specified. 4th. The combination, with a furnace having over its front wall a smoke box, of an evaporating pan provided with a number of flues, and a sub-chamber or heater in rear of the evaporating pan, a tube to receive the sap before it enters the heater, said tube being arranged in connection with the evaporating pan, substantially as and for the purpose set forth. 5th. The combination, with a furnace having over its front wall a smoke box provided with a smoke exit, of an evaporating pan provided with a number of flues traversing its length and the partition walls, a heater or sub-chamber arranged at its back and a tube arranged along some of the partitions of the evaporating pan and having its exit orifice in the heater, substantially as described. 6th. The combination with a furnace having over its front wall a smoke box provided with an orifice in its bottom, and a smoke exit and an evaporating pan having a number of internal smoke flues, of the hinged damper arranged in the smoke box, and adapted to operate, substantially as described and for the purpose set forth.

No. 20,145. Car-Coupling.

(*Accoupleur de Wagons.*)

John Skinner, Flint, Mich., U. S., 6th September, 1884; 5 years.

Claim.—1st. The combination with the draw-head, of the bar having a cross-head which overlies the end of the link, the bar having connection to the draw-head at its rear end, and a shoulder supporting the link beneath the weight of the projecting end of the link being substantially counterbalanced by the weight of the bar and cross-head, substantially as described. 2nd. In a car-coupling, the combination, with the recessed draw-head, of a bar lying therein and provided with a cross-head, the ends of which engage with and ride up and down upon the forwardly-inclined walls of a chamber located behind the coupling-pin, substantially as described. 3rd. In a car-coupling, the combination, with a recessed draw-head, of a bar lying therein, a cross-head upon the head of said bar having its lower edge inwardly bevelled, and a chamber or recess within the draw-head having forwardly-inclined walls which engage with the said cross-head substantially as described. 4th. In a car-coupling, the combination, with the draw-head having the recess 6 and inclined walls 7, of the bar 8 having slot 9 and bevelled cross-head 11 having the groove 13, substantially as described. 5th. In a car-coupling, the combination with the draw-head 1 having opening 2 and shoulder 16, of the bar 8 and cross-head 11, the latter having bevelled edge 12 and groove 13 and the pin 3 and link 15, substantially as described.

No. 20,146. Watch Case. (*Boîtier de Montre.*)

The Fahey Watch Case Co. (assignee of Joseph Fahey, New York, N.Y., U.S.,) 6th September, 1884; 5 years.

Claim.—1st. The combination, with the exterior case of a watch, of an interior removable ring or case adapted to receive and contain a watch movement and provided with a pendant for holding it, and with a lug or pin opposite the pendant for locking it within the exterior case substantially as described. 2nd. The combination, with the exterior case of a watch, of an interior removable ring adapted to receive and contain a watch movement and provided with a solid back cap, a pendant upon its side for holding it and with a lug or pin opposite the pendant for interlocking it within the exterior case, substantially as described. 3rd. A ring adapted to receive and contain a watch movement provided with a solid back cap attached thereto, a pendant upon one side for holding it and a lug or pin immediately opposite the pendant for locking it within a containing case, substantially as described. 4th. The combination of an exterior case for a watch having a recess in its band or ring for the reception of the stem, of a pendant and an interior ring or band having a pendant whose stem takes into such recess, and a lug or pin opposite the pendant adapted to take under a shoulder upon the interior of the band or ring of the case, substantially as described. 5th. The ring 1 provided with back cap 5, lug 2 and pendant 3 having stem 4 arranged relatively, as shown, and adapted to receive and contain a watch movement, substantially as described. 6th. The combination, with the exterior watch case consisting of the band or ring 6 provided with recess 9 and caps 7, 8, of the movement containing ring 1 having cap 5 lug or pin 2 and pendant 3 with stem 4, arranged and operating substantially as described.

No. 20,147. Apparatus for Distilling Wood.

(*Appareil distillatoire pour du bois.*)

Albert Brown and Charles S. Nellis, Chittenango, N.Y., U.S., 6th September, 1884; 5 years.

Claim.—1st. The combination of retorts fitted side to side, and provided in their adjacent sides with ducts communicating with each other and with the source of heat, substantially as set forth. 2nd. The combination, of two air tight semi-cylindrical retorts, jointed at their straight or diametrical side, and provided in the centre of their adjacent sides with coinciding longitudinal channels, substantially as described and shown. 3rd. In combination with two or more retorts and fire arches for heating the same, combustion chambers extended through the retorts, flues connecting the combustion chambers at each end of the retorts, intermediate flues connecting the aforesaid flues and dampers for controlling the communication between said flues, substantially as and for the purpose set forth. 4th. The combination of the retorts having the combustion chamber extended through it, horizontal flues communicating at each end with the chimney and connected with the combustion chambers respectiv-