

Opposing Climbing Hooks

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Products, Materials, and Services

Abstract

USU researcher Scott Greenhalgh has developed a novel fall protection device for use in rock climbing that uses frictional force to ensure safety on rock faces with minimal surface area where other protection devices could be used.

Problem

Fall protection for rock climbers is essentially nonexistent on face climbs without cracks for traditional climbing protection or bolts being drilled into the rock.

Solution

This technology uses two hooks in opposing directions connected together to harness the force of friction to keep the hooks in place and provide safety while climbing on rock faces.

Value Proposition

This novel method provides increased safety for the climber on previous routes and a safe way to climb new routes. It is easily removable, leaving no trace in the rock.

Benefit

Various techniques and equipment are needed for rock climbers to safely overcome the challenges and hazards of unique terrains. Protection devices can be permanently fixed to the rock, such as bolts or pitons, or removable, such as nuts, hexes, or camming devices. Permanent protection is considered illegal or unethical in certain areas due to the requirement for drilling. Removable protection devices are placed inside cracks, holes, or fissures in the rock to secure ropes, slings, or carabiners. Each of these removable features require the rock to have places to secure them. On many climbing routes there are long sections of rock without adequate features of protection, compromising the safety of the climber. There is a need for a better type of removable protection device that can be used on rock faces.

USU's Scott Greenhalgh has developed a technology that provides a unique way to ensure safety while climbing, particularly on rock faces. Two or more hooks are connected together through a chord or chain and utilize the frictional force created when the chain or chord is pulled tight. These hooks can be used on face holds, flakes, knobs, horns, or chicken heads. This creates a stable hook to anchor the climber while they scale rock faces that other equipment is insufficient for. These climbing hooks provide a new technique for climbing that increases safety. New routes that were previously considered too dangerous to climb may now be doable. These hooks are also removable and cause no damage to the rock.

Market Application

This technology can be directly applied to the Climbing Gear and Equipment market, specifically the traditional

climbing sector. It can be marketed as a new method for safety while rock climbing.

Inventors

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Intellectual Property

Pending U.S. Provisional Patent Application Filed July 2025.