UNITED STATES PATENT OFFICE.

HENRY D. GREEN, OF PORTLAND, OREGON.

IMPROVEMENT IN THE MANUFACTURE OF ILLUMINATING-GAS.

Specification forming part of Letters Patent No. **59,004**, dated October 23, 1866.

To all whom it may concern:

Be it known that I, HENRY D. GREEN, of Portland, Multnomah county, Oregon, have invented a new and useful Improvement in the Manufacture of Illuminating-Gas, of which the following is a full, clear, and exact description.

My invention has relation to the manufacture of illuminating-gas of a superior quality and with marked economy; and to this end my invention consists in the manufacture of illuminating-gas from the combination of petroleum or naphtha, or any of the mineral oils, with sawdust or any minutely-divided wood, in about the proportion of equal parts of each by weight, and subjecting the composition to destructive distillation, either combined in one mass and in a single retort, or separately in separate retorts, and mingling the resultant gases and subjecting them to the usual purifying process.

It is well known that naphthas, petroleums, or mineral oils are largely composed of carbon with a small proportion of hydrogen, while wood consists of a far less proportion of carbon and about an equal proportion of hydrogen, and that neither of these substances when subjected to destructive distillation will economically yield a desirable illuminating-gas; but I have found by actual experiment that in combination in about equal proportions by weight, and subjected to destructive distillation in any of the most approved modes of manufacturing illuminating-gas, they produce in large quantities a gas yielding a brilliant incandescent flame, and at an extremely economic rate.

I take the sawdust in a damp or wet condition, and then mix it intimately, in a tank or vat, with the crude petroleum or naphtha, or any of the mineral oils, in about the proportions of equal weights of sawdust and of petroleum. This composition, so intimately mixed, is placed in the common gas retort and subjected to destructive distillation, the gas produced therefrom being purified in any of the modes most approved in the manufacture of illuminating-gas; or I effect the same result by placing damp sawdust and naphtha, petroleum, or any of the mineral oils in separate retorts, and subjecting them to destructive distillation, but receive the gases produced from each in a common receiver, whence they pass through any approved process of purification, and in either mode they are finally received into the gasometer to be distributed through the main and service pipes.

I have named sawdust, but it is obvious that any minutely-divided moist wood will, equally with sawdust, in my combination produce the same results.

I am aware that it has been attempted to produce illuminating-gas from animal fats, vegetable oils, from petroleum, and from wood separately and combined with animal oils, and Letters Patent of the United States were granted to me for the manufacture of illuminating-gas from sawdust in combination with bituminous coals, and therefore I do not now claim any of these; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

The combination of sawdust with naphtha, petroleum, or mineral oils, in about the proportions named, for the manufacture of illuminating-gas, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

H. D. GREEN.

Witnesses:

JNO. B. PEYTON,
J. I. PEYTON.