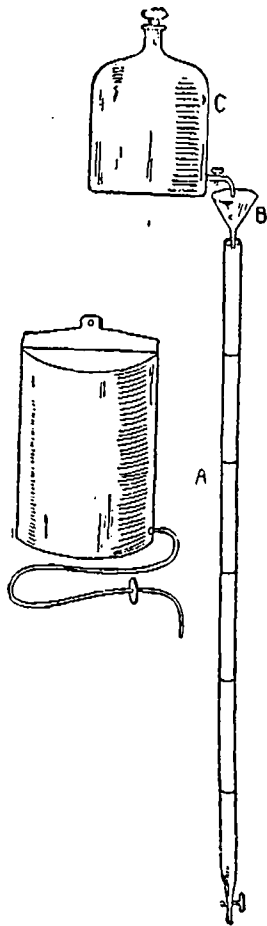




Milk Tester.

The illustration here given shows some additions to the milk tester which save time to the operator. A is a glass tube, with a glass stopcock, called a burette.

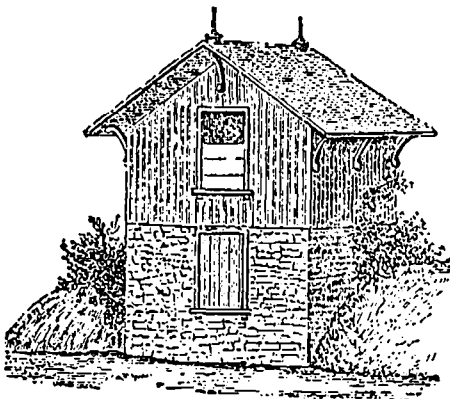


It is graduated in tenths of a c.c., but the marks shown in the drawing are for the proper amount of acid to be used. B is a glass funnel; C is a reservoir bottle holding two quarts. When ready to test, fill the bottle with acid, and then run the burette full. The testing flasks can then be supplied with the required amount of acid from this, in one-quarter of the time necessary to accomplish the same work with the measure furnished with the machine. In adding the hot water, we have another method which is quite handy, shown at the same figure. It is a can with a flat back, to which is attached a small rubber tube four feet long. This hose has attached to it a glass tube with the joint drawn down. Just

above the glass joint is a pinch cock. The can is hung on the wall above the tester. When ready to add the hot water to the test, fill the can, and from this add the needed amount to the flasks.—E. J., in *Rural New Yorker*.

Side Hill Ice-House.

Farmers who are thinking of building an ice house this fall may study the plan given here, with advantage, although the expense of such a house as represented would be rather more than that required for a house good enough for the general run of things.

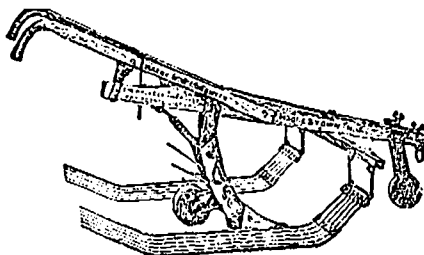


The engraving, reprinted from the *Country Gentleman*, represents the form of construction, when the lower part is built of stone and the upper of common vertical boarding. As the lower part is more than a foot in thickness, the timbers of the upper must be so constructed as to give an equal thickness, and to allow all the contents to settle alike. If, however, the whole is built of stone, this provision as to thickness is not necessary. It is hardly

necessary to mention the common provision for making non-conducting walls by allowing air spaces to be filled with sawdust. This sawdust should be ten inches or a foot in thickness and carefully and compactly filled in. If there is a perfect drainage below, the side walls well constructed, the ice covered with sawdust on top, over which there is a free ventilation, the ice will keep well. An interior size of 14 by 16 and 9 feet high will hold about 40 tons, and will keep plenty of ice during the time mentioned for a moderate family, if properly cared for.

Potato Digger.

One of the hardest problems inventors have had to face has been the construction of a workable potato digger. The *Rural New Yorker* gives as reasons: This is because digging is the hardest and most complicated part of potato growing—weeds, stones, vines and hard-packed soil have all to be overcome in digging potatoes. The actual force of throwing the tubers out of the soil is but a part of the process—they must be screened or sifted from the earth as well. In fact, this sifting has proved the worst obstacle in the path of the inventor. It was easy enough to devise a strong plow that could pass under the tubers and throw them out with dirt, stones and vines, but a good portion of the potatoes were more or less covered and hidden from sight. The problem then, was to devise an attachment for shaking out the dirt and stones, and leaving the tubers on the top of the ground. Two distinct methods have been worked up by inventors. One is represented by a large, heavy, complicated machine with cog wheels, shakers chains and many parts. This is to scoop up vines, dirt and tubers, shake out the former and pass the latter out behind on the surface of the ground. These complicated machines do good work, the objections to them being that they are of very heavy draft, expensive in price, and so complicated, that the average cost of repairs is quite a large item.

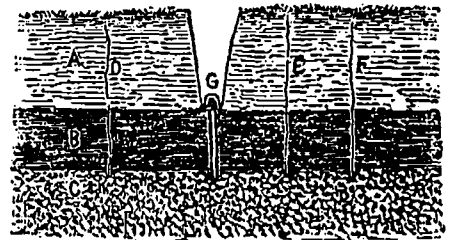


The other plan was to devise a plow with a simple screening attachment without expensive fixtures or heavy weight. The argument in this case was, that the average farmer did not want a complicated or expensive machine, but one that his single team could easily handle and which would not demand annual investments for repairs. Beginning with the shovel plow with spikes or fingers ranged about it, this idea has been developed until we have the arrangement shown in the accompanying cut which is the best simple device yet produced. In this machine the potatoes do not fall behind at all. They are simply plowed to right and left, falling upon the long screens which run lightly and easily over the ground almost exactly as one would dig in the soil with his fingers.

Artesian Drainage.

J. E. WING writes the *Country Gentleman*:—"The drainage of springy land is often very difficult. The ditches put through the wet place are found to drain only imperfectly the surrounding soil. I have seen water stand on the surface of the ground with tile buried 8 feet below—all clear and free and in good working order. The reason is, the water is forced out of the ground by an upward pressure, and comes through little seams and veins distributed through the soil, many of them near the tile perhaps; yet the water will come nearly or

quite to the surface before it works its way to the tile. The condition producing this state of affairs is illustrated in the cut. A shows upper



stratum of wet soil, which is often peaky or mucky; B is a layer of hardpan or tough boulder clay or marly clay; C shows the gravel water-bearing stratum; D E F are the minute natural water channels from latter to surface. The tile is generally laid directly on the hardpan, as shown at G. If conditions are favorable, this will dry it sometimes. To cut deeper into the hardpan is useless unless you can go clear through, and this is often impossible. I have done it, however, with the very best results. To go clear through the hardpan is often too expensive and even impossible. I have cured very difficult places by taking a post-hole digger and sinking a small hole through the hardpan down to the water-bearing gravel, as shown below G in the cut. The water will generally rush up and flow off through the tile. This should be done at intervals of about a rod."

DURING the first five months of 1893 Chicago received 107,471 carloads of live stock, compared with 129,370 last year.

In Pennsylvania, according to a recent census bulletin, there are 513,403 existing mortgages calling for \$613,105,802.

MANY farmers have tried to increase their income by increasing the size of their farms, but it will not maintain the ratio.

A WELL-CONSTRUCTED silo has more to do with the good keeping qualities of its contents than does the artistic packing of the fodder.

THE *London Times* urges British farmers to adopt some method of preserving butter, so as to save the trade in the English market.

LOTS of grumbling is heard about all kinds of farming being "overdone." If this "overdone" business is the cause of the finer breeds of stock now bringing such good prices, we hope it will continue. Everything can be remedied except discontent, and the only cure for this is to cure it before it gets a lusty growth in your disposition. Perhaps you are "overdoing" it kicking, and are "underdone" in the matter of thinking. An old idea, but it may be new when applied to yourself.

In the pathological laboratory of Johns Hopkins Hospital it was necessary recently to determine the exact action of the poison of the rattlesnake. The creatures were kept in a wire covered box. When one was required for experimental purposes, it was caught round the neck by a noose at the end of a stick. A deep glass vessel was then presented to the enraged animal, and it instantly struck its edge with its fangs. The poison, which was caught in the bottom of the vessel, was free from all foreign admixture. Minute quantities injected beneath the skin of rabbits produced marked leso. For some reason or other the snakes refused food, and in order to keep them alive an egg mixture had to be forced down their throats by means of a stout glass tube.—*Scientific American*.