No. 648,346. Patented Apr. 24, 1900.

J. N. POAGE.

WATER COLUMN.

(Application filed Feb. 9, 1900.)

(No Model.)

FIG. 1.

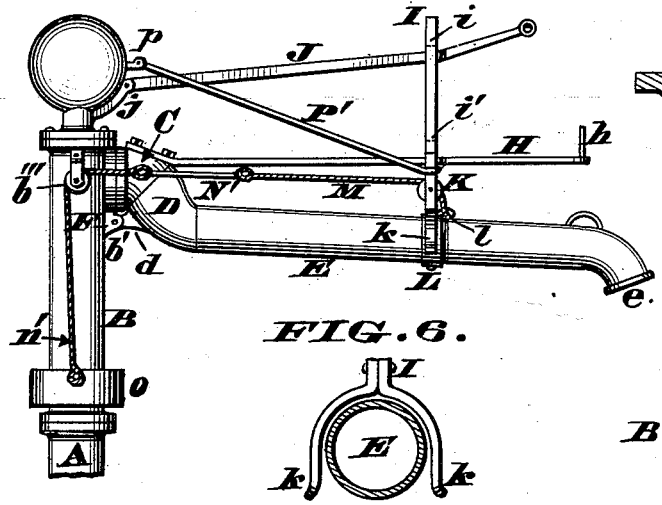


FIG. 6.

FIG. 2.

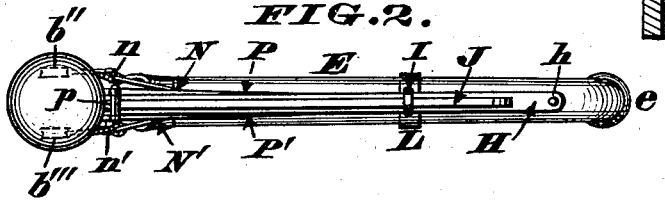


FIG. 4.

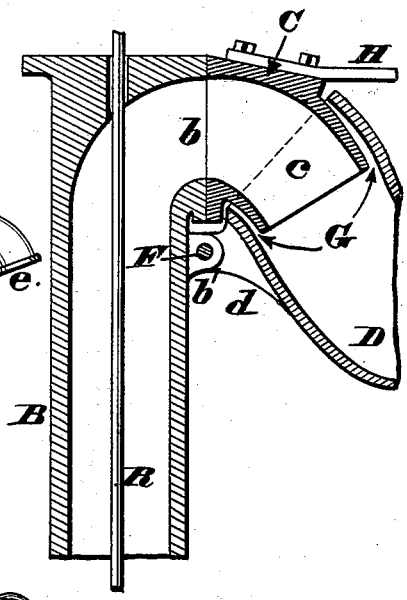


FIG. 5.

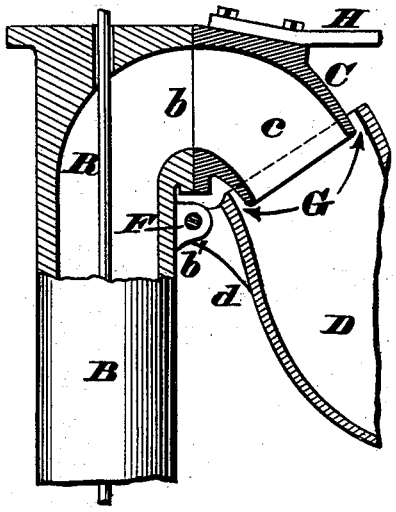


FIG. 3.

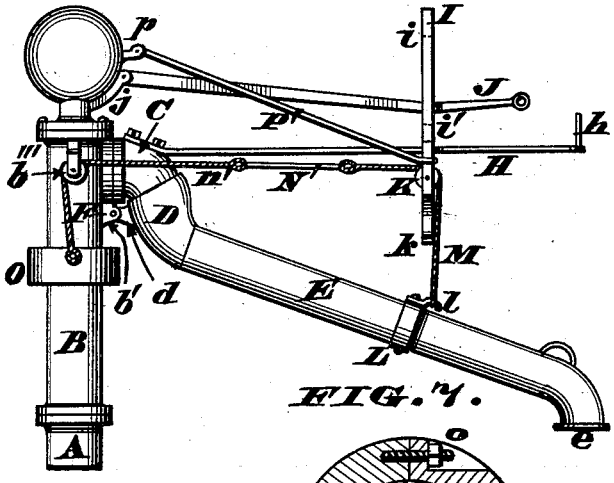
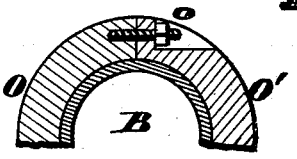


FIG. 7.



Attest.

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UNITED STATES PATENT OFFICE.

JOHN N. POAGE, OF COLLEGE HILL, OHIO.

WATER-COLUMN.

SPECIFICATION forming part of Letters Patent No. 648,346, dated April 24, 1900.

Application filed February 9, 1900. Serial No. 4,628. (No model.)

To all whom it may concern:

Be it known that I, JOHN N. POAGE, a citizen of the United States, residing at College Hill, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Water-Columns; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form a part of this specification.

My present improvements have been designed more especially to be used in conjunction with the peculiar water-column shown in Letters Patent No. 531,598, granted to me December 25, 1894, although said improvements are capable of application to many of the ordinary apparatus now employed for supplying locomotive-tenders with water.

The principal feature of said improvements is a novel coupling wherewith a discharge-spout is connected to an ascending main of the column, the object of this coupling being to enable the free end of said spout to be raised and lowered within any necessary range and without permitting leakage, although said joint is neither packed nor ground. In fact the joint is made so loose as to admit air at all times, thereby facilitating the flow of water through the spout and insuring its complete drainage, as hereinafter more fully described.

In the accompanying drawings, Figure 1 is a side elevation of the upper portion of my improved water-column, the discharge-spout being in its normal position and the lever that operates the valve mechanism raised to stop the flow of water. Fig. 2 is a plan of said column. Fig. 3 is another side elevation of said column, but showing the spout lowered and the lever pulled down to start the flow of water. Fig. 4 is an enlarged vertical section showing my loose coupling in the same position as in Fig. 1. Fig. 5 is a similar section of the coupling in the same position as in Fig. 3. Fig. 6 is an enlarged transverse section showing the discharge-spout arrested by a forked stop. Fig. 7 is a similar section of a portion of a counterbalance for said spout.

A represents part of the ascending main of any approved form of water-column, although said main preferably communicates with a hollow base provided with a valve-operating mechanism of the character described in my Patent No. 531,598 above referred to. Rigidly secured upon this main is a vertical pipe B, having a lateral outlet *b*. (Shown in Figs. 4 and 5.)

C is a downwardly-inclined male coupling rigidly fastened to the pipe B and having a bore *c* of the same diameter as said outlet *b* and communicating directly therewith. Fitting loosely around the lower end of this male coupling is a female coupling D of a discharge-spout E, having a nozzle *e*. Again, this female coupling has a lug *d*, pivoted to a lug *b'*, projecting laterally from the pipe B, the pivot F being so located as to afford an annular space G between said male and female members. Projecting horizontally from the top of this male coupling is a rigid bar H, having a handle *h* and a standard I, the upper portion of which is slotted, as indicated by the dotted line *i i'*, to permit a proper vertical play of the free end of lever J. Below the point where the bar H and standard I are rigidly united to each other a sheave K is journaled in said standard, and below this sheave the standard is forked at *k* to serve as a stop that limits the upward swing of the spout E, at which moment said fork fits around a band or collar L of said spout, as in Fig. 1, although in Fig. 6 this collar is omitted. This collar has a hook *l*, wherewith is engaged one end of a wire rope or chain M, which flexible device after passing around the sheave K is attached to a rod that diverges toward the pipe B, as shown at N N' in Fig. 2, other wire ropes or chains *n n'* being fastened to said rod. These ropes or chains pass over sheaves *b'' b'''* on opposite sides of the pipe B and carry an annular weight O, surrounding said pipe and serving to automatically raise the spout E. Again, this weight is made of two precisely-similar semi-annular sections O O', bolted together, as shown at *o* in Fig. 7, and normally tends to retain the spout in the position shown in Figs. 1, 4, and 6.

P P' are braces proceeding from the junction of bar H and standard I and running up to a lug *p* on the head of the column, to which latter the lever J is pivoted at *j*.

R in Figs. 4 and 5 is a central shaft that operates the valve mechanism in the manner described in my patent above referred to.

The operation of this improved water-col-

umn is as follows: Assuming all the parts of said column to be in their normal positions, (shown in Figs. 1, 2, and 4,) it will be apparent that the weight O draws up the spout E until it contacts with the fork *k*, which at once arrests said spout and without causing any sudden jar or concussion, the rods P P′ serving to support the bar H, standard I, and said spout. Again, in this normal position of the column the supply of water is shut off and the ascending main A B is turned around either to the right or left until its spout E is about parallel with the track, so as not to be struck by passing trains. Furthermore, by referring to Fig. 4 it will be noticed there is a clearance G between the male coupling C and female coupling D to admit air and insure the complete drainage of the spout E, which is now inclined, as represented in Fig. 1. When a train arrives at a watering-station where the column is situated, a fireman on the tender can reach over, grasp the handle *h*, and turn the main A B around until the nozzle *e* of spout E is in line with the well-hole of said tender, after which act said spout is depressed, as shown in Fig. 3. Lever J is then pulled down to let on the water, which flows until the tender is filled. By referring to Fig. 5 it will be noticed that the spout when fully depressed does not cause the female coupling D to become disconnected from the male coupling C, and for this reason there is no escape of water at this loose joint. In fact, the clearance G by admitting air facilitates the flow of water down the spout and effectually prevents any back action or regurgitation. As soon as the tender is filled with water the supply is shut off, the spout automatically swung up by the weight O, and the column turned around to its normal position. Finally, in some cases the male coupling C may be integral with the pipe B, and such a construction is to be considered as within the scope of my invention.

I claim as my invention—

1. A water-column comprising a stand-pipe affording an upward watercourse, a coupling part connected thereto and affording a downward return course and a discharge-spout communicating with said coupling and so coupled thereto as to afford an air-passage between said coupling and said spout as set forth.

2. A water-column B, having a lateral outlet *b*, a downwardly-inclined male coupling C *c*, attached to said column; and a discharge-spout E communicating with said male coupling, and so coupled to said column, or to an attachment thereof, as to afford an air-passage between said male coupling and spout, for the purpose described.

3. The rigid bar H attached to the head of a water-column of the class specified and having the spout movably connected thereto, for the purpose specified.

4. In a water-column, of the class specified, the rigid bar H, standard I, and inclined braces P, P′, for the purpose described.

5. In a water-column, of the class specified, the rigidly-supported standard I, sheaves *b*″ *b*‴ K; flexible connections M, *n*, *n*′, and counterbalance O, for the purpose described.

6. In a water-column, of the class specified, the rigid bar H carrying a standard I, having a fork *k*, at its lower end, for the purpose described.

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

JOHN N. POAGE.

Witnesses:

JAMES H. LAYMAN.

JESSE M. SIMON.