

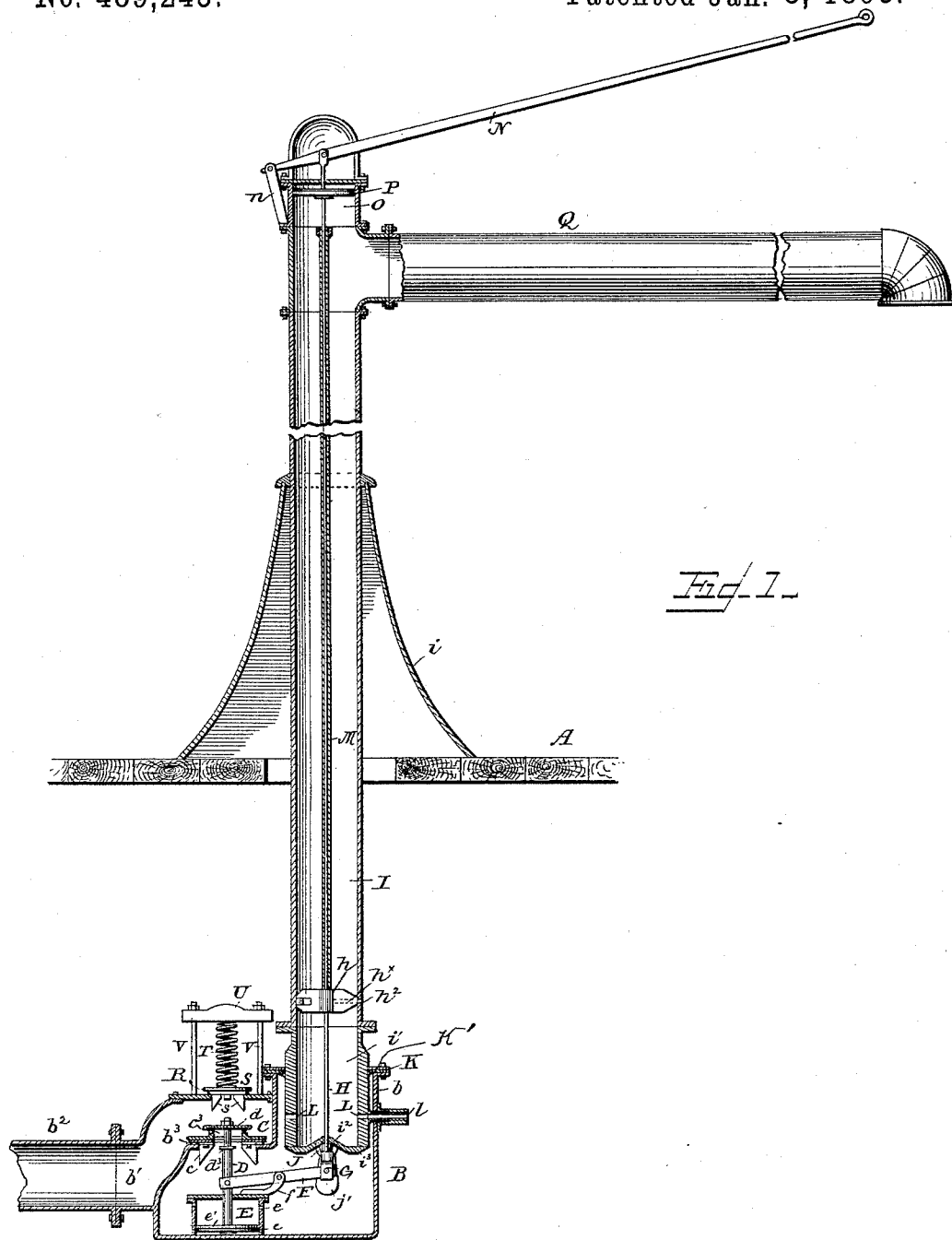
(No Model.)

2 Sheets—Sheet 1.

R. H. WHITE.
LOCOMOTIVE STAND PIPE.

No. 489,245.

Patented Jan. 3, 1893.



Witnesses

Inventör

Chas. H. Curand

David P. Kolhaupfer.

By his Attorneys,

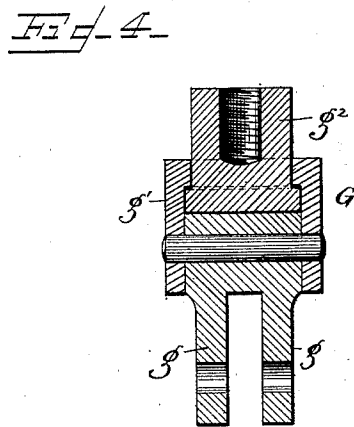
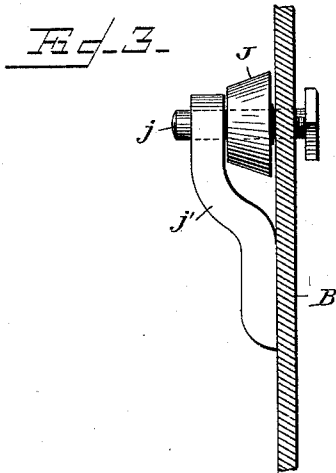
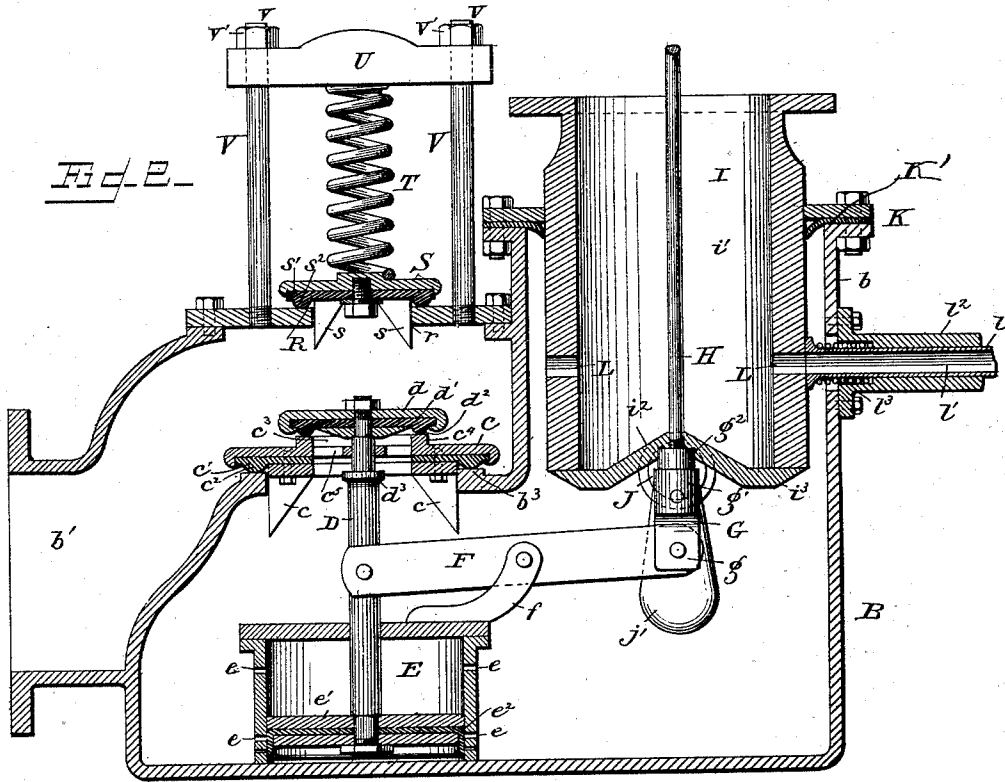
Robert H. White

Chas Snow & Co

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UNITED STATES PATENT OFFICE.

ROBERT HENRY WHITE, OF KINGSTON, NEW YORK.

LOCOMOTIVE STAND-PIPE.

SPECIFICATION forming part of Letters Patent No. 489,245, dated January 3, 1893.

Application filed May 20, 1892. Serial No. 433,725. (No model.)

To all whom it may concern:

Be it known that I, ROBERT HENRY WHITE, a citizen of the United States, residing at Kingston, in the county of Ulster and State of New York, have invented a new and useful Locomotive Stand-Pipe, of which the following is a specification.

This invention relates to stand pipes; and it has for its object to provide an improved, automatically controlled, stand pipe adapted for use in feeding locomotive tenders.

To this end it is the main and primary object of the invention to provide an improved stand pipe having means whereby the same can be easily and readily controlled by the operator, and one which is easily repaired and by means of which the flow of water can be accurately regulated and controlled so as to prevent overflow of the tank or tender being fed.

With these and many other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings;—Figure 1 is a vertical sectional view of a stand pipe constructed in accordance with my invention. Fig. 2 is an enlarged vertical sectional view of the main valve casing. Fig. 3 is a detail sectional view of one of the main upright pipe supporting rollers. Fig. 4 is a detail sectional view of the swiveled coupling.

Referring to the accompanying drawings;—A represents the ordinary platform upon which ordinary tank feeders are mounted, and below the same is located the main valve casing B of my improved stand pipe. The said valve casing B, is provided with an upwardly extending flanged neck *b* at one side, and a receiving inlet *b'* at the other side, which inlet is coupled to the main water supply pipe *b²*, through which the water is led to the valve casing, and intermediate of the discharge neck *b*, and inlet *b'*, is located the main valve seat *b³*, over which are designed to work the valves forming a duplex valve for controlling and regulating the inlet of water to the valve casing.

Working directly over the valve seat *b³* is the main valve C. The said valve C is pro-

vided with the depending guide flanges or plates *c*, working through the main valve opening and guiding the valve in its up and down movement, and between said guide plates or flanges and the top of the valve is clamped the rubber valve cushion *c'*, having a continuous rounded bearing face *c²* adapted to fit snugly upon the top of the valve seat and provide a tight joint. The said valve C is further provided with the central inlet opening *c³*, surrounding which is the raised valve seat *c⁴*, and across which extends the valve guide *c⁵*.

Secured to the upper end of the valve stem D working through the valve guide *c⁵*, is the auxiliary valve *d*, provided with a cushion disk *d'*, having an annular rounded bearing face *d²* adapted to rest upon the raised valve seat surrounding the opening through the main valve C. The said valve stem D is provided at a point below the main valve C, with the lifting shoulder *d³*, which, when the auxiliary valve *d* uncovers the opening through the main valve C, is designed to engage under the main valve and lift the same from its seat thus providing means for first relieving the entire pressure from the main valve before raising the same, and by first closing the main valve C, reducing the column of water, before closing the auxiliary valve. The said valve stem D works through the top of the main closed water cushion chamber E located directly below the main valve seat in the bottom of the main casing, and provided with the top and bottom inlet and discharge openings *e*, which provides means for allowing the water to flow to and from the chamber above and below the cushion piston *e'*. The said cushion piston *e'* is carried upon the lower end of the valve stem D within said chamber, and is provided with the cup packing *e²* working against the sides of said chamber, said water chamber and the piston working therein providing means for the easy seating of the duplex valve without unnecessary jar or concussion.

Secured at the center of valve stem D above the top of the water chamber is the valve operating lever F. The said lever F is fulcrumed in the off-standing bracket *f*, secured to the top of said water chamber and is pivotally connected at its other end in the lower end of

the swivel head G. The said swivel head G is provided with lower bifurcated end *g* receiving one end of said lever and with the flanged sleeve *g'*, swiveling the threaded swivel block *g²* to the body of said head. The said swivel block *g²* receives the lower threaded end of the operating rod H working in the main upright discharge pipe I. The said discharge pipe I works through the base guide *i* supported above the platform A and is provided at its lower end with a closed base *i'*, which projects into the discharge neck *b* of the main casing B. The bottom of the base *i'* is provided with a central raised portion *i²*, while surrounding the lower edge of said base is the beveled face or track *i³* resting directly upon the bevel supporting rollers J. The said bevel supporting rollers J are mounted upon the spindle bolts *j*, passing through opposite sides of the valve casing, and supporting lugs *j'*, secured to opposite inner sides of said casing, so as to allow the main upright discharge pipe to be freely oscillated, while at the same time when the pipe is out of use, the same is held fixedly in position by said supporting rollers being at the apex of the central depressed portion of the base, which also allows the upright discharge pipe to raise as the same is turned into position for use and throws the water openings therein above and out of alignment with the drain valve to be described.

Clamped to the upper flanged end of the discharge neck *b* and tightly surrounding the base of the discharge pipe are the packing rings K, holding in place molded leather packing rings K' which provide a water tight joint while at the same time allowing the main pipe to be rotated in the valve casing.

The base of the discharge pipe is provided above the lower end of the same with the water openings L, which are designed to allow the water to flow into the discharge pipe when the same is turned in a position for use with the rollers out of the raised portion of the bottom, while at the same time allowing the same to drain when turned back out of use. When the discharge pipe is turned in position out of use a hollow drain valve *l* normally registers or aligns with one of said openings L, so as to allow the water remaining in the discharge pipe to pass out of the same through said valve. The said valve is provided with an extended discharge neck *l'*, working through the box *l²*, secured to one side of the valve casing B, and said valve is held normally against the rotating base *i'* by means of the spring *l³*, surrounding the same and forcing the head of the valve against said base, so that when the base is returned to its normal position, one of said openings, according to the direction in which the discharge pipe is turned, aligns with said drain valve. As the pipe raises, the drain opening passes above the drain valve and becomes an inlet opening to admit water to the pipe.

The operating rod H passes through the

guide *h* secured within the discharge pipe I near the lower end of the same and which is provided with a drain passage *h^x* in the top thereof, which communicates with the auxiliary drain opening *h²*, in one side of the discharge pipe and also provide means for draining said pipe. Secured at its lower end in said guide *h* is the main guide tube M, which incloses the greater portion of said rod extending up through said discharge pipe, and which is connected at its upper end to the valve operating lever N, working through the crown of the discharge pipe and pivotally connected at one end to the bracket *n*.

Directly under the crown of the discharge pipe is located the air chamber O, within which travels the air cushion piston P, secured to the operating rod H, and acting in an auxiliary capacity to aid the water cushion, in easily seating the main and duplex valves and directly below said air cushion or chamber the main discharge spout or arm Q is connected to said upright and is adapted to be swung over and away from the track as desired.

Directly above the duplex valve in the main valve casing is located the supplemental valve seat R, secured to the top of the casing and provided with the valve opening *r*, over which works the spring pressed relief valve S. The said relief valve S is provided with the depending guide flanges or plates *s*, working through the valve opening in said upper valve seat, and also with the rubber cushion disk *s'*, having the rounded annular bearing face *s²*, adapted to rest upon the top of the valve seat R, and provide a perfectly tight joint. The relief valve S is normally held to its seat by means of the spring T, bearing thereagainst and the cross head U supported above said valve and the valve seat by the opposite supporting rods V, having upper threaded ends *v*, receiving the adjusting nuts *v'*, working over the opposite ends of the cross head engaging said upper ends, so as to provide means for adjusting the tension of the spring, so that when the water in the valve casing is under undue pressure, the said pressure is relieved by means of said valve. Now it will be readily seen that by operating the operating rod, the auxiliary valve *d*, is first raised to allow the water to pass through the main valve *c* thus relieving the main valve from the pressure of the water and allowing the same to be easily raised from its seat. It will be also seen, that by raising the operating rod H, to lower the valve stem D, the main valve is first closed, thereby diminishing the column of water, which enables the tank when nearly full to be readily filled without running over, the auxiliary valve *d* of course closing subsequently, while the seating of both valves is rendered gradual and easy without any undue jar or concussion by means of the air and water cushion previously described, thus providing a stand pipe easily controlled and operated.

Having thus described my invention, what

I claim and desire to secure by Letters Patent is;—

1. The combination with the valve casing having a valve seat and connected with water supply and discharge pipes; of the main valve working over said seat and provided with a central integral perforated guide, a water passage surrounding the perforated guide, an integral raised valve seat surrounding the water passage, depending guide flanges moving in the main valve opening, and a flexible valve cushion having a rounded bearing annulus adapted to contact with the casing seat, a water-cushioned piston valve-stem or rod moving through the central perforated guide of the main valve and having its shoulder moving to and from said guide, an auxiliary closed valve fixedly mounted on the upper end of said stem to cover and uncover the opening through the main valve, said auxiliary valve having a rounded bearing annulus adapted to contact with the integral raised valve seat of the main valve, and means for reciprocating the piston stem or rod so that the shoulder thereof engages the guide after the auxiliary valve has been lifted above the main valve, substantially as set forth.

2. A valve casing having a central valve seat, a closed water cushion chamber mounted within said casing below said seat and provided with top and bottom water openings, an open valve working over said valve seat, a valve stem projecting into said water chamber and working through and against the main valve, an auxiliary valve mounted upon the upper end of said valve stem, and a cushion piston head mounted upon the lower end of said stem within the water chamber, substantially as set forth.

3. The combination of a valve casing connected with water supply and discharge pipes and having an inner valve seat, a valve working over said valve seat, a supplemental valve seat secured to the top of the casing in a line directly above the inner valve, opposite rods extended above said supplemental valve seat and having upper threaded ends, a vertically movable cross-head loosely working on said rods, adjusting nuts engaging the upper ends of said rods and bearing on the ends of said cross-head to adjust the same, a relief valve working over said supplemental valve seat and having depending guide flanges working through the valve opening in said supplemental seat, and a rounded cushion annulus bearing upon the seat, and a spring interposed between the top of said relief valve and said cross-head, and adapted to be regulated in tension by the latter, substantially as set forth.

4. In a stand pipe, the valve casing having a discharge neck, the cushioned valves working in said casing, the upright discharge pipe supported at its lower end to rotate within the discharge neck of said valve casing, a lever actuated air-cushioned rod working through said upright pipe and connected at its lower end within the casing to a swivel head, and an operating lever pivotally mounted within the casing and connected at one end to said swivel head and at the other end with said cushioned valves, substantially as set forth.

5. In a stand pipe, the combination with the valve casing, the main and auxiliary valves working within said casing, the water cushioned valve stem connected with said valves, the upright discharge pipe supported at its lower end to rotate within said casing and provided at its upper end with an air chamber, an operating rod passing through said upright pipe, and carrying an air cushioned piston working within said air chamber and an oscillating lever connected with said valve stem and operating rod, substantially as set forth.

6. In a stand pipe, the combination with the valve casing having a discharge neck, opposite inwardly beveled supporting rollers secured to opposite inner sides of the casing within said neck, a rotating and vertically movable upright discharge pipe having side inlet and drain openings, a lower closed base working within the neck of said casing and provided with a lower surrounding beveled edge or track resting upon said beveled supporting rollers, and a drain valve, substantially as set forth.

7. In a stand pipe, the combination of a valve casing having a discharge neck, opposite inwardly beveled supporting rollers secured to opposite inner sides of the casing within said neck, a rotating and vertically movable upright discharge pipe having a lower closed base working within said neck and provided with side openings, a centrally raised bottom or base and a lower surrounding beveled edge or track following the contour of the centrally raised base and resting upon and traveling over said supporting rollers, and a side drain valve, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT HENRY WHITE.

Witnesses:

JAMES A. BETTS,
EPHRAIM G. LAWRENCE.