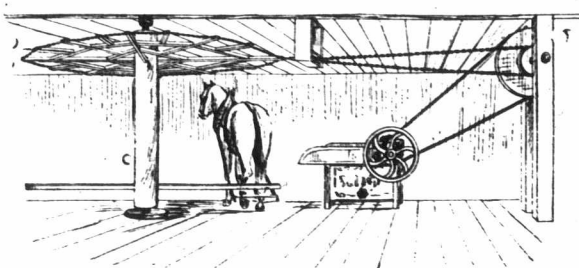
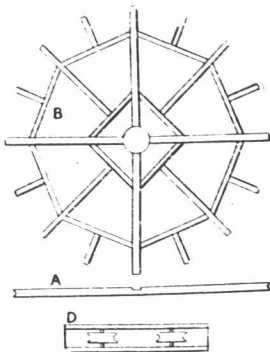


### A Homemade Horse Power.

Occasionally a farmer on a small area of land with a few head of stock does not feel warranted in paying out much money for a power, but prefers to do such work as cutting or pulping by hand; in



which case, however, the animals usually get their food whole. In such cases a person at all handy with tools could easily make himself a one or two horse power similar to that illustrated herewith. This plan was sent us by Howard Mills, Grey Co., Ont., and published in our March 2nd (1896) issue. It takes up little space in the barn, and in barns where an elevated mow is supported by a beam 7 or 8 feet above the floor it can be easily constructed so that the horse will have plenty of room under the wheel. The wheel may be made of ash or elm scantling from 10 to 16 feet long according to the size of the wheel intended to be made. The two main arms and the one for the horse are 3 by 4 inches; the others are 2 by 4, to make it lighter. Each arm has a V-shaped notch in the outer end for the drive chain to run in. A post about 15 inches in diameter and 7 or 8 feet long is used. In this gudgeons are driven at either end and two holes are cut through the post at right angles, one 3 by 4 inches and the other 3 by 6 inches, for the two main arms. A couple of washers under it will make it run easier. The illustration A shows how the main arms are made, B shows the plan of the wheel, and C is a side view of the wheel in position. Put one arm in the 3x4 inch hole first, and then slide the other in the 3x6 inch hole till the notches come together and it drops down, then wedge them down tight. D represents the pulleys through which the drive chain passes, and should be placed on a level with the wheel, as shown in the upper illustration. A belt is run from the larger wheel to the pulley on the cutting box, root pulper or other machine.



### Troubles in Horse Breeding.

The English Royal Commission on Horse Breeding report that 40 per cent. of the mares served by the Queen's Premium horses fail to produce offspring in any given year. This, it was considered, fairly accurately estimates the average loss by mares breaking service or picking their foals, etc. This fact was brought under the notice of Prof. Cossar Ewart, M. D., F. R. S., who devoted special attention to the state of mares at this crucial stage, of which from the sixth to the ninth week is most critical, and wrote a pamphlet upon the subject. Among the practical remarks suggested in the pamphlet we quote the following:

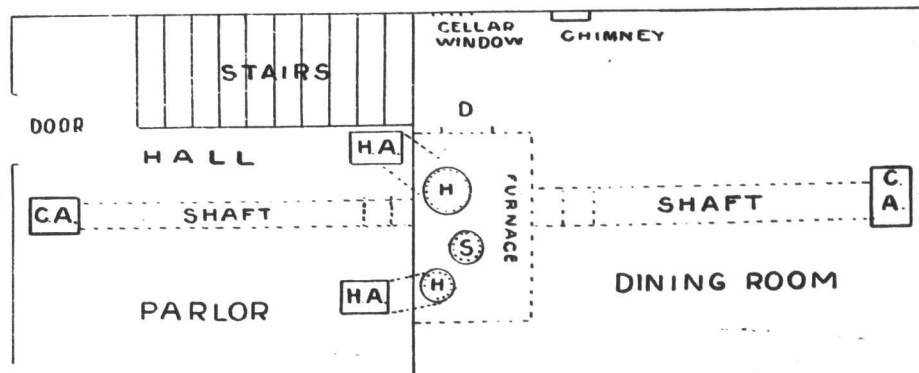
"The crucial stages are at the close of the third and the sixth, but especially, and for another reason, at the close of the seventh or beginning of the eighth week after conception. On account of the supremely nervous character of the horse, the mare is very susceptible to changes of temperature, of food, of companions, changes of surrounding and environment generally, and this susceptibility will be greatly increased at the breeding season. This might be illustrated in various ways, but the following practical suggestions will possibly prove useful: (1) Mares which have been indoors all winter, and are to run at grass all summer, should be acclimatized before being served; (2) mares, and more especially excitable ones, should be served in the evening, and shut up apart from other mares or geldings during the night, and they should thereafter be kept until the periodic disturbance has subsided in a paddock as far removed as possible from mares or geldings likely to tease them; (3) when any signs of being in season (oestrus) are detected in a mare, she should be removed from the company of mares believed to be already in foal; (4) each mare should be carefully watched from week to week, and periodically tried—every ninth or tenth day—until the critical period has been successfully passed; (5) mares backward and out of condition should be generously treated before service; unless they are in a healthy and vigorous state, ova may not be discharged until the summer is well advanced; or, if they be, the embryo, being impoverished, may not survive the critical period, and be more readily expelled."

### Prof. John A. Craig to Go to Iowa Agricultural College.

Prof. John A. Craig, B. S. A., late of Wisconsin Experiment Station, has been elected to the chair of Animal Husbandry in the Iowa Agricultural College.

### Heating the Farm House.

With the disappearance of forests and the growing scarcity of wood, fuel becomes an item of considerable importance to the farmer. I notice that many readers have been contributing valuable letters to the FARMER'S ADVOCATE, giving the result of their actual experience, but so far as I have seen no one has touched on the question of heating the house. I send you herewith pencil sketch of the plan I have adopted and a few notes describing it, which may possibly be of use to others. Should it prove to any as satisfactory as it has in my case, I shall be amply awarded. Formerly the parlor was heated with a small stove and the dining-room with a very large one, the pipe going through the ceiling into the hall above, where there was a big drum. The lower hall had no heat whatever. At present the smoke pipe from furnace comes up through dining-room floor and into chimney at one side; but by continuing it through second floor into bedroom above, using drum there, I expect to abolish the third stove. Having endured the cold, dirt, wood boxes, the insatiable consumption of fuel, and everlasting carrying in of wood and out of ashes till patience ceased to be a virtue, I made enquiries for a regular wood furnace and found the cost would run from \$75 to \$100, which rather staggered me. However, I heard of a couple of homemade furnaces and went to see them, and was not long in getting on to a plan that has cost me only about \$35 all complete. I first got a good 400-lb., three-foot box stove that cost me \$18. There is a cellar under the house with stone cross-wall below partition shown in plan. Alongside this I set the stove, with door facing window, and cased the other three sides (leaving opening for stove door) with 8-inch brick wall (it should be hollow), 4 feet by 5½ feet long and 4 feet one brick high. There is a space of about nine inches wide between stove and inside of brick wall. About eighteen inches from top of stove I set in iron bars across, holding up a heavy piece of sheet iron with three holes cut through for smoke and two hot air pipes. On this sheet iron I filled in seven or eight inches of sand to keep in the heat, jacketed the smoke pipe with asbestos paper, and surrounded the thimble in floor with cement con-



PLAN OF HEATING WITH HOMEMADE FURNACE—DOTTED LINES SHOW BASEMENT ARRANGEMENT.

crete so as to avoid danger of fire. To run the smoke pipe direct into chimney in cellar would involve the loss of a great deal of heat. Beginning at the front of the stove a row of bricks lengthwise is laid underneath from brick floor of cellar to stove bottom and extending to the back and up the end, like a partition dividing the space around the stove into two sections. This is done to avoid trouble by the two currents from the cold air shafts striking. One cold air register ("C. A.") is placed just to the right inside the front door and the other at rear side of dining-room. Underneath ceiling of cellar is a long box or shaft of dressed boards one foot square (shown by dotted lines) which runs to within one foot of stone partition wall, then down to floor and through wall opening into the base of furnace chamber. A similar one comes in from the other side. These shafts provide what is absolutely necessary, a constant supply of cold air to be heated and returned up through tin flues, about ten inches in diameter, to the hot air registers ("H. A.") in hall and parlor. An arrangement might be made whereby a fresh air supply could be brought in from outside altogether and so avoid heating the same air over and over again in houses kept as close as some now are with storm windows and doors. The register and the flues can be got from any good tin shop. As far as my experience and observation go a big box stove used as described is just as good as a high-priced, fancy furnace, and will probably last much longer and is less liable to get out of order. Its simplicity is one of its great merits. Such an outfit can be put in for one-third—and under some circumstances less—the cost of a regular furnace.

The advantages of this plan of heating the farm house are four: 1st, less fuel (all sorts of big, rough chunks can be used); 2nd, less work both for men and women, particularly the latter; 3rd, a cleaner house; and 4th, better heating. If you consider this of any service to any of your numerous readers you are welcome to use it. Their houses may be differently laid out, but the main principles described can be applied by a little study.

[NOTE.—Our correspondent informs us that the two round hot air pipes ("H") shown by dotted lines are incorrectly represented by the artist. They should be the same size.—EDITOR.]

### GARDEN AND ORCHARD

#### Export of Tender Fruits in Cold Storage.

Much credit is due the directors of the Ontario Fruit Growers' Association for the movement which has been made during the past season toward opening a trade in the British market for Canadian tender fruits. At the meeting held in Kingston last December the subject was fully discussed, and the Minister of Agriculture for the Dominion, who was present, asked for the appointment of a committee to consult with him for the carrying out of the scheme in an experimental way. The following is a list of the committee then appointed: L. Woolverton, A. H. Pettit, W. M. Orr, Geo. E. Fisher, E. D. Smith. This committee recommended the erection and maintenance of one cold storage warehouse by the Government and a guarantee to the shippers of the market price of their goods. This was done, and an agreement made with nine shippers to furnish one carload per week of assorted fruits for this work. Fifteen carloads were sent forward, and most of these have now been heard from. Failure resulted in the case of the two first carloads, owing partly to the high temperature on shipboard. From 40 to 48 degrees was too high to prevent a change in Bartlett pears and Crawford peaches. The later shipments, however, were carried at a lower temperature and arrived in fairly good condition, bringing most encouraging prices. For example, some Bartlett pears were sold at 15 shillings a case, Quackenbush plums at \$3.77 a case, while some Crawford peaches brought \$3.66 a case. These prices show the possibility of exporting our tender fruits with success, but there is at the same time the possibility of tremendous loss for inexperienced shippers, unless the conditions are all right. No doubt the best plan would be that which is adopted in California, where

there are packing-houses managed by experts in the business, who pack for the growers at a certain charge per case and guarantee the grower fair returns for his fruit.

A full and detailed report of this work during the whole season, which has engaged the special attention of the efficient secretary, Mr. L. Woolverton, will be given at the next

meeting of the Ontario Fruit Growers' Association, to be held at Waterloo on the 15th and 16th of December.

It will be necessary for the Dept. of Agriculture for the Dominion to continue the experiments in shipping in cold storage at least another season before conditions for certain safety of such tender fruits as Crawford peaches and Bartlett pears can be determined upon. To learn these conditions is very expensive, and one of the first shipments cost the Department £72, besides the loss of the fruit. This was partly made up by later successful shipments, but it shows the need of caution in private enterprise until another season's experiment has made clear the necessary conditions for capturing this very important export trade.

#### Packing Apples.

To the Editor FARMER'S ADVOCATE:

SIR,—Occasionally from our Institute platforms and frequently through the agricultural press the farmer is reminded that "Honesty is the Best Policy," and particularly is he implored to avoid the wicked practice of putting the large apples on the top and the little ones at the bottom, both speaker and writer overlooking the fact that except in a few cases where a fruit raiser forwards his own fruit the farmer has no hand in packing his apples, and if any dishonesty is practiced either in filling or labelling the barrels the fraud lies at the door of the buyers or packers, and it is equally unjust to make the farmer the scapegoat for the sins of others. The usual practice when the bargain is made is for the farmer to pull the fruit, place it under each tree, drive to the cooper's for the empty barrels, board the hands while they are filling the barrels, and take them to the railway station, all for the paltry sum of 75 cents per barrel for fall fruit and \$1 for winter fruit. No chance here for the farmer shipping a single bad barrel. A few years ago I had a call from an apple buyer with the view of purchasing. Passing through the orchard, we were stepping around a fallen tree fairly loaded with unripe fruit. This tree had been blown down some weeks before, so the apples were neither ripe nor developed, and my