

## **Patent Protection & Registration**

Patents grant property rights on new and useful inventions, allowing the patent holder to prevent others from using, making, or selling that invention without permission for a limited time. U.S. patents are permitted by the U.S. Constitution and are designed to promote scientific progress and invention. By allowing inventors to profit from licensing or selling their patent rights, inventors can recoup their research and development costs and benefit financially from their inventing efforts. There are three main types of patents utility, plant, and design. Utility and plant patents can last up to 20 years, while design patents can last up to 15 years. When a patent expires, the patented material enters the public domain, making it free to use by anyone without a license. U.S. patents are issued by the United States Patent and Trademark Office (USPTO).

U.S. Patent No. 11,919,337 entitled "Tire Damage Detection System and Method" issued March 5, 2024 to Bridgestone Europe NV/SA of Zaventem, Belgium. Invented by Lorenzo Alleva of Roma, Italy and Marco Pascucci also of Roma, Italy. Abstract: A tire damage detection method includes a preliminary stage comprising: performing tests involving test tire impacts against/on different obstacles at different motor vehicle speeds; measuring/acquiring test-related wheel speeds during the performed tests; computing test-related normalized wheel speeds based on the test-related wheel speeds; and determining a predefined tire damage model based on the test-related normalized wheel speeds corresponding to the test tire impacts and of associated test-related average wheel speeds. A tire damage detection stage comprises: acquiring signals indicative of a motor vehicle wheel speed; computing, based on quantities indicative of the wheel speed, a normalized wheel speed indicative of a ratio of the wheel speed to an average wheel speed indicative of motor vehicle speed; and detecting potential damage to a tire of the wheel based on the predefined tire damage model and on the normalized wheel speed.