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HOW
TO TIE
THE WORLD'S
24 MOST USEFUL
HITCHES, TIES,
WRAPS, AND
KNOTS

A STEP-BY-STEP MANUAL *by* JOHN CASSIDY

KLUTZ is a kids' company staffed entirely by real human beings. We began our corporate life in 1977 in an office we shared with a Chevrolet Impala. Today we've outgrown our founding garage, but Palo Alto, California, remains Klutz galactic headquarters. For those of you who collect corporate mission statements, here's ours:

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- Have fun.

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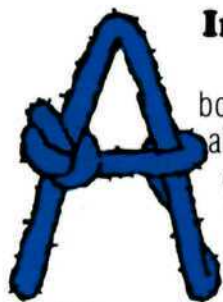
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Introduction



A book about knots is a book about personal organization on the real world level, where shoelaces untie, packages fall apart, and clotheslines droop. This is life's ground floor, the everyday battle against the small-scale forces of chaos. In the course of a modern lifetime, it is not the struggle that receives the most notice, but it *is* the one that seems to consume the most time.

Knots are tools employed in this noble cause. They are meant to connect and thus to simplify. Despite the popular misconception, a properly tied knot is generally distinguished by its simplicity and the ease with which it can be untied, not by its strength or complexity. Any mixed-up tangle of rope can be reasonably strong but it would be neither appropriate to the job, nor simple to undo. It would be, as most one-of-a-kind knots are, an over-elaborate solution to the problem. And a pain in the neck besides.

There exists, in the knotting literature, approximately 4,000 different knots. In choosing the 24 that went into this book, we kept to a single less criteria: Basic, work-a-day, nor-mal-life, 9-to-5 utility. Remembering that most of our readers have forsaken the sea, and are neither woodsmen, wranglers nor soldiers of fortune, we left off such things as the mule-packers' diamond hitch, an excellent knot

for loading up trail animals, and included the short-end sheet bend, a specialist in the repair of broken shoe-

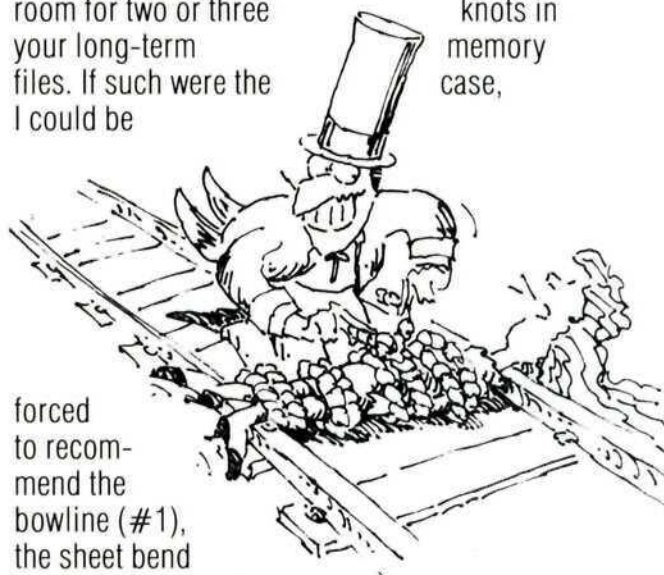
laces. Less romantic perhaps, but occasionally we have to face these kinds of realities.

But Which Is Really the BEST Knot?

A true landlubber's question, but one that is inevitably raised. The correct answer should be the responsible—albeit boring—"It depends." Are you knotting together sheets for an open-air exit from a burning hotel? Or are you tying up your hair?

But let's say you've really only got room for two or three your long-term files. If such were the I could be

knots in memory case,



forced to recommend the bowline (#1), the sheet bend (#7), and the clove hitch (#2). The three of them are the class of the three primary knot categories—loop knots, rope-to-rope knots (bends), and rope-to-something-else knots (hitches). Between them, they should get you into most binds.

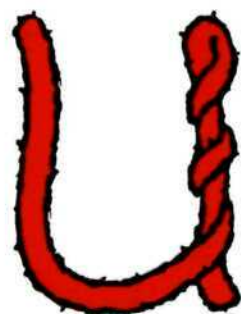
Incidentally, the opposite question, Which is really the *worst* knot? is far simpler to answer. As disillusioning as this sounds, it's the square knot, the most over-hyped, under-strength knot in creation. Clifford Ashley, the author of the definitive encyclopedia on the subject of knotting, states that the square knot "...has probably been responsible for more deaths and injuries than all other knots combined."

The reason is that the square knot "cap-sizes," i.e. it unties itself. A couple of quick tugs on the rope, or an inadvertent bump, and the honest square knot turns into thin air, an unhappy result that demonstrates the difference between a "strong" knot, one that weakens the rope the least, and a "secure" knot, one that resists unraveling. In the normal course of things, it's "security" that'll carry the day, not "strength."

How to use this book

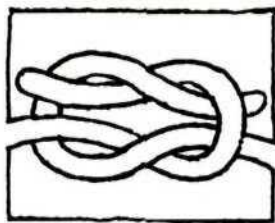
This is a tool-book, that is to say, it is meant to be more than just read. All those knots which are designed to be tied to something, can be tied to the board pages of this book, next to their illustrations.

A word of general advice. To the tying of any knot, there are two parts: one, crossing the ropes in the right order; and two, working the knot closed—tightening it. This second part is occasionally more difficult than the first, and almost always as crucial. On some knots, the shoelace bow for instance, all you need is a simple tug to bring the knot into place. But on others, the short-end sheet bend or the bow tie, for example, working the knot shut is practically the entire problem.

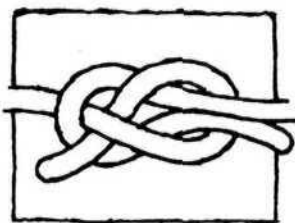


Unfortunately, it's a problem that illustrations can only help with a little, because it's such a general "pulling-together" kind of process. What it requires is a reasonably clear idea of where the knot is going. My best advice is to work the ropes gradually at the final stage, pulling all the loose ends in turn until you discover which pull or which tug shapes the knot in the ways that you want.

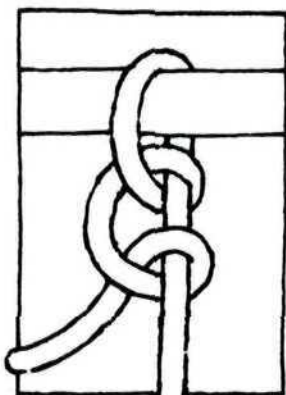
A Glossary of Terms



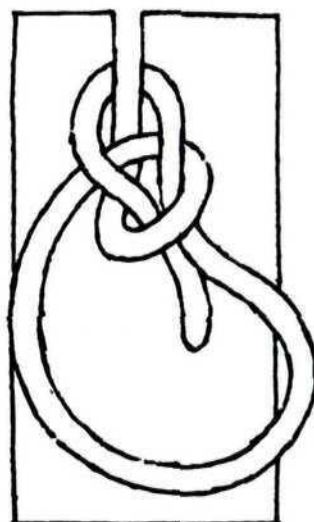
Knot. Any lump in the rope.



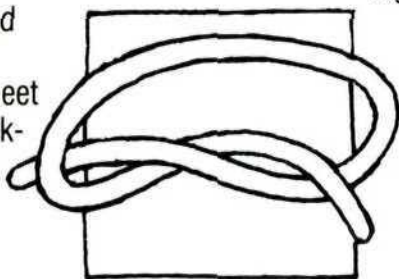
Bend. A knot joining two ropes.



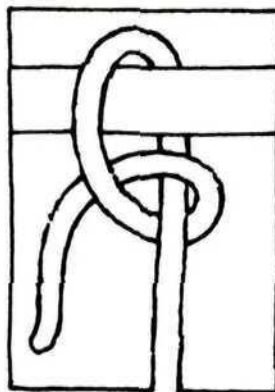
Hitch. A knot joining a rope to something else.



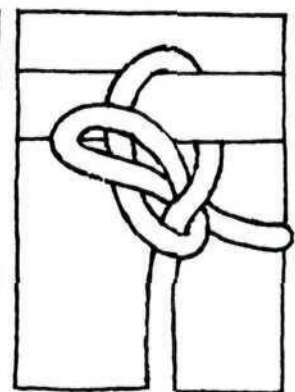
Loop. A knot joining a rope to itself.



Overhand.

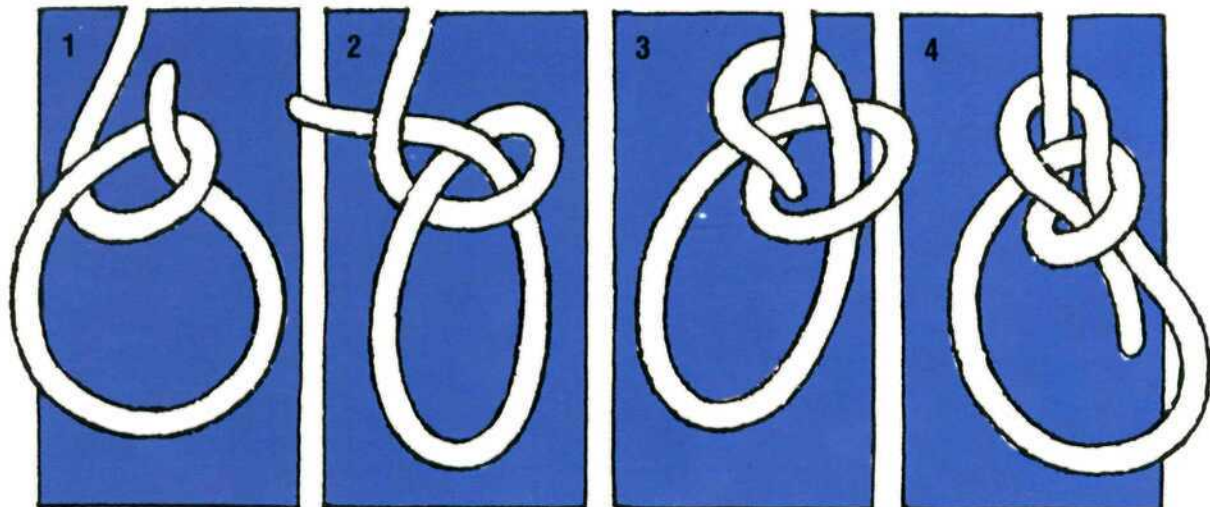


Half-Hitch.



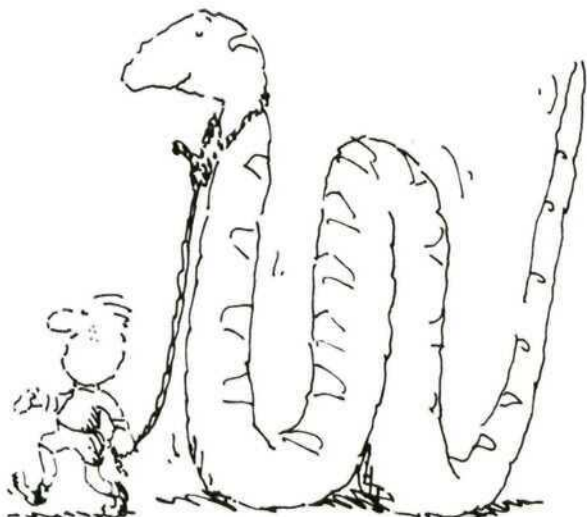
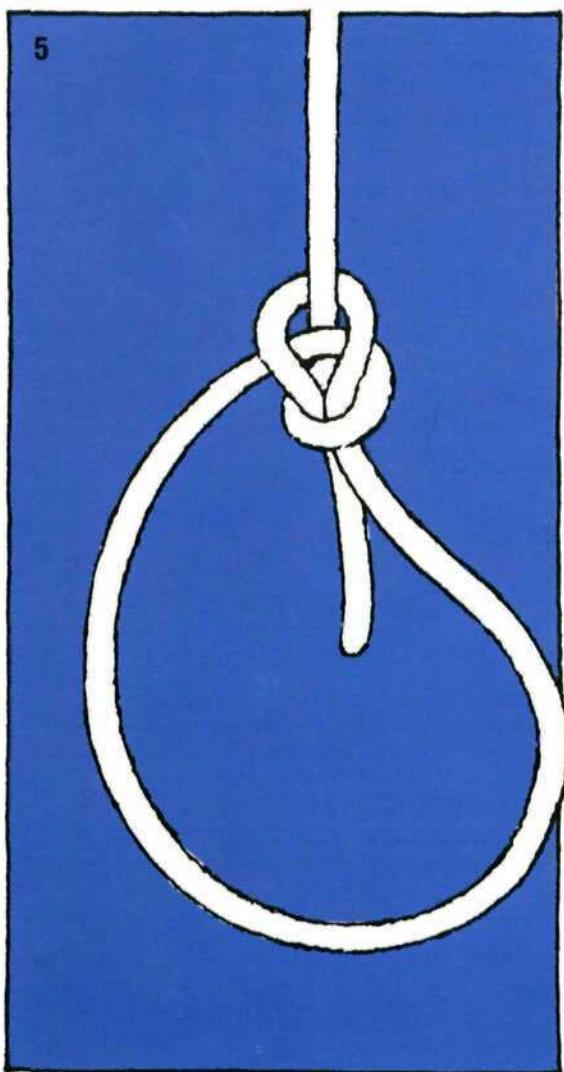
Slipped. A "quick release" modification.

1 The Bowline



If you were marooned on a desert island and could only take one knot with you, this would be the one. Properly tied in ordinary rope, there is little danger of the bowline slipping before the breaking point of the rope itself is reached—a comforting thought if you should ever have to tie a rope around your waist. And nearly as important, the bowline is easy to untie, even after having been dunked in water and put under load. Like most knots, the bowline's origins were on board the full-rigged sailing ships where it was used almost to the exclusion of all other loop knots, and where it was said that "... the devil himself would make a good sailor, if he could only tie a bowline and look aloft."

If you should ever have to deal with particularly thick or stiff materials—a rolled-up bedspread for example, or anything cable-like, one of the best ways to join them is with two interlocking bowlines.



2

The Clove Hitch

My favorite nearly-all-purpose hitch. Simple to tie, simple to untie, and won't jam under strain. There are better hitches if you're especially concerned about security, and if you're attaching a rope to a square shape—like a piece of lumber—the clove is not appropriate, but for your run-of-the-mill,



tie-this-thing-to-that-post kind of problem, the clove is your best choice.

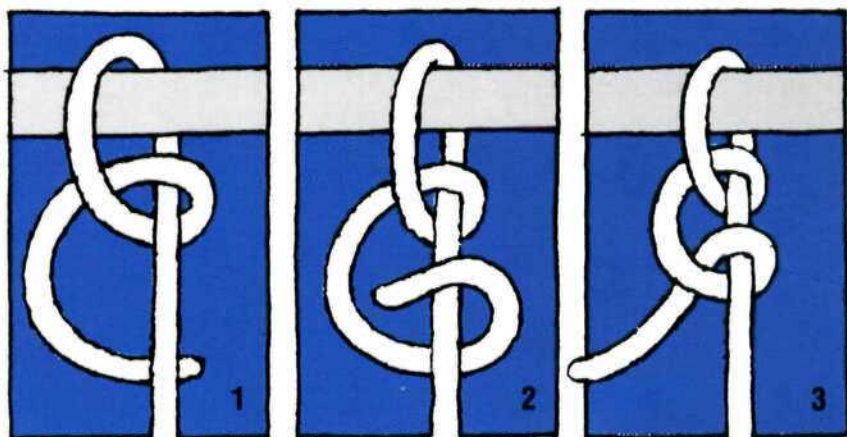
Note the slipped variation →

3

The Two Half Hitches

The only other contender for the title of All-Purpose Hitch. More common than the clove, probably because it seems easier to tie (although it really isn't). Nevertheless, on shapes and in places where the clove won't go, two half hitches is probably the best choice, both for simplicity and security.

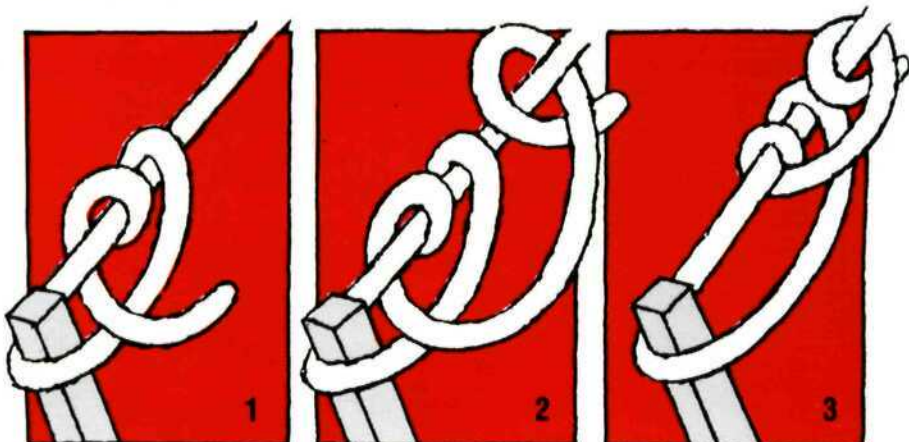
The slipped variation is particularly important, since this knot can often be tough to untie without it.



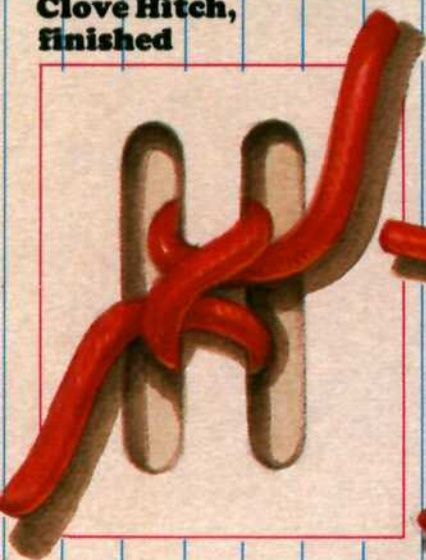
4

The Tautline Hitch

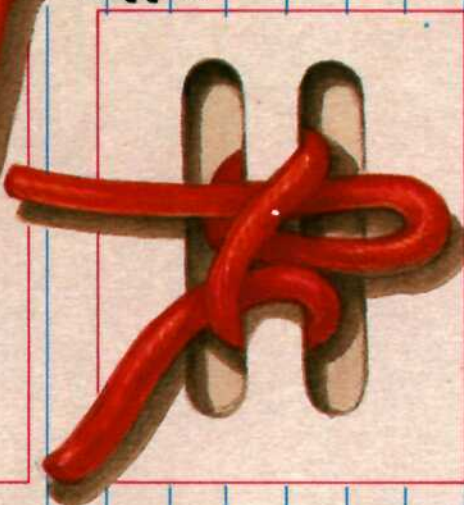
A specialist, but a particularly good one. The tautline hitch is used mainly when you need to keep a rope tight that tends to sag over time (clotheslines, tent guys, etc.). The tautline holds in one direction, but can be slid in the other, when slack has to be taken out. It's a one-way "ratchet" knot, the best of its kind.



Clove Hitch, finished



Clove Hitch, slipped

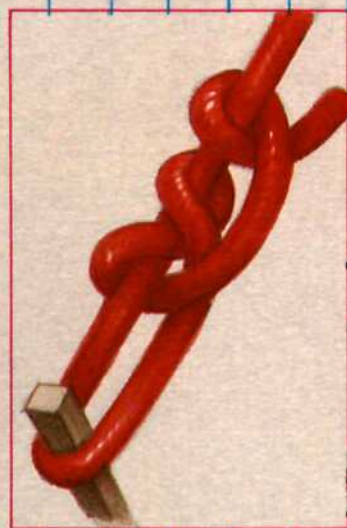


Two Half Hitches, finished

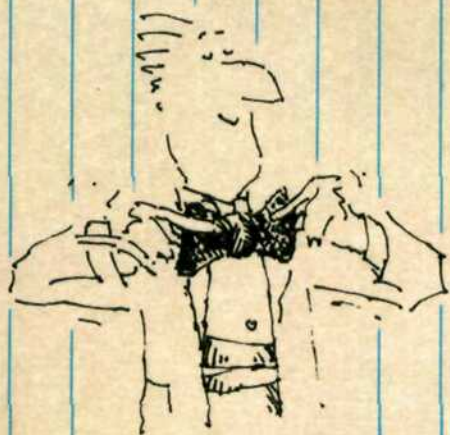
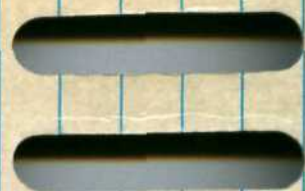
Two Half Hitches, slipped



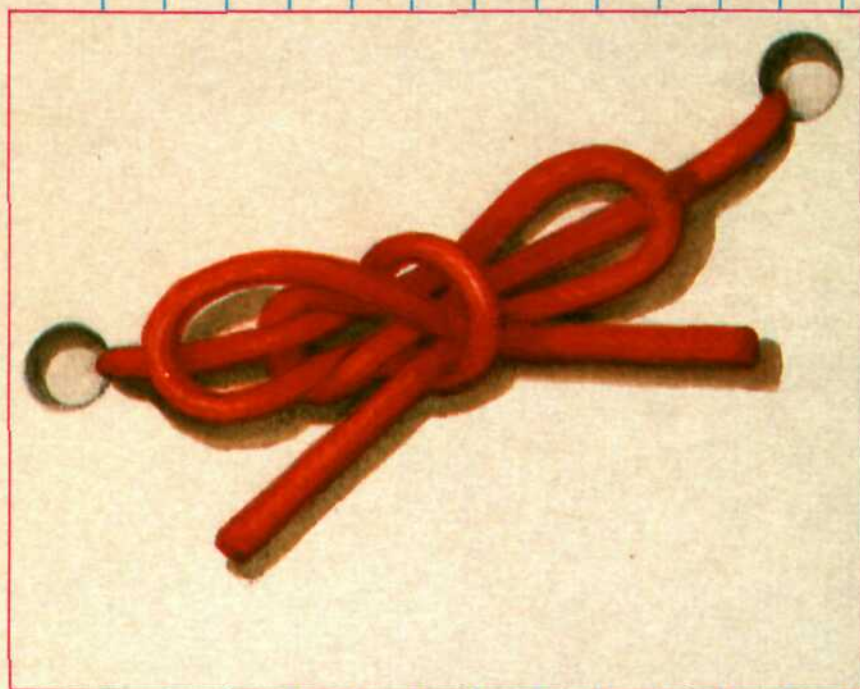
Tautline, finished



Better Bow, finished



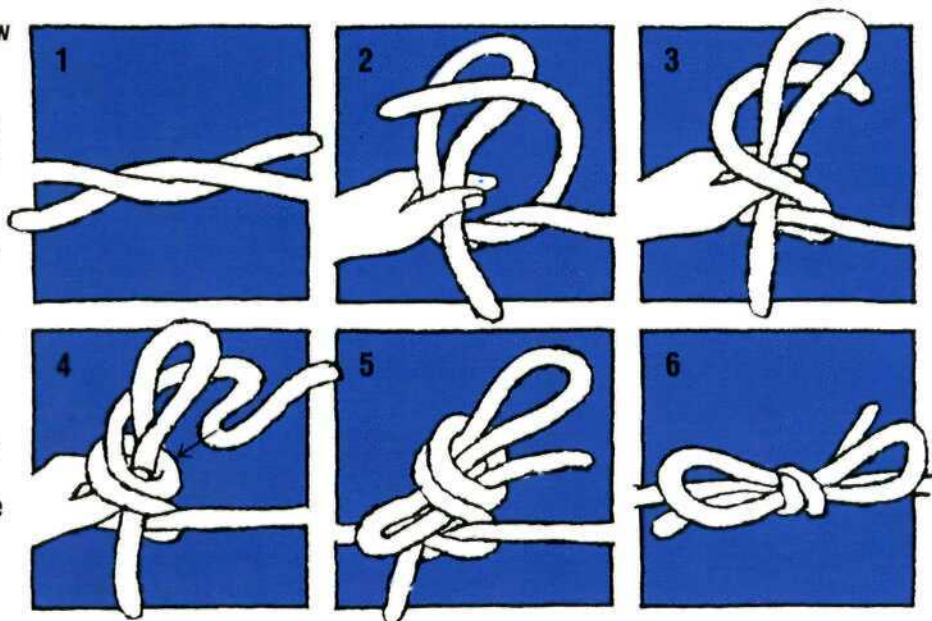
Bow Tie, finished



5 The Better Bow

You only *think* you know how to tie your shoes. The better bow unties with a simple tug, just like the soon-to-be-outdated model you have on your shoes right now, but the difference is—it doesn't jiggle loose. Learn it and you'll never go back, I promise.

As the illustrations show, there's only one crucial difference between this knot and the old style. Instead of taking a single turn around the middle of the loops, you'll take two. *Be sure to wrap both these turns around the end of your finger.* When you withdraw

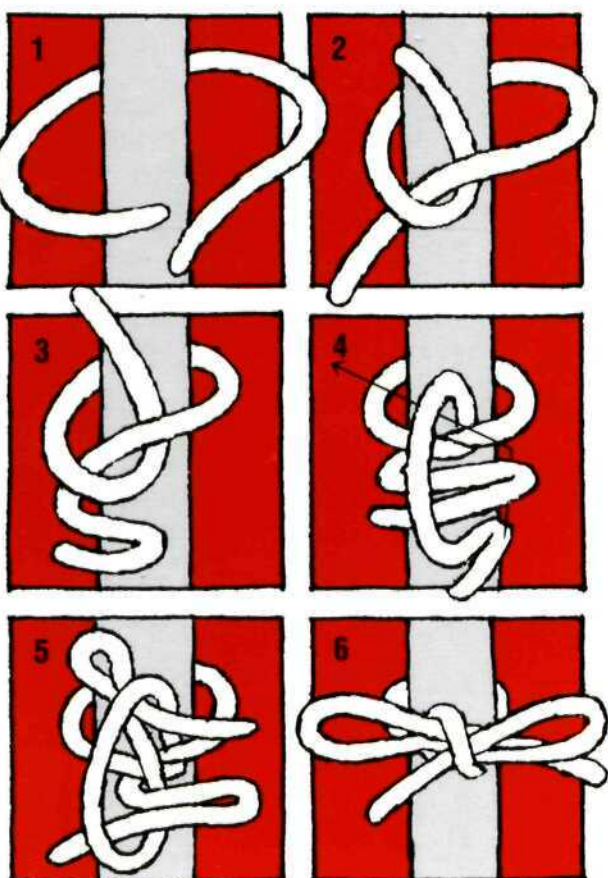


your finger, the "hole" it leaves is the place where you push the second loop through.

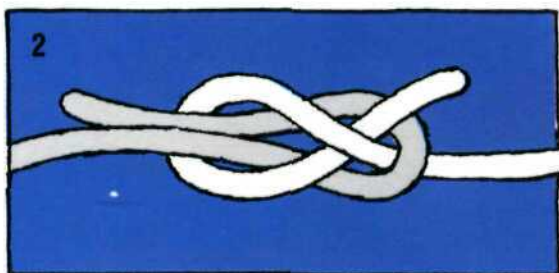
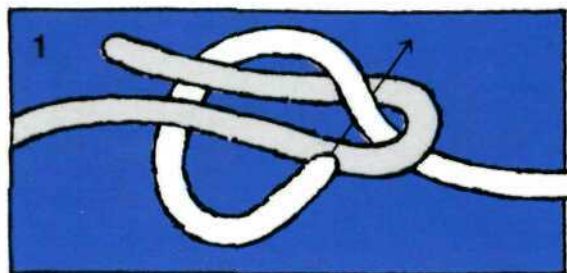
6 The Bow Tie

This may come as a minor revelation, but the knot you tie on your shoes (old style) is the same knot you tie around your neck—at least the finished product is the same. The difference is how you get there.

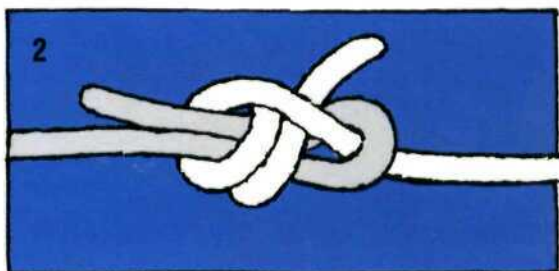
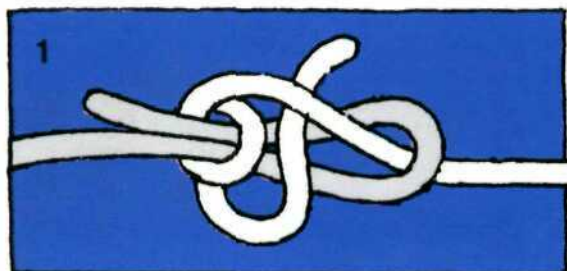
You can practice with cord, as per the illustration, but to really get the idea, you need flat material, ideally the real thing. Follow the steps as illustrated while remembering that the trick is in the last step—pulling the whole thing into shape.



7 The Sheet Bend



Doubled Variation

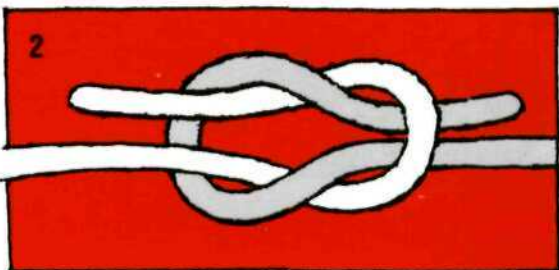
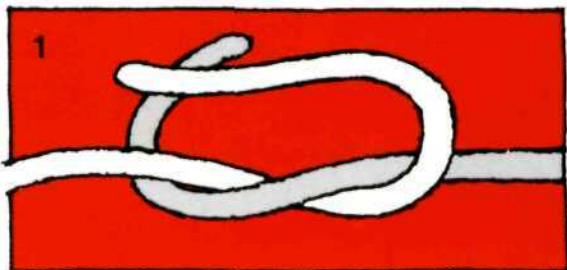


This is the knot that you thought the square was—a strong, simple, honest, easy-to-tie connection. One that you can trust. In the same way that the clove and bowline are, the sheet bend is

an all-star knot, the basic of its category.

The doubled variation is a bit more secure. I'd use it if something important was on the line.

8 The Square Knot

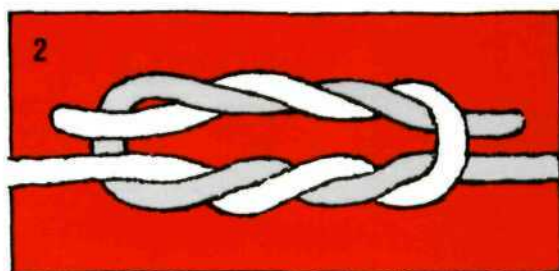
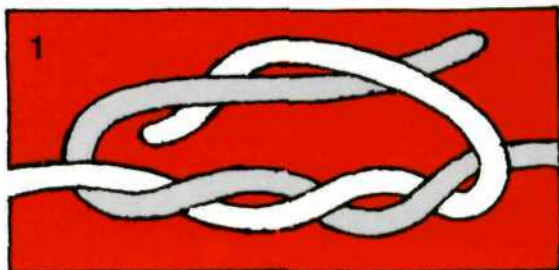


Originally this was known as the reef knot, used on board ship to secure the furled-in sails, not a particularly critical application. Somewhere along the way, though, it picked up a reputation for reliability that it most certainly doesn't deserve. As mentioned in the introduction, it is a rather unstable knot, capable of capsizing if bumped or jiggled in the wrong way, particularly if tied in dissimilar materials.

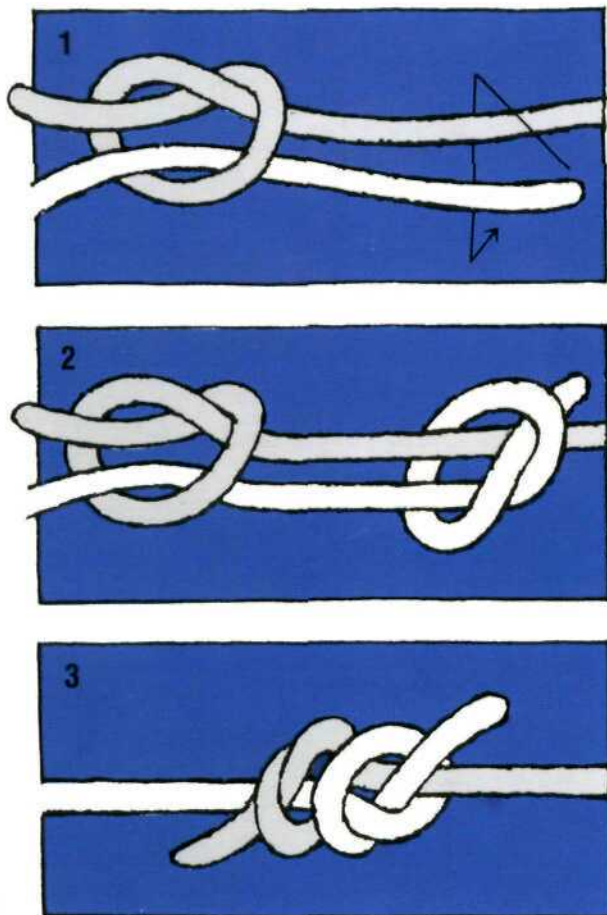
Offsetting these qualities is the fact that you already know how to tie it. As a result, I include it here for all the lightweight applications, bundle and parcel wrapping for example.

The surgeon's variation, incidentally, is the one to use when there's no one around to lend a third hand when you've got the knot half-tied on top of some box.

The Surgeon's Variation

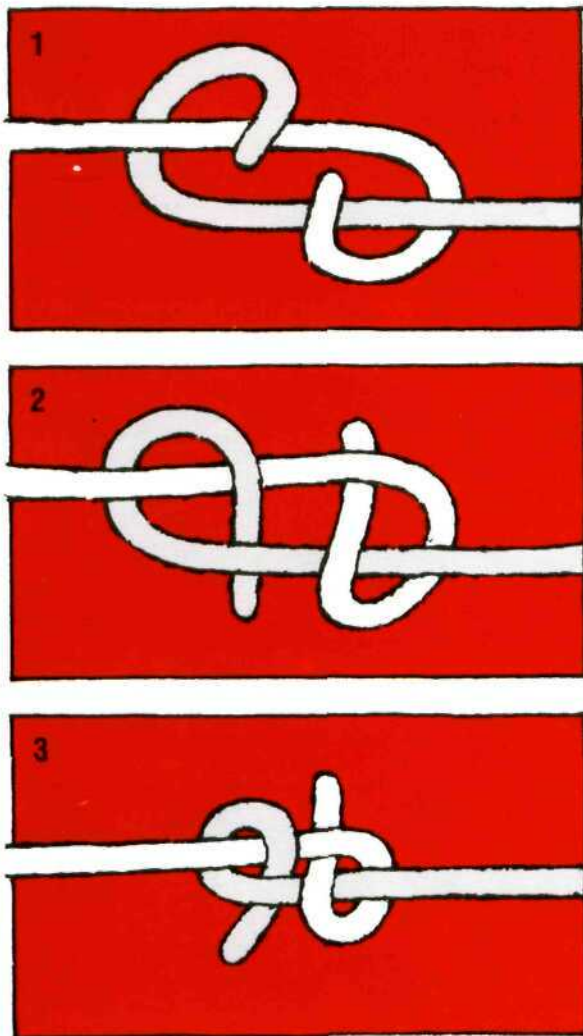


9 The Fisherman's Knot



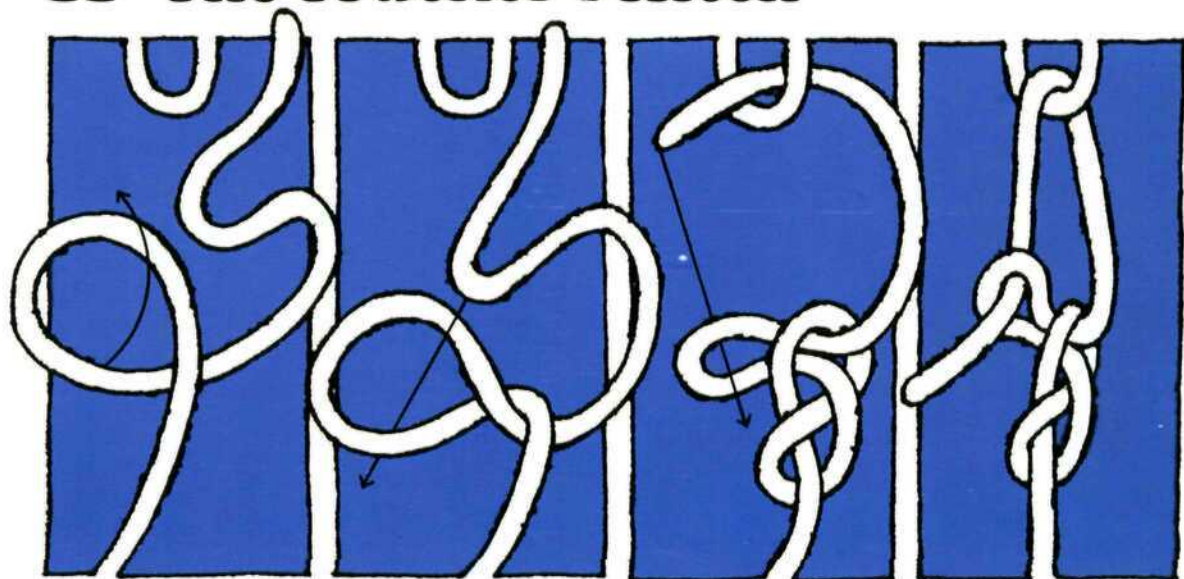
As its name suggests, the fisherman's knot is used quite frequently to join together two pieces of fishing line—to form a leader, for example. With cold or wet hands, it is far simpler to tie than the sheet bend. In larger materials it makes a strong, clean and neat looking connection. I have used it in places where it will be both visible and permanent.

10 The Grass Bend



Another specialist. Tied in rope or cord this is called the whatnot and ranks near the bottom in terms of security. But in flat semi-flexible material (seat belt webbing, leather belts, etc) it changes its character entirely. It is, in fact, the best, if not the only, useful knot for joining this kind of hard-to-knot material.

11 The Trucker's Hitch

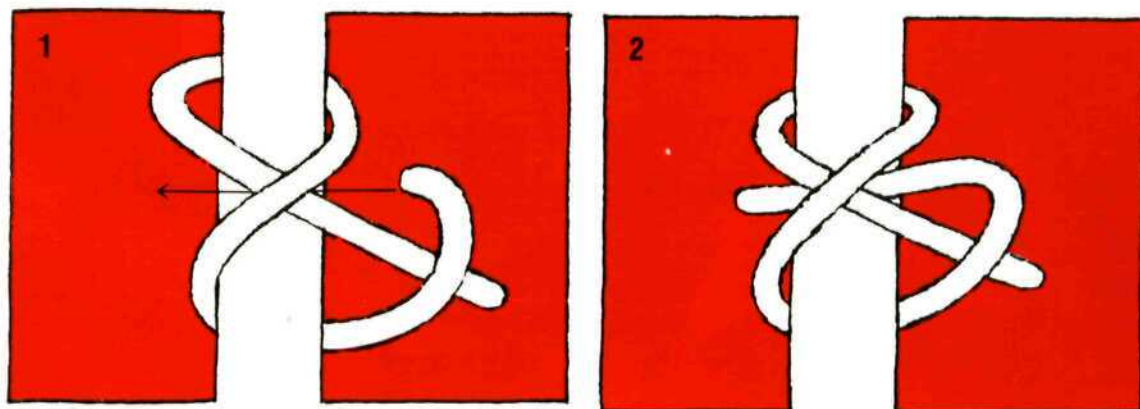


The trucker's hitch is actually a combination of knots put together in order to get some leverage on the tightening process. It is a super knot for cinching down a load. Properly tied, you can get a line guitar-strumming tight with this hitch.

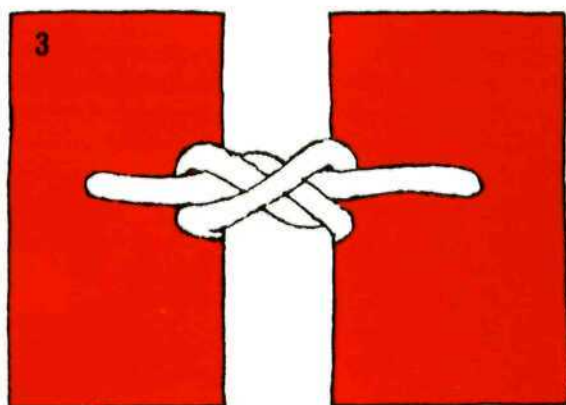
In order to practice this knot here, start with a bowline. Tie it behind the board page and insert

half of the resulting loop through the slot. The other end of the cord comes through the hole punched in the board and is threaded through the exposed part of the bowline loop. Follow the illustrations for the remainder of the process, noting that the final step is two half hitches.

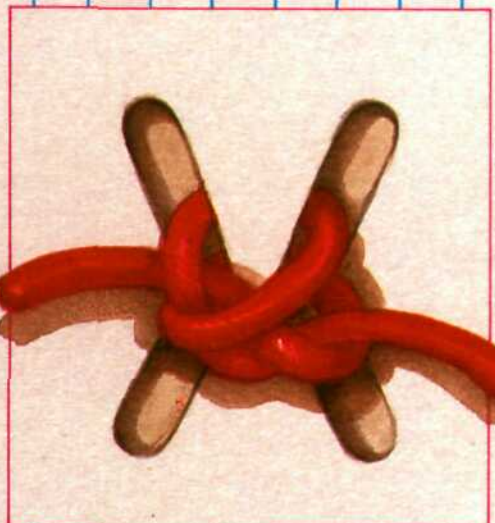
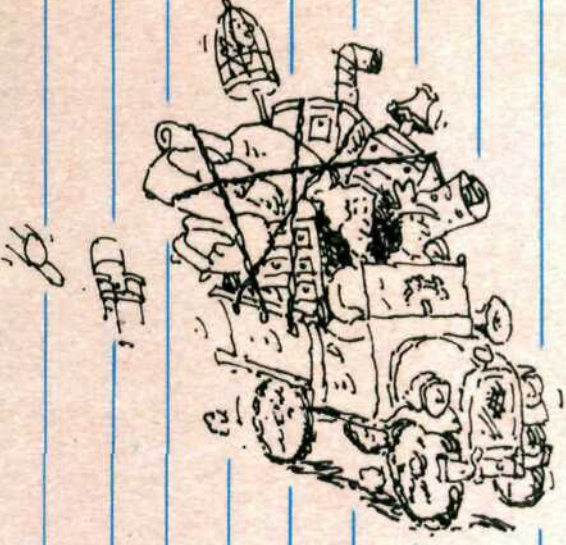
12 The Constrictor Knot



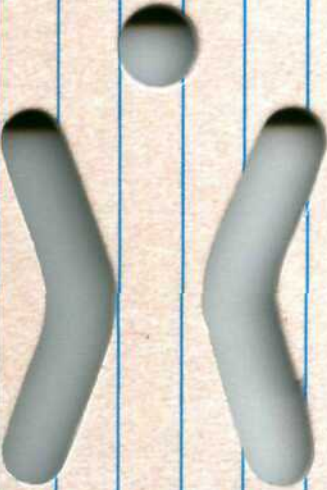
Clifford Ashley invented this arrangement of rope, making it one of the very few knots with an identifiable source. It is a supremely good knot for "seizing" bundles of loose material, or for closing the necks of bags. I've used it in a lot of places as a substitute for tape to bundle things up. Simple to tie, it will not work loose, possessing a ratchet-like bulldog grip. As a result of these fine qualities though, it's best untied with a sharp knife.



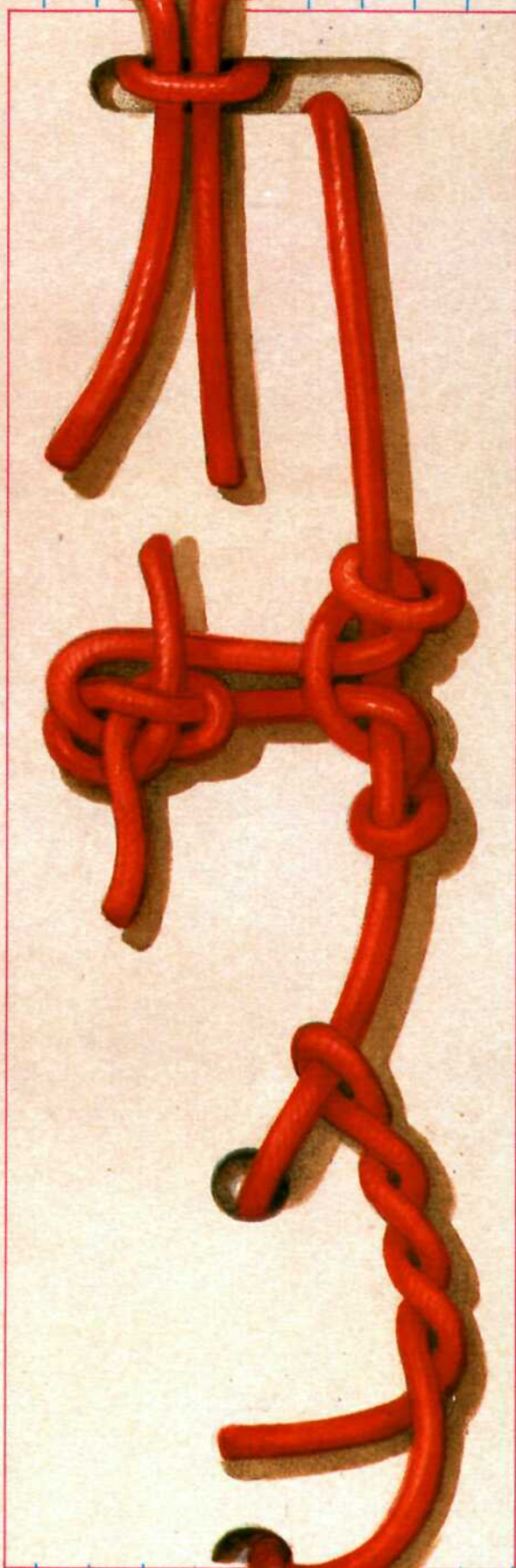
Trucker's Hitch, finished



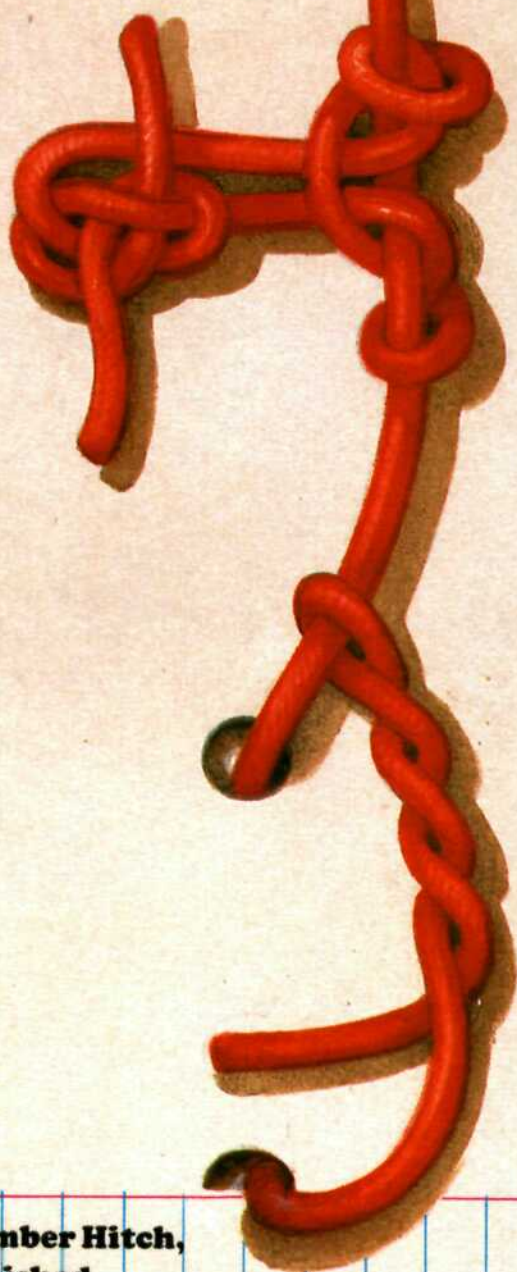
Constrictor Knot, finished



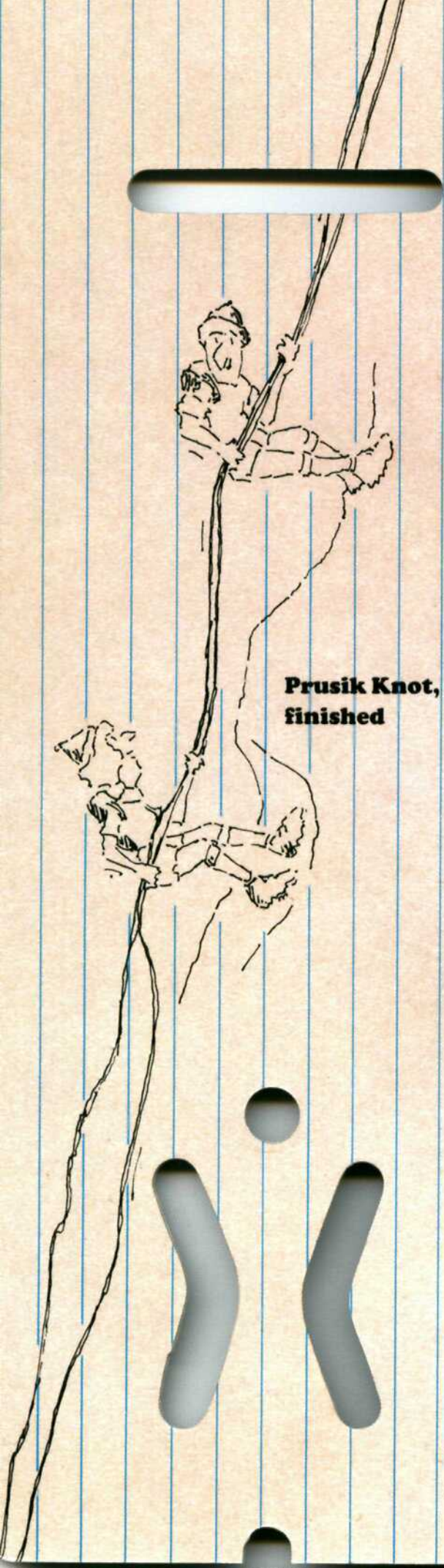
Ring Knot, finished



Prusik Knot, finished



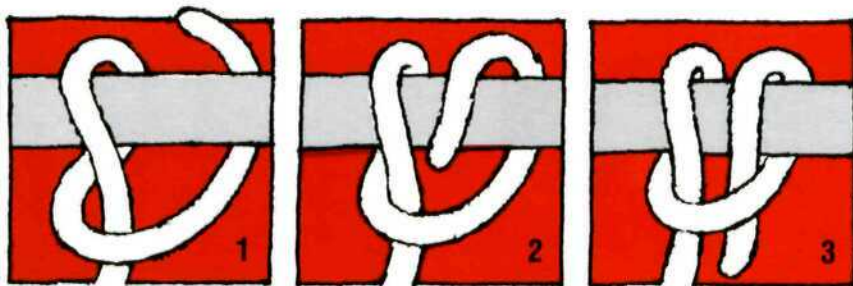
Timber Hitch, finished



13

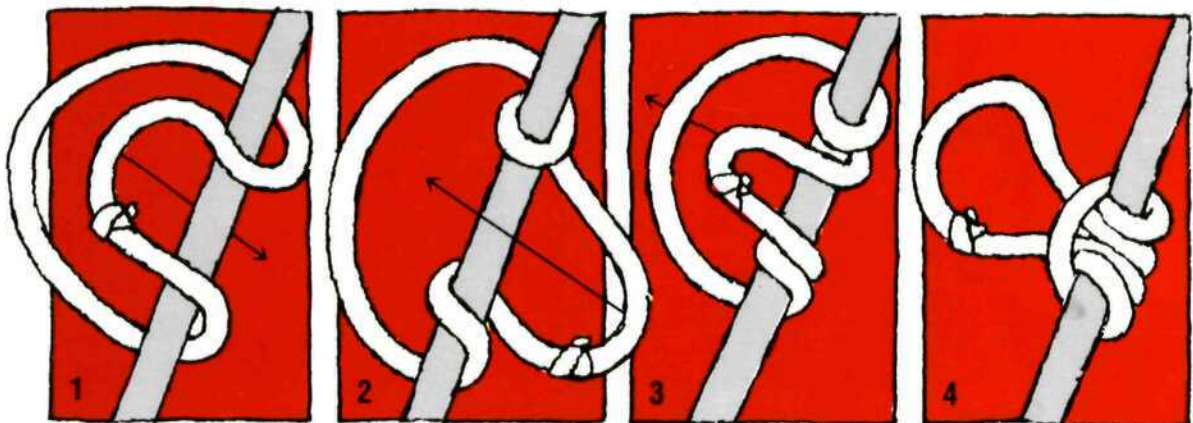
The Ring Knot

Probably most familiar as the knot you use with a rubber band, the ring knot is the ultimate in security when you're dealing with a closed loop, but it's also used occasionally with a loose end, as it is illustrated here.



14

The Prusik Knot



This is a climber's knot, and you'll probably never need it. But on the other hand, if you're ever faced with a vertical rope that you have to climb, the prusik could be a potential lifesaver.

Start with two short pieces of cord, of smaller diameter than the rope you're intending to climb. These will be your "footholds."

Make the two cords into two loops with single

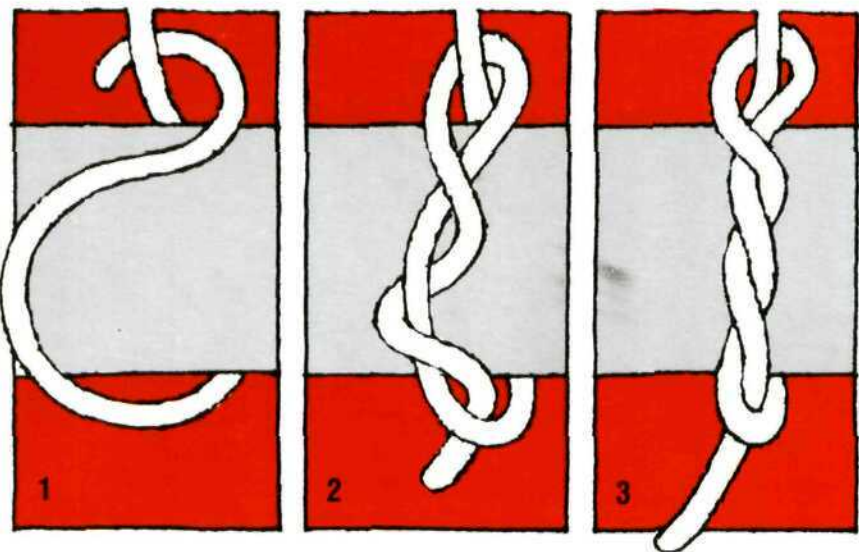
sheet bends, as per the illustration. (Or, even better, use the doubled variation.) Take one of the loops and tie what amounts to a twice-through ring knot around the vertical rope (see the illustration). Do the same with the

second loop. If the cord you've tied the prusik in has a smaller diameter than the rope you'll be climbing on, you'll be able to slide this foothold up, step in it, and not have to worry about it sliding back down.

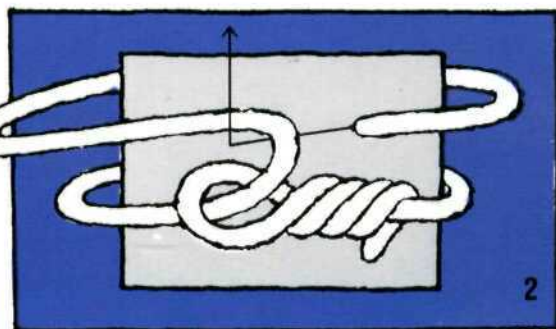
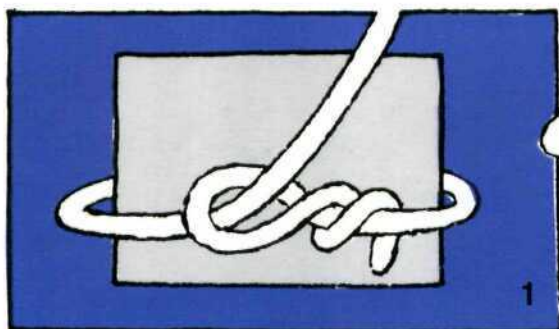
15

The Timber Hitch

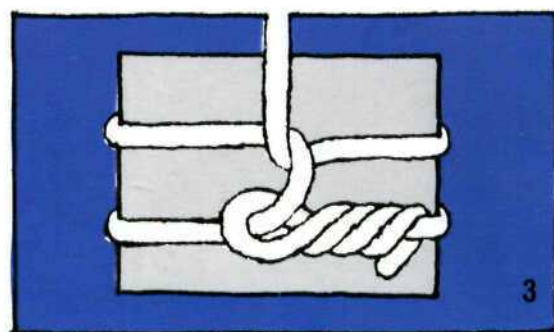
Deceptively secure if you tie it around a rough surface, the timber hitch is childishly easy to tie and never-faillingly simple to undo. It's particularly appropriate if the rope is going to be under a constant strain. On the other hand, don't use it when security is a high priority, or when the direction of the pull is liable to jump around.



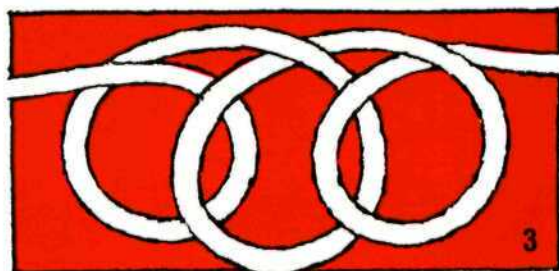
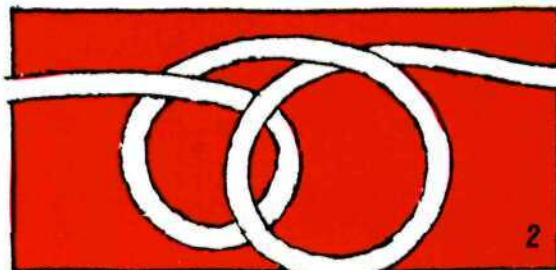
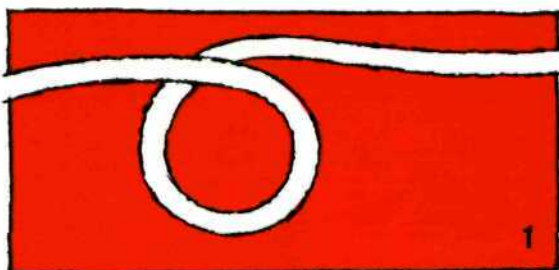
16 The Killeg Hitch



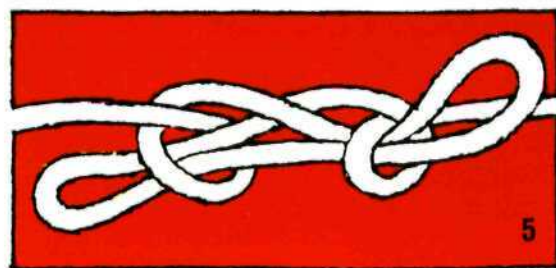
Actually just an application of the timber hitch, the killeg is designed for big messy bundles or odd shapes—a rock for example, or a duffel of some kind. The killeg is the universal tie-on, adaptable to most any shape.



17 The Sheep Shank



A knot designed to solve the problem of too much rope, the sheepshank will take up slack and hold it, *as long as there's a strain on the rope*. When the job is over, you can shake it out with a couple of flips.



18 The Rolling Hitch

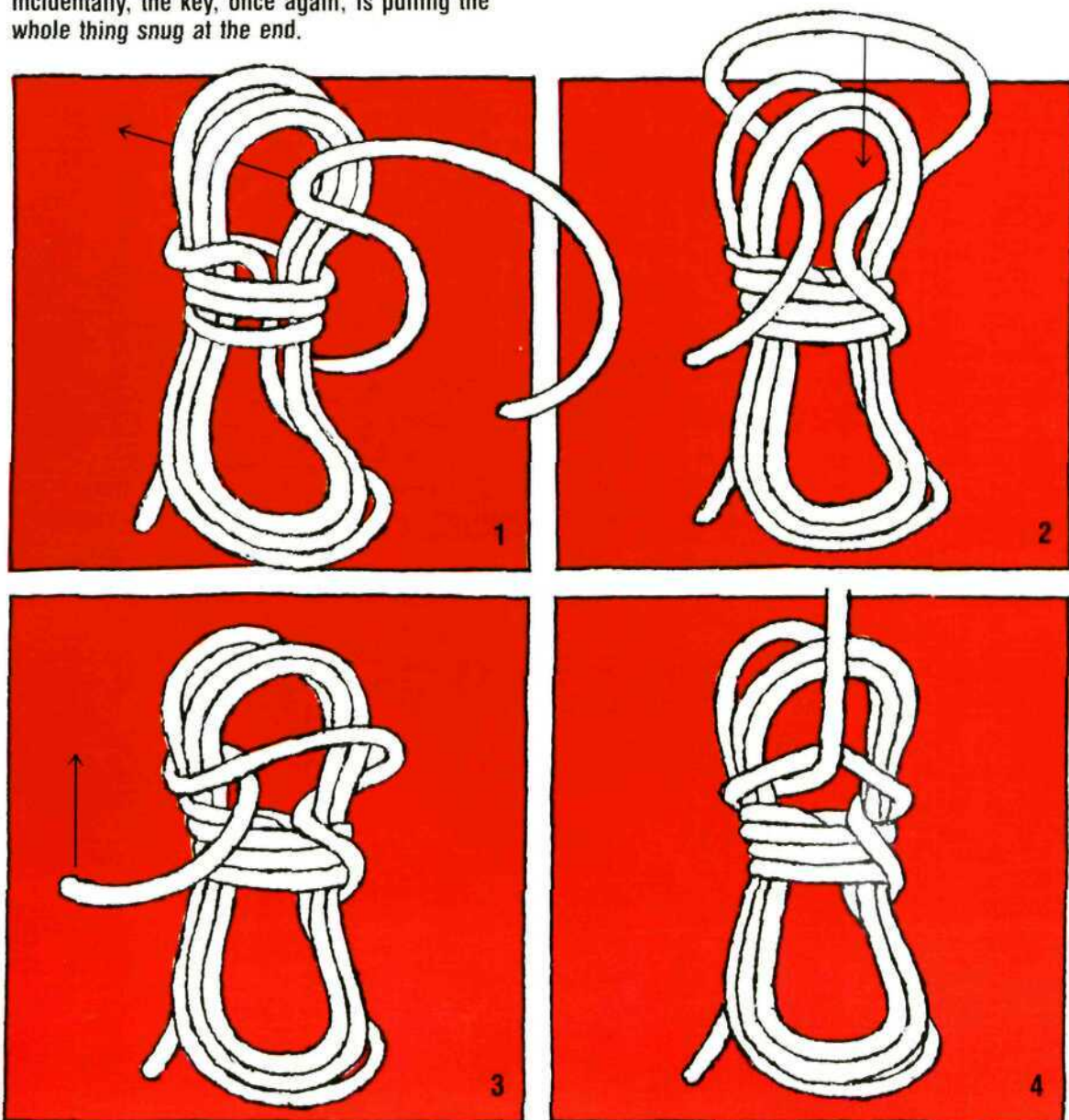
A near cousin to the tautline hitch, the rolling hitch is about the best knot for staying put on a pole when the pull on it is lengthwise, up or downwards. It's also the knot of choice when you're tying one rope to the *middle* of another.



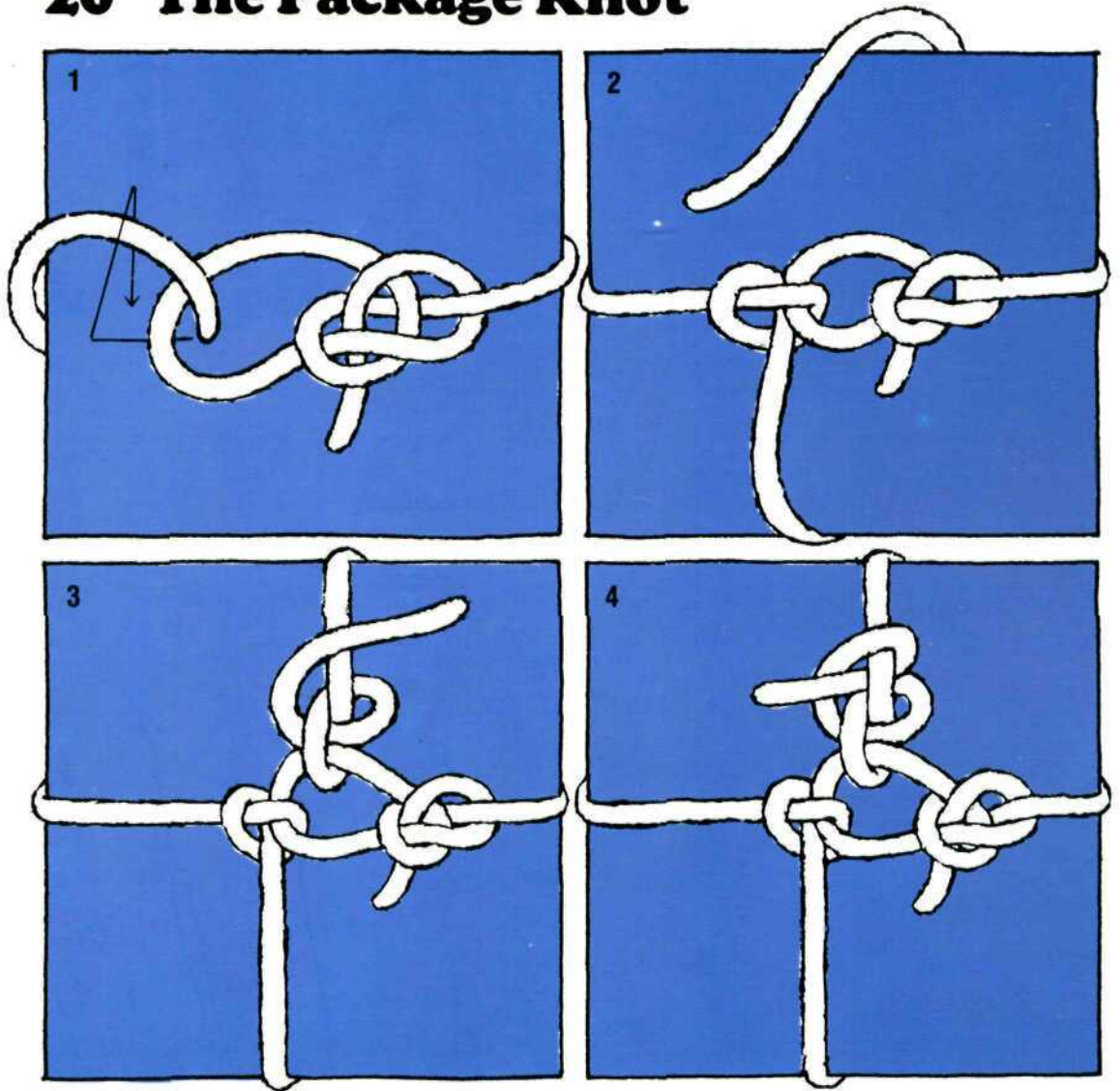
19 The Coil

Not really a knot, but a way to keep and arrange rope so it stays tangle-free. It's simple to form, keeps the rope neat, and comes undone in a second when you need it.

Incidentally, the key, once again, is pulling the *whole thing snug at the end*.



20 The Package Knot

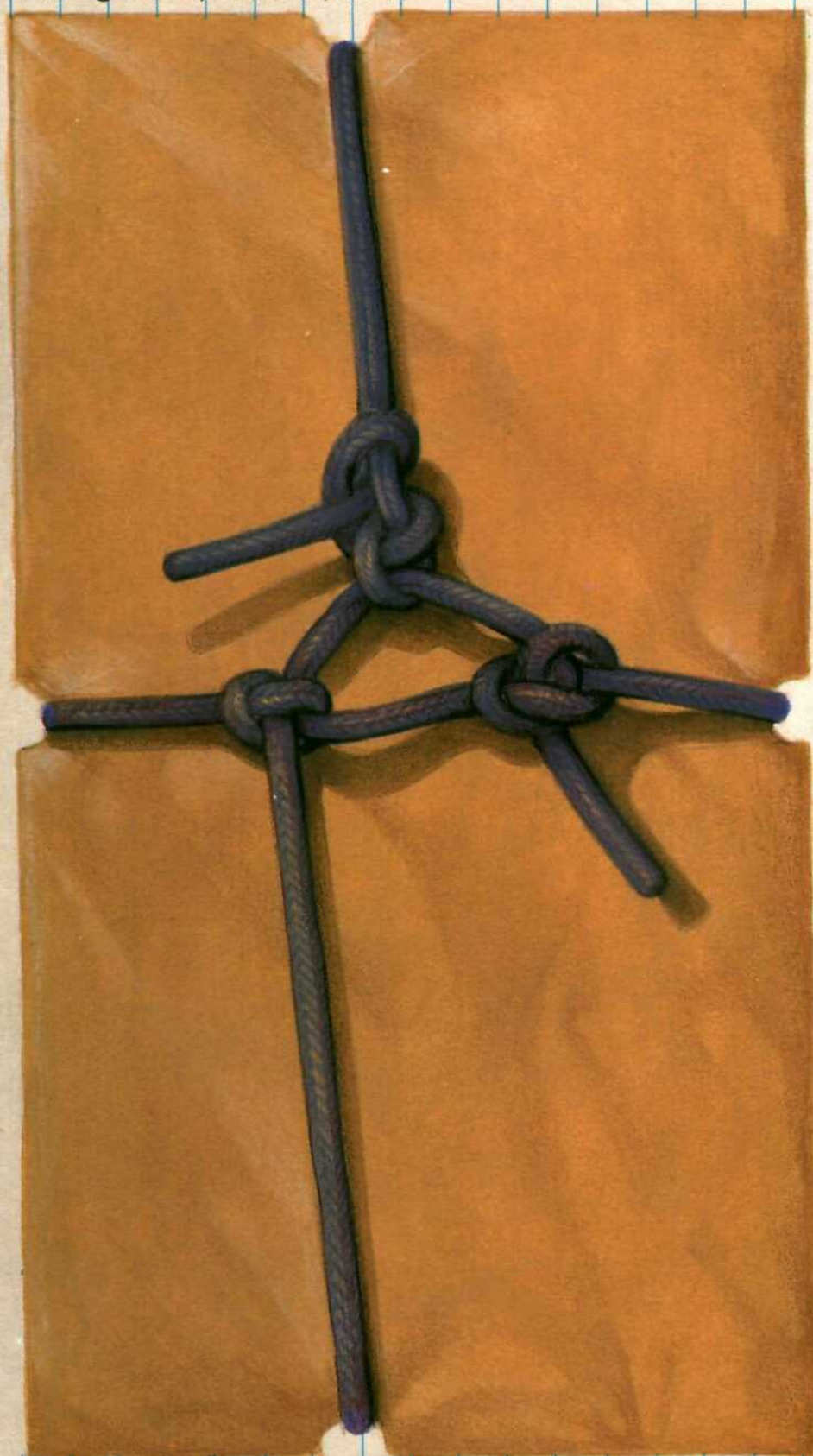


The department-store-certified system—a neat, no-slip combination of knots.

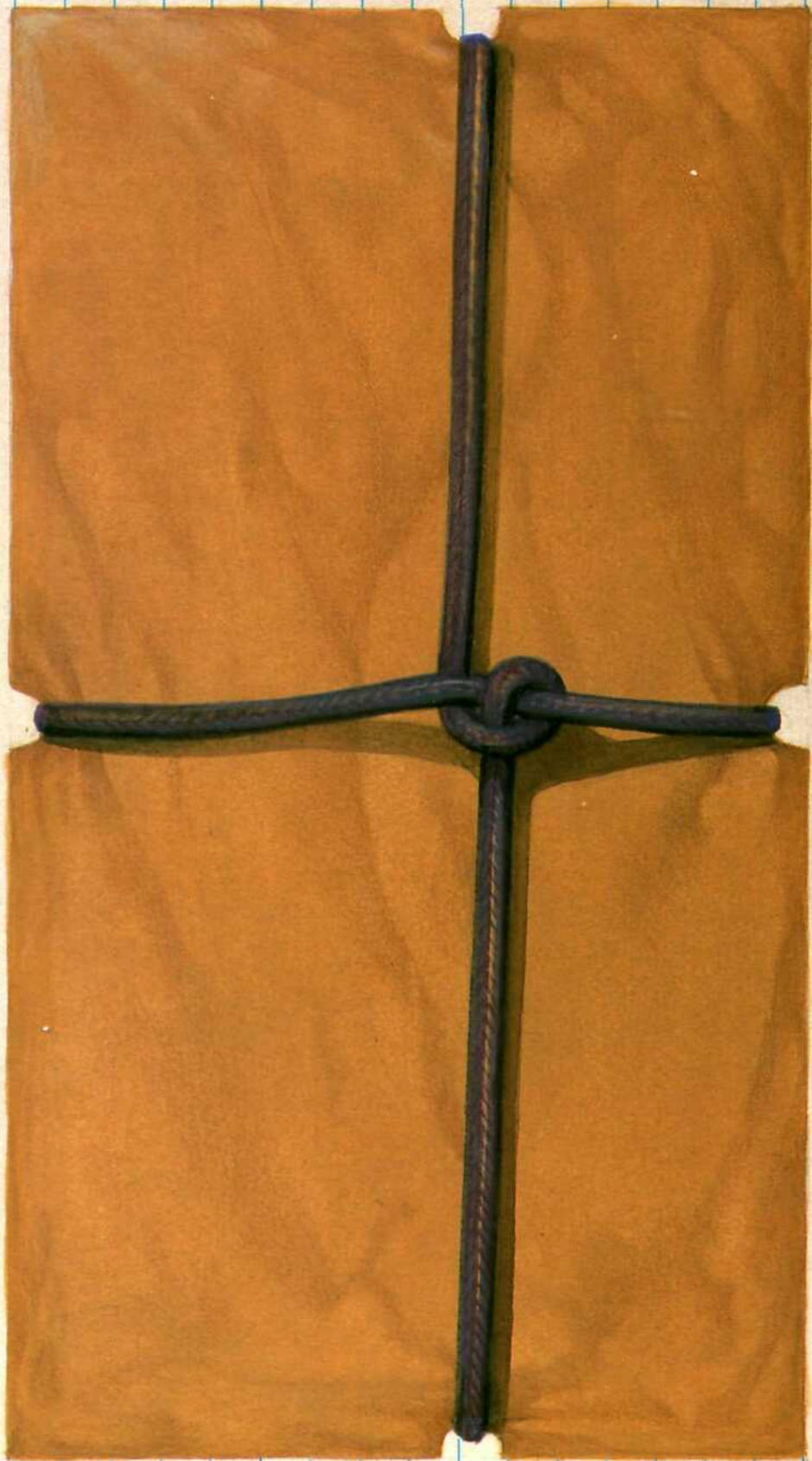
Start with a bowline and wrap the cord around the page as the illustration indicates. On the backside of the page, cross the cords as illustrated. It'll keep everything from sliding off the corners. Finish up with the basic two half hitches.



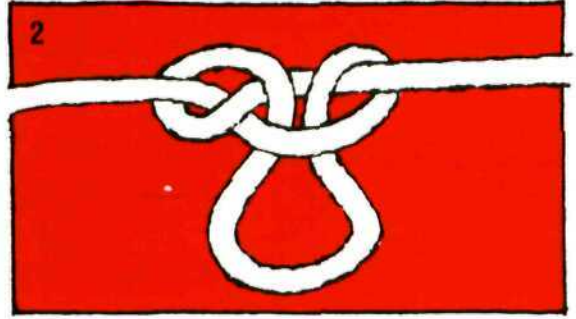
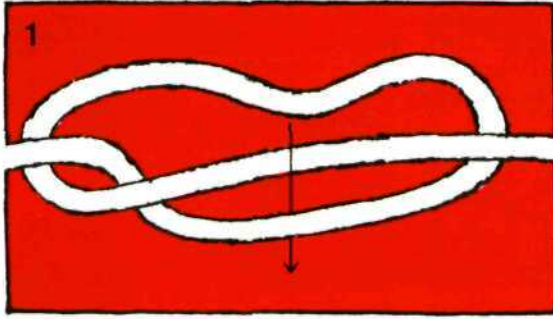
Package Knot, finished, front



Package Knot, finished, back



21 The Harness Loop



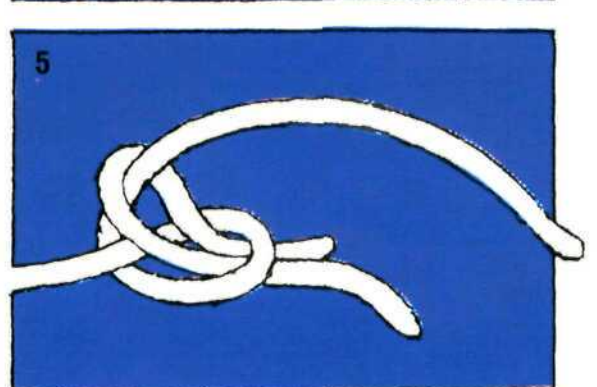
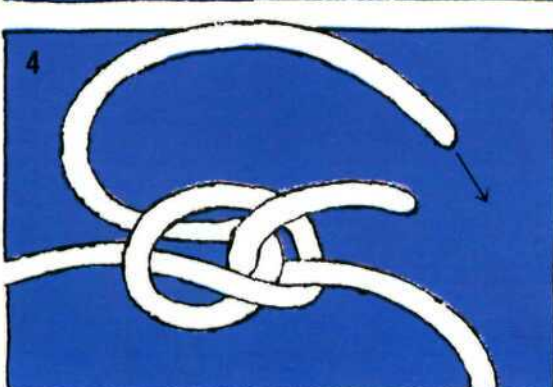
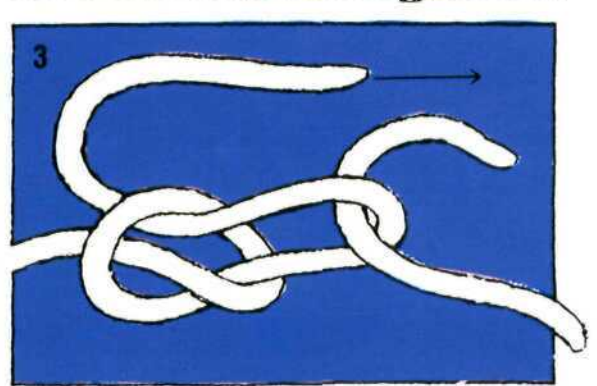
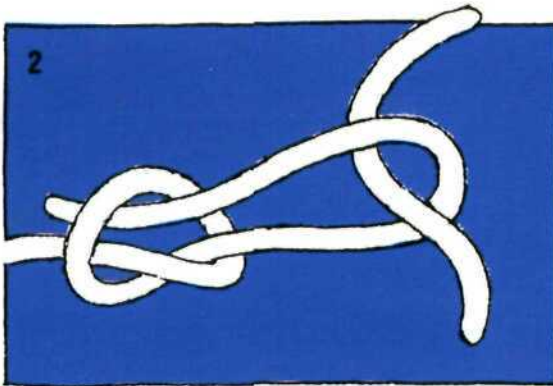
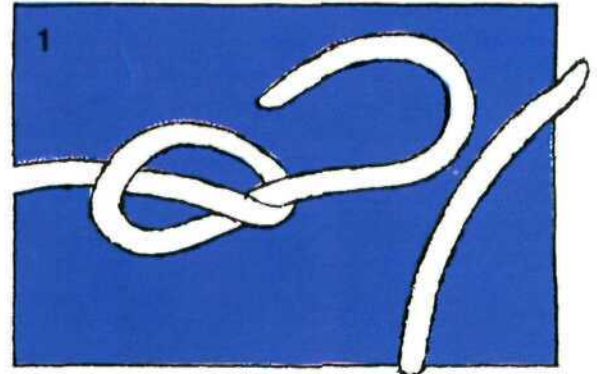
A simple little knot for putting a loop in the middle of a rope when you can't use the ends. Ashley states that the knot was originally used in

hauling field artillery into place. Sounds exciting. Personally, I use it the most when tying things onto the top of my car.

22 The Short End Sheet Bend

A sub-specialist in the field of broken shoe laces, the short end sheet bend is the knot to use when one of the lace ends is so irritatingly short that you can barely get a hold of it.

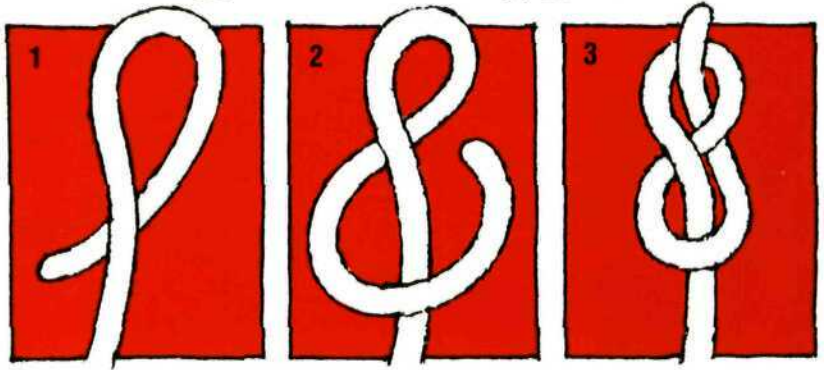
The only real trick to this is the last step, pulling it all together. You have to work it a bit slowly here, keeping an eye on where the whole thing is supposed to be heading. Note, too, that the final product is the familiar sheet bend—you've just taken an alternative route in getting there.



23

The Figure 8 Stopper

Stopper knots are nothing more than lumps in the rope, designed to mark a spot, or to keep the rope from slipping through some kind of tight spot. The simplest is the overhand knot, described on page 2, but just about as simple, and easier to untie after having been really tightened, is the Figure 8 stopper.



24 The Incredible Magic Loop

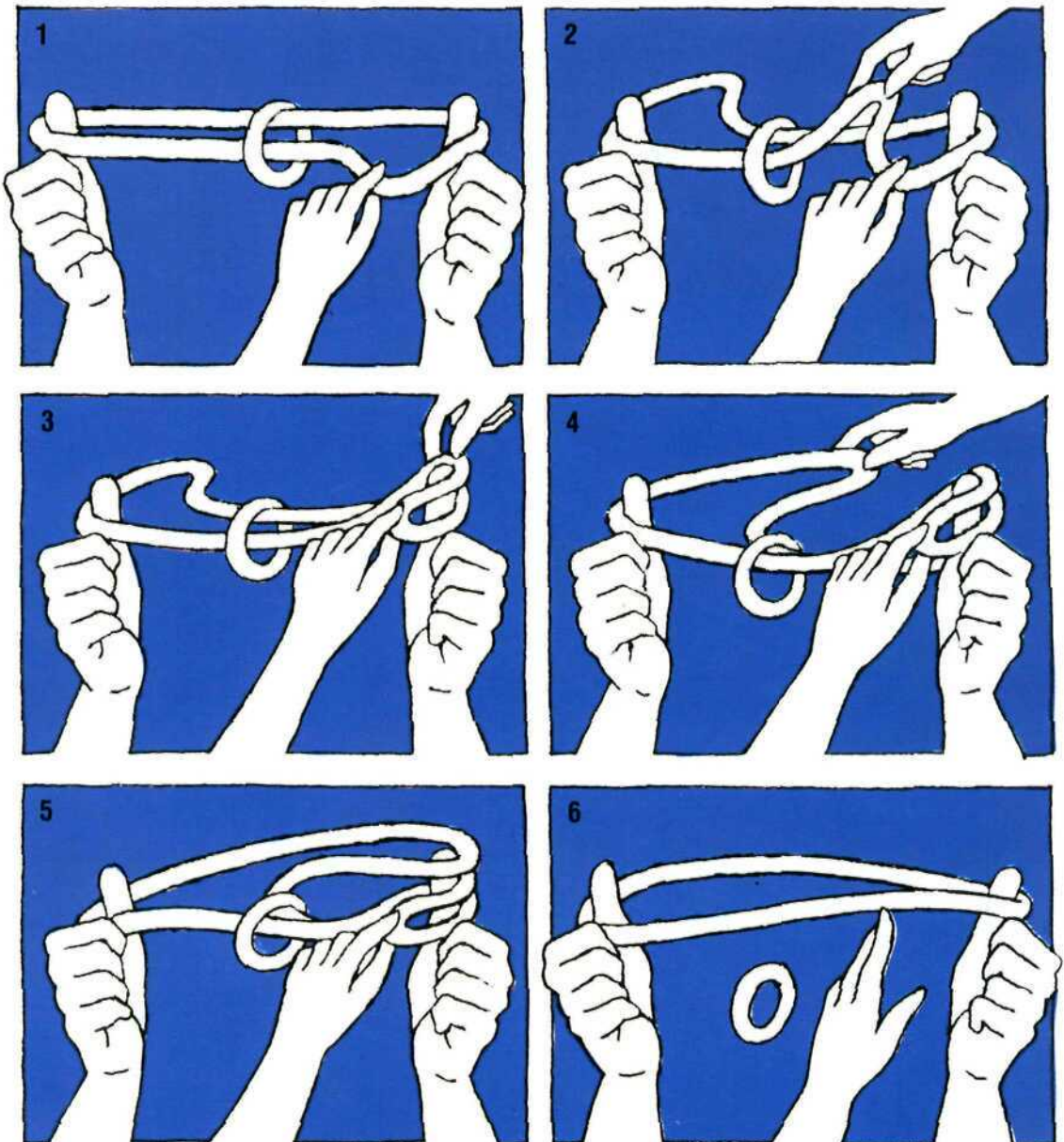
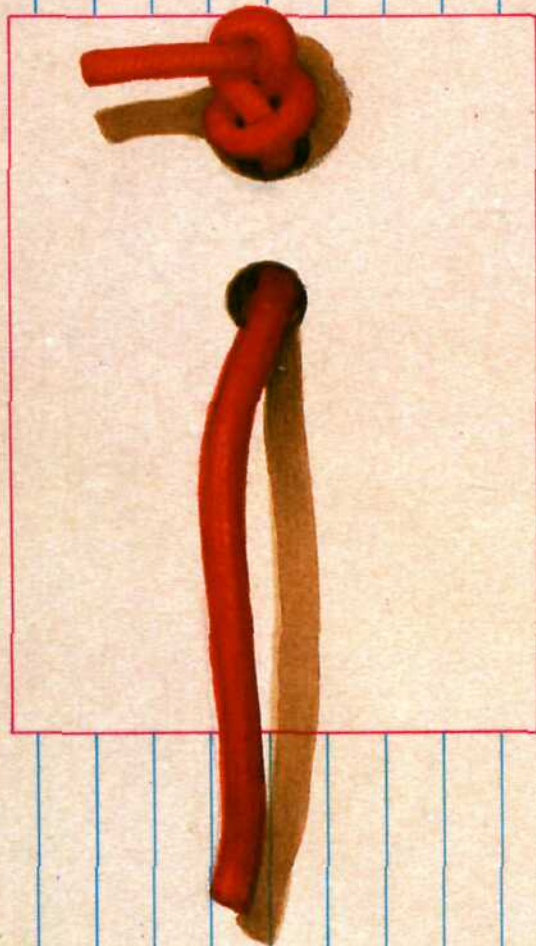


Figure 8 Stopper, finished



The Incredible Magic Loop

A certifiably great rope trick. Easy to do, but satisfyingly mysterious.

Knot together a big loop of cord, pass it through the hole in the back cover and hook it over the thumbs of your volunteer. Smile.

With your right hand, pinch the cord at a point between the book and his left thumb. Pull the cord toward you and hold it. Then with your left hand, pinch it again, this time at a point between your right hand and the book. Pass the cord over the poor fool's left thumb, never letting go of the cord you're still holding in your right hand. Release with your left.

Then, without a great deal of delay, pinch the cord with your left hand again—but this time on the other side of the book, between it and his right hand (it doesn't matter which cord, as long as it's on the other side of the book). Take this and pass it over his left thumb again. He'll have to move his hands in a bit as you make these maneuverings, since you'll be shortening the loop quite a bit.



Then stand back and regard him smugly. You're still holding on with your right hand to the little loop you started with. Release this and ask him to spread his hands. The book will drop off.

Smile again.

And remember, a good magician *never* repeats a trick.

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to knot-tying,
are you
missing
the boat?



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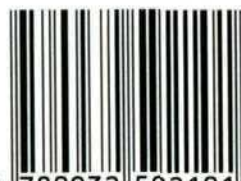
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