

It is necessary to refer to the evidence, which, however, I shall endeavour to summarize as briefly as possible.

For plaintiff, Peter Clark, formerly mechanical superintendent on the Northern Railway and afterwards on the Grand Trunk Railway, said that the straight type of stack began to come into use about 1883 or 1884, and came into general use in 1885. It is the design and type in use on the Grand Trunk, Canadian Pacific, and Michigan Central railways, though the diamond is still occasionally used on branch roads. The principal object of the change was to lessen danger from fire. Of the two the diamond is the more dangerous, and throws much more fire than the straight. It is practically abandoned on all the roads the witness was acquainted with. In cross-examination he said that in May, 1897, there were still many engines in use with the diamond type of stack; the great majority, however, used the straight.

Alexander A. Maver, local locomotive foreman of the Grand Trunk at London, 29 years experience. Has 50 or 60 engines under his charge, of which all the stacks are of the straight type. Change from the diamond began about 20 years ago. It was made because the straight was cleaner as regarded smoke and was a better spark-arrester. It threw 50 per cent. less sparks, and in a less dangerous manner. He considered straight the better of the two for both reasons. It was about 5 years (speaking in March, 1901), since the change was completed.

Frank Morse, superintendent of motive power of the Grand Trunk. Part of his duties to select the best type of engine. There were about 1,000 engines on the road. Both kinds of stack were still in actual use, but the straight predominated, and they had built no other for 5 years past. The straight was adopted because it was considered more efficient, more substantial, and was a better spark-arrester. That is the main reason. So far as he knew, all modern engines are fitted with the straight stack. They still use the diamond on some of the branch lines, and they are used on the main line in New Hampshire, Vermont, and Maine. There were more in general use in May, 1897, than to-day. The diamond is a reasonably good spark arrester; the best known until the straight type was introduced. To make the change cost about \$150 per engine.

W. D. Robb, a master mechanic on the Grand Trunk. The diamond stack throws a much greater quantity of sparks than the straight, probably three times as much. That was one reason why the company has adopted the latter type. It is the best spark-arrester of the two and throws fire in less dangerous manner. Witness came on the road in 1897. There were then some diamond stacks on the division. These