

former, and approaching a similar depth by the latter, varying of course according to the nature and physical condition of the soil. In a few years afterwards this operation might be repeated to a greater depth, with still more advantageous results. The common plough and sub-soil plough are much better adapted for this kind of work than the grubber, which, being several feet in width, cannot possibly penetrate sufficiently deep when moved by any practicable amount of animal power. The "smashing up" of land by the agency of steam, wherever available, is unquestionably the cheapest and most effectual of all methods, reaching readily a depth of twelve or fifteen inches at a single operation, and leaving the land, after a little surface harrowing, in the best mechanical condition for the reception of the seed. Sub-soiling, it should be carefully borne in mind, should always be done when the ground is in a *dry and sound state*; it loses much of its good effects when the land is at all soft, as in such condition clays have a strong mutual tendency to run together, and the poaching of the horses' feet is exceedingly detrimental. In order, then, to clean and pulverize the ground deeply, the grubber may be advantageously employed after the use of the ordinary and sub-soil ploughs; and great care should be taken to perform these and similar operations *only when the ground is dry*, otherwise as much or more harm than good will be the result. Looking at this question practically, it is sometimes difficult to observe this rule as strictly as one could wish, under the varying conditions of the weather and the pressure of farm work, and people must judge for themselves what is best and most practicable to be done in the different circumstances under which they find themselves placed; but always keeping in view the rule above indicated, and observing it in all cases as far as possible. We must reserve the continuation of this subject for another article.

Fencing.

I am about to erect a new front fence on each side of the concession line that divides our farm in the centre, and have read with much interest the cost of the various fences described in recent articles on the subject. I differ somewhat in opinion as to the cost of the various fences as set down in that statement, but of course some allowance must be made for different localities. The price of cedar posts (only 5 cents) as therein mentioned, is exceedingly low, and with us they certainly would be worth double or treble that amount. The labour, also, of erecting the different kinds of fence is not altogether fully set forth; still, on the whole, the system of board fences advocated is certainly sound. The comparison with rail fences is hardly fairly stated, unless, as I before remarked, there are local difficulties which militate against one sort of fence and in favour of another. Per my part, I hate

rail fences, and, if constructed of hard wood, they are an absolute abomination to me. All our farm was fenced with bass and ash rails (mostly bass), and not staked or ridged, only in some places locked. Many a time after wet weather, and when the rails from that cause were as slippery as eels, I have thrown down parts of several panels of fence by simply getting over them. Our foreman used to say he hardly dared look at some of the fences, after rain especially, where the contractor had stretched out the worms so much, to make a less number of rails do, that the fence was almost straight. We are going to banish at least one mile of such fence next year, and think of substituting one of somewhat different construction to any I have seen in Canada, but we often made them in our part of England many years ago, and the fences in Australia are almost altogether constructed the same way. This is the plan proposed—our idea being to construct a post and bar fence, believing it to be cheaper, far more durable, and much stronger than the ordinary board fences. All the post holes are dug to a uniform depth of 3½ feet. We take the posts, which must all have been sawed off to the exact length of 8 feet 6 inches, these posts have all been morticed with mortices of 6 by 2, and 6 inches apart, except above the first rail from the earth, in which case the space between the first and second mortice is only 4 inches. The post will be 5 feet high above the earth, and the lower mortice will be four inches from the ground. The fence will then be 56 inches high, and there will be 4 inches between the top mortice and the top of the post. The bars or rails to be used are 6 by 1½, and 12 feet long. The post holes being all dug, strain a line as tight as possible along the surface of the earth, about ten inches high; this line will thus serve to guide the depth to put the posts; a second line, strained tight also, about five feet high, will guide the line of the top of the posts. As each post is set in its place, to the right depth, and before being filled in, the bars must be placed in position and entered into the mortices, each bar passing and overlapping the one preceding it. To enable this to be done, of course the ends of the bars must be bevelled 6 inches long at each end. This can be done at the saw mill by the edging saw, for about 50c. or 75c. a thousand feet extra; as the next post is placed in position, the ends of the bars will also be entered into the mortices, as before described, the bevelled portions passing each other in each post. After all the fence is up, a short piece of inch or two inch board, 6 inches wide by 56 inches long, can be nailed between each post, so as to confine all the bars in the centre, and thereby form one resisting mass. If a piece of 2 by 4 hemlock is substituted for the inch board, 3½ inch cut nails can be used, and will hold securely; but if inch board of pine is used, wrought nails must be substituted for cut, and of course they must be clinched, but fewer will

serve the purpose. This piece uniting the rails or bars at every 6 feet makes an excellent job. This fence will last twice as long as ordinary board fences, and is cheaper, easier made, and much stronger. A friend of mine erected one forty-two years since near Guelph. It can never warp off, as boards do, nor can any one willfully let down a portion of it, and thereby allow of cattle breaking in. It is a melancholy fact that evil disposed persons will often pull down a portion of rail fence so as to readily admit the ingress of cattle. A breachy ox bears the blame, but the crop into which the inroad is made is destroyed, and the malicious brute who did the mischief escapes scot free. We have often seen ordinary boards, that compose board fences, warped off the cedar posts, where the nails have been somewhat short; and, in fact, it is no uncommon thing to see it happen even where nails of sufficient length have been used. A cedar post will not hold nails like hard wood.

I shall now proceed to show by comparison what the two different fences cost in our locality. I do not question other prices, as they may have advantages we have not, but at the prices we have to pay the relative cost will stand thus—premising that a piece of 120 feet in length of fence is the trial piece, to be made of each kind. The cost of erection of the bar fence would be greatly reduced, if hemlock be used; but hemlock cannot be used as material for an inch board fence. I have used it, and it is a miserable affair. Hemlock 2 by 6 would answer very well indeed, quite as well or better than pine 1½ by 6. In making the mortices, it is understood that a proper brake is constructed to contain the posts, in which they are dogged fast by one stroke of a hammer, and on which the exact distances of the mortices are laid out. On this brake, the ordinary morticing machine used by carpenters is slid rapidly along as each hole is bored out, and when three holes are bored that form each mortice, the chisel is rapidly driven into the centre division, thereby the mortice is instantaneously made, no cutting or squaring at the ends being requisite. These posts can be morticed so as to pay labourer's wages at 5 to 7 cents each post.

The following statement will show the comparative cost of board and bar fences. The board fence to be composed of one nine inch board at bottom, and four six inch boards above it, with one six inch cap piece, to strengthen the top board, and a cover piece of six inches wide, to cover the ends of the boards on the posts:

BOARD FENCE—120 FEET LONG.

22 Posts, at 12 cents.....	\$ 64
22 Holes and setting posts, at 10 cents.....	2 20
455 Feet pine fence board, at \$10.....	4 50
10 Pounds nails, at 4 cents.....	40
Labour, sawing off boards, hewing down and facing posts, nailing up boards, cap and cover piece, at 25 cents per rod.....	1 75
Total.....	\$11 49

BAR FENCE—120 FEET LONG.

11 Posts, (12 feet apart) at 12 cents.....	\$1 32
Morticing 11 posts, at 7 cents.....	0 77
Digging 11 holes, setting posts and entering bars in mortices, at 12 cents.....	1 32
11 Centre-pieces, 2 x 4—56 inches long, hemlock, at 7 cents.....	0 23
2 Pounds nails (cut) at 4 cents.....	0 08
420 Feet pine lumber, at 9 cents, and \$1 00 for beveling the ends at the mill.....	4 20
Total.....	\$7 92

If lumber of a common kind is used, of 1½ inches thick, it will answer well, and as the sawing is one-half less on account of the