rusting process. These tools never scour properly again, and cause trouble ever after by such delay, and further fail to do good work when most needed. Poor plowing and poor cultivation most certainly mean poor crops, and always a poor farmer.

Winter Clothes for Alfalfa.

Alfalfa from northern grown seed is hardy, yet it needs winter protection. In case there was not a good growth left to cover it, to catch snow and lessen the effect of freezing and thawing, it will be helpful to put on a light covering of straw or manure. Some of this will get into the hay, but the important thing is to save the stand of alfalfa.

Just because sheep will gnaw away and manage to live on the shortest pasturage about the farm is no indication that they will do their best on such grazing.

It is poor policy to turn cows out to rough it, as soon as they are turned dry, for a month or two in winter or early spring. This is the time they demand a good and regular ration. A cow is not going to do her best at the pail when calving time finds her run down in condition.

Never fasten fencing wire directly to growing trees. If you do, in a few years the wire will have become imbedded in the tree and do it permanent injury. When you wish to use a tree for this purpose, spike a strip of sound board securely to the tree and fasten the wire to that. In this way very little injury will be done to the tree. Save the trees!

A New Department.

The J. I. Case Plow Works has recently added a Department of Agronomy to their organization. F. H. Demaree, until lately Assistant Professor of Agronomy and Acting Agronomist to the Experiment Station of the University of Missouri, has assumed charge of the department. Mr. Demaree is a graduate of Purdue University—Indiana's agricultural college—and also of the Graduate School of the University of Missouri. For the past three years he was on the faculty of the last named institution.

Born and raised a farmer, scientifically trained in the work, and with years of practical experience behind him, Mr. Demaree's sole interest lies in the various problems and needs of farmers. Through him the J. I. Case Plow Works believes that they can come in closer touch with the needs of farmers in their particular line. Furthermore, they expect to increase the efficiency of their product by more careful field tests and to settle some long discussed disputes as to types of machines for different phases of cultivation.

THE MEN WHO MAKE No. 1 HARD.

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fit for three seasons, but are sorry now that we did not get a larger engine, as this one is rather small for our separator. We could not run the separator to its full capacity.

The question then arises as to whether the single cylinder or the multi-cylinder is the better. From my own observation I favor the multi-cylinder engine of fairly high speed. In the first place there is lack of jar or pound, that is found in the single cylinder of the same horse power. And on account of the less vibration there would be longer life in the engine. The single is not very satisfactory when pulling damp straw, or when the engine is running to its full capacity and a sheaf should go in crossways, the engine is nearly always sure to run down, and sometimes it slows so that when the machine is clear it takes the engine sometime to gain its full speed.

My separator is just fine. It is a good cleaner when handled properly. A good deal of the running of the separator depends on the buyer. A man cannot expect to get the best out of a separator when he does not know how to run it and does not know the principle of the working parts. My separator is just right, neither too large nor too small, and four teams with two pitchers and one spike pitcher could put through from 1,000 to 1,200 bushels of wheat a day, providing you have the power to handle the separator to its full capacity. But four teams will keep the power I have busy without any pitchers, and I can put through from 650 to 750 of wheat a day.

I should like to point out to intending purchasers that they should not go by the horse power of a steam engine that is capable of driving a certain sized separator, as there is a great difference between the ratings of steam and gasoline engines. The steam engines are usually rated at what is known as a normal rating, and the gasoline usually by its brake horse power. For instance, suppose we put a 15 horse power steam engine on the brake, we should find that we had from 30 to 40 brake horse power. We then put on a 15 horse power gasoline, and find that we have very little more than 15 brake horse power, if any; so that the difference is apparent.

This fall I took off the feeder and fed by hand, thinking that I might put through a little more by so doing, but, although it was a little easier on the engine, we could not get much more through, as the straw in this district was rather tough this fall.

I hope I have not trespassed too much on your valuable space, and that this may help some brother thresher. I might say that I have been an engineer ever since I have been able to work, but am afraid that I have not been able to express myself very well.

Yours truly,
A Thresher,
Guy Foster.