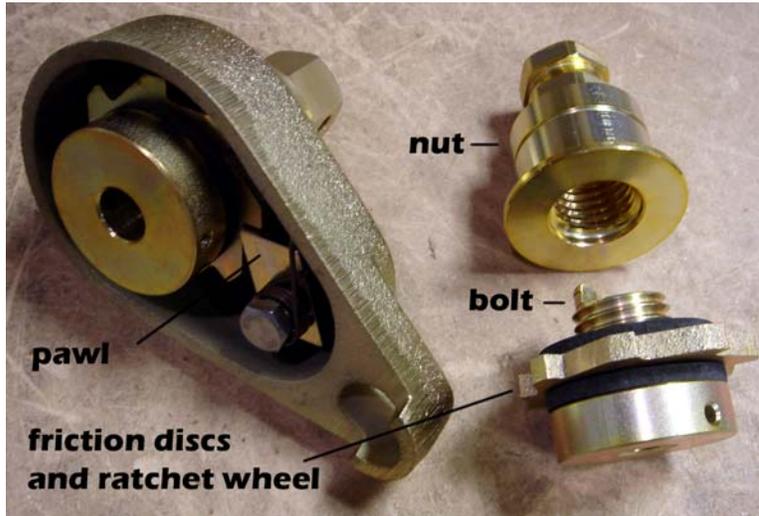


Thern Weston Style Brake Operation

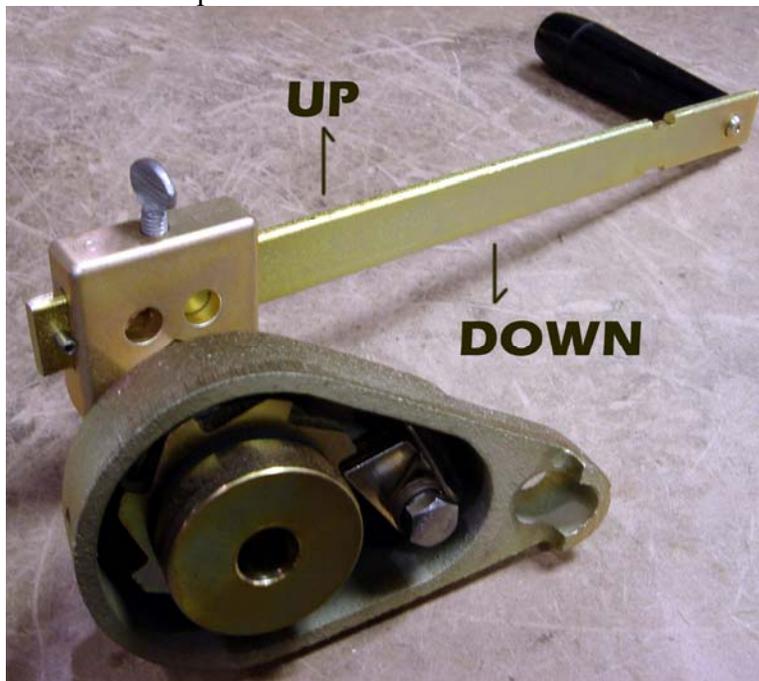
Applies to PB style brakes used on Thern Spur Gear and Worm Gear Hand Winches

The brake used on most Thern hand winches is referred to as a Weston-style brake. This brake type will consist of a partially-threaded bolt, nut, two friction discs and a ratchet wheel with pawl. The partially-threaded bolt and nut sandwich the ratchet wheel between the two friction discs.



Handle force UP locks brake, pawl allows rotation.

To raise a load (or collect wire rope onto the drum) the handle is turned in the UP direction. This turning motion screws the nut onto the bolt compressing the ratchet wheel and friction discs between the nut and bolt so all components are turning together. During this time the operator will also hear a clicking noise as the pawl makes contact with the ratchet wheel sprockets.

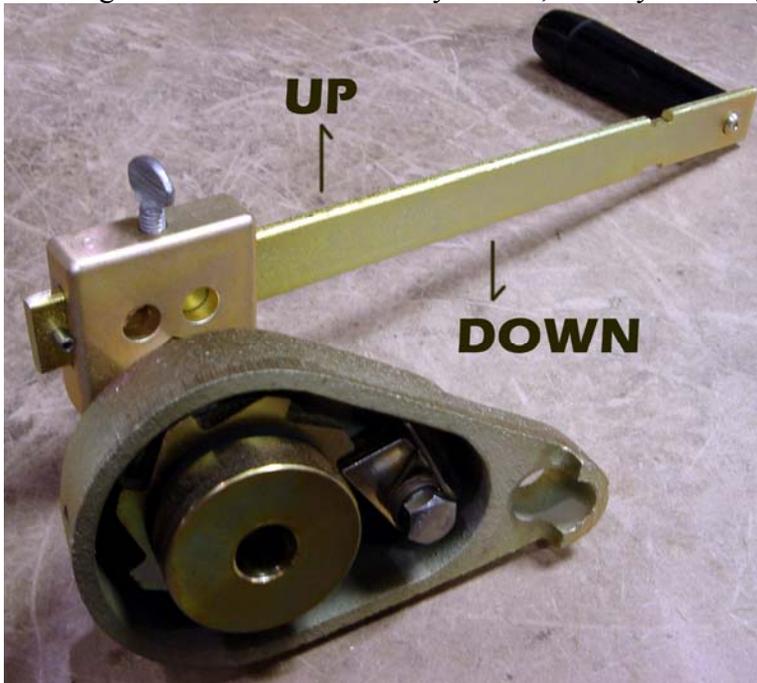


Drum force locks brake, pawl prevents rotation.

When the handle is released by the operator, the load acting on the drum creates a rotational force that screws the nut onto the bolt compressing the ratchet wheel and friction disc further. The ratchet pawl now acts to hold the ratchet wheel in place. Compressive forces on the friction discs now keep the drum from rotating, and the load will be suspended.

Handle force DOWN unlocks brake, friction discs loosen to allow rotation.

To lower the load (or pay wire rope off the drum) the handle is turned in the DOWN direction. The pawl, which is secured to the brake housing, prevents the ratchet wheel from rotating. With the ratchet wheel stationary, the rotational force applied to the handle now unscrews the nut and bolt slightly, removing compression on the friction discs and allowing the bolt and nut assembly to turn, thereby allowing the drum to turn.



For proper use and long life, the Weston-style brakes require the wire rope to be wound onto the winch drum in only one direction. **Improper wire rope installation will prevent the brake from working properly and the load could fall.** Also, with this type of brake assembly, a free-spool option is typically not available.