H G. ASHTON.

Exhaust Mechanism for Locomotives and other Steam Engines.

No. 201,862. Patented April 2, 1878.

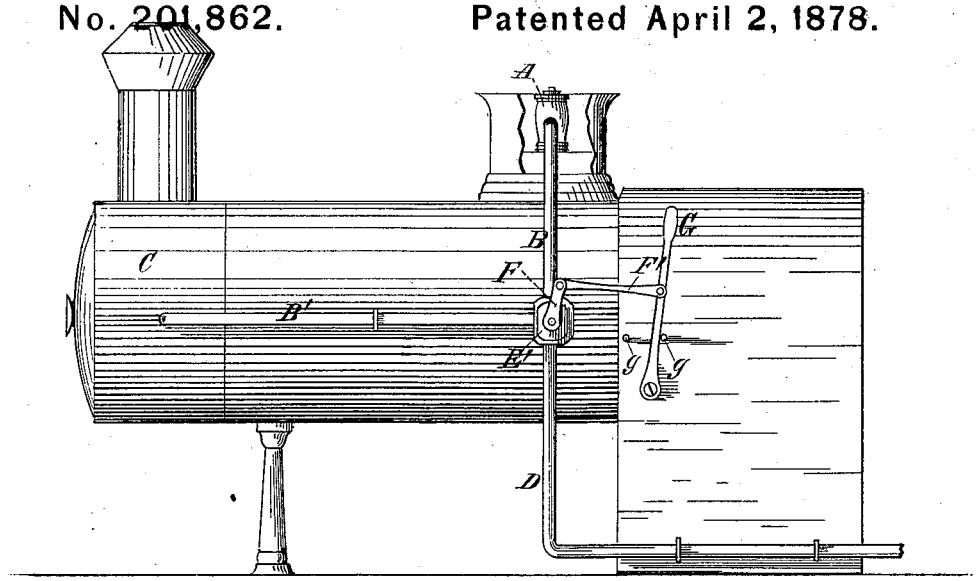

Fig. 1.

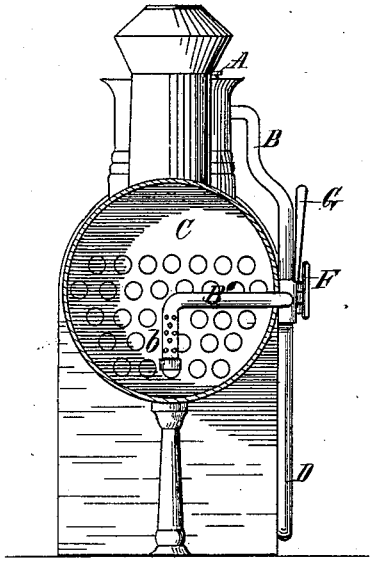

Fig. 2.

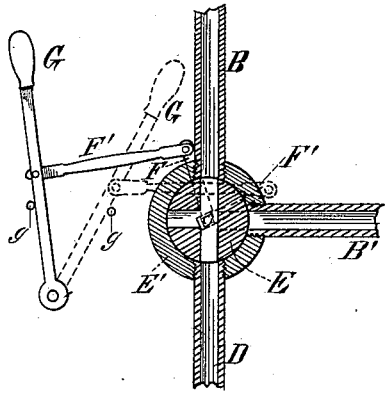

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY G. ASHTON, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO ASHTON VALVE COMPANY, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN EXHAUST MECHANISMS FOR LOCOMOTIVES AND OTHER STEAM-ENGINES.

Specification forming part of Letters Patent No. **201,862**, dated April 2, 1878; application filed December 19, 1877.

To all whom it may concern:

Be it known that I, HENRY G. ASHTON, of Somerville, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in Locomotives and other Steam-Engines, which is fully described in the following specification, reference being had to the accompanying drawings, making a part hereof.

The object of my invention is to get rid of the objectionable noise produced by steam as it escapes from a safety-valve, and this object is accomplished by conducting the steam which escapes from the safety-valve into the smoke-box, from which it is discharged into the open air through the smoke-stack.

The apparatus used to accomplish this result is very simple, and is shown attached to a locomotive in the accompanying drawing, in which—

A represents a safety-valve, around which a closed chamber is formed to retain the escaped steam. B B′ is a pipe leading from this chamber into the smoke-box C, where it is discharged. In practice it is found better to have the end of the pipe B′ in the smoke-box turned downward and perforated, as shown at *b*, Figure 2, and capped, so that the steam will not be discharged in a single large jet into the smoke-box, but in a series of small jets, escaping as a vapor from the smoke-stack without materially affecting the draft.

It will be seen that if a chamber were formed around an ordinary safety-valve, and the steam should escape from the boiler into this chamber in such large quantities that the pipe could not properly discharge it, a back pressure would be formed in the chamber, which would tend to close the safety-valve without giving the boiler adequate relief. To obviate this difficulty my invention should always be applied to a valve which has its upper surface protected from contact with the steam, and the best valve known to me for that purpose is one a patent for which an application was filed in the United States Patent Office by me December 4, 1877.

When it is preferred to use this invention in connection with my invention for heating the feed-water in the tender by escape-steam, as described in my Patents Nos. 186,783 and 194,073, the pipes are connected, as shown in the drawing, D being the pipe which runs into the tender.

At E′ is a three-way cock, the best form of which for this purpose is shown in Fig. 3, in which E is the valve, which is controlled from the cab by means of the lever G and links F′ and F, *g g* being stops to prevent too great motion being given to the valve. Fig. 3 shows the valve in position to allow the steam to flow in the feed-water by the pipes B and D.

If the steam is to be prevented access to the feed-water for any reason, the handle G′, and by it the valve E, is moved into the position indicated by the dotted lines, thus allowing the steam a passage through the pipes B and B′ into the smoke-box. By this arrangement the steam, although at a high tension—often one hundred and thirty pounds to the square inch where it escapes—is reduced to a low tension (about ten or fifteen pounds) when it enters the smoke-box.

What I claim as my invention is—

1. The combination of the safety-valve A with the smoke-box C by means of the pipes B B′, as and for the purposes set forth.

2. The combination of the safety-valve A, pipe B, cock E, and pipes B and D, constructed and arranged as shown, in order that the escape-steam from the safety-valve may be carried in either one of two directions, as set forth.

HENRY G. ASHTON.

Witnesses:

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