

The commissioners may order the costs and expenses of the investigation, or any part thereof, to be paid by the person found to blame for the explosion. These costs are not in the nature of a fine, and are unlimited. These findings are made public, and the reports show that sums of from five pounds to two hundred and fifty pounds have been paid by those found blameable, while they are still liable for damages under common law.

It will be seen that the tendency of the Act and its workings is to compel boiler owners or users to have their boilers properly examined by competent persons, and to employ trustworthy engineers. It very naturally raises the standard of the men employed, for the consequences to an engineer who is found to be negligent or incompetent in his duties are serious.

Boiler Insurance Companies which hold out to the public that practical immunity from explosion can be relied upon by their system of inspections would be presumed to employ as inspectors only men well known to be competent, and would probably be heavily mulcted in costs where an explosion was caused by a defect which was overlooked by an inspector whom the commissioners found to be incompetent. Second-hand dealers would be careful in the statements they made to purchasers regarding the condition of the boilers they had sold, and boiler makers would exercise great care in the work put upon the construction of, or repairs to, boilers.

It would seem, therefore, that no greater protection against loss of life or damage to property arising from the explosion of boilers could be given than by the Legislatures of our different provinces passing an Act similar in its scope to that in use in the United Kingdom. The Act in question has been in operation for twenty-one years, and its results have given very great satisfaction.

ACCIDENTS FROM ACETYLENE.

There have been a number of explosions arising from acetylene gas machines at various points in Canada during the last few weeks. In the case of one at Ridgetown, Ont., a coroner's jury reached the following conclusion:

"We strongly recommend the Government to pass an Act to enforce the installation of acetylene gas machines in isolated buildings, and place them under Government control."

This eminently sensible recommendation has been objected to because it is said to be put forward in the interest of the Standard Oil Company, who, presumably, are afraid that the growing use of acetylene gas for illuminating purposes may interfere with the use of coal oil lamps. As to the truth of this guess we know nothing, but we are convinced of the need of regulation and supervision of a method of lighting so little understood theoretically, and so liable when in the hands, as it often is, of people who know nothing of either mechanics or chemistry, to result in explosion and disaster. As to the production of acetylene gas. It is produced by the contact of calcium carbide with water, which contact results not only in the production of volumes of brilliantly illuminating acetylene gas, but also in the generation of much heat.

Several years ago, December, 1899, to be exact, it was shown by Robert Howe, C.E., in a paper before the Insurance Institute of Toronto, that the Explosives Department of the British Home Office, having made experiments to determine the character and peculiarities of acetylene gas, found that under a pressure equal to two atmospheres it is violently explosive. Therefore, the pressure at which it can be legally used is placed at one and one-twentieth atmospheres, while in France and Germany one and one-half and one and one-tenth respectively have been fixed by the authorities. Mr. Howe's paper further shows the risks incident to the use of these substances:

The risk attending the storage of carbide includes not only an immediate evolution of large quantities of highly inflammable gas on contact with water, but also the possible ignition of the gas, or mixtures of it with air, by the intense heat generated by water acting upon the carbide.

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Danger from improper construction or location of generators, which should always be placed in a dry, well-ventilated and absolutely frost-proof room, and no generator should be used until that particular style has been examined and approved by a competent person.

We venture to say that the suggested regulation we have underlined above is persistently ignored in Canada. Numbers of persons, both male and female, are allowed to manage, or mismanage, these perilous materials who know nothing of the risks to which they are nightly exposing households and whole communities. More than this, we have been told that many acetylene gas machines are made of flimsy material, put together carelessly, and that they are exposed to weather and the action of rust and water in a manner that causes one to wonder that wounds or fatal accidents are not more common.

Here, then, is an element of danger to the public which should no longer be permitted. A man of intelligence, who understands the composition of carbide and the conditions of the production of acetylene gas, may be trusted to have a gas machine properly installed in an outhouse, and will naturally take pains to look after it, or have it looked after. But it is worse than the prevailing carelessness as to steam boilers in factories to have servant maids or stable boys given charge of the watering of carbide in dwellings or rows, where an explosion may mean death to one or a dozen persons.

It was, in our opinion, with perfect propriety that the Ridgetown jury made their recommendation of governmental control. There should be an Act to regulate the construction of machines for the making of acetylene gas, and this Act should also regulate the placing of such machines, and subject them to periodical inspection. It would further be well that every person whose duty or practice it is to attend to these machines should be required to possess a Government certificate, and that the householder who desires to instal such a machine should obtain a permit from the municipality in which he resides. In the Old Country and in Germany governmental regulations have been imposed upon the use of acetylene gas; and it is not in the public interest that the negligent go-as-you-please mode now in vogue in Canada of dealing with this illuminant should be permitted to continue.