

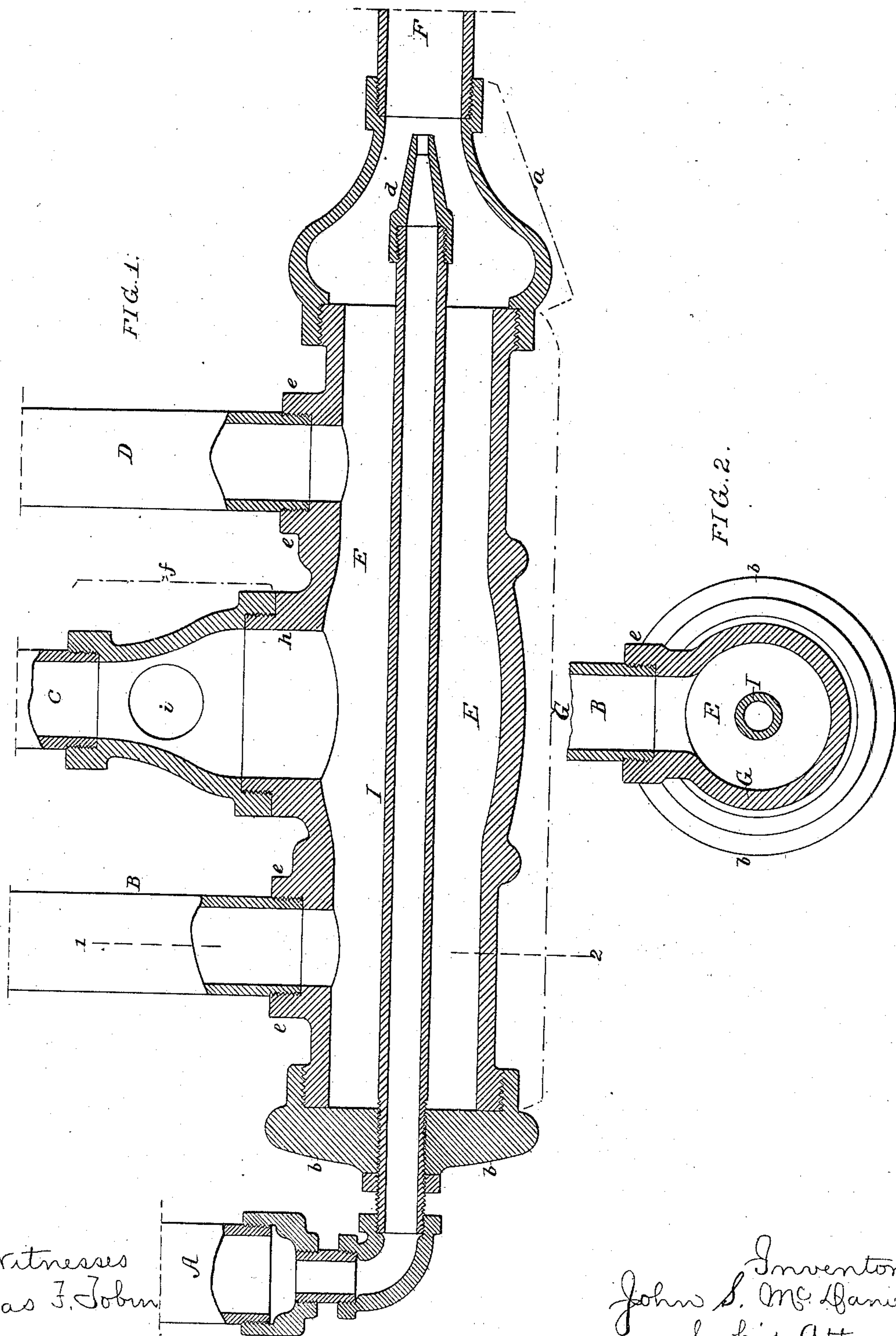
(No Model.)

J. S. McDANIEL.

ATTACHMENT FOR STEAM PIPES.

No. 311,437.

Patented Jan. 27, 1885.



Witnesses
Jas F. Johnson
John M. Clayton.

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UNITED STATES PATENT OFFICE.

JOHN S. McDANIEL, OF WILMINGTON, DELAWARE, ASSIGNOR OF ONE-HALF
TO JAMES WATSON, OF PHILADELPHIA, PENNSYLVANIA.

ATTACHMENT FOR STEAM-PIPES.

SPECIFICATION forming part of Letters Patent No. 311,437, dated January 27, 1885.

Application filed May 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. McDANIEL, a citizen of the United States, and a resident of Wilmington, Delaware, have invented a certain Improved Attachment for Steam-Heating Pipes, of which the following is a specification.

The object of my invention, which is fully described and claimed hereinafter, is to induce the free discharge of the steam and water of condensation from steam-heated pipes.

In the accompanying drawings, Figure 1 is a sectional view of the improved attachment for steam-heated pipes; and Fig. 2, a transverse section on the line 1 2, Fig. 1.

A, B, C, and D are terminal portions of different steam-heated pipes, all communicating with a steam-generator, but in most cases differently arranged, as the apartments through which they traverse may suggest. These pipes communicate with a chamber, E, formed in the present instance by the casing G and its two heads, *a* and *b*, the outlet F of the chamber communicating directly with the atmosphere or any of the many available steam-traps. It should be stated here that where there are several steam-pipes communicating with one outlet the steam in one pipe is apt to interfere with the free escape of the steam and water of condensation from other pipes, for the reason that the steam in one pipe, generally that in which the steam has the shortest course to traverse, is in a more active condition than that which is compelled to take a longer course in other pipes. It is this conflict between the steam escaping from one pipe and the steam and water of condensation which should escape freely from another pipe or pipes which causes the well-known disagreeable rattling noises occurring in steam-heating apparatus. In order to obviate this evil, I place centrally within the chamber E an ejector, the simplest form of which is a tube, I, communicating at one end, in the present instance, with the pipe A, in which the steam is supposed to be in the most active condition, the nozzle *d* at the opposite end of the tube being directed to the outlet F, so that the jet of steam from this nozzle will induce the

free discharge of the more sluggish steam and water of condensation from the other pipes, B, C, and D, into the chamber, and thence through the outlet-pipe F.

In carrying out my invention it is not necessary to adhere to the precise attachment shown, for its construction may be varied as the number of pipes communicating with the chamber E may suggest. There may, for instance, be but two steam-heating pipes communicating with one chamber, or more pipes than are shown in the drawings. In the present instance there are simple enlargements *ee* on the casing G, into which are screwed the terminal portions B and D of two steam-heated pipes, while the terminal portion C of a third set of pipes is screwed into a tubular attachment, *f*, which is screwed onto a boss, *h*, on the casing G, this attachment being enlarged, so as to receive the termination of a fourth pipe, (indicated by the circle *i*,) should a fourth pipe be required. The portion of the tube I which projects through the head *b* of the casing is connected by ordinary well-known coupling devices to the pipe A, or to any other pipe in which the steam is most active.

A prominent advantage of my invention is the complete clearing of the pipes when steam is first introduced into them.

In many cases it may be advisable to connect the ejector-tube directly by a special pipe with the steam-generator, or with one of the pipes at a point near the generator, so as to insure the injection of a jet of active steam into the outlet of the chamber.

I claim as my invention—

The combination of the terminal portions of two or more waste-pipes of heating apparatus with an ejector, the nozzle of which communicates with one of the pipes, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN S. McDANIEL.

Witnesses:

JOHN M. CLAYTON,
HARRY SMITH.