No. 764,738. PATENTED JULY 12, 1904.

J. S. LIVENGOOD.

WATER GAGE FOR STEAM BOILERS.

APPLICATION FILED JUNE 20, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

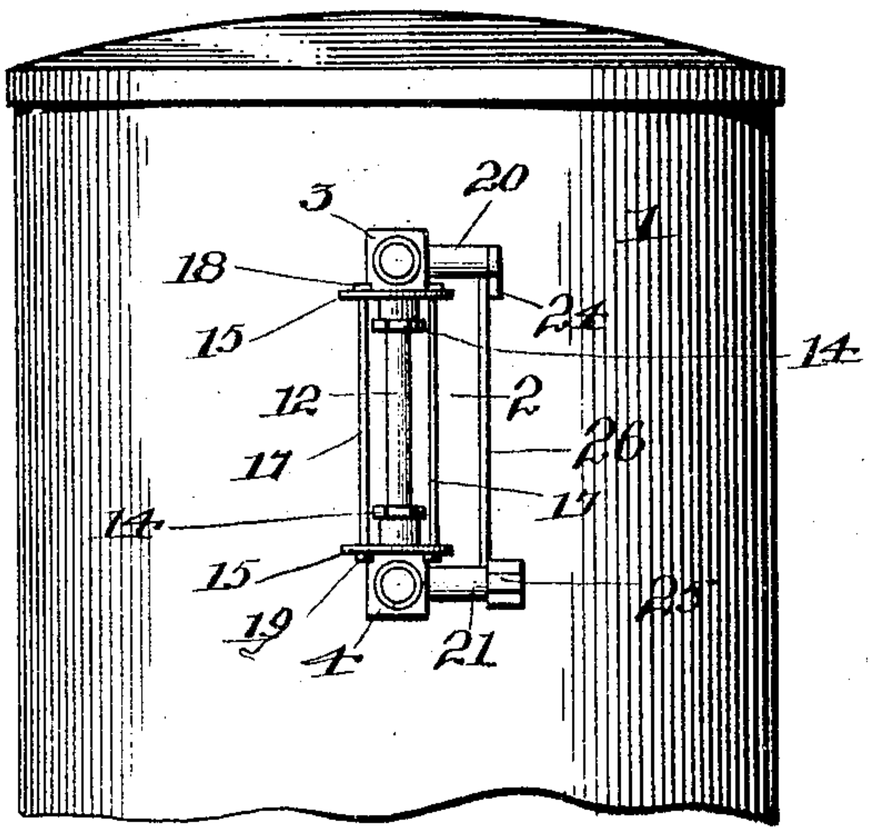
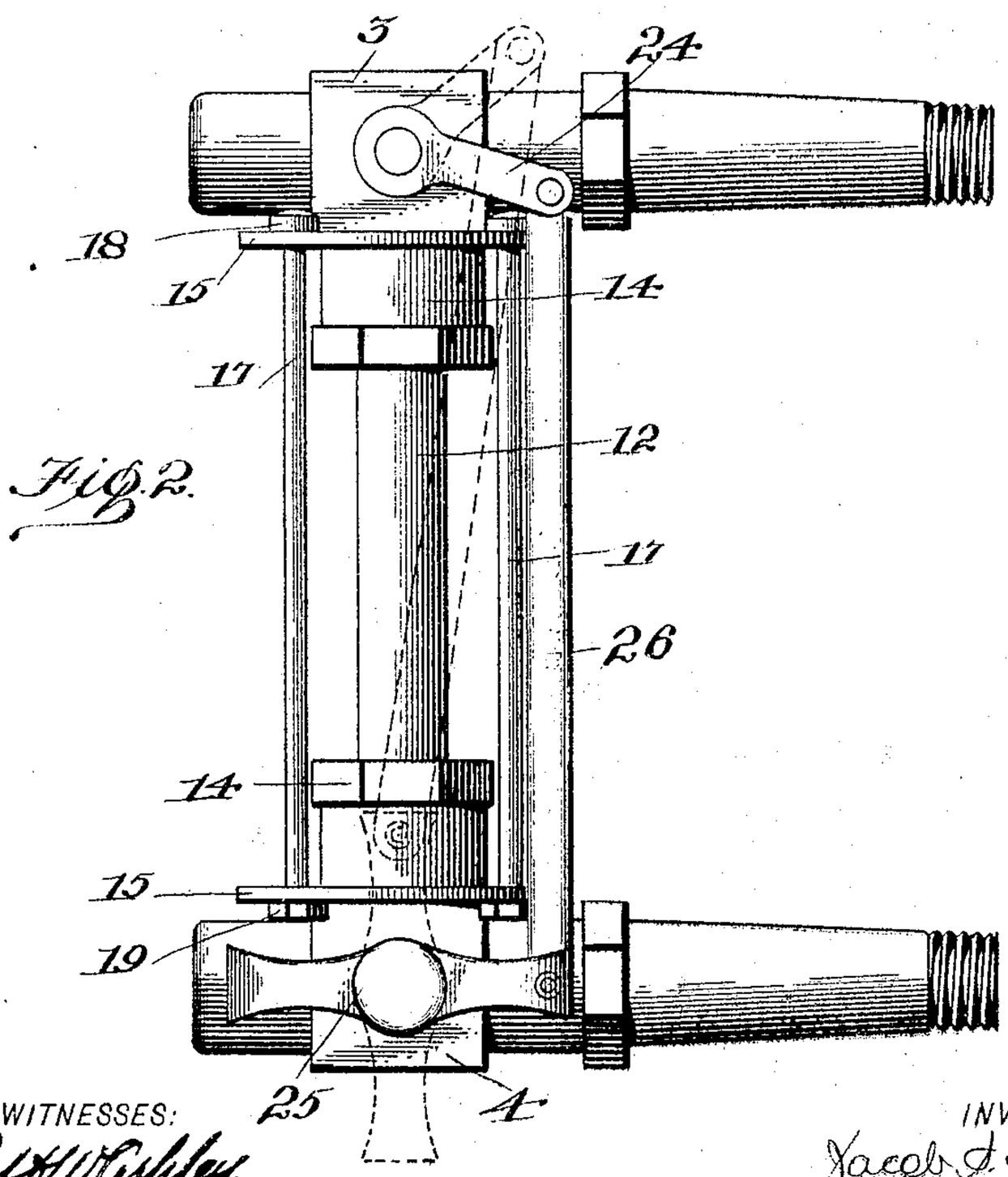


Fig. 2.



WITNESSES:

Robt. H. Ashley.

J. L. Sykes.

INVENTOR

Jacob S. Livengood,

BY

J. R. Littell

HIS ATTORNEY.

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APPLICATION FILED JUNE 20, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

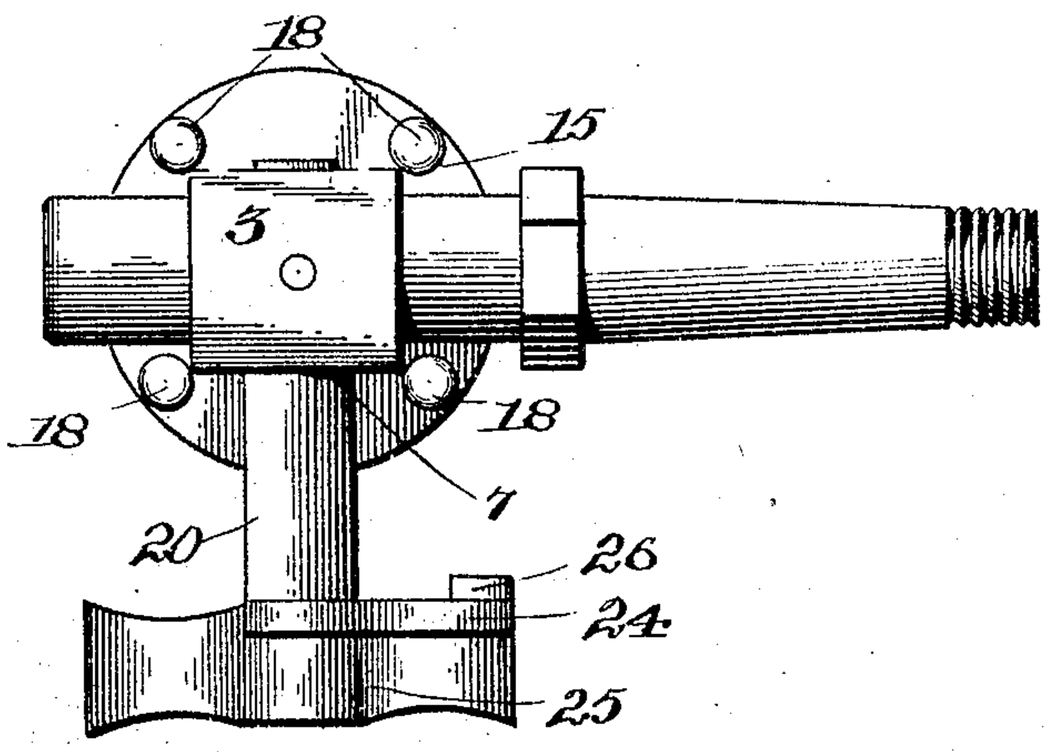
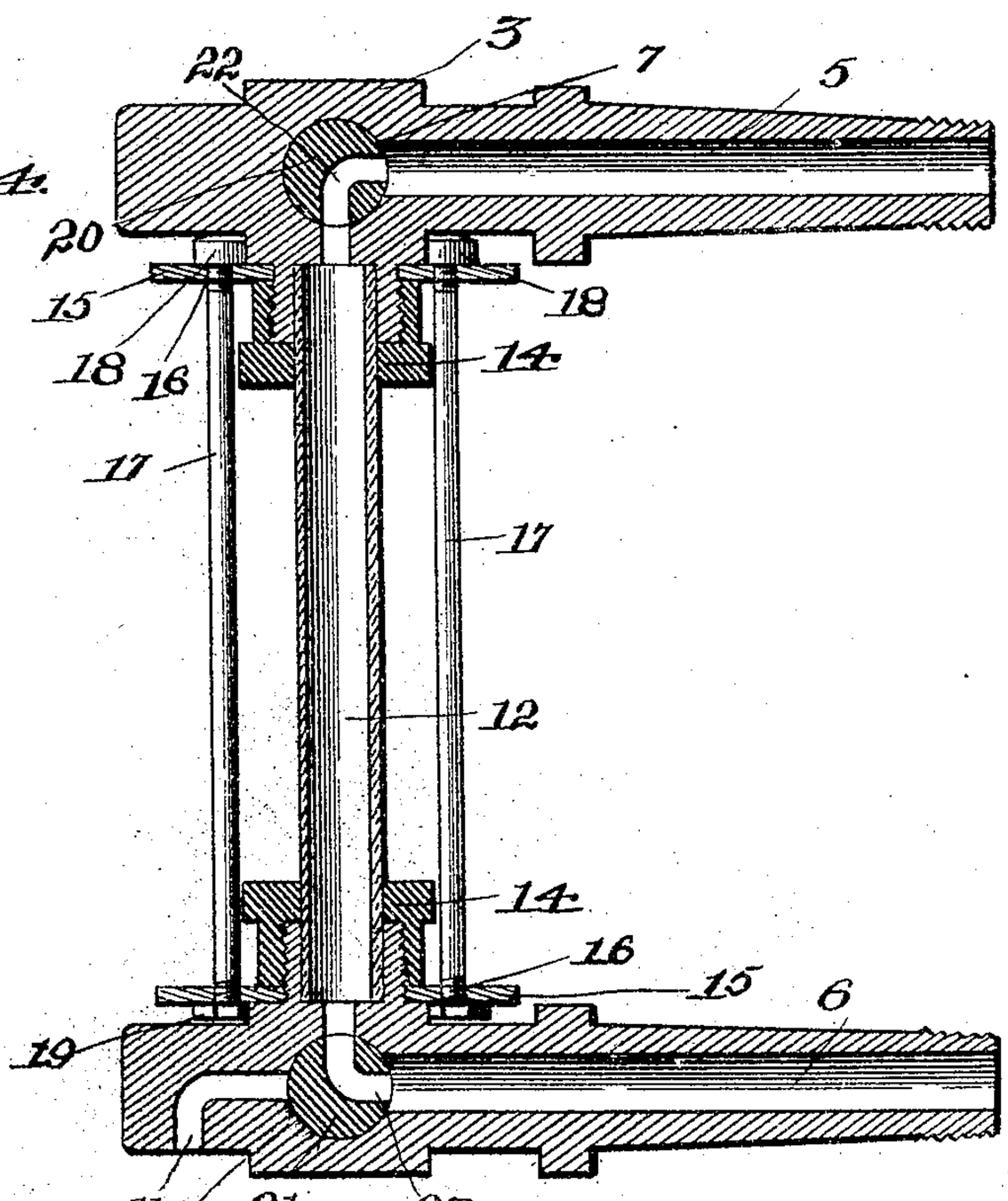


Fig. 4.



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UNITED STATES PATENT OFFICE.

JACOB S. LIVENGOOD, OF REHRERSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO PHILIP E. KANTNER, OF REHRERSBURG, PENNSYLVANIA.

WATER-GAGE FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 764,738, dated July 12, 1904.

Application filed June 20, 1903. Serial No. 162,369. (No model.)

To all whom it may concern:

Be it known that I, JACOB S. LIVENGOOD, a citizen of the United States, and a resident of Rehrersburg, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Water-Gages for Steam-Boilers, of which the following is a specification.

My invention relates to water-gages for steam-boilers.

The object of my invention is to provide a water-gage for steam-boilers having means for simultaneously shutting off the admission of steam and water from the boiler thereto and opening the drip-orifice, or vice versa.

My invention consists in a water-gage having a valve at each end adapted to control the admission of steam and water from the boiler thereto, a drip-orifice to exhaust the water therefrom, and means for connecting said valves so as to render their operation simultaneous.

In the drawings, Figure 1 is a front view of a portion of a boiler, showing my water-gage in place thereon. Fig. 2 is a side view thereof. Fig. 3 is a plan view. Fig. 4 is a central transverse vertical sectional view taken on the line $x\ x$ of Fig. 3.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates a portion of a boiler having my water-gage 2 in place thereon.

3 and 4 designate the upper and lower casings having longitudinal passages 5 and 6, respectively, horizontally-bored valve-seats 7 and 8, respectively, and the lower casing a drip-orifice 11.

12 designates the gage-tube, the upper and lower ends of which are seated in externally-screw-threaded sleeves 13 on the casings and secured therein by internally-screw-threaded nuts 14, which encircle the tube and are screwed onto said sleeves. A protecting-cage for the gage-tube is formed by disks 15, clamped between the casings and the nuts 14 and connected by bars 17 passing through holes 16 and having heads 18 on one end and nuts 19 screwed onto the other ends.

20 and 21 are valves having passages 22 and 23, respectively, and seated in the bores 7 and 8. The valve 20 is provided with an arm 24, and the valve 21 with a cross-piece 25, and a rod 26 pivotally connects one end of the cross-piece with the end of the arm.

The operation is as follows: To place the gage in operative connection with the boiler, the cross-piece 25 on the valve 21 is grasped and turned to the position shown in full lines in Fig. 2 and in this position by its passage 23 connects the gage-tube 12 with the water-passage 6 and closes the drip-orifice, and at the same time the valve 20 is also turned by its connection therewith and by its passage 22 connects the gage-tube with the steam-passage 5. To place the gage out of operative connection with the boiler, the cross-piece 25 is grasped and turned to the position shown in dotted lines in Fig. 2, which turns the valves 20 and 21, connects the drip-orifice with the gage-tube, and disconnects the steam and water passages with the gage-tube.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claim.

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

A water-gage for steam-boilers, comprising horizontal casings having passages communicating with the boiler one of said casings having a drip-orifice, the inner ends screwed into the boiler and the outer ends provided with exteriorly-threaded sleeves, a gage-tube the ends of which are seated in said

sleeves, valves in the outer ends of said casings controlling the communication between the gage-tube and boiler, and the drip-orifice and gage-tube, a rod connecting them for simultaneous operation to connect the gage with the boiler and close the drip-orifice, or to disconnect the gage-tube from the boiler and open the drip-orifice, and a gage-casing comprising disks surrounding said sleeves, bars connecting said disks and a nut screwed on each sleeve and securing each disk between it and the casing, substantially as described.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

JACOB S. LIVENGOOD.

Witnesses:

FRANK S. KLINE,

CLAYTON G. SHOLLENBERGER.