Evaluating promising car axle structures by examples of the patents of international manufacturers

© D.Yu. Leschinsky, A.A. Smirnov, E.V. Yagubova

Bauman Moscow State Technical University, Moscow, 105005, Russia

The paper presents a research on the most significant inventions in the field of vehicles drive axles. It describes the most interesting axle and main gear designs, as well as the designs of wheels, wheel hub assemblies, drive shafts, and differential locks. Diagrams and pictures illustrate the basic approaches applied in the structures and the principles of their operations.

Keywords: patent research, patent search, the drive system, final drive, hub drive, cardan shaft, differential locking device.

Leschinsky D.Yu., graduate student of the Wheeled Vehicles Department at Bauman Moscow State Technical University. No published works. e-mail: denis.leschinsky@mail.ru

Smirnov A.A., Ph.D., Assoc. Professor of the Wheeled Vehicles Department at Bauman Moscow State Technical University. Author of more than 20 publications in the field of automotive industry. e-mail: smr_a@mail.ru

Yagubova E.V., graduate student of the Wheeled Vehicles Department, engineer of Special Engineering Research Institute at Bauman Moscow State Technical University. Published one paper in the field of automotive industry. e-mail: yagubova.evg@yandex.ru