(No Model.)

C. LOZON.

THROTTLE VALVE.

No. 378,140. Patented Feb. 21, 1888.

Fig. 1

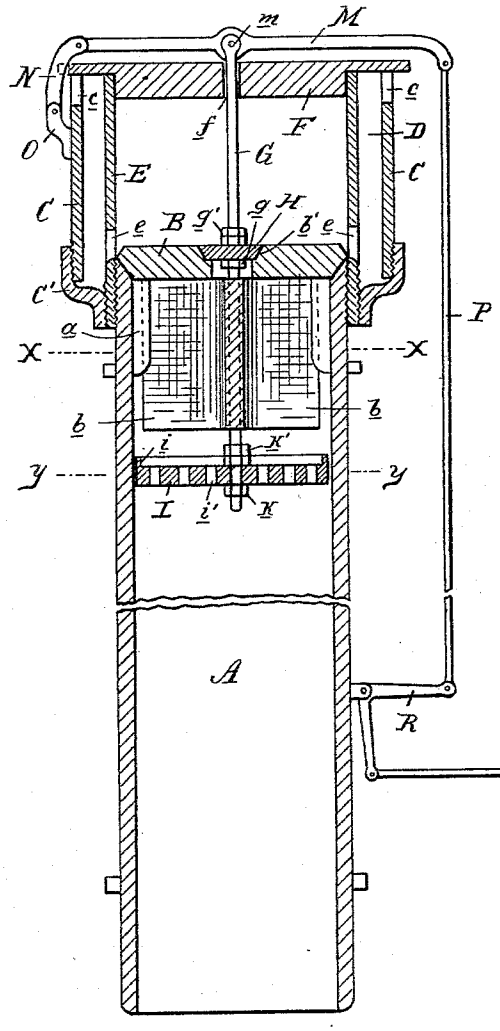


Fig. 2

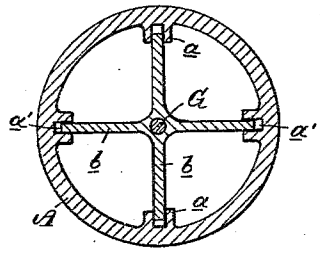
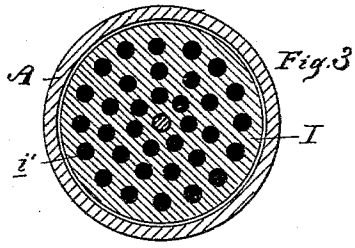


Fig. 3



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N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

CHARLES LOZON, OF DETROIT, MICHIGAN.

THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 378,140, dated February 21, 1888.

Application filed September 24, 1887. Serial No. 250,538. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LOZON, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Throttle-Valves of Locomotive-Engines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in throttle-valves for locomotive-engines; and the invention consists in introducing the steam through an annular chamber to the valve, in placing an auxiliary valve in the main valve, and in providing a strainer or grating to prevent the passage of any solid substances through the steam-pipes.

In the drawings which accompany and form a part of this specification, Figure 1 is a vertical sectional view of my improvement. Fig. 2 is a sectional plan of the valve and the steam-pipe on the line *x x* in Fig. 1. Fig. 3 is a section of the strainer and steam-pipe on the line *y y* in Fig. 1.

A is the steam-pipe leading from the dome of the boiler to the steam-chest of the engine.

B is the throttle-valve, the stem of which is provided with the wings *b b*, which slide in the channels *a'*, formed on the inside of the steam-pipe by the projections *a a*.

C is a short section of a pipe of larger diameter than the steam-pipe, and is attached thereto a little below the throttle-valve by a beveled or inclined connection, C'. This pipe C is provided with the ports *c*, through which steam is admitted to the annular chamber D. The annular chamber D is formed by the pipe C and the interior pipe, E, which latter depends from the cap F. This cap F covers the upper end of the pipe C. The pipe E extends downward until within a short distance above the throttle-valve and steam-pipe, thus forming the annular port *e*, through which steam passes into the steam-pipe when the valve is opened. The lower edge of the port is beveled to facilitate the passage of the steam.

An aperture is made in the center of the main throttle-valve. This aperture at its upper edge is formed into a valve-seat, *b'*, in which is seated the auxiliary valve H. This auxiliary valve, as well as the main valve, is operated by the rod G, which passes through the perforations *b'* in the center of the valve-stem of each valve. The auxiliary valve is held in position on the rod by the screw-nuts *g g'*. The rod G extends below the bottom of the stem of the main valve, and carries at its lower extremity the strainer or perforated disk I, which is provided with the raised rim *i*, and has its entire surface filled with small perforations *i'*. This disk is nearly of the same size as the interior of the steam-pipe, and has a free movement. The strainer or disk is supported on the rod by the screw-nut *k*, and is retained in place by the screw-nut *k'*, which in operation also comes in contact with the valve-stem of the main valve and raises the valve from its seat. The upper end of the rod G passes through the slot *f* in the cap, and is pivoted at *m* to the lever M. The lever M at one end is pivoted to the upper end of the link N, which is pivoted at its lower end to the bracket O. This bracket is bolted to the pipe C. To the other end of the lever M is pivoted the rod P, which in turn is pivoted to the upper arm of the bell-crank lever R. To the lower arm of the lever R is pivoted or otherwise suitably secured the rod S, which passes through the end of the boiler and into the cab of the engine. The auxiliary valve allows the steam-pipe to be filled with steam before the main valve is opened, thus balancing the pressure of the steam on each face of the valve. This materially lessens the labor of the engineer, and the guides decrease the wear on the valves by retaining them steadily in place.

What I claim as my invention is—

1. In a locomotive-engine, the combination of the steam-pipe with the throttle-valve, an exterior pipe, C, suitably connected with the steam-pipe, the cap F, and the pipe E, the parts being constructed and arranged substantially as and for the purposes described.

2. In a locomotive-engine, and in combination, a steam-pipe, a throttle-valve, and a strainer suspended below said valve, substantially as described.

3. The combination of the steam-pipe of a locomotive-engine with a throttle-valve, an auxiliary valve, and a strainer below the valves, substantially as described.

4. The combination, in a locomotive-engine, of a steam-pipe with a strainer below the throttle-valve, substantially as described.

5. The combination, in a locomotive-engine, of a steam-pipe provided with the throttle-valve B, auxiliary valve H, exterior pipe, C, suitably connected to the steam-pipe, the cap F, and interior pipe, E, all substantially as described.

6. In a locomotive-engine, the combination of the steam-pipe, channels *a*, and the throttle-valves, substantially as specified.

CHARLES LOZON.

Witnesses:
EDMOND J. SCULLY,
JOHN SCHUMAN.