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[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. 11,865,676](#) entitled “Adjustable Wrench” issued January 9, 2024 to Nigel Buchanan of Fife, United Kingdom. Also invented by Nigel Buchanan. **Abstract:** An adjustable wrench (1) with a head portion (200), automatically adjustable within its size range. The fastener (80) to be operated is fitted between the fixed jaw (201) and moving jaw (300), the operators thumb pressure released, automatically propelling the moving jaw 300 towards the fixed jaw (200), the use of four workpiece contacting surfaces (202, 203, 302, 303), two within each opposing jaw (201, 300), engaging the four corresponding actual levered faces (83) to each apply a drive force to a hexagonal fastener head 81. The head portion (200) illustrated in section in order to show the gear teeth (403) on the head end (402) of the handle (400) levering closed the moving jaw (300) via its associated wedge-shaped rack gear (312). The handle (400) pivoting at the point PP that the relevant head end gear tooth (403) engages the corresponding rack gear tooth (312) further urging the handle locking teeth (407) into the pawl locking teeth (61) within the confines of the elongate pin hole elongate portion 404 creating a further jaw (201, 300) ratcheting/locking closure mechanism.

[U.S. Patent No. 11,866,890](#) entitled “Mobile Earth Working Machine Encompassing a Functional Apparatus Preferably Toollessly Coupled Detachably to a Machine Frame” issued January 9, 2024 to Wirtgen GmbH of Windhagen, Germany. Invented by Roland Lull of Königswinter, Germany; Marcel Joisten of Neuwied, Germany and Oliver Freund of Königswinter, Germany. **Abstract:** A mobile earth working machine includes a machine frame; a working apparatus; a functional apparatus connected to the machine frame pivotably; and a pivot joint between the machine frame and the functional apparatus, having a frame-associated joint element and an apparatus-associated joint element. A mechanical coupling includes a frame-side coupling configuration and an apparatus-side counterpart coupling configuration.

[U.S. Patent No. D1,010,776](#) entitled “Female Quick-connect Connector” issued January 9, 2024 to JOI Holding, LLC of Boaz, Kentucky. Invented by Jason Ingram also of Boaz, Kentucky. **Claims:** What is claimed is the ornamental design for a female quick-connect



connector, as shown and described.

[U.S. Patent No. 11,866,893](#) entitled “Self-Propelled Construction Machine and Method for Operating a Self-Propelled Construction Machine” issued January 9, 2024 to Wirtgen GmbH of Windhagen, Germany. Invented by Christian Berning of Zülpich, Germany; Rene’ Müller of Vettelschoß, Germany; Sebastian Hofrath of Hennef, Germany and Cyrus Barimani of Königswinter, Germany. **Abstract:** The invention relates to a self-propelled construction machine, comprising a machine frame supported by a chassis having wheels or crawler tracks. The basic principle of the invention involves determining a variable Δ which is characteristic of the milling profile on the basis of a functional relationship between the variable which is characteristic of the milling profile and the advance speed v and/or milling drum rotational speed n . The variable Δ which is characteristic of the milling profile is a correction variable for adjusting the height of the milling drum with respect to the surface of the ground.