

temperature is around 50 degrees and dry than where the temperature is 40 degrees and damp. Johnson Co., Ill. W. H. UNDERWOOD.

[Note.—This club plan is something after the beef-ring plan so common in some districts of Ontario. It would, however, provide a change of meats that is welcome during hot weather. We all agree that farmers should co-operate to supply summer meat.—Editor.]

THE FARM.

Farm Engineering.

CONCRETE BUILDING BLOCKS.

Concrete block walls have the advantage of cheapness and ease of construction by unskilled hands over walls formed in place from newly-mixed concrete. The blocks are handled somewhat in the same way as brick, being larger than brick and cheaper. In fact, concrete block construction, all things considered, is cheaper than any other form of building with the possible exception of wood in those parts of the country where lumber is comparatively cheap. In addition, block construction is practically fireproof and is extremely durable.

The building of blocks properly placed has numerous advantages over any other obtained at near the same cost. The walls are as strong as brick. The blocks, being hollow, do not allow moisture to penetrate readily when they are carefully laid, and, therefore, permit of plastering directly on the wall, if desired, particularly after a precautionary waterproof coating. The air retained in the spaces within the blocks aids in insulating the interior of the building, making it cooler in summer and more easily heated during the cold weather. In most cases pipes, wires and other conduits may be laid in the hollows of the building blocks, a thing desirable many times, although extremely undesirable where frequent repairs or changes are contemplated.

The individual blocks are of various and widely different shapes. Not all of them are the shape of hollow brick, although that shape is possibly the most common in farm construction. The essential things are that the blocks shall be easily molded, economical in material, easily interlocked or bonded, of dimensions which may be somewhat varied to meet changing conditions, and of pleasing appearance.

There are two main types of block construction, the wet and the dry. The difference is merely in the consistency of the concrete when molded. In the wet construction considerable water is used, and the blocks have to be left in their molds until dry. In the dry or "semi-wet" type, just enough water is added to make the mixture damp, and the block readily retains its form after the mold is removed. The wet process blocks are far superior, but the dry process is universally used because of the lower investment in molds required, and the more rapid production of blocks. Practically all, if not all, of the concrete block machines produce the dry process blocks.

The "cast stone process" is really a wet block construction, the molds being made in sand. The sand absorbs the surplus water from the wet mixture, and somewhat accelerates the drying process. Its disadvantage is that a new mold must be formed for each block, thus making slow and expensive production. Ornamental blocks are frequently turned out in this way.

The making of dry blocks in the block machine or without a machine, is extremely simple, a 3- or 4-inch layer of the mixture being placed in the mold and well tamped with quick, sharp blows until the surface is slightly puddled. Another layer is then placed, and the operation repeated until the mold is filled. In some machines used by large contractors, the molds are filled and then pressed or tamped hydraulically and released almost at once.

In the wet process the mold is poured full of the wet mixture, slightly tamped, and then set aside to dry or "cure." This curing process is important with all types of blocks. It should continue for at least a month and longer if possible before the blocks are used, because the longer the block is cured the harder it will become.

The main cost of blocks is, of course, the cost of the material. It is cheaper than solid concrete, because, being hollow, less material is used. The usual mixture is 1 part cement to 4 parts of sand and gravel, although a 1 to 5 proportion is common. With a 1 to 4 mixture a barrel of cement will give 14.5 cubic feet of solid concrete. The openings in the block may be from 30 to 50 per cent. of the total volume so that a barrel of cement will give practically 29 cubic feet of blocks with 50 per cent. opening and 20.7 cubic feet with 30 per cent. opening. From these figures the price of common-

sized blocks is given below, using \$2.50 as the price of cement per barrel.

Size of block.	Price each.
8 x 9 x 32 (1-3 opening)	17 cents.
8 x 9 x 32 (½ opening)	12½ cents.
12 x 9 x 32 (1-3 opening)	25 cents.
12 x 9 x 32 (½ opening)	19 cents.

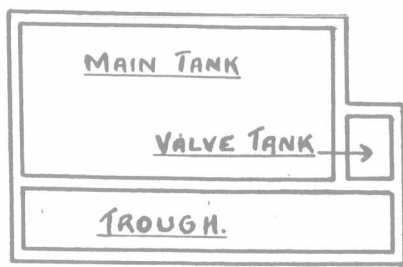
Nova Scotia.

R. P. CLARKSON.

An Up-to-Date Watering Trough.

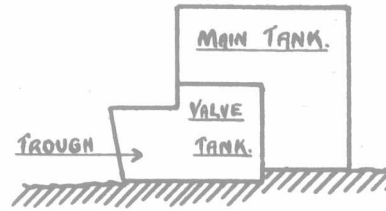
Editor "The Farmer's Advocate":

The accompanying illustration represents a tank and watering trough built on my farm last fall and put to use this spring and it works so



Ground Plan of Watering Trough.

satisfactorily that I thought some of the readers of the "Advocate" might gather some suggestions from it. The storage tank is 6 feet by 11 feet inside and 5 feet high. The floor is 6 inches higher than the valve tank and trough. The



End View of Watering Trough.

valve tank is 3 by 2 feet and the trough is 14 by 2½ feet high. It is eighteen inches wide at the bottom with a flare of about 6 inches. These dimensions could be modified to suit any circumstances.

Huron Co., Ont.

A. C. DAMES.

Green Manuring.

Editor "The Farmer's Advocate":

So far Canadians have not suffered to any considerable extent from what reduced many parts of New England to the verge of ruin—desolating soil depletion. Thanks to the class of settlers who occupied our farms from the early days, the soil has for the most part been well nourished. Mixed farming has done its share in the way of returning to the soil almost an equivalent to what has been taken from it. The standard of cultivation has been high, and the judgment ex-

ercised in cropping has been good. The discovery of the place of clover as a crop and soil renovator has been of incalculable value. Added to this is the fact that the growing cities have demanded enormous quantities of milk. In this way the dairy business has come to have an important place in soil maintenance. The expediency of cattle and hog feeding as soil nourishers requires no argument.

But has not the time come when the question of green manuring should be squarely faced? No one argues that any system that has been of advantage in soil building in the past should be abandoned, but has not the day arrived when the old standbys should be supplemented by green manuring? The best of soil is none too good. A score of reasons press forward for providing for the largest possible returns from every foot of the farmer's arable land. Labor is scarce and dear. The money value of land has risen immensely during the past few years. The farmer's whole plant is costly. He has but one yearly return as a rule from his field. Unless that one return is of the largest possible kind he finds it hard to make any progress.

Hence the importance of making every part of the farm as fertile as possible. Take the corn field for an example. Corn is a gross feeder, and unless the soil is carefully nourished the land is bound to suffer. Yet such land has been made to increase in fertility by green-manuring alone. The practice has been to sow rye and hairy vetch among the corn late in August or in September. The early rains insure a quick start and yet the growth is not sufficient to interfere with the corn harvesting. The covering of rye and vetch insures the extermination of any weeds that may have escaped the last cultivation. By May of the following Spring this green crop will be in ideal condition for plowing under. The rank growth of the rye will add an immense amount of humus to the land, while the vetch will have added a great deal of humus as well as nitrogen.

The same holds for the care of the field that has been sown to a cereal. As soon as the cereal has been harvested it is good practice to plow it with a broad-share plow and to sow to rye and hairy vetch. By spring this crop will be ready for pasture. By May it will be an ideal field for humus-making.

Those who are afraid to experiment with vetch will make no mistake in sowing their newly-plowed fields to rape. This crop sprouts readily, matures rapidly and is ready for pasturage the fall it is sown. A flock of sheep will do well on rape, while the herd to be fed for the winter, fat cattle will come into the stable from such a field in splendid condition for putting on flesh.

In making a beginning in green manuring it is best to make the change gradually. Do not trust wholly to the vetch, but use a small quantity with other seed. In this way the soil becomes inoculated with the vetch nodule-forming bacteria and when the inoculation once takes place there is no doubt but that the sowing of the vetch with very considerable liberality will yield large financial returns.

York Co., Ont.

J. A.

Why Is a District Representative?

Editor "The Farmer's Advocate":

The work of the four-score Doctors of Agriculture, as Dr. G. C. Creelman, President of the Ontario Agricultural College, almost invariably calls the District Representatives of the Ontario Department of Agriculture and their assistants, is very much in the limelight of late. Truly, these men are doing a great work for themselves and for the country. It was the chance to develop his knowledge of scientific agriculture and to bring farmers, with whom he might come in contact, up to a better appreciation of their calling, and incidentally enhance their chances of success that led a certain young man, fresh from his third year at the agricultural college, which he entered after several years on an Ontario stock farm, to accept the rather precarious, often thankless, (as far as officialdom and the general farming community are concerned) and always indefinite and unremunerative position of assistant to one of the best Representatives that ever took up the work for the Department. The position of assistant, as this young man experienced it, was one of the best opportunities to do good work that ever came across his trail. The Representative labored even more strenuously, and there was always more to do. Representative work is, as most of those who advise a young man to take it up term it, "a great experience." No better cognomen could be given it. Talk about variety; of it there is no end, and a continuous performance of a sixteen-act vaudeville amusement hall or a five-ring circus with numberless clowns and thrillers could not offer more laughs, sometimes at one's own foolishness, sometimes at that of those whom circumstances have thrust across the path of duty. It is not

all funny, the serious side of the "JOB" as the boys call it is work in all forms from dissecting tubercular chickens and naming the white spots on their livers to working the handle of a spray pump, and all the while explaining to the questioners roundabout why leaves curl up on certain trees, why cows chew bones, why the goose, which in reality was a gander, did not lay last spring, why the fertile eggs in the incubator did not hatch, why the calves were spotted when they should have been a solid color, and why the colt's legs were not straighter when foaled. A non-partisan government official is looked upon in rather a peculiar light by most farmers who connect party with all things governmental, and expect an official to know a great deal more than he very often does.

However, it is to relate some experiences that "Bill," as he has decided to call himself, is writing now. There is a vast difference in taking in agricultural information by osmosis, that slow process by which the intensely practical is replaced in part by the intensely scientific and theoretical until the cells composing the all too small brain of the student become distended, and his head is just about as big as that of a horse suffering from osteo porosis, and allowing all this information to pour out in about five minutes in such a stream of intelligent conversation that the farmer understands every word and can put the advice to practical use. Generally the information pours out all right, but often by the wide gulf of lapse of memory, or, perchance, in a string of scientific names which cause the listener's chin to drop in astonishment, and usually when this is the case his estimation of the educated agriculturist falls lower than his