T. H. WALKER.

THROTTLE VALVE FOR LOCOMOTIVES.

APPLICATION FILED SEPT. 26, 1912.

1,126,595.

Patented Jan. 26, 1915.

2 SHEETS—SHEET 1.

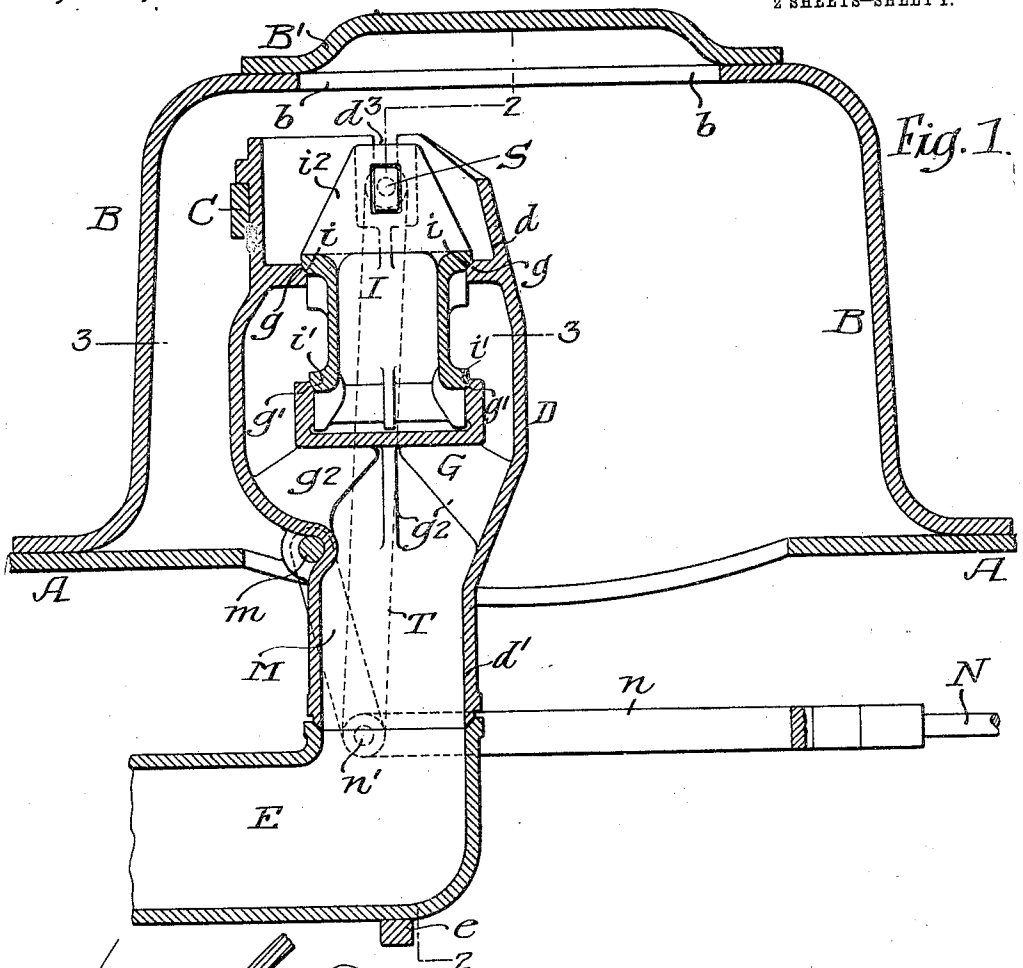



Fig. 1.

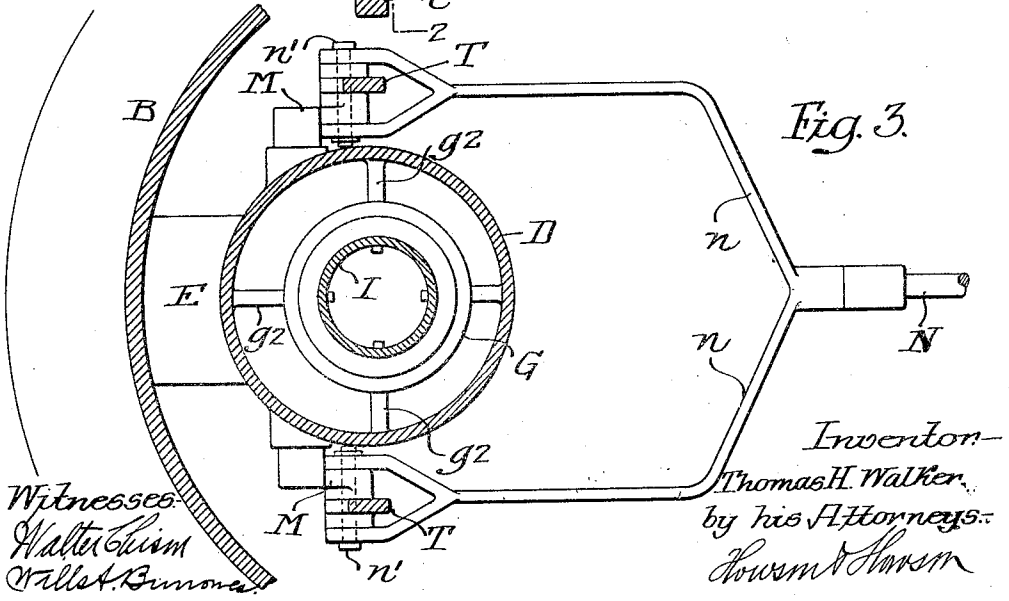



Fig. 3.

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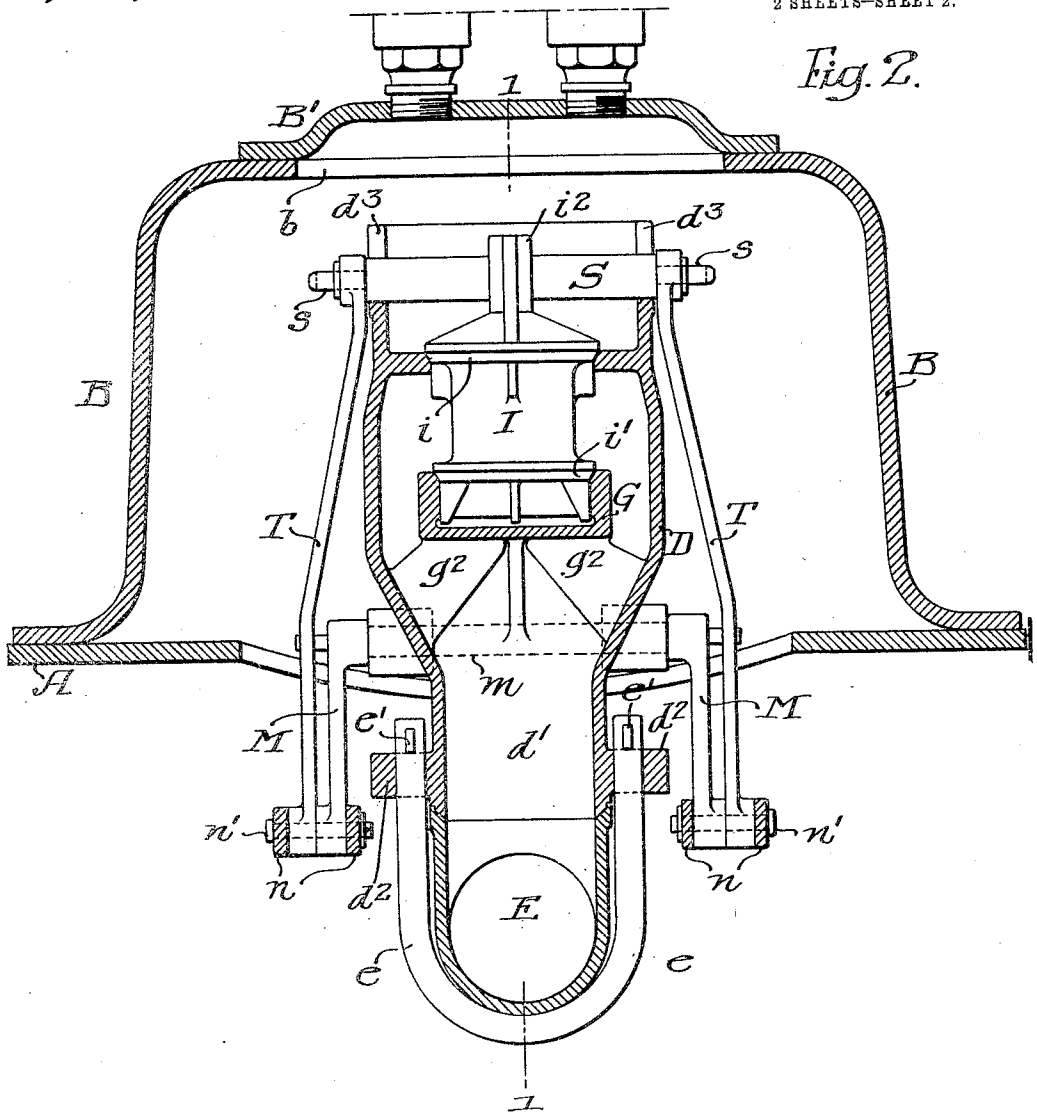
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2 SHEETS—SHEET 2.

Fig. 2.




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# UNITED STATES PATENT OFFICE.

THOMAS H. WALKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE BALDWIN LOCOMOTIVE WORKS, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## THROTTLE-VALVE FOR LOCOMOTIVES.

1,126,595. Specification of Letters Patent. Patented Jan. 26, 1915.

Application filed September 26, 1912. Serial No. 722,500.

*To all whom it may concern:*

Be it known that I, THOMAS H. WALKER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Throttle-Valves for Locomotives, of which the following is a specification.

One object of my invention is to so design the throttle valve and the dome of a locomotive boiler in which the throttle valve is located, that the opening in the dome can be used as a man hole through which to enter the boiler, dispensing with a separate man hole heretofore used in locomotive boiler construction.

A further object of the invention is to so design the throttle valve as to provide for the proper flow of the steam through the valve when the valve is open.

These objects I attain in the following manner, reference being had to the accompanying drawings, in which:—

Figure 1, is a longitudinal sectional view of the upper portion of the locomotive boiler and dome, also showing the throttle valve in section; the section being on the line 1—1, Fig. 2; Fig. 2, is a transverse sectional view on the line 2—2, Fig. 1; and Fig. 3, is a sectional plan view on the line 3—3, Fig. 1.

A is the shell of the boiler.

B is the dome into which the throttle valve extends. This dome has an opening $b$ of sufficient size to allow for the passage of a man through the opening and into the interior of the boiler. This opening is closed by a suitable cap B′ bolted to the dome.

D is the throttle valve casing located at one side of the center of the dome, as clearly illustrated in Fig. 1, and supported in the ordinary manner by a bar C secured to the casing at the upper end and extending from one side to the other of the dome. The upper end of the casing is carried well up to the top of the dome to obtain dry steam, and is beveled, as at $d$, so as to allow sufficient space for an entrance into the boiler through the opening in the dome, as mentioned above.

The lower end $d'$ of the casing is circular in cross section and is attached to the pipe E by a U-shaped hanger $e$. The upper ends of this hanger extend through lugs $d^2$ and are held in place by keys $e'$, as shown in Fig. 2.

In the casing D is an upper seat $g$ and a lower seat $g'$. This lower seat is formed by a flange of the cup G made integral with the casing D and connected thereto by a spider $g^2$, so as to allow steam to freely flow between the cup G and the inner wall of the casing.

I is a hollow valve proper having an upper flange $i$ adapted to the seat $g$, and a lower flange $i'$ adapted to the seat $g'$ on the cup G. The valve has guide wings at intervals so that the valve will be properly guided when raised and yet will allow the free flow of steam from the boiler into the casing D and through the pipe E.

It will be noticed that the upper seat $g$ and the cup G are arranged off center in respect to the casing. This allows the casing to be placed nearer one side of the dome and yet allows the valve to be readily removed through the opening in the dome. This construction leaves sufficient room for a person entering the boiler through the opening in the dome to pass clear of the valve casing.

The hollow valve I is operated through the rod N extending to the cab of the locomotive. This rod has a forked extension $n$, each fork of which is connected to a rocking arm M secured to a transverse pivot $m$. One of these arms M is located on each side of the casing D.

Adapted to the upper portion $i^2$ of the valve I is a cross bar S having reduced ends $s$, and connecting this cross bar to the pins $n'$ of the forked extension $n$ of the rod N are links T, so that when the rod N is moved longitudinally in one direction the valve will be raised off its seat. The movement of the valve is slow at first and then gradually increases, owing to the link connection.

The rod S is guided in the upper end of the casing D, being located in slots $d^3$ in the upper flange, as shown in Fig. 1.

By the above construction the throttle valve can be made and located in such a position as to allow of the free passage into the locomotive boiler through the single opening in the dome, dispensing with additional man hole openings in the boiler, and the valve can be opened and closed with comparatively little effort on the part of the engineer. It is simple in construction and can be readily removed from the casing

when necessary, and through the opening in the dome.

I claim:—

The combination of a locomotive having a dome provided with a man hole opening; a casing located within the dome at one side thereof and having its upper end beveled at one side; an upper seat and a cup shaped lower seat within the casing; a spider connecting the cupped seat with the casing so as to allow for the free passage of steam around the cup; a hollow valve having an upper and a lower flange adapted to the two seats in the casing; a cross bar connected to the upper end of the valve and adapted to guides in the casing; pivoted arms; links connecting the outer ends of the arms to the cross bar of the valve; and an operating rod also connected to the outer ends of said pivoted arms.

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

THOMAS H. WALKER.

Witnesses:
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WM. A. BARR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."