corn left over more than can be gotten in at first filling. We would prefer 2x6 staves, and 16 feet is a more convenient and cheaper length. By cutting one third of the planks in two and breaking joints with a 16-ft. and 8-ft., the work is entirely satisfactory, as we have proven by experience. In our Questions and Answers Department this issue, under the heading, "Round Silo Pointers," we give a valuable new idea for silo door, suggested to us by a dairy farmer. It is worth looking up.—ED. F. A.]

Modern Barn Raising.

BY JOHN D. M'GREGOR, HALTON CO., ONT.

In almost every department of agriculture great progress has been made in the last number of years, machinery and scientific methods taking the place of the old-time drudgery, but in the matter of barn-raising no progress has been made in the last quarter of a century until quite recently. While the first small frames that were built by the early settlers could be easily raised with the help of the neighbors, the immense structures that are springing up all over the country are a fruitful source of accidents, and the many accounts of death and disaster that the press of the country tell us of every year, set the more thoughtful farmers wondering, is there "no better way"? As I have never seen this matter discussed in an agricultural paper, I will try and describe the method introduced this year in Halton County, Ont.

A man has a raising outfit, and with his men and appliances travels from farm to farm, like a gang of threshers. The power is secured from a large derrick. This is erected on top of the foundation, and consists of three cedar poles about forty feet in length, and fastened together at the top. The bottom of the posts are spread in such a manner that the feet of two of them are about fourteen feet apart, while the other way they are perpendicular. The foot of the third post is about the same distance out. This leaves a perpendicular face, which is the front of the machine for working purposes. A long, heavy guy rope running opposite from the face is tied securely to keep the derrick from upsetting. The posts are secured by a strong frame at the bottom, and castors are provided for moving around the floor. A powerful block and tackle is used. The top block is fastened to the top of the derrick, and the bottom one to the timber that is to be raised. A single pulley is attached to the foot of one of the posts. The rope passes through this, and a span of horses supply the power.

In beginning to raise a bank barn, the end bent is put together on the ground, not on top of the foundation. It is put together with the feet of the posts away from the building, and the tie beam towards it. The derrick is set on top of the foundation, with the perpendicular face within, about a foot and a half from the end of the building. The tackle is secured to the tie beam of the bent, and the team is driven on. The bent is easily raised up, swings out clear of the stone wall, raised until the feet of the posts are clear of the wall plates; then a man takes hold of each post, and the horses are gently backed and the posts guided into their places. The bent is then properly stayed until the next bent is raised. The next bent will be put together on top of the foundation, with the feet of the posts away from the machine and the tie beam towards. The derrick is shifted round in position and the other bent raised. The girths are not put up until both bents are up, when a double block is put on the end of each girth, and they are easily and safely raised. In case the tenons of any of the girths should be a tight fit, instead of some artist dressing them down with an axe, as has been the custom in the old-time races, a double block is attached to the two posts and the timber is forced into position. The same system is followed until all the bents are raised.

When the plates are to be raised they are drawn alongside of the building, on the ground. The tackle is attached to the center of the plate, a guy rope is fastened to each end, and a man at each end stands on the ground and balances the plate. It is raised up clear of the posts, and the horses backed up, when it is easily guided into position. The purline plates are also raised from the ground clear over the outside plate, which is put into position first. The purlines are let rest on the top beams until the derrick is shifted into the center of the barn, when they are placed on their respective posts.

With regard to the cost of the job, the owner of the raising outfit brings all his outfit himself. He also brings four men, and charges twenty dollars for the job. The framer oversees the timber being put together. One man is required to drive the team that does the raising, another man and team to draw the timber, and about three or four men to put the timber together. With good luck a barn can be raised in a day.

The advantages of this method are many. First, it is a safe way. There is no noise or excitement; one man bosses the job. The timber is handled better, as the joints are not strained, and tighter joints can be framed, as the blocks will draw them together.

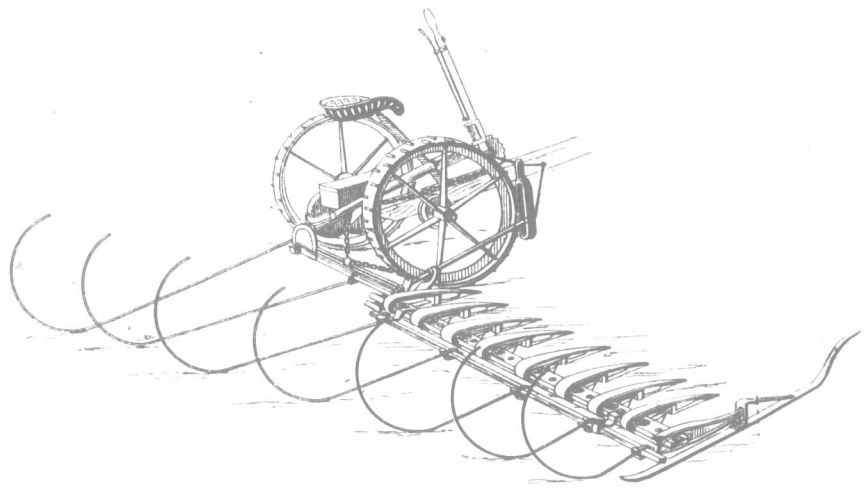
It is much cheaper, for as a rule from 100 to 150 are invited to a raising, and the supper is a matter not only of trouble to the ladies, but also a matter of considerable expense. We understand that a patent has been applied for, and believe that before long the agricultural implement agent will have among his regular stock, outfits for raising barns. The scythe, the cradle and broadcast sowing are now things of the past, the old system of statute labor is fast following, and the old howling, excited throngs that raced to get their plates into position first will soon be one of the institutions that "has been."

New Pea Harvester Attachment.

The attachment I have made to my pea harvester can be made to suit any ordinary width of cut. Mine is an old front-cut Toronto mower. The shortest tooth, or turned-up hook, should be not more than 18 inches long, and should be fastened as near the end of the bar as possible, or the peas will catch on the outside instead of starting to roll. The second tooth should be attached to the cutting bar about 9 inches in from the first, and be about 10 inches longer. The teeth should gradually increase in length, and also in distance apart, the two longest being 18 inches apart. The first two are made of horse-rake teeth, and the rest of common round iron. It will be noticed by the illustration that the two longest teeth are fastened to the back of the mower proper instead of to the cutting bar. The longest tooth, if fastened high up on the mower, need not touch the ground till it comes to the crook, but it must be fastened so as not to swing in toward the others, as the peas have a tendency to pull it that way, and it should have a big crook. The distance between the longest tooth, fastened to the back of the mower, and the shortest one, attached to the cutting bar, should be about six feet, in order to allow plenty of room for the team to walk the next round. I have used this attachment for harvesting my peas for the last two seasons, and cannot see how anything can work nicer than does this.

I admit that the buncher is a good invention, but in my judgment this side-delivery attachment is away ahead of it, for with the buncher it requires a man to follow, and the team has to be driven slowly in order that he may keep up, whereas with this attachment the team can walk up promptly, and thus do a good day's work. It also leaves the peas in smaller, looser bunches (not in a continuous swath), that dry out quickly. I have a blacksmith shop on my farm, in which I do my own work. I have not heard of anyone manufacturing this contrivance for sale, nor do I believe it is patented.

Bruce Co., Ont. J. K. LIVINGSTON.



SIDE-DELIVERY ATTACHMENT TO PEA HARVESTER.

The Utility and Economy of Wind as a Farm Power.

The progressive farmer must have power of some kind. If he does not have a silo, there are cornstalks to be cut, there are roots to be pulped, and, in a large majority of cases, water to be pumped for the stock. We had a horse power for nearly 20 years, but we did not pump water or pulp roots with it; and it is very hard work on horses grinding grain. In winter the horses were often feeling very frisky, and by hitching them on to the horse power in that condition they frequently overworked themselves.

A year ago we got a 13-foot power windmill, and, with the exception of perhaps two or not more than three perfectly calm days, it has pulped all the roots, and we have not pumped one pail of water for the stock since it was put up. I think there was only one occasion that for a few hours the gearing was frozen up by an ice storm. The horse power would often get drifted up with snow, and sometimes the track was so slippery that the horses had to be sharp shod before they could do anything; and, again, in a blizzard a man could scarcely stand on the horse power to drive. Now, with the windmill, we let the lever go, and we are ready for business in the stormiest day that blows. From my experience, I reckon that our mill, in a good strong wind, is equal to five horses on the horse power. We do all our cutting, grinding, pulping, pumping, sawing wood, etc.

It is said that you must make hay while the sun shines. So you must use your power mill when the wind blows, and keep a good stock of cut feed and chop on hand. When one of the many days that are so stormy that a man can scarcely go out of doors comes, then you can be as busy as bees getting feed cut and grain ground. Our grinder is a perfect regulator, and never stops or gets choked, no matter how the wind vacillates.

I estimate that it is worth the cost of the outfit to have the roots pulped and the water pumped. We had an old cylinder, and threshed seven or eight loads of oats that were left over from the day's threshing, and on one occasion on which I was scarce of help I hitched on to the fanning mill and chaffed up a pile of oats that we had threshed with the cylinder, and it worked splendidly, but it is only occasionally that we have a wind steady enough to drive the fanning mill successfully. The grindstone can also be run by windmill power.

A pumping mill will cost from $60 to $80, and will do nothing more than pump. Our power outfit, grinder, saw, mast, belting, etc., cost about $200, and does all sorts of work. The outlay will vary with the size of mill, extent of piping, etc So I think it is much the cheaper in the long run.

To many people it would seem an untruth, but it is a fact all the same, that the wind power is very easy on machinery. We have cut feed without fastening the cutting box to the floor.

There are differences in the position of farm buildings. We believe that in some situations, owing to the lay of the surrounding country, the wind is not so powerful as in other situations where the surroundings are different.

Oxford Co., Ont. DAVID LAWRENCE.

Cultivating the Corn Crop.

For a month after the middle of May the chief corn-growing districts of Canada had reasons for feeling discouraged at the prospects of a good crop, because of the excessively cool and moist condition of the climate, but from the middle of June forward the corn weather has been ideal, until a good crop is now assured to those who do their share in promoting its welfare. It is not many years since it was generally conceded that when the weeds were destroyed the hoes and cultivators could be laid aside for the season, but it has now become pretty generally recognized, especially by reading and investigating farmers, that there are virtues in cultivation apart from killing weeds, viz.: conservation of moisture and aeration of the soil. Concerning the conserving of moisture by cultivation there is no room for dispute. Experiments have proved that cultivation has saved as much as three tons of water per acre per day over ground not cultivated, which saving was directly due to less evaporation from the cultivated soil. From this time on until the crop is too big to get through with a horse and cultivator, frequent cultivations will do good; especially should this be done after every shower, because the rainfall prepares the soil in the best possible manner for the evaporation of moisture, by leaving the surface soil filled with small pores, which act as water conductors between the lower soil and the atmosphere. Writing on this point, Prof. James Atkinson, Iowa Agricultural Experiment Station, says: "Just as soon as the free water that enters the soil by force of gravitation is arrested by the capillary forces in the soil it immediately begins to rise toward the surface by virtue of the same force which arrested its downward course. It therefore follows that the breaking up of these surface pores will check this flow of water into the atmosphere, hence the wisdom of making free use of the cultivator after heavy rains."

But there is cultivation and cultivation, and there is a possibility of doing harm even by cultivation at proper intervals, if it amounts to root pruning by the implement running too deeply in the soil. As a matter of fact, while the corn roots permeate the soil deeply and in all directions, it is the roots that grow near the surface that do most in feeding the plant, for the reason that it is there that warmth and air prepares the food in liberal quantity. In a dry season it is especially injurious to a crop to destroy part of its root system, and we have good reason to believe that to deprive a growing plant of any of its roots is injurious. It is, therefore, as important to cultivate correctly as to cultivate at all, and, according to the most reliable authorities, from 1½ to 2½ inches is the best depth at which to stir the ground. It is also important to leave the surface smooth and level after each cultivation, as the rougher the soil the more surface there is exposed to the drying action of the sun. To give the cornfield a chance to return a full yield, not only should all weeds be destroyed, but cultivation should be sufficiently frequent to maintain a surface mulch of from 1 to 2 inches, and this can be accomplished by cultivation once a week in dry weather, and as soon after each shower as the ground will work well.

The crop prospects for Canada, on the whole, may be said to indicate yields above the average. Fall wheat in some districts of Ontario has suffered severely from Hessian fly and other causes, and in those sections will be not more than half a crop, while in other sections it promises a full crop. Hay, oats and other spring grain, as well as roots and corn, in Ontario and the Eastern Provinces, are all that could reasonably be desired, while the prospects for all crops in Manitoba and the Northwest are of the most encouraging description. The rainfall having been almost more than sufficient, and the weather having, as a rule, kept warm, vegetation has been exceedingly rapid, and the prospect for heavy yields was probably never better. The same we believe, may be said of the Pacific Province.