

Earliest knot illustrations?

It seems certain that humans have used knots since prehistoric times, but who first illustrated knots? This is an interesting question because:

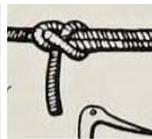
- (i) Knots have been important to everyday human activities including the provision of shelter and food, throughout past eras [1].
- (ii) Knots have long been taught by demonstration. Some trades and guilds prized their secrets (including how to tie their knots).
- (iii) Good illustrations can increase the ease and scale of teaching and learning knots.
- (iv) Knot illustrations of sufficient quality to assist teaching are surprisingly difficult to produce, at least for those without a high level of artistic talent.
- (v) Knots were long the subject of superstition, which inhibited their illustration [3].

Through some combination of these or other reasons, we see no illustration of knots in sufficient detail to determine their structures in primitive art works such as cave drawings.

The earliest surviving illustrations are in the form of art works from ancient (BCE) Chinese, Greek and Egyptian cultures. But these are generally limited to intertwined patterns, thumb knots, figure-eight knots, Hercules (reef) knots and loops or bows. It is rare to find an ancient illustration of a common / sheet bend although this structure has been used by weavers and net-makers for tens of thousands of years.



A belt (reef?) knot from an Egyptian statue of Raheka ~2350 BCE.
[https://commons.wikimedia.org/wiki/Category:Belt_knot_\(hieroglyph\)](https://commons.wikimedia.org/wiki/Category:Belt_knot_(hieroglyph))



The join between a becket and a line in Egyptian tomb paintings of ~1800 BCE is sometimes interpreted as a sheet bend.
<https://mqfacultyofarts.github.io/bh-draft/dictionary/Khnumhotep+II+Tomb+3/Tomb+owner+catching+birds+with+a+clapnet/>
<https://archive.org/details/quipuswitcheskno0000dayc/page/58>



A Hercules (reef) knot in Greek jewellery from ~300 BCE.
https://commons.wikimedia.org/wiki/Category:Ancient_Greek_jewellery_in_the_Staatliche_Antikensammlungen



A figure-eight knot in a Chinese jade pendant from the 3rd Century BCE.
https://www.metmuseum.org/toah/hd/shzh/hd_shzh.htm



A Chinese lanyard knot depicted in a stone carving from the Han Dynasty (202 BCE - 220 CE), probably formed from interlocking thumb knots [2]. See also https://en.wikipedia.org/wiki/Chinese_knotting

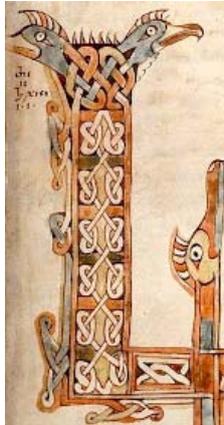


A slippery sheet bend as a sash knot on a sculpture from ~200 CE in the Roman Atrium Vestae (left: from [Carole Raddato on Wikimedia](#)); and the more-common slippery Hercules / reef knot on a statue of Fortuna (right: from [Rabax63 on Wikimedia](#)).

Oribasius documented in the 4th Century CE nine knots used by Greek physicians since the 1st Century CE. Illustrations (mostly incorrect) were added to copies made from ~1500 CE [4].



A Celtic knot design topping a letter A from an illuminated manuscript.
<https://bymuravka.livejournal.com/166612.html>



Detail from a letter L in an illuminated manuscript of ~900 CE. <http://medievalletters.blogspot.com/2011/06/9th-century-carolingian-li-monogram.html>

European monks from about 800 CE (possibly earlier than 600 CE) produced illuminated manuscripts including Celtic “knot designs”; but these Celtic designs typically include sharp angles that seem to preclude the kinds of cordage used in physical knotting. Sometimes the motifs include obvious thumb knots, a structure known by anglers to ‘tie itself’.



Assyrians and Greeks used inter-linked patterns in seals before 2000 BCE <https://arxiv.org/ftp/arxiv/papers/1809/1809.00063.pdf>; <https://www.researchgate.net/publication/267426543>

Several stylized knots appeared in European heraldic badges from the 11th Century CE [5]. It is interesting that the Wake knot (heraldic form of the Carrick bend) uses essentially the same weaving as the ancient Chinese double coin knot (often with a different dressing).

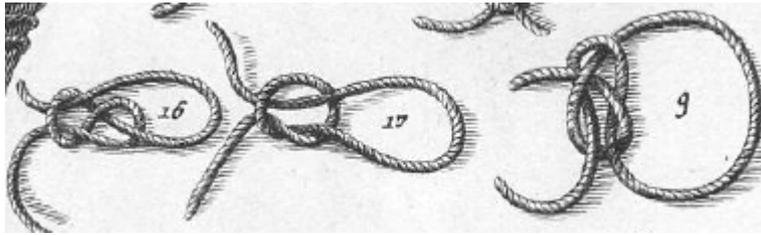
Thumb knots were later shown in substrates (such as crocodile tails) that are highly unlikely to be knotted in practice. They are none-the-less beautiful as works of art. Other illustrations in the same documents conceal all practical knot structures, in cases such as a tethered cow, an archer’s bow, and the bridles of mounted knights.



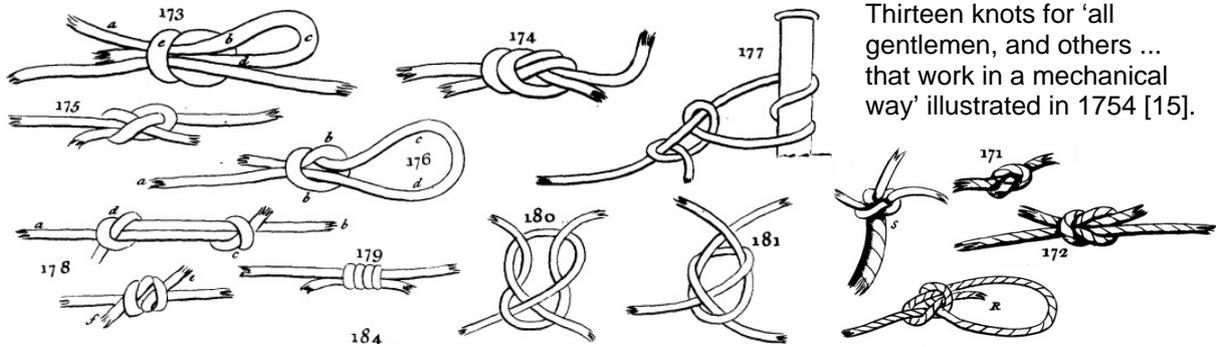
Crocodile eating a (mythical) hydrus (both with knotted tails) from an early 13th Century CE ‘Bestiary’ manuscript. http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Harley_MS_4751

Use of Gutenberg’s printing press from 1450 did not seem to stimulate any written instruction in knot tying. It is easy to mention uses of knots, but harder to describe unambiguously a knot structure and how to tie it. Knot illustrations and tying instructions are absent in manuscripts and printed books on ship-rigging and seamanship from the 17th Century CE [6-9]. With the advent of engravings in ‘mass-produced’ printed material, knot illustrations suitable for instruction first appeared after 1740 CE in works for builders [10] and for sailors [11-13], and in encyclopaedias eg [14, 15]; then in periodicals eg [16, 17] and in knotting manuals. Of the latter, manuals by Ashley [18] and Day [4] stand out, and provide many references including illustrated seamanship manuals of the 1800’s.

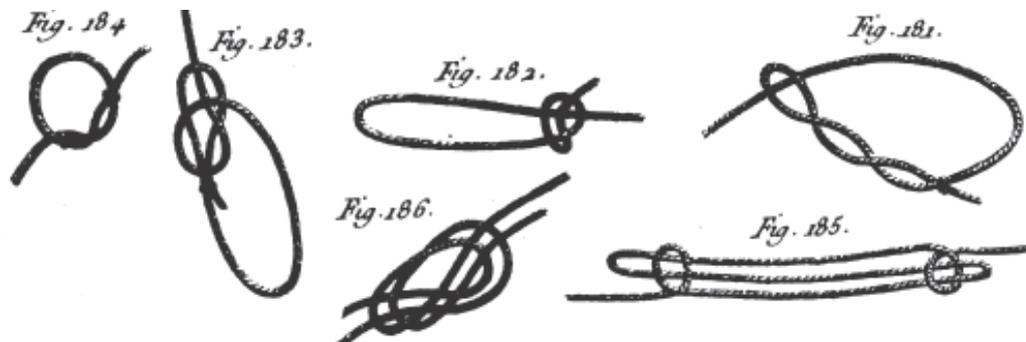
Among modern authors, Ashley [18] was a genius in diversity of illustrated knots. Day [4] was a masterful pioneer in photographic illustration of knots; the difficulty of which is highlighted in Graumont and Hensel’s compilation, with many plates too dark to assist readers even in the 4th edn [19]. Illustrations of exemplary clarity, and very different styles, were provided by Butterworth and Båling for the works of Lever [20] and Svensson [21].



Three of the many knots for builders illustrated in 1743 [10]. Zabaglia illustrated figure-eight knots correctly, as did Lescallier (1777-91), but some later illustrators got it wrong (Émy 1841, Bowling 1866, Haslope 1891). The error remains in some company logos.



Thirteen knots for 'all gentlemen, and others ... that work in a mechanical way' illustrated in 1754 [15].



Six of the many knots for mariners illustrated in 1777 [11].

It is amazing to me that it took so long. Perhaps the explanation is that most users of knots were, until relatively recent times (after 1740 CE), poor and/or illiterate; with little chance to access illustrated works of instruction. If so, there was no commercial imperative to publish, and knot users had to learn by demonstration or experimentation.

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