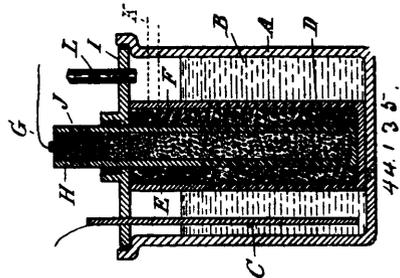


breaking up the currents from the retort, substantially as described. 6th. In portable gas works, the combination of a pipe leading from a source of fluid to be vaporized, a cast integral retort into which the pipe leads provided with a primary set of connected channels in which the fluid is subjected to partial vaporization, and with a secondary set of connected channels communicating with the primary set, and in which the partially vaporized fluid is subjected to further vaporization, said retort having a partition chamber with a dished bottom forming a flame spreader located at the point of greatest heat and at the exhaust passage of the retort, and a delivery pipe for the gas, substantially as described. 7th. In portable gas works, the combination of a pipe leading from a source of fluid to be vaporized, a cast integral retort into which the pipe leads, provided with a primary set of channels in which the fluid is subjected to partial vaporization, and with a secondary set of channels communicating with the primary set, and in which the partially vaporized fluid is subjected to further vaporization, said retort having a chamber with a dished bottom forming a flame spreader located at the point of greatest heat and at the exhaust passage of the retort, and a delivery pipe for the gas, substantially as described. 8th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort and gas from the retort to the holder, and gas from the holder to the place of use, an air injector opening into the pipe between the retort and the holder, provided with an inlet and with a valve mounted on a rock shaft to move it from or toward its valve seat to open or close it, an automatic valve trip, and a rod connecting the valve shaft with the valve trip, the pipe from the retort to the holder being provided with a discharge nozzle entering the main injector pipe between the valve and the holder, substantially as described. 9th. In portable gas works, the combination of an oil supply pipe tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort and gas from the retort to the holder, and gas from the holder to the place of use, an air injector provided with an air inlet, and with a valve mounted on a rock shaft to move it from or toward its valve seat to open or close it, an automatic valve trip, and a rod connecting the valve shaft with the valve trip, and with an auxiliary pipe or pipes opening at the ends into the main injector pipe, the pipe from the retort to the holder being provided with a discharge nozzle opening into the main injector pipe between the point where the ends of the auxiliary pipe or pipes enter the main injector pipe, substantially as described. 10th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort, and gas from the retort to the holder, and gas from the holder to the place of use, an automatic valve trip comprising a pivoted member and a leverage bar connected to the pivoted member at the end furthest from the gas holder, and with a rod or link at the end nearest the gas holder movable up and down by the holder as it reaches the limits of its movements, substantially as described. 11th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort and gas from the retort to the holder, and gas from the holder to the place of use, an automatic valve trip comprising a pivoted member and a leverage bar connected to the pivoted member at the end furthest from the gas holder, and with a rod or link at the end nearest the gas holder movable up and down by the holder as it reaches the limits of its movements, and means shiftable by the tipping of the pivoted member and bars from one end of the trip to the other, substantially as described. 12th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort and gas from the retort to the holder and gas from the holder to the place of use, a valve comprising chambers separated by a valve seat and provided with a port, a valve disc fitted against the valve seat provided with a port and with a central projection on the valve disc, and a spring arranged in the hollow head of the valve stem and holding the valve disc constantly to its seat, substantially as described. 13th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the retort and gas from the retort to the holder and gas from the holder to the place of use, a valve comprising chambers separated by a valve seat provided with a port, a valve disc fitted against the valve seat provided with a port and with a central projection, a valve stem provided with a hollow head engaging the projection on the valve disc, a spring arranged in the hollow head of the valve stem and holding the valve disc constantly to its seat, and means for limiting the extent of movement of the valve disc, substantially as described. 14th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort and gas from the retort to the holder and gas from the holder to the place of use, the oil tank being provided with a hot air surrounding jacket, and a hood enclosing the retort and communicating with the interior of the oil tank jacket, substantially as described. 15th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort and gas from the retort to the holder and gas from the holder to the place of use, the oil tank being provided with a space above the surface of the oil for the reception of air under pressure, a pipe opening into the oil tank above the oil and leading

to the gas holder, and a valve or cock in such pipe to permit or prevent the passage of carburetted air from the oil tank to the gas holder, substantially as described. 16th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort and gas from the retort to the holder, and gas from the holder to the place of use, a gas pressure receptacle intermediate the retort and the gas holder, a pipe leading from the receptacle and entering the oil pipe intermediate the oil tank and the retort, and a valve in such pipe connected by a rod *g*, with the valve trip, whereby the valve is automatically operated to permit or prevent the passage of gas from the receptacle to the oil pipe to facilitate the flow of oil, substantially as described. 17th. The combination of a generator retort provided with vertical flues extending through the same through which heat and air may pass, a surrounding jacket inclosing the retort, and a pipe leading from the jacket for conveying heated air to the place of use, substantially as described. 18th. In portable gas works, the combination of an oil supply tank, a gas generating retort, a gas holder, pipes for conveying oil from the tank to the retort, and gas from the retort to the holder, and gas from the holder to the place of use, a gas pipe leading from the retort to a gas holder, an emergency valve in such pipe intermediate the retort and the holder, and means actuated by the holder when it rises above its normal limit for automatically operating the valve to close the gas pipe, substantially as described.

**No. 44,135. Electrolytic Cell. (Cellule électrolytique.)**



Thomas Craney, Bay City, Michigan, U.S.A., 1st September, 1893 : 6 years.

*Claim.*—1st. In an electrolytic cell, a combined anode and diaphragm, consisting of two perforated holders, one within the other, a porous non-decomposable material packed between the cells of the holder, and a carbon anode mainly composed of a filling of coarse particles of carbon contained in the inner holder, and forming open interstices for the passage of the liquid to be electrolyzed, substantially as described. 2nd. In an electrolytic cell, a combined carbon anode and diaphragm, consisting of two perforated holders, one within the other, a porous non-decomposable material packed between the cells of the holders, a filling of relatively coarse particles of carbon, and means for the escape of the gas from the inner holder. 3rd. In an electrolytic cell, the combination with the vessel A containing the cathode, of a combined anode and diaphragm, consisting of the perforated holders D and E, the filling of non-decomposable porous material F, between the holders, a filling of particles of carbon L in the inner holder, the perforations J, in the upper end of the holder E, and the terminal G, embedded in the carbon pencil described.

**No. 44,136. Fire-lighter.**

(Composition pour allumer le feu.)

The Southgate Manufacturing Company, assignees of James Chaumon, all of Bridgewater, Somersetshire, England, 1st September, 1893 ; 6 years.

*Claim.*—As a new article of manufacture, a fire-lighter composed of resin, petroleum, wood dust and tar mixed together in substantially the proportions specified.

**No. 44,137. Horse Collar and Hames.**

(Collier et attelle de cheral.)

George Dietrich Ohl, Milwaukee, Wisconsin, U.S.A., 1st September, 1893 ; 6 years.

*Claim.*—A horse collar, comprising two sections vertically adjustable one upon the other, curved hame sections longitudinally adjustable on the lower collar section, and another hame section that is fast on the upper collar section, but adjustably engaged with the former hame sections. 2nd. A horse collar, comprising two sections, vertically adjustable one upon the other, detachable layers of filling intermediate of the opposing ends of the collar sections, curved hame sections longitudinally adjustable on the lower collar section, and another hame section that is fast on the upper collar section, but adjustably engaged with the former hame sections. 3rd. A horse collar, comprising two sections vertically adjustable one upon the other, a series of guide lugs radially disposed on the lower collar section, tubular hame sections loosely