

New invention
for pumps

Lorway

June 17, 1874.

Dear George,

I have at length got my fingers warm enough to commence writing; we are having such cold chilly weather here, it only becomes the least warm when the sun is shining.

The Office of the Louisburg Rly. is at this place. The road commences at a junction which it forms here with the present Railway from here to Sydney.

I have just heard of such a capital idea in respect to a mining pump. It originated with a mining engineer in England who was perplexed as to mode of getting rid of the escape steam of a high-pressure pumping engine

he had in his pit, as it is against
the law to allow it to blow off
in a mine. He hit upon the
fortunate idea of connecting it
with the ~~suction pipe~~ of
the exhaust pipe from the cylinder
with the suction pipe of the by
pump. He found to his surprise
that this made his engine run
about twice as fast, & as he
required no extra power he lowered
the steam, & found eventually
that he could work his engine
with 15 lbs. pressure with a cut-
off at $\frac{1}{2}$ of the stroke. His indic-
ator diagram showed that he
had virtually converted the
engine into a condensing engine.

This would of course be quite
a considerable suction on the
exhaust when connected as above,
~~for~~ caused by the weight of
the column of water in the
pumps below the point of attachment.
This ~~arrangement~~ ^{alteration} has been made
in all the pumping engines in

the mines on this Island & at least most of them, & is found a great economy. It has also proved of great advantage in lubricating the interior of the pumps which are corroded very fast by ~~from~~ the sulphurous waters from the mines, & the saving effected in this way is even greater than that arising from the diminution in the quantity of fuel required. You see the oil, &c. blown out of the Cylinder goes with the water into the pumps.

It was Mr Rumble who told me of this. He is quite an interesting person to talk to, as he knows all about mining machinery & engines. He is very pretentious & thinks a great deal of his own opinions, & never speaks on any subject without making diagrams on the first object he can get to. He is manager (?) of the mines here, & a new hoisting engine is being put up under his directions.

There are some very interesting articles in the "Engineer" I send by this mail.

I have been out camping the last week but we had rather a wet time of it. I am now in the office making profiles, &

The weather here is most extraordinary & unseasonable.

Frosts still continue. At least there was one just a few nights ago, & so people are afraid to put anything in the ground.

I see plowing going on as I now write, and the trees are scarcely in half leaf yet; they are only far enough advanced to have a general green appearance.

I remain

Yours affectionate

Brother

William.