



### USEFUL HINTS ON ROAD MAKING.

The importance of using modern machinery in making good roads has become pretty generally recognized since the commencement of the good roads movement in Ontario. A road grader has become a standard implement employed by a great majority of townships, and wherever they are properly used are a great saving of labor and do their work more efficiently than can be done by hand. Municipal clerks report their use in two hundred and fifteen townships, a considerable number of these having two. Several, among which are Minto, Trafalgar, Tecumseh, Toronto and Plympton, own three or four.

Several townships and numerous towns have supplied themselves with rock crushers. Among the townships owning these implements are: Nottawasago, Ameliasburg, Front of Leeds and Lansdowne, Mara, Winchester, Bastard and Burgess, Bathurst and Elmsley, Bertie, Rear Yonge and Escott, Smith, Williamsburg, Charlottenburg (crusher and traction engine) and North Grimsby. A number of townships, of which are Keppel, Elmsley South, Beckwith, Pittsburg, Elizabethtown and Ramsay, hire a crusher or contract for broken stone. The county of Hastings uses a complete outfit of road making machinery, roller, crusher, grader and traction engine. Victoria also has an outfit of road making machinery for the use of the townships, and Wentworth rents its crusher to the townships within the county.

Broken stone roads are, when properly made, more serviceable than gravel roads, and wherever there is a plentiful supply of good stone, particularly if gravel is scarce or of poor quality, a crusher with screen attachment should be used. It is profitable also to put certain qualities of gravel through a stone crusher, such gravel as contains a quantity of large stone. If there is much clay or earthy material in the gravel it will be well to remove it by using a revolving screen attached to the crusher.

Townships should, wherever possible, use a road roller, particularly if broken stone is used. A roller will at once consolidate the metal, leaving the road in the best condition for travel, at the same time resulting in a great saving of gravel stone. Without the use of a roller, the road reaches a condition fit for travel only after a long period, during which time the loose material causes much inconvenience and is mixed with the soil beneath, largely destroying its usefulness. Townships should

own a horse roller, or better, should rent a steam roller from a town or city in the vicinity possessing one.

If a steam roller is available its use may be further extended to picking up the road and loosening the old material before placing the new material on the road; after which the road may be rolled down solidly, the new material and the old road surface having a perfect bond.

Road graders are commonly operated by two teams of horses at a cost of \$6 per day. A traction engine, such as is used for threshing machines, is, however, a very much better power, and is sometimes hired for about \$3 a day, or half the cost of using horses. The engine gives a steady draught and does not need to stop to rest, *two advantages over the use of horses.* It is customary to go two or three miles with a traction engine before turning, and by making one or two circuits up one side of the road and down the other, it is gener-

ally possible to cut off the square edges which have formed, restoring the crown and preparing it for a new coating of gravel or stone.—The Municipal World.

The death occurred on June 1st of Mr. John Rollison, city clerk of St. Catharines, Ont. Mr. Rollison had filled the position for the past 32 years.

It has been suggested that small tanks of pure oxygen, to be used for resuscitating persons overcome by smoke or gas, should be carried as a part of the desirable equipment of hook and ladder trucks going to fires. Such tanks would have been found very useful at last week's fire in West Fifty-ninth street, Manhattan, when so many firemen were overcome by the smoke and fumes generated by the burning oiled and waxed floors and alleys in the bowling establishment destroyed on that occasion.—Fire and Water.

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