

## Patent Protection & Registration

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[U.S. Patent No. 11,572,133](#) entitled "Electric Drive Motorcycle" issued February 7, 2023 to PIAGGIO & C. S.P.A. of Pontedera, Italy. Invented by Luca Carmignani; Alessio Sisi; Emiliano Guidi; Paolo Capozzella; Jury Cantini; Walter Mariotti all of Pontedera, Italy. Abstract: An electric drive motorcycle (100), comprises: a front portion comprising one or more front wheels (103) and a handlebar (104); a rear portion comprising a saddle (101), a shell body (107) arranged below said saddle (101), and a rear wheel (105) arranged below said shell body (107); an intermediate portion (108) extending as a connection between said front portion and said rear portion; an electric drive unit (8) connected to said rear wheel (105); a power supply unit feeding said electric drive unit (8); and a helmet carrying compartment (11) placed in the shell body (107) below the saddle (101), wherein said power supply unit is arranged in a position below said helmet carrying compartment (11), so that said saddle (101), said helmet carrying compartment (11) and said power supply unit are substantially stacked on each other, being said helmet carrying compartment (11) and said power supply unit arranged inside the shell body (107), wherein said supply unit comprises a battery unit (15) or a battery unit (15) and an electric motor/generator, wherein a control unit apt to control said drive unit (8) and said battery unit (15) is provided, said control unit comprising a case (20) arranged below the battery unit (15), wherein a rear fork (1) jointed to the shell body (107) is provided, said rear fork comprising at least a fork arm (3, 4) extending between said shell body (107) and said drive unit (8), and wherein said rear fork (1) is placed beside and/or surrounds said case (20).

[U.S. Patent No. 11,572,672](#) entitled "Method to Decouple Engine Speed from Hydraulic Pump Speed Through an Electric Motor Driven Variator" issued February 7, 2023 to Deere & Company of Moline, Illinois. Invented by Eric Vilar of Dubuque, Iowa and Jonathan Coulter of Glenpool, Oklahoma. Abstract: A work machine includes an engine for driving a primary working unit. At least one hydraulically powered auxiliary working unit is powered by a hydraulic pump. The engine and an electric motor both provide power to the hydraulic pump via a planetary gear set which sums the power inputs from the engine and the electric motor. The pump speed of the hydraulic pump is thereby decoupled from the engine speed of the engine.

[U.S. Patent No. 11,572,611](#) entitled "Process for Warm Forming an Age Hardenable

Aluminum Alloy in T4 Temper” issued February 7, 2023 to Novelis Inc. of Atlanta, Georgia. Invented by Corrado Bassi of Salgesh, China; Etienne Combaz of Sion, China; Aude Despois of Grone, China; Pasquier Romain of Euseigne, China; Maude Fumeaux of Aproz, China and Julie Richard of Sion, China. Abstract: Described are processes for shaping age hardenable aluminum alloys, such as 2XXX, 6XXX and 7XXX aluminum alloys in T4 temper, or articles made of such alloys, including aluminum alloy sheets. The processes involve heating the sheet or article before and/or concurrently with a forming step. In some examples, the sheet is heated to a specified temperature in the range of about 100-600° C. at a specified heating rate within the range of about 3-600° C./s, for example about 3-90° C./s. Such a combination of temperature and heating rate results in an advantageous combination of sheet properties.

[U.S. Patent No. 11,575,810](#) entitled “Auto-positioning Camera for Drawn Implements” issued February 7, 2023 to Deere & Company of Moline, Illinois. Invented by Darin L. Roth of Batavia, Iowa; Joshua D. Graeve of Ottumwa, Iowa; and Cole L. Murray of Polk City, Iowa. Abstract: A drawn agricultural implement includes a main frame and a plurality of ground engaging units supporting the main frame from a ground surface. A working unit is supported from the main frame and configured to engage crops as the implement moves in a forward direction across the ground surface. A draft tongue extends from the main frame for attachment to a tractor. A camera having a field of view is mounted on at least one of the draft tongue, the main frame and the working unit. The camera is movable relative to the at least one of the draft tongue, the main frame and the working unit to reposition the field of view.

[U.S. Patent No. 11,572,902](#) entitled “Manifold for Reducing or Generating Pilot Pressure for a Pilot Operated Excavator” issued February 7, 2023 to Deere & Company of Moline, Illinois. Invented by Alexander J. Nytko of Dubuque, Iowa; Jeff Dobchuk of Saskatoon, Canada; Kevin W. Campbell of Dubuque, Iowa; and Kristen D. Cadman of Dubuque, Iowa. Abstract: A pilot hydraulic system may include a pilot pressure source, a pilot pressure return tank, a pilot valve, a pilot pressure supply line connecting the pilot pressure source to the pilot valve, and a pilot pressure return line connecting the pilot pressure return tank to the pilot valve. A main control valve may include a pilot chamber. A pilot pressure control line connects the pilot valve to the pilot chamber. A hydraulic sub-system is provided for modifying pilot pressure provided to the pilot chamber of the main control valve. The hydraulic sub-system may include a variable orifice valve disposed in the pilot pressure control line, a pilot pressure bypass line communicating the pilot pressure control line downstream of the variable orifice valve with the pilot pressure return line, and an electrohydraulic pressure reducing valve (EHPRV) disposed in the pilot pressure bypass line.