

### FILTERING CISTERNS AND CISTERN BUILDING.

In a previous number we have spoken of pure water as essential to health. We regard rain water as pure, fit for use. How to get it and keep it is the question now before us. To do this, cisterns must be made in the ground. The size of cisterns may depend upon the quantity of water wanted. They may vary from five to twenty feet in diameter, and from ten to twenty-five feet in depth. A deep cistern will keep the water cooler and probably better. From sixteen to twenty feet is a good depth. We are of the opinion that excellent water can always be kept in cisterns of that depth. From six to nine feet is a good width for ordinary family purposes. They should be dug round, and with the utmost regularity, be perpendicular, the bottom smooth, and a little hollowed in the middle, to facilitate the process of cleaning and give greater permanency to the coat of cement. A permanent clay soil is generally solid enough when well dug, and the sides well smoothed and cemented, to make a lasting cistern; but it is always best to brick over the bottom and sides. This gives the most reliable permanency if the bricks are properly laid. It prevents any water pressure from bursting in, and makes a solid basis for the cement. The top should be arched over with brick, leaving a hole in the middle about two and a half feet in width, and arched sufficiently to sustain any pressure that may ever be expected to be put upon it. When it is thus dug and arched, or bricked, it is ready for the cement, which should be carefully put on at three coatings. Good hydraulic cement, well put on, will make a permanent water-tight lining for the cistern, which is cheap and not easily displaced.

The next important matter is a filter. Pure water cannot well be obtained in all seasons of the year without a filter. There are many modes of filtering cistern water. One is to dig a small cistern six or eight feet deep, near the main one, and fit a filter in the bottom of this, having first connected it with the main cistern by a lead pipe. The orifice of the passage to the main cistern is first protected by bricks or stones. These are covered with a strong coarse woolen cloth. Upon this is placed a layer of powdered charcoal; on this a layer of gravel; another cloth similar to the first; and then charcoal and gravel again. The more of these layers the more perfect the filter. They must be so placed that all the water shall pass through them. The filter in all cisterns is made in the same way.

Another arrangement is to make two cisterns of equal depth, one much larger than the other, and connect them at the bottom with a lead pipe. Lay up a brick arch around the orifice of the passage in the large cistern, about two feet high and make the filter in this. Let the water from the roof into this cistern. The main body of the water being in the large cistern, it will fill slowly, and the water will have time to settle all it will, before going through the filter. There is probably no better plan for good water than this. The only objection to this plan is, that if the filter needs repairing or replenishing, the water must all, be taken out to do it.

Still another plan, is to make a large and small cistern, the large one half the depth of the small one. Make the filter in the large one as in the last named plan. In this the water filters quicker without time to settle, but the filter can be repaired without the loss of the water in the small one.

Some divide the filtering cistern with a brick wall, and place a filter in this and another at the aperture as above, making two filters. This doubtless will give excellent water. Whatever plan is adopted, care should be taken to do it well. Let all the work be done well, and of good material, and there can be no doubt of receiving good water.—*Goward's Real Estate Reg.*

REAPING MACHINES vs. HAND LABOR.—The English *Agricultural Gazette* calculates that if manufacturers could only distribute 10,000 reapers before another harvest, it would be equivalent to more than letting loose all England's standing army on the grain fields of Great Britain. And it further remarks—"Had we had such means at our command this year we should not now have had to complain of one-half our crop being five days in the rain. Supposing these machines to have been a week at work, 500,000 acres would have yielded 2,000,000 quarters of Grain, worth more both in money and as food, by much more than the value of the machine, than it now will prove to be. And the ground would have been cleared a fortnight earlier than it will for autumn cultivation and the other sources of employment which energetic agriculture furnishes."