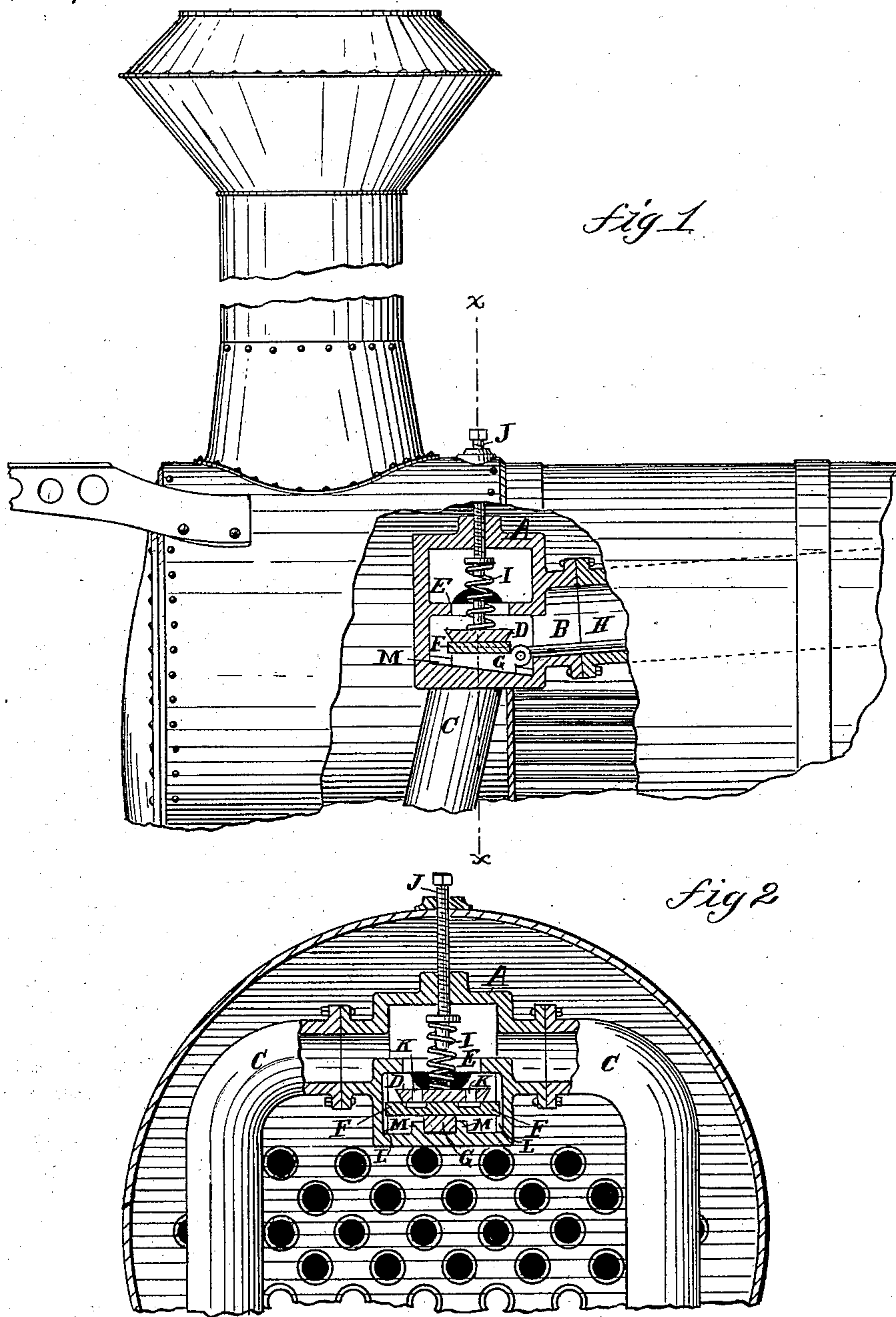


(No Model.)

J. C. HIGDON.
LOCOMOTIVE.

No. 268,231.

Patented Nov. 28, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN C. HIGDON, OF KANSAS CITY, MISSOURI.

LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 268,231, dated November 28, 1882.

Application filed April 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. HIGDON, of Kansas City, Jackson county, Missouri, have invented a new and useful Improvement in Locomotives, of which the following is a full, clear, and exact description.

This invention consists of a valve in the steam-pipe of a locomotive, to be automatically closed by the excessive flow of steam when the driving-wheels slip, to cut off the steam from the engines and stop the wheels, and then to be automatically opened again to allow the requisite flow of steam from the throttle-valve to the engines, the said automatic valve being located between the throttle-valve and the engines, to momentarily interrupt the flow of steam whenever by the slip of the wheels an excessive flow takes place in consequence, as hereinafter described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a side elevation of part of a locomotive-boiler, with a part of the boiler and the steam-pipe sectioned through the said automatic cut-off, and Fig. 2 is a transverse section of Fig. 1 on line *x x*.

A represents a stop-valve chamber, which I locate in the steam-pipe B, anywhere between the throttle-valve and the branches C, or at the junction of said pipe and branches, as here shown.

D is the valve, and E the seat on which said valve is to close to stop the flow of steam. When the valve is open it rests on a table, F, that is adjustable toward and from seat E by a wedge, G, under the control of the engineer by a rod, H, attached to the throttle-lever, or any approved means. The valve is pressed down on said table by a spring, I, and an adjusting-screw, J, the said screw extending out through the steam pipe and boiler suitably for being actuated to regulate the tension of the spring when required. A sliding rod may be substituted for the screw, and a bell-crank and rod may be employed to force the sliding rod down, the rod that is attached to the crank being extended to the cab for the convenience of the engineer.

It is intended to impose about the same pressure on valve D by spring I, to keep said valve

open, that the steam exerts on the other side of the valve tending to close it, thus placing it in equilibrium, or thereabout, so that it will be closed promptly by any undue rush of steam. To enable it to open again automatically it is perforated in two or more places, K, or otherwise contrived so as not to wholly shut off the steam, so that as soon as the wheels stop and the rush of steam stops the pressure will equalize on both sides of the valve D, and it will open by its gravity, or by a slight preponderance of pressure of the spring I upon its upper side. The object of the wedge is to regulate the action of the valve by setting it nearer to or farther from the seat E.

The table F is to relieve the valve from the lateral thrusts of the wedge. Said table works in guides L to take the thrust of the wedge from the valve, and the wedge G works in guides M to keep it in position.

I do not mean to limit myself to the particular arrangement of apparatus that I have shown for carrying out my invention, for it is obvious that the same may be varied in this respect. For instance, the regulating-valve may be located directly below or in advance of the throttle-valve, a bell-crank or a screw may be substituted for the wedge to regulate the distance of the valve from the seat, and other changes may be made.

The table F is grooved or otherwise shaped on the upper surface so as not to prevent the under side of the valve from being subject to steam-pressure, to prevent its sticking and insure the prompt lifting of the valve from the table.

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

1. The combination, with the steam-pipe of a locomotive-engine, of a cut-off valve, D, automatically closing by excessive flow of steam when the wheels slip, substantially as described.

2. The combination, with a steam-pipe of a locomotive-engine, of a cut-off valve automatically closing by excessive flow of steam when the wheels slip, and also automatically opening when the excessive flow ceases and equilibrium ensues, substantially as described.

3. The combination, with the cut-off valve D, of the table F, adjustable toward and from the seat E, substantially as described.

4. The combination of the spring I and an adjusting-screw, J, or equivalent device, with the valve D, arranged to be closed by the flow of steam, substantially as described.
- 5 5. The combination of the spring I and an adjusting-screw, J, or equivalent device, with the valve D, arranged to be closed by the flow of steam, and being provided with a table, F, adjustable with respect to seat E, substantially
10 as described.
6. The valve D, apertured as described, in

combination with its seat E and adjustable table F, substantially as and for the purpose set forth.

7. The table F, grooved to afford steamways 15 below valve D, resting thereon, substantially as and for the purposes set forth.

JOHN C. HIGDON.

Witnesses:

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J. E. HIGDON.