

Sheet bend

From Wikipedia, the free encyclopedia

The **sheet bend** (also known as **becket bend**, **weaver's knot** and **weaver's hitch**) is a bend, that is, a knot that joins two ropes together. Doubled, it is effective in binding lines of different diameter or rigidity securely together, although it has a tendency to work loose when not under load.

The sheet bend is related in structure to the bowline. It is very fast to tie, and along with the bowline and clove hitch is considered so essential it is knot №1 in the *Ashley Book of Knots*.^[1] It is a more secure

replacement for the reef knot (square knot), especially in its doubled variety.^[2]

The "weaver's knot" takes its common name from its historic use in textile mills. Even in modern operations, weavers are taught to use this particular knot when correcting broken threads in the warp. In practice, weavers are taught to be able to tie the knot in as little time possible, with the mean average being no more than three to five seconds.



Sheet bend



Names	Sheet bend, becket bend, weaver's knot, weaver's hitch
Category	Bend
Efficiency	48%–58%
Related	Bowline
Typical use	joining two ropes of different diameters
ABoK	(simple) #1, #66, #1431; (double) #488, #1434; (weaver's) #2, #485;

Contents

- 1 Method
- 2 Double sheet bend
- 3 Security
- 4 See also
- 5 References

Method

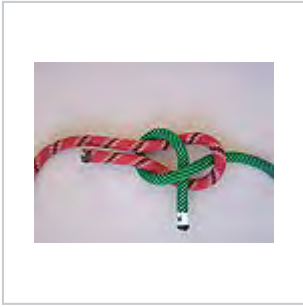
The sheet bend may be tied by various methods: the basic "rabbit through the hole" method of forming a half hitch in the bight of the larger rope, by a more expedient method shown in Ashley as №1431 (similar to the method used by an experienced sailor or mountaineer to tie a bowline) or by a trick method, Ashley №2562, involving upsetting a noose knot over a short end of the "larger" rope. (Lines of equal size may be joined with a sheet bend, of course, but when one is larger, it plays the simpler role of the red line shown in the infobox, rather than forming the nipped hitch as the green line does.)



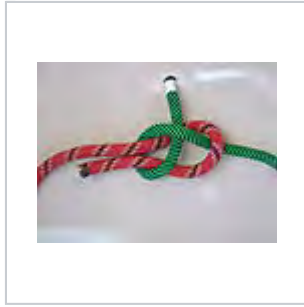
Weaver at Queen Street Mill demonstrating a weavers knot

One type of weaver's knot is topologically equivalent to a sheet bend, but is tied (usually in smaller stuff) with a different approach. Sheet bends are also used for netting.

Notice that, to have any strength, the two free ends should end up on the same side of the knot^[3] (see below). Under even moderate load, a left-hand sheet bend will quickly slip and release completely.



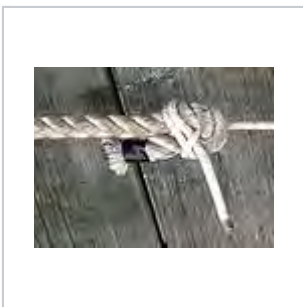
Secure



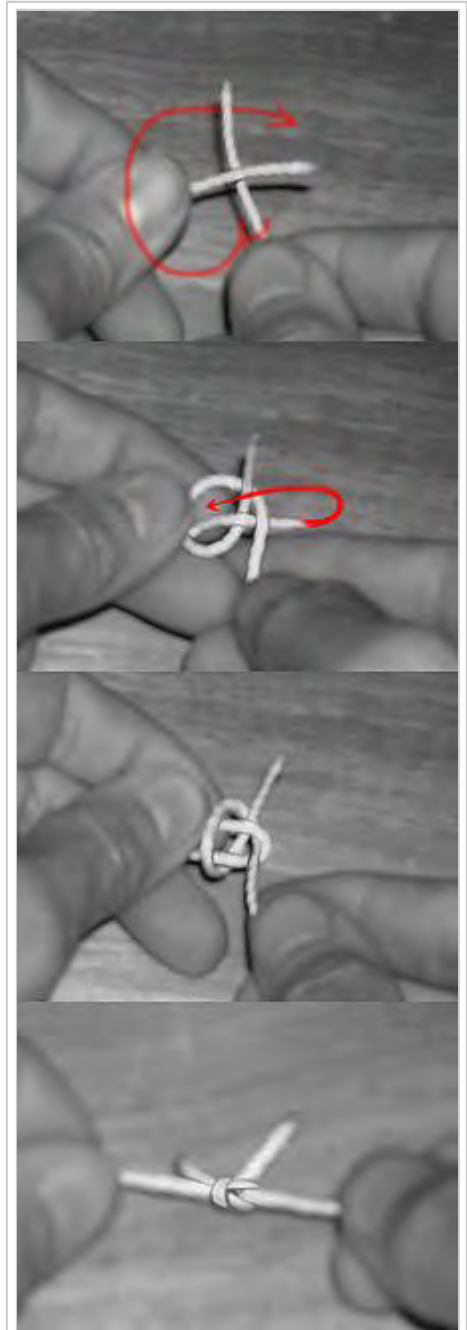
Insecure (Left-hand sheet bend [4])

Double sheet bend

When lines are of unequal diameter or rigidity it is necessary for security to "double" the sheet bend by making an additional round turn below the first and again bringing the working end back under itself. The free ends should end up on the same side of the knot for maximum strength.



The double sheet bend



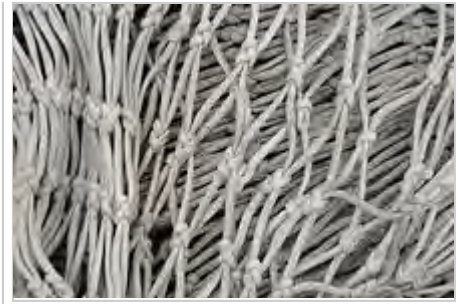
Steps in tying a weaver's knot

Security

A study of 8 different bends using climbing rope of equal diameter said the sheet bend was weak. In one test, it pulled apart with less than half the pressure that other knots withstood.

The authors recommend "2 half hitches on the bend back line and overhand knot on turn thru line." Even with these, it was always a bottom

performer and the double sheet bend did little better. The butterfly bend did best, but the double fisherman's knot was recommended for being easier to untie.^[5]



A fish net made from sheet bends

See also

- List of bend knots
- List of knots

References

1. Ashley, Clifford W. (1944). *The Ashley Book of Knots*. Doubleday. p. 9.
2. Cassidy 1985, *The Klutz Book of Knots*
3. "Knots and Splicing". ropeinc.com. Single Sheet Bend.
4. Clifford W. Ashley, *The Ashley Book of Knots* (New York: Doubleday, 1944), #67 and #1432
5. Knot Break Strength vs Rope Break Strength (<http://caves.org/section/vertical/nh/50/knotrope-hold.html>)

Retrieved from "https://en.wikipedia.org/w/index.php?title=Sheet_bend&oldid=756171690"

Categories: Bend knots



Wikimedia
Commons has
media related to
Sheet bends.

- This page was last modified on 22 December 2016, at 13:04.
- Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. By using this site, you agree to the Terms of Use and Privacy Policy. Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization.