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V E. Western

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This Roller employing discarded truck tyres was made and used on the Denmark Research Station

A USEFUL FARM-MADE ROLLER

By V. WESTON, Manager, Denmark Research Station

A very serviceable compacting roller can be constructed at little expense by using discarded truck tyres. The roller described here has an overall width of 5 ft. 3 in. and carries seven 9.00 x 24 semi-trailer tyres which had been discarded when the treads were worn smooth.

Up to ten tyres could be used to give an effective width of 7 ft. 6 in. and for large areas rollers could be used in tandem or staggered formation.

The roller illustrated was designed for small farms with paddocks of only two or three acres in area. Wide rollers in such paddocks would be undesirable as they tend to drag when turning corners, resulting in uneven soil surfaces.

CONSTRUCTION

The first step is to make a wooden core to hold the tyres. Lengths of 4 in. x 2 in. jarrah are cut and checked out (half-jointed) to make three crosses as shown in the diagram.

The length of the arms of the crosses will be governed by the size of the tyres used. The 9.00 x 24 tyres give almost the ideal height, width and weight for the particular roller used on the Denmark Research Station. These tyres have an inside (bead to bead) diameter of approximately 24 in. so that the arms of the crosses are about 20 in. long to allow for the 2 in. thickness of the cross-stays, nailed or spiked to the ends of the arms. The core should be short enough to allow the inner surfaces of the tyres to press closely together when clamped.

Check tyre diameters carefully and make the core so that the tyres are a snug fit.

The next step is to make the metal end-clamps. These are also cross-shaped, made of any available flat iron or steel approximately 3 in. wide and $\frac{1}{2}$ in. thick. Old dray or cart tyres are ideal for the end-clamps and for the frame reinforcements described later.

Lengths are welded in the shape of a cross and a hole is cut in the centre to take a stub axle 1\$\frac{1}{2}$ in. in diameter and 14 in. long which is welded into position.

Fig. 1.—Front and back views of the roller showing frame construction
The stub axle projects 2 in. on the inside of the end-clamp, the centre of the wooden cross being bored out to take this projection. Holes are drilled in the end-clamps to coincide with similar holes in the wooden arms. Bolts through these holes hold the end-clamps and core firmly together.

The length of the arms of the end-clamps should be sufficient for them to project about four to five inches over the tyre walls.

**ASSEMBLING**

Bolt one end-clamp into position on the core, then stand the core on end with the end-clamp downward and force the tyres over the core. It will be found that the last tyre will project over the core and to fix the second end-clamp in position it will be necessary to use double-length bolts with long threads. Screwing down the nuts on these bolts will pull the end-clamp down into position and the projecting bolt-ends can then be cut off with a hacksaw or bolt-cutters.

**THE MAIN FRAME**

A simple rectangular frame is constructed from 5 in. x 3 in. hardwood securely braced with 3 in. x ½ in. metal at the corners. The drawbar is a 4 ft. length of 5 in. x 3 in. hardwood with a metal T-piece and angle-braces as shown in the photograph. The frame used in this roller...
was fitted with brass-lined 1½ in. bearings but, where suitable metal bearings are not available, hardwood blocks will give good service.

This roller has been used successfully at the Denmark Research Station consolidating a seed bed after ploughing and cultivation. Excellent germination was achieved with spring-sown lucerne and early summer-sown Sudan grass. On the lighter sandy soils better results were obtained by rolling before and after seeding.

Contour Banks at Mingeneu

How big is a contour bank? When new a contour bank is 18 to 21 inches high and this usually settles down to 9 to 12 inches. The bank is usually 6 to 8 feet wide at the base of the channel and the uphill side of the bank is a broad flat depression 8 to 15 feet wide. A contour bank can be any length to fit in with fence lines and natural depressions. Contour banks usually have a slight gradient increasing slightly towards the outlet end, gradients vary from level up to 4 inches in each 100 feet. Contour banks which help cure water erosion are usually 5 to 10 chains apart. Contour banks can be constructed by disc plough or road forming grader.
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