R. B. GREENWAY.

STAND PIPE.

APPLICATION FILED FEB. 2, 1914.

1,113,330.

Patented Oct. 13, 1914.

2 SHEETS—SHEET 1.

Fig 1

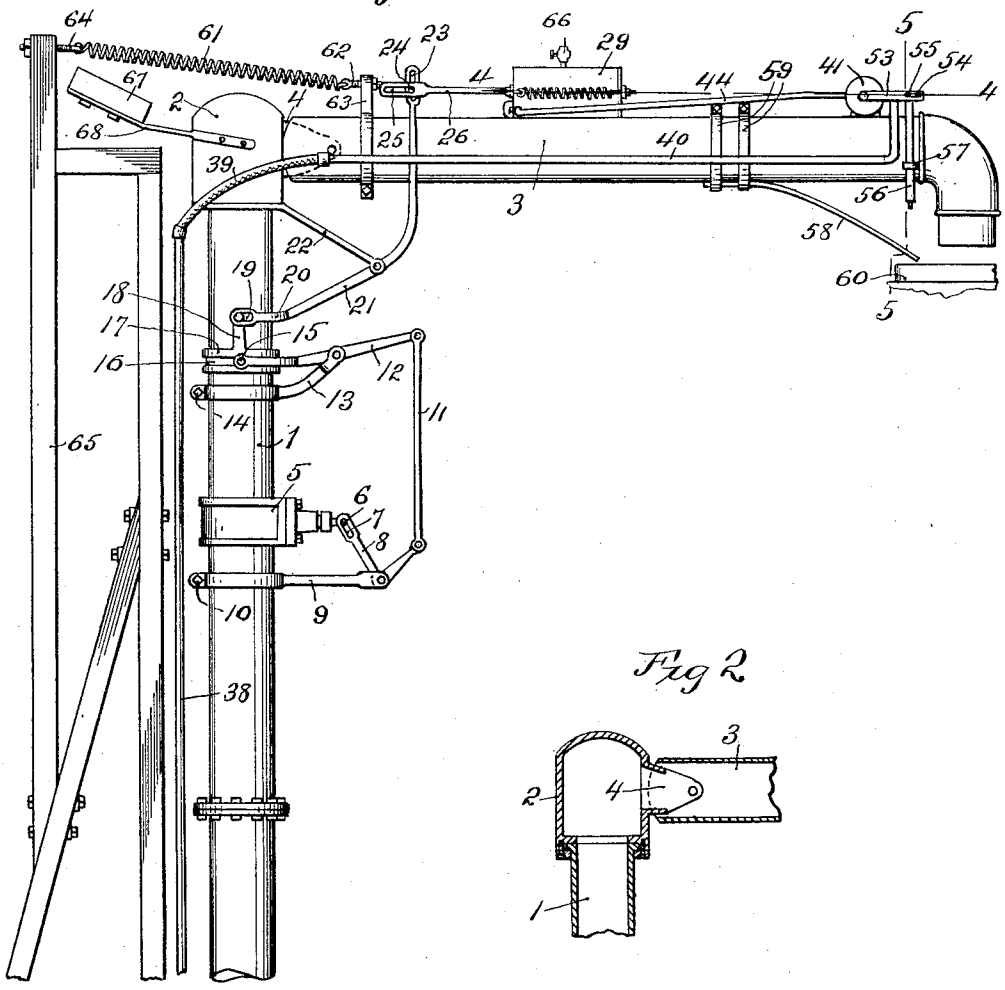


Fig 2

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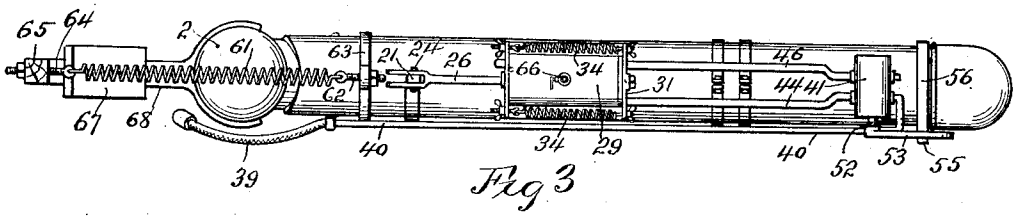


Fig 3

Fig 4

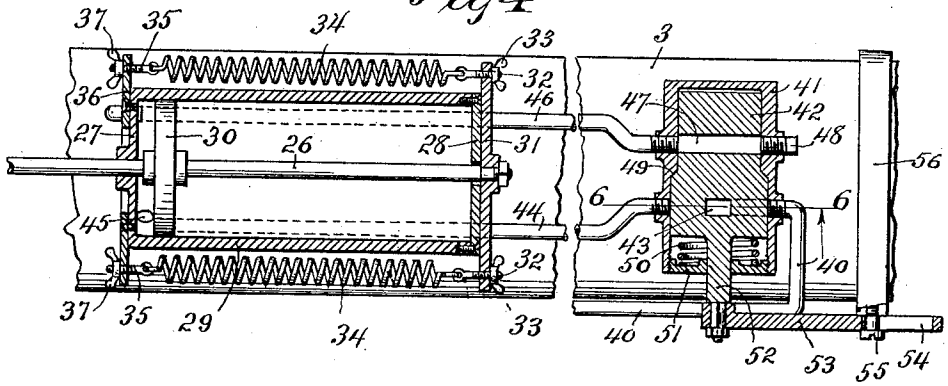


Fig 7

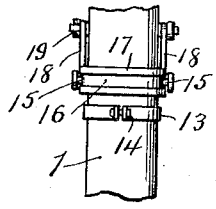


Fig 5

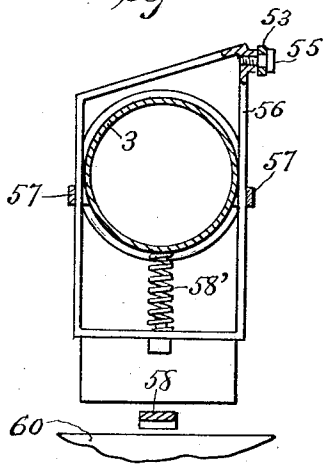
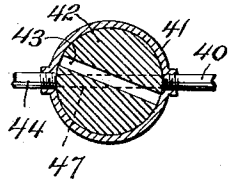


Fig 6



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UNITED STATES PATENT OFFICE.

ROBERT B. GREENWAY, OF SAN BERNARDINO, CALIFORNIA.

STAND-PIPE.

1,113,330. Specification of Letters Patent. **Patented Oct. 13, 1914.**

Application filed February 2, 1914. Serial No. 815,949.

To all whom it may concern:

Be it known that I, ROBERT B. GREENWAY, a citizen of the United States, residing at San Bernardino, in the county of San Bernardino and State of California, have invented a certain new and useful Improvement in Stand-Pipes, of which the following is a specification.

My invention relates to improvements in stand pipes.

It relates particularly to the type of stand pipes having a lateral delivery spout for discharging oil or water into the tender of a locomotive.

The object of my invention is to provide a novel stand pipe, which is not liable to be pulled down by an engine, the tender of which is being filled, being inadvertently moved.

Another object of my invention is to provide a stand pipe in which the delivery pipe is automatically raised and is required to be held down during the discharge of oil or water, to prevent the material discharged from running over the tender due to the carelessness of the operator.

Another object of my invention is to provide automatically operating means for controlling the flow of the oil or water through the stand pipe.

Other objects of my invention are hereinafter fully described and claimed.

In the accompanying drawings, which illustrate the preferred embodiment of my invention, Figure 1 is a side elevation of my improved stand pipe, the delivery spout being shown in the raised position. Fig. 2 is a central vertical sectional view of the upper end of the stand pipe and of the inner end of the delivery spout. Fig. 3 is a plan view of my improved stand pipe. Fig. 4 is an enlarged horizontal sectional view on the line 4—4 of Fig. 1, some of the parts being broken away. Fig. 5 is an enlarged cross section on the line 5—5 of Fig. 1. Fig. 6 is a vertical section on the line 6—6 of Fig. 4. Fig. 7 is a fragmental elevation of the sliding collar and parts connected therewith.

Similar reference characters designate similar parts in the different views.

1 designates a vertical pipe section of a stand pipe provided at its upper end with a hollow head 2, which is rotatable on a vertical axis and which discharges into a laterally extending delivery spout 3, which is pivoted to two ears 4 with which the head 2 is provided.

The vertical pipe section 1 is provided with a valve casing 5 in which is mounted an ordinary slidable cut-off valve having a stem 6, which extends through and is pivoted in a slot 7 provided in one end of one arm of a bell crank lever 8, which is pivoted at its angle to a bracket 9 having its inner end bifurcated and encircling, and clamped to the pipe section 1 by a bolt 10. The other arm of the bell crank lever 8 is pivoted to a connecting rod 11, which in turn is pivoted to one end of a lever 12, which is pivoted to a bracket 13 having a bifurcated end encircling the pipe section 1 and clamped thereto by a bolt 14. The other end of the lever 12 is bifurcated, the arms of said bifurcated end having secured respectively therein two diamatrically opposite pins 15, which are located in a peripheral groove 16 of a collar 17 which is vertically slidable on the pipe section 1. The collar 17 is provided with two diametrically opposite arms 18, the ends of which are respectively pivoted in slots 19 provided respectively in two arms 20 provided at one end of a lever 21, which is pivoted to a bracket 22 secured to the head 2. The other end of the lever 21 is provided with a slot 23 through which extends a bolt 24, which also extends through a slot 25 provided in one end of a horizontal piston rod 26.

The piston rod 26 extends through central holes provided in the heads 27 and 28 of a cylinder 29 which is carried on the upper side of the spout 3. In the cylinder 29 is reciprocatively mounted a piston 30 which is secured to the piston rod 26.

For retracting the piston 30 to the position shown in Fig. 4, the outer end of the piston rod 26, outside the cylinder 29, has secured to it a horizontal bar 31 provided adjacent to its opposite ends with holes in which are mounted longitudinally adjustable screw-threaded bolts 32, on one set of ends of which are respectively mounted wing nuts 33, and the opposite set of ends of which are respectively secured to one set of ends of two longitudinal coil springs 34, the opposite set of ends of which are re-

spectively secured to two bolts 35. Said bolts 35 extend through holes provided therefor in a transverse bar 36 secured to the adjacent head 27 of the cylinder 29. Respectively mounted on the bolts 35 and bearing against the bar 36 are wing nuts 37.

For forcing the piston 30 outwardly, I provide a conductor comprising the following described parts: A pipe 38, which has one end connected to a tank, not shown, adapted to contain fluid, such as air, under pressure, has its other end connected to one end of a flexible pipe 39, the opposite end of which is connected to one end of a pipe 40, the other end of which is fitted in a peripheral hole provided in a valve casing 41, in which is rotatably mounted a valve 42, provided therethrough with a transverse passage 43, which is adapted to register with the opening, in which is mounted the pipe 40 and with a peripheral opening, in which is fitted one end of a pipe 44, the other end of which is mounted in a peripheral hole 45 extending through the side of the cylinder 29 adjacent to the head 27 and at the inner end of the piston 30, as shown in Fig. 4.

A pipe 46 has one end extending through the cylinder head 27 and has its other end mounted in an opening in the casing 41 which is adapted to register with a transverse passage 47 provided in the valve 42, said passage being adapted to register at the same time with a peripheral outlet 48 extending through the casing 41 and communicating with the atmosphere. The valve 42 is provided with a peripheral shoulder 49 which is normally held against an annular inner seat in the wall of the casing 41 by a coil spring 50 which bears at one end against the adjacent end of said valve, and at its other end bears against a circular screw-threaded head 51 fitted in the adjacent internally screw-threaded end of the casing 41. The passages 43 and 47, as shown in Fig. 6, are disposed at angles to each other, and are arranged, when the valve 42 is oscillated, to alternately communicate with the pipes 40—44 and the pipe 46 and outlet 48.

For oscillating the valve 42, the following described mechanism is provided: One end of the valve 42 is provided with an axial stem 52, which extends through an axial hole provided in the head 51 and which, outside of said head, has secured to it a crank 53 provided at its outer end with a slot 54 through which extends a screw 55, which is secured to a rectangular frame 56 which embraces the spout 3 and is slidably mounted in vertical guides 57, with which opposite sides of the spout 3 is provided. A coil spring 58′ has its upper end bearing against the under side of the spout 3, and has its lower end bearing against the frame 56, Fig. 5, whereby the valve 42 is normally swung to the position shown in Fig. 4, in which position the passage 43 is closed and the passage 47 communicates with the atmosphere and wth the exhaust pipe 46.

A spring bar 58 has one end secured by two collars 59 to the underside of the spout 3. The free end of the spring bar 58 is adapted, when the spout 3 is swung downwardly at its outer end, to strike against a locomotive tender 60 and to be forced thereby against the lower end of the frame 56, which will be forced upwardly against the pressure of the spring 58′, so as to disconnect the passage 47 from the pipe 46 and to connect the passage 43 with the pipes 40 and 44. The outer end of the spout 3 is thus forced downwardly by an operator standing on the tender 60. When the spout has been thus depressed, the fluid under pressure will pass by the pipes 38, 39 and 40, the passage 43, and the pipe 44 into the cylinder 29, and will force the piston 30, together with the piston rod 26 to the right, as viewed in Fig. 4, against the tension of the retracting springs 34. This movement of the piston rod 26 will cause the valve in the valve casing 5 to be opened through the intermediacy of the lever 21, collar 17, pins 15, lever 12, connecting rod 11, bell crank lever 8, and valve stem 6, thereby permitting water or oil, as the case may be, to pass through the pipe section 1 and spout 3 into the tender 60.

As soon as the weight of the operator is removed from the spout 3, it will at once be swung upwardly to the normal position shown in Fig. 1 by means of a coil spring 61, one end of which is connected to a bolt 62, which is secured to a clamp 63, which is secured to the spout 3. The other end of the spring 61 is secured to a bolt 64 which extends through a vertical standard 65 disposed at the left of the pipe section 1 as viewed in Fig. 1. As soon as the spout 3 rises, the free end of the spring bar 58 moves downwardly, thereby permitting the spring 58′ to force downwardly the frame 56, thereby rocking the valve 42 to a position closing the passage 43 and establishing communication between the passage 47 and the pipe 46 and outlet 48, as shown in Fig. 4. When the parts are in this position, the springs 34 will retract the piston 30 to the position shown in Fig. 4, the air in the cylinder 29 at the left of the piston escaping to the atmosphere by way of the pipe 46 and passage 47. The piston rod 26 will thus force the valve in the casing 5 to the closed position through the intermediacy of the mechanism already described.

For the purpose of lubricating the interior of the cylinder 29, it may have secured to its upper side a valved-inlet fitting 66. A counterweight 67 may be mounted upon a laterally extending arm 68 secured to the head 2 at the side opposite to that to which is connected the spout 3. When the

spout 3 is horizontally revolved with the head 2, the collar 17 will be turned by the lever 21, the pins 15 traveling in the annular groove 16 of said collar.

From the foregoing description, it will be understood that water or oil will flow through the stand pipe and spout only during the time that the operator's weight holds the outer end of the spout 3 sufficiently depressed so that the spring bar 58 will be forced by the tender 60 to a position in which the frame 56 will be held in its uppermost position. As soon as the weight of the operator is removed from the spout, the coil spring 61 will swing the spout upwardly, thereby freeing the spring bar 58 from the frame 56 which will be forced downwardly by the spring 58′ so as to disconnect the passage 43 from the pipe 40, thereby cutting off the supply of compressed fluid from the cylinder 29 and permitting the springs 34 to retract the piston rod 26 so as to shut off the flow through the stand pipe.

I do not limit my invention to the structure illustrated and described, as modifications, within the scope of the appended claims, may be made without departing from the spirit of my invention.

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

1. In a stand pipe, a vertically movable delivery spout, a valve, a member carried by said spout and adapted to be operated by striking a locomotive tender, and means operated by said member for actuating said valve.

2. In a stand pipe, a vertically movable delivery spout, a valve, a resilient movable member carried by said spout and adapted to be flexed by striking a locomotive tender, and means operated by said member for actuating said valve.

3. In a stand pipe, a vertically movable delivery spout, a spring bar having one end secured to said spout and having its other end adapted to engage and be moved by a locomotive tender, when the spout is moved downwardly, a valve and means operated by said spring bar for actuating said valve.

4. In a stand pipe, a pipe section provided with a cut-off valve, a vertically movable delivery spout into which said pipe section discharges, means for operating said cut-off valve, and means adapted to be operated by a tender of a locomotive for controlling said valve operating means.

5. In a stand pipe, a pipe section provided with a cut-off valve, a vertically movable delivery spout into which said pipe section discharges, and means operable by a locomotive tender for controlling the operation of said cut-off valve.

6. In a stand pipe, a pipe section having a cut-off valve, fluid actuated means for moving said valve to the open position, a vertically movable delivery spout, and means adapted to be operated by a locomotive tender for controlling the operation of said fluid actuated means.

7. In a stand pipe, a pipe section having a cut-off valve, fluid actuated means for operating said valve, valve mechanism controlling said fluid actuated means, a vertically movable delivery spout, and means controlled by said spout for actuating said valve mechanism.

8. In a stand pipe, a pipe section having a cut-off valve, a vertically movable delivery spout into which the pipe section discharges, fluid actuated means for operating said cut-off valve, valve mechanism controlling said fluid actuated means, and means carried by said spout for operating said valve mechanism and adapted to be operated by a locomotive tender.

9. In a stand pipe, a vertically movable delivery spout, a cylinder, a piston reciprocative in said cylinder, a conductor connected with said cylinder, a valve controlling the flow of fluid through said conductor, and means adapted to be actuated by a locomotive tender, for actuating said valve.

10. In a stand pipe, a vertically movable delivery spout, a pipe section discharging therein and having a cut-off valve, fluid controlled means for operating said valve, valve mechanism controlling said fluid controlled means, and a spring carried by said spout and adapted to be operated by a locomotive tender for operating said valve mechanism.

11. In a stand pipe, a pipe section having a cut-off valve, a pivoted vertically movable delivery spout into which said pipe section discharges, valve controlled means for actuating said cut-off valve, and means carried and controlled by said spout for controlling said valve controlled means.

12. In a stand pipe, a pipe section having a cut-off valve, a pivoted vertically movable delivery spout into which said pipe section discharges, valve controlled means for actuating said cut-off valve, and means adapted to be operated by a locomotive tender for controlling said valve controlled means and carried by said spout.

13. In a stand pipe, a pivoted vertically movable delivery spout, means for normally swinging said spout upwardly, valve mechanism, and means carried by said spout and adapted to be operated by a locomotive tender, for operating said valve mechanism.

14. In a stand pipe, a pivoted vertically movable delivery spout, a spring for normally swinging said spout upwardly, valve mechanism, and means adapted to be operated by a locomotive tender, for operating said valve mechanism.

15. In a stand pipe, a pivoted vertically movable delivery spout, a pipe section hav-

ing a cut-off valve and discharging into said spout, means for normally swinging said spout upwardly, valve controlled means for operating said cut-off valve, and means adapted to be operated by a locomotive tender, for controlling said valve controlled means.

16. In a stand pipe, a pivoted vertically movable delivery spout, a pipe section discharging therein and having a cut-off valve, and valve controlled fluid operated means controlled by said spout for actuating said valve.

17. In a stand pipe, a pivoted vertically movable delivery spout, a pipe section discharging therein and having a cut-off valve, valve controlled fluid operated means for actuating said cut-off valve, means for normally swinging said spout upwardly, and a resilient member carried by said spout, and adapted to be operated by a locomotive tender, for controlling said valve controlled means.

18. In a stand pipe, a delivery spout, a pipe section discharging therein and having a cut-off valve, and valve controlled fluid operated means adapted to be operated by a locomotive tender for actuating said valve.

19. In a stand pipe, a delivery spout, a pipe section discharging therein, a cylinder, a piston reciprocative in said cylinder, a conductor for fluid connecting with said cylinder, a valve controlling the flow through said conductor, means adapted to be operated by a locomotive tender for controlling said valve, and means actuated by said piston for controlling the flow through said pipe section.

20. In a stand pipe, a delivery spout movable vertically, a pipe section discharging therein, means for controlling the flow through said pipe section, and means adapted to be operated by a locomotive tender, for controlling said flow controlling means.

21. In a stand pipe, a delivery spout, a pipe section discharging therein and having a cut-off valve, a cylinder, a piston reciprocative in said cylinder, a conductor for fluid connected with said cylinder, a valve controlling the flow through said conductor, means adapted to be operated by a locomotive tender for controlling said valve, and means actuated by said piston for operating the cut-off valve.

22. In a stand pipe, a delivery spout movable vertically, a pipe section discharging therein and having a cut-off valve, a cylinder, a piston reciprocative in said cylinder, a conductor for fluid connected with said cylinder, valve mechanism controlling the flow through said conductor, means actuated by said piston for operating the cut-off valve, and means adapted to be operated by a locomotive tender, for controlling said valve mechanism.

23. In a stand pipe, a vertically movable delivery spout, a pipe section discharging therein and having a cut-off valve, means for normally forcing said spout upwardly, a cylinder, a piston reciprocative in said cylinder, a conductor for conveying fluid under pressure into said cylinder, valve mechanism controlling the flow through said conductor, means actuated by said piston for operating the cut-off valve, and means for actuating said valve mechanism and adapted to be operated by a locomotive tender.

24. In a stand pipe, a vertically movable delivery spout, a cylinder, a piston reciprocative therein, two conductors connected respectively to said cylinder at one end of said piston, one conductor being adapted to convey fluid under pressure, and the other discharging to the atmosphere, a valve for simultaneously opening one and closing the other of said conductors, means controlled by said spout for controlling said valve means for retracting said piston after it has been moved by said fluid in one direction, a pipe section discharging into said spout, and means actuated by said piston for controlling the flow through said pipe section.

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

ROBERT B. GREENWAY.

Witnesses:
ROWLAND S. HUGHES,
M. F. HOFFMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."