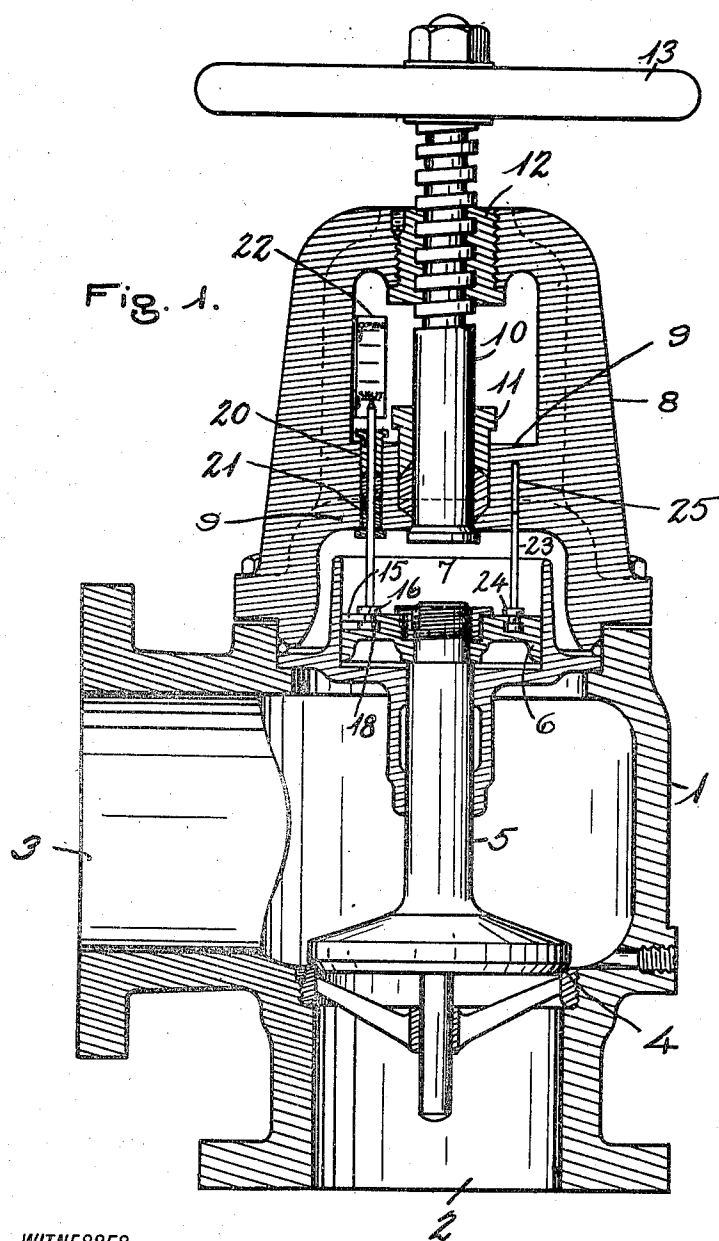


J. M. FOSTER.
 INDICATOR FOR STOP VALVES.
 APPLICATION FILED SEPT. 27, 1911.

1,029,600.

Patented June 18, 1912.

2 SHEETS-SHEET 1.



WITNESSES
Cornelius Gabruskie
Frances E. Blodgett

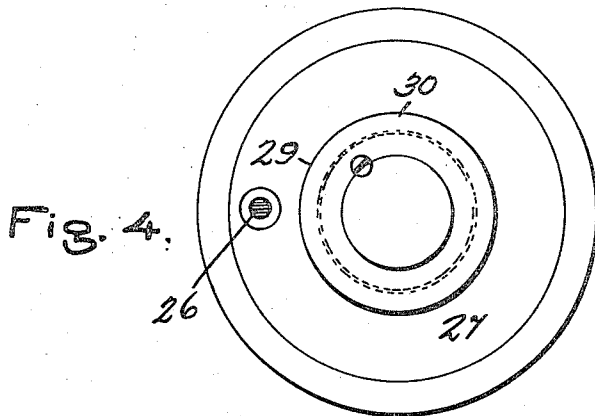
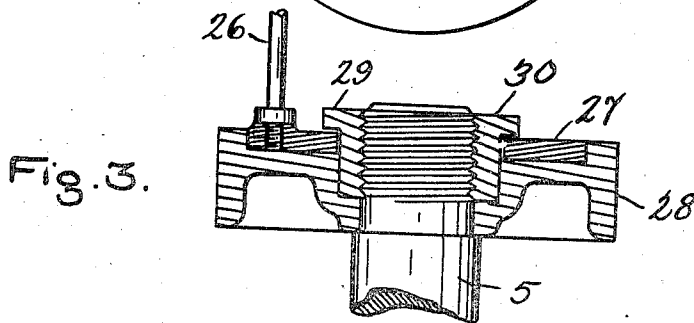
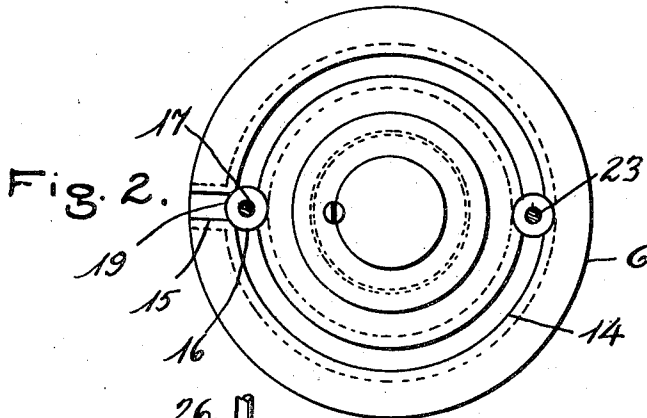
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John M. Foster,
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WITNESSES

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UNITED STATES PATENT OFFICE.

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INDICATOR FOR STOP-VALVES.

1,029,600.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed September 27, 1911. Serial No. 651,482.

To all whom it may concern:

Be it known that I, JOHN M. FOSTER, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain Improvements in Indicators for Stop-Valves, of which the following is a specification.

The objects of this invention are to provide for automatic stop valves such as used on steam boilers a sliding indicator which shall move with the dash-pot piston to show whether the clapper is open or shut, and to what extent it is open; to provide such an indicator which shall be kept in axial alignment with its slideway regardless of rotary movement of the dash-pot piston and clapper; to secure a simple construction, not liable to get out of order, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate the same parts throughout the several views, Figure 1 is a central sectional view of a stop valve having my improved indicator applied thereto in its preferred form; Fig. 2 is a plan of the dash-pot piston with the indicator rod and guide rod in transverse section; Fig. 3 shows in central section similar to Fig. 1, a dash-pot piston with a modified form of connection of indicator rod thereto, and Fig. 4 is a plan of the same.

In said drawings, 1 indicates the body of the valve, adapted to be connected to the boiler at inlet 2 and to the header at outlet 3, and providing a seat 4 for the clapper 5, as usual. At the top of the stem of the clapper is the dash-pot piston 6, working in the dash-pot 7 which is seated in the top of the body 1 and held by the yoke 8 bolted in place. Said yoke provides a top for the valve body, as at 9, and through this part 9 slides a stem screw 10 surrounded by a stuffing box 11 and threaded at its upper part for engagement with a yoke nut 12 in the top of the yoke 8. A hand-wheel 13 enables the stem screw to be lowered and raised.

It will be understood that it is the purpose of my improvement to indicate outside of the valve body the vertical position of the clapper, and to do this I have applied my indicator to the dash-pot piston 6, as

will next be described. It is thus removed from the steam passage, and is convenient of access, as well as applied easily and by a very simple construction.

In the preferred form shown in Figs. 1 and 2, the dash-pot piston 6 has in its upper surface an annular slot or groove 14 which is undercut or T-shaped in cross-section and has at one point a radial entrance 15 opening out through the edge of the piston. The head 16 of an indicator rod 17 is slidably inserted in said groove, said head having a lower flange 18 occupying the undercut portion of the slot and an upper flange 19 which is closely adjacent to the top surface of the piston. The rod 17 itself extends upward through the top 9, substantially parallel to the stem screw 10 at one side thereof, and is surrounded by packing with glands 20, 21 above and below the same in said top 9. Said indicator rod 17 will thus slide up and down as the clapper 5 is opened or closed, and at the same time the clapper and dash-pot piston are free to turn or rotate without cramping said rod. The top end of the rod 17 forms a pointer or index to travel over a graduated scale 22 mounted on the yoke 8 in any convenient way, and thus the position of the clapper can be read at a glance.

Preferably a guide rod 23 is provided diametrically opposite the indicator rod 17, said guide rod having a similar head 24 arranged slidably in the slot 14 and extending upward into a vertical boring 25 forming a slideway in the top 9, but not reaching clear through said top. This guide balances the indicator rod 17, and helps secure perfect and sensitive action of the indicator.

In Figs. 3 and 4 I have shown an indicator rod 26 screwed at its lower end into a ring 27 which lies in an annular groove or recess in the top of the dash-pot piston 28, and is loose enough therein for the piston to turn without cramping the indicator rod. The inner edge of said ring 27 underlies the flange 29 of the clapper nut 30, which serves to hold the ring in its groove or recess. In this construction, a guide rod (not shown) can obviously be employed, as described in connection with the preferred construction.

Various modifications in the detail construction of my invention can of course be made, and I wish the following claims to be

construed as covering them, so far as the language and the state of the art will permit.

Having thus described the invention, what I claim is:

1. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper, a dash-pot for said piston, and a yoke closing the top of the valve body, of an indicator rod projecting from said dash-pot piston through the top closure of the valve body, outside the same and adapted to move longitudinally with said piston, and a packing for said indicator rod to prevent leakage.

2. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper, a dash-pot for said piston, and a yoke closing the top of the valve body, of an indicator rod projecting from said dash-pot piston through the top closure of the valve body, and means connecting said rod to said piston to move longitudinally therewith while permitting the piston to rotate independent of said rod.

3. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper having an undercut annular groove in its top, a dash-pot for said piston, and a yoke closing the top of the valve body, of an indicator rod projecting from said dash-pot piston through the top closure of the valve body, and means on the lower end of said indicator rod projecting laterally into the undercut portion of said groove and causing said rod to move longitudinally with the piston while permitting said piston to rotate independent of the rod.

4. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper having an annular T-slot in its top, a dash-pot for said piston, and a yoke closing the top of the valve body, of an indicator rod projecting from said dash-pot piston through the top-closure of the valve body, and a flange on the lower end of said indicator rod slidable in the undercut part of the T-slot.

5. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper having in its top an annular T-slot with

a branch slot leading therefrom, a dash-pot for said piston, and a yoke closing the top of the valve body, of an indicator rod projecting from said dash-pot piston through the top closure of the valve body, and flanges on the lower end of said indicator rod one in the undercut part of the T-slot and the other adjacent to the top surface of the piston.

6. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper, a dash-pot for said piston, and a yoke closing the top of the valve body and having slideways, of an indicator rod and a guide rod projecting from said dash-pot piston into the respective slideways and adapted to move longitudinally with the piston.

7. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper, a dash-pot for said piston, and a yoke closing the top of the valve body and having slideways, of an indicator rod and a guide rod projecting from said dash-pot piston into the respective slideways, and means connecting said rods to said piston to move longitudinally therewith while permitting the piston to rotate independent of said rods.

8. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper having an undercut annular groove in its top, a dash-pot for said piston, and a yoke closing the top of the valve body, and having slideways, of an indicator rod and a guide rod projecting from said dash-pot piston into the respective slideways, said rods each having at its lower end an annular flange slidable in the undercut part of said annular groove.

9. The combination with a stop valve having a body portion providing an inlet and outlet with a valve seat between, a clapper for said seat, a dash-pot piston on said clapper, a dash-pot for said piston, and a yoke closing the top of the valve body, of an indicator rod projecting from said dash-pot piston through the top closure of the valve body outside the same and adapted to move longitudinally with said piston, and a scale on the outside of said yoke adjacent to the projecting end of said indicator rod to show the position of the clapper.

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Witnesses:

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