

A National Winter Fair.

Editor "The Farmer's Advocate":

I was much pleased with the broad-minded and emphatic tone of your article in the last Farmer's Advocate on the subject "Does Canada Need an International Winter Fat Stock Show." As an old exhibitor at the Guelph Winter Fair I must say I am heartily in sympathy with the views expressed in the article, and I hope the agricultural press of our country will take this matter up and in season and out of season press it upon the attention of the powers that be. No local jealousies or political influence should be allowed to stand in the way of locating a great National Winter Fair at the Toronto Show Grounds.

I don't like the title Fat Stock Show, as the exhibits are not confined to fat stock, but comprise breeding stock of many kinds as well as dairy stock and seed grain and potatoes, as well as the greatest exhibit of live poultry on the continent. I would therefore suggest that the title "National Winter Fair" would be the most appropriate under the circumstances. I believe now is the time to strike, when I understand great alterations and improvements are about to be made on the Toronto Show Grounds, in the matter of the erection of up-to-date stables and a great judging arena which could all be utilized at both fall and winter shows. Although at the recent Guelph Show the great majority of the dairy cattle exhibitors were so dissatisfied that they declared for cutting loose from the Ontario Winter Fair and establishing a National Dairy Show; I still entertain a warm feeling for a united show, provided that ample accommodation is provided for an exhibit not only of dairy cattle in increased numbers and classes, but for an exhibit also of dairy products, dairy utensils and machinery, along the lines followed at the Chicago Dairy Show. I feel confident that the general public will be better satisfied to have a united show, as at present, only on broader lines as I have suggested. It might be that in a few years the show would be developed to such an extent that it would be desirable to follow the plan pursued at Chicago and divide the dairy interests into an exhibition by itself, but in any event both shows should be held on the Toronto Show Grounds, and in the same buildings though on different dates.

Oxford Co., Ont.

JOHN MCKEE.

Pasteurized Whey for Calves.

In answer to your letter of inquiry, I would say that, first, I keep only the largest calves. I feed them three quarts of milk twice a day for five weeks. At about two weeks old I start feeding them hay and oats. When five weeks old I start one quart of whey and two of milk as the milk comes from the cow. Before they are two months old I have them all on whey, giving them what I think is a good drink twice a day, increasing hay and oats as they grow older. I never feed meal or calf food of any kind. I keep the calves in till pasture is good and ground is warm. I find calves never do well in an orchard. I have fed pasteurized whey for three years, and have raised twenty-two calves. As to weights, they would average six hundred at eight months old. I consider the pasteurized whey just double the value of skimmed milk. We pay at our factory seventy-five cents per ton of cheese, for having it pasteurized. I do not think I ever invested money any better.

Middlesex Co., Ont.

D. P. CORNISH.

Ohio reports a smaller than average number of cattle and sheep being fed this winter.

THE FARM.

How to Build a Plank Frame Barn.

As I intend building a plank-frame barn next spring, I will be greatly obliged if you will give a bill of material for same, to be 112 feet long and 48 feet wide and 18-foot posts, two threshing floors 14 feet wide, with a wide mow and a granary between.

I would like to use a self-supporting semi-circular roof, as shown in your issue of April 20th, 1911, adopted by Edgar Zavitz, to be covered with galvanized roofing.

Would spruce or pine be suitable for making the rafter?

How are the rafters attached to the plate?

ALFRED G. CRAWFORD.

So many are asking for bills of material and other information bearing on this popular kind of frame that I have decided to give some time to a description of how to lay one out and also how to erect it. The giving of lists of material for some particular size of a barn does little to help the other readers who may intend to erect a similar frame, but of different size, and I have arrived at the conclusion that it is best to go

carefully over the subject in such a manner to enable any ordinary barn carpenter or intelligent farmer to make his own bill of material and superintend the framing and erection.

Designing.—In designing this or any other frame it is best to keep it ordinary width, not because the plank frame cannot be built very wide; but because it is a great deal cheaper, per cubic foot of interior space, to build barns from 36 feet to 50 feet wide, and in my estimation the ideal barn is only from 36 feet to 40 feet wide. I am led to say this because modern requirements call for four square feet of glass area for each animal in the stable and in wide barns where the rows of stalls run across the building it is simply impossible to get anywhere near this amount of light area. Then again it is hard to ventilate these wide stables and there are sure to be dark, dreary, unhealthy stalls somewhere. These causes should make a man hesitate before building a very wide stable; but when the cost shows a large increase per cubic foot for wide frames over medium sizes, I think any wise farmer or carpenter will see why it is to his advantage to build a narrower but longer barn. The plank frame, like the steel bridge, is designed along scientific lines, and has timbers of the correct size to overcome any strain likely to come upon them. This makes the cost of wide barns considerably greater than of narrow ones, as each important timber must be made larger as the width increases.

Another feature in plank frames is the designing of the bents close together, the ordinary distance being from 12 to 18 feet, but 14 to 16 feet is the distance I always try to have mine apart. This is because of two reasons, the first being the advisability of using light bents made of timber easy to get, and the second is because girths and plates can always be got 14 or 16 feet long at a reasonable price without waste. This brings me to an important point, and one well worth careful consideration by the designer.

secured to overcome a load in some particular direction, and this makes it essential that directions be followed closely.

The sills are made of pieces varying in width from 6 to 12 inches, according to the size of the barn, and always 2 inches thick. This part of the sill is laid in soft mortar on the foundation wall, and when it has been bedded nicely by pounding down with a heavy hammer, a second part of the same width as the first, but only one inch thick, is nailed down on it, so that this second part breaks the joints and so holds all the planks up close end to end. This makes a sill three inches thick, and it should be kept in two inches from the extreme measurements of the barn all around, to allow of a third part made of a 2 x 6-inch piece set down on edge, with the inside face close up against the outside edge of the sill just completed and well spiked to it. This last part stands up 3 inches above the 3-inch sill all the way around.

The joists, 2 x 8 or 3 x 8, are now set on proper centers to carry the load, and this will vary from 12 to 24 inches, according to size of joist, span and load, but the depth of 8 inches should be adhered to, as the ends being rested on the flat part of the sill stand 5 inches above the edge of the 2 x 6 inches and allow of another 2 x 6-inch piece being spiked to these ends all the way along each side. This last piece stands 1 inch above the top edge of the joists and allows the under floor boards to finish against it, and then when the top or finish floor is put down, the boards will lay right out over this joint and finish against the wall covering. This method closes this part of the building so effectively that no beam-filling is required and allows the air getting to the sill and preventing dry rot.

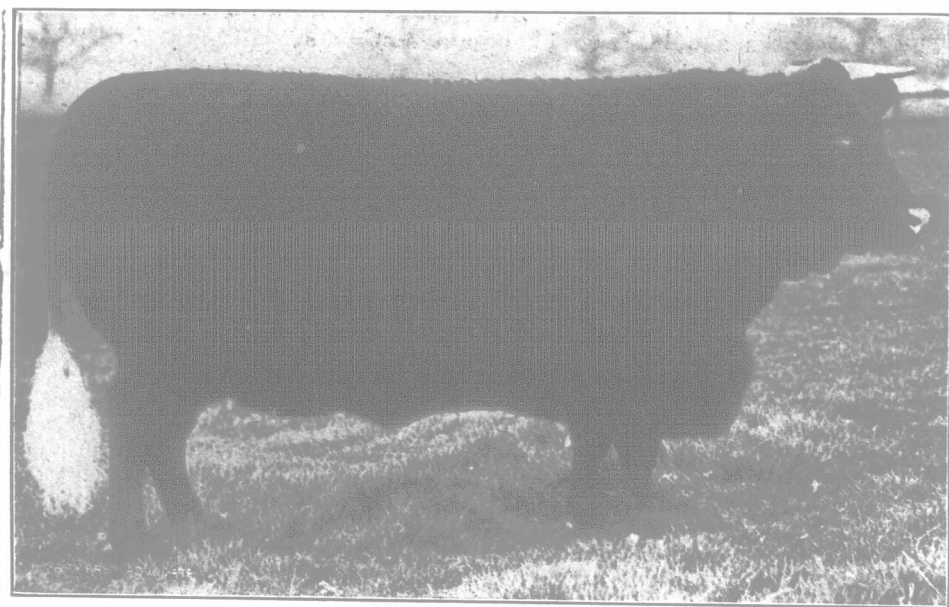
At the points where the bents are to be, two joists are set, each 3 inches, on either side of the exact center mark of the bent to allow of the posts slipping down in as the bent is raised up, and makes a box 8 inches deep to keep it in place.

This requires the flooring being left open at each post. I usually have the first floor all down except at these points, and find that a good close floor is a great help in fast working when putting the bents together.

Before commencing to frame, I find the best thing to do is check over the list of material while sorting out the different lengths and sizes so no mistakes are likely to be made when framing. Then I begin to lay out one each of every piece, marking on it what it is for and how many pieces of it are required. This is by the workmen who taken for a templet cut the quantity

marked and then lay this templet on top of the pile to tell what it is for. This enables me to keep a lot of men busy and insures against mistakes, as every thing is measured by me. In square and single-bevel cuts we generally pile eight or ten pieces up, then lay the templet on top, and square lines down both sides of the pile to guide when sawing. These quantities are cut with a cross-cut saw, and by this and like methods all the way through we can frame barns 40 x 60 feet in ten hours with four men. When all is cut, we begin to put the bents together on the floor and generally use the first one as a templet to put all the rest on, and so avoid taking frequent measurements, and, besides, insure against making mistakes. It is a large barn that four men cannot assemble in two days and generally half a day will raise any frame and set braces and rafters. The frame is composed of the following members and number of pieces: The main or side posts are made 2 x 8 when the barn is not over 16 feet high to the roof and 2 x 10 if under 24 feet, and each post has two of these pieces kept 2 inches apart by the ties and braces which connect it to the purlin post and to permit of the lower end of the roof support going between the two planks. The purlin posts, like the main posts, vary in size from 2 x 8 to 2 x 12, and are also 2 inches apart to permit the ties and braces going between the members and securing it and the main post together. It starts from just inside the main post and runs up and inward to the purlin plate, and is secured to the main post at the bottom by a short tie between each.

The roof support is a single plank 2 x 10 inches



Beauty of Windsor.

Devon heifer; age two years seven months. First in class, Smithfield, 1912. Bred and exhibited by H. M. the King.

This is the use of stock sizes and lengths for just as many pieces used in the frame as possible. It is almost a criminal waste to buy 16-foot girths and have to cut them off to 15 feet to fit some uneven spaces, when this foot might have just as well have been covering some of the building. In fact, uneven spacing and odd sizes cost builders a great deal larger sums than they ever suppose, for material and labor cutting and fitting. Use even measurements wherever possible and do not be buying firewood at \$50 a cord.

The frame.—It is not the quantity of timber that gives strength to a plank frame, but it is the position in which the pieces are placed that makes this the strongest in existence. This is best understood when we consider a joist which, when set on edge and secured against any side pressure, will carry hundreds of pounds over a considerable span, whereas if it was laid flat, a small weight would spring it alarmingly, while it would be absolutely no use as a support under any load. Now, take a beam in the same position—it will be four times the size of the joist, yet will carry little more weight without springing, but it has one advantage: it can be turned over on the side, and sustain just as much as the way it was placed first. Now, is this a real required advantage? Is it wise to pay four times the price for a timber to guard against a thing that cannot possibly happen? Wouldn't the joist be quite safe when set and secured against overturning? Wouldn't it be easier-handled, cheaper and much better in appearance than a heavy timber? Well, that argument applies to the plank frame in every particular. Each piece is set and