

Fact Sheet

U.S. Army Cold Regions Research and Engineering Laboratory Patents Awarded in CY 1996–1998

PATENT #	INVENTOR(S)	TITLE OF INVENTION	DESCRIPTION
5,567,078	Dr. James H. Lever, Gordon E. Gooch, and Edward P. Foltyn	Method for Forming a Sloped-Face Ice-Control Structure	Slope-faced ice-control elements, such as large quarried granite blocks, each spaced apart across a riverbed adjacent to a floodplain region. These elements are designed to arrest a breakup ice run and prevent flooding caused by ice jams. The design of the structure leaves gaps between the elements for easy canoe and fish passage in warm weather.
5,585,799	Dr. Norbert E. Yankielun and Michael G. Ferrick	A Microwave Doppler Radar System for Detection and Kinematic Measurements of River Ice	A system that detects river ice motion and measures the velocity of river ice to provide early warning of river ice runs for flood hazard or water resource assessment. The use of microwave continuous wave Doppler radar technology in combination with electronic signal processing equipment enables the system to be used regardless of visibility conditions.
5,601,906	Karen S. Henry	Geosynthetic Barrier to Prevent Wildlife Access to Contaminated Sediments	A barrier to deny wildlife access to contaminated sediments, while permitting gas formed in the sediment layer to escape.
5,609,418	Dr. Patrick B. Black	Clapeyron Thermometer	A high-resolution thermometer that employs the known thermodynamic pressure-temperature relationship of a solid-liquid mixture near its melting point.
5,648,724	Dr. Norbert E. Yankielun and Stephen N. Flanders	Metallic Time-Domain Reflectometry Roof-Moisture Sensor	An apparatus for detecting the presence, location, and extent of moisture in a roof using metallic time-domain reflectometry (TDR); includes an electrical pulse generator, a transmission line embedded within the roof and connected with the pulse generator, and a signal analyzer that interprets the electrical pulses transmitted along the transmission line.
5,651,200	Michael R. Walsh and Dennis J. Lambert	Debris Exclusion Device for an Augerhead-Type Hydraulic Dredge System	An apparatus to increase safety of dredge operators in explosives-contaminated areas.
5,706,018	Dr. Norbert E. Yankielun	Multiband, Variable, High-Frequency Antenna	A field-portable and deployable radio antenna for HF operations.
5,784,338	Dr. Norbert E. Yankielun and Leonard J. Zabilansky	Time-Domain Reflec- tometry System for Real-Time Bridge Scour	An apparatus for determining rates of bridge scour at piers.
5,790,471	Dr. Norbert E. Yankielun and Leonard J. Zabilansky	Water/Sediment Interface Monitoring System Using Frequency-Modulated Continuous Wave	An apparatus for determining rates of bridge scour at piers.

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5,796,679	Dr. Norbert E. Yankielun	Doppler Velocimeter for Monitoring Groundwater Flow	An apparatus and method for monitoring groundwater flow velocity and direction using high-frequency acoustic signals and the frequency shift caused by the Doppler effect.
5,804,721	Dr. Norbert E. Yankielun and Stephen N. Flanders	Capacitor for Water Leak Detection in Roofing Structures	An improved moisture-sensitive capacitor that operates effectively in high moisture or saturated conditions. This capacitor may also be used in fluid-sensing applications other than roofing structures.
5,815,064	Jonathan A. Holmgren and Dr. Matthew Sturm	Snow Temperature and Depth Probe	An apparatus and method for accurately determining snow temperature at various depths below the surface of the snow down to the snow/ground interface.

POINT OF CONTACT

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January 1999