E. N. YEAMANS.

AUTOMATIC FOUNTAIN VALVE FOR LOCOMOTIVES.

APPLICATION FILED APR. 4, 1916.

1,260,739. Patented Mar. 26, 1918.

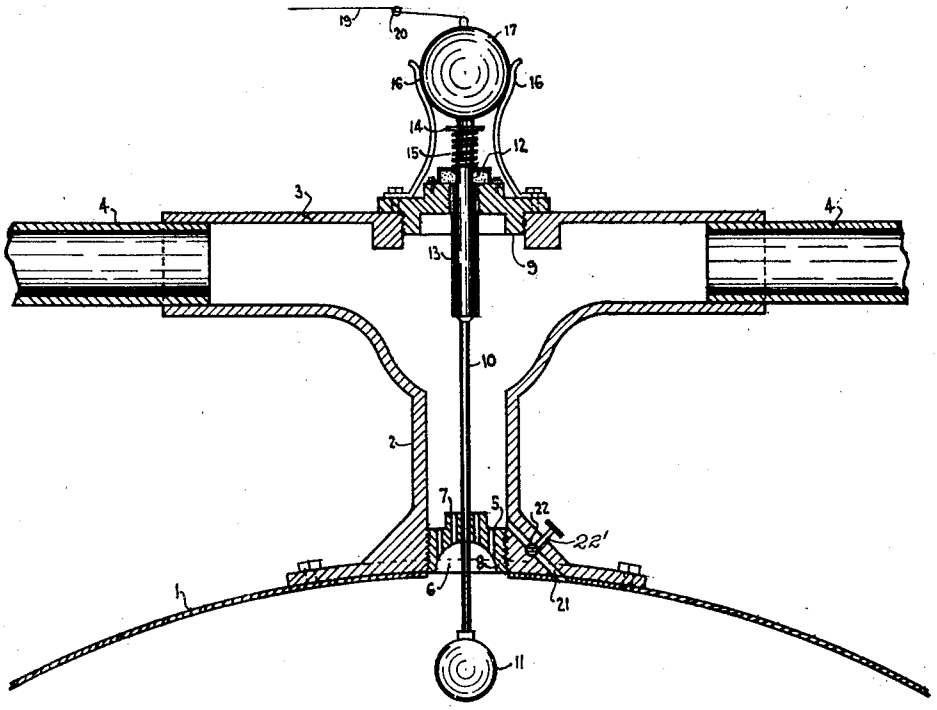


FIG. 1

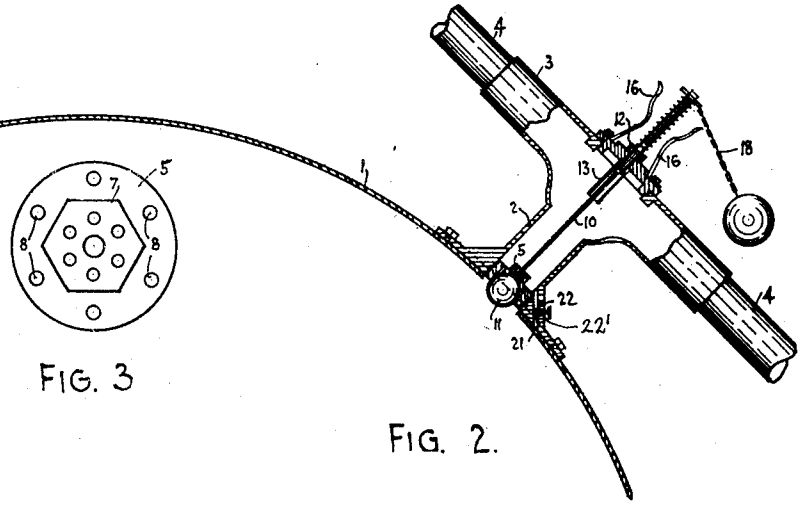


FIG. 2.

FIG. 3

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UNITED STATES PATENT OFFICE.

EUGENE N. YEAMANS, OF CITRUSGROVE, TEXAS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE YEAMANS COMPANY, A CORPORATION OF TEXAS.

AUTOMATIC FOUNTAIN-VALVE FOR LOCOMOTIVES.

1,260,739. Specification of Letters Patent. Patented Mar. 26, 1918.

Application filed April 4, 1916. Serial No. 88,763.

To all whom it may concern:

Be it known that I, EUGENE N. YEAMANS, a citizen of the United States, residing at Citrusgrove, in the county of Matagorda and State of Texas, have invented certain new and useful Improvements in Automatic Fountain-Valves for Locomotives, of which the following is a specification.

This invention relates to new and useful improvements in an automatic fountain valve for locomotives.

The object of the invention is to provide a valve of the character described which will be automatically closed in case of overturning of the locomotive so as to effectually cut off all escaping steam from broken pipes to prevent the scalding of the enginemen who may be trapped in the cab.

With the above and other objects in view the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1 is a sectional side elevation of the fountain showing the valve applied thereto,

Fig. 2 is a fragmentary sectional side elevation showing the locomotive in overturned position and the valve closed, and

Fig. 3 is a plan view of the valve seat employed.

Referring now more particularly to the drawings wherein like numerals of reference designate similar parts, in each of the figures the numeral 1 refers to the locomotive boiler, having the fountain bolted or otherwise secured thereto and formed of the neck 2 and the T 3. This T has the injector pipe 4, 4, leading therefrom in opposite directions. In actual use a number of other pipes lead from this fountain but it has not been thought necessary to show them for the purpose of illustrating the valve herein described; it is to be noted, however, that practically all of the steam utilized for the various purposes of the locomotive, excepting the motive steam for driving the same, is discharged through this fountain.

Screwed in the neck 2 is a valve seat 5, whose inner side has the concaved recess 6 and whose outer side has the hexagonal elevation 7 for the reception of a wrench for screwing and unscrewing the seat and this seat is provided with a plurality of steam passageways 8 therethrough. Alined with the neck 2 is an orifice through the T 3, which is normally closed by means of a gland 9, which is screwed therein. The seat 5 and gland 9 have central alined orifices forming bearings for the valve rod 10, whose inner end projects into the boiler and has fixed thereon the ball valve 11 of a contour to fit closely in the recess 6 when seated. Secured to the gland 9 and surrounding the rod 10 is a bushing 12, which is extended inwardly forming a sleeve 13 around the rod 10 and the portion of said rod within said sleeve is enlarged so that should the exposed portion of the rod become corroded or roughened it will still slide freely through said bushing. The outer end of the rod 10 has a collar 14 fixed thereon and interposed between said collar and bushing and surrounding said rod is a coil spring 15. Fastened to the gland 9 and upstanding therefrom are the oppositely arranged flexible clamps 16, 16. Only two clamps are shown but if desired four or more may be employed, said clamps being preferably spaced a uniform distance apart to form a holder for the ball 17, which, when in position in said holder, rests against the outer end of the rod 10 and holds the valve 11 unseated. This ball is anchored to the rod 10 by means of a chain or cable 18. In case of accident should the boiler be overturned the ball 17 will be displaced as shown in Fig. 2 and the resistance of the spring 15 assisted by the steam pressure against the valve 11 will seat said valve and cut off the passage of steam through the passageways 8. All steam will thus be trapped in the boiler and prevented from escaping through the steam pipes, which are usually broken in case of accident, scalding those trapped in the cab of the locomotive.

It is often desirable to close said valve and shut off the steam from the fountain for the purpose of repairing the injector or the steam pipes, which may become broken or get out of order and for that purpose a cable 19 is attached to the ball 17 and passes through the eye 20 fastened to the top of the cab. This cable is within reach of the engineer and when pulled, the ball 17 will be unseated and the valve 11 permitted to seat as hereinbefore explained. When the valve has thus been seated, it is held in that

position by the steam pressure within the boiler and ordinarily it would be impossible to unseat the valve unless the pressure on the opposite sides thereof is equalized. For that purpose, a by-pass 21 is provided connecting the neck of the fountain with the interior of the boiler and this by-pass is normally closed by the ball valve 22, which is controlled by the stem 22'. When it is desired to equalize the steam pressure on opposite sides of the valve 11 the steam pipes leading from the fountain will be closed and the by-pass 21 opened, thus admitting steam into the fountain. The valve 11 may then be easily opened and the ball 17 replaced to hold it open and the by-pass 21 then closed. The valve will then be in position for its normal action as hereinbefore explained.

What I claim is:—

In a device of the character described, the combination with a boiler, of a T fountain connected thereto and leading therefrom, a valve seat secured in the neck of said fountain having steam passageways therethrough, a valve stem slidable through said seat, a valve secured to the inner end of said stem and closing said passageways when seated, a resilient member acting against said stem and tending to hold said valve closed, a displacement weight normally resting against the outer end of said stem and holding said valve open, flexible clamps holding said weight in normal position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EUGENE N. YEAMANS.

Witnesses:
ANNIE L. CARY,
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