

No. 845,119.

PATENTED FEB. 26, 1907.

T. A. PITMAN.
STEAM THROTTLE VALVE.
APPLICATION FILED NOV. 6, 1906.

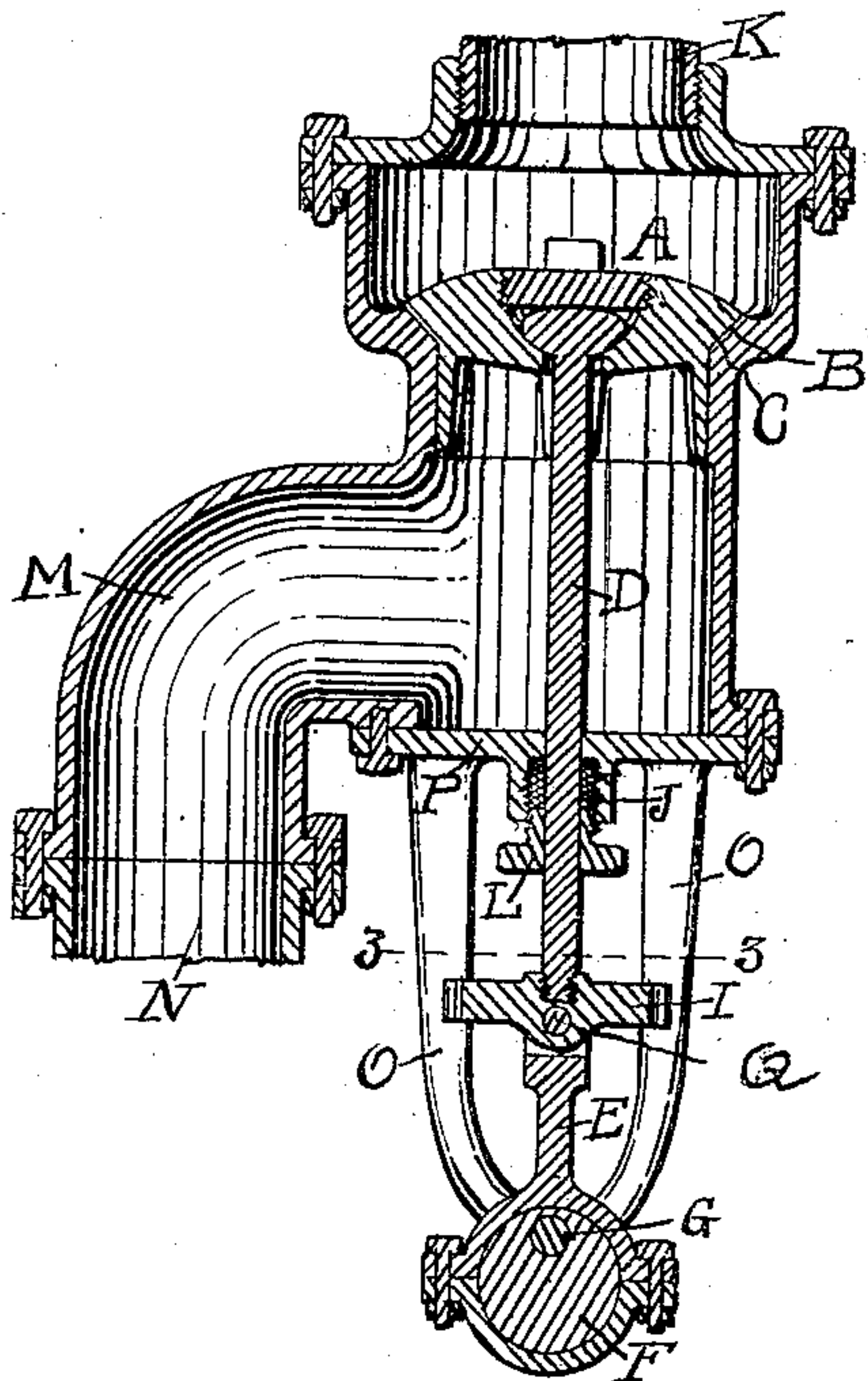


Fig. 1

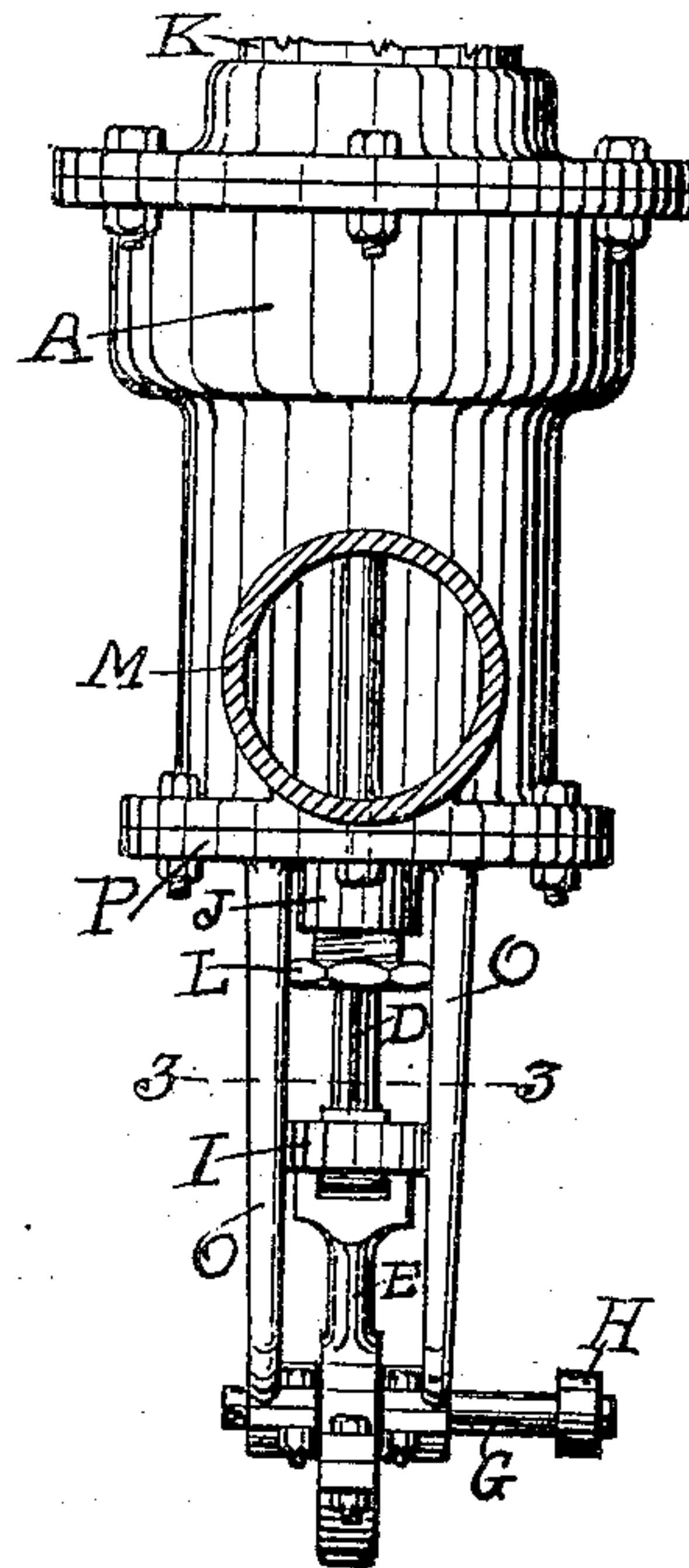


Fig. 2

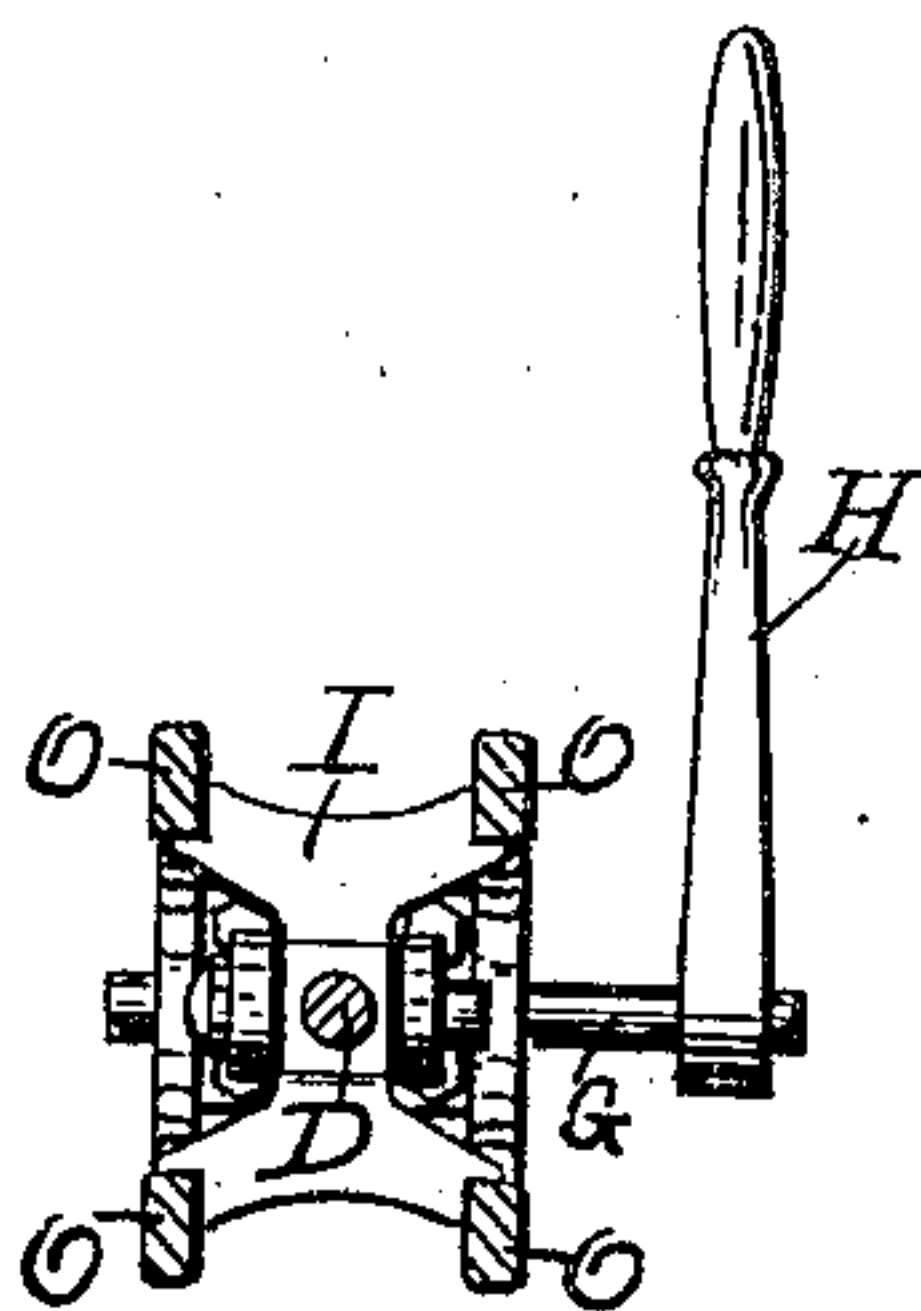


Fig. 3.

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UNITED STATES PATENT OFFICE.

TAYLOR A. PITMAN, OF TACOMA, WASHINGTON.

STEAM THROTTLE-VALVE.

No. 845,119.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed November 6, 1906. Serial No. 342,234.

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 throttle-valves used to supply and control the steam passing from the boiler to the engine.

It has for its object, first, to provide a mechanism whereby a throttle-valve may be opened and closed with ease, and, second, to regulate the supply in a manner that will keep the engine under perfect control, and, third, to provide a valve with stuffing-box that can be packed while the valve is closed and under pressure. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a section lengthwise through the valve, showing its construction. Fig. 2 is a side view of the valve, showing the exterior appearance in elevation; and Fig. 3 is a cross-section at 3 3, showing the piston-slide and the operating-lever.

Similar letters refer to similar parts in the several views.

Heretofore throttle-valves have been operated by means of direct pressure from the lever-arm, which under certain conditions makes it difficult to open the valve and to regulate the supply of steam so as to maintain perfect control of the speed of the engine. It is sometimes necessary to open the valve by a slight jerk on the throttle-lever. This causes the valve to open suddenly, and the resultant supply of steam causes the engine to start more suddenly than desired. I obviate this difficulty by means of my improved throttle-valve mechanism, which enables me to open the valve slowly with perfect ease, and thus secure a moderate and steady supply of steam with which to start the engine. By this improvement I secure and maintain perfect control of the engine, and thus avoid the sudden starting of the engine and accidents that are liable to result therefrom.

To secure the results mentioned, I construct a valve in which A is the valve-chamber, B the valve-seat, and C the cut-off or washer of the valve.

D represents the valve-stem; E, the piston by which the valve is operated. The piston

is enlarged to encircle an eccentric F, pivotally mounted on the shaft G, which is provided with a lever H, by which the valve is operated. The joint of connection between the stem D and the rod E is provided with a slide I, which is pivotally connected by a pin Q to the rod E and which insures the perfect alinement of the stem at all times and prevents improper friction through the stuffing-box J. It is to be observed that the stuffing-box J is provided with a packing-screw L. This packing-screw may be removed at any time while the valve is closed and stuffing-box repacked while the valve is under pressure.

The pipe K is continued to the boiler, from which the steam is supplied, and provides direct connection between the boiler and the valve. The side pipe M is extended by means of the pipe N, which conveys the steam to the engine. The valve now being supplied with steam and under pressure, I start the engine by steadily turning the crank H. The eccentric F, operated by the shaft G, to which the crank H is attached, raises the valve A with a positive and steady movement, and the steam is admitted from K to M, which passing through N starts the engine. By means of the eccentric F the valve may be opened to its full capacity and the full head of steam be provided when desired. By means of this eccentric operated by the lever-arm H the supply of steam can be controlled with perfect ease at any point between the first opening of the valve and its full extension, and by this device I provide a valve that fully meets the objects desired and set forth, and all sudden jerks or starts of the engine may be avoided and unfortunate accidents therefrom prevented.

It is to be observed that the mechanical construction of the valve in its several parts is consistent with the best forms of valve construction and connections. The head of the stem D is pivotally mounted in the valve C, so that the same will adjust itself perfectly to the valve-seat when closed. The crank-shaft G and the eccentric F are mounted in a practical manner to the standards O, which extend from the head-plate P of the valve-chamber. It is to be observed that this head-plate can be removed at any time to give access to the valve-chamber for any repairs that may be necessary to the valve A. The stem D is screwed into the guide I with a threaded joint which allows it to be readily

disconnected and permits the same to be withdrawn through the stuffing-box.

I do not limit myself to proportions and dimensions, but reserve the right to vary each as the size and character of the valve may require.

I am aware that prior to my invention the mechanical parts of my valve have been used in other forms of devices. I therefore do not claim the novelty exhibited in the mechanical construction, but in the combination of the several parts forming the complete valve set forth in my invention.

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

1. In a throttle-valve, the combination with the valve and its stem, of an eccentric, a collar encircling the eccentric and connected with the valve-stem, and means for actuating the eccentric to positively open and close the valve, substantially as described.

2. In a throttle-valve, the combination with the valve and its stem, of an eccentric connected with said stem, a slide intermediate of the eccentric and valve-stem, and a guide for said slide, substantially as described.

3. In a throttle-valve, the combination with the valve and its stem, of an eccentric, a slide connected with said stem and pivotally

connected with a part of said eccentric, and a guide for said slide, substantially as described.

4. In a throttle-valve, the combination with the valve-chamber, the valve and its stem, of a detachable head-plate to the valve-chamber below the valve, a stuffing-box connected to said head-plate and through which the valve-stem passes, and means connected with the valve-stem to reciprocate the same in seating and unseating the valve, substantially as described.

5. In a throttle-valve, the combination with the valve-chamber, the valve, and the valve-stem, said chamber having a steam-supply inlet on one side of the valve, a steam-outlet on the other side of the valve for the passage of steam to the engine, and a head-plate on the steam-outlet side of the valve through which the valve-stem passes, of an eccentric located outside of said head-plate and connected with the valve-stem to open and close the valve, substantially as described.

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

TAYLOR A. PITMAN.

Witnesses:

A. F. EASTMAN,
GEO. W. BULLARD.