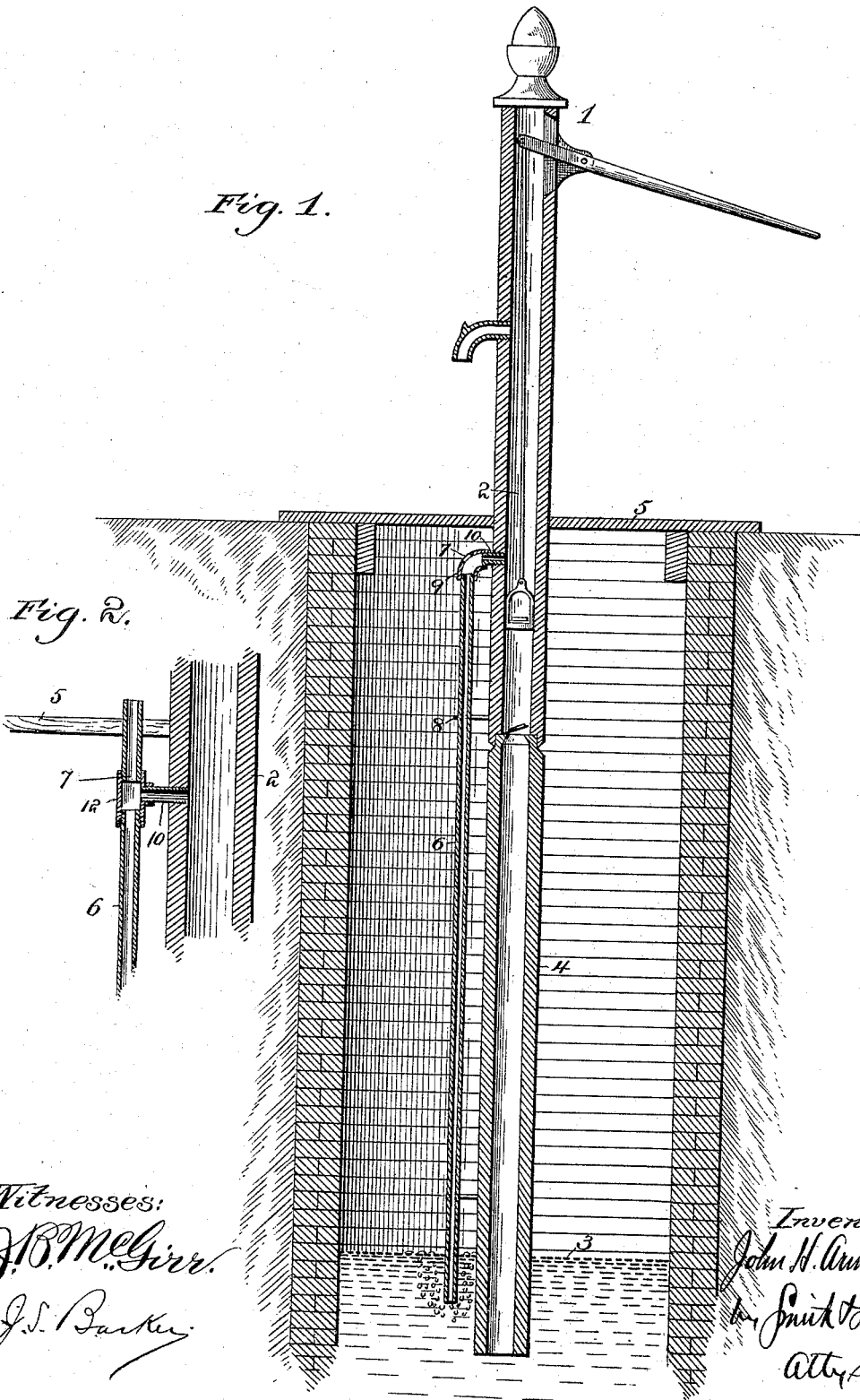


(No Model.)

J. H. ARMSTRONG.
MEANS FOR AERATING AND PURIFYING THE WATER OF WELLS, &c.
No. 493,853.

Patented Mar. 21, 1893.

Fig. 1.



Witnesses:

J. B. McGirr.

J. S. Barker.

Inventor:

John H. Armstrong

by Smith & Low

Attys.

UNITED STATES PATENT OFFICE.

JOHN H. ARMSTRONG, OF DUQUOIN, ASSIGNOR OF ONE-HALF TO W. C. RUSSELL, OF PERRY COUNTY, ILLINOIS.

MEANS FOR AERATING AND PURIFYING THE WATER OF WELLS, &c.

SPECIFICATION forming part of Letters Patent No. 493,853, dated March 21, 1893.

Application filed April 21, 1892. Serial No. 430,030. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ARMSTRONG, a citizen of the United States, residing at Duquoin, in the county of Perry and State of Illinois, have invented certain new and useful Improvements in Means for Aerating and Purifying the Water of Wells, &c.; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

It is the object of my invention to utilize a portion of the water which is lifted by a pump from the bottom of a well or cistern for the purpose of carrying down fresh air into the well or cistern, aerating or purifying its contents. I effect the object by combining with a pump of any desired character a return pipe leading from the barrel of the pump into the well, and having an opening through which air may enter the pipe and be forced and drawn down by the weight of the returning water.

In order to make my invention more clearly understood I have shown in the accompanying drawings means for carrying the same into practical effect, without, however, limiting the improvement, in its various applications, to the particular construction which, for the sake of illustration, I have delineated.

Referring to the drawings:—Figure 1 is a vertical sectional view of a pump, well, and a return and purifying pipe, the whole embodying my invention. Fig. 2 is a similar view on a larger scale showing another form of connection of the aerating pipe with the pump barrel and with the atmosphere.

Referring to the drawings 1 indicates a pump of any desired character the barrel of which is indicated at 2 from which extends to the water in the well 3 the supply pipe 4. 5 is the platform covering the well and supporting the pump.

6 is the return and purifying pipe which extends down into the well for a sufficient distance.

8 are staples by which said return pipe is secured to the pump or other suitable support.

9 is an elbow connected with the pipe 6

and also connected by a pipe 10 with the barrel of the pump and having an air opening 7. 55

In Fig. 2 the pipe 6 extends up above the platform and its open upper end constitutes the air aperture 7. In this case the pipes 6 and 10 are connected by a T coupling 12.

In relative size the internal diameter of the tube 10 is less than that of the tube 6 in order to insure that the latter shall not choke and cause the water entering through the tube 10 to back up and flow out of the opening 7. The tube 10 may be one-eighth of an inch in diameter, and the tube 6, one-fourth of an inch. 65

The operation of the improvement is as follows: The pump 1 being operated the desired amount of water will be raised and delivered from its spout, a certain quantity passing from the barrel 2 through the pipe 10 and flowing into and down the return or purifying pipe 6 which at such time will be full of air which will have entered the pipe through the opening 7. The weight of this descending water will carry with it into the well or cistern a considerable quantity of this pure air and in its descent will become aerated, with much benefit to the contents of the reservoir, the returning water agitating at the same time and aerating the contents of the reservoir. 80

The lower end of the pipe 6 should be beneath the surface of the water, and it will always be filled with pure air which will have entered through the opening 7. 85

Having thus described my invention, what I claim is—

The combination with the well or cistern 3 and the pump having the chamber or barrel 2 and pipe 4, of the return pipe 6 connected directly with said barrel below the spout, extending below the surface of the water, and having the air inlet-opening 7 independent of and above the opening through which water enters said pipe 6 and past which opening 7 the water flows through said pipe, whereby air is sucked into the latter, substantially as set forth. 90 95 100

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

JOHN H. ARMSTRONG.

Witnesses:

PAUL MADISON,
IRA PARKER.