

THE JOURNAL
OF THE
Board of Arts and Manufactures
FOR UPPER CANADA.

JANUARY, 1867.

THE NEW PATENT ECONOMIC GAS.

It is one of the objects of this Journal to announce any new discoveries which may be of use to society at large, and to explain as far as possible what advantages may be offered by putting them into practice.

During the last few months, journals of more or less notoriety have occasionally made allusion to a new invention known as "Ensley's Patent Economic Gas." Notwithstanding the good authority under which some of these accounts have been published, we have always been inclined to look upon glowing statements of wonderful discoveries with a certain amount of incredulity, and so for some time we regarded this. Latterly, however, owing to the confidence with which the merits of this new gas have been proclaimed, from sources worthy of all credence, and especially from the undisputed fact that a town in Canada has actually been lit up with it, preconceived theories with regard to the invention appear to have been established, many of which when originally propounded were regarded with apprehension and suspicion.

The primary object of this invention is to produce an illuminating gas. The secondary object is, at the same time and with the same apparatus, to manufacture certain saleable and valuable products, namely, charcoal, tar, turpentine, pyroligneous acid, bone black, ammoniacal liquor, and other valuable substances. The patent covers the right to manufacture these articles from vegetable and animal matter, either separately or combined.

The materials best suited to the purpose are pine wood and bones. From the former gas has been made, but of a kind unfit for general use owing to its want of carbon, which is essential to impart the proper colour and brilliancy, on account of which defects, wherever it has been tried, it has generally been laid aside. The effectual meeting of this difficulty is what we conceive to be one of the chief merits of Mr. Ensley's patent. To attain this object he adds to the wood gas a quantity, equal to from thirty to fifty per cent., of gas made from animal matter. The best material and that most easily obtained for this purpose is bone, which not only yields a large amount of gas, but also affords, by means of the apparatus used,

a large proportion of residuum in the form of ammoniacal liquid and bone black. These two commodities are manufactured in large quantities in many cities and towns of America, and are extensively used and known as fertilizers (the bone black being the principal ingredient in Coe's superphosphate of lime), and they will always find a ready market for this and other purposes.

The promoters of this patent contend, and say they are prepared to confirm by actual experiment, that which may appear at first sight to be almost incredible, namely, that the residuum of the wood and bones taken from the retorts are sufficiently valuable to defray more than all the cost of material and other expenses of every kind in the manufacture of the gas, thereby *leaving the receipts for the gas itself all clear profit.*

The following is a short history of Mr. Ensley's discovery, as published by the assignees and present proprietors of the patent, Mr. John Moffat, of London, and Mr. T. D. Ledyard, of Toronto:

"Mr. Ensley's discovery that illuminating gas and the other valuable substances could be easily extracted from common pine wood and bones, was, like many other valuable discoveries, at first regarded with much suspicion and distrust by the public, and many popular prejudices and fears had to be overcome before its commercial value and importance were fully appreciated. The test of practical success has, however, now stamped it as one of the most important inventions of this age of scientific discovery.

It is many years ago since, by a series of experiments, Mr. Ensley first demonstrated that it required but a very simple and economical apparatus to extract in large quantities not only gas but also tar, turpentine, charcoal, &c., from the common pine wood and roots which abound in almost every part of the United States and Canada. The gas, however, produced from these materials, although good, yet wanted one of the most valuable properties of a bright, light, viz., carbon. That property Mr. Ensley discovered, could be easily extracted from bones and refuse animal matter of all kinds, and he accordingly proceeded to mix a portion (say one-third) of the gas produced from this matter, with that produced from the wood, until he had a bright, steady light, perfectly free from smoke and smell, and quite as good as that produced from good coal.

Having satisfied himself of the genuineness of his discovery, he constructed a small model of the apparatus he proposed to use, and endeavoured to obtain the assistance of several eminent men to enable him to bring the invention under the notice of the public. He received, however, no encouragement from those to whom he addressed himself, and at length, after repeated failures to enlist the sympathies of influential men, he became disheartened, and suffered the model to remain idle for a number of years.

It was not until the beginning of this year that Mr. Ensley at length succeeded in attracting public notice to his valuable discovery. It happened