hydrocarbon, substantially as and for the purposes described. 7th. As a new article of manufacture, a lubricant composed of deodorized *reduced* oil of the class of petroleum hereinbefore described, substantially as set forth. 8th. As a new article of manufacture, an *undistilled or residual product* of petroleum of the class hereinbefore described, containing in solution an oxidating oxide or oxides by which substantially all of the sulphur compounds of the oil are bound, substantially as set forth. 9th. As a new article of manufacture, a lubricant composed of *reduced* oil of the class described, containing in solution an oxidating oxide or oxides by which substantially all of the sulphur compounds of the oil are bound, substantially as set forth. 10th. As a new article of manufacture, *reduced* oil of the class described, containing in solution an oxidating oxide or oxides, and a hydrocarbon having an acid reaction, such as oleic acid, substantially as set forth. 11th. As a new article of manufacture, the described *undistilled* deodorized petroleum of the class hereinbefore specified. 12th. As a new article of manufacture, the described *undistilled* deodorized petroleum of the class specified free from water and alkali. 13th. As a new article of manufacture, the described *undistilled* deodorized petroleum of the class specified free from water and alkali, and holding in solution one of the specified heavy metal or metals which are precipitated from their solutions by hydrogen sulphide.

No. 37,269. Art of Purifying Petroleum.

(Art de purifier le pétrole.)

The Solar Refining Company, Lima, (assignees of Herman Frasch, Cleveland), both of Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors from a still through a number of heated independent columns or filters charged with a purifying agent, and connected with the still and maintaining said independent columns at a relatively uniform temperature, whereby the vapors passed through the columns are uniformly purified, substantially as and for the purposes described. 2nd. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors through a number of heated independent columns or filters, charged with a metallic purifying agent and connected with the still, and maintaining said columns at a relatively uniform temperature, whereby the vapors passed through the columns are uniformly purified, substantially as and for the purposes described. 3rd. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors through a number of heated independent columns or filters charged with a metallic purifying agent and connected with the still, and maintaining said independent columns at a relatively uniform temperature of about 520 degrees Fahrenheit, whereby the vapors passed through the columns are uniformly purified, substantially as and for the purposes described. 4th. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors from the same still through a number of independent columns or filters charged with metallic purifying agents, and maintaining a uniform passage of the vapors through the several columns or filters by producing a partial vacuum on the exit side of the same, substantially as described. 5th. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors from the same still at a uniform rate through a number of independent columns or filters heated to a uniform temperature, substantially as described. 6th. In the purification of oil containing sulphur compounds, by subjecting such oil or the vapors thereof to a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by treating the same with a chemical solvent, whereby the said sulphide is removed, substantially as and for the purposes described. 7th. In the purification of oil containing sulphur compounds, by subjecting such oil or the vapors thereof to a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by treating the same with a chemical solvent, and then washing with water, substantially as and for the purposes described. 8th. In the purification of oil containing sulphur compounds, by passing the vapors of such oil through a column containing a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by passing through the column a chemical solvent, and then passing water through the same, substantially as and for the purposes described. 9th. In the purification of oil containing sulphur compounds by passing the vapors of such oil through a column containing a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by passing through the column a chemical solvent, passing water through the same, and then heating the column, substantially as and for the purposes described. 10th. In the purification, by metal, of oil containing sulphur compounds, the improvement consisting in treating or washing the metal, coated with sulphide, with dilute acid, so as to renew the said metal for further action on the sulphur compounds, substantially as and for the purposes described. 11th. In the purification of oil containing sulphur compounds with solid purifying material in a suitable state of division, whose action becomes impeded by the formation of a metallic sulphide coating on the particles of said material, the improvement consisting in washing the coated material with a solvent of the metallic sulphide, and thus exposing anew the active surfaces of said particles, substantially as described. 12th. In apparatus for the purification and desulphuration of petroleum vapors, the combination of several columns or filters containing a purifying agent, a vapor supply pipe entering said columns, discharge pipes leading therefrom, and an exhauster or exhausters, whereby uniform and equal passage of the vapors through each of the columns is maintained, substantially as and for the purposes described. 13th. In apparatus for the purification and desulphuration of petroleum vapors, the combination of several columns or filters containing a purifying agent, a vapor supply pipe communicating with the columns, discharge pipes leading therefrom, and a steam ejector or ejectors for exhausting the vapors from the columns, substantially as and for the purposes described. 14th. In apparatus for the purification and desulphuration of petroleum vapors, a column containing the purifying agent, having a vapor inlet and outlet, an opening at the upper part of the column for the introduction of a purifying or cleansing liquid, and an outlet leading from the base for its discharge, substantially as and for the purposes described. 15th. In apparatus for the purification of petroleum vapors, a series of columns containing purifying material and connected with the vapor space of the still, and with a condenser, and a vessel in which the said columns are situate, said vessel containing a liquid which surrounds the said columns, and is designed to transmit substantially equal heat thereto, and being provided with means whereby the contents of the said vessel are heated, substantially as and for the purposes described.

No. 37,270. Art of Purifying Petroleum.

(Art de purifier le pétrole.)

The Solar Refining Company, Lima, (assignees of Herman Frasch, Cleveland), both of Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. In the art of desulphurizing petroleum or its distillates by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described, consisting in removing the sulphide coating, thereby exposing fresh metallic surfaces, substantially as and for the purposes described. 2nd. In the art of desulphurizing petroleum or its distillates, by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described, consisting in agitating the particles of the sulphide-coated purificator, and thereby abrading and removing the sulphide and exposing fresh metallic surfaces, substantially as and for the purposes described. 3rd. In the art of desulphurizing petroleum or its distillates by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described, consisting in agitating the particles of the sulphide-coated purificator, and thereby abrading and removing the sulphide and exposing fresh metallic surfaces, and subsequently washing the purificator with a solvent, substantially as and for the purposes described. 4th. In the art of desulphurizing petroleum, the improvement consisting in passing the vapors of petroleum through a column or vessel containing a solid purificator, and subjecting the contents of such column or vessel to agitation during the passage of the vapors, substantially as and for the purposes described. 5th. In the art of desulphurizing petroleum or its distillates by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described consisting in agitating the particles of sulphide-coated purificator, and thereby abrading and removing the sulphide and exposing fresh metallic surfaces, and washing the purificator with water, substantially as and for the purposes described. 6th. In apparatus for purifying petroleum, an agitatory vessel containing a purificator interposed in the path of the vapors between the still and condenser, substantially as and for the purposes described. 7th. The combination, with a petroleum still and a condenser, of a rotatory vessel containing a permeable purificator, and interposed in the path of the vapors, substantiaily as and for the purposes described. 8th. A vessel for purifying petroleum, having trunnions on which it is journalled and is axially movable, and having upright partitions which cause the vapors passing therethrough to assume a circuitous course, substantially as and for the purposes described. 9th. A rotatory vessel for purifying petroleum, having a vapor inlet and outlet, and having upright cross-partitions provided with openings at or near the middle, substantially as and for the purposes described. 10th. A vessel for purifying petroleum, having hollow trunnions on which it is journalled and is axially movable and having chambers formed by upright partitions which cause the vapors passing therethrough to assume a circuitous course, and peripheral openings in the said chambers, substantially as and for the purposes described. 11th. The rotatory drum or vessel 2, communicating at the ends with the still and with the condenser, and having perforated or grated end partitions 13, substantially as and for the purposes described. 12th. A vessel for purifying petroleum vapors, containing a permeable purifying material, and upright partitions dividing the vessel into chambers, provided with openings through which the vapors pass in a circuitous course, substantially as and for the purposes described.

No. 37,271. Composition for Purifying Canadian and Similar Petroleum. *(Composition pour purifier le pétrole Canadien et autres semblables.)*

The Solar Refining Company, Lima, (assignees of Herman Frasch, Cleveland), both in Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The herein described new composition for removing or destroying the sulphur compounds in Canadian and similar petroleum, the same being in a finely divided form or powder and having its individual grains or granules composed of lead oxide, and copper oxide in connection with a less active or an inactive substance or carrier, such as iron oxide, plaster or other pulverulent substance, substantially as and for the purpose described. 2nd. The herein described new composition for removing or destroying the sulphur in Canadian and similar petroleum, the same being in a finely divided form or powder and having its individual grains or granules composed of *one or more* of the oxidating oxides, in connection with a less active or an inactive substance or carrier, such as iron oxide, plaster or other pulverulent substance, substantially as and for the purposes described. 3rd. The herein described new composition for removing or destroying the sulphur compounds in