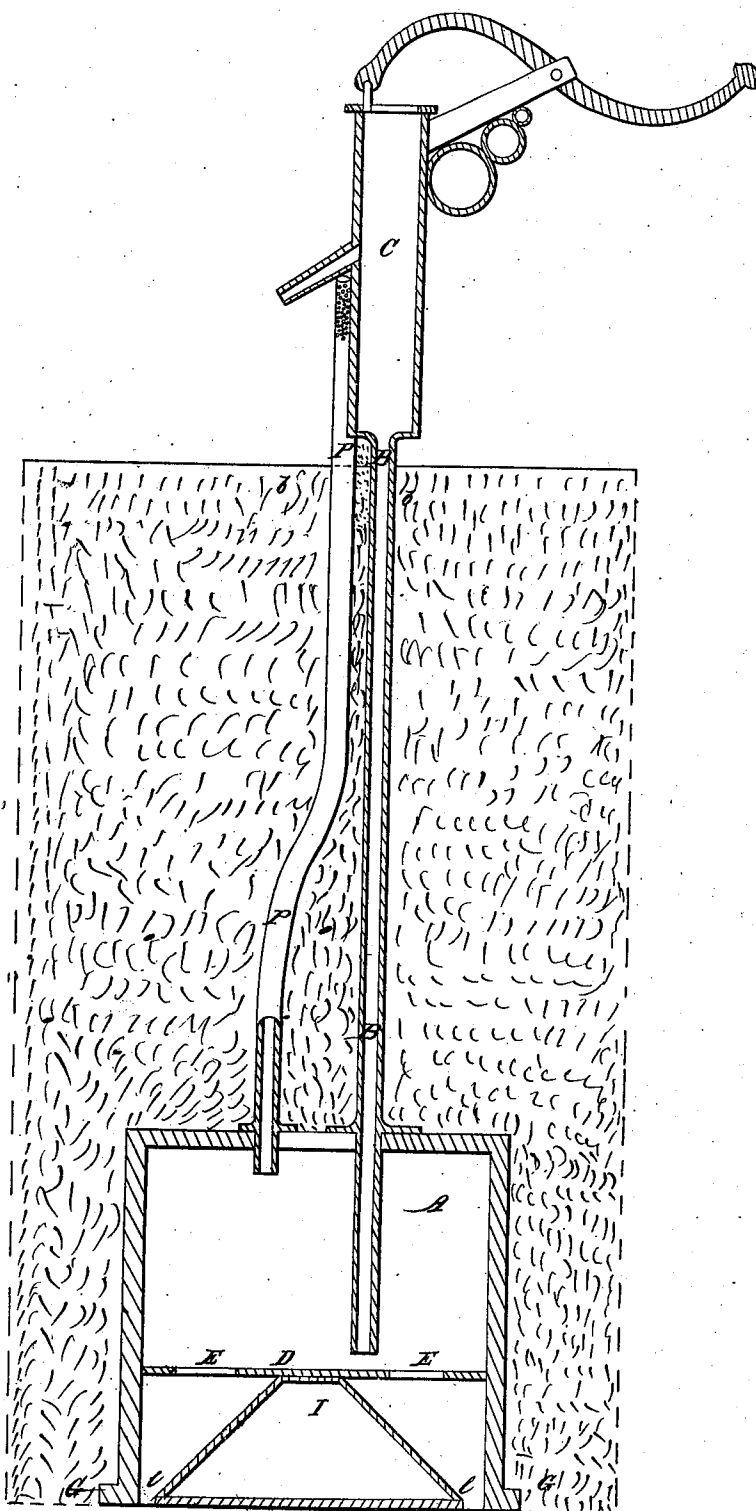


No. 14,273.

PATENTED FEB. 19, 1856.

W. D. BARTLETT.
WELL.



UNITED STATES PATENT OFFICE.

WILLIAM D. BARTLETT, OF AMESBURY, MASSACHUSETTS.

CONSTRUCTION OF CISTERNS.

Specification of Letters Patent No. 14,273, dated February 19, 1856.

To all whom it may concern:

Be it known that I, WILLIAM D. BARTLETT, of Amesbury, in the county of Essex and State of Massachusetts, have invented a new and useful Apparatus or Cistern for Procuring Water from the Earth; and I do hereby declare that the same is described and represented in the following specifications and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and use referring to the drawing.

Figure 1, is a sectional elevation of my apparatus complete, with a pump attached for raising the water.

The nature of my invention consists in making a cistern or reservoir of wood, masonry or some other materials in the earth, with an opening or openings to admit the water of the particular stratum in which it is located; with the hole or aperture in the earth through which it was put in filled above it, so that the water in the several strata above the apertures in the cistern, will flow on, or have an opportunity to flow on, in the same strata that it did before the cistern was put in, so that the cistern will be filled with the water of the stratum in which it is placed, and the water of that stratum only.

If the stratum in which the bottom of the box is placed consists of a formation that would be likely to be carried into the cistern by the water, a filter of gravel, charcoal or some other substance, may be found under and around the bottom of the cistern to prevent it; and in order that the extraneous matter carried into the cistern by the water, may be deposited over the apertures in the bottom, the sides of the apertures may be made to incline by making such apertures largest at the top, or by making the interior of the bottom conical or pyramidal for that purpose. The water accumulating in such cistern may be drawn from it by syphon, pump or some other means, an air pipe being provided to supply air to the cistern, so as to permit the water to be drawn with facility.

In the accompanying drawing A, is a cistern placed in the earth consisting of a stout box with top and sides which I prefer to make of hemlock plank, because it does not impart much if any disagreeable taste to the water; but it may be made of iron or

masonry or such other material as may be preferred. About one third of the lower part of this box is separated from the upper part by the partition D, provided with two openings E, E, to let the water from the lower into the upper part. The box I, may be made in the form of a pyramid with a base three or more inches smaller than the interior of the box A, and fastened in the middle of the partition D, so as to leave a space *l, l*, between the base of the pyramid and the sides of the box A, for the water to pass up into the box A. The box I, instead of being pyramidal may be made long enough to reach across the box A, with inclined sides, so as to shed any sand or extraneous matter carried through the opening *l, l*, when the water becomes still, so as to prevent the water from bringing in more of the same or other materials when a small deposit of a few inches in depth has been formed over the openings *l, l*. The width of the lower edges of the box A, may be increased by fastening some cleats G, G, on the outside as represented in the drawing.

The partition D prevents the water below it from being disturbed, so as to agitate the deposit in the opening *l*, by pumping the water away from above the partition.

To place this box in the earth a hole should be dug a few inches larger than the base of the box, down to, or into the stratum of earth from which the water is to be obtained; and so deep in such stratum, that the water will rise to the top of the box, and if the stratum which supplies the water is not gravel, or consists of, or contains loose sand or other substances, which would be likely to be carried into the box by the water, the hole should be dug from eight to sixteen inches deeper than it is intended to place the bottom of the box; and filled from eight to sixteen inches deep with gravel, or if gravel cannot be readily obtained, charcoal will answer a good purpose, if the pieces placed under the openings into the box, are so large as not to be floated up into the box through the opening *l*, or a lattice of some kind may be placed under the opening to prevent it from being floated in. The bottom of the hole having been properly prepared, the box may be lowered and placed in it, and the space around the box filled up about one foot in depth with gravel or charcoal so as to filter any matter which may descend around the sides of the box.

The end of the pipe B, through which the matter is to be drawn should now be inserted, and secured in the top of the box, so that the lower end of the pipe will be
 5 about two inches above the partition D, and the pipe P, which is to ventilate the cistern should also be inserted just through the top of the box, and secured properly to it. The hole may now be filled with the earth which
 10 was taken from it over the box and around the pipes. If the hole was made through several strata of different kinds, it may be desirable to return the materials of each stratum to its original position as near as
 15 may be, so that the water of each of the several strata may flow or filter forward in the same direction and in the same stratum or strata that it did before and not descend to the box or cistern below.

20 Whenever there is any noxious water in any of the strata above the box the hole a short distance above the box should be filled and packed with clay or some substance which will prevent the noxious water from
 25 descending to the box, and mixing with the water which enters it, so as to render it impure.

It will be apparent from the above description that one or both sides of the openings through which the water enters the cistern may be made inclined for the purpose of shedding any substance carried in by the water into the opening through which the water enters when the water ceases to flow
 30 in. I contemplate that these openings may have a series of inclined planes upon one side or around them for the purpose above mentioned. Also that the cistern may be made round, or of such other shape as may
 35 be preferred.

40 Some of the advantages of my cistern over wells as ordinarily constructed may be enumerated as follows, to wit: They frequently want clearing out, while it is not
 45 probable that my improved cistern will ever require cleaning. In common wells there is

generally nothing to prevent the water from entering at the surface; besides the water in the well may be a mixture of the water from each of the different strata from the top to
 50 the bottom, some of which may be very objectionable, while the water in my cistern is the water of the stratum in which the cistern is placed, and of that stratum only; as
 55 all the water in the strata above is compelled to flow or filter forward where it did before the cistern was put in below it; for it is well known that the water of some wells is good in a dry time, when they receive water from the lower stratum only. But
 60 after a rain the water from some of the strata higher up descends and mixes with the good water and spoils the whole. In such cases my cistern would furnish good water uniformly regardless of drought or
 65 plenty. Most wells are open to the reception of dust, leaves, animals and insects, none of which can get into my cistern. Some wells near tide water are so affected by the tides as to render them comparatively
 70 or quite useless; but if my cistern is put in below the level of the water at low tide it will not be affected by the tide water but will furnish water of a uniform quality continually. The water from my cistern will
 75 generally be cooler in warm weather than from open wells or wells stoned to within a short distance of the surface.

I believe I have described the construction of my apparatus or cistern for obtaining
 80 water from the earth so as to enable any person skilled in the art to make and use it. I will now state what I desire to secure by Letters Patent, to wit,

I claim—

85 A cistern constructed substantially as described or in any equivalent manner for the purposes set forth.

WM. D. BARTLETT.

Witnesses:

THOMAS I. CLARK,
 I. NAYSON.