How to build a Concrete Ice House

THERE are few improvements possible which do more to make farm life pleasant than an ice house. Its stored blocks not only make it possible for the farmer to increase his profits by improving the market value of his dairy products, but also, to enjoy the comforts of a home supply of ice.

It is so easy and inexpensive to have an abundant supply of ice all summer that it is really surprising that every farm is not provided with an ice-house. The spread of concrete construction on the farm has been followed by the erection of such buildings in all parts of the United States and Canada, and it is the purpose of this article to give some suggestions which may help those who have not yet built, to plan their ice-houses.

Concrete, being indestructible and not easily penetrated by heat or cold, is a splendid material for the walls. It has the added advantage of being comparatively cheap, since sand, stone, gravel and water are usually available on the farm, and the work can be done by the farmer or his assistants, at seasons of the year when spare time is plentiful. Moreover, concrete walls are not affected by the continual dampness and do not rot like wood. The saving in painting and repairing, to say nothing of superior ice-keeping qualities, in a few years amounts to more than the first cost of the concrete building.

Location.

In determining the location of the ice-house, a place should be chosen where the building can be well drained by an underground line of drain tile. If possible, it should be placed where the shade of large trees, or larger structures, will protect it from the heat of the mid-day sun.

The concrete for the walls should be made of Portland cement, clean sand and a hard crushed rock or screened gravel. Instead of the sand and rock, clean bank-run gravel may be used.

Naturally, the size of the ice-house will depend upon the number of pounds needed daily and the number of days ice will be used. A cubic foot of ice weighs about 57 pounds, and a ton, with 10 per cent. allowance for seams between the cakes, occupies 38 cubic feet. It is not necessary to pack the ice between the cakes, but on the floor, around the sides of the building and on the top of the ice there should be placed 12 inches of sawdust, well rammed. An 18-inch thickness of prairie or marsh hay may be used instead of the sawdust, provided it is well weighted down on top of the ice. Making allowance for sawdust packing and 8-inch concrete walls, a house 10 feet square (inside measurement) and 8 feet to the eaves, will hold 10 tons.

The materials may be hauled to the site at odd times, and piled so as to be convenient for working.

The wooden forms for the concrete may be either fixed or movable. Fixed forms are merely two boxes without top or bottom, which fit one within the other with an 8-inch space between for the concrete. Such forms are made of 2 by 4 inch studding spaced two feet and sheathed next to the concrete wall with 1-inch siding. The forms should be held in place at the bottom by timbers called "liners," and should be well braced. To save lifting the concrete, the outside boards may be nailed on as the concrete is placed in the forms. Movable forms require less lumber than the fixed variety. Such forms are built in sections 2 to 4 feet high and in lengths convenient to handle, usually 8 to 10 feet. The 2 by 4 inch uprights are spaced three to four feet. Cross-cleats at the top are provided to keep the forms eight inches apart. Near the bottom twisted wire ties are used to draw the farms up tightly against the previous day's concrete work. Each succeeding day the wires are cut and the forms raised.

The sheathing and rafters for the wooden roof may be used in the forms. It is not necessary to cut them; their ends may simply be allowed to project beyond and above the walls.

Foundation trenches should be dug 10 inches wide along the lines laid out for the building and should be carried down to solid ground and below frost, usually three to four feet. Bring a drain tile up within the building lines to the point where the door will be.

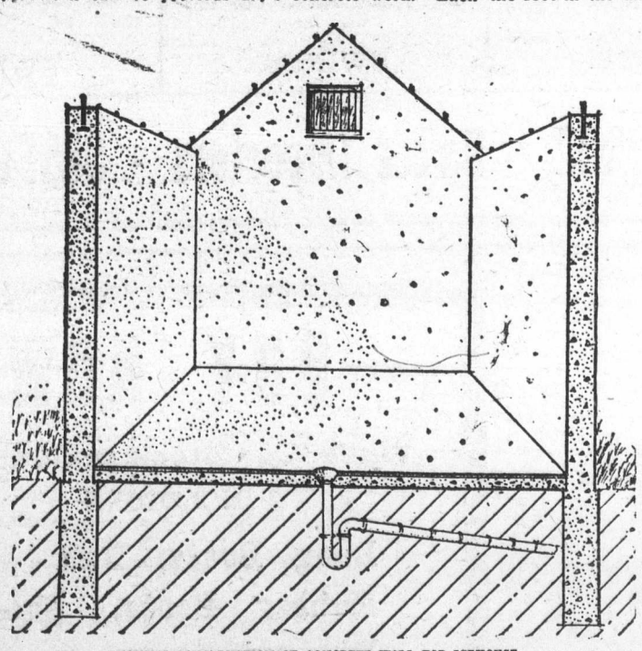
Mixing.

In mixing the concrete a tight wooden platform should be used. The proportions are one part Portland cement to 2½ parts sand to 5 parts crushed rock. Or one part cement may be used to 5 parts bank run gravel. In measuring, count one bag of cement equal to one cubic foot. Concrete for the foundation should be made mushy wet and filled in the trenches to the ground level.

Set up the forms, and during the erection, in the centre of one of the end walls, place a door frame (2½ by 6 feet clear) within the forms. Brace it well so that the concrete will not bulge it out of shape. Place the concrete in layers 6 to 8 inches thick carried around the entire building. In the concrete walls of each gable end set a frame for ventilating doors (2½ by 2½ feet) in the same way as the large door frame was placed.

As the forms are filled, at intervals of 18 inches, imbed bent iron rods or twisted wire in the concrete around the corners of the building. Likewise put two ⅜-inch rods or an old wagon tire in the concrete 1½ inches above the door opening. When the side and end walls have reached their full heights and while the concrete is yet soft, set ½-inch bolts, 8 inches long, heads down, 5 inches in concrete and 32 inches apart. To these bolts will be fastened the 2 by 4-inch plates for the roof.

After the building is a week old, the forms may be removed and the 4-inch concrete floor built directly on the ground. Begin at the back of the building and slope the floor ⅛-inch to the foot in the direction of the drain tile at the door. Lay the last few sewer pipes of the 5-inch drain with well-cemented joints and include a tile known as a "trap," having a bend which always contains water. The water acts as a seal to keep out the warm air in the drain. Cover the floor end of the drain with a trash strainer.



SHOWING CONSTRUCTION OF CONCRETE WALL FOR ICEHOUSE.

The Roof.

The roof may be covered with shingles or any other good material. Close the door opening, next to the ice, with removable sections of boards fitting in slots or grooves and provide a door swinging out. Hang the little doors in the gables with hinges on the outside, so they may be cracked to provide the necessary ventilation and at the same time keep out the rain. Store the ice as previously instructed.

Success in ice-keeping depends largely,

On an air-tight, heat-proof building;

On good drainage, with the drain "trapped" to keep out warm air;

On careful and thorough packing of the ice;

On well regulated ventilation in the roof space over the ice.

A well-built concrete ice-house fulfills these conditions. Every year it is ready for use without repairs. And by means of ice, farm life can not only be made more comfortable and attractive, but fruit, poultry and dairy products can be marketed to better advantage.

For an ice-house 10 by 10 feet, 8 feet to the eaves and 13 feet to the roof peak, with 8-inch walls, 4-inch floor, and a foundation 10 inches by 3 feet, the following materials will be required for the concrete:

Crushed rock, 15 cubic yards.

Sand, 7½ cubic yards.

Portland cement, 21 barrels, and 16 ½ by 8-inch round head bolts.

MADDENED THE BEAR.

Ingenious Trap That Was Formerly Used by the Mexicans.

The Mexicans in California had an ingenuous method of trapping bears before the advent of the Yankees brought modern firearms into the region. A piece of meat was nailed to the stout horizontal limb of an oak tree. From a limb five or six feet above a rope was suspended, to the end of which a large stone was made fast so that it hung about six inches above and a trifle nearer the trunk than the meat on the lower limb.

When a bear smelled the meat from afar he would climb up the tree and make his way to the bait. In doing so he would push the stone pendulum to one side. Just as he was about to fasten his teeth in the meat the stone would swing back and bang his head. This would arouse the anger of the bear, and he would give the stone a sweep of his paw which would send it swinging farther out. The consequence was a harder bang and more anger. The more he struck the stone the harder he would be hit in return, until from ferocious anger he would lose his caution and attack the pendulum with all his vigor. One powerful sweep, then bang, and bruin would be tumbled out of the tree to the rocks below, where, disabled by his fall, he would be at the mercy of those who set the trap whenever they chose to take him.

THE HANDY MAN.

His Job of Varnishing the Door Was Not a Howling Success.

Mr. Brewster thought his front door looked as though a coat of varnish would do it no harm and resolved to do it himself to save the expense of a painter.

Finding an old "golden sirup" tin in the yard, he went off to the shop for some "best oak varnish." He placed it in the pantry for the night and was up early next morning and by half past 12 had got the door finished.

"I don't like it now it's done," he said to his wife.

"It's bad varnish," replied she. "He's sold you the wrong sort of stuff."

He thought so, too, and went back to the shop, taking what was left with him.

"This is funny varnish you sold me," said he. "It's dull, sticky stuff."

After examining it the shopman said: "This is not what I sold you. This is sirup!"

It then dawned on him that he had got hold of the wrong tin, and he went back home to explain to his wife, who at once said: "Good gracious James! And I've made the pudding with the other tinful!" Then, after a moment's pause, "You'll dine today on roast mutton and varnish pudding!"—Pearson's Weekly.

The Gallery Gods' Applause.

Lawrence Barrett once told of a conversation he had with Edwin Booth. The latter had been congratulated upon an ovation given him by a crowded house on the opening night of an engagement. "The sweetest music to my ears," said the great tragedian, "is the shouting of the boys in the gallery. I know they are not applauding because I have a reputation or because they wish to make a display. They simply give vent to their natural enthusiasm. When they shout I know that I am giving a good performance. As for the parquet, it may clap its hands out of politeness. A dramatic critic who had certain notions as to how a line should be read will applaud if I read it his way; otherwise he will remain quiet. I can never analyze the applause of the front rows, but the gallery is sincere in its likes or dislikes."

Shakespeare's Education.

Shakespeare could not have been an educated man, that is, in the academic sense of the word, for he was a mere youth when he went to London from Stratford and had had, up to that time, only such mental training as he could pick up in the schools of his native town. It nowhere appears that he attended school after leaving Stratford. And yet, as Matthew Arnold says, he lived during his London residence "in a current of ideas in the highest degree animating and nourishing to the creative faculty in a society permeated by fresh thought, intelligent and alive." And he used not only the ideas which he imbibed as they floated around him, but all the learning he could pick up without neglecting his calling.—New York American.

THEY WAKE THE TORPID ENERGIES.—Machinery not properly supervised and left to run itself, very soon shows fault in its working. It is the same with the digestive organs. Unregulated from time they are likely to become torpid and throw the whole system out of gear. Parmelee's Vegetable Pills were made to meet such cases. They restore to the full the flagging faculties, and bring into order all parts of the mechanism.

Watford merchants have the goods and meet all price competition.

SOCIETIES.