J. HYDE.

STEAM VALVE.

APPLICATION FILED APR. 14, 1909. RENEWED JAN. 4, 1912.

1,017,292. Patented Feb. 13, 1912.

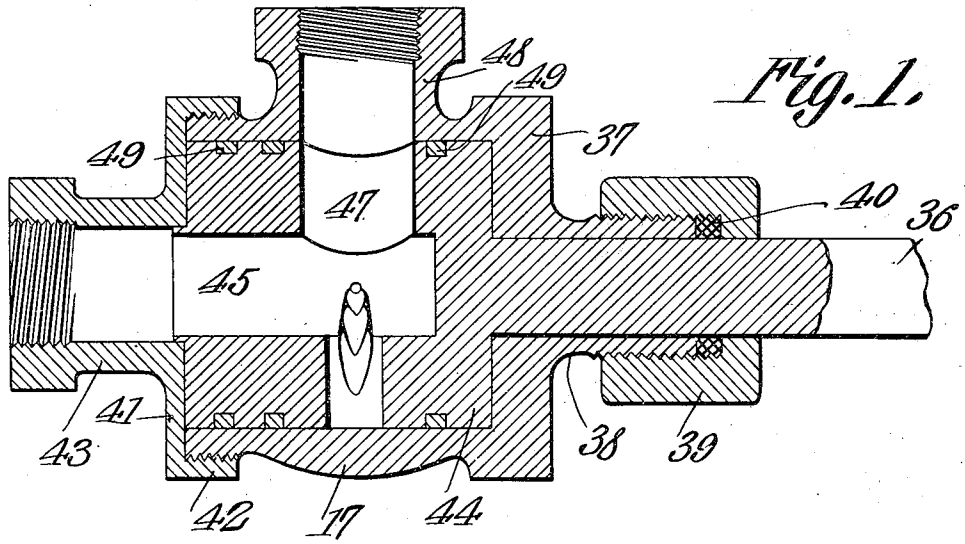

Fig. 1.

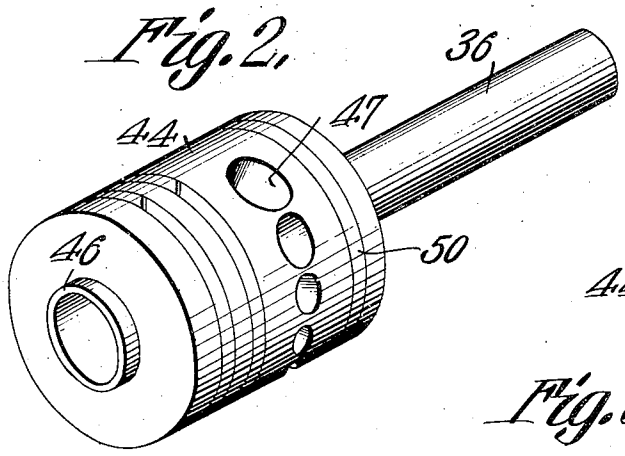

Fig. 2.

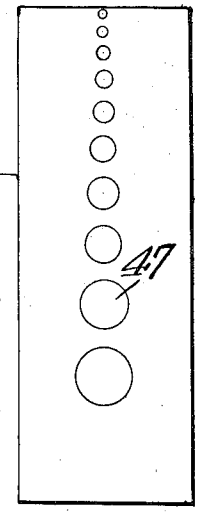

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN HYDE, OF PITTSBURGH, PENNSYLVANIA.

STEAM-VALVE.

1,017,292. Specification of Letters Patent. Patented Feb. 13, 1912.

Application filed April 14, 1909, Serial No. 489,821. Renewed January 4, 1912. Serial No. 669,436.

To all whom it may concern:

Be it known that I, JOHN HYDE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Steam-Valve, of which the following is a specification.

This invention relates to steam valves.

The object of the invention is to provide an article of this character, in which the passage of steam therethrough may be accurately and easily regulated, thus, in the event of its use in connection with a steam engine, to insure steady and regular action thereof and without fluctuations due to differences in steam pressure.

With the above and other objects in view, which will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a steam valve, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts—Figure 1 is a longitudinal sectional view through a valve constructed in accordance with the present invention. Fig. 2 is a perspective view of the valve plug. Fig. 3 is a diagrammatic view of the parts of the plug.

Referring to the drawings, 17 designates generally the valve of the present invention, the same comprising a suitable cylindrical casing of constant internal diameter, with one end closed by a head 37 having a neck 38 formed thereon and provided with a longitudinal bore in the like axis of the valve casing. The neck 38 receives the valve stem 36 and is provided with external screw threads for the reception of a suitable packing gland 39 inclosing packing 40. The end of the valve casing remote from the neck is formed with external screw threads for the reception of a head 41 having an internally threaded annular flange 42 adapted to the threaded end of the valve casing, and this head 41 is provided with a neck 43 longitudinally bored and provided at the outer end with screw threads for the reception of the corresponding end of an outlet pipe, not shown.

The stem 36 carries a straight plug valve 44 of cylindrical shape and of such size as to fill the internal bore of the casing. The body 44 of the valve is longitudinally bored for a portion of its length as indicated at 45, this bore alining with the passage through the neck while the corresponding end of the valve is formed about the bore 45 with an annular flange 46 entering the bore of the neck 43 for a short distance. The valve 44 is provided about midway of its length with a series of radial passages 47 all extending from the outer surface of the valve 44 to the bore 45, the passages 47 gradually increasing in size from a minimum to a maximum as clearly indicated in the displayed diagram of Fig. 3. The casing of the valve in line with these passages is formed with a radial neck 48 having a bore equal in diameter to the largest of the passages 47 and this neck is suitably tapped for the reception of a pipe. On each side of the series of radial passages 47 the valve 44 is provided with circumferential grooves 49 in which are seated split packing rings 50 preferably of the metallic expansion type, but these packing rings may be of course of other form and material. When the valve 17 is of such size that the largest opening 47 does not exceed about an inch in diameter these openings may be round but when the valve is of larger capacity, then in order to avoid a too great increase in the diameter of the valve, the openings 47 may be made longer in the direction of the axis of the valve and the body of the valve may be correspondingly lengthened. These features are within the province of the constructing engineer and therefore it is not deemed necessary to illustrate them, since the action of the valve is in no wise modified thereby. The largest opening will determine the full capacity of the valve while the remainder of the openings decrease in size in regular order to the minimum size which will supply only steam enough to operate the engine at the slowest rate.

By providing a long series of graduated openings 47 about the valve 44, a very sensitive and long range of graduation of steam feed to the engine is provided. The long series of passages may extend around the valve 44 for practically its entire circumference, it only being necessary to leave enough blank space to entirely close the passage through the neck 48 when it is desired that in one position communication between the neck 43 and the neck 48 should be entirely closed.

What is claimed is:

A valve comprising a cylindrical casing provided with a lateral neck, and having a bore of like diameter throughout and closed at one end by a fixed head carrying a reduced externally threaded neck, a gland engaging the neck, a detachable head connected with the other end of the casing and carrying a reduced internally threaded neck, a straight plug valve arranged within the bore of the casing and being coextensive in length therewith and held against endwise movement by the detachable head, the valve being provided with a series of radial passages, of graduated sizes, to register with the opening in the lateral neck, a stem carried by one end of the valve and extending through the gland on the first named neck, an annular flange carried by the other end of the valve and engaging the second named neck, and resilient packing rings carried by the valve and engaging the walls of the bore to afford a fluid tight coaction between the parts.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN HYDE.

Witnesses:
C. W. McKNIGHT,
J. C. SHERRIFF.