(No Model.) 3 Sheets—Sheet 1.

H. F. PROBERT.

STAND PIPE FOR SUPPLYING WATER TO RAILROAD ENGINES.

No. 420,889. Patented Feb. 4, 1890.

Fig. 1.

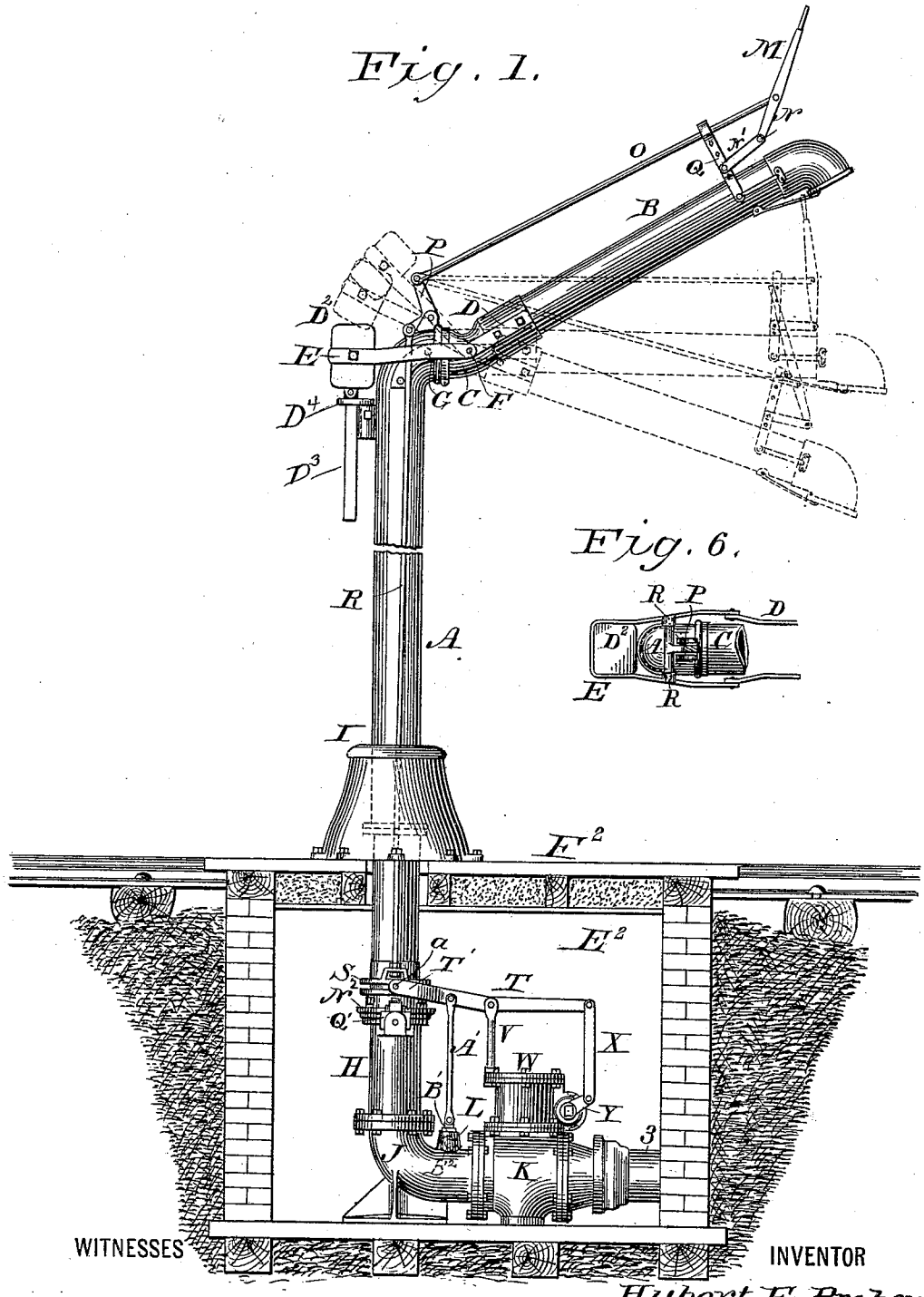

Fig. 6.

WITNESSES

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H. F. PROBERT.

STAND PIPE FOR SUPPLYING WATER TO RAILROAD ENGINES.

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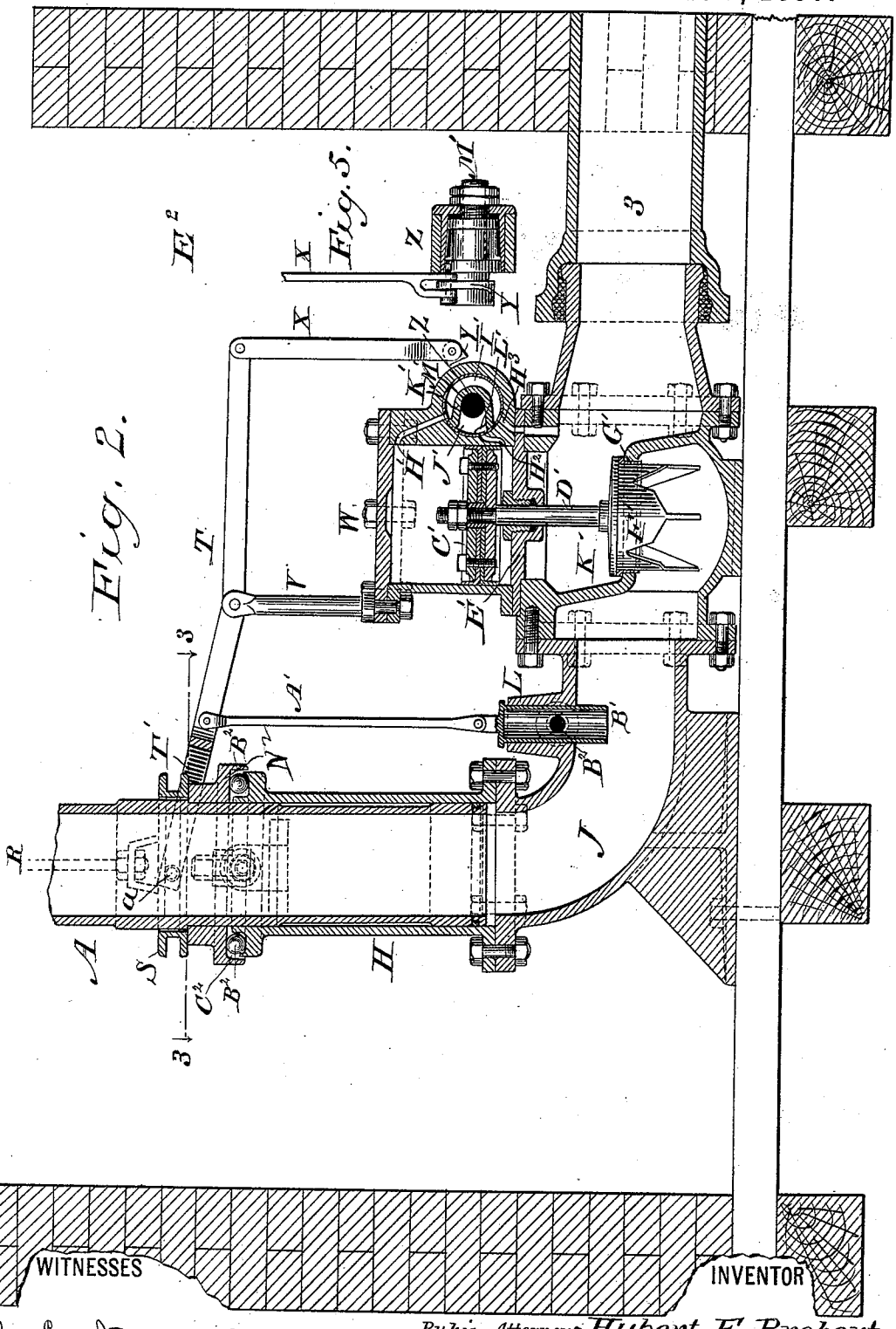

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(No Model.) 3 Sheets—Sheet 3.

H. F. PROBERT.

STAND PIPE FOR SUPPLYING WATER TO RAILROAD ENGINES.

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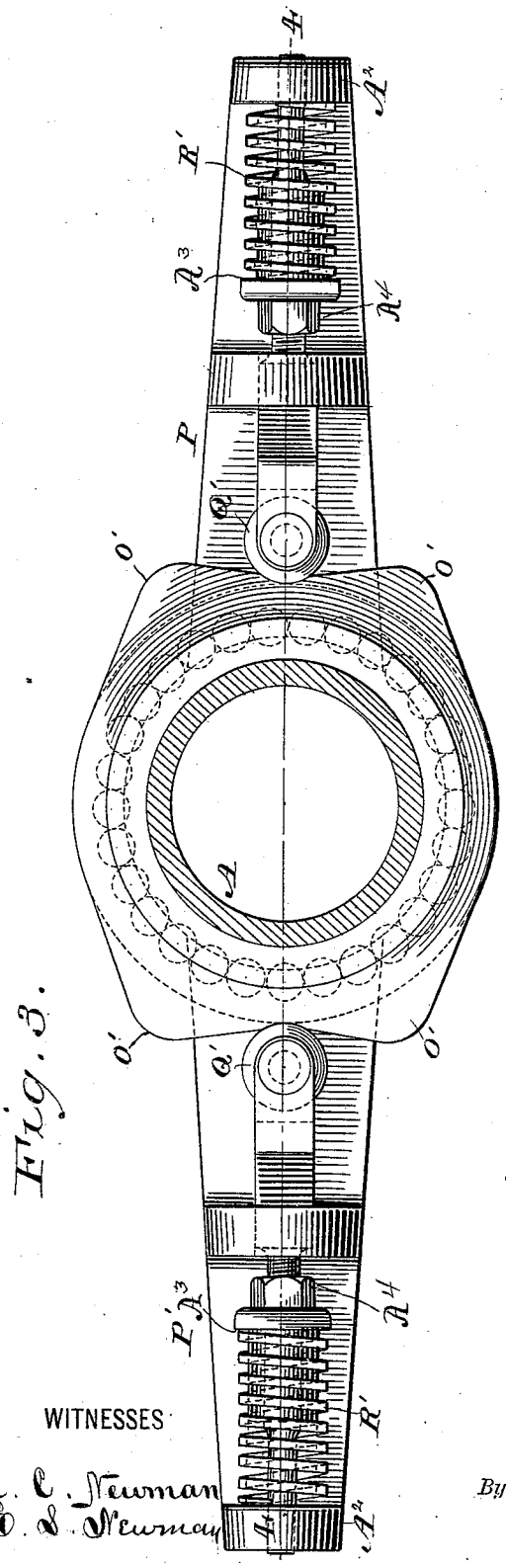

Fig. 3.

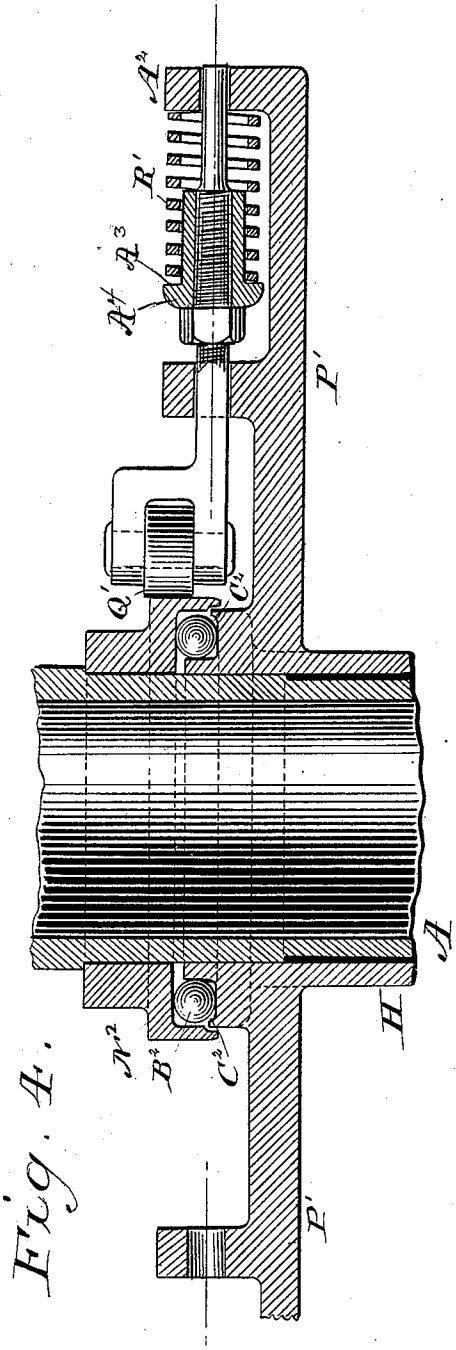

Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

HUBERT F. PROBERT, OF THREE RIVERS, MICHIGAN, ASSIGNOR OF ONE-HALF TO THE SHEFFIELD VELOCIPEDE CAR COMPANY, OF SAME PLACE.

STAND-PIPE FOR SUPPLYING WATER TO RAILROAD-ENGINES.

SPECIFICATION forming part of Letters Patent No. 420,889, dated February 4, 1890.

Application filed November 12, 1888. Serial No. 290,580. (No model.)

To all whom it may concern:

Be it known that I, HUBERT F. PROBERT, of Three Rivers, county of St. Joseph, and State of Michigan, have invented certain new and useful Improvements in Stand-Pipes for Supplying Water to Railroad-Engines, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to provide a device suitable for conveniently supplying water to engines in all seasons of the year with equal facility.

By my invention the water is kept underground and protected from cold, while at the same time it can always be delivered for use by an operator standing upon the engine-tender. I also provide improved means by which, when not in use, the spout may be swung out of the way, and yet remain convenient for use the next time occasion demands. I also provide against the possibility of the spout swinging around before the wind, so as to be out of reach of the man upon the engine, and by the same means a device for assisting the adjusting of the spout when required to be used.

My invention consists in such improvements as I hereinafter describe in detail, and succinctly specify in my claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved apparatus as used in practice, part of it being shown as underground. Fig. 2 is a central vertical section of the underground portion of my apparatus. Fig. 3 is a horizontal section, partly in plan, on the line 3 3 of Fig. 2, drawn on a large scale. Fig. 4 is a vertical section taken on the line 4 4 of Fig. 3, but partly broken off at one end. Fig. 5 is a central vertical section, partly in elevation, of the auxiliary-valve mechanism. Fig. 6 is a side elevation of a part of the stand-pipe similar to that shown in Fig. 1, but broken away in front, in order to show in dotted lines the parts in the rear or on the opposite side.

Referring to the letters upon the drawings, A is a hollow column or stand-pipe.

B is a spout or continuation of the pipe.

C is a flexible connection between the two, which is preferably made of rubber that may be prepared by special process, so as to resist the action of any degree of cold.

D D are bars secured upon the spout B, and pivoted to the bifurcated lever E by pin F. The lever E is pivoted to the column A by the pin G, which acts as a fulcrum for the lever E.

D^2 is a counter-weight bolted to the lever E, and D^3 is a rod pivoted to the counter-weight and passing down through a guide D^4 secured to the pipe A. By this means the relations of the parts described are preserved through all the movements necessary for their operation.

H is a case, within which the column rests, and which, in connection with the curb I, serves to support it in an upright position.

J is an elbow connecting the case H and the valve-casting K, and is provided with a drain L.

M is a hand-lever having its fulcrum at the pivot N, and connected by the rod O with the bell-crank P.

Q is a standard resting on the spout B, which supports the pivoted fulcrum-link N′ and the rod O.

R R are rods connecting the bell-crank P and the grooved collar S, which is loosely fitted around the column A, so as to move upon it when actuated by the rods R R.

T is a lever, having two arms T′, which embrace the grooved collar S and are connected thereto by the lugs *a*, which work loosely within the groove of the collar.

V is a standard resting upon the pressure-cylinder W, attached to the valve-casting K and forming the fulcrum of the lever T.

X is a link pivotally connecting the lever T and the lever Y for operating the auxiliary valve Z.

A′ is a rod which pivotally connects the lever T and the drain-piston B′, that opens and closes the drain L in the usual way.

C′ is a piston working within the pressure-cylinder W.

D′ is a piston-rod connecting the piston with the main valve F′.

E′ is a separating-plate.

G′ is the main-valve seat.

H′ H^2 H^3 are ports connecting the interior

of the auxiliary valve and the interior of the pressure-cylinder and valve-casting, respectively.

I′ is a water-passage, and J′ a U-shaped compartment.

K′ is a wall separating the U-shaped compartment and the water-passage.

L′ is a water-stop to partly obstruct the port H^2, so that the water can but slowly escape from under the piston, and therefore the main valve can but slowly close.

M′ is a nozzle.

N^2 is a collar secured to the pipe A so as to rotate with it, and having cast upon it the lugs O′, with suitably-inclined faces between them.

P′ are arms attached to the case H to support the rollers Q′, which are secured in place in spring bearings Q^2, so that they may be moved outward and inward along the arms and bear upon the collar N^2.

R′ are adjustable coiled springs, having their seats at one end upon the projections A^2 of the arms P′, and at the other end upon the shoulders A^3 of the adjusting-nuts A^4.

B^2 indicates hardened-steel balls, which travel in a groove C^2 on the top of the case H. The rotating collar N^2, resting upon these balls, sustains the weight of the column A and allows it to turn freely with minimum resistance from friction.

E^2 is a pit, within which the valve mechanism is buried and covered by a heat-non-conducting platform F^3.

3 is a pipe for supplying water to the column through the valve.

In operation, when it is desired to turn on the supply of water, the spout B being swung around over the engine-tank at right angles to the track, and being depressed so as to enter the man-hole of the engine-tank, the lever M is pulled outward from the column A. This movement of the lever M serves, through the connecting-rods and bell-crank, to lift the grooved collar S, which depresses the inner end of the lever T, and, by means of the connecting-link X, the lever Y, so as to operate the auxiliary valve Z. At the same time, through the connecting-rod A′, the drain-piston B′ within the drain L is lifted, so as to close the drain. The depression of the lever Y turns the wall K′ so as to form a communication between the port H′ and the U-shaped compartment J′ of the auxiliary valve, and at the same time to place the ports H^2 and H^3 in communication through the water-passage I′. By this means a flow of water from the supply-pipe 3 is forced beneath the piston C′, so as to lift the main valve F′ and to permit the passage of the water through the valve-seat G′ and up through the column A. By reverse motion of the lever M the grooved collar S is depressed, and the lever T, moving with it, raises the lever Y to operate the auxiliary valve Z. At the same time the piston B′ is depressed, so that the water within the elbow J finds an exit through the drain L and is discharged. The lever Y being raised and the auxiliary valve Z operated, the port H^2 and the U-shaped compartment J′ are placed in communication, while the ports H′ and H^3 communicate with each other through the water-passage I′. The water-pressure from the supply-pipe 3 is then exerted upon the top of the piston C′, and gradually depressing it forces the main valve F′ down upon the valve-seat G′. The water in the lower part of the pressure-cylinder W, passing out through the port H^2 and under the stop L′, discharges gradually through the nozzle M′, so that the main valve is not closed with a shock. When the lever M is turned back toward the stand-pipe, the spout B is turned around parallel to the track and is held in this position by the rollers Q′ pressing against the depressions between the lugs O′, so that the pipe may not be turned by the wind. The rollers Q′, pressing against the inclined faces between the lugs O′, serve not only to hold the pipe in position when placed out of the way, but to help to bring it around to its true position for use and to hold it there.

I do not claim the parts of the valve used, because they have been embodied in another application, and they are described only that their relation to the stand-pipe may be apparent.

I claim as of my own invention—

1. The combination of the main-valve casting, the elbow J, the case H, secured thereto, the stand-pipe rotatable within the case H, the collar N^2, secured to the stand-pipe and provided with the lugs O′ and inclined faces between them, the arms P′, secured to the case H, and adjustably-yielding rollers Q′, supported by the arms and bearing upon the collar N^2, substantially as set forth.

2. The combination of the rotatable stand-pipe A, the spout B, flexibly connected thereto, the bars D D, secured to the spout, the bifurcated lever E, pivoted to the bars and to the stand-pipe A, the counter-weight D^2, the rod D^3, pivoted to the counter-weight, and the guide D^4, through which the rod passes, substantially as set forth.

3. In combination with the main-valve casting, the elbow J, the case H, secured thereto, the stand-pipe rotatable within the case H, the collar N^2, secured to the stand-pipe and provided with the lugs O and inclined faces between them, the adjustable yielding rollers Q′, supported upon the case H of the main valve and the auxiliary-valve mechanism, a grooved collar on the stand-pipe, a pivoted lever connecting the collar to the auxiliary valve, and rods and a lever for raising and lowering the collar, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

HUBERT F. PROBERT.

Witnesses:
EDWIN H. HENDERSON,
L. B. PLACE.