patches, it may be possible to handle it with a digging fork and hand cultivation. As a rule, however, this method is not a success, because the treatment is neither frequent nor thorough.

Benefits of Tile Drain.

Editor "The Farmer's Advocate":

Tile-draining is a benefit in every way. It is a great benefit in the drouth, and also in a wet season. In a dry season, it leaves the ground porous, and allows the air to circulate through it; and in a wet season it takes the water away from the crops readily. It may be expected to pay for itself in three years, if in ordinary good crop years; if in a wet season, it will pay for itself in one year.

I have had experience with a medium-heavy clay loam, with subsoil—a porous clay. It costs about 20 cents a rod for digging and burying. For 3-inch tile, ten dollars a thousand (16 tile to the rod). I tile this kind of land four rods apart (i. e., the laterals).

I think one-inch fall to the rod would be sufficient for three-inch tile, the laterals being 30 rods long; and, if it is a practically level field, I would start at the outlet, 2½ feet deep, and come up to 2 feet at the end of 30 rods, as I think this depth suits my land best.

In a thirty-acre field, emptying into a main drain, for one-third of the field a 10-inch tile, one-third an 8-inch, and the other one-third a six-inch, suits well. I would use 3-inch tile for laterals on this drain. I would prefer a main drain to several small ones emptying into an open ditch, because it never goes out of repair like the open outlet.

I would advise doing the work in the spring of the year, when there is just sufficient water in the ground to get the bottom level. You can't run a good bottom with over an inch and a half to two inches of water in the bottom. I prefer a tile spade and a scoop. JOEL WHITNEY.

Essex Co., Ont.

Some Knots and Splices in Ropes.

Editor "The Farmer's Advocate":

Few farmers know how to splice a rope, and many are incapable of tying a good knot when necessary. Realizing this, I will try to explain below, with the help of the accompanying cuts, some things worth knowing about a rope. Most of this was obtained from a sailor, and can be relied upon. All here given I have tried myself, and know to be good. Before proceeding, it will be necessary to understand the three parts a rope are known by, viz., standing part, bight and end (see Fig. 1).

A reef knot or binder knot (all binders do not tie this knot) (Fig. 4) needs little explanation. First make an overhand knot (Fig. 3), then bring both ends back, and pass through each bight and draw tight. Do not make it (Fig. 5) a granny knot, or it will slip.

A bow-line knot (Figs. 6, 7, 8) is very useful; will never get tight, and cannot slip; is often used by threshers to draw heavy machines into the barns, and is a regular sailor's knot. Lay the end (A) over standing part (B); form with B a bight (C) over A (Fig. 7). Take a round behind B, and down through bight (C), and draw taut, and you have as useful a knot as is known —Fig. 8, knot completed.

A timber hitch (Fig. 15) is made by passing a rope around a timber, bringing the end over the standing part, and pass a couple of turns round its own part. It is easily made and taken off, and is safe.

SPLICING.

A farmer sometimes breaks a rope, and is unable to splice it. I believe, by a careful study of this, one may make almost as good a job as a sailor. The only tool necessary is a marlinespike (Fig. 2); this is indispensable. It is made out of a piece of hardwood 10 inches long, 2 inches at large end, and tapered to a point. When splicing, use plenty of grease. You cannot expect to make a decent splice without.

There are two kinds of splices commonly used, the short splice and the long splice. We will speak of only one—the long splice. This splice will pass through almost the same space as an unspliced rope. This is for a three-strand rope—the kind mostly used.

To make a long splice, unlay the ends of the rope to be spliced, three or four feet, according to diameter. Now interweave the strands, as shown in Fig. 9; unlay one strand (say A), and in the groove left, follow up by laying B (of course, do not leave space between ropes, as shown in cut; this is to make it more plain). Unlay C, and follow up with D; cut off all ends more than one foot long. Your rope will now have the appearance of Fig. 10. Tie an over hand knot (Fig. 12) with the three sets of ends, and see that the knot lies nicely in the groove. Divide the strands in halves, and pass them over one strand and under two. Use the marline spike and plenty of grease. Halve the remaining strands, and do the same. Repeat if ends are long enough; if not, cut off, not too close to rope, but draw tight before cutting. The idea of halving each time is to make a neater splice, and will not weaken rope any.

To put a new strand in a rope when one is cut or broken, unlay broken strand; in the remaining groove, lay a strand same size as broken one, from three to four feet long, and follow up as you unlay broken strand. Finish same as in long splice. You will have two sets of ends to finish, not three, as in long splice. Before leaving this, I will mention a good whipping (this is the string tied around end of rope to keep from unravelling). Take a binder-twine, three or four feet long (Fig. 11); lay double part on rope; take end V and start at Y, winding round and round towards the bight; when string is nearly done, push end V through Z, keeping string on rope tight with the thumb; draw end W; this will draw loop Z, also the string under the whipping. Now cut off close the ends of string.

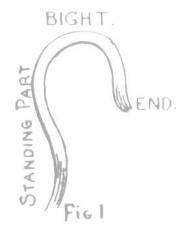

Fig. 1


Fig. 2


Fig. 3


Fig. 4.


Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

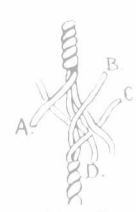

Fig. 9.


Fig. 10.


Fig. 12.

Fig. 13


Fig. 14


Fig. 16.

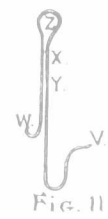

Fig. 11

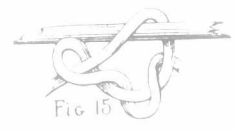
Fig. 15

I will now explain how to make an ordinary sling rope. For each rope, 32 feet of ½-inch rope will be required. In center of rope an eye is wanted (Fig. 13). To make this, open the rope with the aid of a marlinespike, three inches from center, and enter the longest end; draw it through until it presents appearance of Fig. 13. Take end of rope and pass it through other rope, just below A, and draw tight; this will not slip; no iron ring is used at this end. At each end of rope an iron ring is required (Fig. 16), which can probably be purchased at hardware stores, or plain rings may be used. The small ends of rings are fastened in an eye-splice (Fig. 14). The eye of this should be very small. To make the eye splice, unlay the strands; enter the center strand under a strand of the standing part as shown. Do the same with other strands. Take three-quarters of each of the strands and pass them again; take two-thirds of remaining strands and repeat; do the same with one-third; draw tight and cut ends off not very close to rope, and don't forget the slush-pot (grease).

Ontario Co., Ont. F. H. WESGATE.

THE DAIRY.

Thoughts for Bad-butter Makers.

An occasional contributor to The Kincardine Reporter, W. Welsh, in a recent issue, gives some pointed comments on the manufacture and marketing of butter in the rural districts. His letter is as follows:

In this age of machinery and handy appliances, it is strange that such a thing as bad butter should ever find its way to the market. If cows are fed properly, cleanliness attended to, and a few simple rules followed, bad butter would be an impossibility. Then, why so much butter only fit for axle grease?

I had occasion to inspect butter recently, and I was simply surprised at the quantity passing through the hands of our business men. Some of it was good, some indifferent, and some bad, in color, taste, and smell. Much of it was just as it came from the country and country stores, with all the miscellaneous scents and flavors, enough to make good butter smell bad, and poor butter no better.

Were I stamping on each package the quality, I would place on some the words, "fairly good"—but spoiled by bad company; others, "bad"—through dirt and carelessness; whilst others, I would mark "doubtful"—of being butter.

There, says the packer, is one parcel we paid eighteen cents per pound wholesale—good butter; and there is another we paid the same price for per pound, and we sell it to any person for ten cents per pound. I asked why they took such butter? The reply was that they could not help themselves, as all that butter was packed at the country store. The storekeeper gave a fixed price for good butter, and had to give the same price for the bad or lose a customer.

I know that in early days there were no such appliances such as are seen to-day. Suitable utensils could not be got for love or money. I have seen them straining the milk through a small willow basket. Of course, it might take out any pollywog or small toad, but for the hair that got through, a few draggings by a three-pronged fork in opposite directions cleaned it fairly well from the butter, which was then as palatable as much of the butter taken to the country store to-day.

The farmer and the farmer's wife take "stuff" to the store that they know neither looks nor smells wholesome, and yet they have the audacity to expect the highest market price. Is there no way of making careless people make good butter? There is, and that is to pay for it according to worth. It is a wrong system, where those making good butter must submit to the lower price forced upon them by bad butter.

We have Government beef inspectors and hog inspectors: why not have butter inspectors, also? Then, each quality would be marked, and the storekeeper retain his custom. Something in this line must be done if we ever expect to get a foreign market for our butter.

Improvement of the Dairy Herd.

The difference in value between ten good heifer calves and ten rather inferior ones would make quite an item in paying for a good bull, especially when we consider that the raising of good and poor calves, as far as feed is concerned, is the same, writes Stanley A. Logan, in the Nova Scotia Agricultural Report for 1908.

It is well to commence feeding some coarse feed to the calves as soon as they will take it. Have some nice bright clover hay in the rack at the side of their stall, and they will soon commence to nibble at it. Drop a handful of wheat bran in their pail about the time they are done drinking their milk, and they will soon learn to lick it all up. It is a good idea to feed their meal ration in this way for a while, as, in their anxiety to thoroughly clean out the pail, they are not so apt to acquire the habit of sucking each other. After they have learned to eat bran, a little ground oats can be added, and a very small quantity of oil-cake meal; and if they are fall calves, they will soon relish the addition of some pulped roots to the meal ration. In this way, the embryo cow is educated to digest the more concentrated foods.

Do not slacken off the feed in a heifer as she nears parturition. She needs it just as much then as any time, and perhaps more. Heifers do not have milk fever, and if there is a good deal of inflammation in the udder, so much the better. It helps to develop the udder. After calving, however, it is well to go easy for a few days, as the digestion is apt to be weakened by the act of parturition. Bran mashes are a good diet, and if the weather is cold, her drink must have the chill taken off. Commence to increase feed gradually, but do not wait till the inflammation is all out of the udder. Get her feeding well, and not let her hard. Develop her all that is possible the first year, and, generally speaking, it is well [illegible] her nearly twelve months during the first