

## 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. 11,911,982](#) entitled “Method and System for Applying a Sealing Agent to the Surface of an Internal Cavity of a Pneumatic Tyre” issued February 27, 2024 to Bridgestone Europe NV/SA of Zavenlem, Belgium. Invented by Roberto Pontone of Roma, Italy. **Abstract:** A system (1) for applying a sealing agent to the surface (5) of an internal cavity (2) of a pneumatic tyre (3) provided with an applicator device (12) for supplying a strip of sealing agent that is applied to the surface (5) and an opto-electronic device (4\*; 20) that is integral to the nozzle (18) of the applicator device (12) and that is provided with at least one sensor element (9\*; 20) that is able to acquire a plurality of images of the surface (5) and to provide a plurality of signals that are indicative of said plurality of acquired images; and an electronic processing system (11) connected to the opto-electronic device (4\*; 20), and to the applicator device (12) and configured so as to acquire the signals that are indicative of the plurality of images acquired by the opto-electronic device (4\*; 20); and to control the application of the sealing agent as a function of the plurality of signals that are indicative of the plurality of images acquired by the opto-electronic device (4\*; 20).

[U.S. Patent No. 11,911,985](#) entitled “Application System and Method for Applying a Sealing Agent to the Inner Surface of a Pneumatic Tire” issued February 27, 2024 to Bridgestone Europe NV/SA [BE/BE] of Zaventem, Belgium. Invented by Roberto Pontone of Roma, Italy. **Abstract:** An application system and method for applying a sealing agent to the inner surface of a pneumatic tire includes: rotating, by means of a support device, the pneumatic tire about an axis of rotation; applying a layer of sealing agent to the inner surface of the pneumatic tire by means of a dispensing head arranged within the pneumatic tire itself; pressing, by means of a pressure roller, the just applied layer of sealing agent against the inner surface of the pneumatic tire; pushing the pressure roller against the just applied layer of sealing agent by means of an actuator which generates a force having a desired value; determining, by means of a force sensor, a measured value of the force generated by the actuator; and cyclically varying the force generated by the actuator as a function of the measured value of the force.

[U.S. Patent No. 11,911,878](#) entitled “Ratchet Wrenches” issued February 27, 2024 to Nigel Buchanan of Fife, Great Britain. Also invented by Nigel Buchanan. **Abstract:** A ratchet wrench (1) has a flexible clutch ring (500) that forms the mid part of a laminate-like structure comprising a wrench head (200), the clutch ring (500) and a drive element (40). When under load, the compression forces applied to the clutch ring (500) are substantially dissipated around its circumference (508) and inner surface (509), this inward force clamping upon the inherently strong drive outer surface (45). The laminate-like construction enables a reduction in the width or depth of the wrench head without a loss in strength.

[U.S. Patent No. 11,911,773](#) entitled “Apparatus and Method for Attaching a Crushing Mantle of a Cone Crusher to a Carrier Cone of the Cone Crusher and for Detaching the Crushing Mantle from the Carrier Cone” issued February 27, 2024 to Kleemann GmbH of Goppingen, Germany. Invented by Alan Eisner of Mequon, Wisconsin and Lucas Scholz of Waldstetten, Germany. **Abstract:** An apparatus (2) and a method for attaching a cone-shaped crushing mantle (4) of a cone crusher (100) to a carrier cone (6) of the cone crusher (100) and for detaching the crushing mantle (4) from the carrier cone (6) are provided. The apparatus (2) comprises a hydraulically actuated pre-tensioning actuator (24) adapted for pressing the crushing mantle (4) against the carrier cone (6) in a pre-tensioning process in the axial direction prior to tightening attachment screws (18) in the head region (20) of the carrier cone (6). The hydraulic pre-tensioning actuator (24) comprises a pressure chamber (26) for receiving a pressurized hydraulic medium and a piston (28) limiting the pressure chamber (26). The hydraulic pre-tensioning actuator (24) is applied externally to a pressure plate (10) during the pre-tensioning process, such that a piston rod (36) of the piston (28) or a rod-shaped element attached thereto extends through the central opening (14) of the pressure plate (10) and is attached to the head region (20) of the carrier cone (6), wherein the pressure chamber (26) and the piston (28) of the hydraulic pre-tensioning actuator (24) are located on a side of the pressure plate (10) opposite to the carrier cone (6). The hydraulic pre-tensioning actuator (24) may be released and removed from the pressure plate (10) outside the pre-tensioning process.