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U.S. Patent No. 11,975,573 entitled "Internally Cooled Tire-wheel System" issued May 7, 2024 to Bridgestone Americas Tire Operations, LLC of Nashville, Tennessee. Invented by Jon I. Stuckey of Uniontown, Ohio and Samuel O. Givens of Copley, Ohio. Abstract: A pneumatic tire may include a tread, an inner tire surface positioned opposite the tread, and an internal heat exchanger attached to the inner tire surface. The wheel assembly may include a wheel rim, the pneumatic tire, and a pump. The pneumatic tire may be attached to the wheel rim. The pump may be attached to the wheel rim outside of the pneumatic tire and configured to rotate with the wheel rim. The pump may be coupled to the internal heat exchanger through an opening in the wheel rim. The wheel assembly may further include a coolant disposed in the internal heat exchanger and configured to absorb heat from the pneumatic tire. The wheel assembly may also include an external heat exchanger configured to remove heat from the coolant.