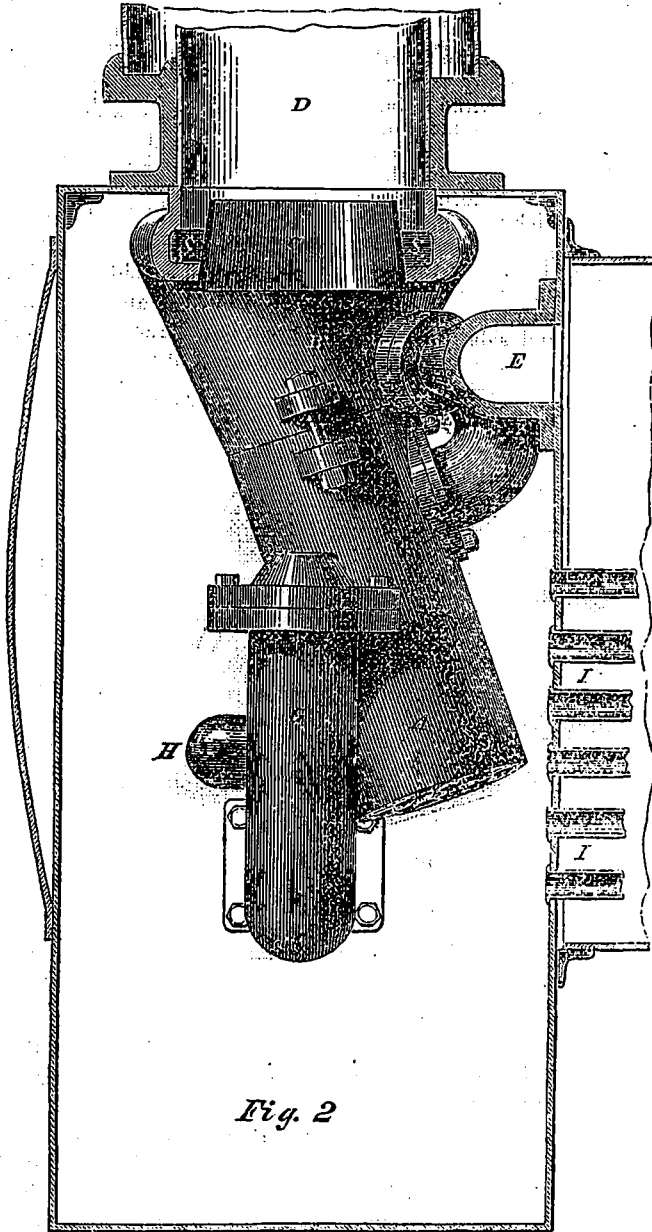


Grand Trunk Railway of Canada, where it is said to have the most satisfactory success.

In the accompanying engravings Fig. 1 is a transverse section of a locomotive smoke box, in which is placed the improved exhaust chamber and steam surcharger, shown partly in elevation. Fig. 2 is a longitudinal section of the same.

Like letters refer to like parts in each of the figures.

A A are tubular chambers arranged within the smoke box, having a number of flues, J, opening at the bottom into the smoke box, and opening at the top into the large flues or pipes, B B. These pipes, B B are connected to the tubular chambers,



*Fig. 2*

as shown at S. Their upper ends are bent inwardly toward each other, and flattened and elongated and connected to, and passing nearly around the short cylinder, C, placed within the smoke pipe, and forming by their junction therewith an annular chamber, S, which opens into the smoke pipe, D, and causes a strong draught through the flues, J, and through the lower flues of the boiler.

F F are steam pipes branching from the main steam pipe leading from the boiler, and conveying steam from the boiler into the tubular chambers, A, in which the steam will fill the spaces between the flues, and become superheated by the flues.

From the chambers, A A, it is conveyed to the steam cylinders of the engine by the pipes, H. G are the exhaust pipes opening into the smoke box