

About the inventor

Reg Coates, Arborist/freelance climber of the UK, New Zealand and Australia.

Reg had recognized the need to make this particular task, amongst others, easier and safer.

The company

Coates Tools. Reg and Juliet Coates now hope to utilize Regs' vast tree-work experience to aid in the production of a small but radical 'problem solving' product range.

This Task

The Sectional felling of large diameter trunks in confined spaces.



Traditional methods

Sections are either cut into shallow, disk-type sections which are then slid from the top of the standing trunk. Otherwise, they are cut into longer sections with the incorporation of a hinge cut.

Problems

With shallow sections/discs:

- Many repetitive cuts.
- Very difficult leverage/work position for the climber, i.e. all the strain of the push is transferred onto the lower back.
- Risk of repetitive strain for the climber i.e. pushing, sawing, poor circulation while wearing climbing irons for the longevity.
- Difficulty in rigging/tying off such pieces due to their limited depth.
- Where rods/rollers are inserted - To be effective, the disc surface must be absolutely flat (un-ridged) to accommodate the roller action. Effectively placed insertion of such, also presents the risk of a trapping hazard for less experienced climbers.

With hinged sections:

- More cutting required at different angles and levels.
- Greater degree of skill, strength and endurance is required.
- Difficulty in finding the balance between retaining a hinge that is strong enough to maintain the direction of the section as it folds, while at the same time producing the power/leverage to pull/push such proportionately short fat sections. For this reason sections are usually made slightly longer for pulling leverage so not to compromise the risk of either cutting through the hinge or weakening it to a point where it becomes unreliable.
- Notched sections require a larger drop zone.
- Where rigging is required, come's the difficulties associated with mitigating the shock loading, i.e. momentum of the scarf/hinge cut, greater falling distance required.

BlockDriver solutions

The Blockdriver is designed to manoeuvre sections cut to a more practical size, somewhere in between those described as hinged and disc's.

- Before the BlockDriver is even needed, the lever bar, with its 9.25:1 mechanical advantage, performs superbly in breaking bypass/step cuts, as well levering over notched sections higher up the tree. The distance/depth between step/bypass cuts can now be increased, ensuring a greater degree of section-stability and safety.
- Less cutting time required: Sections can be safely cut at a depth of up to 3 feet, so long as this is no more than 75% of its width. Obviously, less cutting means less time in the tree.
- The twisting force applied by the lever bar accommodates unwanted ridges and steps that often occur when cutting large diameter sections. As the Step/bypass cut is broken, the section is also shifted sideways so the ridges are less likely to obstruct each other when the section is being pushed.
- Little or no stress is transferred to the climbers back. 16.2 KGF, of an acceptable 25 KGF is initially required to raise a 300 KG section, while only 6 KGF is required to push and dislodge it.
- Sections are severed with a simple bypass/step cut which is far easier than notching.
- Less drop zone required than hinged sections.
- Easy and safe to incorporate a rigging system.
- The absence of a notch/scarf means less momentum is acquired as the section is arrested by the rigging.
- Less distance of fall needed due to the depth/length (=less weight) at which the sections can be cut, rigged and lowered.
- While pushing sections, the BlockDrive method, unlike steel rods/rollers, only carries one end of the section, so friction, for control, is maintained at the other end.

Specification

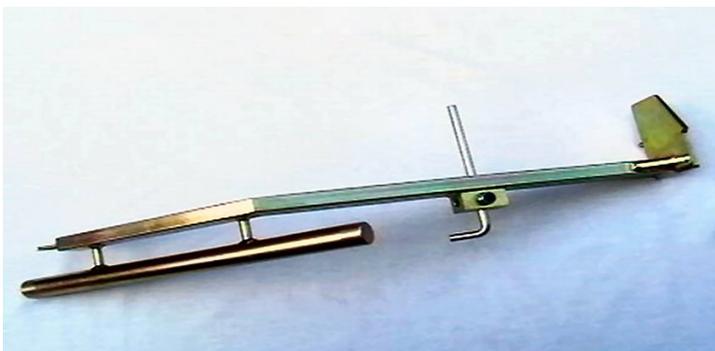
Blockdriver

Weight 6 KG
Push ratio 15:1
SWL 300 KG



Lever Bar

Weight 3KG
Lift ratio 9.25:1
SWL 300KG



Conclusion

“We believe the words ergonomic and innovative have become the most overly used ‘descriptive’ words/terms in reference to many of the latest arborist tools/concepts. However, we at Coates Tools believe to have a genuine claim to such descriptions in reference to this particular product, the BlockDriver. We are satisfied that we have created a product that offers a safe, economical and logical technique when undertaking this particular task.”

“The product comes with a guarantee of 12 months from the date of purchase. However, with the correct use and application, we would expect a product to have a working life of up to 10 years longevity.” Available shortly from ‘**TreePro**’ will be the Coates Felling Lever.

