Peggy Osterkamp's New Guide to Weaving **1**

Free Chapter 10
"Using a Paddle"

Winding a Warp & Using a Paddle

Peggy Osterkamp
with Carol Hillestad

THIRD EDITION

A guide that makes weaving fun with new techniques from European handweavers and the textile industry

Dedicated to

Jim Ahrens
1906–2000

Also by Peggy Osterkamp

Peggy Osterkamp's New Guide to Weaving, Book #2: Warping Your Loom & Tying On New Warps

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10 *Using a Paddle*

For many weavers, "paddle" is a mysterious word. Perhaps they've tried and never quite figured out how to make it work. It may have seemed awkward, confusing—but always seductive. How liberating to be able to warp multiple ends at once! But keeping one thread organized and moving freely onto the warping board or reel can be a challenge—how much more dexterity it must take to manage four or six or a dozen!

But that is exactly the advantage of using a paddle. The paddle lets you measure many threads with every pass up and down the board or reel. Becoming proficient with the paddle need not take any special dexterity—in fact, its use has developed precisely because it acts as an extension of your own hand.

Which type of paddle you choose depends upon what feels the most comfortable for you. You can choose the slot and hole style in Figure 104, a homemade one like Figure 105, or the all holes type in Figure 106. You can choose to use your paddle as a stationary paddle or carry it around the warping board or reel while warping. The types of paddles are briefly described in the equipment chapter beginning on page 14, and in separate chapters that follow.

Perhaps you've experimented with faster measuring yourself. Like other weavers, maybe you thought that if you could measure one thread at a time, why not carry two threads at a time? Separating the two threads between your fingers and placing them separately to form the lease, you may have found that this worked pretty well.

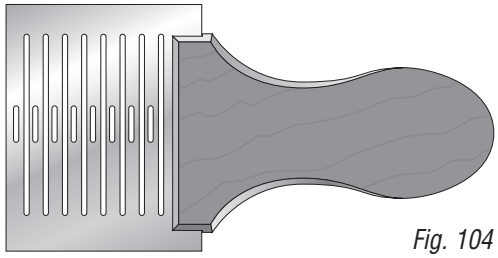

Fig. 104

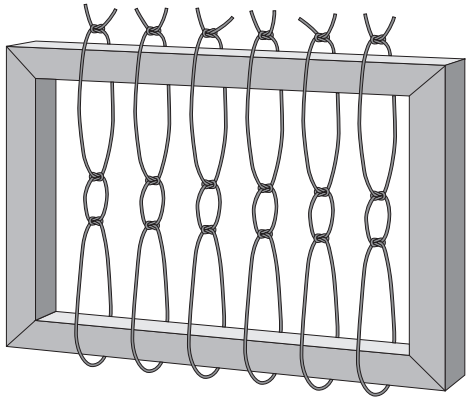

Fig. 105

Then maybe on the next warp you decided to carry the experiment a step further and tried carrying four ends at a time with four ends going along together in the lease rather than thread-by-thread. Even that may have worked for you—if you were lucky and it was not a long, wide, or complex warp. Remember that we're especially concerned here with those ticklish warps, and the methods that will work for them will work for any warp.

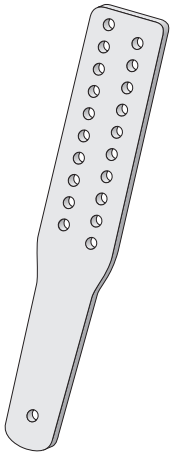

Fig. 106

☞ Why use a paddle?

Carrying three, four, or more threads without making a thread-by-thread lease can lead to problems. Here's why. No matter how you twist and turn two threads as you carry them back and forth or round and round, two threads can always be easily separated —they can only be joined in a spiral, like two-ply yarn, which you may know from experience can be separated easily. Three, four, or more ends are a different story. More than two ends will inevitably braid up on each other, as you know all too well if you have ever tried knitting with three or more colors. By the end of a row, you have a tangle of yarns to untwine.

The same principle applies to your passes at the warping board or reel. The paddle gives you a tool that keeps the yarns separated, in order, under uniform tension—and untangled. It also gives you an easy way to pick a thread-by-thread figure eight where you need it at the threading lease, while allowing you easily to make a group lease at the raddle lease.

Limits of the paddle

It is possible to paddle 20 or more ends at a time. But like any tool, the value of a paddle has limits:

1. You need a separate yarn package for every separate end. You can see that this puts a limit on the time-savings of the paddle—winding 20-spools could well take you more time than you'd save.

To ensure equal tension, these packages should be of the same weight and of the same type. So try not to use a four-pound cone, a three-pound cone, a 10-ounce ball, and a 10-ounce spool. Use all cones, all balls, or all spools and, if possible, wind them so that each package weighs the same amount—with enough yardage to measure out the whole warp.

If you must use a variety of packages, you need to put a bit of drag on all of them, just enough to equalize the tension. A tension box will do the trick, or you can weave the threads through the back of a chair.

2. There is a practical number of threads to use in your paddle.

- You can use the number of threads that will go in each raddle section. This is what I try for and recommend.
- If you'd rather carry more threads than are in one raddle group, you can use a multiple of that number. Just be sure to leave a section of the paddle unthreaded in between the groups so you can easily distinguish one raddle group from the other and keep them separate when you're making the raddle leases.
- You can use half as many threads as will go in each raddle section—you might want to do this if you don't have enough yarn packages for a whole group.

If you dress the loom from front to back and don't use a raddle, there is no limit to the number of ends you can paddle—but remember you'll need a separate yarn package for each end.

3. Your warp's design is a consideration. If your warp design calls for many color changes, it might not be practical to use a paddle because you would be stopping to change the colors in it so often.

Getting Started

☞ Read about warping with one thread at a time for basic information in Chapters 4 through 9 which apply to all warping. Here are things you need to do in addition, regardless of which paddle style you use or how you dress your loom. Using each style is explained in separate chapters, beginning on page 67.

How many threads is a paddleful?

Remember that the number of warps in a raddle space is the number of threads you put in the raddle or group lease on the warping board or reel? If you're using a paddle, you can paddle a raddle group of threads at a time, and "cross" the raddle lease on every pass. See Figure 107. In other words, the number of ends in raddle lease groups will affect the number of ends it's efficient to paddle. Usually I want the number of warps in a raddle group to be the number of threads in my paddle. When I see how many threads will be in a raddle group, I know that's the number of cones of yarn I want to use in the paddle. It may be more practical to use part of a raddle group in the paddle, however. With raddle lease groups of 10, you could paddle 2, or 5, or 10 ends at a time. With groups of 8, you could paddle 2, or 4, or 8 ends at a time.

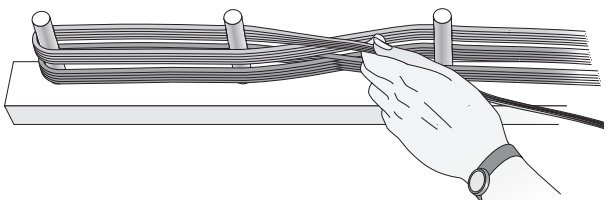

Fig. 107

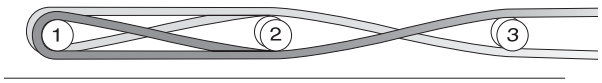

Fig. 108

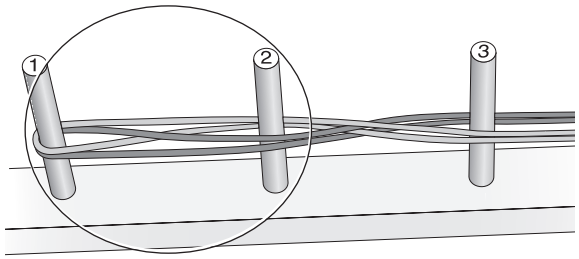

Fig. 109

The leases

When you're warping with multiple threads you need to be sure you have the correct number of pegs for the leases. A false lease will form at the thread-by-thread lease. For this reason, *you must use 3 pegs at the thread-by-thread lease end on the warping board or reel.* See Figures 108 and 109. (If your paddle has the same number of threads in it as are in a raddle group, you need only 2 pegs at the raddle lease end of the warping board or reel. See Figure-110.) See Chapter 4, Your Warp's Path, beginning on page 29, for more detailed information on the leases and pegs needed. You don't need to worry about having enough pegs if you always use 4 pegs at each end of the warp, or "hook" the warp over the boards with the pegs on a reel. All this is discussed in Chapter 4.

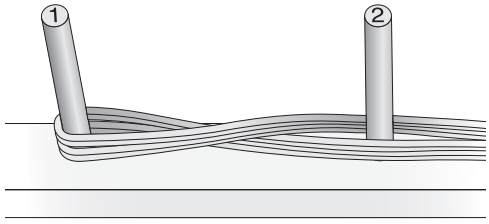

Fig. 110

At the first peg

To start when you're warping multiple ends with a paddle, tie all the ends together in one overhand knot and hook the bundle over the first peg, with half the ends above and half below. See Figure 111.

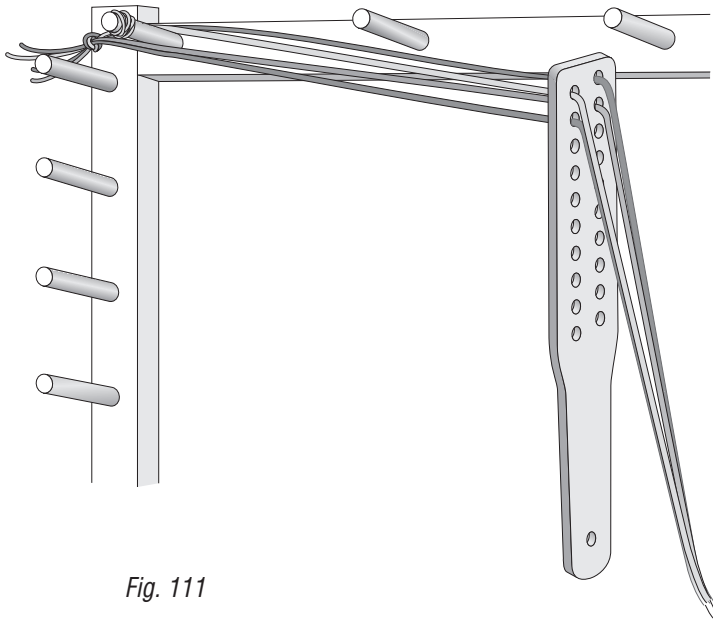

Fig. 111

Keeping tension and ends even

All the packages of your yarns (spool, balls, cones) should be the same type and the same size to keep all the threads under equal tension. If you must use a variety of types and sizes of yarn packages, put the yarns through a tension box to even out the tension. Read about this is the Equipment chapter, on page 13.

As you measure the threads, be conscious of their tension. Even tension, but not a lot of tension, is what you're after. The guide eyes on the creel and the holes in a paddle or heck block provide a slight resistance as the threads feed through them. So these devices do more than keep the threads in order, they also help to maintain even tension. One fairly accurate check for tension, if you're using a spool rack or a paddle, is to pull the group of yarns forward gently to test the "feel" of the even tension, then relax your pull. Do the threads sag evenly? If they drape evenly, the tension is also even.

You can easily see if one end has less tension on it when you're warping multiple ends. It sags below its neighbors and often loops and snags them. You should add resistance to a sagging end's package (or you'll struggle with it throughout warping and, later, weaving). Adding resistance can be as simple as slipping that spool of yarn into a plastic bag or oatmeal box and punching a hole for the yarn to exit. Rubbing against the opening will create more friction on that one end. Other ways to add resistance: stretch a cat's cradle of string between the yarn package and the

paddle and make that end go over and under the strings to add friction, or thread that end through enough spindles of a chair back to even out the tension, or over and under an extra wire on a spool rack.

Keep tension even. Don't wind your warp tightly. Even tension, but not very much tension, is the goal. Winding tightly will almost certainly cause your pegs to bend in, and even a nearly imperceptible bending means each successive warp end will be ever-so-slightly shorter. A reel can bend in the middle if you put too much tension on it.

Keeping the warp ends near the base of the pegs on the warping board helps prevent bending. Don't over-fill your warping board or reel. Before that happens, tie off the leases, remove that section from the board, and start the next section. Later you'll put the sections together to make the full width.

On a warping reel, as you measure, you must start and stop the reel slowly if you're using a horizontal creel to hold your yarn packages. If you jerk to start or stop, the spools will overspin, then spin backward on themselves, and create another jerk when the spool reverses direction again.

On a warping board you must be careful to keep successive ends from overlapping. Overlapped ends would turn out to be different lengths, so I always measure right on the wood of the peg and keep pushing the threads back on all the pegs as I go along. Just like in warping with one thread at a time, never let the warp accumulate more than about one and one-half inches from the base of the peg.

Broken threads

Keep a careful eye on the ends to be sure that all are travelling from the spools or cones and that none are broken or missing. If an end breaks or a spool runs out without your noticing it, pull off a bunch of the yarn from the new spool and tuck it under a few of your already-measured threads. With this reserve held in place, when you find the broken end during beaming, you'll have a supply of the yarn there ready to tie in.

Spiral problems

If you discover a mistake in warping such as doubled or skipped spirals, the best choice is to cut off the warps at the paddle or heck block and throw away the wrongly-warped ends. It is possible to save the warp, but you'll have to spend a lot of time untangling threads and you may have tension problems later if all the packages aren't re-wound under even tension.

Changing yarns

To change colors or start a new package of yarn, try always to tie the knots at the threading lease end, not at the raddle end. Knots at the raddle end would mean knots on the warp beam later on—a bad idea when your goal is to keep everything smooth and under equal tension. However, it is sometims necessary (for example when there is an uneven number of threads of a color) to knot threads at the raddle end. Don't tie the new thread to the peg directly. Instead, tie it to the thread it's replacing, making the knot as smooth and small as possible. Or if you're tying off several

threads, cut them all, and knot them against the end peg with half the threads on each side of the peg as in Figure 111. Begin the new group of threads as before with all the threads in a knot and half the threads above, half below the end peg as in Figure 111.

What to do about knots

In most situations, you should just accept knots that you discover in threads when you're using the paddle. It's just too difficult to go back to the beginning or ending of a path with just one thread. It's far easier to mend them later, rather than now. But if you must eliminate knots, it's better to cut off all the threads, knot them at the threading end, and start fresh where you left off.

What if a spool runs out?

Be very, very careful not to let spools run out. If you do run out or find that a thread has broken and is no longer in the paddle, you can either cut away the warp back to a point where you had all your threads, or you can pull a few yards of the "lost" or new thread from its spool, wind them into a bundle, then tuck them under the warp on the reel. When you find the lost end later in beaming, you can repair it by knotting it to this extra yardage.

How paddles work

Read how each paddle is used in the following chapters. Chapter 11 explains how to use a slot and hole paddle—both as a "stationary paddle" and as a "carry-around paddle." Using the all holes paddle is described in Chapter 12.

The tension box

A tension box between the creel and the paddle can even out the tension of yarns. Use it for a mixed warp, when by their nature the yarns behave very differently, or when different types or sizes of yarn packages are necessary. If you don't get enough tension using all the rods on the box, you can spiral the threads around one peg twice for extra tension. If you don't have a tension box, run the threads in and out of a spool rack, ladder back chair or reed to get the threads all under the same tension.

Some yarns, particularly metallics and some rayons, unwind extra fast. Especially in a mixed warp, you'll need to slow these yarns down. A good way to do this is to weave the yarn under and over several bars on the creel. This puts more drag on these threads and slows the spools down.

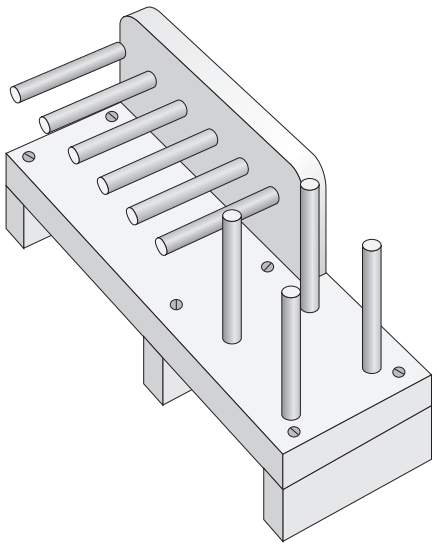

Fig. 22 - Tension box

Paddles

The paddle lets you measure many warp ends at one time. You can use either a warping board or a warping reel, and it doesn't matter whether you dress your loom from back to front or front to back—each pass with the paddle measures out two, or three, or more ends. The time savings can be significant, making the paddle an excellent tool for efficient weaving.

It is most useful when you have few color changes in your warp or for plaids or color and weave effect warps, such as houndstooth or log cabin, where a full repeat or half repeat of the warp colors can be threaded in the paddle at once. Sometimes it might be more efficient to paddle one warp for each color and then mix the warps in the raddle or reed. Or, each color (or color sequence) could be kept threaded in its own paddle, and the paddles changed as the color changes are required.

The paddle gives you a tool that keeps the yarns separated, in order, under uniform tension—and untangled. It also gives you an easy way to make a thread-by-thread figure eight where you need it at the threading lease, while allowing you easily to make a group lease for the raddle.

☞ Carrying three, four, or more threads without making a thread-by-thread lease can lead to problems. Here's why. No matter how you twist and turn two threads as you

carry them back and forth or round and round, two threads can always be easily separated—they can only be joined in a spiral, like two-ply yarn, which you know from experience can be separated easily. Three, four, or more ends are a different story.

More than two ends will inevitably braid up on each other, as you know all too well if you have ever tried knitting with three or more colors. By the end of a row, you have a tangle of yarns to untwine.

Slot and hole paddle

This type of paddle is also called a "rigid heddle paddle." It can be used clamped to a surface as a stationary paddle or it can be carried in your hand while warping. Using them is described in Chapter 11.

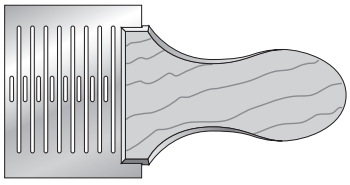

Fig. 23 - Slot and hole paddle

They are available with or without a handle. The handle is only needed when you carry the paddle while warping.

All holes paddle

This is a simple paddle with holes. Ideally the columns of holes are staggered. If they're not staggered on the paddle you have, put a dot over one of the top holes to represent the highest hole. Put another dot below the bottom hole in the other column to represent the lowest hole. See the sidebar, "How to make a substitute paddle" below.

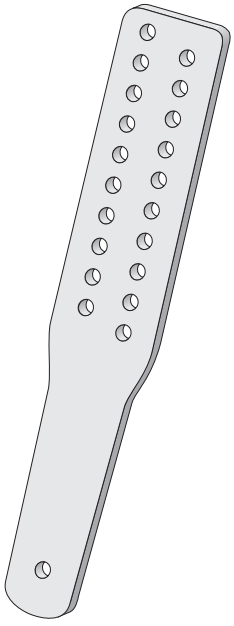

Fig. 24 - All holes paddle

How to make a substitute paddle

If your weaving store doesn't carry paddles made especially for weaving, here are some substitutes.

Painter's stir-sticks

Stores that sell paint often sell (or even give away) plastic stir-sticks that have two columns of offset holes.

Pasta stirrers

Kitchen specialty shops may have wooden pasta paddles—they look like a pancake turner, with holes offset in columns of two.

Homemade paddles

You may be able to fashion a paddle yourself. The ideal material is clear, rigid plastic (so you can see through the paddle), but anything you can work into an approximate paddle shape, with smooth holes aligned correctly can work.

Stationary paddles

Stationary paddles aren't carried along with the warp during warping. Instead they are clamped in one place. The homemade paddle in Figure 25 and the slot and hole paddle can be used as stationary paddles and are described in Chapter 11.

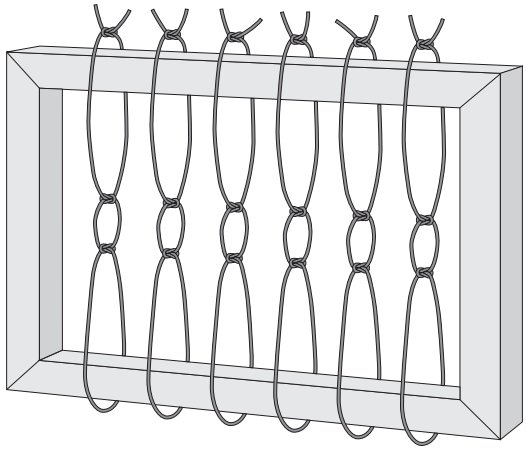

Fig. 25 - Stationary paddle

Sticks

Lease sticks

Lease sticks are a pair of flat or round sticks with a hole at each end, used to hold the leases. They are as long as the width of the loom and usually come with it. Lease sticks don't have to be especially strong or sturdy—in fact, I prefer thin, lightweight ones because they're not so cumbersome.

Extra sticks

Extra sticks—of thin, lightweight material up to one-half inch wide and no longer than the back beam or cloth beam—always come in handy after warping. I use them to begin weaving a heading that can be disengaged from the loom, or to make a dividing heading so I can cut pieces off as I weave them and not waste yarn tying more knots. They're also used for packing on the warp and cloth beams so the warp and finished cloth are always flat and under even tension. Having a dozen or so is ideal. They do not need holes in the ends.

End stick

You need a separate end stick if you warp from back to front, but your loom probably didn't come with one. Use a spare lease stick or dowel (not one of the two apron rods at the cloth or warp beams). The end stick should be wider than the warp, but not longer than the warp beam of your loom. Ideally, there should be a hole at each end, like lease sticks. This allows you to tie a string from end to end after you slip the stick through the end loops of the warp, to keep them safe from sliding off. The end stick will eventually be tied to the warp beam's apron rod for beaming.

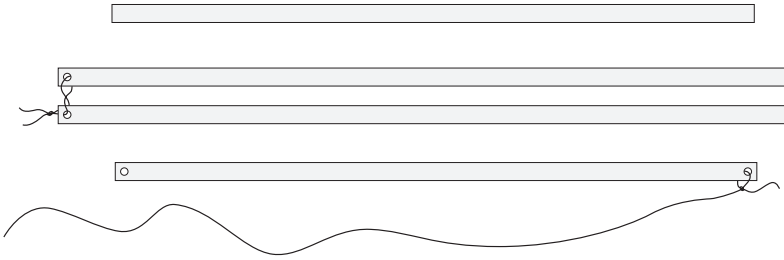

Fig. 26 - Packing stick, lease sticks, and end stick

I hope you enjoyed reading this introductory chapter about what the paddle can and can't do and the important hints that apply to both kinds of paddles. Following the chapter are three pages from the Equipment Chapter describing the types of paddles.

Specific step-by-step instructions for each type of paddle are given in the following two chapters. Chapter 11 is entitled: "Slot and Hole Paddle: Stationary or Carry-around". Chapter 12 is "The All Holes Paddle". Both are complete with the illustrations you are accustomed to. There are 14 chapters in the entire book including: winding a warp, sett, planning projects, and a comprehensive 7-page index. The book has 138 pages and over 200 illustrations.

You can order "Winding a Warp & Using a Paddle" on my website at **www.peggyosterkamp.com**.

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