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A. G. SAHEURS
PROCESSES AND APPARATUSES FOR THE REGENERATION OF A LIQUID OR OTHER APPLICATIONS
Filed Jan. 10, 1940

Serial No. 313,281

3 Sheets-Sheet 1

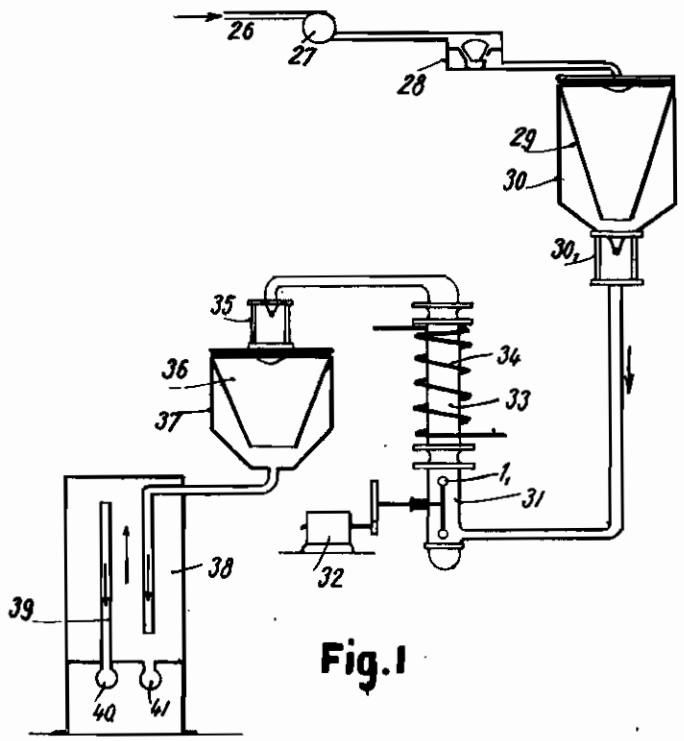

Fig.1

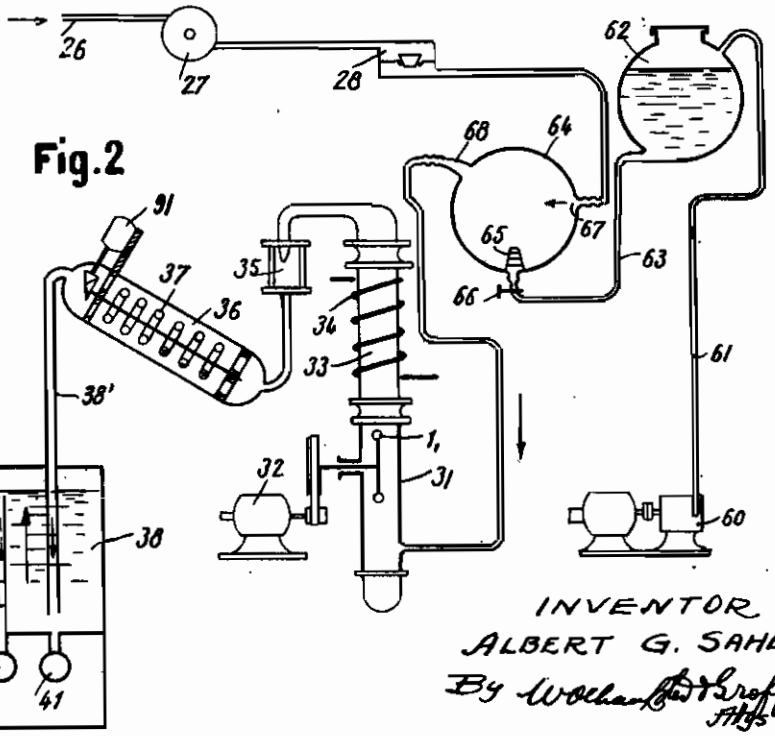

Fig.2

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Fig.3

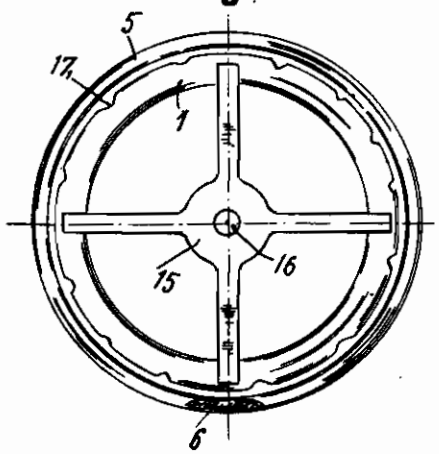


Fig.4

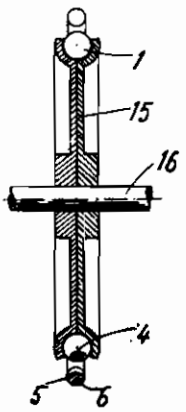
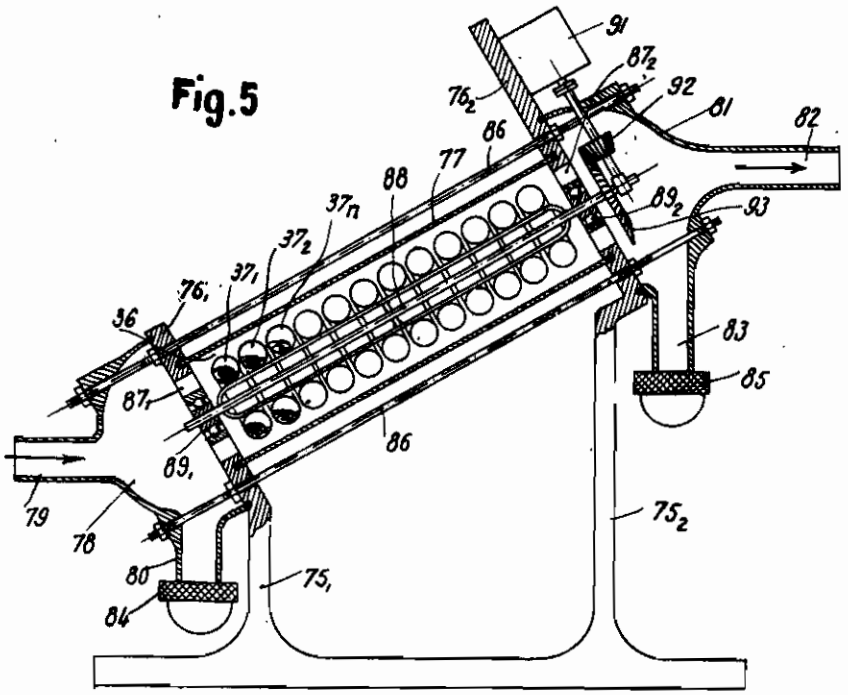


Fig.5



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3 Sheets-Sheet 3

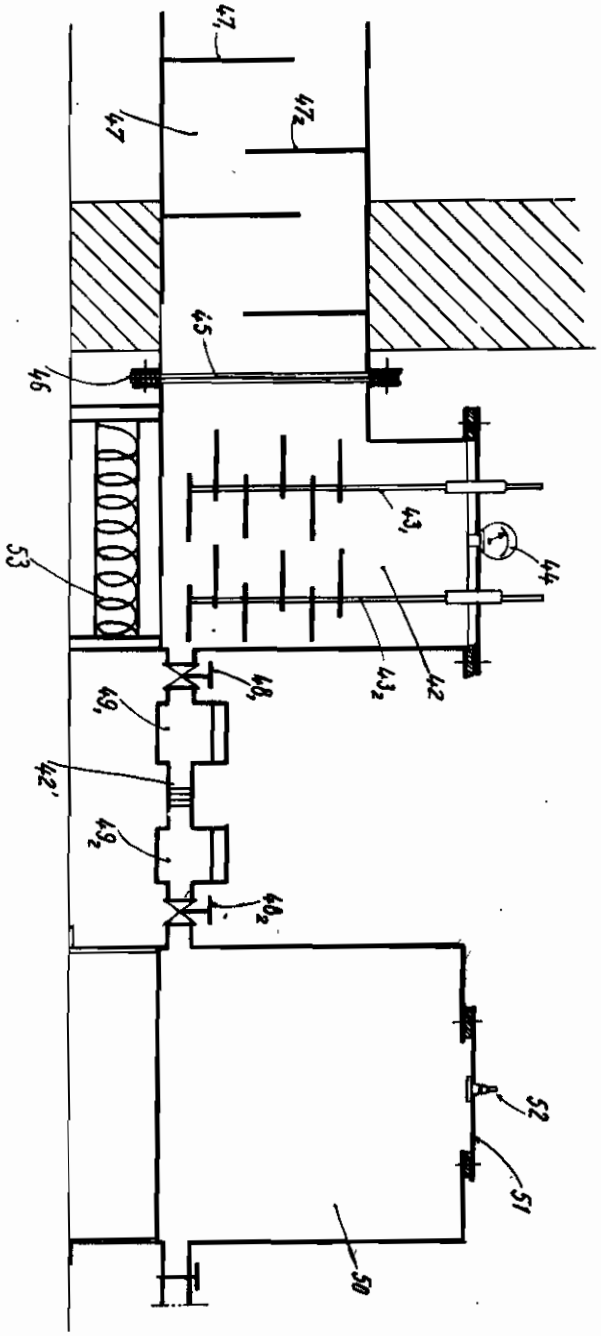

Fig. 6

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ALIEN PROPERTY CUSTODIAN

PROCESSES AND APPARATUSES FOR THE REGENERATION OF A LIQUID OR OTHER APPLICATIONS

Albert Gastón Saheurs, Barentin, France; vested in the Alien Property Custodian

Application filed January 10, 1940

The invention has for its object to perform the manufacture of synthetic gasoline from salt water by means of effluvia or emanations produced through a development of electrostatic energy.

The invention extends to a process for producing synthetic gasoline according to which one mixes under pressure worn oil, finely divided graphite and alcohol; this mixture is submitted to an electrolytic action; this mixture is submitted to the effluvia of quicksilver lamps, which permits to obtain a homogeneous and stable colloidal solution; said colloidal solution is mixed with a salt water mass; the mixture is submitted to the effluvia of quicksilver lamps.

The invention also extends to the various apparatuses necessary for performing this process.

These apparatuses comprise the characteristics which result from the following description and especially from the claims appended at the end of said description.

Installations for the working up of these processes are represented, by way of example, on the enclosed drawing on which:

Fig. 1 is a schematic sectional view of an installation in accordance with the invention for the manufacture of synthetic gasoline.

Fig. 2 is a schematic cross section of another installation, in accordance with the invention, for the manufacture of synthetic gasoline.

Figs. 3 and 4 are respectively a front view and a sectional axial view of a lamp.

Fig. 5 is a longitudinal sectional view of an apparatus used in the installation of Fig. 2.

Fig. 6 is a longitudinal cross section of an installation for the preparation of a colloidal solution.

Fig. 1 shows an installation for the manufacture of synthetic gasoline from salt water:

Sail salt water gets to **28**, traverses a distributor **27**, then comes to a constant level vat **26**.

A colloidal preparation is contained in a conical receiver **29** forming mixer and combined to a filter-preparer **30**. The salt water traverses said preparation then flows, after crossing an isolating part 30_1 into a receiver **31**, containing lamps I_1 analogous to those below described. These lamps are set in rotation through a motor **32**.

At the outlet of receiver **31**, the liquid passes through a tube **33**, surrounded by a coil **34** which is traversed by an electric current.

The liquid then flows through another isolating part **35**, then goes a conical receiver **36**, forming a mixer and containing a colloidal preparation different from the first one, and combined to a filter **37**.

At last, the liquid runs to a decantation vat **38**. The gasoline comes out through **39** and is collected at **40**; the residue water is drained at **41**.

To prepare the two colloidal solutions utilized above, the installation represented on the Fig. 6 can be used to advantage.

Said solution comprises a preparation vat **42** containing two electrodes 43_1, 43_2; and the pressure of which is indicated on a manometer **44**. Said vat is separated from an exhaust muffler **47** having baffles 47_1, 47_2 by a safety plate **45** having a gasket **46**. The preparation vat is heated by a resistance **53**; it communicates with an expansion vat **50** having a lid **51** and a valve **52**, through the medium of a pipe on which two valves 48_1, 48_2 and two apparatuses 49_1, 49_2 with lamps I_1 . . . are intercaled.

This installation operates as follows:

In the preparation vat **42**, mineral oil is introduced, worn oil, for instance, or oil coming from the draining of engines. A graphite of well determined origin, very finely sifted and having a carbon contents of at least 99% is added to it. At last, a certain proportion of alcohol variable according to the proportion of alcohol to be obtained in the fuel is added. The quantity of alcohol to be added is higher, by 10% at least, than the quantity of alcohol required in the final product.

The above mixture is performed under a certain pressure. The electrodes 43_1, 43_2 are then put under a tension of 110 or 220 volts. At the end of about 10 hours, the mixing of the products introduced in the vat **42** is intimately secured.

By opening the valves 48_1, 48_2 and under the action of the pressure in the vat **42**, the mixture is sent into the expansion vat **50**, passing in the lamp apparatuses 49_1, 49_2. Under the action of said lamps, the colloidal mixture is fixed, i. e. made stable. It is no longer to be feared that after a certain time has elapsed, the graphite will deposit at the bottom of the receiver by gravity, not that the oil and alcohol will separate due to their difference in densities.

The vat **58** which is used for storing the stabilized colloidal preparation may also serve to incorporate the mixture to soft charcoal used as support.

In case of explosion in the preparation vat **42**, the safety plate **45** will tear off and the gaseous products issued from the explosion will expand by turning round the baffles 47_1 47_2 of the exhaust **47**.

The Fig. 2 represents another installation for the manufacture of synthetic gasoline which

makes use, as that of Fig. 1, the colloidal solutions obtained with the apparatus of Fig. 6.

In the installation of Fig. 3, a compressor **60** discharges air, through a pipe **61**, into a cylindrical receiver **42** containing the colloidal preparation.

Said colloidal preparation, under pressure, is sent through a pipe **63** into a mixer constituted by a glass capacity **64**, through the medium of a nozzle **65** controlled by a cock **66**.

The glass capacity admits, on the other hand, through an inlet **67**, the salt water driven by a distributor **27**. Said distributor **27** admits the salt water through a pipe **28** and discharges it into a constant level vat **28** connected to the glass capacity **84**.

In said capacity, the salt water mixes with the injected colloidal preparation. The mixture formed leaves the capacity through the tube **68** and, is introduced into a receiver **31** containing the quicksilver lamps 1_1 set in rotation through a motor **32**.

At the outlet of the receiver **31**, the liquid passes in a tube **33** surrounded by a coil **34** which is traversed by an electric current.

The liquid then crosses an isolating part **35**, then arrives to an inclined tubular receiver **36** containing the quicksilver lamps **37** of circular shape, and driven in a movement of rotation over themselves by a motor **81**.

The liquid having flowed across said receiver **36** is decanted in a vat **38**. The gasoline produced is collected at the surface through the pipe **39** and evacuated through the pipe **40**. The residual water is drained through the pipe **41**.

Quicksilver lamps used in the installation of Figure 2 are shown on the Figures 3 and 4.

The lamp **1** assumes the shape of a torus mounted on a frame **15**, which is, itself, mounted on a rotation axle **18**.

The stationary capacity **5** surrounds completely the lamp **1**, which shows, on the other hand, baffles or rugosities 17^1.

The quicksilver **4** tends to accumulate constantly at the lowest point and flows along the inside walls of the lamp **1**. When said lamp **1** rotates, the baffles 17^1 drive the quicksilver **4**, then let it fall again. This motion creates a tension inside the lamp; there results an electric field which is influenced by the quicksilver in the stationary capacity **5**.

It is an advantage to introduce in the lamp **1** or in the capacity **4** a rare gas (neon, krypton, etc.) under small pressure. An increase in the electrostatic effect is thus obtained.

The electrical energy developed makes itself visibly known through luminous phenomens. The colour of these lights depends on the pressure inside the isolating body and on the nature of the filling gas. It is an advantage to consider a pressure from 4 to 10 m/m of quicksilver.

Radioactive emanations may also be added to the atmosphere of the lamp **1**, in order to still further the formation of effluvia.

The tubular receiver **36**, containing the quicksilver lamps **37** used in the installation of Figure 2 is represented on the Fig. 6 and comprises a frame **75**, two feet of which 75^1 75^2 support two inclined and parallel cheeks 78^1 78^2. Between said two cheeks 76^1 76^2 a cylinder **77** is pressed. An inlet chamber **78** with issuing pipe **79** and impurities exhaust tube **80**, is mounted on the lower cheek 76^1. An outlet chamber **81** with outlet pipe **82** and impurities exhaust tube **83** is mounted on the upper cheek **78**. Each exhaust tube is stopped by a removable plug **84—85**. The whole of the inlet chambers **78** and outlet chambers **81** and the cylinder **77** is pressed on the cheeks 76^1 76^2 by ties **86**.

The cylinder **77** communicates with the inlet chamber **78** and outlet chambers **81** through openings 87^1 87^2 provided in the cheeks 76^1 76^2. Said cheeks constitute bearings for an axial shaft **88** mounted on ball bearings 89^1 88^2. Said shaft carries quicksilver tubes of circular shape 37^1 37^2 $37n$. A motor **91** mounted on the upper cheek 76^2 drives the shaft **88** through the medium of a gear transmission **92—93** also serving as speed reducer.

The operation of said apparatus is as follows: the liquids are coming through the pipe **79**, passes in the chamber **78** where they undergoes a first decantation, the impurities being evacuated through the tube **88**. They are traversing the openings 87^1 passes in the cylinder **77** where are submitted to the successive action of the quicksilver lamps 90^1 80^2, and they comes out through the openings 87^2 and passes in the outlet chamber **81** where they deposits impurities which are exhausted through the tube **83**.

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