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DETERMINATION OF AN OPTIMUM PEDALING MECHANISM FOR CYCLE-RICKSHAW

S. D. MOGHE¹ AND J. P. MODAK²

 ¹ Associate Professor, Mechanical Engineering Department, Shri Ramdeo baba College of Engineering & Management, Nagpur, Maharashtra, India.
² Professor (Mechanical Engineering) and Dean R&D, Priyadarshini College of Engineering, Nagpur, Maharashtra, India.

Abstract

The paper describes detail study of the pedaling mechanism of cycle-rickshaw and suggests new pedaling mechanisms to reduce physical exertion of rickshaw-pullers. New pedaling mechanism are designed and developed for the cycle-rickshaw. Kinematic analysis of the pedaling mechanisms is done as well as experimental verification of the new pedaling mechanisms is also done. It is observed from the results of experiments that existing pedaling mechanism with elliptical sprocket chain drive requires minimum energy of a rickshaw puller. A relation between the energy expenditure of the rickshaw-puller and various pedaling parameters is established from multiple regression analysis of the collected experimental data.

Keywords: cycle-rickshaw, pedaling mechanism, pedaling energy, oxygen uptake during pedaling. © http://www.ascent-journals.com
