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“Tarred Foot-paths in Rural Districts.”

By EDGAR PURNELL HOOLEY, Assoc. M. Inst. C.E.

AN important objection to the use of tarred foot-paths has hitherto been the effect of the sun's heat upon them, but with the mixture hereafter described that difficulty is largely obviated. The chief advantages claimed for such foot-paths are,—cleanly appearance, freedom from slipperiness, cheapness, simplicity of manufacture, avoidance of the inconveniences attending the employment of patent processes, and free use of the paths during construction.

The tarred foot-paths in Nottinghamshire are made thus:—Slag or furnace refuse from ironworks, obtained in the neighbourhood, is the material principally used as the aggregate, but gravel, screened, washed and dried, would do equally well for “bottoming.” It is essential all material should be perfectly dry, and should be warm when mixed with the tar. The processes of drying and warming in country districts, where no drying-floors are available, must be carried out in fair weather; the material being heated in convenient places out of doors, by fires lighted under heaps of about 10 tons of material at one time. The method of drying adopted by the Author is to lay four sections of ordinary 4-inch glazed pipes in the form of a cross leading to a central upright section of pipes which forms a chimney. Faggots and breeze are laid around the pipes, and when well alight, the material is gradually added in a cone-shaped heap and is allowed to dry slowly. When the material is dry, and warm enough to allow the hand to be held on the surface without discomfort, it should at once be mixed with the tar-mixture, which has been boiling thoroughly whilst the heap has been drying. After having been mixed and again heaped up, it should be allowed to stand for at least a week, though it will be better if it is left for three weeks or a month before being used.

The tar-boiler is capable of containing 100 gallons, constructed with an enclosed furnace underneath it, and for convenience of moving is placed on three wheels, each wheel being 18 inches in

diameter. The mixture to be boiled consists of:—tar 40 gallons, pitch 28 lbs., Portland cement 20 lbs., resin 6 lbs.

The boiler must be well cleaned occasionally, and always be completely emptied after each operation. The tar is the first ingredient placed in the boiler, and is allowed to simmer gently for an hour before the other substances are gradually added. The whole is then thoroughly stirred in the boiler, and afterwards allowed to boil gently until it attains an equal consistency throughout. Great care must be exercised to prevent the boiling tar-mixture from igniting, but after a little experience, any intelligent workman will become a good judge of the heat required. Before applying the mixture to the stone, it is allowed to cool down slightly, until, when mixed with the warmed stone, it does not give off vapour but mixes easily. When the mixture is in this condition, a bay, similar to that made for mixing mortar, is formed of the heated slag or stone, and the tar-mixture is poured into the centre of it, the stone being carefully turned over until the whole forms a sticky mass. It is again turned three times whilst in this warm condition, being finally heaped up. It will then, if properly mixed, be found to be in a state known to the workmen as "alive," having that appearance if moved with a shovel. After the material has been thus mixed, the bottom of the foot-path is properly shaped, and curb-stones are laid as required. If the ground is wet, cross drains are formed to dry the bottom before the tarred material is laid on. The Author has found a good bottom secured by using a bed of ashes, pit-refuse or clinkers, up to within 4 inches of the curb level, this bed being well and evenly rolled. The coarse tarred material is next applied, and is rolled to form a bottom layer 2 inches thick. A water-ballast roller with round edges is the best implement for this purpose. If the tarred material should stick to the face of the roller, a water-can may be attached to it, and a slight trickle of water be allowed to play continually on the face; or the latter may be dressed three times a day with common oil, which will generally prevent any sticking. When the bottom layer has been well rolled, further layers of finer material are applied, $\frac{3}{4}$ inch thick at a time, until $1\frac{1}{2}$ inch in thickness is obtained after rolling. Fine topping is then applied in layers, and rolled until it is 1 inch in thickness, any outside portion that the roller cannot reach being rammed. The face of the path is now quite smooth. It is almost impossible to roll a tar-path too much or too carefully. It is rolled so as to allow of a fall to the edge of the path or water-

course, of 1 in 48. The path is left "proud" about $\frac{1}{2}$ inch over the curb. After the final rolling, the face is carefully washed over with the boiling tar-mixture, and whilst moist it is dusted or blinded with very fine dry gritty granite or slag dust, mixed with cement in the ratio of 1 part of cement to 7 parts of dust. The path is now finished, and will be found to have a perfect face, neither slippery in winter nor spongy in summer, but firm and comfortable for pedestrians. In Nottinghamshire, during 1894, such foot-paths cost 1s. 2d. per square yard.

The repairs necessary are slight. Where the traffic is heavy, the face should be washed over every second year with a dressing of the tar-mixture and blinded with cement and dust. Should any signs of wear appear, they should be cut out in the top layer and patches should be inserted, the whole being washed with boiling tar and blinded. Sometimes it may be necessary to renew the top dressing, but the traffic must be exceptionally heavy for this to be required more frequently than once in six years.
