
题 目： 平衡冲击压路机设计

摘要

冲击压路机与现有其它形式的压路机相比，具有工作效率高、压实范围大、影响深度广等特点。但是在实际工作过程中，冲击压路机存在被压材料表面不平整、左右冲击轮不协调以及冲击轮在运动过程中导致牵引车晃动产生能量的损耗等问题。本文是以机械节能设计为主要基础，提出平衡冲击压路机的部分设计概念，从而基本解决了冲击压路机现存的问题。

为了使平衡冲击压路机具有良好的性能和较高的工作效率，本文首先对平衡冲击压路机的工作原理进行分析，得出平衡冲击压路机要获得平整的冲击平面以及被压实的工作材料，关键取决于前后冲击轮的相位问题；本位再根据对普通轮式车辆转弯过程轮胎及轮轴的运动分析，得出为了使平衡车冲击压路机获得平稳的工作能力以及达到节能的效果，需要通过自由转向轮，采用转向轮胎机构的设计才可以解决。

关键词：机械设计；平衡冲击压路机；转向专场机构；相位协调

Abstract

Compared with other types of roller, the impact roller has the characteristics of high efficiency, large compaction range and wide influence depth. However, in the actual working process, the impingement roller has some problems such as uneven surface of the pressed material, uncoordinated left and right impingement wheels, and energy loss caused by the shaking of the tractor during the impingement wheels. Based on the mechanical energy saving design, this paper puts forward some design concepts of balanced impact roller, which basically solves the existing problems of impact roller.

In order to make the balanced impact roller have good performance and high work efficiency, this paper first analyzes the working principle of the balanced impact roller, it is concluded that the balance impact roller to obtain flat impact plane and compacted working material, the key depends on the front and rear impact wheel phase problem; Based on the analysis of the movement of tires and axles in the turning process of ordinary wheeled vehicles, it is concluded that in order to achieve the stable working ability and energy saving effect of the impact roller of balanced vehicles, it is necessary to adopt the design of free steering wheel and steering wheel mechanism to solve the problem.

Key words: mechanical design; Balanced impact roller; Turn to special organ; Phase coordinate

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