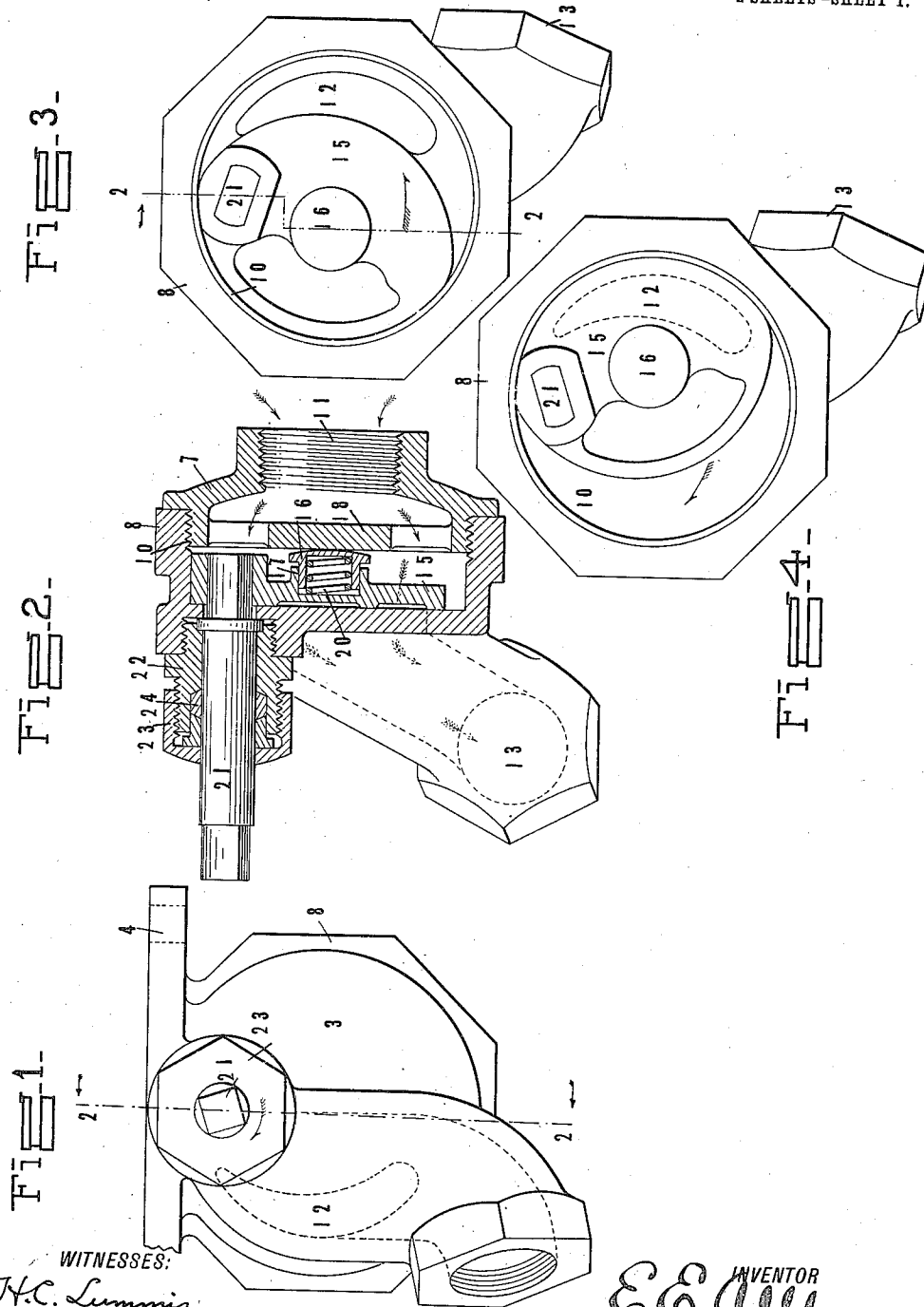


E. E. ALLBEE.
VALVE FOR TRAIN PIPES.
APPLICATION FILED APR. 16, 1908.

964,081.

Patented July 12, 1910.

2 SHEETS—SHEET 1.



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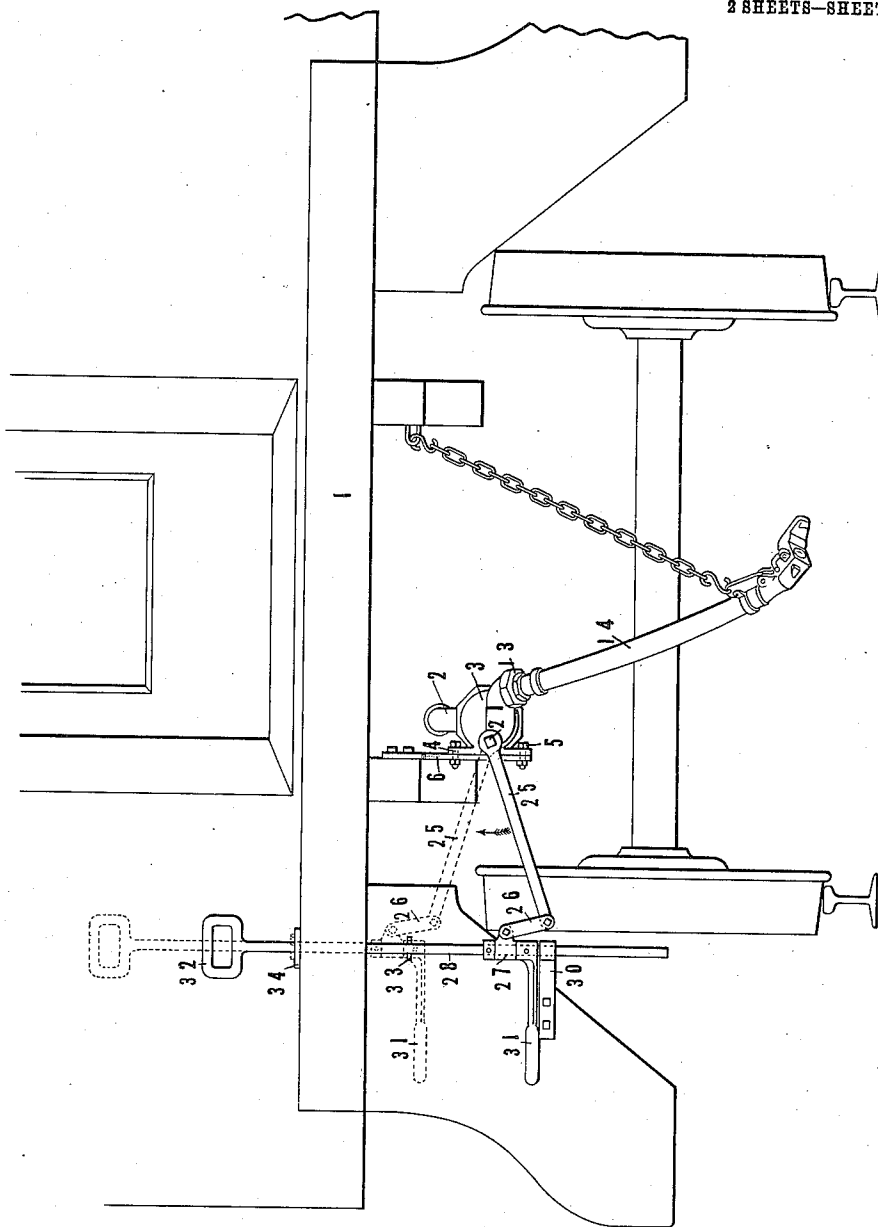


FIG. 5—

WITNESSES:

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UNITED STATES PATENT OFFICE.

ELMER E. ALLBEE, OF ARLINGTON, NEW JERSEY, ASSIGNOR TO SAFETY CAR HEATING & LIGHTING COMPANY, A CORPORATION OF NEW JERSEY.

VALVE FOR TRAIN-PIPES.

964,081.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed April 16, 1908. Serial No. 427,319.

To all whom it may concern:

Be it known that I, ELMER E. ALLBEE, a citizen of the United States, residing at Arlington, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Valves for Train-Pipes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to valves for controlling the flow of fluids under pressure, and more particularly to valves adapted for use in railway cars or similar structures.

One of the objects of the invention is to provide a valve of the above character of simple, durable and compact construction.

Another object is to provide a valve particularly adapted for use in the above relation which can be easily operated from the outside of the car either above or below the platform thereof, and which may be opened or closed with a minimum amount of movement.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, wherein is shown one of various possible embodiments of my invention, Figure 1 is a front elevation of my improved valve. Fig. 2 is a horizontal sectional view taken substantially on line 2-2 of Fig. 1. Fig. 3 is an elevational view of the interior of the casing showing the valve open, one of the sections of the valve casing removed. Fig. 4 is a similar view but showing the valve in a closed position. Fig. 5 is a view showing the valve mounted upon the end of a train pipe of a railway car together with the mechanism employed for operating the same.

Similar reference characters refer to similar parts throughout the several figures of the drawings.

Referring now to the drawings, 1 indicates the platform of a railway car beneath which extends a train pipe of usual construction, a part of which is shown at 2.

The valve shown at 3 is mounted upon

the end of the train pipe and is provided with a supporting flange 4 which is secured as by means of bolts 5 to a strap 6 which in turn is secured to the sills of the railway car. Valve 3, in the present instance, is constituted by a pair of chambered sections, as at 7 and 8, which are suitably joined as by means of screw threads 10. Section 7 is provided with an admission port 11, with which the train pipe communicates, and section 8 is provided with a discharge port 12 from which leads a conduit 13, to the end of which is attached a coupler section 14, as shown in Fig. 5 of the drawings. The direction of flow of the fluid through the valve is indicated by the full barbed arrows. The inner side of section 8 of the valve casing which, in the present instance, is the pressure side thereof and adjacent the discharge port 12, is machined off smooth to provide a valve seat, which is adapted to receive an oscillatory valve member 15. This valve, in the present instance, is formed by a metallic member of less diameter than the interior wall of the casing, and has its opposite edges on arcs, described by a radius equal to that describing the circumference of the inner wall of the casing, so that when said valve member is oscillated in either direction the edges thereof will abut the inner wall of the casing which will operate as an abutting stop therefor. The shape of this valve member, which is substantially that of a gibbous, is clearly shown in Figs. 3 and 4 of the drawings. The half barbed arrows indicate the direction of movement of the valve when the same is oscillated to open or close the discharge port. The discharge port 12 lies between the edge of valve member 15 and the inner wall of the casing when the valve is swung to the position shown in Fig. 3 of the drawings.

Valve 15 is pressed tightly against its seat by means of spring means which engages the side of the valve member opposite to that which engages the valve seat. This spring means, in the present instance, comprises a cap 16 adapted to telescope within a socket 17, formed upon the valve member 15, said cap engaging with an apertured partition 18 which extends across section 7, a spring 20 being located within said cap and urging the latter and said valve member to movement in opposite directions.

Valve member 15, near one of its edges,

is provided with a rectangular or square aperture adapted for receiving an actuating stem 21 which extends through a nipple 22 threaded into the casing, a cap 23 being provided upon said nipple which holds a gland 24 in operative engagement with said stem. It will be understood that a slight rotation of stem 21 in either direction will operate to oscillate the valve member to open or close the discharge port.

To the outer end of stem 21, in the present instance, is connected a lever 25, which in turn is connected by a link 26 to a collar 27 mounted upon a vertically reciprocating rod 28, one end of which extends upward through the platform of the car, the opposite end thereof being guided in a bracket 30. A handle 31 is formed upon this rod below the platform of the car, and the handle 32 is formed upon the upper end of the rod above the platform.

The operation of my invention, which should be obvious from the above description, may be briefly described as follows:—
The parts are so adjusted that when the handles 31 and 32 and lever 25 are in the position shown by full lines in Fig. 5 of the drawings, the valve member 15 is in the position shown in Fig. 3 of the drawings with the discharge port 12 open. To close the valve, the handle 31 may be lifted to the position shown in dotted lines in Fig. 5, the parts being held in such position by means of a pin 33, provided in the rod 28, which engages with a plate 34 provided upon the platform. The mechanism may be similarly operated from above the platform by lifting handle 32. The lifting of rod 28 operates through link 26 and lever 25 to rotate stem 21 slightly, which stem being socketed into the valve member, oscillates the same and thereby closes the discharge port of the casing. It will accordingly be seen that I have provided mechanism well adapted to attain, among others, all the objects and ends above enumerated in a simple and efficient manner. The valve structure is composed of few parts and occupies a minimum space beneath the platform of the car. A further advantage inherent in the present invention resides in the fact that the valve may be opened or closed with a minimum amount of oscillatory movement.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein

described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. A valve for train pipes, comprising a casing having admission and discharge ports, a valve adapted to close the discharge port, said valve comprising an oscillating member, the edges of which are formed by two arcs, each having a radius substantially equal to that which describes the inner wall of the casing, the center of each lying in the minor axis of the valve at less than the said radial distance from the other arc, a stem connected with said valve member near one end thereof and adapted to oscillate the same to open or close said discharge port, the engagement of said valve member with the inner wall of said casing operating to determine the open or closed position of said valve member.

2. A valve for train pipes comprising a casing having admission and discharge ports, a valve seat formed about one of said ports on the pressure side thereof, a valve comprising an oscillatory member, the edges of which are formed with substantially the same radius as and are adapted to conform to the contour of the inner walls of said casing, and a stem connected with said valve near one edge thereof and adapted to oscillate the same, the engagement of said valve member with the inner walls of said casing operating to limit its oscillatory movements.

3. A valve for train pipes comprising a casing having admission and discharge ports, a valve seat formed on the pressure side of said discharge port, a valve comprising an oscillatory member having a diameter less than that of the interior dimensions of the casing, portions of the edges of said valve member being formed with the same radius as and adapted to conform to the contour of the inner walls of the casing, and a stem connected with said valve near one edge thereof and adapted to swing the same toward or from said valve seat, the opened and closed positions of said valve being determined by its engagement with the inner walls of the casing.

4. A valve for train pipes comprising a casing composed of a pair of chambered sections suitably joined together and having admission and discharge ports, an oscillatory valve adapted to be swung to open or close the discharge port, said valve comprising a member of less diameter than that of the interior of the casing and having portions of its edges formed with the same radius as and conformable to the interior wall of the casing, said portions abutting the inner surfaces of the casing when the valve mem-

ber is in closed or opened positions, and a stem connected with said valve member near one edge thereof and adapted to oscillate the same, said stem being operable from a position exterior to said casing.

5. A valve for train pipes comprising a casing having admission and discharge ports, a valve adapted to close the discharge port, said valve comprising an oscillatory member, portions of the edges of which are struck upon arcs described by a radius equal to that which describes the inner wall of the casing, a stem connected with said valve member near one edge thereof and adapted to oscillate the same to open or close said discharge port, the engagement of said valve member with the inner wall of said casing operating to determine the opened or closed position of said valve member.

6. A valve for train pipes comprising a casing formed of a pair of chambered sections suitably joined together and having admission and discharge ports, a valve seat formed adjacent one of said ports upon the pressure side thereof, an oscillatory valve member co-operating with said seat to open or close said port, means for oscillating said valve connected with the same near one edge thereof, and means co-acting with said valve and one of said sections for urging said valve against its seat.

7. A valve for train pipes for railway cars comprising a pair of suitably joined chambered sections one of which is provided with an admission port and the other with a discharge port, one of said members being formed with an apertured partition, a valve seat formed upon the inner wall of the other of said sections adjacent the discharge port thereof, an oscillatory valve member interposed between said partition and said valve seat, means for oscillating said valve whereby said discharge port may be opened or closed, and a device for pressing said valve against its seat comprising a cap engaging said partition, and a spring interposed between said cap and said valve member.

8. A valve for train pipes comprising a casing formed of a pair of suitably joined chambered sections, one of which is provided with an apertured partition, one of said sections being provided with an admission port and the other with a discharge port, a valve seat formed upon the inner wall of one of said sections adjacent the discharge port thereof, an oscillatory valve member interposed between said partition and said valve seat and adapted to cooperate with the latter

to open or close said port, a stem connected with said valve member near one edge thereof and adapted to oscillate the same, means for pressing said valve toward its seat comprising a cap engaging said partition and telescoping with a portion of said valve member, and a spring located within said cap and urging the same and said valve member to movement in opposite directions.

9. A valve for train pipes comprising a casing having admission and discharge ports, a substantially circular valve seat formed upon the inner wall of said casing adjacent one of said ports, an oscillatory, gibbous-shaped valve member located within said chamber and having its edges conformable to the contour of the inner wall of the casing, said valve member co-acting with said valve seat to open and close said port, and means for oscillating said valve member, the oscillatory movements of said valve member being limited by the engagement of the edges thereof with the wall of the casing.

10. A valve for train pipes, comprising a casing having an elongated discharge port, a valve seat formed adjacent said discharge port, an oscillating valve member shaped to fully close or open said port with a short range of movement, means coacting with said valve and said casing for urging said valve against its seat, and means adapted to oscillate said valve member.

11. A valve for train pipes, comprising a casing having a substantially crescent-shaped discharge port, a valve seat formed about said discharge port, an oscillating valve member adapted to swing over and to close said port, means coacting with said valve and said casing for urging said valve against its seat, and means adapted to oscillate said valve member.

12. A valve for train pipes, comprising a casing having a substantially crescent-shaped discharge port, the outer wall of said port being concentric with the inner wall of said casing, a valve seat formed about said discharge port, an oscillating valve member, the edges of which are formed with substantially the same radius as and are adapted to conform to the contour of said inner casing wall, and means adapted to oscillate said valve member.

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

ELMER E. ALLBEE.

Witnesses:

G. R. JEWETT,
HERBERT MCNEILL.