T. A. PITMAN.

STEAM THROTTLE VALVE.

APPLICATION FILED FEB. 17, 1908.

903,767.

Patented Nov. 10, 1908.

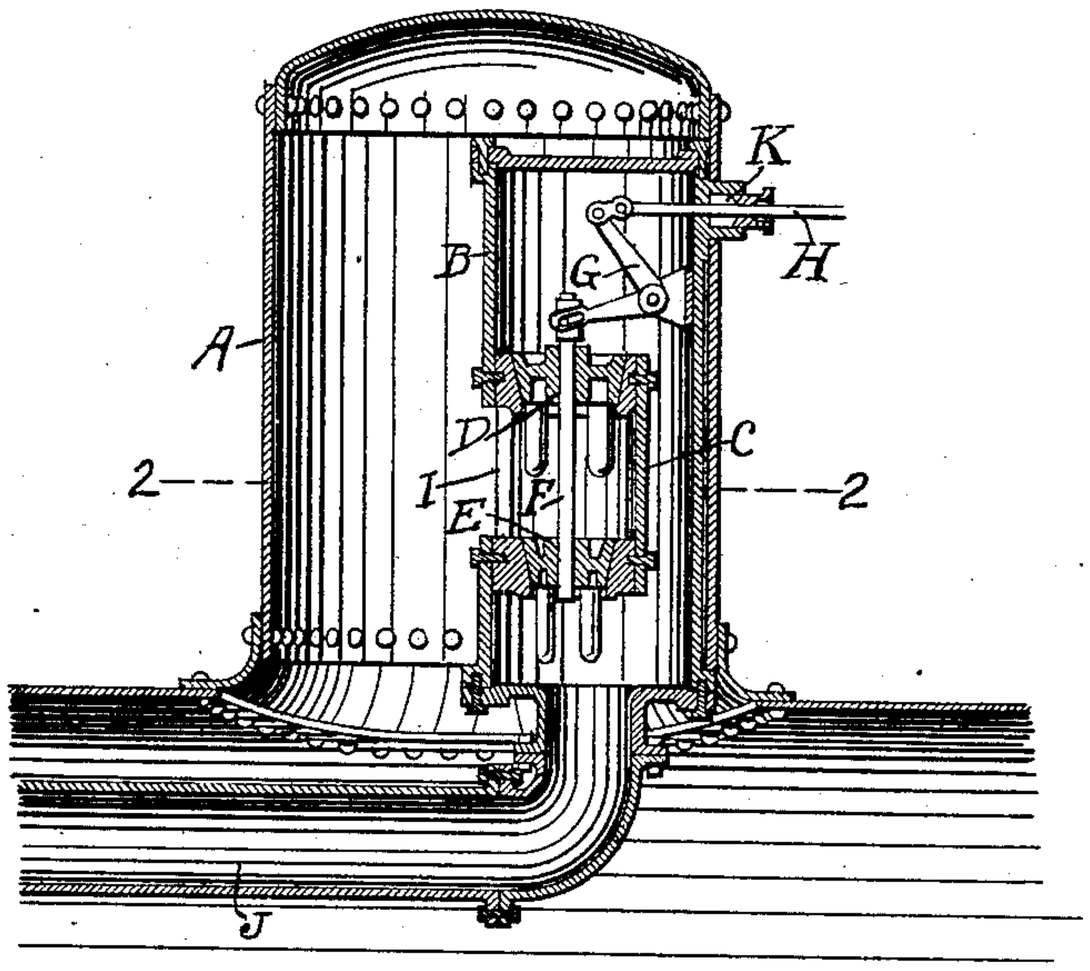

Fig. 1.

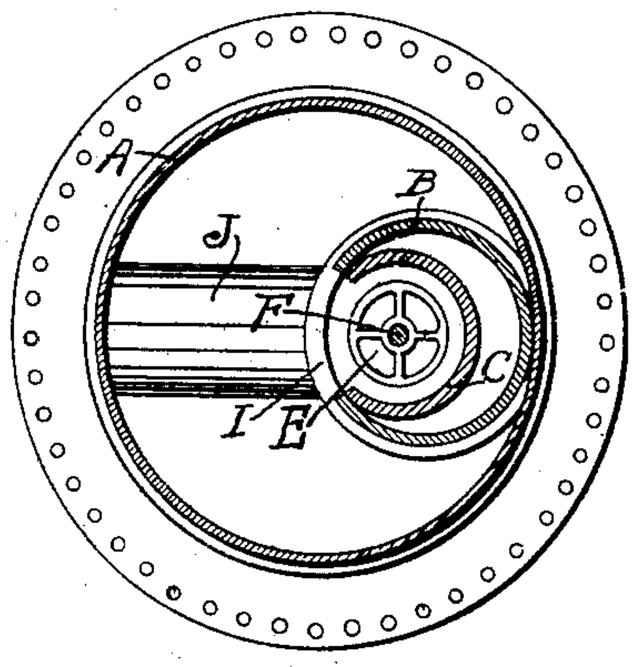

Fig. 2.

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TAYLOR A. PITMAN, OF TACOMA, WASHINGTON.

STEAM THROTTLE-VALVE.

No. 903,767. Specification of Letters Patent. Patented Nov. 10, 1908.

Application filed February 17, 1908. Serial No. 416,319.

To all whom it may concern:

Be it known that I, TAYLOR A. PITMAN, a citizen of the United States, residing at the city of Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Steam Throttle-Valves, of which the following is a specification.

My invention pertains to steam throttle valves used on locomotives and other steam engines.

It has for its objects: First: The construction of a throttle valve with double gates, each gate of such form and size and so located as to be equally balanced by the pressure of the steam when closed or open, and thus secure a valve that can be operated with ease, and; Second: To construct a throttle valve with the packing of its operating piston free of pressure when the throttle is closed. I attain these objects by means of the mechanism illustrated in the accompanying drawing in which

Figure 1 is a vertical section through the valve and a steam dome in which it is located; and Fig. 2 is a horizontal section of the valve and dome at 2—2.

Similar letters refer to similar parts in each figure.

Heretofore steam throttle valves have been constructed with the outlet between the gates and with the operating piston within the boiler and having its packing chamber in the head of the boiler where it is constantly under pressure. This makes it impossible to re-pack the chamber while steam is on which frequently causes loss of valuable time. To obviate this I have conceived the idea of constructing a throttle valve with the intake between the gates and the operating mechanism confined in the outlet valve chamber, thus leaving the same free of pressure when the valve is closed. I thus produce a valve of simple construction, easy to operate, and with a packing chamber free from pressure whenever the same requires re-packing.

My invention will be more readily understood by reference to the drawings in which A represents the dome to a locomotive or other steam boiler, in which is located the valve chamber B and in which is an inner valve gate chamber C. The valve gates D and E are mounted on the valve stem F which is operated by the pivot lever G and the throttle operating rod H. The valve gates D and E are designed to have equal surfaces so each will receive the same pressure of steam from the dome A and the boiler below. The steam enters the valve at the opening I and when valve is opened by lifting the stem F with the gates D and E, the steam passes up and down through each into the outer chamber B, and thence through the steam pipe J to the engines. The gates are slightly cone shape which produces a tight valve that is simple in construction and with gates so evenly balanced as to be easily operated.

The packing chamber K through which the operating rod H passes is connected with the outer valve chamber B and is free from pressure when the valve gates are closed. It can readily be re-packed at any time when the boiler is under steam pressure by simply closing the valve and shutting off the steam.

I thus secure the objects desired in my invention in producing a throttle valve that is simple in construction, easily operated and having a packing chamber free of pressure when the valve is closed while the boiler is under steam pressure.

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

1. A throttle valve having a steam receiving chamber between two gates of equal area, said gates opening into an outer discharge chamber, having steam pipe connection with the engines, and suitable means for opening and closing the gates of said throttle valve substantially as shown and described and for the purposes set forth.

2. A throttle valve having a steam receiving chamber between two gates of equal area, said chamber having an intake between the gates and said gates opening into an outer discharge chamber in which is located the operating mechanism of said valve gates, the packing chamber of said operating mechanism being connected with said outer discharging chamber where it is free from steam pressure when said valve gates are closed, substantially as shown and described and for the purposes set forth.

3. The combination with the steam dome, of a valve chamber located within the dome and having a pipe leading therefrom and an opening into the dome, a valve-gate chamber within said valve chamber having an opening registering with the opening in

the valve chamber and provided with valve-gates in its opposite heads, and means for opening said gates, substantially as described.

4. The combination with the steam dome, of a chamber formed within the dome and having a pipe leading therefrom, a valve-gate chamber located within said chamber and formed with valve-gate seats in its opposite heads and having communication with the dome between said valve-gate seats, balanced valve-gates connected together and seated in said heads, a lever mounted in the chamber which incloses the valve-gate chamber and operatively connected with the valve-gates, and an operating rod connected with said lever, substantially as described.

5. The combination with the steam dome, of a chamber formed within the steam dome and having a pipe leading therefrom, a valve-gate chamber located within said chamber and formed with valve-gate seats in its opposite heads and having communication with the dome between said valve-gate seats, balanced valve-gates connected together and seated in said heads, an operating rod connected with said valve-gates, and a packing box for said operating rod located next to the outer wall of said inclosing chamber, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

TAYLOR A. PITMAN.

Witnesses:
L. H. HIGGINS,
I. H. HILL.