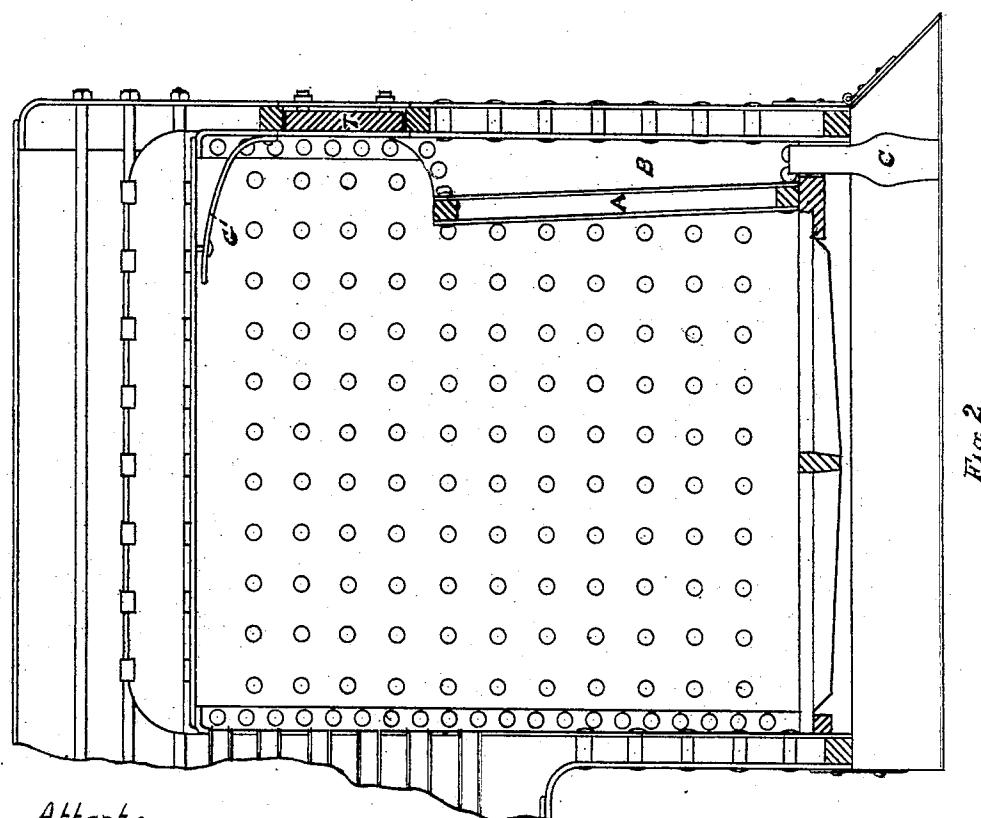
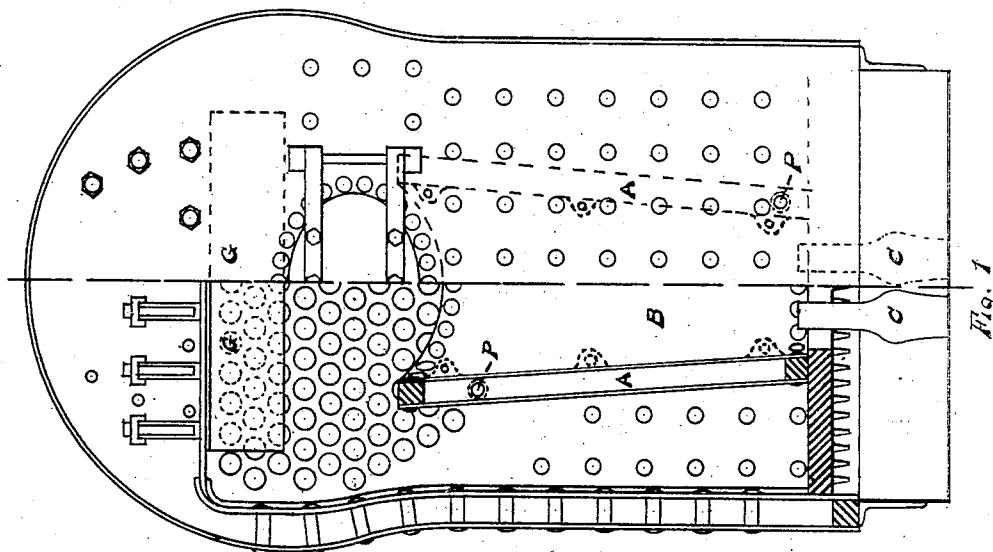


J. D. JOHNSON.
Vacuum Railway-Brake.

No. 196,459.

Patented Oct. 23, 1877.



Attest:
Arthur J. Johnson
Robert P. Rogers

Inventor:
John D. Johnson.

UNITED STATES PATENT OFFICE.

JOHN D. JOHNSON, OF RICHMOND, ASSIGNOR OF A PART OF HIS RIGHT TO RICHD. D. MORKILL, JR., AND EDWARD DALE, OF SHERBROOKE, AND THOMAS HART, OF RICHMOND, QUEBEC, CANADA.

IMPROVEMENT IN VACUUM RAILWAY-BRAKES.

Specification forming part of Letters Patent No. **196,459**, dated October 23, 1877; application filed September 8, 1877.

To all whom it may concern:

Be it known that I, JOHN DIXON JOHNSON, of the village of Richmond, in the county of Richmond, and Province of Quebec, of the Dominion of Canada, have invented new and useful Improvements on Vacuum Railway-Brakes, which improvements are fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a sectional end elevation, and Fig. 2 a longitudinal section of the fire-box of a locomotive with my improvements attached.

The object of my invention is to furnish a device whereby the objectionable noise produced by vacuum railway-brakes may be obviated.

In the drawings, A is a water-lined guard, consisting of an inclosed metallic chamber, in direct communication with the water-space in front of the fire-box by means of the connecting-passages P P. The water-lined guard is constructed of such a shape as to inclose a space, B, between it and the front of the fire-box, the said space being of such dimensions as will freely allow the steam to escape from the nozzles C C of a vacuum-brake, which are placed at the bottom of the inclosed space B, in such a position that the steam escaping from the nozzles will impinge against the curved deflector or guide G, the guide being of such

conformation and in such a position as to direct the escaping steam toward and through the tubes of the boiler, affording it a ready escape to the atmosphere without injury to the fire-box or to the boiler, and also without the usual objectionable noise.

In cases where the heat of the fire is so intense as to fuse the guide G when only constructed of sheet metal, I prefer to make it water-lined, and, in connection with the water-space of the fire-box, materially the same as shown and described with regard to the guard A.

To the door of the fire-box is attached, by means of ferrules and bolts or other suitable contrivance, a thick and closely-fitting plate of iron, T, for the purpose of more completely deadening the sound.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in the fire-box of a locomotive, of the guard A and guide G with the nozzles C C of a vacuum railway-brake, substantially as and for the purpose specified.

JOHN D. JOHNSON.

Witnesses:

ARTHUR J. CLEVELAND,
ROBERT P. VOGES.