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U.S. Patent No. 12,029,273 entitled “Shoe Sole Comprising Graphene” issued July 9, 2024 to Directa Plus S.p.A. of Lomazzo, Italy. Invented by Giulio Giuseppe Cesareo of Como, Italy; Massimiliano Bianchi of Carate Brianza, Italy and Antonino Di Pasquale of Basiglio, Italy. Abstract: A shoe sole comprising an elastomeric composition comprising: (D) 100 phr of a mixture of rubbers comprising: i. from 40 to 70% by weight of an isoprene polymer; ii. from 20 to 50% by weight of polybutadiene; iii. from 10 to 40% by weight of an SBR having a glass transition temperature (Tg) from ?60 to ?40? C.; (E) from 50 to 100 phr of amorphous carbon black having a surface area greater than 85 m.sup.2/g measured with the ASTM D6556 method, and a dibutyl phthalate absorption index (DBPA) greater than 90 measured with the ASTM D2414 method; (F) from 1 to 30 phr of graphene nano-platelets, wherein at least 90% of said graphene nano-platelets has a side dimension (x, y) from 50 to 50000 nm and a thickness (z) of 0.34 to 50 nm, and wherein said graphene nano-platelets have a C/O ratio ?100:1.

U.S. Patent No. 12,031,793 entitled “Firearm” issued July 9, 2024 to Caleb Crye of Brooklyn, New York. Also invented by Caleb Crye. Abstract: A compact rifle-caliber firearm is provided herein comprising a receiver body, a barrel, and a grip. The barrel is coupled to the receiver body and extends in a forward direction relative to the receiver body. The barrel includes a bore and a bore axis. The grip is coupled to the receiver body and positioned rearward relative to the barrel. The grip is operable to accept a magazine sized for rifle cartridges. The grip includes a grip depth that is less than or equal to two inches. The compact rifle-caliber firearm may further include a magazine operable to be inserted into the grip and operable to receive rifle cartridges. An interior magazine depth may be less than a length of the rifle cartridges. Rifle cartridges positioned in the magazine may be angled relative to an uppermost cartridge.

U.S. Patent No. 12,031,273 entitled “System and Method of Dynamic Corrective Enzyme Selection and Formulation for Pulp and Paper Production” issued July 9, 2024 to Buckman Laboratories International, Inc. of Memphis, Tennessee. Invented by Mark Reed of Bartlett, Tennessee; Feiran Li of Memphis, Tennessee and John Carter, also of

Memphis, Tennessee. Abstract: Systems and methods as disclosed herein automatically provide real-time dosing corrections for an industrial process wherein enzyme blends are applied to natural fibers for pulp/paper production. An initial enzyme blend (e.g., enzymes and supporting formulation components, as relevant) and respective dose rates are selected to be applied based on expected fiber surface substrate characterization, expected fiber quality characterization, the physical conditions of the system being treated, respective characteristics of the initially selected enzyme blend components, etc. Upon application of the initial enzyme blend, online sensors provide real-time feedback data corresponding to measured actual values for the fiber surface substrate characterization and fiber quality characterization. A replacement enzyme blend (enzymes and supporting formulation components) and respective dose rates thereof is dynamically selected based on the feedback data. The enzyme dosing stage can be optimized responsive to product changes and/or variations in fiber sources/blend and/or physical conditions, substantially in real time.

U.S. Patent No. 12,031,279 entitled “Earth Working Machine Having a Positive Connection Between the Rotating Working Assembly and its Rotary Bearing” issued July 9, 2024 to Wirtgen GmbH of Windhagen, Germany. Invented by Hardy Wilhelmi of Dattenberg, Germany; Karsten Buhr of Willroth, Germany; Andreas Salz of Neustadt, Germany and Sascha Spöth of Heistenbach, Germany. Abstract: An earth working machine includes a support structure and a working assembly mounted on the support structure so as to be rotatable about a drive axis. An assembly-side bearing configuration is connected to the working assembly and a structure-side bearing configuration is connected to the support structure. The assembly-side bearing configuration includes a driver configuration having a driver surface facing in a first circumferential direction and the structure-side bearing configuration includes a driver counterpart configuration having a driver counterpart surface facing in a second circumferential direction opposite to the first, the movement spaces of the driver surface and of the driver counterpart surface about the drive axis overlapping one another.