

HAND STITCHING

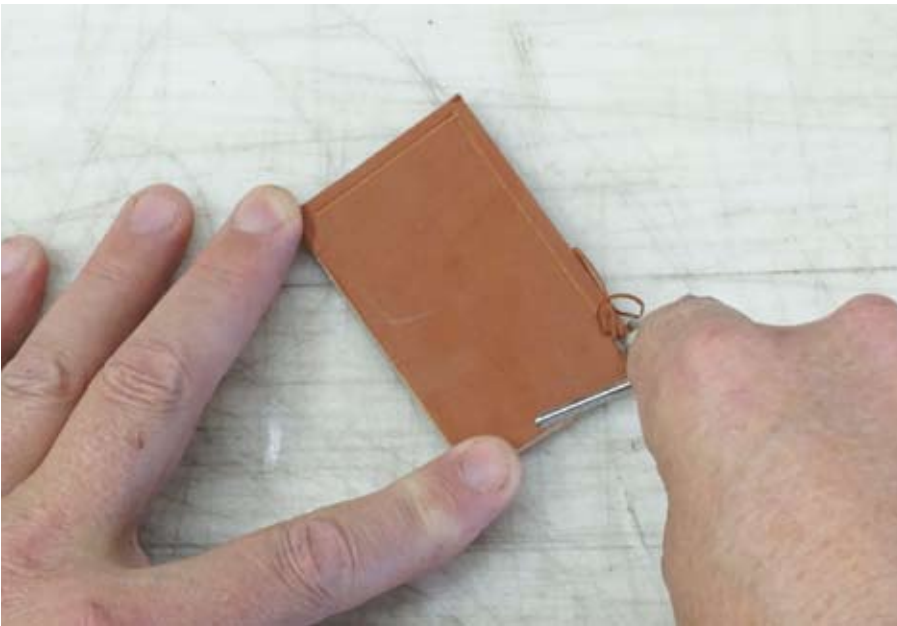
STEP BY STEP



USING A PRICKING WHEEL
WITH
FRONT AND BACK SIDES FINISHED
BY GORDON ANDRUS



Starting at the left side and moving clockwise, the **basic tools** for hand stitching are, egg eye harness needles (*these are size 003*), polyester thread (*size 207/.65 mm used here*), coad hand stitching wax (*or bees wax*), dividers (*for general layout, and to mark stitching line in light weight leathers when stitching groove is not used*), 1 3/4" round awl in haft, diamond awl blade in haft (*1 1/2" long size used here*), hook awl in haft (*also called a "jerk needle"*) used for lock stitching and tying hidden knots, overstitch wheel, pricking wheel (*stitch size here is 6 to the inch*), and a stitch groover or scratch compass.



Mark the stitching line. The line here is being cut with a stitch grooving tool. There are a variety of grooving tools available. This one comes from Barry King Tools.

The line distance from the edge varies from job to job. This groove is 5/16" from edge to center of groove, and is a good average.

A groove is not appropriate in certain jobs. Light weight leathers will be weakened by a groove. Saddle horns are better when a crease is used in the place of a groove, and often times when using pricking irons no groove is used. In these instances a line is marked with dividers.



The stitches are marked along the stitching line. In this case a number 6 pricking wheel has been used. This pricking wheel differs from an overstitch wheel in that it will cut it's marks into the leather. This allows the awl blades point to more accurately find center. Overstitching wheels don't have as long points, and will make a series of stitch shaped creases.

This being said, pricking wheels are much less common than overstitch wheels. As a result overstitch wheels can be, and are, often used to layout stitching.



Seen here is the back side of the item to be stitched. I am right handed and as such this side is on the left as I stitch. Note the angle of the lines drawn in ink.



This is the front side of the work, the side to the right when stitching. Note that the line angle is the mirror image of the back side.



The awl used for cutting the stitching holes is diamond shaped, and is thinner in one axis than the other. This blade is very sharp along the thin sides.

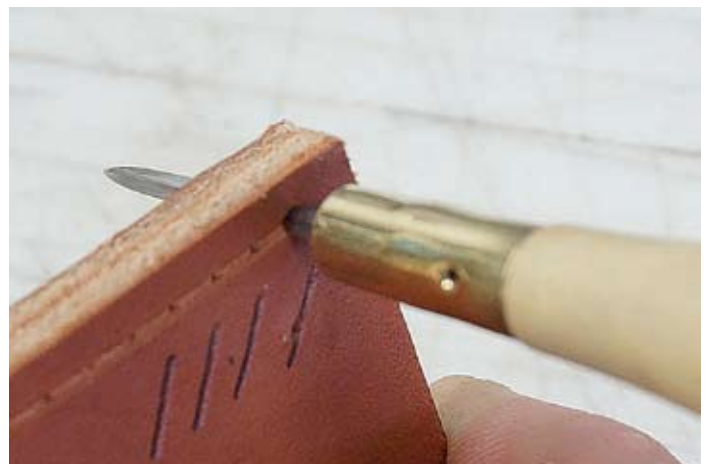


Here the awl has been rotated 90 degrees, showing one of the sharp edges. The edges on this awl will shave hair.



This illustrates the correct angle at which the awl blade is driven through the leather. These lines are only drawn here to illustrate this, and can be drawn on your practice pieces while learning to stitch.

By Gordon Andrus



Here the awl blade has been driven through the leather at the first mark.



Note the angle of the holes and be sure that yours match this.



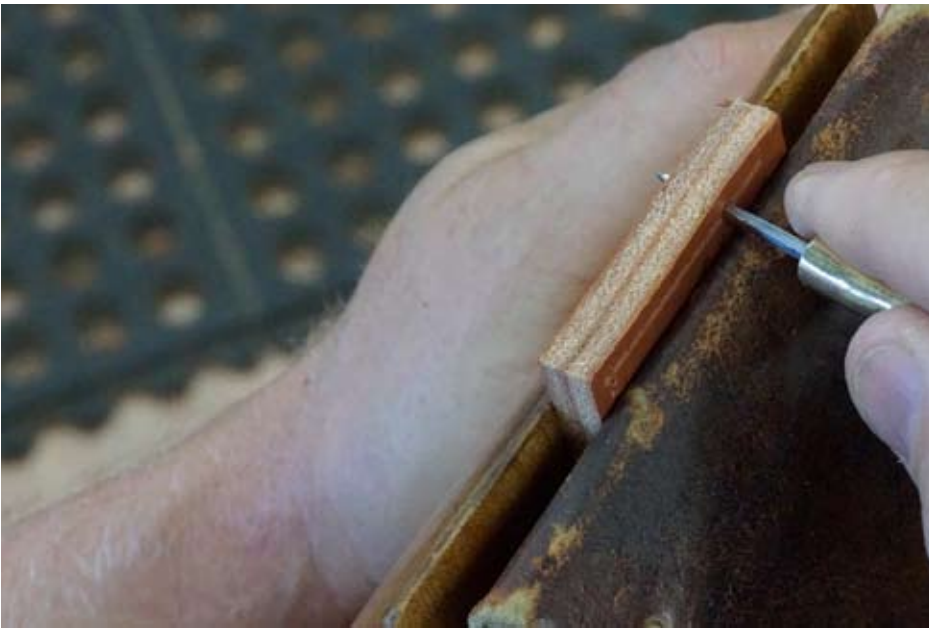
Because the work here represents a piece that will be seen from both sides, a groove has been cut on both sides and stitches marked likewise. The holes will be made part way through from the left side so that the stitches will appear alike, as much as possible, from side to side. The awl is in my left hand to do this, and is held at the proper angle as shown by the lines drawn here on the work.



The awl blade is inserted from the backside about 1/3 of the way through the leather. Be sure to mirror the angle that will be cut from the front side.



Here I've kept the awl in the work and turned it to show the backside of the piece. Continue pre punching part way through all of the holes.



With the awl in my right hand I am now punching the holes all the way through, being sure to emerge through the corresponding holes that were started on the backside.



View from the back.



For this demonstration I am only going to stitch this one edge, and all of the holes have been made.



We are now ready for needles and waxed thread. This thread is size 207. It can come straight from a tube of machine thread or as a pre waxed hand stitching thread. Polyester will outlast natural linen or nylon thread.

By Gordon Andrus

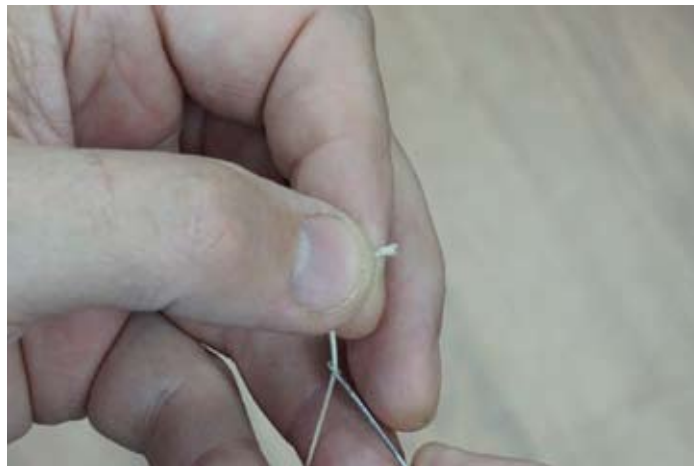


This wax is known by cordwainers (shoemakers) as coad (pronounced CODE). It has pine rosin in it to make the thread stick fast when pulled up tight. Bees wax is more commonly used and works very well.

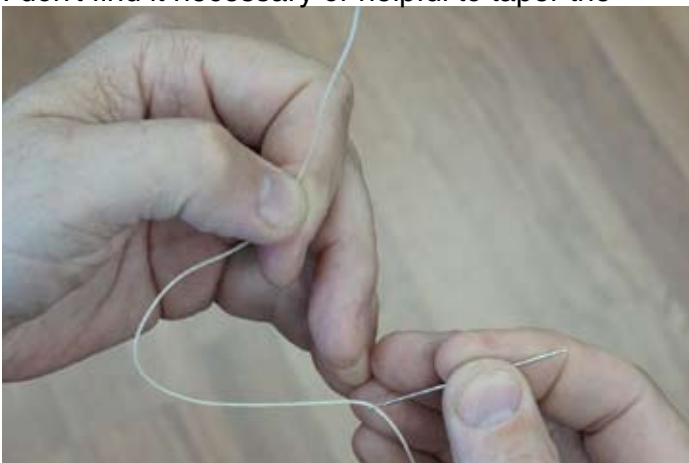


I prefer to thread a needle by pinching the thread tip as shown, and putting the needle on to the thread, rather than trying to push the thread through the eye of the needle.

I don't find it necessary or helpful to taper the



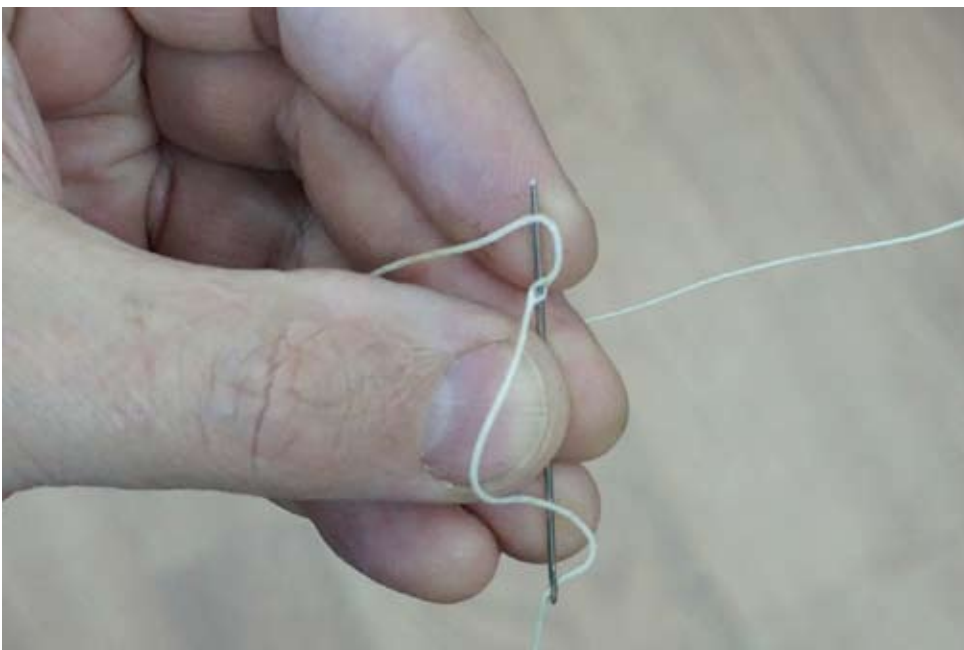
thread before hand, which I've come to think of as a hold over from making up threads from single ply twist. Tapering is essential to fitting up a boar bristle waxed end, but not here. My own experience and choice.



To make a double locked end, pull the thread through the needle about 8". My left thumb and forefinger are holding the thread about 4" from the end, where I will make the first piercing of the

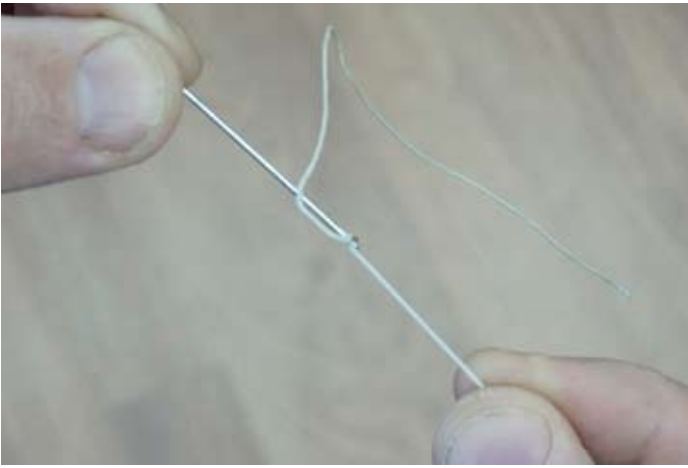


thread, as shown above.

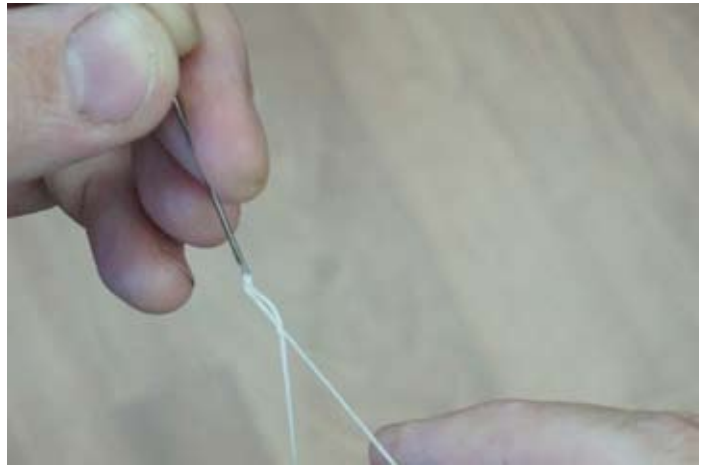


The next piercing is made through the tail about 3/16" from the first.

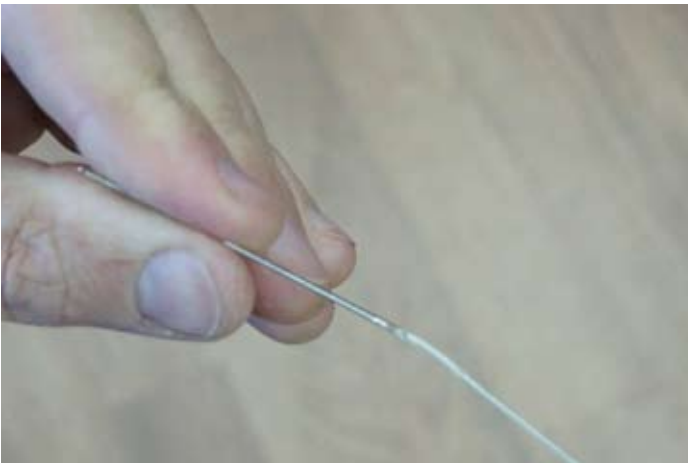
Hand Stitching Step by Step



Pull the thread down so that the first piercing is stopped by the eye of the needle.



To finish the knot, take the tail and pull it down so that the piercings pass from the needle over and onto the main body of the thread.



You will have a smoothly knotted and locked thread needle attachment.



With a needle on each end of the thread we are ready to make stitches.



Right and left hands will remain on their respective sides throughout the work. Don't reach over!

For efficiency, this is a hard and fast rule.



The first needle is passed through the first hole. This is done from left to right out of tradition as much as to establish the rhythm for the rest of the work.

Hand Stitching Step by Step



Crossing the right hand needle under the emerging left hand needle, pull it through.



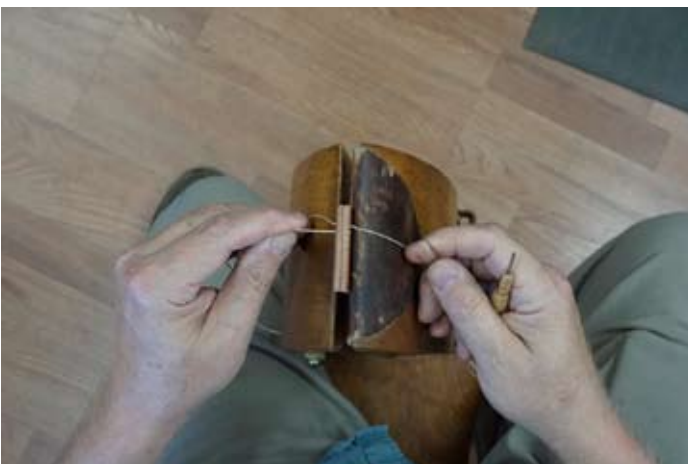
Pull roughly half of the thread through the hole.



Lift the needles together and adjust the thread length from side to side until the needles are even.



Now we are back with a needle in each hand. For most jobs, I don't make all of the holes at one time, so always carry the awl in my right hand as I stitch.



Here I am beginning the first stitch by again passing the left hand needle through the next hole as I begin stitching toward myself.



Though it can wear on the thread, I am using the thread to push the needle through the hole. Even without doing this, needle changes may be needed when stitching long seams due to the thread wearing out at the needle eye.



Crossing the right hand needle under the emerging left hand needle, pull it through. Let the thread slip through the fingers of your left hand as you do so.

Do not drop the left hand thread!



Let me say this again...

“Do not drop the left hand thread!”

Here, I am preparing to pass the needle that I’ve just pulled through with my right hand, back over to my left hand.



I am getting ready to place the needle end thread into my left hand so that I can mind it while I push the right hand needle through the same hole.



The thread from the left side is now held at both ends by my left hand. This serves several purposes, chiefly keeping the thread pulled down into the end of the angled hole toward me.



Now, with the thread pulled toward me in my left hand, I am ready to pass the right hand needle that I have never put down, through the same hole.



The right hand needle is now passing through the hole at the top of the angle of the hole. Because the thread in this hole is pulled toward me by the left hand, the needle is much less likely to catch the thread that is already in the hole as it passes.



I am again using the thread to push the needle.



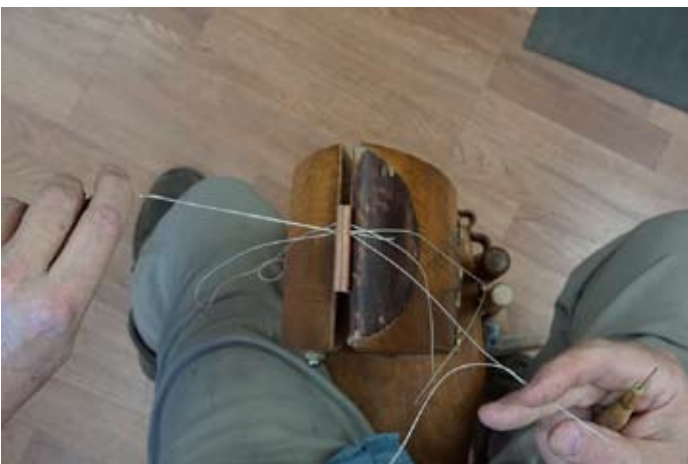
Now, ***without pulling the needle through to the left side***, I am passing the needle that I have been minding, over to my right hand. No needles have ever been dropped, and the stitching proceeds smoothly.



Having passed the needle off to the right hand-



I am ready to pull the second needle through to the left side.



Needles have changed sides successfully, and the stitch is ready to pull up.



With the first stitch made and pulled up tight, proceed to make the remaining stitches in the same way. Practice will give you rhythm and speed. The work will be uniform and clean.



I will now proceed to tie the hidden knot. Begin by back stitching one full stitch. Whenever stitching through holes that have stitches in them it is good to have a round stabbing awl like this one.



The round awl will open the hole for the back stitch without cutting threads. Here it is being pushed through the previous hole, making room for the hook awl.



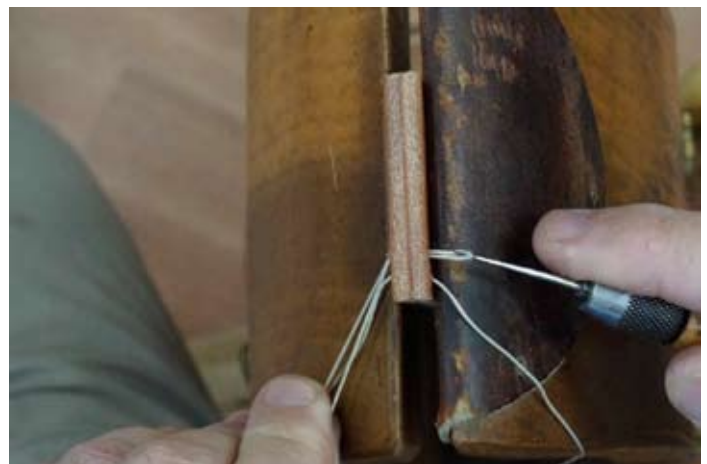
Hook awls like this one are user made from a diamond awl blade. The hook needle from a needle and awl leather stitching machine works fairly well for this purpose.



The hook is ready to take a loop which has been made. The hook is turned up, and the round awl has made it less likely to catch the thread in the hole when pulling the loop back through.



The loop is on the hook awl ready to pull back through the hole.



Note how the hook is turned. This keeps it away from the previously made stitch, and only the new loop has come back through the hole with it.



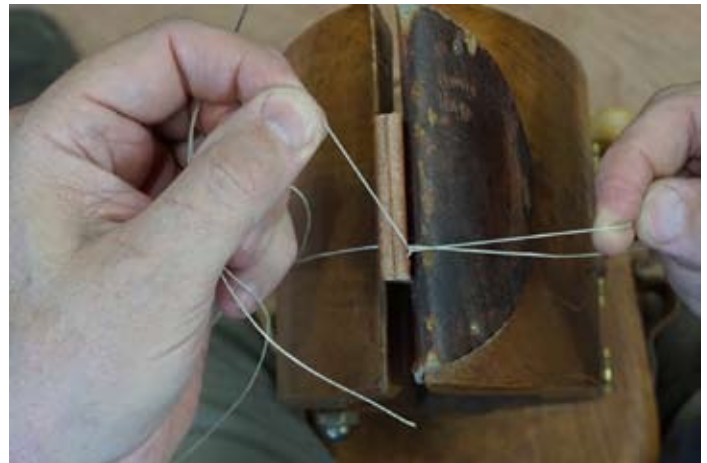
Pull all of the slack until the thread comes up tight. Do not pull the end of the loop with the needle attached on the other side.



Pulling on the hard end, (the end that doesn't slip), you can drop the thread from the left side.



Now take up the needle on the right side and make a half hitch around the hard end of the loop thread.



The first half hitch has been pulled up tight. My right hand is pulling the hard end of the loop.



Here I have tied a second half hitch.



Pull the second half hitch up tight. I am also pulling the hitches toward the back stitched hole that the loop is coming through. This will aid the knot being pulled into the hole.

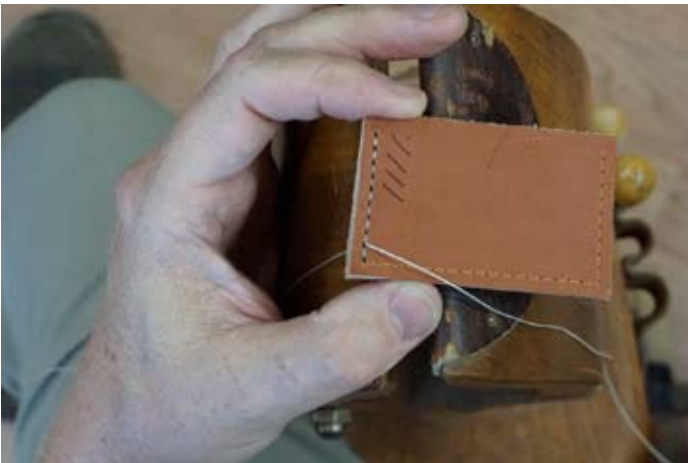
Hand Stitching Step by Step



Now I am ready to pull the looping thread on the right, back through to the left.



With the loop pulled back to the left I can now pull the knot into the hole.



With the knot buried in the hole, I am left with a thread end on both sides.



Snip the threads as close as you can without cutting a stitch.



I've finished the work by rolling the stitches with a number 6 overstretch wheel.

HAND STITCHING

STEP BY STEP



NUMBER TWO
USING PRICKING IRONS
BY GORDON ANDRUS



This pricking iron is marked with a number nine and 3mm, which denotes that it will make nine holes in an inch. Each hole will be 3mm apart. This means it will be used to stitch 8 to the inch,



which differs from the numbering on American made pricking and overstretch wheels. The prongs will fit in this stitch groove, allowing for use of the groove.



Pricking irons are not intended to pass all the way through the leather. Indeed, if the work is thick as in double saddle skirting, the prongs will get stuck and impede the work. In thinner leathers like this



cinch safe, the holes may go through. The combined thickness here is around 13 ounce, or a tad over 5mm.

Advance the work by putting the first prong, (left



side here), in the last hole previously punched. Proceed till all holes have been marked out.



A great advantage of the pricking iron is that it will go deep enough to give the awl great accuracy as it passes through the work. Even if the hole does not pass all the way through, the awl is kept straight.



I'm going to begin and end this seam with one back stitch. I'm stabbing one hole off of the edge of this top piece so that the first stitch will tie it's edge down.



Here I have made certain that the first hole through both thicknesses goes clear through. This second hole is going to be the starting hole in forming the first back stitch.



First needle passes from left to right through the second hole.



Needles crossed to pull the needle through.



First needle pulled through.



Needles together and thread pulled even in length on each side.

Hand Stitching Step by Step



Left hand needle passing back to first hole, and through it.



The thread on both sides is pulled back away from me with the left hand, making room for the second needle to pass through unimpeded.



Right side needle now passes through the same hole.



With both needles having passed through, the first stitch (the back stitch) is ready to pull up tight.



Pulling the back stitch tight.



Here I've switched to the round awl to open up the hole with thread in it.

Hand Stitching Step by Step



Round awl in use opening the hole.



Proceeding to advance forward in the work by passing left needle through.



Needles crossed to pull left hand needle through.



Pulled through.



Needle from left now passed off to the left hand, and thread pulled down into near side of stitch hole out of the way of the next needle.



Right hand needle going through the same hole.

Hand Stitching Step by Step



Stitch pulled up tight completing the first back stitch.



Showing the first back stitch tacking the edge down.



Note placement of needles in each hand between middle and forefingers, and the diamond awl ready to finish opening holes.



Pass awl through each hole to insure that they are all open.



The last hole is pierced through the back piece only. It is placed right against the edge of the top piece, just as the first hole was.



Proceed to make the last stitch over the edge of the top piece to tack it down securely.

Hand Stitching Step by Step



Last stitch pulled tight ready to back stitch and tie hidden knot.



Round awl used to open back stitch.



Change to hook awl and make a loop in the left side thread.



Place loop on hook.



Pulling loop through to the right side.



Pull up the slack to get ready to tie the hidden knot.

Hand Stitching Step by Step



Pulling on hard end of the loop, the end that won't slip.



Making first half hitch with the right hand needle and thread around the hard end of the loop.



When tied correctly the half hitch will look like an overhand knot.



Pull the half hitch tight.



Begin the second half hitch.



Bring the right side thread over it's needle to form the second half hitch.

Hand Stitching Step by Step



It should again look like this before pulling it down tight.



Pull the needle end of the knot.



And make it tight.



Pull the left side needle and thread.



Removing the loop from the right side.



Hand Stitching Step by Step



Pull the knot into the hole to hide it.



Snip the ends as close as possible.



Stitched 8 to the inch, with edges tacked.

Appendix

Generalized Guide for Hand Stitching							
Total Leather Thickness	Stitches Per Inch	Awl Width	Thread Size (TEX)	Thread Size (Metric)	Thread Size (cord count)	Needle Size (traditional)	Needle Size (inches)
2 to 3 OZ.	15 to 12	.06" Or Nm 140 stitcher needle	94	.33 mm	2 cord	004	.033"
3 to 6 OZ.	11 to 9	.075"	137 / 138	.43 mm	3 cord	004	.033"
7 to 10 OZ.	10 to 8	.085"	167 / 207	.55 mm	4-5 cord	003	.040"
11 to 14 OZ.	7 to 6	.1"	277	.65 mm	6 cord	1/0	.042"
15 OZ. or more	6 to 5	.15"	346	.75 / .8 mm	7-8 cord	1/0 to 2/0	.050"

As the title states, this is a generalized guide. It is based on traditional best practices for handwork. Some of the sizes here may be difficult to find sources for. Thread comes from worldwide sources and varies in size. Different awl widths are notoriously difficult to find. Style variation will

have a big effect on some of these sizing choices. At the time of this writing large stitches with wide flat braided threads are in vogue. This guide is still useful. If you proceed by choosing your stitches per inch length first, rather than the leather thickness.