MAKING GAS FROM CRUDE PETROLEUM.

Petroleum has long been looked upon by the scientific and industrial world as one of the best materials from which to obtain light and heat, and, as time passes, the assertion that in the future it will do all that coal now does is received with a steadily increasing confidence.

This belief is strengthened by the many peculiarities which characterize both the product and its surroundings; when properly treated it is one of the best known illuminants and possesses great heating power, and it can be brought at a minimum expense from those vast reservoirs in petroleum gas. It can be mixed with coal gas either by the glass. On each side of the table a rack is mounted on

which Dame Nature has kindly placed it in inexhaustible quantities. But the proper purification of the crude material, the elimination of all those constituents which decrease the effects following combustion, has proved to be an obstacle of no mean importance, since, heretofore, the accomplishment of this object could only be attained at a cost that was practically prohibitory.

Although we have for many years been dependent upon mineral oil for a large portion of our light, yet gas made from this source has not, until recently, been introduced upon an extensive scale, mainly because of the difficulties attending its manufacture and its poor quality. It is a simple matter to place oil in a retort, and by the aid of a little fire obtain a gas; but to so purify that gas that it will contain no element except those which promote combustion is a part of the problem which has been long studied unsuccessfully.

The North American Petroleum Gas Company, of 145 Broadway, this city, has produced an apparatus by which a gas having superior heating and

in operation, and from it arise none of those odors which petroleum gas works built by this company at Brighton Beach, Coney Island.

The oil, in the same condition as when it left the well, is raised by means of a small hand pump from a barrel placed outside of the building to a small tank located in a room adjoining the retort room. This tank is placed at such an former will give almost as much light as five cubic feet of elevation that the oil will flow to the retort, which it enters through the dome, spreading and falling to the bottom of the upper compartment, the floor of which, though at a pany, Mr. Isaac D. Guyer, we recently had an oppor-

"spluttering," and at the same time removes the heavier impurities. The gas here generated then passes through other chambers, arranged vertically, in which any remaining impurities are detained, and finally issues from the retort through a pipe which conducts it to a partitioned water box placed alongside of the retort. Here the gas is separated to insure each particle coming in contact with the water. The gas is then led to the condenser. consisting of a series of vertically arranged pipes, coupled in pairs and placed so that their lower ends enter the water contained in a closed box. This gas is so rich that before it can be used for ordinary purposes it must be mixed with about 40 per cent of air. This is accomplished by the mixer shown in the foreground of the engraving.

impurities renewed. So slight is the attention required that a man and boy can easily take care of ten retorts.

This apparatus generates from 80 to 100 feet of gas from one gallon of crude petroleum, which costs four cents; and each retort yields from 150 to 250 feet per hour. The gas is a fixed gas, being unaffected by either cold or great pressure

Since it mixes readily with coal gas, an inferior quality of the latter can be raised to any desired standard of illuminating power by the addition of a small amount of



IMPROVED GLASS ROLLING TABLE.

lighting qualities is generated at a small cost comparatively passing both together through the purifiers, or by passing from crude petroleum. The apparatus is simple in all its the petroleum gas directly into the hokler, this forming a parts, requires but little attention, being almost automatic thorough mixture; the latter is the preferable method. The company claims that one barrel of crude petroleum will proare so conducive toward rendering the ordinary gas works duce gas greater in amount of illuminating value than the a nuisance in any neighborhood. Our engraving shows a coal gas produced from two tons of the best Pennsylvania gas coal; less fuel being required, no lime, and the handling of material being greatly reduced. A comparison-made by the chemist A. T. Schuessler-of this gas with ordinary coal gas shows that the former is 4.90 times superior in illuminating power, and therefore one cubic foot of the the latter.

Through the courtesy of the president of the comcherry red heat, is covered with a substance which prevents tunity of comparing the illuminating power of petroleum

wants protection for his "Paradisina" perfume or his "Tiberius" relish. This is much more useful to him than mere protection of a certain design which he may print on his labels. The public buy the perfume or the relish, and do not trouble themselves about the presence or absence of an anchor, a crown, or a cross-keys on the labels.

So the government granted this power of registering fancy words as trade marks, and the result is now beginning to appear. Last month we published, says the Chemist and Druggist (London), some correspondence which had passed between Mr. Haydon, of Birmingham, and the Registrar of Trade Marks. Mr. Haydon seems to have directed attention to the registration of the terms "Domestic Tea" and "Mitre Tea," and to have asked on what principle such titles are admitted to registration. The answer of the Registrar showed that the subject had been considered, and it can

easily be seen that to draw the line fairly is a task of extreme delicacy. The act says he may register as a trade mark any distinctive impression of the name of the firm. or the signature of a firm, or "a distinctive device, mark, brand, heading, label, ticket, or fancy word or words not in common use,"

The Registrar decidedfairly enough, the editor thinks-that he ought to regard as a fancy word, not necesserily an absolutely new word or meaningless combination of letters, but any word used outside of its or-The dinary significance. term "Mitre," as applied to tea, seems to be, on that interpretation, quite a fancy word, but the adjective " Domestic " almost approaches description. The Registrar, however points out that the combination of words "Domestic Tea" is not a combination of "words in

GLASS ROLLING TABLE.

We give an illustration of a machine constructed by Messrs. Robert Daglish & Co., St. Helens' Engine Works and Foundry, for rolling out cut glass into sheets. Our engraving is from Engineering. The table is portable, being mounted on four wheels, so that it can be moved with ease to any part of the glass works. The moulding tables are of cast iron, and of widths varying from 2 feet 9 inches to 4 feet 2 inches The surface is either plain, ribbed, checkered, or formed with any device which it is desired to impress on

> the frame of the carriage, and gearing into each rack 1s a toothed wheel mounted on a shaft, which also carries a plain iron drum the width of the table. The melted glass is poured on the table in front of the roller, which is then passed to and fro by means of the hand wheels shown, and the glass is thus spread out into a sheet. An ad justable guide is placed at the back of the roller to regulate its travel, and means are provided of varying the thickness of the sheet rolled.

Trade Mark Rights in Words.

Until this year the Registrar of Trade Marks in England has steadily refused to admit to registration any mere words, however fanciful, as trade marks. An exception was always made in favor of words used as trade marks before August, 1875. This exclusion of the right to use fancy words as trade marks seemed, however, an unnecessary restriction on business. What manufacturers wanted was protection for a fancy title which should come to designate their particular products. The inventor of a scent or a sauce



The furnace is placed in

bers, and the grate dumps into a long water trough. The heat is so distributed and utilized in its passage through the other was two and a half inches. The petroleum gas the retort that all parts are subjected to just the right flame was much larger, more brilliant, and of a purer color degree, while the consumption of coal is reduced to the lowest point. By means of flues and dampers the heat in any particular section can be controlled at will. The the fact that the plant necessary for its manufacture upon a dome of any retort can be readily raised by the aid of a large scale can be erected at a cost much less than that rewhich can then be cleaned, and the substance collecting the occupied is small in comparison.



APPARATUS FOR MAKING GAS FROM CRUDE PETROLEUM.

the center of the retort, immediately beneath the cham- | gas with water gas, issuing from burners of the same size. | common use," like "Souchong Tea" or "Green Tea," The petroleum gas was under a pressure of one inch, while which, as such, would clearly be excluded.

than the other.

The Salvation Army's Trade Mark.

The Official Trade Mark Journal, London, in its issue of An important advantage possessed by this gas arises from August 20, publishes an application from "William Booth, General of the Salvation Army and Minister of the Gospel," to be registered, as the proprietor of a trade mark, in which traveling block and tackle, thereby exposing the interior, quired by the ordinary gas works; and in addition, the space the design of a cross and crown and the words "blood and fire" form the principal part.