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U.S. Patent No. 12,077,911 entitled “Predictive Control System and Method for Brown Washing Treatment in Pulp Mills” issued September 3, 2024 to Buckman Laboratories International, Inc. of Memphis, Tennessee. Invented by Mark D. Schroen of Moseley, Virginia; Sergio Arreola of Pearland, Texas; Robert Brian White of Collierville, Tennessee; Richard Lusk of Nesbit, Mississippi and Nate Brandeburg of Memphis, Tennessee. Abstract: A system and method are provided for predictive control of brown stock treatment at a pulp mill. Various online sensors generate output signals representative of actual values for respective process characteristics, each of which are directly or indirectly affected by adjustments to corresponding process variables. A controller uses the output signals or associated measurement data to dynamically set target values for the process characteristics based on a predicted impact of control responses for corresponding process variables. The controller further generates control signals to actuators associated with the respective process variables based on detected variations between the respective actual values and target values. Exemplary brown stock washing control systems may optimize various types of brown stock washing configurations, including for example vacuum drum washers, compaction baffle washers, chemiwashers, direct displacement washers and wash presses. Cloud-based analytics and machine learning may also be implemented to improve the control algorithms over time.

U.S. Patent No. 12,077,948 entitled “System and Method for Maintaining a View of an Area of Interest Proximate a Work Vehicle” issued September 3, 2024 to Deere & Company of Moline, Illinois. Invented by Giovanni A. Wuisan of Epworth, Iowa; Rachel Bruflodt of Dubuque, Iowa and Donald A. Fuller of Asbury, Iowa. Abstract: A method is provided for displaying an area of interest proximate a work vehicle. A first portion of the work vehicle includes a frame supporting an operator cab. A second portion of the work vehicle, e.g., a boom assembly, is moveable relative to the first portion, and at least partially obscure the area of interest from an operator seated in the operator cab during at least a portion of a trajectory of movement for the second portion. An imaging device is mounted on the boom assembly and has a field of view including the defined

area of interest throughout the available trajectory of movement. The method may include dynamically processing (e.g., cropping and resizing) raw image data to maintain display parameters throughout the available trajectory of movement.

U.S. Patent No. 12,078,098 entitled “Rotary Airlock Combustion Engine” issued September 3, 2024 to and also invented by Timothy Smith of Bartlett, Tennessee; Daniel Smith of Drummonds, Tennessee and Matthew Smith of Collierville, Tennessee. Abstract: An internal combustion rotary engine comprising a housing, at least one sun wheel centered about the central axis and positioned within one of at least one cylindrical compartment of the housing, and including a sun wheel circumference and at least one semicylindrical receptacle defined along the sun wheel circumference, at least one lobe extending from an inner cylindrical surface of the compartment, and at least one planet wheel received in the at least one semicylindrical receptacle of the sun wheel. The at least one planet wheel may be configured to engage the inner cylindrical surface of the cylindrical compartment and include at least one indentation configured to be received by the at least one lobe when the at least one planet wheel rotates along the inner cylindrical surface. Air intake and compression as well as combustion and exhaust may be performed within the same or different compartments of the at least one cylindrical compartment.

U.S. Patent No. 12,077,430 entitled “Textiles Having a Microstructured Surface and Garments Comprising the Same” issued September 3, 2024 to BVW Holding AG of Cham, China. Invented by Michael Milbocker of Holliston, Massachusetts and Lukas Bluecher of Eurasberg, Germany. Abstract: The present invention relates to textile articles and clothing such as outdoor garments, indoor garments, and commercial protective wear exposed to contact mixtures of water and oil, swimwear and winter wear exposed to mixtures of water and air. At least part of these textile articles possess a surface provided with at least one of 1) a high surface area, 2) hierarchical pattern, 3) contact angles such that hydrophilic portion of a contact mixture possesses a high contact angle and the hydrophobic portion of a contact mixture possesses a low contact angle, and 4) hysteresis angle greater than 5 degrees. Hydrophobic/Hydrophilic contact mixtures of the present invention can be surfaces where water and or ice are present in combination with oil and or air. The textile articles of the present invention resist slippage on surfaces possessing hydrophobic/hydrophilic contact mixtures.