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## New System of Deodorizing Petroleum.

This engraving represents an improved apparatus for deodorizing petroleum oil.

By this process the distilled petroleum is deodorized or "treated" by merely removing the pressure of the atmosphere and agitating the oil. In this manner the odor is set free in the form of a gas, and a very superior article of oil is produced; some samples might almost be mistaken for olive oil, it is so free from the peculiar petroleum odor. Naphtha is also readily deodorized so that it is not at all objectionable. The fire test, by this process, is raised so high that all of the naphtha produced can be worked or mixed in with the oil, and the point of ignition is still above 110°, or above that of the oil as now treated by chemicals. In the ordinary process the cost for chemicals is about five cents per gallon, in this process the cost is the coal used for supplying power. The importance of an economizing process of this kind may be seen when the petroleum yield is considered—10,000 bbls. per day.

The following is a description of the mode of operating this machine:—

The oil is passed through pipes, B, into the receiver, B, which is exhausted of air. C is a tubular coil lying in the oil in the receiver, A, through which steam is introduced for the purpose of heating the oil. D is an agitator, by means of which the oil is agitated and thus equally heated. E is the lower compartment of the receiver, which is also exhausted of air; into this the oil is introduced by means of the register, F, and passed into the tank, G. H is an agitator, made of wire cloth or its equivalent, driven at a high velocity by the belt, I.

Its office is to separate the oil and so liberate the gases confined in it. J J are two exhaust pumps by which the gases, as they pass from the oil, are drawn through the tubes, K, from the receivers, B and E, and discharged through the pipes, L, into the balloon, M. N is a condensing pump by which air or gases are condensed in the receiver, O, in connection with the tanks, G S. P is a receiver for generating gases. Q is a shaft by which the machinery is driven. R R are stop-cocks and S is one of many perforated tubes through which the condensed air or gas is passed into the tanks, G G.

The operation is easily understood from these details. There are no chemicals used in the process, the end being attained by purely mechanical devices. We also append a report of Prof. Doremus in connection with this subject:—

COL. CHAS. B. NORRIS:—In compliance with your

an air pump, covered with a glass jar, and relieved of atmospheric pressure sufficiently to raise and maintain the mercurial column between 28 and 29 inches.

Rapid ebullition soon commenced, and by rotating an axis with flanges in the midst of the oil, a gentle agitation was excited that facilitated the discharge of the more volatile vapors. After continuing this treatment for thirty minutes the kerosene was removed from the exhausted receiver. In consequence of the warm-water jacket it had only cooled to 100° Fah. It was thoroughly washed with cold water for five minutes by means of a little mechanism known as an "egg-beater."

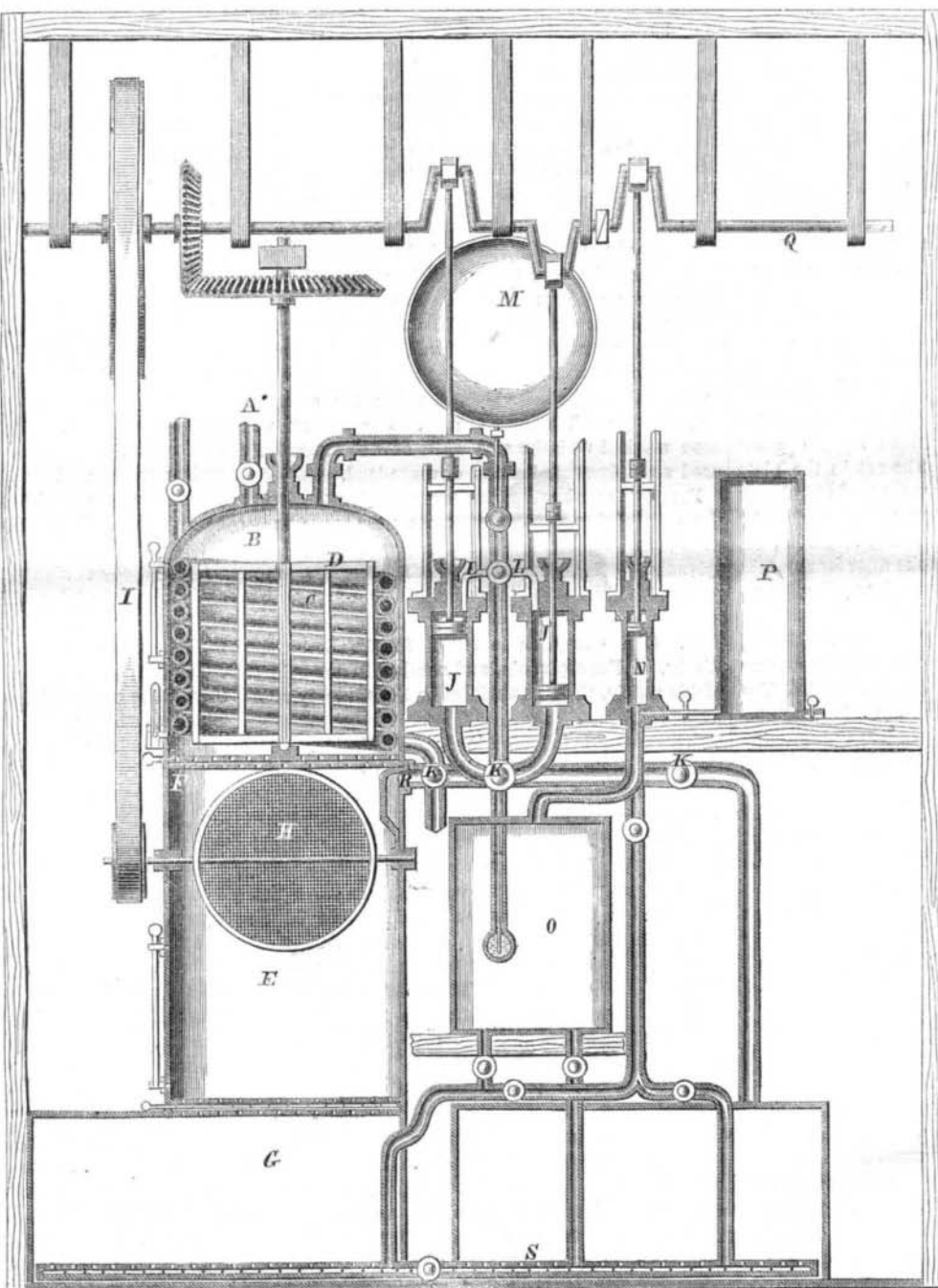
These three operations—heating the oil from 130° to 140° Fah., distilling for half an hour in vacuo with agitation, and thorough washing with cold water—benefitted the liquid in three ways—first, it removed the pungent and unpleasant odor so characteristic of the unpurified kerosene, and found even in that which has been chemically treated—this improvement was palpable even prior to the washing with water and while the water was warm; second, it increased the specific gravity from 1° to 2° Baume; third, it produced a marked change in the fire test, as commonly employed, raising the temperature at which the combustible vapors first fired from 15° to 27° above that of the oil untreated.

Both of the samples of kerosene referred to were subjected to the same operations and with the same important results. An experiment similar to that described was also made on the crude petroleum, accomplishing the same three desiderata, viz., removing much of the disagreeable odor, raising its

specific gravity, and diminishing its combustibility.  
R. OGDEN DOREMUS,  
Professor of Chemistry at the Free Academy and at the Bellevue Medical College.

New York, Oct. 9, 1865.  
This invention was patented through the Scientific American Patent Agency on March 14, 1865, by Joel Green. Address A. D. Mellick, No. 26 Pine street, New York, for further information.

It is said the Willimantic Linen Co. made over 300 per cent profit last year.



GREEN'S SYSTEM OF DEODORIZING PETROLEUM.

request, that I should give a general statement of the result of Mr. Joel Green's experiments, as performed in my laboratory, on kerosene oil, prior to a more detailed and exact report of the process, I beg leave to submit the following:—

Two samples of unpurified kerosene were separately treated. They were of specific gravity 45° Baume, and 62° Fah.; one was from Messrs. Hendricks & Somers's establishment, the other from that of Messrs. Stebbins & Co. After being warmed to 135° Fah., in a vessel surrounded with water at the same temperature, they were placed on the plate of