

## **Ratchet Hook Tourniquet**

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The "ratchet hook tourniquet" is a design modification to the current ratchet tourniquet that would reduce application time. Current ratchet tourniquets incorporate a permanently sewn connection between the strap and the body of the ratchet, forming a loop that has to be advanced up the injured limb before being tightened. Since the injured limb must be fed through the loop, precious time is lost during this process, especially while applying a tourniquet in cramped places like vehicles or helicopters. Instead of a sewn connection, the proposed device would utilize a flat metal hook that connects the strap to the body of the ratchet. This allows the tourniquet to open up and the free end to pass around the injured limb. Rather than passing the injured limb through a tourniquet loop, the opened tourniquet can be applied immediately above the injury and tightened without further disruption of the limb. This modified application method would allow faster and easier application of the tourniquet.

The tourniquet would be used under conditions of severe extremity trauma, such as gunshot wounds or blast injury.

The invention is specifically directed at improving the certainty of effective placement and the speed of application of the tourniquet in cramped environments such as vehicles, and when the limb has suffered severe disfiguring trauma. By modifying the current fixed pinning of the tourniquet strap to the ratchet tightening mechanism to a detachable hook-and-pin attachment, the hooked end of the tourniquet strap can be manually fed around the limb, and re-attached to the ratchet and tightened, rather than requiring that the tourniquet strap be fed over the end of the limb and advanced to above the wound before tightening as is the case in the current tourniquet configuration. Furthermore, the detachable hook configuration allows the strap to be fed cleanly around the limb and attached to the ratchet mechanism with less chance of twisting during application. The patent disclosure makes a compelling case for the advantages of this tourniquet configuration in comparison the unmodified tourniquet, or other type of tourniquet.

A demonstration model exists, and this technology has been advertised in the Federal Register.

The modified tourniquet could be used by anyone who has need for quick treatment of potentially life-threatening bleeding in austere environments, such as emergency personnel or wilderness medicine practitioners. Possible companies that may be interested are those that already make the current ratchet tourniquets.