



Design and Construction of Sheep-drafting Yards

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THE use of concrete in the construction of sheep-drafting yards and the types of gates and races which may be employed are among the subjects dealt with in this, the second part of an article on sheep-drafting yards. The first part appeared in the July "Journal", and the final portion will appear in next month's issue.

CONCRETE fence posts and strainers have not yet been as widely used as their merits deserve. At present there is great scope for their use, and as the supplies of good durable timber decrease still further that scope will widen. Many still avoid them, because they have had, or have heard of, failures with such posts. When concrete posts crack through, the most probable cause is that the concrete has not been mixed properly in the first place, that the posts have not been allowed time to mature, or that the reinforcing has been wrongly placed.

Some farmers believe that a single 3/4 in. rod through the middle of the post is as good as a 1/2 in. rod in each corner. This is a fallacy.

Concrete has very great compressive strength, but will stand very little tensile stress. Steel reinforcing, which has a high tensile strength, is put in to overcome this weakness. The reinforcing should therefore always be in that part of the concrete likely to be subject to tensile stress. A post is liable to be pushed or pulled in any direction.

In Fig. 7 on page 131 the direction of the force applied to the posts is represented by arrows. The shaded sides of the posts are under compression, while the unshaded half is under tension. Post A, which is reinforced with a single thick steel bar, tends to crack off at or near ground level (C). The crack can go half way through the post before it meets with the resistance of the steel, which can quite easily become bent, allowing the crack to go right through. With post B, which is reinforced with a much lighter rod in each corner, the tensile strain, from whatever direction it is applied, is always offset by a steel rod just below the surface, and cracks do not develop. The steel must, however, be covered with 3/4 in. of concrete to

prevent its rusting, and the covering of concrete should be thicker at the top of the post to allow for weathering.

Advantages and Disadvantages

The value of concrete posts may be assessed from the following list of their advantages and disadvantages.

Advantages

1. Where suitable supplies of sand and shingle are available they are cheap to construct.
2. Skilled labour is not required to make them. Post construction provides useful and profitable employment for the farm staff during wet weather when they might otherwise be idle.
3. When properly made they are strong and practically everlasting. There are no upkeep costs and as posts get older they get stronger. This applies to no other type.

4. They are not destroyed by fire or the ravages of pests.

5. Large gateposts, etc., can be made of any desired shape for special jobs and can be cast directly on the site. Details relating to aggregates, types of moulds, etc., and to other constructional points connected with the use of concrete were dealt with in a series of articles by H. W. T. Eggers, Engineer, Department of Agriculture, Wellington, which appeared in the "Journal" in successive issues from November, 1949, to March, 1950. Technical literature is also available from cement companies.

Disadvantages

1. Their cost becomes prohibitive if material for making them has to be carted a long way.
 2. They are heavy, so that with large strainers and gateposts transport may present difficulties, especially on hill country where they will have to be packed on horseback. However, ordinary posts are not too heavy for a man to carry.
 3. They have to be allowed to mature before use, which takes time. (This is not always a disadvantage.)
 4. Cement is still in short supply, but it is hoped this is only a passing phase.
- In Fig. 8 on page 131 are given two of several alternative methods of attaching wires to concrete posts.



Fig. 6—An all-concrete fence is permanent and upkeep is low.