so as to have them come in between two and three years old. Your heifer has now become a dairy cow (or will if properly looked after.) She may possibly be a little irritable at the first milkings, but patience and attention will overcome these difficulties. Feed well and develope the milking trait as much as possible, in this direction, milk your cow up to within six or eight weeks of the next calving, thus getting the young cow into a good habit. Of course she must be fed well to make it at all worth while, and with succulent food such as green oats, oats and pease, corn or even rape I might mention the danger of milk fever, but as this is more particularly a disease of older cows I will desist. To sum up, I would impress the necessity of first, selection; secondly, good care; without either the object aimed at cannot be obtained."

N. W. Farmer.

MISLEADING CONCLUSIONS.

A correspondent of the *Farmer's Review* writing under the head of "Some Valuable Dairy Suggestions" speaks of the very excellent address made by Prof. E. H. Farrington before the Illinois Dairy convention last winter, and among other things the correspondent says:

ACID AND FAT.

There is a notion prevailing in some localities that if the milk be left unskimmed for a long time the acid of the milk will "eat up" the butter fat or a portion of it. What the origin was of this strange idea is not known. It certainly rests on mis-observation, instead of on any fact. It is akin to that idea that prevails quite widely yet that wheat can, under certain conditions, turn into "cheat" or "chess." Prof. Farrington has settled the acid fat theory by a clever test. He took milk of a certain quality and carefully mixed it. Then he filled six pipettes, and tested one of them, setting the others away. He tested one bottle each month throughout the summer. These tests running over a period of five months gave the same results, which, of course, proved the acid did not "eat" the fat, for the fat in the last bottle had been exposed to the milk acid for five months and yet is contained the same amount of fat as the first bottle, where the fat had not been exposed at all.

Now while the above is all true under the circumstances named, tested chemically and mechanically by the Babcock method, it is not true practically, when we consider the open setting method of obtaining cream. If any dairy farmer should let his cream stand on the milk in the pans too long, he would soon find that somehow or other he had lost butter. Every housewife knows that where the cream stands until the milk is very sour it renders the cream very thin, and the fat seems to pass into the sour casein and thus practically occasions loss of fat. To all practical intents and purposes then, it is true under some conditions that the acid will eat up the fat. Very likely it was experience of this kind which led to the existence of the idea which the correspondent combats

RUNNING A FARM SEPARATOR BY WATER.

Somebody is constantly trying to find a shorter or more economical way of doing the ordinary work of a farm dairy. One of the advantages of the live dairy paper is that it is constantly on the watch for practical suggestions and the reader gets the benefit of them. Otherwise he might live years, and thousands do, and never know the better way.

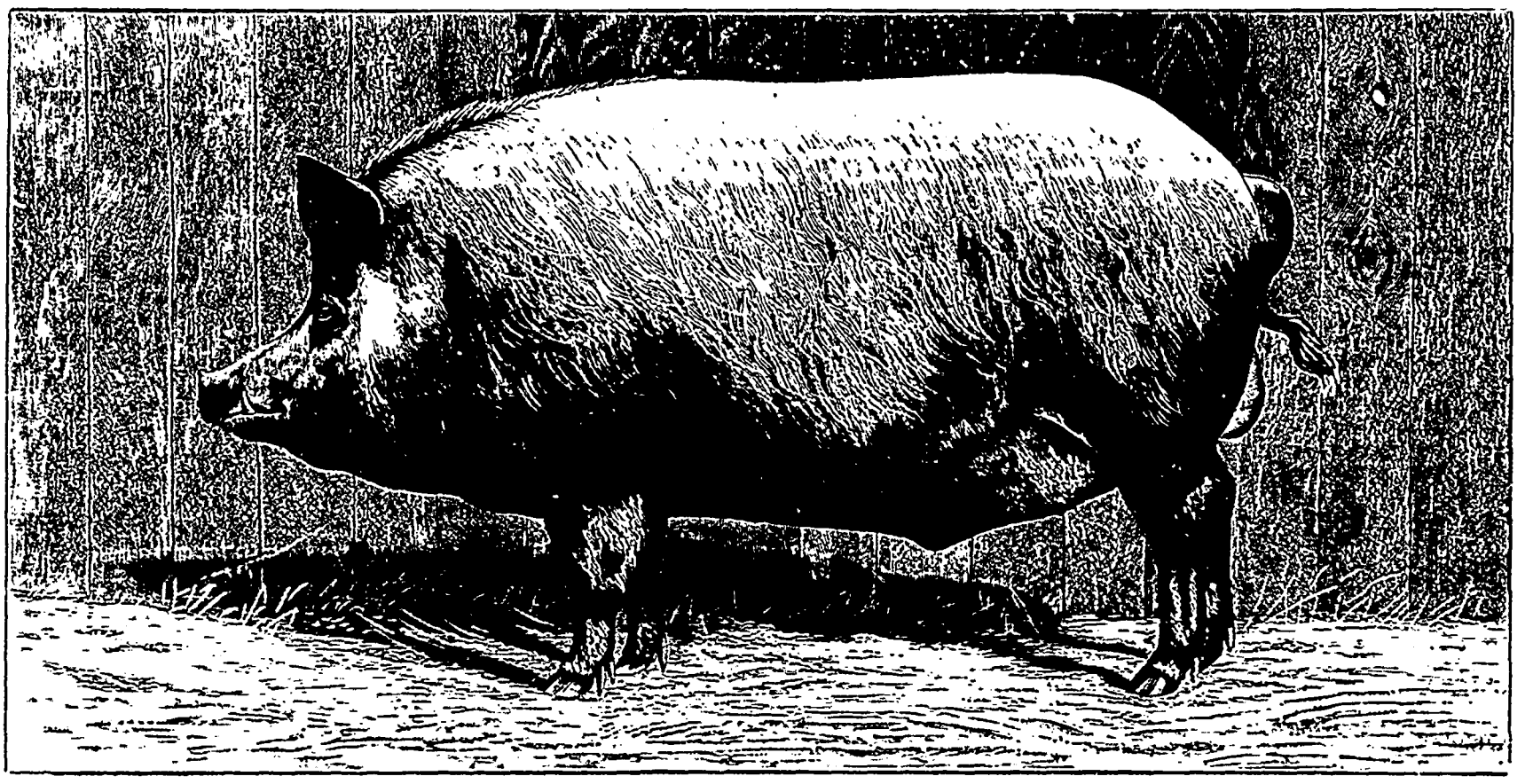
W. L. Williamson, of Colorado, is evidently a thinking, ingenious dairy farmer. He writes to the *Field and Farm* detailing how he has solved the problem of running a No. 3 separator with ordinary well water.

He says:

We have a De Laval Baby Separator No 3, and find it easy enough to run by hand—quite as easy, after getting up speed, as the No. 2—but we are now milking twenty cows, and found it would save the work of one hand nearly one hour each day by getting some kind of power. I thought of buying a small engine, but felt I could not afford it at present. Animal power I did not think would be reliable, so I arranged to use a water motor, and found that it was just the thing. There is no power that could be more regular in its work. The separator pulley does not vary one half of one revolution during the thirty minutes that it runs, night and morning.

The water necessary to run the motor is pumped by a windmill into an elevated tank and is drawn out through a two and one-half inch pipe to the motor. The latter is placed on a platform down in the well directly under the tank and discharges the water back into the well. By placing it in the well we get more fall, and the water can be pumped into the tank for use again. We have seventy feet fall, and this gives about thirty pounds to the square inch pressure, so it takes very little water. The tank is eight feet in diameter, and I find by actual measure that twenty inches in depth of water will run the separator for thirty minutes, and in this length of time we can run the milk of twenty cows through.

We have been using this arrangement eight months, and during that the time have not failed a single time to have water to run the machine. In addition to running the separator we use water from the tank for watering horses and cattle, besides 100 gallons a day in the kitchen. Those who already have windmills and tanks can fit up this power very cheaply; but even if it costs more than an engine it is better to use the water power, because there is no danger of explosion, no expense for fuel, and other advantages, which for a Baby separator make it the most desirable of all powers.



TAMWORTH BOAR, THETFORD'S PRIDE 6th.—(*Nor.-West Farmer.*)

CONCISE SUMMER BUTTER-MAKING RULES.

Ed. Hoard's Dairyman.—The following concise rules for making butter were given a lady in this neighborhood by an old cremery man. Can they be beaten?

"Presuming that your cows have good pasture, good shade and good water, that they are otherwise treated kindly, that they are milked at a regular intervals, and that everything is scrupulously clean:—Keep your cream at low temperature, say 50°, if possible, until about twelve hours before churning time, then raise it to 70°. Maintain this temperature, as near as may be, for twelve hours, or until it thickens, then reduce temperature to 56° and churn, stopping when the butter is in granules, the size of wheat grains or smaller, draw off the buttermilk, wash in water at 55° until the water runs off clear. Work into it from three fourths to an ounce of fine salt to the pound. Never touch it with your hands, or let your ladle slip on your butter, or the butter on the table or vessel you work it in. All slipping motions injure the grain of the butter. Pack firmly in tub, previously soaked in cold brine, fill above tub and cut off even with top with a thread. Wet parchment circle in cold water, spread over the top and paste with salt. Keep cool till it reaches market and it will bring the top."

Windsor, Mo. S.

MILKING SHORT-HORNS.

We have had a great deal of discussion among the breeders of Short-horn cattle in the past years, and more especially since the Columbian test demonstrated the possibilities of the breed in this direction, about milking Short-horns, and we notice that Short horn breeders are careful in advertising and in making sales to call attention to the milking qualities of their herd. This is all right. There is a world of undeveloped milking capacity in Short-horn cattle. The mischief is that the course of breeding until the last year or two has been persistently, though unintentionally so shaped as to drive as far as possible the milking qualities out of these