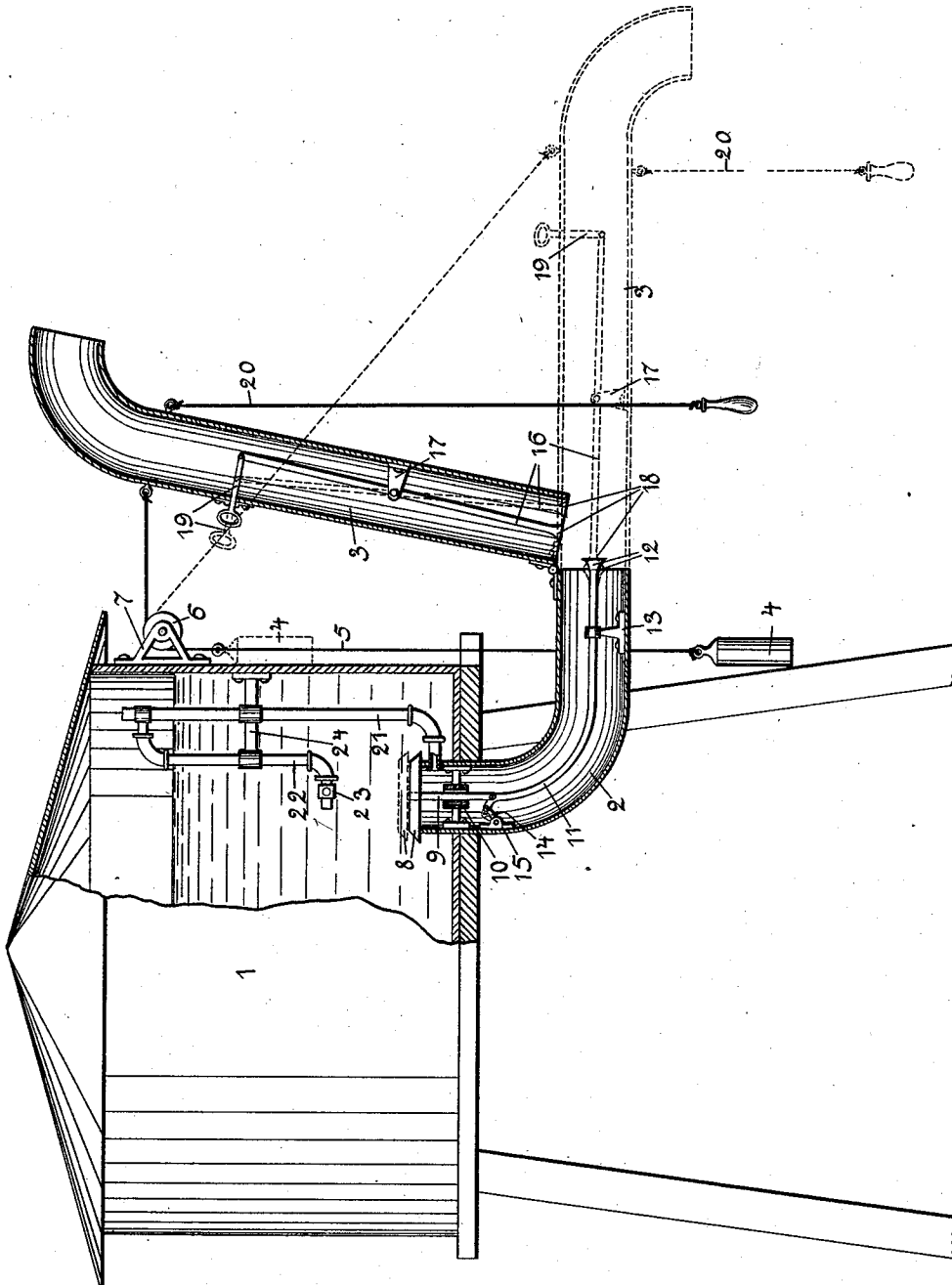


C. H. MILLER & W. A. BUNNELL.
WATER TANK.
APPLICATION FILED DEC. 12, 1910.

1,000,619.

Patented Aug. 15, 1911.



WITNESSES:

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CHARLES H. MILLER AND WALTER A. BUNNELL, OF DECATUR, TEXAS.

WATER-TANK.

1,000,619.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed December 12, 1910. Serial No. 596,844.

To all whom it may concern:

Be it known that we, CHARLES H. MILLER and WALTER A. BUNNELL, citizens of the United States, residing at Decatur, in the county of Wise and State of Texas, have invented certain new and useful Improvements in Valve-Operating Mechanism for Water-Tanks, of which the following is a specification.

Our invention relates to a new and useful valve operating mechanism for water tanks.

It is customary for railroads to provide elevated water tanks at intervals along their lines to replenish the tanks of locomotive tenders from which tanks the boilers are fed. The outlet pipes of these elevated tanks are provided with hinged discharge spouts which are ordinarily held raised out of the way of trains, but may be swung down to a horizontal position for use.

It is the object of our invention to provide a mechanism that will automatically open a discharge valve within the tank when said spout is lowered.

Another object of the invention is to provide means by which air may be admitted into the outlet pipe adjacent to the valve, and also into the lower portion of the tank.

Finally the object of the invention is to provide a device of the character described that will be strong, simple, durable and efficient and comparatively easy to construct, and also one that will not be likely to get out of working order.

With these and various other objects in view, our invention has relation to certain novel features of the construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawing.

In this drawing is shown an elevation of an ordinary railway water tank equipped with the usual form of hinged spout and provided with the hereindescribed valve regulating mechanism. A portion of the tank, together with the outlet and spout is shown in section to make clear the operation of the mechanism.

The numeral 1 is applied in the drawing to one of the aforesaid tanks elevated in the usual manner upon a tower. An outlet pipe 2 having a right angle turn is provided to the tank. The hinged spout which is denoted by the numeral 3 is shown in heavy lines in its raised position, and in dotted lines lowered. This spout is counterbal-

anced by a weight 4 supported by a cord 5 which passes over a sheave or pulley 6. This sheave is mounted upon the upper portion of the tank in a bracket 7. 60

The outlet pipe 2 is normally closed by a valve 8, the weight of which is sufficient to hold it ordinarily down in place. This valve is mounted upon the upper extremity of a rod 9, the vertical motion of which is guided by a bracket 10 secured to the inner walls of the pipe. The lower extremity of the rod 9 is pivotally attached to a rod 11 which conforms to the curve of the pipe 2, and is provided upon its lower extremity with a head or upset portion 12 which projects slightly from the pipe. The horizontal portion of the rod 11 is slidably mounted in a bracket 13 secured to the inner wall of the pipe 2. The upper end of the rod 11 is connected by means of a swinging link 14 to a small bracket 15 secured to the inner wall of the pipe 2. 65 70 75

A rod 16 is centrally mounted in the spout 3 and is pivoted near its middle portion upon a bracket 17 secured to the walls of said spout. This rod is provided at one extremity with an upset portion or head 18 which comes flush with the edge of the spout 3. The other extremity of said rod has pivotal attachment to a lever 19 which extends to the top of the spout 3 and is provided with a hand hold exterior to said spout. A cord 20 is suspended from the end portion of the spout to permit of its being readily drawn down to a horizontal position. Within the tank 1, a vertical pipe 21 is mounted adjacent to the wall thereof, and serves to establish communication between the upper portion of the tank and the upper portion of the outlet pipe 2. Another vertical pipe 22 is employed to establish communication between the upper portion of the tank and the lower portion thereof. An ordinary check valve 23 is provided upon the lower extremity of the pipe 22. The pipes 21 and 22 are held rigidly in place by a bracket 24 secured to the inner wall of the tank 1. 80 85 90 95 100

The rod 16 normally occupies the position indicated by full lines in the drawing. Thus, when the spout is lowered to a horizontal position for use the heads 12 and 18 will come into contact, and the rod 11 will undergo a horizontal sliding displacement. The link 14 will then undergo a slight angular displacement about the pivot 105 110

15, and this will produce an upward motion of the rod 11 which will be communicated to the rod 9 and the valve 8. When the required amount of water has escaped from the tank, the lever 19 will be pulled out to the position which it occupies in dotted lines in the drawing. The rod 16 will thus be swung about its pivotal point, and the heads 12 and 18 will be thrown-out of contact. The rod 11 will then be free to undergo horizontal displacement and the valve 8 will become seated owing to its own weight and the pressure of water acting upon it. The pipe 21 acts as an air conduit and permits the water in the pipe 2 to be readily replaced by air as it escapes thus preventing the formation of a partial vacuum which would tend to retard the escape of the water. The pipe 22 will be of use only when the weather is sufficiently cold to cause the formation of a layer of ice upon the surface of the water in the tank 1. Such a layer of ice would prevent the air replacing the water from above as the level of the latter is lowered. The check valve 23 offers no obstruction to the passage of the air downward in the pipe 22, but will not permit the air to escape upward in said pipe.

No invention is claimed for the counter-balanced hinged spout as this is known to be old, but the valve operating mechanism and the air distribution system are believed to be novel features.

What we claim is:—

1. In a device of the character described, the combination with an elevated water tank, of an outlet pipe for the same, a counterbalanced hinged spout connected with said outlet pipe, a valve closing the outlet pipe within the tank normally held seated by its own weight, and a mechanism by which said valve is automatically raised when the spout is lowered to a horizontal position.

2. In a device of the character described, the combination with an elevated water tank, of an outlet pipe for the same, a counter-balanced hinged spout, having connection with said outlet pipe, a valve closing the outlet pipe within the tank and nor-

mally held seated by its own weight, a mechanism by which said valve is automatically opened when the spout is lowered to a horizontal position, an air pipe connecting the upper portion of the tank with the middle portion thereof and with the upper portion of the outlet pipe.

3. In a device of the character described, the combination with an elevated tank, of an outlet pipe for the same provided with a right angle turn, a hinged counterbalanced spout connected with said outlet pipe, a valve closing the outlet pipe within the tank, a rod having pivotal connection with the stem of said valve, and adapted to undergo horizontal displacement, said rod having its extremity projecting slightly from the outlet pipe, a rod pivotally mounted in the spout adapted to contact with the aforesaid rod and thereby raise the valve when the spout is lowered, and a lever by which the extremities of the two rods may be thrown out of contact permitting the valve to seat itself.

4. In a device of the character described, the combination with an elevated tank, of an outlet pipe for the same provided with a right angle turn, a counterbalanced hinged spout having connection with said outlet pipe, a valve closing the outlet pipe within the tank, a rod centrally mounted within the outlet pipe having pivotal connection with the stem of said valve, and having its end projecting slightly from the outlet pipe, a rod pivotally mounted within the spout having one end flush with the spout extremity and adapted to contact with the aforesaid rod when the spout is lowered, a lever adapted to produce a pivotal displacement of the rod in the spout, thereby throwing the extremities of the two rods out of contact, an air pipe establishing communication between the upper portion of the tank and the middle portion thereof and the upper portion of the outlet pipe.

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Witnesses:

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