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Headbands  
How to Work Them

Jane Greenfield

Jenny Hille

Edgewood Publishers  
New Haven, Connecticut  
1986

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Headbands are fascinating, both from the point of view of their history and of their construction. Most instructions on how to work them are sparse.

Twelve headbands are described in this book, with step-by-step drawings. We hope that this will prove of interest to beginners and experienced binders alike.

The number of variants is so great that it would be impossible to identify and describe them all. Only the major types have been described, and only one way of doing each presented. We haven't suggested the suitability of these headbands for specific uses or tried to evaluate their mechanical value. These judgements are up to the binder.

Jenny Hille learned some of the more unusual headbands abroad, and figured out ways of doing others. We have worked out the descriptions together. Neither one of us could have produced this book without the other.

We would like to thank Louise Carter for trying out these instructions (successfully), and for many suggestions that have made for greater clarity; Gisela Noack for giving us very helpful advice, and Jerilyn Davis for seeing this book through the press.

Jane Greenfield  
Jenny Hille

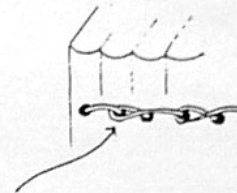
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## GENERAL INFORMATION

Early headbands were often made up of secondary embroidery, not tied down, worked on a primary headband which was frequently tied down and laced into wooden boards. They served to consolidate the head and tail of the spine and strengthen the board attachment. They gradually declined to a nineteenth century example consisting of a piece of paper neatly painted with pink stripes and pasted around a bit of string, to today's machine made ones available by the yard.

A few suggestions are collected here:

A good, hand worked headband should be tied down in the center of the gatherings which may be marked with strips of paper (acid-free in case one is left in the book by mistake). It is generally considered a good thing to tie down at the kettle stitch. However, Bernard Middleton says that it seems that no weakness has resulted when this has not been done (English Craft Bookbinding Technique, p. 107).



Come out on this side of the kettle stitch chain.

Knowing when and where tension on threads is needed comes with practice. Equal tension on the threads when they are on opposite sides of the core is important in maintaining an even row of beads as well as in the general appearance of the headband, and keeping the threads parallel to the bookblock is equally important.

Headbands should be tightly worked and the thread pushed back against its neighbor with the needle as you go along, so that there is no gap between threads.

### Cores

Tawed skin, leather, hemp or linen cord, vellum, cane and rolled paper have all been used as cores at one time or another. Cores can range from about 1/16" to 1/4" in diameter. They are, of course, mostly round, although tall, flat ones became popular in the early nineteenth century. The maximum number of cores we have found in a single headband is five -- in the Italian Renaissance headband.

Headbands are easiest to work if the cores are moderately stiff. They can be coated with an adhesive and allowed to dry.

The embroidery of headbands on cores that are not laced into the boards

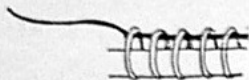
should begin and end two or three gatherings in from the edges of the spine. See p. 5.

#### Thread

It is difficult to specify the length of thread needed as that depends on the size of the core, the width of the spine, and the number of tie downs if any. Mrs. Laura Young (Bookbinding & Conservation by Hand, pp. 107-10) has given the following guidelines: single 1/16" core, book 1" thick, 2 colors, 10" of winding thread, 18" of tying down thread. Double headband, larger cores, 2 colors, 15" and 27"; German style, 1/16" core, 2 colors, 12" of each. We have found that in general much less thread than one supposes is needed and is easier to work with.

More thread can easily be added by tying the additional thread to the existing thread around a kettle stitch. Thread can also be tied to the sewing thread inside a gathering before going out onto the spine. Use a weaver's or square knot. It is, of course, best to have enough thread to finish the headband without adding.

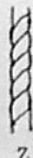
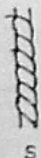
A different color of thread can be laid along the spine side of the core and included in the embroidering until you are ready to use it. The original color can be treated in the same way until needed again.



Thread can best be flattened for threading into a needle by licking it and then pressing it down on a hard surface with your thumbnail rather than between a thumb and fingernail only.



In the course of winding, thread often untwists and so thickens. It can be twisted back in the direction of its twist -- S or Z -- and held to maintain its original thickness while winding.



do so because the wax on the thread is not necessary and the wax on knotting, but silk thread should not be waxed as this dulls the sheen.

Barbour's linen threads and colored silk ones are available from Talas, 213 West 35th Street, New York, N. Y. 10011, (212)736-7744, and a limited range of colored linen ones from Tender Buttons, 143 East 62nd Street, New York, N. Y. 10021, (212)758-7004. Embroidery stores carry a wide range of colored silk and cotton threads.

The materials suggested here are the ones we have used and which are readily available. In some cases they are a way of communicating a specific size. They are suggestions only and are obviously means from which to deviate.

#### Needles

Crewel Nos. 7 and 8 needles are very fine. Crewel No. 6 has a large eye and is good for general work. Tapestry Nos. 18 to 22 needles are best for leather thongs as their eyes are very large. Curved needles come in sets of mattress needles and the like.

This is the headband most frequently used today. It should be the width of the square less the leather of the headcap so that it supports the leather without causing it to protrude. This type of headband is not usually laced into the boards.



Spine



Edge

Equipment

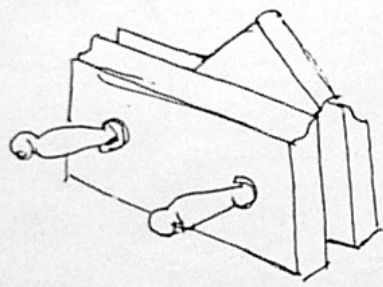
- Finishing press
- Scissors
- Needle

Materials

- A core of cord or leather, about 1/16" in diameter for a small book, up to 1/4" for a very large one, and slightly longer than the width of the spine
- 1 or 2 colors of silk or linen thread
- Beeswax (optional)
- Adhesive

Step 1

Put the book in the press with the edge facing you.



Step 2

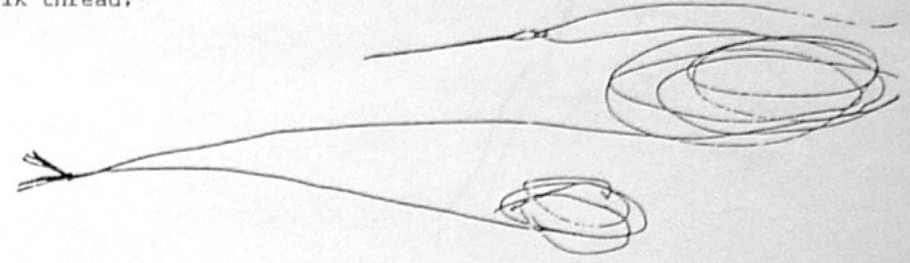
If you are using two colors of thread, tie them together with a simple overhand knot and put a dab of adhesive on it.



Step 3

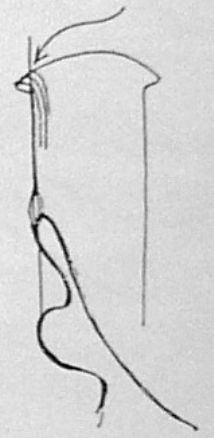
Thread the tying down thread, A, into a needle.

Wax the thread if you wish although, as already mentioned, this does dull the sheen of silk thread.



Step 4

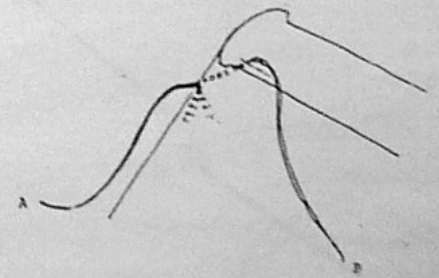
Line up your needle with the first leaf of the book, like this, and go into the center of the gathering it lines up with at the edge of the spine, with the winding thread A.



In this case it is the third one due to the backing. Always be sure to start well in from the front and finish well in from the back of the book.

Step 5

Leave enough thread for the winding end B if you are using one color of thread. Leave the knot in the fold of the gathering if you are using two. See p. 2 for guidelines on length of thread.

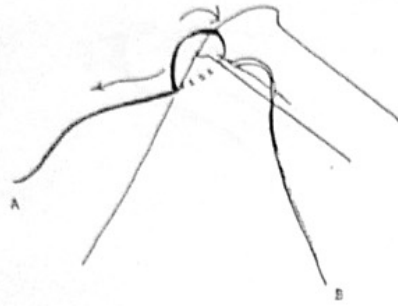


Come out at the kettle stitch with A.

Headband with a bead on the edge

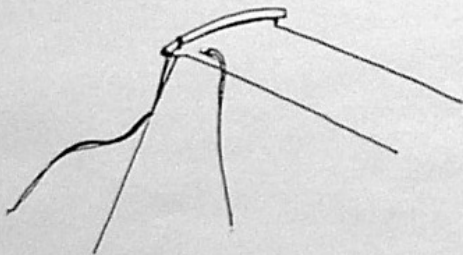
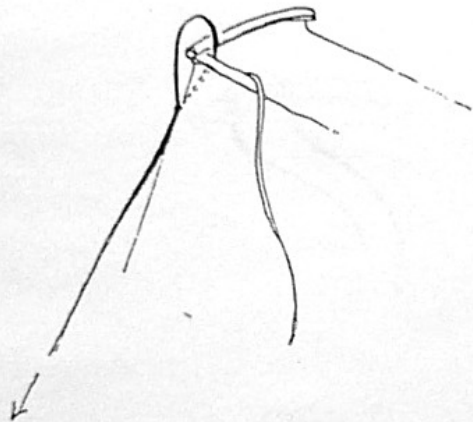
Step 6

Bring the thread back toward you, go back into the gathering and around again. This forms a loop.



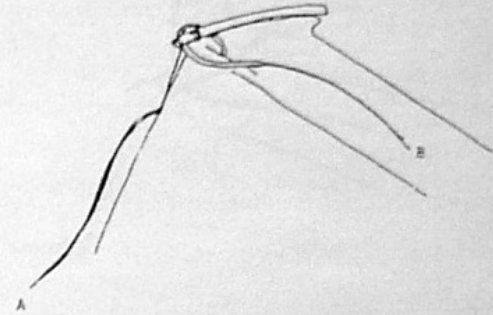
Step 7

Put the end of the core in the loop and tighten it.



Step 8

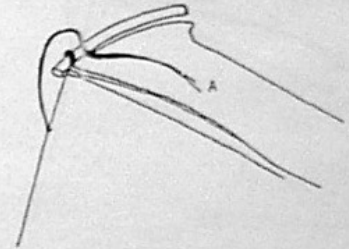
Bring the winding thread, B, under the core, around thread A on the spine of the book, and back toward you. This holds A in place.



Step 9

Bring thread A back over the core. This produces two windings, as the original loop formed the first one.

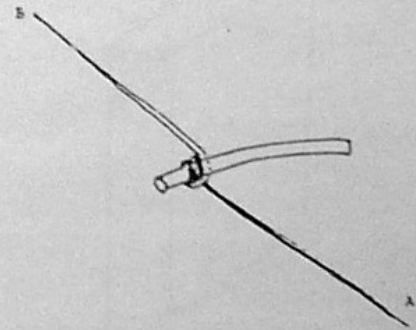
From here on maintain equal tension on the two threads, keeping them parallel to the edge of the book.



Step 10

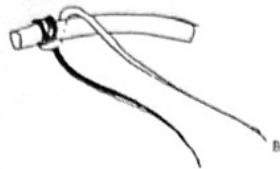
Bring thread B across thread A and under and behind the core.

This forms the first bead.



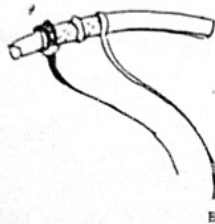
Step 11  
Bring thread B back toward you.

This forms the third winding.

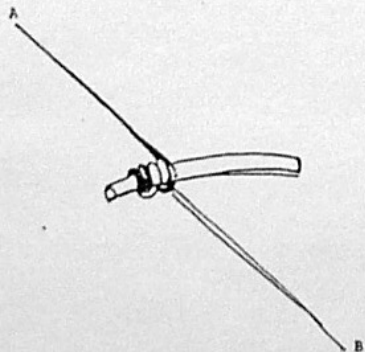


Step 12  
Wind once again, producing two windings with thread B.

Push the threads next to each other so that there is no break, as you go along.

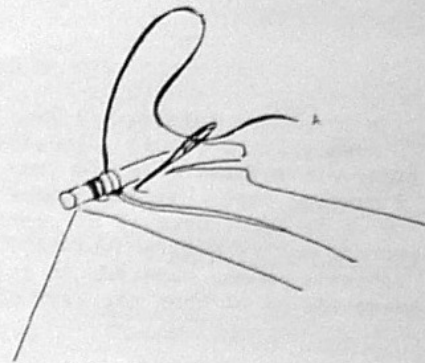


Step 13  
Bring thread A across thread B and under the core.

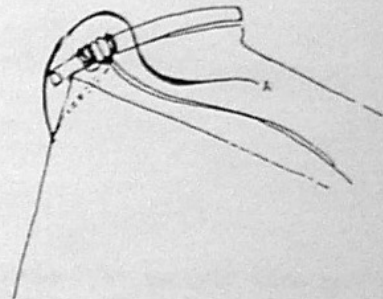


HEADBANDS

Step 14  
Bring A forward and go into the gathering right beside the previous winding. Come out at the kettle stitch.



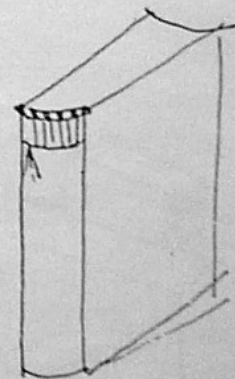
Step 15  
Bring A back toward you.



Repeat steps 10 through 15 across the book.

Step 16  
To finish, go out at a kettle stitch with thread A. Thread a needle with B and go into the gathering and out at the kettle stitch with it. Tie the threads together with an overhand knot.

Cut off the ends, leaving about 1/2", fray them out and glue them down.



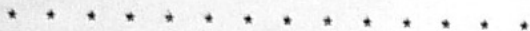
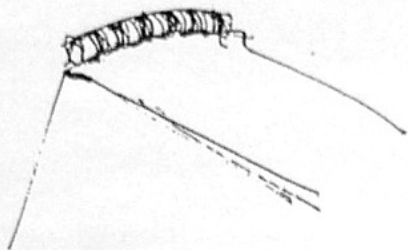
Headband with a bead on the edge



Step 17

Cut off the extending ends of the core flush with the beginning and ending of the embroidery, being very careful not to cut it.

Put a dab of adhesive on the ends and on the two outer windings on the spine side of the headband.



Vary the number of windings of the threads in a two-color headband to produce different patterns.

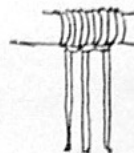


Adding a different colored thread is described on p. 2.

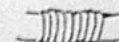


HEADBAND WITH A BEAD ON THE SPINE

The headband with a bead on the spine forms the primary sewing of a great many Medieval and Renaissance headbands. It was usually sewn with unbleached, uncolored thread on a core of tawed skin or vegetable fiber which was laced into a groove in wooden boards. Sewn through a spine lining and laced into a vellum cover, it is used today as a conservation headband. See Christopher Clarkson's Limp Vellum Binding. The method of sewing is exactly like that of the most common present-day headbands, the only difference being that the bead is on the spine.



Spine



Edge

Equipment

Finishing press

Scissors

Needle

Materials

A core consisting of a strip of leather about 3/8" to 1/2" wide by about 5" longer than the width of the spine, or a piece of stiff cord the same length and about 1/8" in diameter, or both, with the leather wrapped around the cord

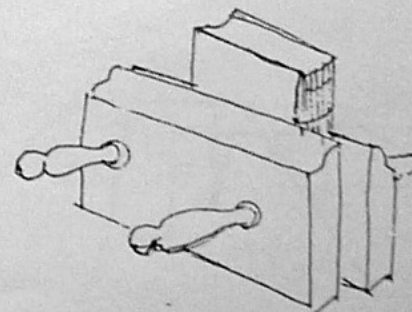
Barbour's 3 cord, No. 30 linen thread

Beeswax

Adhesive

Step 1

Put the book in the press with the spine facing you.



Step 2

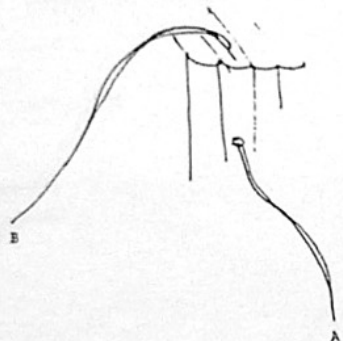
Thread a length of Barbour's No. 30 thread into a No. 6 crewel needle. Wax the thread.



Step 3

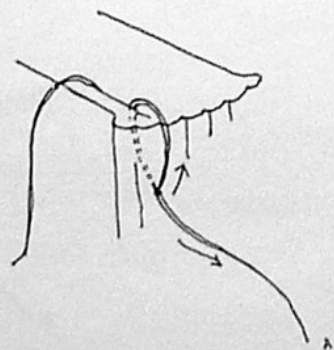
Go inside the fold of the second or third gathering and come out through the kettle stitch.

The winding end B can be about one half as long as the tying down end A.



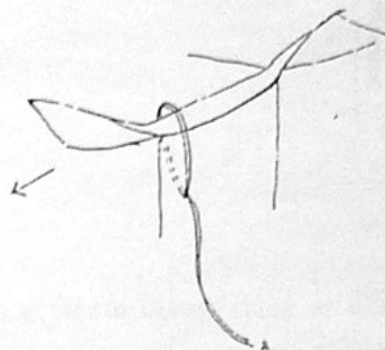
Step 4

Anchoring loop: Bring end A up, around into the center of the gathering again, and back out at the kettle stitch.

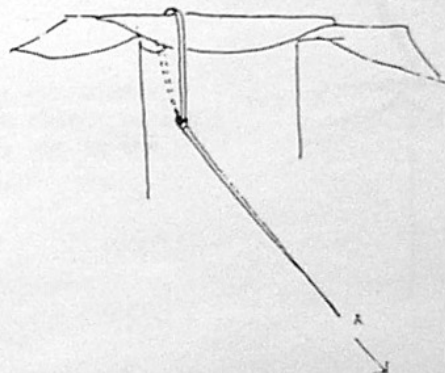


Step 5

Fold the strip of leather and slide it, on the edge of the book, into the loop just formed.

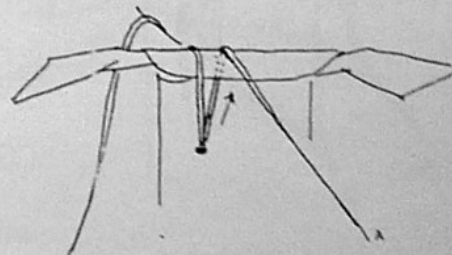


Tighten the loop so that the core is held in place.

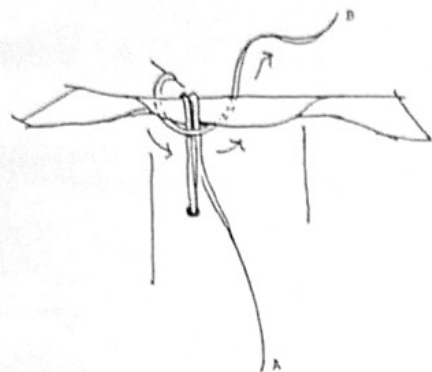


Step 6

Bring end A up again, behind the core and back around toward you. Line it up beside the anchoring loop.

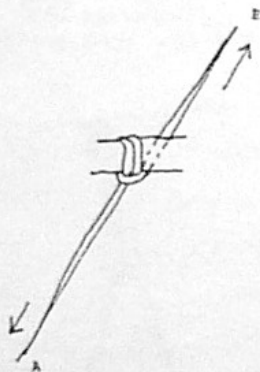


Step 7  
Bring end B across the two strands of end A and back underneath the core.

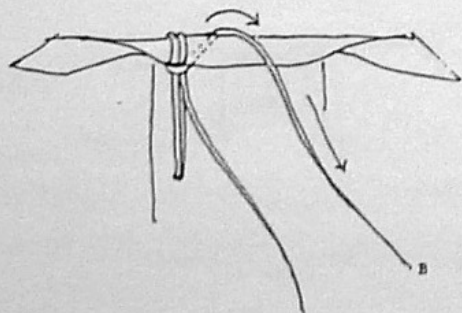


When forming a bead, with the two ends of thread on opposite sides of the core, maintain equal tension on them.

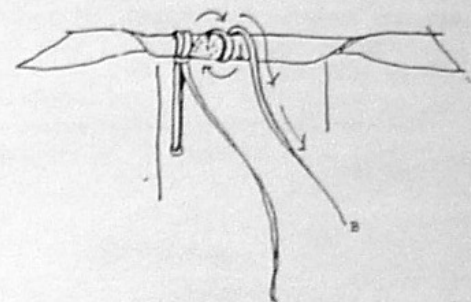
Keep thread A parallel to the spine, and B to the edge.



Step 8  
Bring end B over the core and back toward you.

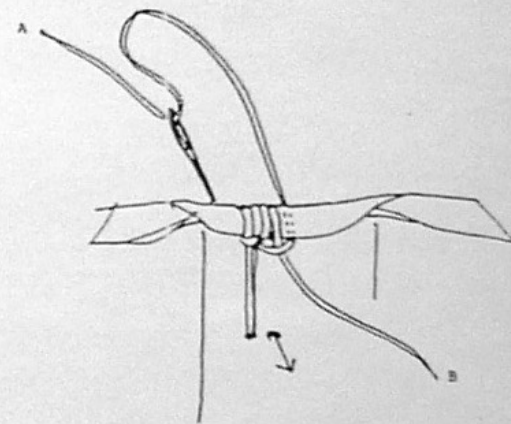


Step 9  
Wind end B around the core again or as many times as are needed to bring you to the center of the next gathering.

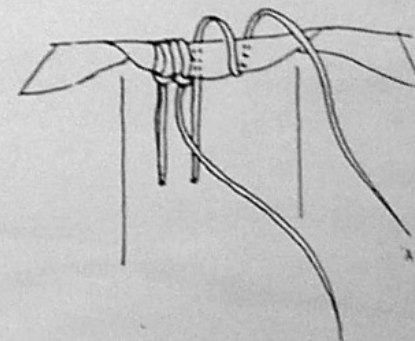


Line up the windings of end B beside those of end A.

Step 10  
Take end A across the windings of B and into the center of the gathering, coming out at the kettle stitch.

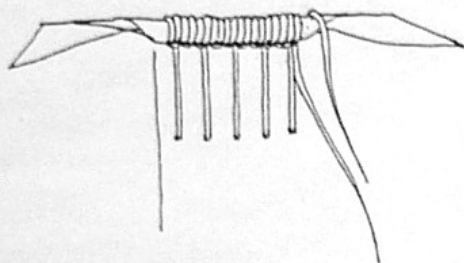


Step 11  
Bring end A under and around the core and back toward you.



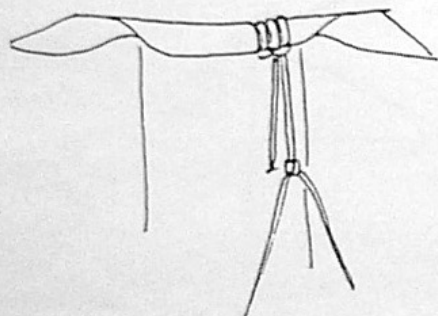
Step 12

Repeat steps 7 through 11 across the spine of the book.

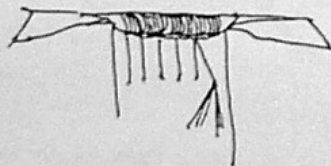


Step 13

Go behind the core and inside the last gathering with whichever thread has just formed a bead (You may need to switch the needle). Come out at the kettle stitch and tie the two ends together in a square knot.

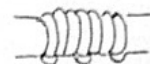


Trim the ends, leaving about 1/2" of thread, and fray them out. Glue them down.

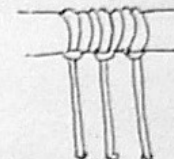


HEADBAND WITH A BEAD ON THE SPINE AND THE EDGE

We learned this headband from notes taken by Martha Little when she was studying in England. It was developed as a possible conservation headband by Christopher Clarkson in Florence, and taught briefly by him in 1967-68. He now says (private communication) "The mechanical foolishness of this design was, I am afraid, slow to dawn on me (put it down to youthful enthusiasm)." Be that as it may, it is a very attractive looking headband.



Edge



Spine

Equipment

Finishing press

Scissors

Needle

Materials

Core of stiff cord about 1/8" in diameter for a medium sized book

Barbour's 3 cord, No. 18 or No. 30 linen thread

Beeswax

Adhesive

Step 1

Put the book in the press with the edge facing you.

Step 2

Tie a thread around the core with an overhand knot, leaving a short and a long end.

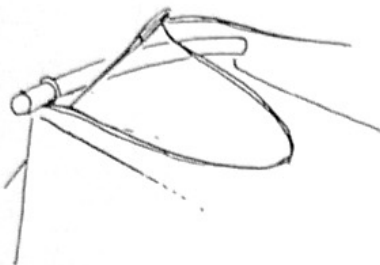
Let the short end lie along the core. It will remain inside the sewing and can be cut off when you have sewn about half the headband.



Step 3

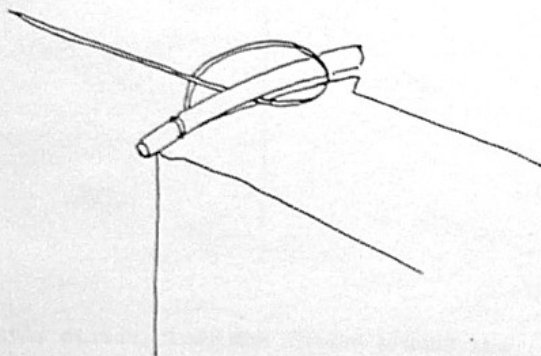
Go into the center of the gathering and out at the kettle stitch.

This puts the short end of the thread behind the core on the spine side.



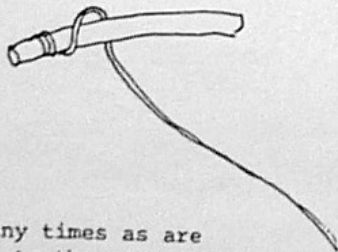
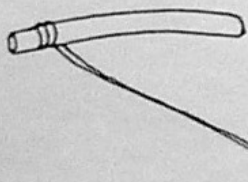
Step 4

Bring the thread up and loop it over the end of the core like this.



Step 5

Bring the thread back toward you under the core. This forms a bead on the spine.

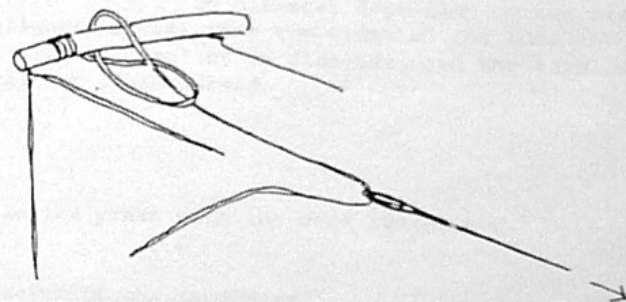
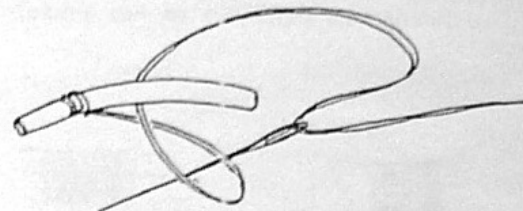


Wind once, or as many times as are needed to bring you to the center of the next gathering.

Step 6

Form a loop by going back under the core. Note that the threads are crossed.

Come over the core and through the loop.

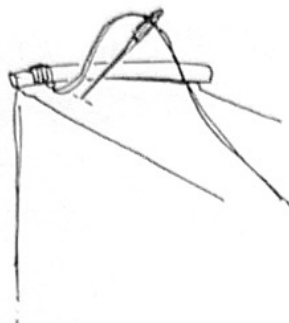


Step 7

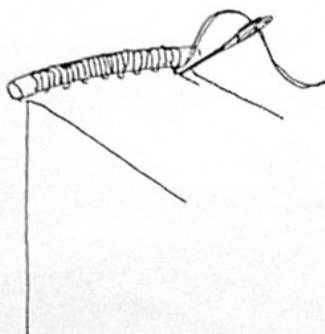
Pull the thread tight to form a bead. When it is tight enough push the bead down onto the edge with your thumbnail.



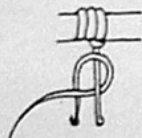
Step 8  
Go into the gathering.



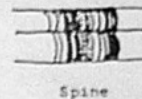
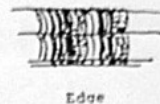
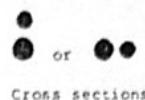
Step 9  
Repeat steps 4 through 8 across the book.



Step 10  
End by coming out at the kettle stitch, loop the thread around the previous tie down, cut off the thread leaving about 1/2", fray out and glue the ends to the spine.



This headband is currently in use and is very attractive and fun to do, but very difficult to describe. Distinctive features are the facts that the beads are the same color as the winding threads above them, instead of contrasting, as in the headband with a bead on the edge, and each winding has a bead. Colors can be switched at random.



Equipment

- Finishing press
- Scissors
- 3 needles as fine as possible

Materials

- A cord about 1/16" to 1/8" in diameter depending on the size of the book and slightly longer than the width of the book
- Another cord, slightly smaller in diameter, and the same length
- 3 colors of silk or linen thread
- Beeswax (optional)
- Adhesive

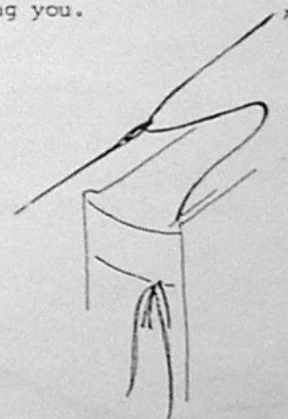
Step 1

Put the book in the press with the edge facing you.

Step 2

Go into the center of the second or third gathering and out at the kettle stitch with thread A which should be a little longer than the other two.

Leave a short end of it outside the spine and tie threads B and C to it with a weaver's knot.

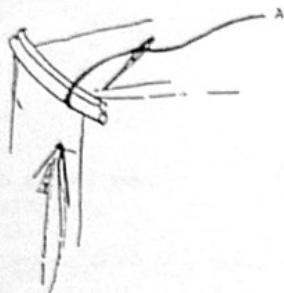


Switch the needle to the long end of A which comes out of the center of the gathering.

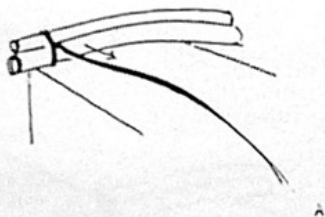
French double headband

Step 3  
Place two cores on the edge, in front of thread A.

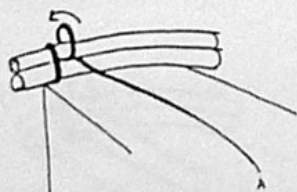
Come back around the two cores, into the gathering, and cut at the kettle stitch again. This anchors the cores.



Step 4  
With thread A come toward you between the cores,

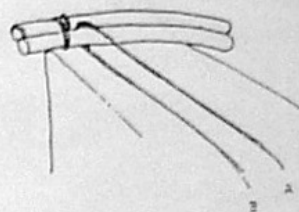


around the top core, and back between them.

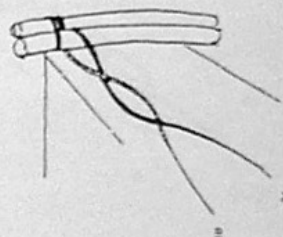


HEADBANDS

Step 5  
Bring B up toward you, underneath both cores, to the right of the windings of A.



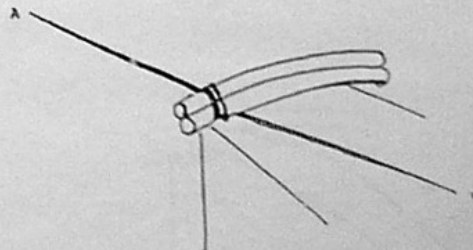
Step 6  
Cross B over A and A over B.



Step 7  
Go back under both cores with A, thus forming the first bead.

Pull the threads tight, being sure to maintain equal tension on them.

The double twist and holding the threads like this when tightening keep the bead the same color as the winding.

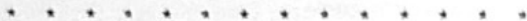


French double headband

Step 8

Repeat steps 4, 6 and 7 (5 is omitted as thread B is already toward you) as many times as you want windings of A. Tie down after a twist leaving A dangling from the kettle stitch.

Although tying down can be done in the course of winding a color, it should always be done when you have finished winding one, after a twist. This means that you will not necessarily be able to tie down in the center of a gathering.

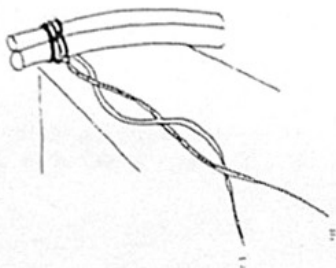


Step 9 COLOR B

Bring C up underneath the cores, to the right of the latest winding.

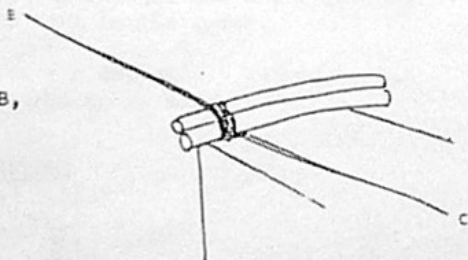
Cross B over C, C over B and B over C again.

Note that the bead is formed before the winding above it.

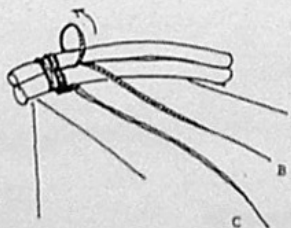


Step 10

Go back underneath both cores with B,

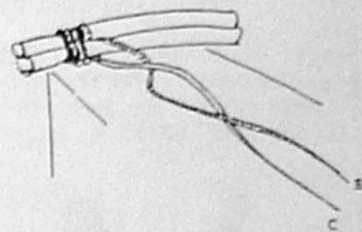


toward you between them, around the top one and back between them.



Step 11

Cross C over B and B over C.



Step 12

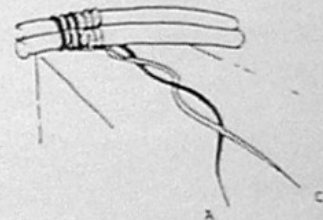
Repeat steps 10 and 11 for as many windings of color B as you wish. Tie down after a twist, leaving B dangling from the kettle stitch.



Step 13 COLOR C

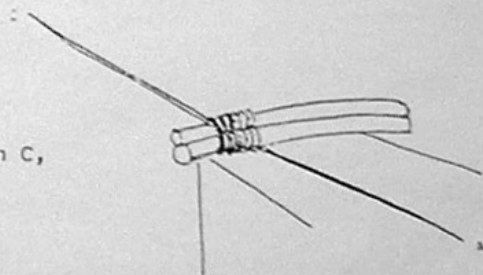
Bring A up underneath the cores, to the right of the latest winding.

Cross C over A, A over C and C over A again.

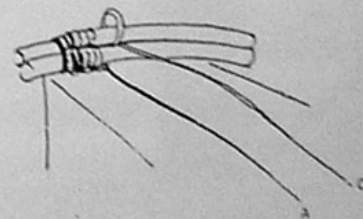


Step 14

Go back underneath both cores with C,

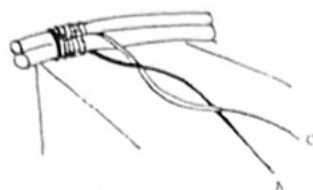


toward you between them, around the top one and back between them.





Step 15  
Cross A over C and C over A.



Step 16  
Repeat steps 14 and 15 for as many windings of color C as you wish.  
Tie down, after a twist, leaving C dangling from the kettle stitch.

\* \* \* \* \*

Alternate the colors across the spine.

We have repeated the instructions for each color as this is easier than referring back and substituting A's and C's for B's and A's or C's and B's.

Step 17  
To finish, tie down with your final color and go into the gathering with the thread remaining in front of the headband. Tie B and C together to A with an overhand knot and cut off the ends, leaving about 1/2". Fray them out and glue them to the spine.

Trim the ends of the core flush with the embroidery and put a dab of adhesive on the end windings, on the spine side.



### COPTIC HEADBAND

The instructions for this headband have been worked out from Theodor Petersen's "Drawing of the Usual Plain Coptic Headband Sewing" in A Orientalis 1 (1954) p. 55. The headband was sewn on a book with wooden boards and a spine lining. The lining has been left out of drawings here.



Edge



Spine

Although the following instructions seem complicated, the headband consists simply of a chain with each link catching up the previous one.



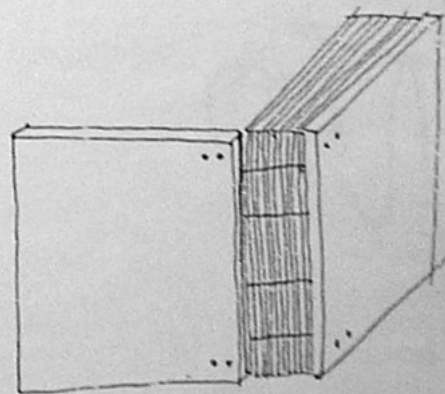
#### Equipment

- Drill and 1/16" or 1/8" drill bit
- Scissors
- Needle, straight or curved

#### Materials

- Barbour's 3 cord, No. 18 or No. 30 linen thread
- Beeswax
- Adhesive

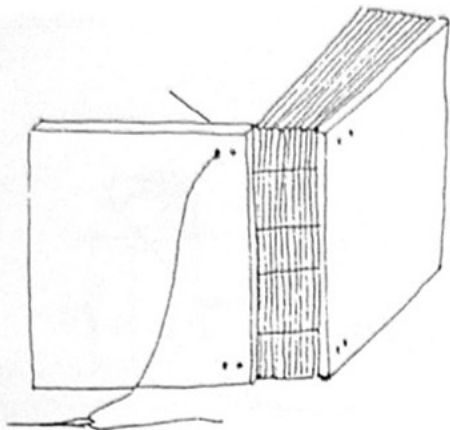
Step 1  
Bore four holes in each board, about 1/2" in from the head and tail edges, 1/4" apart, and about 1/4" in from the spine edge.



Step 2

Go from inside to out through the outer hole of the back board, leaving an end inside the board.

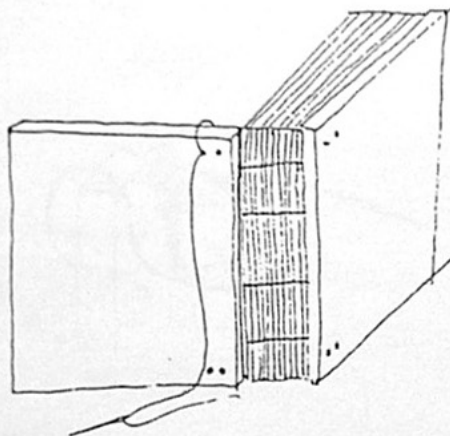
If you go over this end when looping around the board, it won't need further fastening.



Step 3

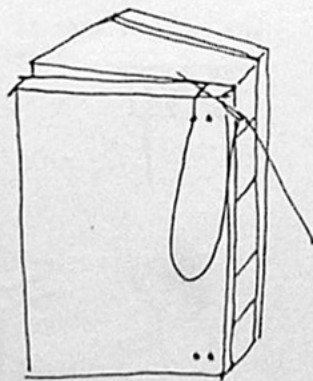
Loop the thread around the edge of the board and tighten it so that it is snug but not really tight.

(Do not pull the threads very tight throughout the sewing of this headband.)



Step 4

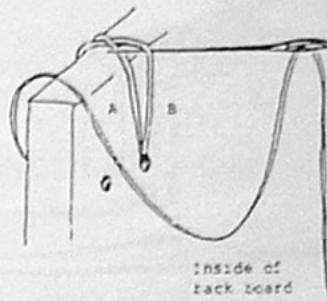
Go back up and through the loop, and then back through the first hole from inside to out.



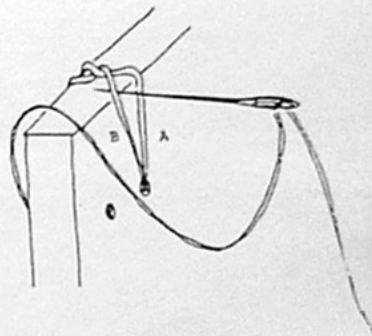
HEADBANDS

step 5

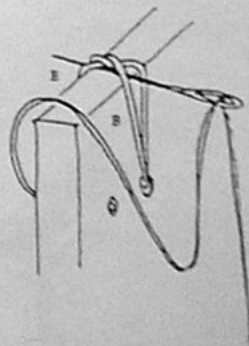
Bring strand B over strand A with the tip of the needle.



Inside of back board

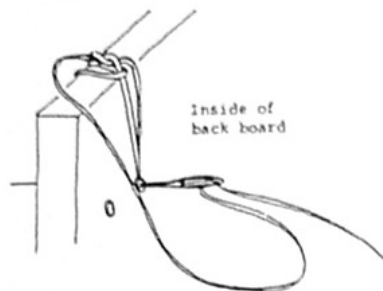


Go underneath both sides of B.

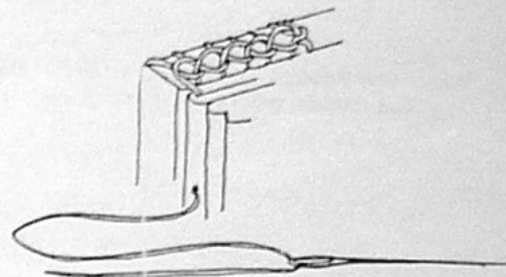


Coptic headband

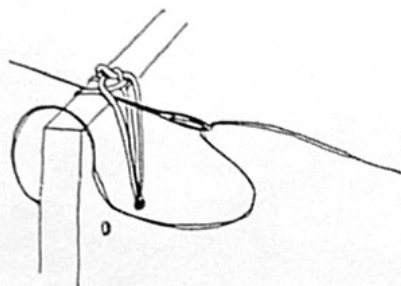
Step 6  
Go into the hole from inside to out.



Step 9  
Go into the first gathering and out on the spine.



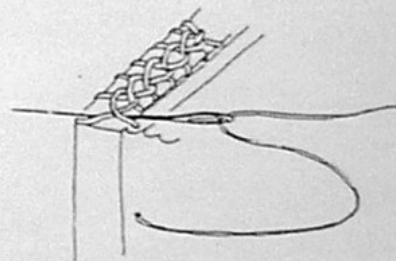
Step 7  
Go under the latest thread crossing, also from inside to out.



As is usually the case, the pattern is slightly irregular at the beginning.

Push the links to the center of the board with your thumbnail as you go along.

Step 10  
Go under the crossing just formed.

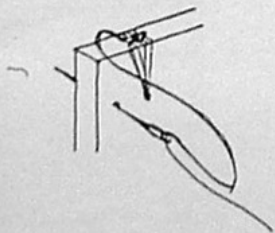


Step 8  
Repeat steps 6 and 7 to the edge of the board. In this drawing the threads are spread apart to show the pattern clearly.

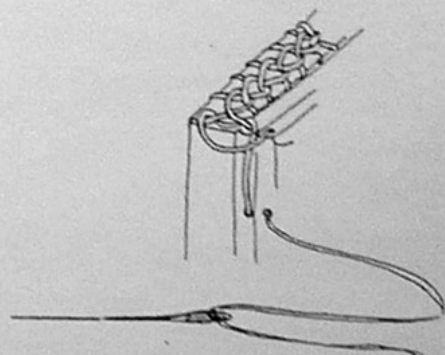
The headband actually looks more like the drawing on p. 27.



Switch to the next hole to tie down when about half the distance between the holes is covered on the edge of the board.



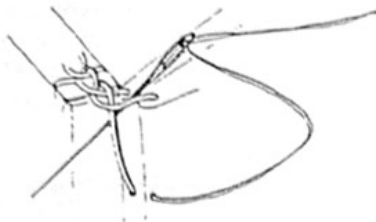
Step 11  
Go into the second gathering and out on the spine.



Step 12

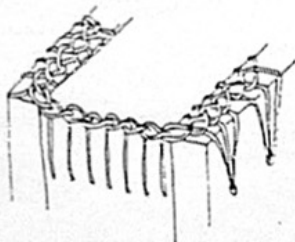
The thread going into the gathering and the outer tie down of the previous one form a crossing.

Go under it and tighten gently.

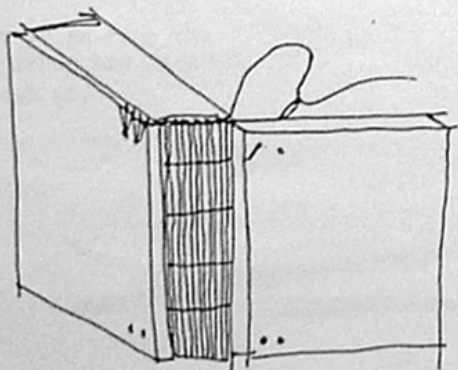


Step 13

Repeat steps 11 and 12 across the spine.

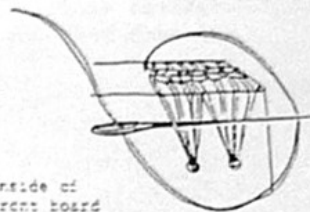


When you reach the front board go into the inner hole from inside to out and catch up the previous link as you have been doing.



Step 14

After repeating step 12 for the last time, tie a loop around the last tie down inside the board. Cut off the thread, leaving about 1/2", and glue the tail down.



Inside of front board

## ETHIOPIAN HEADBAND

We have no source for these instructions other than examination of Ethiopic manuscripts in the Beinecke Library. Very few of them have headbands, but those that do follow about the same pattern. Since, obviously, we can't take the books apart to see how they were put together, we can't be sure that this is how they were done. We have chosen what seems the most reasonable method and at least the resulting headband looks like the Ethiopian ones we have seen.



Spine



Edge

These headbands are made after the book has been covered. Two rows of stitches go through the leather on the spine, the thread attaching a braid on the edge of the book as it goes along.

### Equipment

Finishing press (optional)

This headband can be done equally well without one.

Needle, curved or straight

Scissors

Awl

### Materials

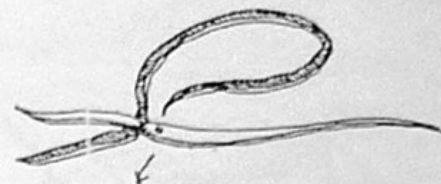
2 strips of leather (strong, stiff and thin if possible) about 1/8" to 1/4" wide by the width of the spine plus 4" or 5". For ease of reference we will assume that these strips are red and black).

Barbour's 3 cord, No. 30 or No. 18 thread

Beeswax

### Step 1

Poke a hole about 2" in from the end of the black strip and lace the red one through it.



### Step 2

Poke a hole in the red strip and lace the black one through it.

The holes should be about the width of the strips apart. It is easiest to poke them after you have done the previous lacing.

### Step 3

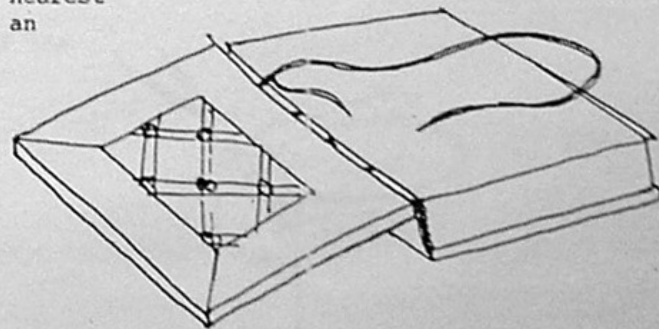
Continue lacing the strips together, alternating the one you lace, black into red, red into black.

This forms a braid like this:



### Step 4

Inside the hinge tie a piece of sewing thread about 1' long to the thread of the nearest sewing station. Use an overhand knot.

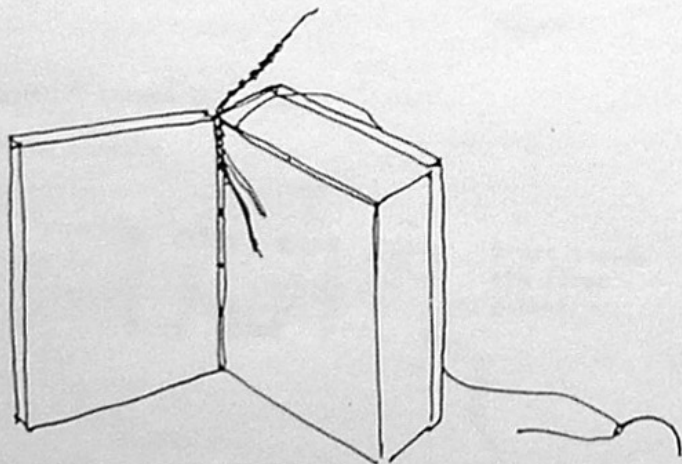


Step 5

Catch the underside of the braid and go sideways into the center of the first gathering, about 1/2" down from the edge.



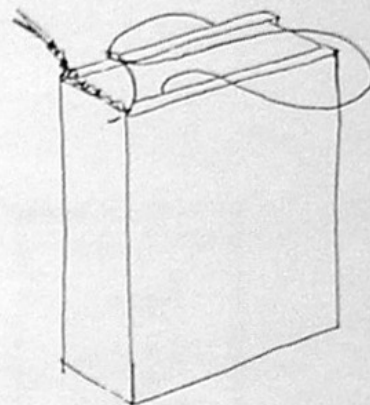
Pull the thread tight. This brings the braid into position.



Step 6

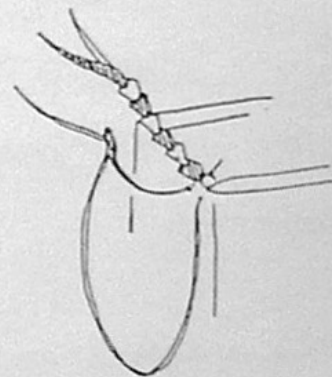
With the spine facing you, come up and out through the turn-in level with the edge of the bookblock or slightly angled down from it.

See step 9 for the sewing pattern.

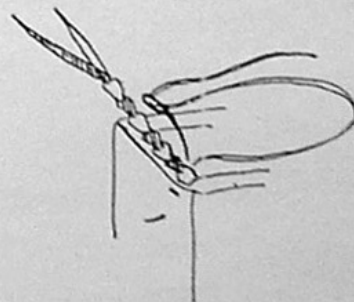


Step 7

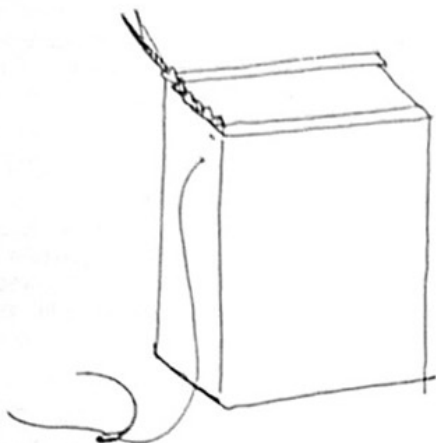
Go back through the leather, between the two strips of the braid, forming the first stitch,



and into the center of the next gathering, about 1/2" down from the level of the first stitch.



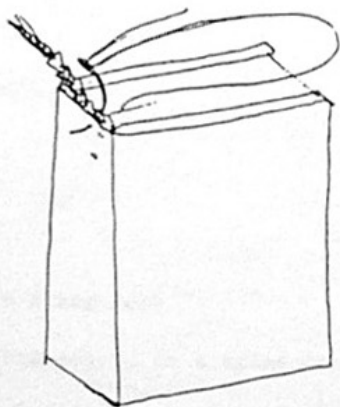
and come out on the spine.



Step 8

Go back into the center of the next gathering, thus forming another small stitch.

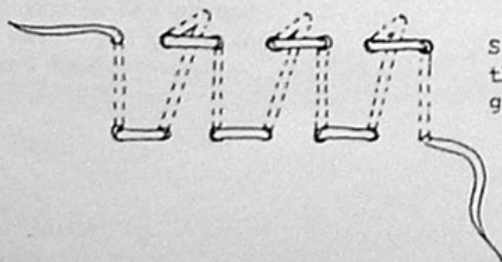
Go up to the edge, under the braid, and out through the spine leather.



Step 9

Repeat steps 7 and 8 across the book.

This is the sewing pattern.

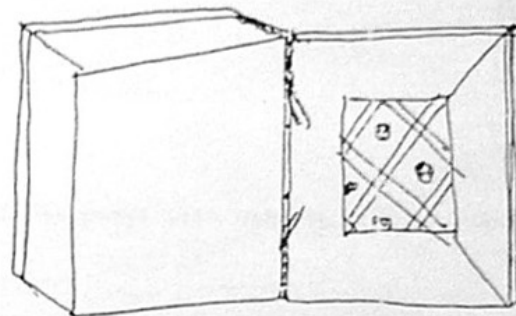


Start inside the first gathering.

Step 10

You can go out into the hinge after completing either the edge stitch or the one below it, depending on where you are in the last gathering.

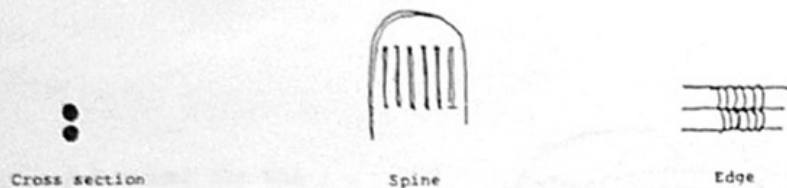
Tie the braid to the nearest sewing station in any way you like.



## PLAIN WOUND DOUBLE HEADBAND

The instructions for this headband are based on the articles and diagrams of Barbara Giuffrida and Karl Jäckel (see pp. 78-79) which are the simplest and best of those published on the medieval, plain wound headband.

The ends of the cores of this type of headband were usually laced into wooden boards and pegged. It is said to have been sewn, in some cases, as a continuation of the sewing of the text block. It can be sewn through a plain spine lining or one ending in a tab. A partial spine lining and a half moon tab are included in the drawings and instructions, but the angling back of the spine to accommodate the headband, which was often done, is not.



### Equipment

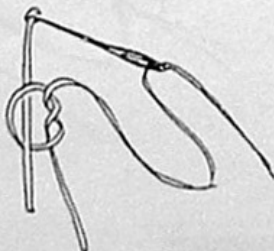
Finishing press  
Scissors  
Needle  
Pliers (optional)

### Materials

2 cores about 1/8" in diameter for a medium sized book  
Barbour's 3 cord, No. 18 linen thread  
Leather lining piece with a tab, glued to the spine, or a spine lining that does not extend  
Adhesive

### Step 1

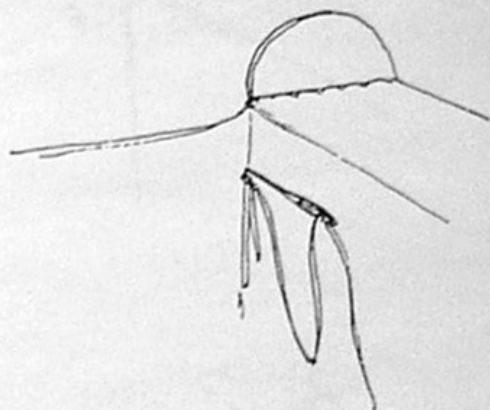
Tie the thread around the sewing thread inside the first gathering with an overhand knot.



### Step 2

Pull the thread tight enough so that the knot slides up to the kettle stitch hole, and go out through the hole and the spine lining.

You may find pliers helpful to pull the needle and thread through the leather.

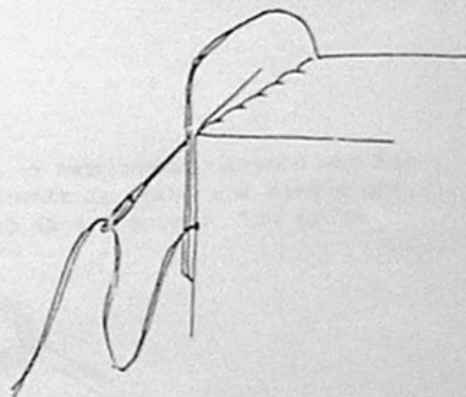


### Step 3

Put the book in the press with the edge facing you.

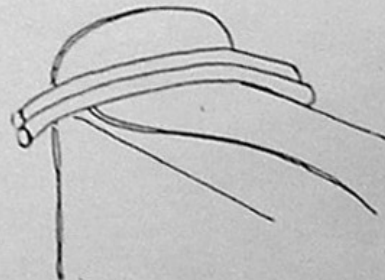
### Step 4

Come back toward you through the tab, just below the edge of the book.



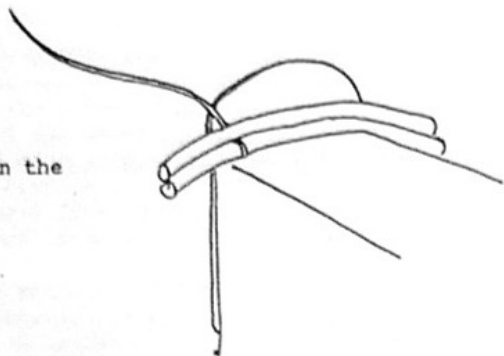
### Step 5

Hold the two cores against the tab and on top of the thread.



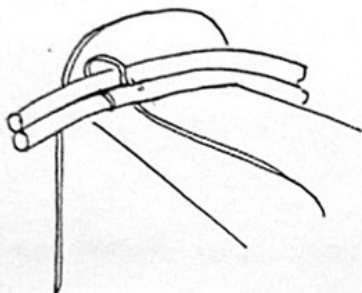


Step 6  
Take the thread back, in between the cores, but not through the tab.

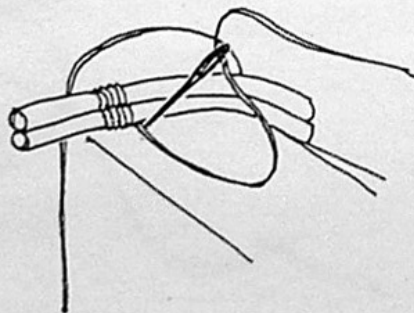


Step 7  
Bring the thread around the top core and behind the bottom one. The thread forms a figure eight.

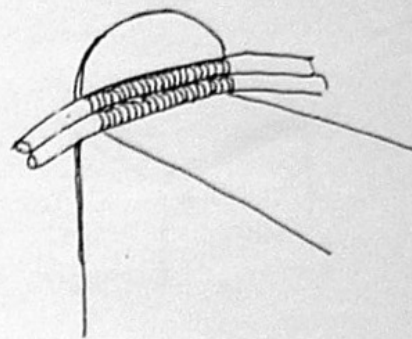
Wind the thread in this figure eight until you reach the center of the next gathering.



Step 8  
Go into the center of the gathering, out at the kettle stitch, and back toward you through the tab, below the cores.



Step 9  
Repeat steps 6 through 8 across the spine.

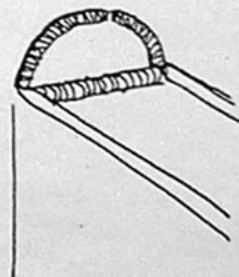


Step 10  
Go out of the final gathering at the kettle stitch and tie the thread around the previous tie down with an overhand knot. Cut off the thread, leaving about 1/2", fray it out and glue it down.



\* \* \* \* \*

Books frequently had single, plain wound headbands. Anyone who has worked the double one will have no trouble in doing the single one. The double one was occasionally worked as a chevron. See p. 76.



Braided headbands were popular, particularly in Germany, in the XVth and XVth centuries. They were worked on primary headbands, probably plain wound or with a bead on the spine, laced into wooden boards. They were worked after the book was covered, with the leather usually cut flush at the head and tail of the spine and the thong going through it and underneath the primary headband. It has been suggested that they were worked wet, but we have found that wet tanned leather is very difficult to braid. We have not tried working with tawed skin thongs.

The headband described here is based on the most difficult (and prettiest) of Karl Jäckel's descriptions and drawings of braided headbands, and on observation of braided headbands in the Beinecke Library.



Edge



Spine

Equipment

Scissors

2 needles with large eyes

Awl

Needle nosed pliers

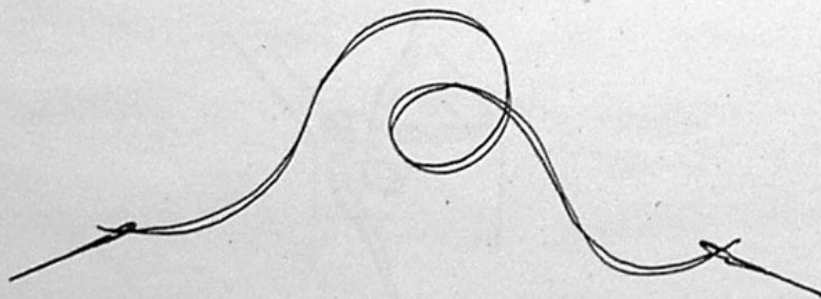
Material

A long leather thong about 1/8" wide

A plain wound or beaded-on-the-spine primary headband, see pp. 11-16 or 40-43

Step 1

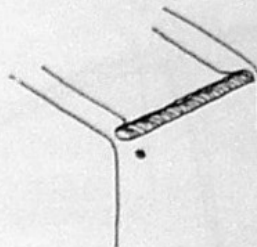
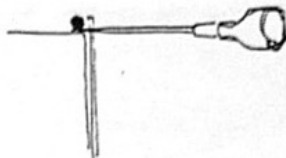
Cut the two ends of the leather thong to points. Thread both ends. It looks as if the ends of the thongs would come out of the needle eyes but they don't.



Step 2

Punch a hole through the leather on the spine with an awl, about 1/8" in from the joint and just under the primary headband.

Be careful not to damage the bookblock.

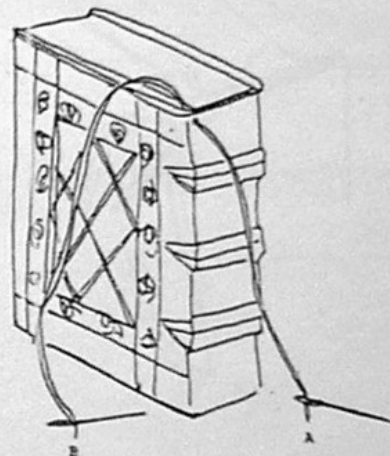


Step 3

With the spine facing you, lace the thong through the hole in the leather and underneath the primary headband.

Ends A and B should be of equal length.

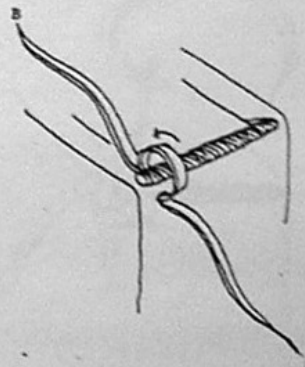
It is helpful to mark end A in ink near the tip.



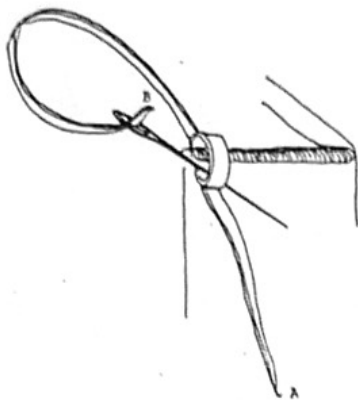
Step 4

Go around and bring end A toward you through the same hole, using the pliers to pull it through.

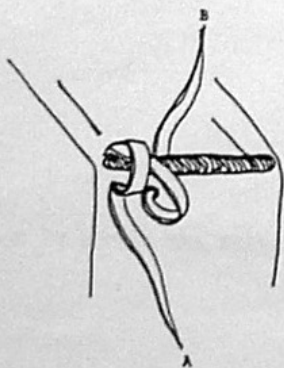
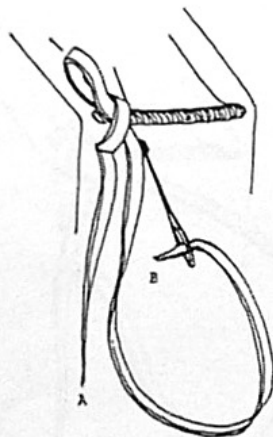
Tighten the thong about this far.



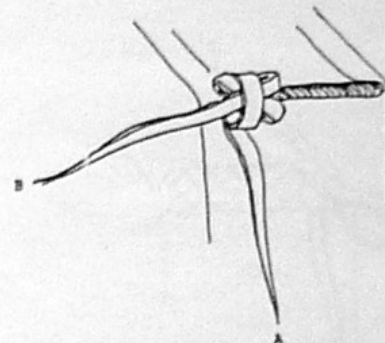
Step 5  
Pull end B through the loop thus  
formed.



Step 6  
Pierce a second hole with the awl,  
about 3/16" to 1/4" away from the  
first one, and go through it under  
the primary headband with B.

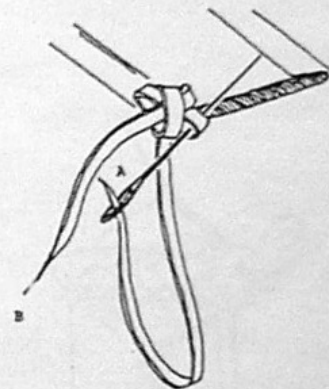


Step 7  
Pull the thong gently (not tight)  
and go through the top loop with B.

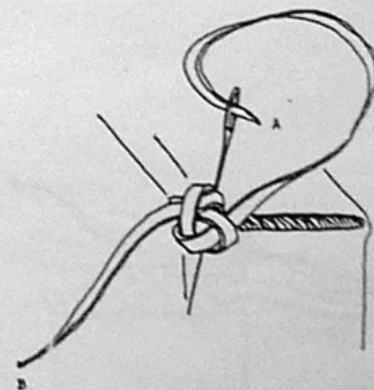


Be sure to have the hair (right)  
side of the leather showing.

Step 8  
Go through the bottom loop with A.



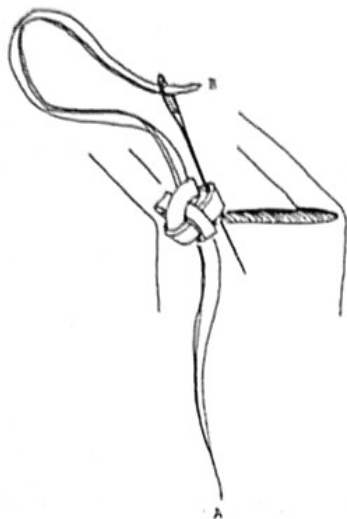
Step 9  
Come back toward you, under the  
primary headband and through the  
same hole, with A.



Step 10

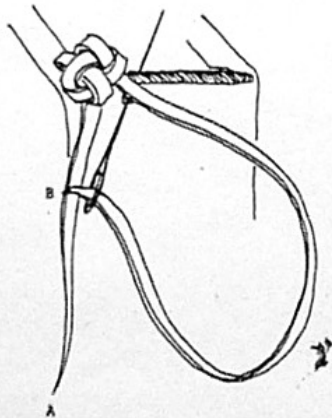
Go through the upper right hand loop with B, as in step 5.

Tighten the whole braid.



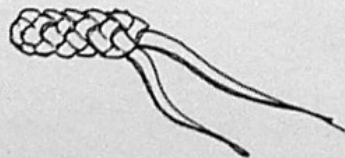
and go into the next hole.

Twist the thong so that the hair side is showing.



Step 11

Repeat steps 7 through 10 across the spine.

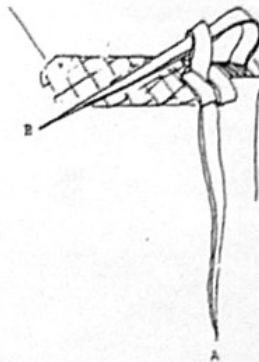


HEADBANDS

Step 12

The last hole should be just short of the joint.

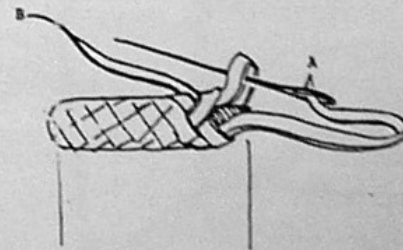
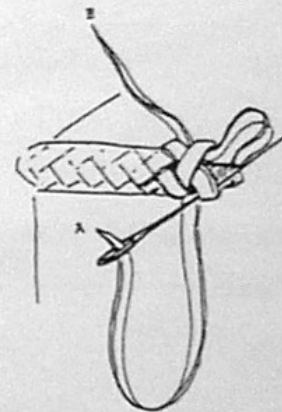
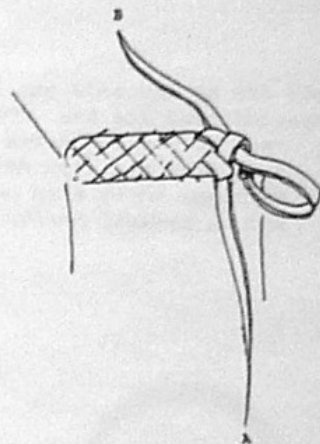
Bring B through the last upper loop.



Step 13

Go through the bottom loop with A,

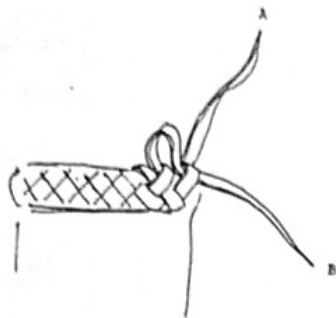
and come back through the last loop formed by B (step 12).



German braided headband

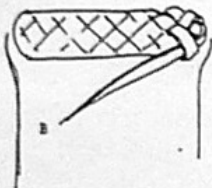
Step 14

Before tightening A completely, twist B so that the hair side is out and lace it through the loop just formed by A.



Step 15

One last lacing with B rounds off the headband nicely. Pull A and B tight and cut them flush.



GREEK HEADBAND

Sixteenth and XVIIth century Greek headbands are attached on the edges of thick, flush, usually grooved wooden boards, and are sewn through coarse cloth spine linings which, as usual, are not shown in the drawings. They often consist of one core with stitches sewn on a diagonal with another core with stitches sewn at a right angle to the edge of the book on top of it. This is a headband learned in the Istituto per la Patologia del Libro in Rome.



Cross section



Spine



Edge

Equipment

Drill with a 1/16" or 1/8" drill bit

Scissors

Needle

Materials

1 stiff cord about 1/8" to 1/4" in diameter, depending on the size of the book and about 4" longer than its width

1 stiff cord, slightly thinner, and the same length as the first

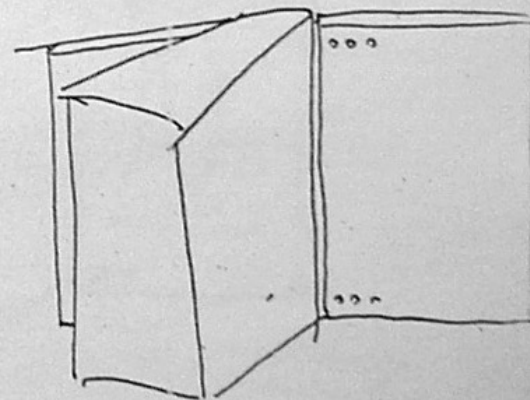
Barbour's 3 cord, No. 18 linen thread

Beeswax

Adhesive

Step 1

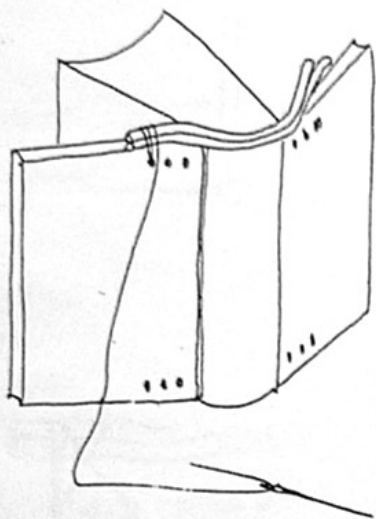
Bore six holes in each board, 1/2" in from the head and tail edges, about 1/4" apart, and 1/4" in from the spine edge.



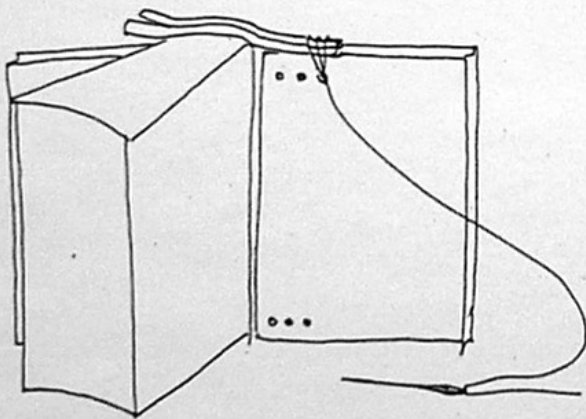
Greek headband

Step 2

Put the cores on the edge of the book with about 1 1/2" lying on the back board. Starting from the outside, wind the thread three times into the outermost hole. If you go over the end of the thread when looping around the board, it won't need further fastening.

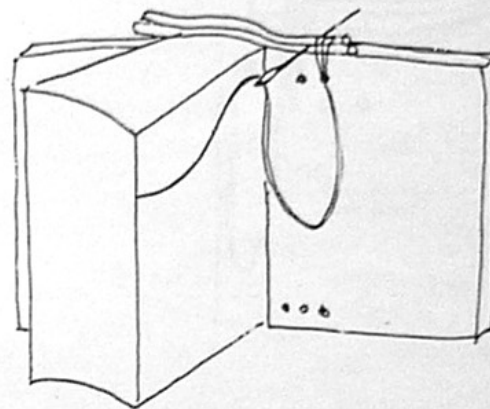


Go back through the hole to the inside.

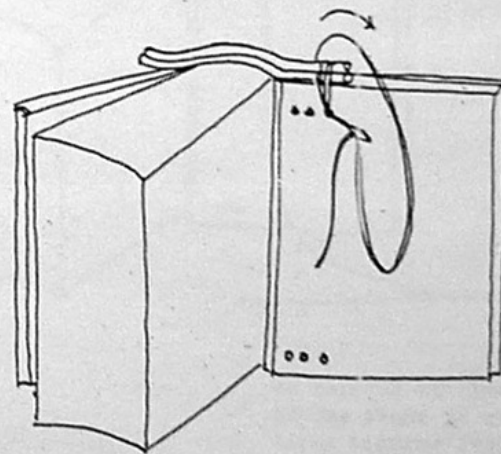


Step 3

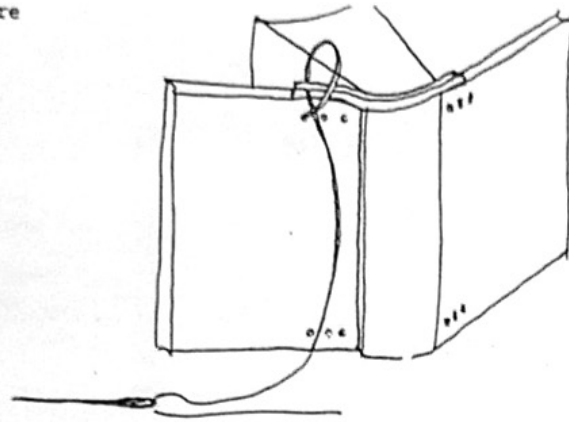
Go between the cores from the inside out,



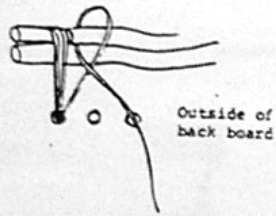
over around both cores, down, and through the hole.



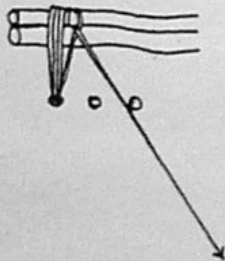
Go up around the upper core  
and back between the two  
cores.



This forms a loop.



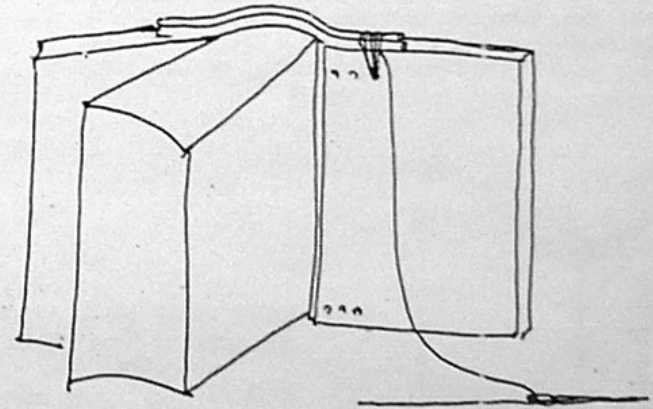
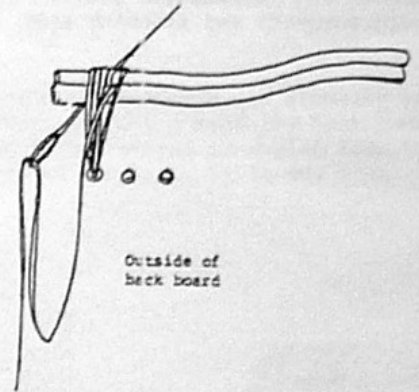
Pull tight.



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HEADBANDS

Step 5  
Go under both cores three  
tie downs back.



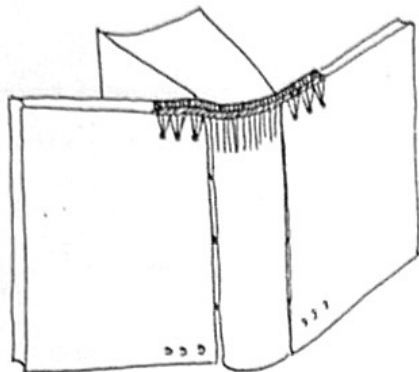
Be careful to come out  
to the right of the  
first winding inside the board.

Greek headband

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Step 6

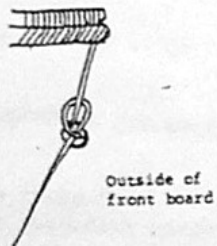
Repeat steps 3 through 5 across the book, moving on to tie down in the other holes in the board and in the gatherings as you come to them. End at the outer hole of the front board.



Step 7

Loop the thread around the final tie down, cut it off, leaving about 1/2", and glue it down.

Cut the cores off flush with the beginning and end of the embroidery.



Outside of front board

ARMENIAN HEADBAND

The Armenian bindings we have seen have thick wooden boards and the primary headbands are tied down in them and sewn through coarse cloth spine linings (not included in the following drawings). The secondary embroidery is sewn on three cores. This produces two chevrons pointing in opposite directions.

We don't know if this is the way Armenian headbands are actually worked or not. These directions do, however, produce a headband that looks like Armenian ones. The pattern of this headband is copied from those on Armenian manuscripts in the Beinecke Library. It is the most difficult headband we have tried.



Cross section



Spine



Edge

Equipment

Drill and 1/16" or 1/8" drill bit

Scissors

2 No. 7 or 8 crewel needles

Materials

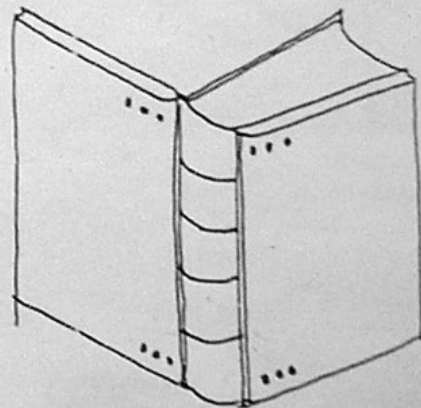
2 pieces of cord about 1/8" in diameter and long enough to extend about 1" onto each board

2 pieces of cord about 1/16" in diameter and the same length

2 colors of very fine silk or cotton embroidery thread split in two  
Barbour's 3 cord, No. 30 linen thread for the primary tie downs

Step 1

Bore two or three holes in each board, about 1/2" in from the head and tail edges, 1/4" apart, and about 1/4" in from the spine edge.



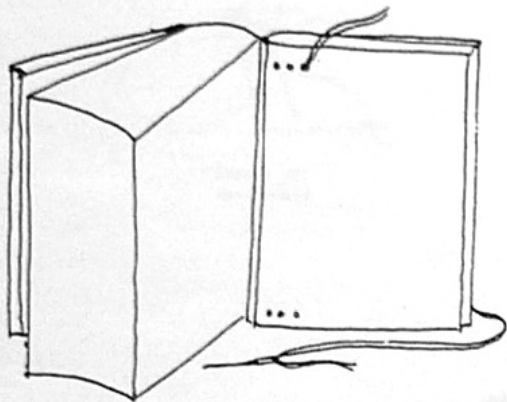
Armenian headband



Step 2

The primary core is attached with a double linen thread.

Go through the outer hole in the back board from inside to out, leaving a tail inside.

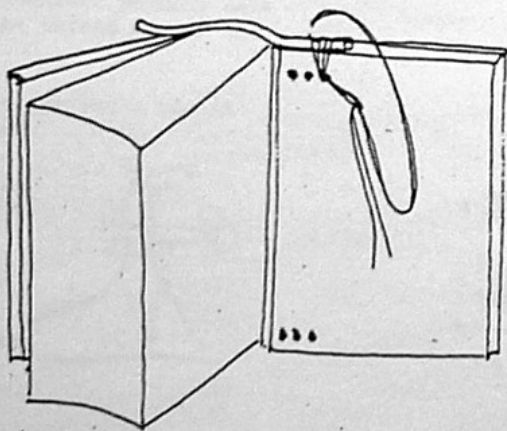


Step 3

Anchor the primary core with three or four loops in each hole, the thread going from inside to out.

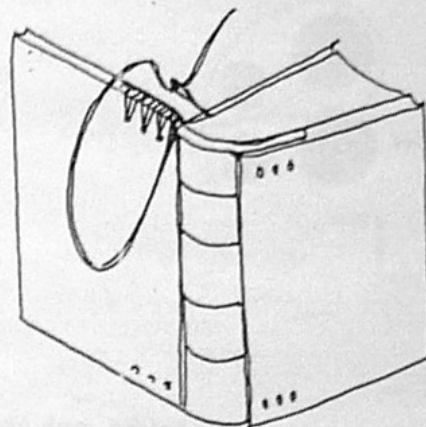
If you include the tail in the looping as you go along, it will need no further fastening.

Wind around the core itself as you cross from the board to the spine. This makes it easier to attach the secondary headband at the joint.



Step 4

After winding across the joint, go into the first gathering and come back out on the spine.

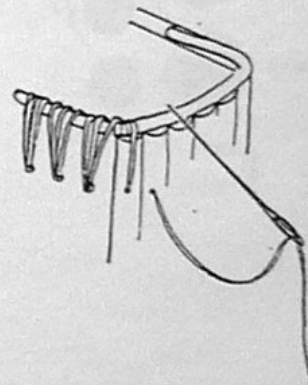


Step 5

Loop around in the second gathering and so on across the spine and over onto the front board.

Note that the thread does not wind completely around the core itself (except at the joint) but merely attaches it to the edge of the book.

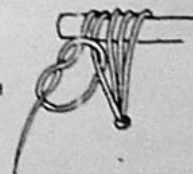
Do not tighten the thread too much to avoid flattening the core.



Step 6

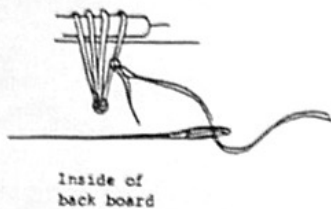
To finish the primary sewing, tie the thread around the lacing with an overhand knot.

Inside of front board

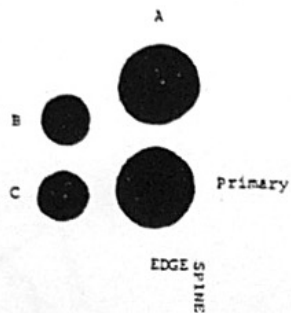


Step 7  
Tie the light color thread to the outermost lacing with an overhand knot.

Use cotton embroidery thread, split in two, to approximate fine Armenian thread.

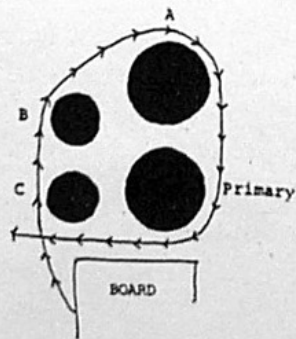
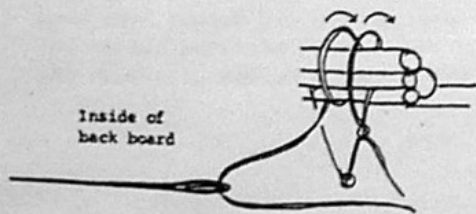


Step 8  
Place three cores on the primary like this:



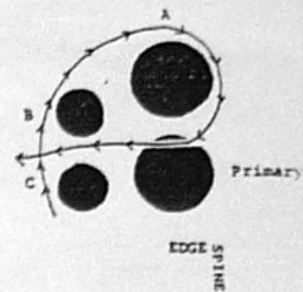
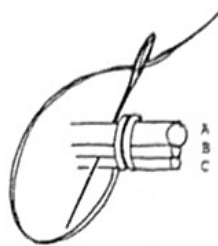
Step 9  
Going from inside to out, to the right of the outermost primary core lacing, loop the thread around the cores twice.

Be sure to hold the cores one on top of the other.

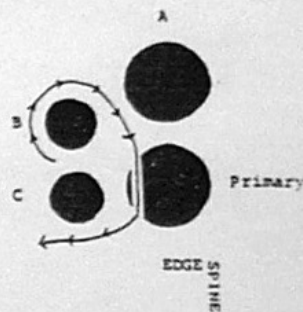
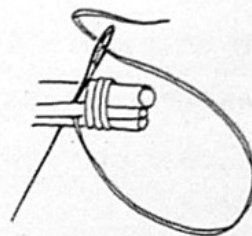


Step 10  
Go up and around A and come back toward you between B and C.

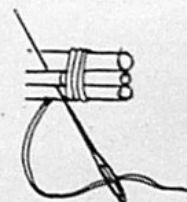
Try to catch a thread of the primary core, or the core itself, as you go past it.



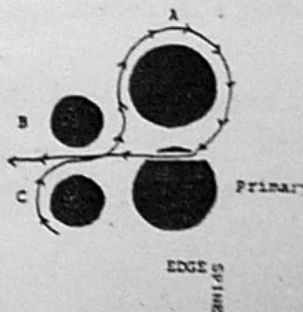
Step 11  
Go up around B and down behind cores B and C, coming back underneath them.



Step 12  
Go back up behind B,



around A, and back toward you between B and C.



Step 13

Repeat steps 11 and 12 four times.

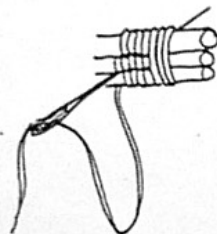
In doing so you can add a thread of the second color so that it will be in position when you need it. See p. 57 for a common pattern.



Step 14

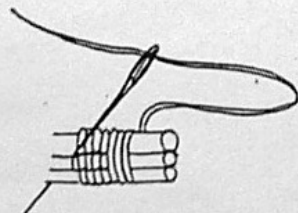
Repeat step 11 and go between B and C with the needle pointing to the right, seven windings back where you started.

Be sure to catch the primary as you go.



Step 15

Come back toward you over A, with the needle pointing to the left of the windings, and go behind B and C.

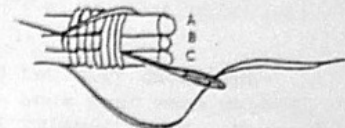


Step 16

Go in between B and C at the beginning of the windings and come out between A and B to the left of them.

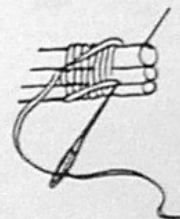
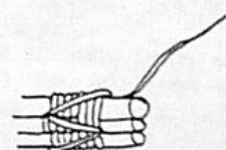
Do this in one step without going out in the back.

You will find it easier to catch a thread of the primary if you spread A and B slightly apart.



Step 17

With the needle at a right angle to the cores, go straight back between B and C to the right of the windings.



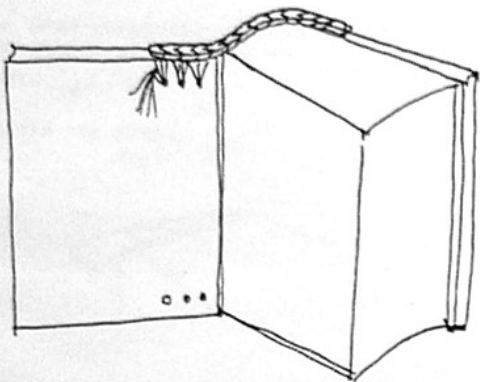
Step 18

Repeat steps 15 through 17, moving to the left one winding at a time.



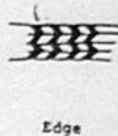
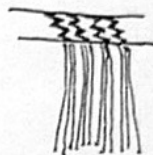
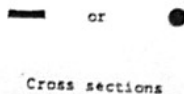
### Step 19

After completing step 17 on the front board, go through the board to the the inside and tie the threads around the outer tie down with an overhand knot. Cut off the ends, leaving about 1/2", fray them out and glue them down. Trim the ends of the cores flush with the embroidery and put a dab of adhesive on the outer windings on the spine side.



### ISLAMIC HEADBAND

Karl Jäckel and Deborah Evetts have described two very different methods of working this type of headband. We have seen both methods in the Beinecke Library's large collection of Islamic books. Many of these headbands were sewn without cores, a few on cord cores and a larger number on strips of leather. There is very little variation in the chevron pattern which usually consists of two highly contrasting colors, with occasionally a gold or silver thread included.



#### Equipment

Finishing press  
Scissors  
Needle

#### Materials

A strip of stiff leather, 1/4" to 1/2" wide by slightly longer than the width of the book  
2 colors of silk or embroidery cotton thread  
Barbour's 3 cord, No. 30 linen thread  
Beeswax (optional)  
Adhesive

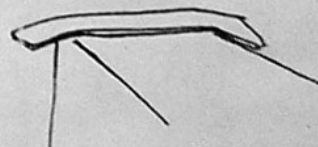
#### Step 1

Put the book in the press with the edge facing you.

#### Step 2

If necessary, stiffen the leather strip with paste and let it dry.

Glue it on the edge.

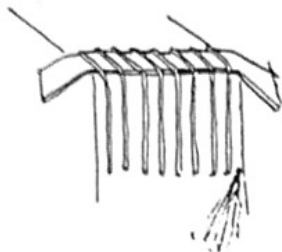


Step 3

Tie a thread to the sewing inside the first gathering with an overhand knot. Come out on the spine and loop the thread around the leather strip, going into the center of each gathering. Come out on the spine at the last one, cut off the thread, leaving about 1/2", fray it out and glue it down.

The thread does not wind completely around the core itself but merely attaches it to the edge of the book.

Do not pull the thread too tight.



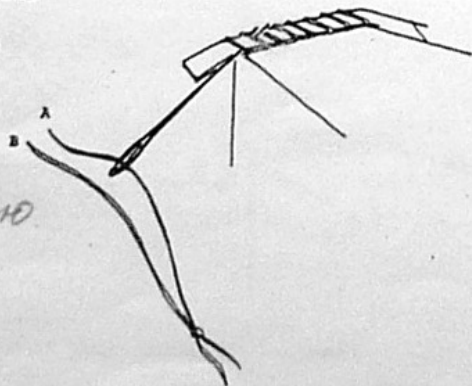
The threads in these drawings are very far apart for clarity. In fact, Islamic (tie downs) are very close together and look like the drawing on p. 65.

Step 4

Tie two different colored threads together with an overhand knot. Come up through the leather strip with thread A, at the right of the second (primary) tie down. This makes a nice size chevron.

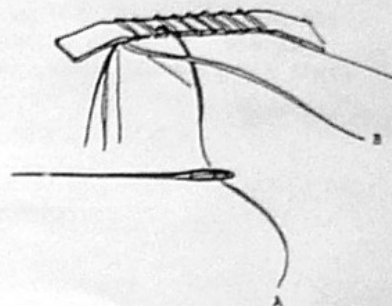
The size of the chevron can be varied by the number of tie downs you go under. Ideally, the number of tie downs should be divisible by the number you plan to go under.

Pull the knot (snugly) up under the strip of leather.



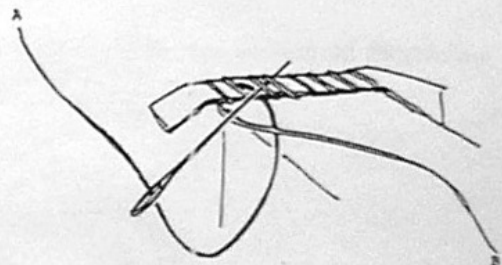
Step 5

Cross B over A from left to right.



Step 6

Go under the next two windings with A and tighten the thread gently.

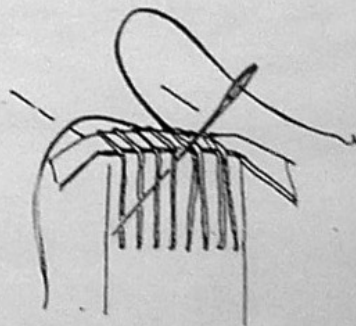


Step 7

Repeat steps 5 and 6 across the book with A, being careful to work along the front edge of the leather strip.

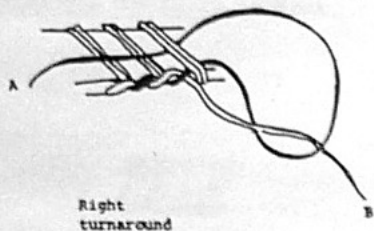
The easiest way to pick up a winding is on the spine. Then slide the needle and thread around to the front.

Note that picking up the threads pulls them together.



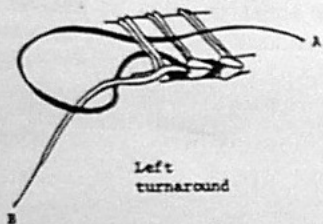
Step 8  
Cross B over A and go back under the last two tie downs with A.

Tighten the thread gently.



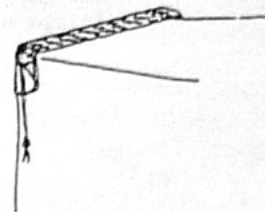
Step 9  
Repeat steps 5 and 6 across the book, crossing B over A from right to left. Push this second row of threads against the first row.

This makes the first chevron.

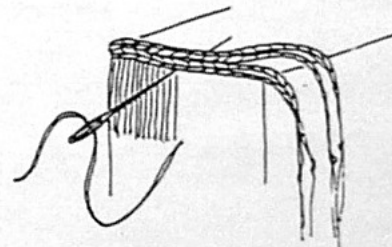


Step 10  
Work enough rows of chevrons to cover your strip of leather.

Step 11  
To finish, paste the ends of the core down on the first and last fly leaves. Cut off the embroidery threads, leaving about 1", tie an overhand knot near the end of them to prevent fraying, and tack them, haphazard, to the core or spine lining.  
n формула  
adj формулярный  
ср же чник  
Схр бэ зодз  
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The hinges of Islamic bindings usually cover the method of beginning and ending the headbands.



This is the headband described by Karl Jäckel, made up of threads of different colors twisted in opposite directions. It looks just like the one described above unless it is falling apart.

## ITALIAN RENAISSANCE HEADBAND

The primary sewing for this headband is described on pp. 11-16. The secondary sewing, with three colors, has five cores (four very small) and a bead on the spine. It is very attractive and not as complicated as it looks.

Jenny Hille learned to work this headband at the Istituto per la Patologia del Libro in Rome.



Edge



Cross section



Spine

### Equipment

Finishing press

Scissors

3 No. 7 or 8 crewel needles

### Materials

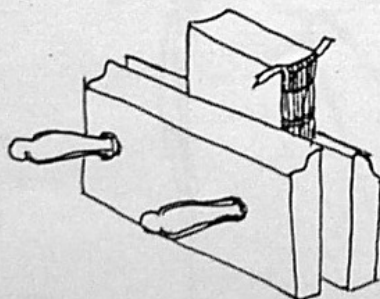
A primary headband sewn on a piece of leather and/or cord  
Barbour's 3 cord, No. 18 linen thread for the small cores  
3 colors of silk or linen thread

Beeswax

Adhesive

### Step 1

Put the book in the press with the spine facing you.



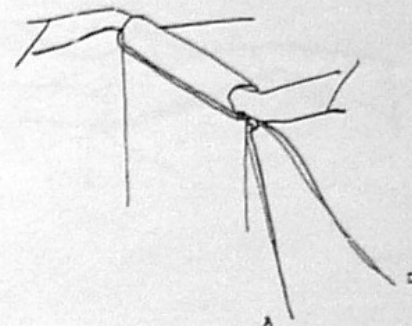
HEADBANDS

### Step 2

Cut a length of thread (Barbour's 3 cord, No. 18 or slightly thicker) about 10" longer than the width of the spine. Wax it.

Loop it around the primary headband, going under one end of the core and across the spine. Tie it under the other end of the core with a square knot.

This forms cores A and D.

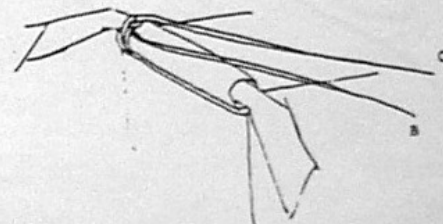


### Step 3

Tie another piece of waxed thread, about the same length, around the beginning of the primary headband.

The two ends of this thread form cores B and C.

Here only a single overhand knot is needed.



### Step 4

Cut three lengths of thread, each of a different color (in this case green, white and red as A, B and C are already in use), and about 4' long for a medium size book.

Thread each color into a needle, doubling the thread.

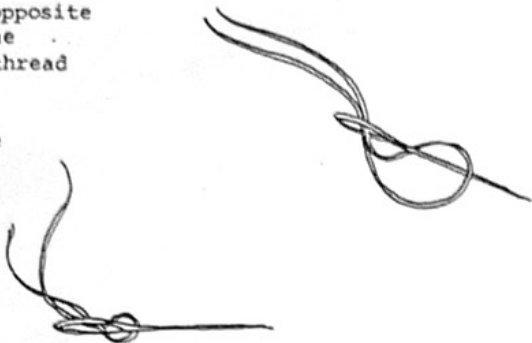


Italian Renaissance headband

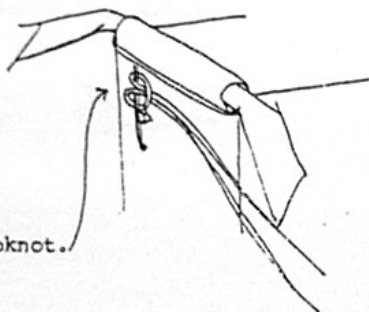
Step 5 (optional)

Bring the loop of the thread opposite the ends to be knotted over the needle. Pull the needle and thread in opposite directions.

This anchors the needle in one place and helps keep the thread from tangling.

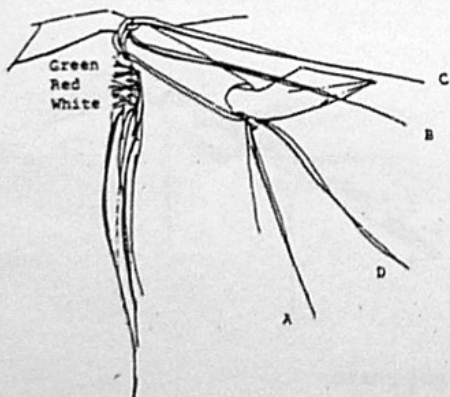


Tie the ends together.



Step 6

Tie each thread around the first tie down of the primary sewing with a slipknot.



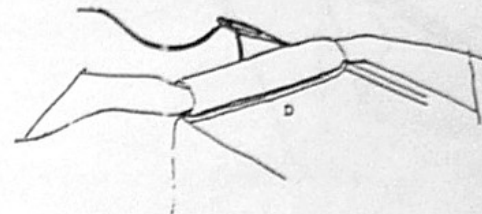
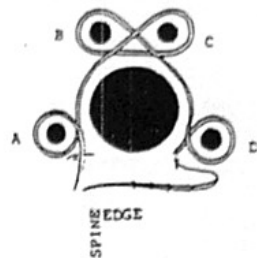
You now have five cores -- the primary headband surrounded by the four small cores A, B, C and D.

The colored threads are attached and ready to begin sewing.

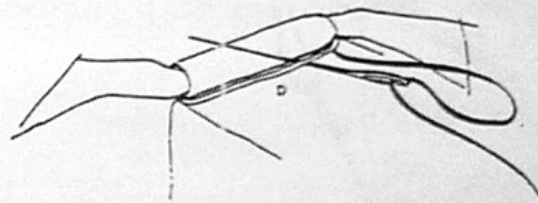
This looks and is confusing at first.

Step 7

Go under the primary headband and cores A and D with the green thread.



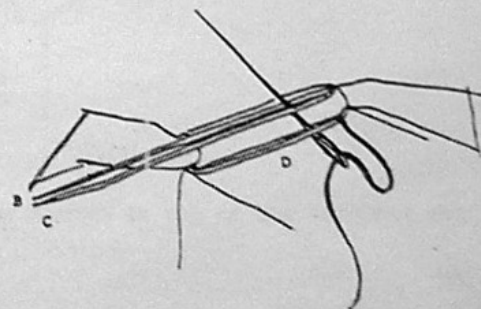
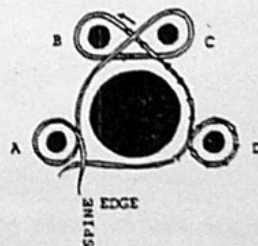
Go back between the primary headband and core D.



The reason for backtracking here is because it is difficult to angle up between the primary headband and core D when going under the primary headband.

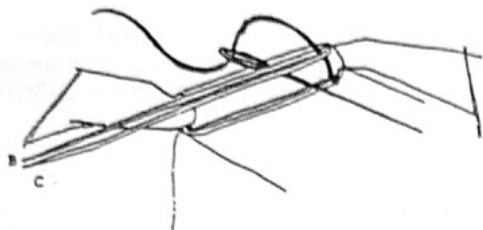
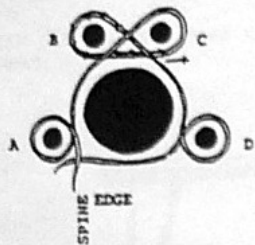
Step 8

Go around core D and up between cores B and C.





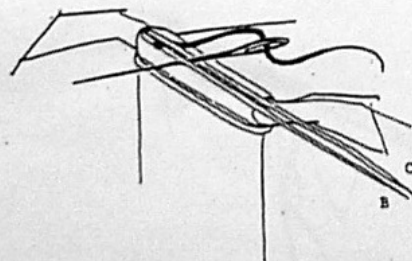
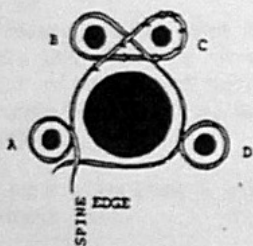
B and C.



Be careful to hold these cores taut on top of the primary headband to avoid this.

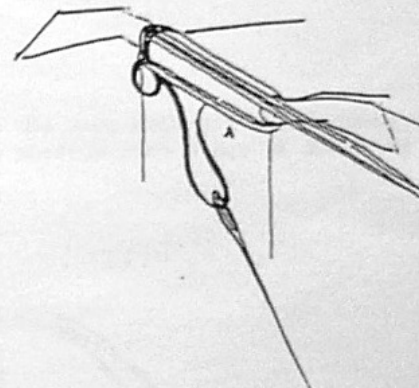
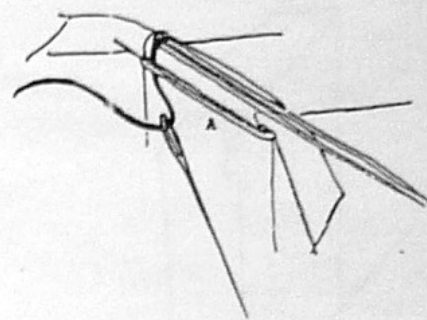
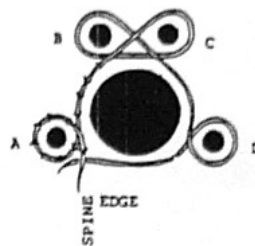


Step 10  
Come back toward you over C and under B.



HEADBANDS

Come down along the primary headband and around A, ending where you started.



Step 12  
Repeat steps 7 through 11 with the red and white threads.

Hold the previous winding tight when starting the journey with the next color.



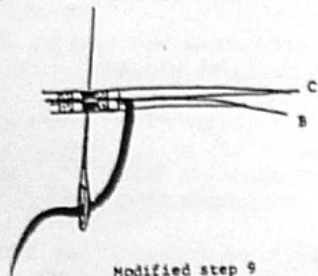
After the three colors are sewn, the chevron or top of the headband can be started.

Italian Renaissance headband

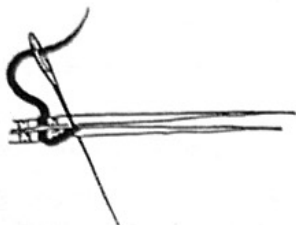
Step 13

Repeat steps 7 through 11 with the green thread with two exceptions: Do step 9 (go over core B and under cores B and C.) three windings back in the middle of the previous green winding, and step 10 to the right of the embroidery.

Be sure you go out over the green winding on the edge side of the headband.



Modified step 9



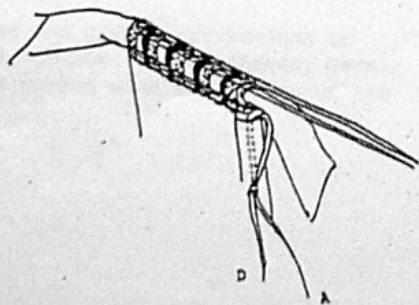
Modified step 10

Continue across the book, alternating the colors.

Step 14

To finish, thread core D into a needle and bring it through the center of the final gathering and out onto the spine at the kettle stitch.

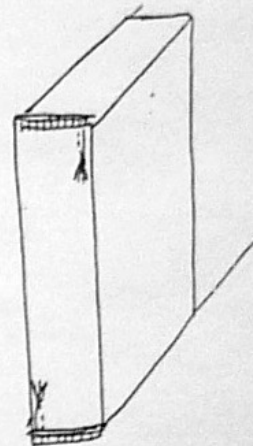
Tie core A to core D with an overhand knot.



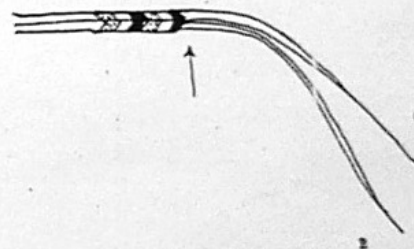
HEADBANDS

Step 15

Cut off the ends, leaving about 1/4", and fray them out. Glue core and ends down on the spine.



Cores B and C can be threaded under the last bead and glued down, or cut off flush along the edge of the chevron with a dab of adhesive put on their ends.



If you do not plan to lace the headband into boards, the primary core may also be cut off flush.

Cut off the colored threads, leaving about 1/2", fray them out and glue them to the spine.

Italian Renaissance headband

Although manuals on bookbinding usually describe headbanding briefly, with a few exceptions it has not seemed necessary to include them here. We have included titles that cover the history of the headband even though they are not absolutely germane to our aspect of the subject.

Adam, C., Restauration des manuscrits et des livres anciens (Puteaux, 1984).  
A short chapter on the history of headbands with instructions on working four kinds.

Bosch, Gulnar, John Carswell and Guy Petherbridge, Islamic Bindings & Bookmaking, A Catalogue of an Exhibition, The Oriental Institute, University of Chicago, May 18 -- August 18, 1981.  
A brief description of the Islamic headband and the method of sewing it.

Clarkson, Christopher, Limp Vellum Binding (Hitchin, Herts, 1982).  
The use of medieval headband structures in conservation rebinding.

"A Note on the Construction of the Mondsee Gospel Lectionary by Christopher Clarkson, Conservator of Rare Books and Manuscripts at the Walters Art Gallery," The Journal of the Walters Art Gallery 37 (1978) pp. 72-73.

A diagram and description of the headband sewing of a gospel dating to the second third of the XIth century.

Dudin, M., L'Art du relieur doreur de livres (Paris, 1761).  
Interesting account of the manufacture of paper cores by children and fairly detailed instructions on working headbands.

Evetts, Deborah M., "Traditional Islamic Chevron Headband," Guild of Book Workers Journal 19 (1980-81) pp. 30-35.  
A detailed description of the working of an Islamic headband on a cord core.

Gast, Monika, "A History of Endbands, Based on a study by Karl Jäckel," The New Bookbinder 3 (1983) pp. 42-58.  
An extension of Karl Jäckel's work, with good photographs.

Gilissen, Léon, La reliure occidentale antérieure à 1400 (Turnhout, 1983).  
Descriptions and excellent photographs of medieval headbands.

Giuffrida, Barbara, "Book Conservation Workshop Manual, Part Three: Endbands," The New Bookbinder 2 (1981) pp. 29-39.  
Historical outline and detailed explanations of the structure of conservation headbands used in the Biblioteca Nazionale Centrale, Florence.

Horne, Herbert P., The Binding of Books; An Essay in the History of Gold-Tooled Bindings (London, 1894).

A few historical facts and a description of the working of a headband.

Jäckel, Karl, "Alte Techniken des Buchbinderhandwerks in der modernen Schriftgutrestaurierung, 2: Das Kapital," Bibliotheksforum Bayern 3 (1975) pp. 207-219.

Descriptions and instructions on working various types of headbands.

Johnson, Arthur W., The Thames and Hudson Manual of Bookbinding (London, 1978).

A clear description with drawings of single and double headbands with the bead on the edge.

Lamacraft, C. T., "Early Book-Bindings from a Coptic Monastery," The Library 4:20 (1939-40) pp. 214-233.

Fragments of colored headband threads were found in early Coptic codices in the Chester Beatty Library.

Middleton, Bernard C., A History of English Craft Bookbinding Technique (New York and London, 1963).

An outline of the history of English headbands.

The Restoration of Leather Bindings, Rev. ed. (Chicago, 1984).  
Dating of a few headbands, with drawings.

Petersen, Theodore C., "Early Islamic Bookbindings and their Coptic Relations," Ars Orientalis 1 (1954) pp. 41-64.

Two drawings of a Coptic headband. There are also clear drawings and a description of the Coptic method of headbanding in Petersen's unpublished work in the Morgan Library.

Pollard, Graham, "The Construction of English Twelfth Century Bindings," The Library 5:17 (1962) pp. 1-22.

A confusing diagram and description of XIIth century double headband sewing.

"Some Anglo-Saxon Bookbindings," The Book Collector 24 (1975) pp. 130-159.

Diagrams of the board attachment (including headbands which were part of it) and descriptions of books dating from the VIIIth to the XIIth centuries.

Powell, Roger and Peter Waters in The Stonyhurst Gospel, ed. T. Julian Brown (Oxford, 1969).

A detailed, clear description of the Stonyhurst Gospel headband.

Regemorter, Berthe van, "La reliure arménienne," Bazmaveb 61 (1953) pp. 200-204.

Description of Armenian headbands.

"La reliure byzantine," Revue Belge d'Archéologie et d'Histoire de l'Art 36 (1967) pp. 99-142.

Brief description of Greek headbands with good photographs.

"La reliure des manuscrits grecs," Scriptorium 8 (1954) pp. 3-23.  
Fairly detailed descriptions of Greek headbands.

"Le codex relié depuis son origine jusqu'au Haut Moyen Age," Le Moyen Age 61 (1955) pp. 1-26.

Brief descriptions of the Stonyhurst Gospel and Cadmug Codex headbands.

"Note sur l'emploi des fils métalliques dans la tranchefile," Scriptorium 15 (1961) pp. 327-8.

Byzantine influence on XVth and XVith century Greek manuscripts and the use of metallic thread in the Victor Codex headband.

Roberts, Matt T. and Don Etherington, Bookbinding and the Conservation of Books, A Dictionary of Descriptive Terminology (Washington, 1982).

Summarizes the history of headbands and lists the materials used.

Town, Lawrence, Bookbinding by hand, for students and craftsmen (New York, 1950).

Brief instructions on working a headband with a bead on the edge.

Veziin, Jean, "La réalisation matérielle des manuscrits latins pendant le haut Moyen-Âge," Codicologia 2 (Leiden, 1978) pp. 15-51.

A clear diagram of a plain, wound, double headband which is an extension of the sewing of the textblock.

Young, Laura S., Bookbinding & Conservation by Hand (New York & London, 1981).

Specifies the materials needed and gives instructions on working single core headbands, double core headbands, German style headbands and headbands worked with the sewing of the textblock.

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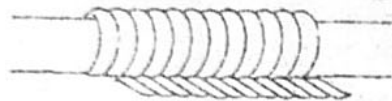


Bild 110 Kapitalbund senkrecht umstoßen  
*senkrecht umstoßen*



Bild 116 Flechtvorgang mit Lodestienen



Bild 111 Gedrehtes Band



Bild 112 Kreuzstich

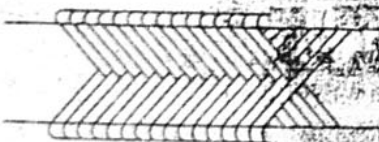


Bild 113 Kreuzstichvarianten

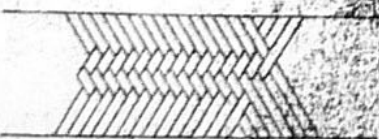


Bild 114 Geflochtenes Kapital



Bild 115 Flechtvorgang



Bild 117 Kapitalbau des Fadens

Bild 118 Fadenführung bei Umstoßen  
mehrerer Kapital

Bild 119 Fadenführung