

The inventor has succeeded in hardening the friction wheel and the axle, so as to insure the success of his principles the rubbing parts have also been enclosed, so as to prevent access to dust, whilst, at the same time, the oiling is accomplished without difficulty or delay, and the consumption of oil is reduced to an amount exceedingly small.

According to the trials which have been made, the friction is now reduced to the one four-hundredth of the weight, being the one half of the best English rail road car.

The wheels which will roll upon the rails are alike for each kind of car; these have also been improved, as stated in the annual report, and some modification has since been made in the pattern, by which they will be strengthened. These wheels are believed to be the best that have been made for rail ways.

We may therefore consider it certain, that in connection with the improved locomotive engine, the efficiency of rail ways is now double, if not treble, what it was when the Baltimore and Ohio road was commenced. It is possible, if not probable, that further improvements, both in the construction of rail ways and in the application of motive power upon them, are yet in store. Nevertheless the present state of these improvements is alone sufficient to place rail ways in point of speed, certainty, and general advantage, pre-eminently above any other description of interior communication yet known.

Respectfully submitted.

J. KNIGHT, Chief Engineer.

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*Engineers' Office, Baltimore & Ohio Rail Road,*

January 14th, 1830.

To Jonathan Knight, Chief Engineer of the Baltimore & Ohio Rail Road.

In conformity with thy requisition of the 8th inst. I herewith transmit a summary report of the operations of the engineer department, in relation to the laying down of the rails on the Baltimore and Ohio rail road, since those operations commenced in March last, with a statement of the "expenses and extent" thereof, accompanied by such other information and