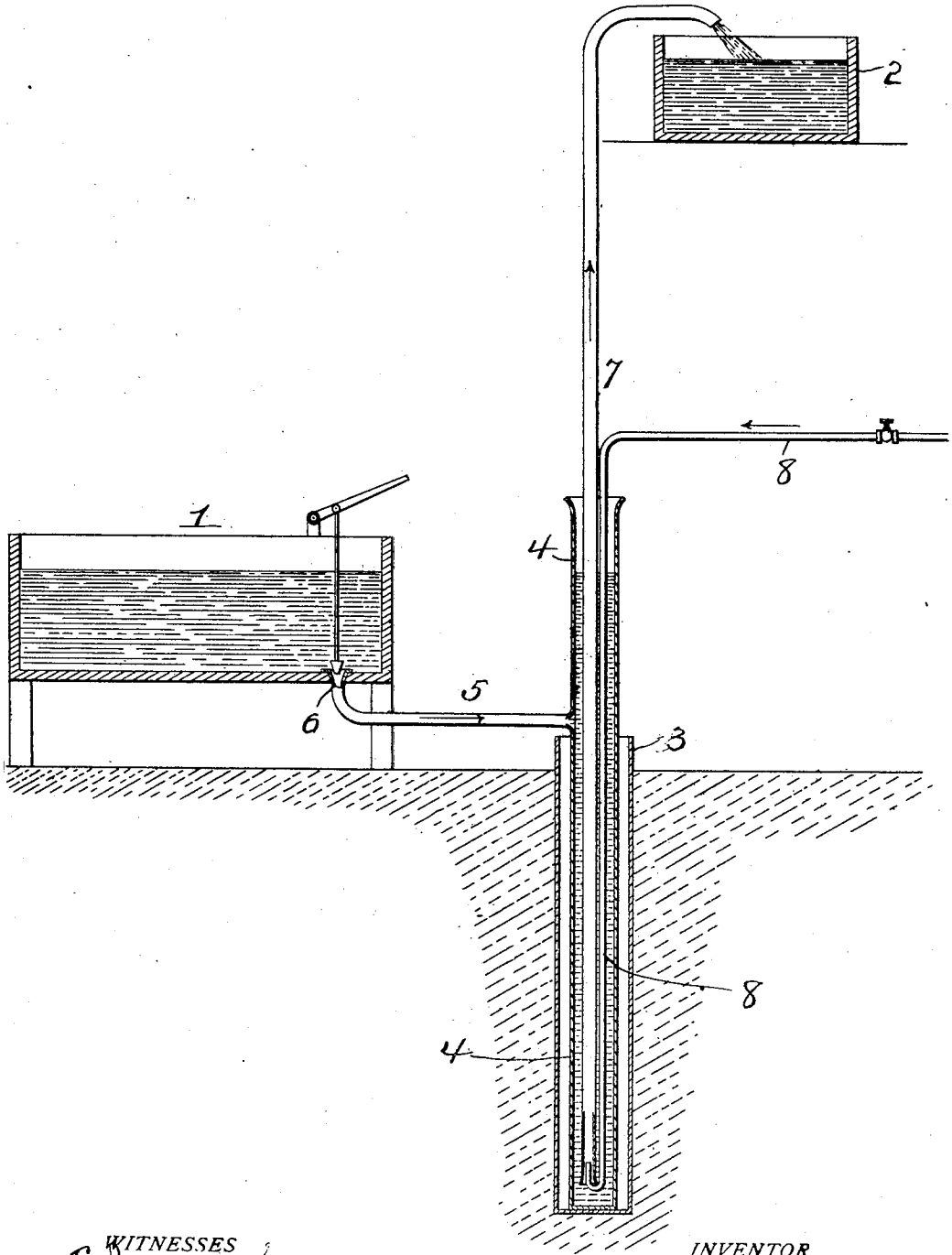
No. 779,853. PATENTED JAN. 10, 1905.

S. HUGHES.

MEANS FOR ELEVATING ACIDS.

APPLICATION FILED SEPT. 19, 1903.



WITNESSES

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No. 779,853. Patented January 10, 1905.

UNITED STATES PATENT OFFICE.

SAMUEL HUGHES, OF SUMMERVILLE, SOUTH CAROLINA, ASSIGNOR OF ONE-HALF TO EDWARD F. LOWNDES, OF CHARLESTON, SOUTH CAROLINA.

MEANS FOR ELEVATING ACIDS.

SPECIFICATION forming part of Letters Patent No. 779,853, dated January 10, 1905.

Application filed September 19, 1903. Serial No. 173,863.

To all whom it may concern:

Be it known that I, SAMUEL HUGHES, a resident of Summerville, in the county of Dorchester and State of South Carolina, have invented certain new and useful Improvements in Means for Elevating Acids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improved means for elevating acids, the object of the invention being to provide improvements of this character which will be simple in construction and which will elevate acid or other liquid to the height desired by the employment of compressed air; and with this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

The accompanying drawing is a view in section illustrating my improvements.

1 represents an acid-supply tank, and 2 an elevated tank into which the acid is to be conveyed.

3 represents a cylindrical casing, which is located in a well sunk in the earth, and in this casing a well-pipe 4, of lead or other acid-proof material, is located and closed at its bottom, as shown.

A pipe 5 connects the bottom of tank 1 with well-pipe 4 to supply acid thereto, and a valve 6 is provided in said tank to regulate the escape of acid therefrom. This valve or other suitable mechanism controls the feed of acid to the well and consequent quantity elevated. A delivery-pipe 7 extends from near the bottom of well-pipe 4 up to and directs the acid into tank 2, and a compressed-air-supply pipe 8 discharges its air into the bottom of pipe 7 to force the acid up therethrough into tank 2.

The height to which the acid can be elevated is dependent upon the depth of the well, and as it is desirable to provide means which will permit the removal of the well-pipe in the event of wear or injury I protect the same by casing 3. This casing is of considerably greater diameter than well-pipe 4, permitting the easy movement of the latter, and it prevents the accumulation of dirt and gravel around the well-pipe, which would interfere with its removal. While I have shown a bottom in casing 3, in some soils a bottom is unnecessary and can be dispensed with.

A great many slight changes might be made in the general form and arrangement of the several parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a well-casing, an acid-supply tank, a removable acid-resisting pipe located inside the well-casing, said pipe being closed at its bottom and extending above the well-casing and as high as the top of the supply-tank and a pipe connecting the supply-tank and acid-resisting pipe, of a delivery-pipe extending to nearly the bottom of the acid-resisting pipe, said delivery-pipe being open at its lower end and communicating at its upper end with a receiving-tank, and an air-pressure pipe, the lower end of which communicates with the lower end of the delivery-pipe, substantially as set forth.

2. The combination with a well-casing, an acid-supply tank, a removable acid-resisting pipe located inside the well-casing, said pipe being closed at its bottom and extending above the well-casing as high as the top of the supply-tank, a supply-pipe communicating at one end with the bottom of the supply-tank and at its other end with the acid-resisting pipe at a point below the top thereof and below the plane of the bottom of the supply-tank, and a valve in the supply-tank for opening and closing the supply-pipe, of a delivery-pipe extend-

ing to nearly the bottom of the acid-resisting pipe, said delivery-pipe being open at its lower end and communicating at its upper end with a receiving-tank, and an air-pressure pipe, the lower end of which communicates with the lower end of the delivery-pipe.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SAMUEL HUGHES.

Witnesses:
W. L. DICK,
JAS. J. CORCORAN.