

cylinders, of uniform dimensions, a matter of some considerable importance in duplicating the parts, as well as in other respects.

Should the Low Pressure Cylinder be found inferior to the plan now proposed, it may at any time be removed, and a small cylinder take its place at trifling expense.

It will be seen that I have added greatly to the strength of the framing of the Engines, with modifications in the details, in view of securing a more effective Engine.

I have to add, that I have seen no Engines in any of the cities I have visited, nor do I know of any Pumping Engine of the capacity of the Montreal Engine, pumping against the high head of water it does, that at all approaches it in speed and pumping efficiency. The Buffalo Engine, under a head of only 88 feet, makes but four strokes per minute. None of the other Engines named exceed twelve strokes per minute. While the Montreal Engine, working at its best speed, under a head more than twice that of the Buffalo Engine, makes eighteen strokes the minute, equal to a velocity in the pumps of 80 to 216 feet per minute. This remarkable result has had great weight with me in recommending this plan of Engine for your adoption, nor do I think, with the improvements I have suggested in the plans and details, taken as a whole, a better design for a Pumping Engine could be devised.

In conclusion, I have to urge upon your Committee, if it is decided to build a second Engine, the importance both to yourselves and the contracting parties for the work of the necessity for prompt action in this matter, the time is so short to do the work; and should the whole field of details and plans be required to be gone over again, we shall require the same great exertions to be made, attended with the same anxiety and expense as we have incurred in the construction of the present Engine.

I am, Sir,

Your most obdt. servant,

SAML. RISLEY,

*Consulting Engineer.*