



Letter of the day
Sincerely yours, C. L. L.

Inventor:

John Lane
John Lane

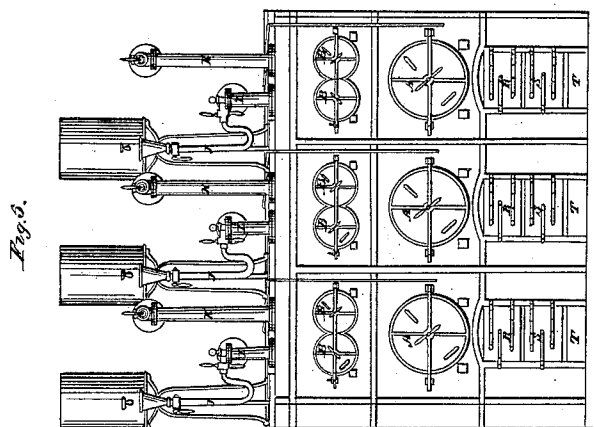
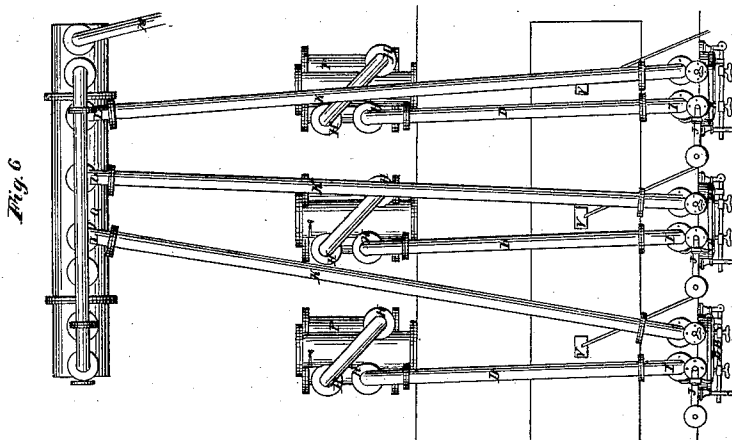
DANRE, NICOLAS & LOPEZ.

2 Sheets—Sheet 2.

Gas Retort.

No. 9,501.

Patented Dec. 28, 1852.



Witnesses:

John L. Hodge
Charles B. Hodge

Inventor:

N. Danre
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UNITED STATES PATENT OFFICE.

DANRÉ, NICOLAS & LOPEZ, OF MARSEILLES, FRANCE.

IMPROVEMENT IN THE PROCESS OF MAKING ILLUMINATING-GAS.

Specification forming part of Letters Patent No. 9,501, dated December 28, 1882.

To all whom it may concern:

Be it known that we, GEORGE DANRÉ, PASCAL NICOLAS, and FELIX LOPEZ, of Marseilles, in France, have invented a new, cheap, and improved mode of combining, by mechanical and chemical processes, the hydrogen gas of different kinds of wood with the percarbureted gas of resin, oil, grease, or other fatty substance by which a carbureted gas of any required density can be obtained at the pleasure of the operator, inferior only to that of oil-gas, but superior to that of coal-gas, and entirely free from sulphurous fumes.

The nature of our invention is evident from the above description thereof; and to enable others skilled in the art to make and use it, we refer to the following account of its construction and operation, and to the accompanying drawings, lineal and perspective, in duplicate, with the letters of reference and explanations thereon, in which—

Figure 1 is a longitudinal elevation of the machinery; Figs. 3, 4, and 5, end elevations of the same; and Figs. 2 and 6, perspective views of parts thereof.

The cylinder C receives an average charge of one hundred kilograms, (equal to two hundred and twenty-four pounds) of half-seasoned wood. It is introduced into the retort A, heated to a lively cherry-red. As soon as the head of this retort is put on, the distillation commences. The hydrogen gas, the vegetable tar, and pyroligneous acid escape through the tubes D and E into the reservoir P. The liquids settle therein, and the gas in passing through the tubes from H to H' undergoes a cooling, which causes it to precipitate still more tar and acid. Finally, the hydrogen gas, scarcely or not at all carbureted according to the nature of the wood intended for carbonization, reaches the retort B B', which is filled with scrap-iron, or spirally-twisted sheet-iron, through the tube H''. The hydrogen gas meets in I a stream of resin, oil, grease, or fatty substance, or melted resin which falls into the retort B B'. This retort, like the retort A, is heated to a rather lively cherry-red. The oils or fatty substances produce a percarbureted gas, which, traversing the double retort with the hydrogen gas from the retort A, combines with it by the aid of the heat and

the two gases united, and, thus combined, reach the small barrel Q through the tubes K and the plunger L', in the condition of sufficiently carbureted gas. The gas of the small barrel or hydraulic main Q cools and deposits a black oil in passing from the tubes from M to M''' to the purifiers, registers, and gas-holder of the manufactory. The gas, when it enters the small barrel Q, will be carbureted in proportion to the stream of oil, melted grease, or resin which shall have been introduced by the siphon J. The operator should regulate the stream according to the poverty or richness in carbon of the gas proceeding from the distillation of the wood, and, consequently, according to the nature of the wood. The tars and acids of the reservoir P and the black oil of the small barrel Q overflow through the sluice-pipe N and the siphon G. The wood, according to its nature, leaves in the cylinder C from twenty to thirty per cent. of a perfectly pure charcoal of a very superior quality, and which, when ignited, emits no smoke, owing to its preparation apart from fatty substances. There flows from the reservoir P a vegetable tar of equally superior quality, and a pyroligneous acid, the use of which is well known.

It will be seen at once that the ready sale for charcoal, vegetable tar, pyroligneous acid, and black oil (the basis of lubricating-grease) reduces almost to nothing the price of producing a gas, richer in carbon than the average qualities of coal-gas, and completely free from sulphurous substances. In view of the purity, the richness, and the whiteness of the gas, as well as upon the ground of economy in its manufacture, the discoveries, inventions, and improvements effected by our long labors give us an incontestible right to the title of inventors. It is on account of the results obtained in the different products which we have just pointed out, and of the principles upon which our entire combination is based that we claim the right of inventors, whatever modification the mechanical parts may undergo in other respects, and that we rest our demand for the exclusive enjoyment of Letters Patent, according to the act of Congress made and provided; and be it further known that Letters Patent for our invention were issued at Paris by the

government of France for fifteen years to us, GEORGE DANRÉ, PASCAL NICOLAS, and FELIX LOPEZ, dated September 27th, 1851, which Letters Patent were for an apparatus and mechanical and chemical processes, which introduce important improvements and great economy in the combination of hydrogen gas with carbonized matter, by which processes hydrogen gas scarcely, or not at all, carbureted, extracted from different kinds of wood employed in the preparation or production of the carbon is combined with the percarbureted gas of resin, oil, grease, or any other fatty body, and there is obtained, at the will of the operator, a carbureted gas of any required density inferior to that of oil-gas, but superior to the average density of coal-gas, and having also the no small advantage of being exempt from all sulphurous fumes.

What we claim as our invention, and desire to secure by Letters Patent from the United States of America, is—

The combination of woody and fatty substances in gas-generators, as described, so that the excess of hydrogen in the former may combine with the excess of carbon in the latter, and produce a rich carbureted gas of any required density and free from sulphurous fumes.

G. DANRÉ.

PASCAL NICOLAS.

FELIX LOPEZ.

Witnesses:

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