

Act, and have taken the ground that the entire Act is illegal as it was not competent for the Provincial Legislature to pass a measure affecting trade and commerce, generally; such legislation being confined to the Dominion Government. How this matter is, or how it will terminate, we cannot say, and as it may be assumed that the provincial legislature is a very fair authority, we do not think it necessary to hazard an opinion.

PORTABLE GAS APPARATUS.

Some four or five years ago, there appeared in the *Scientific American*, a description of a patent which had been granted for carburetting hydrogen gas. The apparatus, of which illustrations were given, consisted, essentially, of a vessel for the generation of hydrogen, an arrangement for washing and carbonizing the gas, and a gasometer. The hydrogen evolved from a mixture of iron, or zinc turnings, water, and sulphuric acid, was made to pass through a vessel containing petroleum naphtha, by which means the gas which would otherwise burn with a pale, blue, almost non-luminous flame, became possessed of the light-giving property. The residue in the gas-generating vessel, consisting of sulphate of zinc, or iron, was said to be sufficient to pay the greater part, if not the entire expense of the process.

Being somewhat anxious to test the practicability of this process we devised an apparatus for making the experiment on a small scale, and, by the aid of a Pepy's gasometer, collected about ten or twelve gallons of the carburetted gas. Attachment with a gas burner was made, and on lighting the jet a clear and luminous flame appeared. The experiment was repeated with fresh quantities of gas, and the conclusions arrived at were: (1st) that the luminosity was equal to that of ordinary coal gas; (2nd) that the rate of consumption was greater than with coal gas; (3rd) the *hold*, or adhesion of the gas to the burner was so slight that the flame was easily blown out, (this may have arisen from deficient pressure); and (4th) that the cost would not compare favorably with that of ordinary gas.

Our reasons for stating these experiences are, that a patent has recently been obtained in Canada for the same process, and a company has been formed, through which every endeavor is being made