

## READ

If you are using an industrial sewing machine we suggest you use nylon, cord (not monofilament), thread in size 12. It is so strong and durable, we use it at a problem. This possibly could be used for hand or awl sewing. If you get it use heavy waxed cord or waxed linen thread. Once again, if hand 9, it is much easier to have a shoe shop bond a sole onto the leather sole. Then you glue in the innersole and match and glue the uppers to the piece. Now also have the shoe shop sew this seam.

## USE

Avoid fumes always.

Preferably use Atco or Barge leather cement. They can be found at hardware stores, leather and craft supply shops, or shoe findings stores. The glue is used to certain parts in place until you sew them together. This way it assures you it will be on the place it belongs. Don't be sloppy with the glue.

## BUTTONS

We use deer horn and coins for our buttons, mostly in the five cent and ten cent size. You can use bone, wood, metal, stone. Solder a strong loop around the button. You can use a disher out coin.

## SIDE LINER OR INSOLE

Use sheep fleece, leather, or store bought insoles.

## COVER

Hand held one that uses an injector blade (available in craft or hobby shops) or a single edge razor blade or two.

Skive is to shave the thickness of leather to allow better fits between thick and thin. Skiving gives a thinner more comfortable seam.

## LEATHER

We use a two inch silver refrigeration duct tape. There are many different types of this tape. Avoid the silver tape that is soft and stretchy. You can use other masking tape but it is harder and more delicate to work with. You can use the tape at hardware, refrigeration and heating supply stores.

## FOOT BOARD

For attaching your pattern to after you have taped your foot.

## LEATHER TIP MARKERS

We use Sanfords No. 89 King Size markers. Their use is explained in the book. Or use some equivalent marker. (Felt tip.)

## SPEED HAND HELD LEATHER AWL

Comes with needles, it won't hurt to get extra needles. Available at saddle shops, hobby shops, hardware stores etc. You only need this if you don't have an industrial machine.

## 11. LEATHER PUNCH OR CHISEL

A one or two prong chisel or a round hole punch. Be sure to use a piece of hard wood or rubber to protect your tools when punching holes. Don't make your holes too big or too close together. Also avoid putting the holes too close to the edge.

## 12. OLD SOCK

The sock should be fairly thin and not have any holes or at least very small ones if any. The sock should also be taller than the moccasins you are making. Don't use a thick sock.

## 13. SCISSORS

Used to cut taping off your foot when job is done, and cutting the poster board patterns and the leather.

Actually you really need 2 different types of scissors. One that is for cutting the leather and one that is for cutting the taping off your foot when the job is done. The leather scissors are about 10 - 12 inches long and heavy duty. The other scissors are called surgical scissors and are slanted at an angle with a blunt tip on one of the blades. This keeps you from cutting your customer's leg while cutting off the taping. The leather scissors are available at hardware stores, hobby shops etc.. Ask an upholsterer to find you a pair. The surgical scissors can be found at hospital supply, drug stores etc..

## TAPING

Use a light sock (nylon or thin cotton), which is higher on the leg than the moccasin will be. While taping the sock should be kept as snug fitting as possible keeping the top pulled up.

1. Lay strips of tape (6" to 8" long) side by side overlapping  $\frac{1}{4}$ " of the edge. (Illustration 7) This works best if attached in one direction only, from the first strip until the desired length (equal to the length of the foot to be taped) is reached.

2. The foot is placed on the tape as in illustration 2. From this point on it is important that the weight of the person, whose foot is being taped, be kept evenly distributed on both feet. Starting with the toe area, each 2" strip of tape is added, by tearing, into 2 or 3 strips until it reaches the foot. (Illustration 3) These divisions of each strip work best if they match with curves, bumps, and toes. As each tear is made in a strip, the piece should be wrapped across the foot before tearing the next division. This tearing and wrapping procedure must alternate evenly between sides of the foot.

3. After taping the foot with this group of strips, then the toes and heel must be reinforced. Make two tape groups as in the illustration 4 (each strip is about 4" to 5" long). The point is placed under the heel a couple of inches (or the toes) each strip is torn into smaller strips. Alternating from side to side they are taped over the area, illustration 5. Often this step of the procedure must be repeated.

4. The whole foot should now be covered with tape so that none of the socks shows. At the ankle front and back place a 4" strip of tape torn as in illustration 6. This is a sticky piece to handle, but the close smoothness it gives the contours of these areas is worth the trouble. It may take two of these strips in each spot to get the trick.

5. The taping of the leg from the ankle up is done with 5" to 6" long strips of tape. The shape of the leg causes the tape to curve upward from the point of application. When the desired height of the moccasin top is reached, strips of tape should be applied so that the top is horizontal to the ground. The best way to determine the location of the top of the moccasin is to work with the shape of the leg. Gravity and the action of walking will cause the top to move downward. Therefore the area of the leg which is curving up to the thickest part of the calf should not give the top of the moccasin any leverage against the downward forces. The illustration 7 the area between B and C would be unsuccessful and uncomfortable. The area between A and B is a difficult height, but it is possible, especially with some experience. Above A up to the knee gives leverage to the

moccasin top. Also the area from the ankle up to C is a good area for the top of the moccasin.

6. After the taping is complete have the person sit down while you inspect the tape edges, especially around the sole. If there are any breaks where the sock shows, apply another piece of tape as a patch.

7. Have the person stand; the taping should be comfortably snug, not tight, should look like a form fitting space boot, no wrinkles. Now you will mark cutting line to remove the taping to use as a pattern. There is a cutting line around the sole and on both sides of the ankle. (Illustration 8) The line around the side of the ankle should be perpendicular to the floor. The line on the side of the front and so that it does not pass directly over the ankle bones. Now take a good look at your lines, these will be the seams and opening of the moccasin. Mark some short lines across the cutting lines for guides to match up when you put it into leather. (Illustration 8 and 9).

8. Have the person sit down before you start to cut the taping off. Cut down the outside vertical line until the sole line is reached. Now grasp the toe area and the heel (at the sole line center) and gently tug while the person tries to pull their foot out. When the taping is removed you must make two corrections to the seam lines. At the arch make the inward curving line straighter and at the heel raise the line  $\frac{3}{8}$ " at the center. This should gently slope back to the sole line of each side of the heel. (Illustration 10) Also there may be a slight tear just below the sole line at the opened seam line, patch this with a piece of tape. Redraw matching guide lines across the new lines at the arch and heel.

## ABOUT TAPING

1. Make a tracing of both feet. Check to see if they are mostly the same with differences of  $\frac{1}{4}$ " or more necessitate taping both feet.
2. For perfection tape both feet. This will assure that you are fitting both feet perfectly. If you want to take the chance that both feet seem to be the same; then here is how to choose which foot to tape. You tape the left foot if the person is right handed and tape the right foot if they are left handed.

## WHILE TAPING

1. Don't move, or watch your foot being taped.
2. Keep weight equal on both feet.
3. Wrap tape smoothly and snugly.
4. Do several practice tapings at first.
5. Each individual leg has its own shape which has natural positions for the top of the moccasin.
6. Check taping carefully to see that there are no breaks where the taping appears to be overlapping (especially around the bottom edge of the foot).

## PATTERN MAKING

Cut on the seam lines. To get necessary seam allowance tape a good ball point pen to a non-working one (DON'T use the retractable point push button type). Remove sock from sole piece and stick this tape sole onto poster board. Cut around at the edge of tape, but leave out going in for each toe dip. *Illustration 10* On the toe and front piece it is often necessary to make small  $1/8''$  to  $1/2''$  cuts around the toe area so that it will lie flat. *Illustration 11* Place a push pin at each sole side seam corner (*Illustration 12*) so that the area in between is stretched and is flat against the poster board. Now pull the toe part down, flattening it out, and draw the sole edge with a regular ball point pen. Mark the matching guide marks. Release the toe area and pull gently on the top, the push pins are still in the same place. The side seams are marked with a regular ball point pen against the tapping edge. If a tall moccasin is being made, it will be necessary to move the push pins once or twice. *Illustration 12* To do this, draw to the pin, then flatten the ankle area down and up; place a third pin a couple of inches from the original. Pull out the original pin on the same side and place it across from the original. Now remove the other original pin and draw along the edge to the pins. Repeat as often as necessary until the top is reached and completed. Put the matching guide marks on as you make the pattern from the tapping.

Draw the button strip on. *Illustration 13* It is about  $1\frac{1}{2}''$  wide. Now the front pattern piece is complete, cut it out.

The back heel piece also must be pinned and stretched flat. Place pins (2) as in *Illustration 14* and using a regular ball point draw the sole line at the tapping edge. Put the matching guide marks on. Now, on the inside side seam edge use the double ball point. The outside edge uses the regular pen. This piece is very conoured and therefore the push pins must be moved and re-positioned all the way up the edge, at the same time the top is being pulled upward so that the original height is not lost.

The outside edge must have a flap added. This will go under the button strip when you have the moccasin on. This flap is  $1\frac{1}{2}''$  wide at the bottom sole edge and becomes 3" near the top. *Illustration 14* Along the outside edge is where the lacing tabs will be placed. They should be no more than 2" apart and should be kept at the same distance all the way up the moccasin. *Illustration 15*

Heel guard position starts with the two outer most heel matching guide marks. Height is at least 3" at the center (for adults) and will be slightly taller as the size of the foot increases. *Illustration 14*

## MARKING OUT AND CUTTING

The hide has firm areas and soft stretchy areas. The firm areas are backbone edge down to at least the middle of the hide. The most stretchy is at the flanks and at the end of the neck. *Illustration 16*

If only one foot was taped, each pattern piece must be marked on leather using each side of the pattern. If both feet were taped, use the pattern which corresponds to the tape side up.

Innersoles are cut from the stretchy areas. Mark them out using a razor sharp type knife. The outer sole is made from the same stretchy in the area under the sole edge part of the toe and heel you are using the double pen to mark out. Use part of the hide which is no stretchy. Mark the matching guide marks on the backsides.

The uppers, front-toe and back-heel are marked out of the firmest part of the hide. Place the top of these pattern pieces on the firmest part. If this part of the hide while marking out. Only stretch the area under the edge part of the pattern. Use the regular pen and mark the matching guide marks on the backside.

When cutting out it is best and easiest if you use very sharp, large razor sharp type knife. This is very important. You must cut exact difference and then you will not be pleased with the fit.

After the main pattern pieces are marked out, cut the button strip the front-toe pattern and mark out one for each moccasin. Do the same heel guard on the back-heel pattern. The lacing tabs can be made from pieces. They are 3" X  $\frac{1}{2}''$  and made from firm non-stretchy parts. At this the pieces should be cut out and marked with the matching guide marks

## GLUE AND SEW

Several of the seams of the moccasin are more comfortable if they are skived joining. The area which should be skived is from the edge in no more than 1/16". It changes the edge from *to being like* a sharp edge to a rounded edge. The heels and toes, and to the sole edge of the heel guard. After skiving, you could check matching guide marks, replace any which were removed. Line the button strips onto the front outside seams and the heel guards onto the heels, matching the guide marks. After the glue has dried, sew these parts together, stitching as close to the edge as possible. Do not sew along the sole edge of the heel guards.

Placement of the lacing tabs is as in *Illustration 15*. On tall moccasins the top of the lacing tabs is farther from the edge than the bottom ones. They are placed 3/8" from the heel and 1/2" from the ankle is reached and from there they graduate farther away until they are reached for the knee high moccasins. These must be sewn on quite sturdily. Recommend a triangular stitching pattern.

Line the inside vertical seams, but don't join them. The glue is applied 1/8" from the edge on the backside of the front-toe pieces. On the edge of the backside, the glue is applied 1/4" along the top surface. When the glue is tacky, dry the front-toe and heel are joined. Do this from the backsides so the matching guide marks can be seen to be matched. Wait until the glue is dry before sewing.

While waiting, prepare the sole and innersole. They must be glued together. There is the same amount of seam allowance (double ball point pen) all around. The backsides are glued together and aren't sewn or bonded on. The innersole is glued on.

The seam around the sole edge may either be on the inside or the outside. If on the outside, it must be carefully trimmed very close to the stitching. This works with sewing machine sewn moccasins. Also, if you or the person the moccasin is for, have tender feet, the inside seam is rather painful until broken in. I'll describe the construction as for an outside seam. This is the type seam I use in my moccasins. If you want it inside, put the glue on the other side of the seam from the following instructions. Apply 1/4" wide glue strip all around the inner edge of both the sole piece and the uppers on the backside. When the glue is tacky to touch, match the guide marks starting with the first one to the heel. The button strip, *Illustration 17* Move around the toe matching all the guide marks (stretching and easing the leather when necessary). When the first guide mark on the inside heel is reached, it is the beginning of a great

deal of stretching of the upper while the sole is pushed in and gathered (*Illustration 18*), so that the other matching guide marks will match. This is hard work. After that is done, match the last mark at the beginning of the flap and stick the flap down. The button strip front-toe goes on top of this (you have to put a little glue on the top side of the flap). *Illustration 19*

After the glue is well dried (especially if machine sewn), sew around this seam at 1/4" in from the edge.

### ABOUT SEWING

After gluing there are several sewing alternatives.

1. sew by hand — linen (waxed) or nylon thread using:

A. hand awl

B. needle and thread in pre-punched holes; *Illustration 20*

2. industrial sewing machine — walking foot type, harness stitcher, and shoe machinery found at:

A. upholstery shop

B. shoe repair shop

C. saddle shop

D. canvas, tent, and awning shop

E. factory using heavy industrial sewing machines

Your access to any of these could be by paying for the service, barter, or a friend (who will perhaps even let you use his machine.)

## FINISHING

If you are sewing or bonding an additional thickness of some type of sole material or leather, you use the basic sole pattern as used for the innersoles. It is to use something which can be replaced without having to take the moccasin when resoling is necessary.

The sole edge seam should be trimmed to 1/8" from the stitches. Be careful use if you cut too close the moccasins are weakened at this important connection. Variations -- *Illustration 20*

The holes for sewing the buttons on are punched in a triangular pattern. *Illustration 21* This illustration also shows the button location across from the top of the lacing tab. Use very strong thread (I use number 12 nylon), double. Leave 1/2" space between the button and the moccasin. Wrap the threads in this 1/2" space with the sewing thread before going through the moccasin the last time. *Illustration 22* On the back tie a square knot and put glue on it.

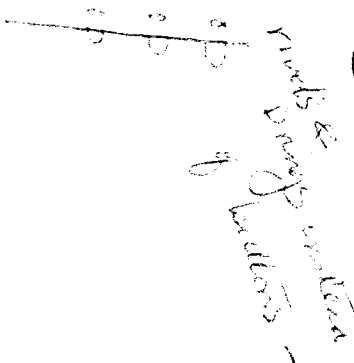
The lacing thong is attached half way between the first button and the sole seam. If you use a rawhide type thong punch a hole just big enough to slip through. Tie it on using a flat type knot, such as a double half hitch. If using rawhide cut from the moccasin leather hide, it will be 3/8" or so wide until use punches it out. Punch a hole large enough to just barely get it through. Do this by punching two or three small holes in line, rather than one large hole. Then punch the end of the lacing punch a hole and cut a slot. *Illustration 23* Now put it through the button strip holes; and then put the long end of the lacing through the sole and slot. Pull snug. Thread thong or lacing through the lacing tabs as in *Illustration 24*.

Putting on your moccasins the first few times is a tight squeeze (if they're tight, they're probably not right). Point your toe and holding onto the lacing strip wiggle your foot all the way in. Now hold on to the back and point your heel out as you pull up on the back. Your foot is not on the floor for this step.

Hold the top of the moccasin together as you lace them closed. Lacing is as in *Illustration 24*. To tie off thong at top see *Illustration 25*.

Keep moccasins clean with saddle soap. Dry away from direct sunlight or heat, and oil with a leather oil after completely dry.

# ILLUSTRATIONS



These are printed on one side of the page. You may find it useful to remove these and glue onto poster board for quick visual reference while at your workbench.

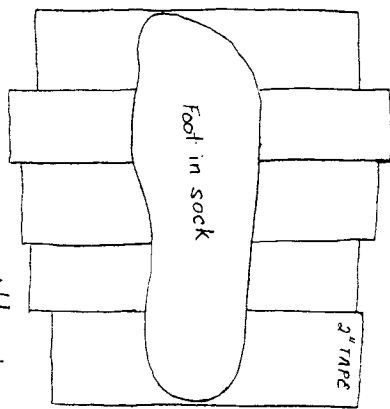


Illustration 2

15

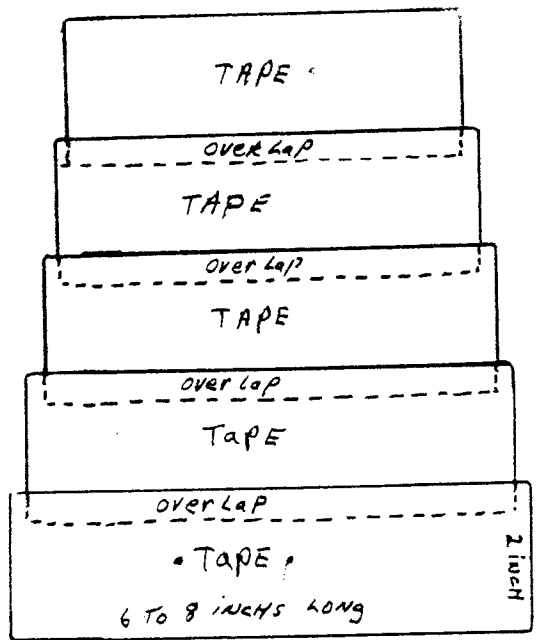


Illustration 1

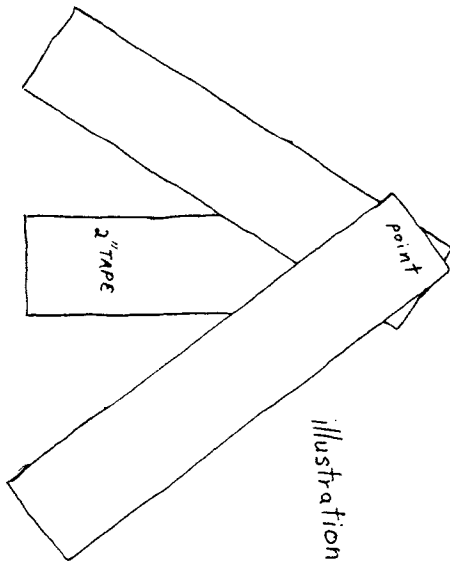


Illustration 4

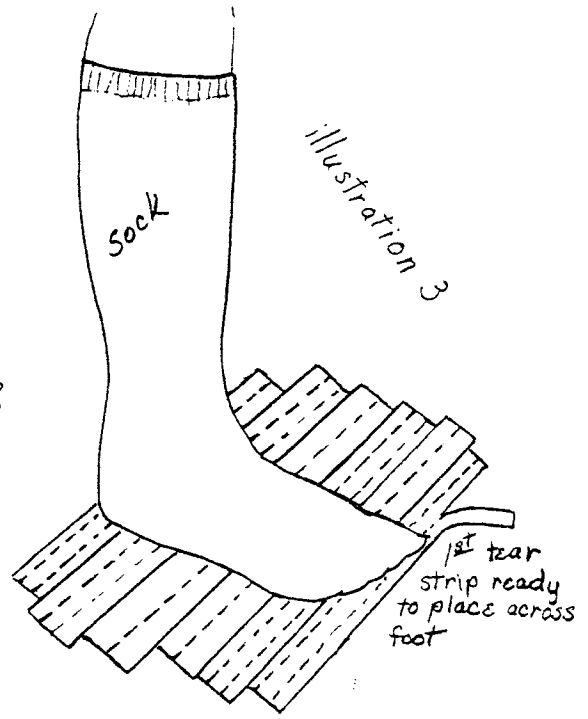
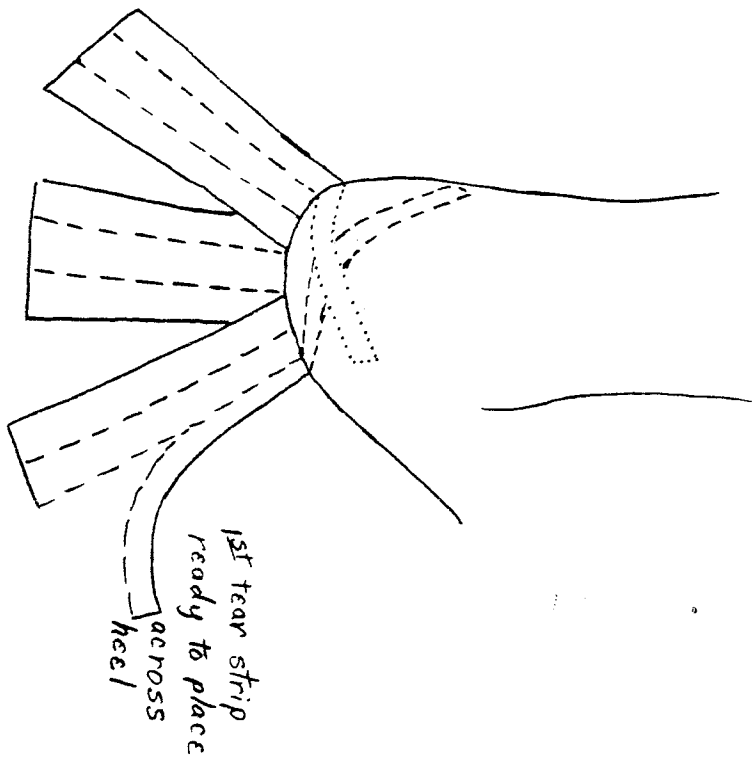


Illustration 3

dotted lines indicate possible tear divisions



*illustration 5*

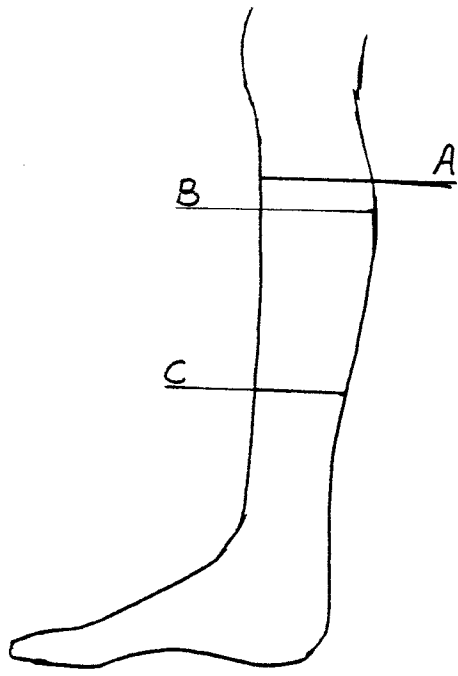


illustration 7

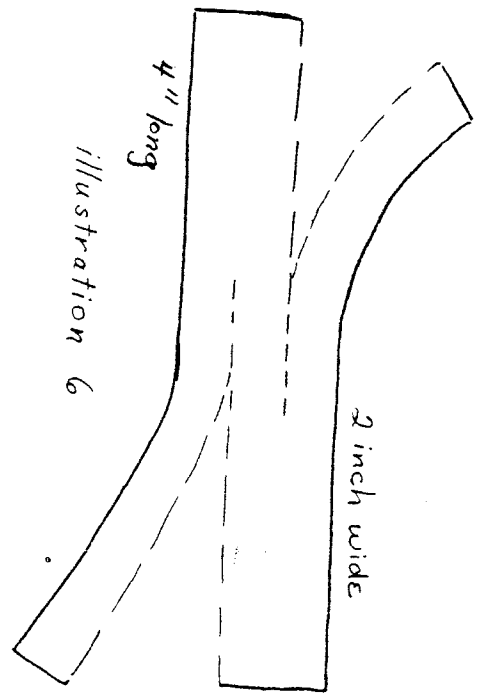


illustration 6



Plate I

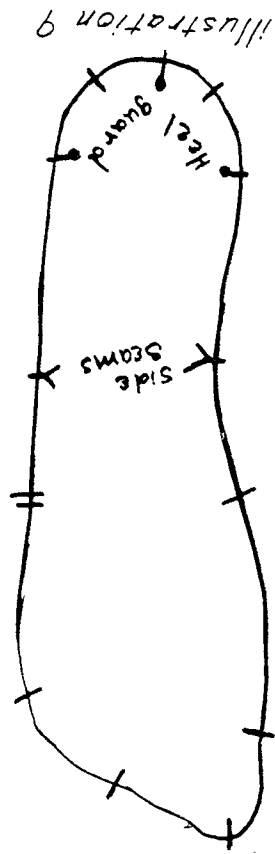
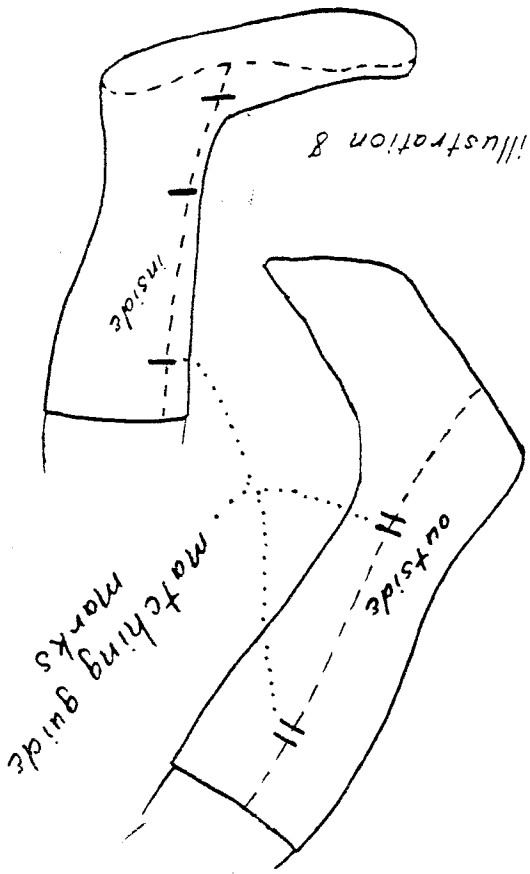
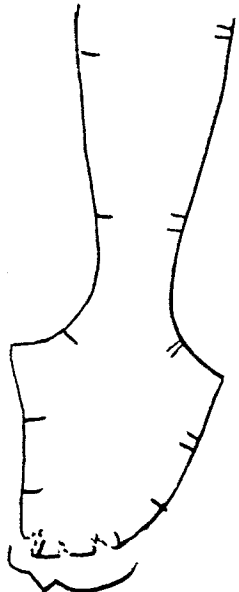
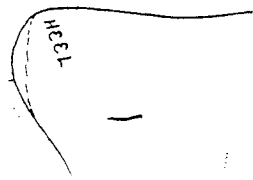




Illustration 10



small cuts

illustration 11

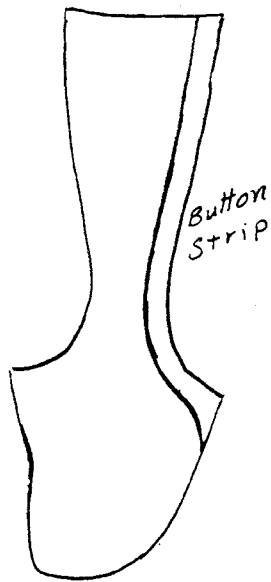


illustration 13

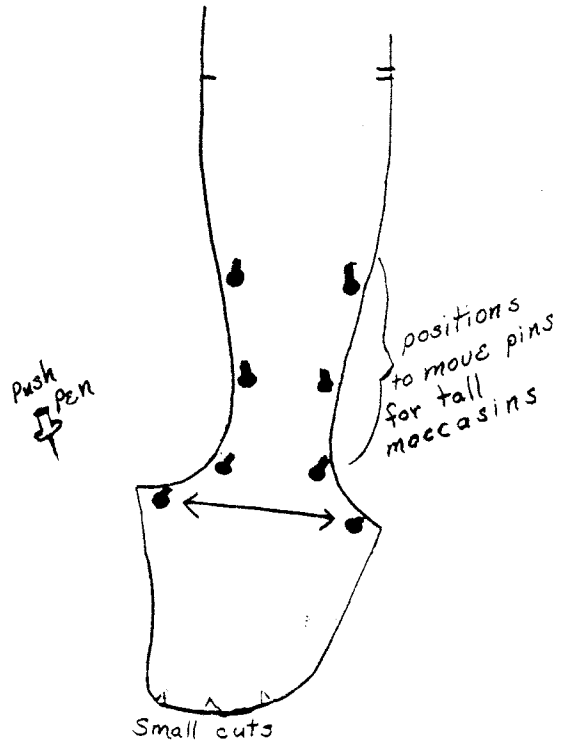


illustration 12

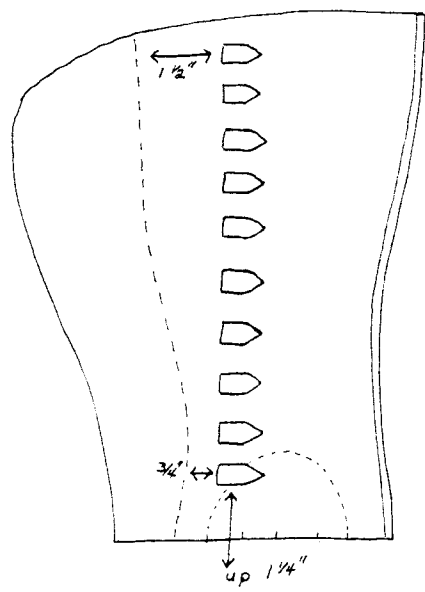


illustration 15

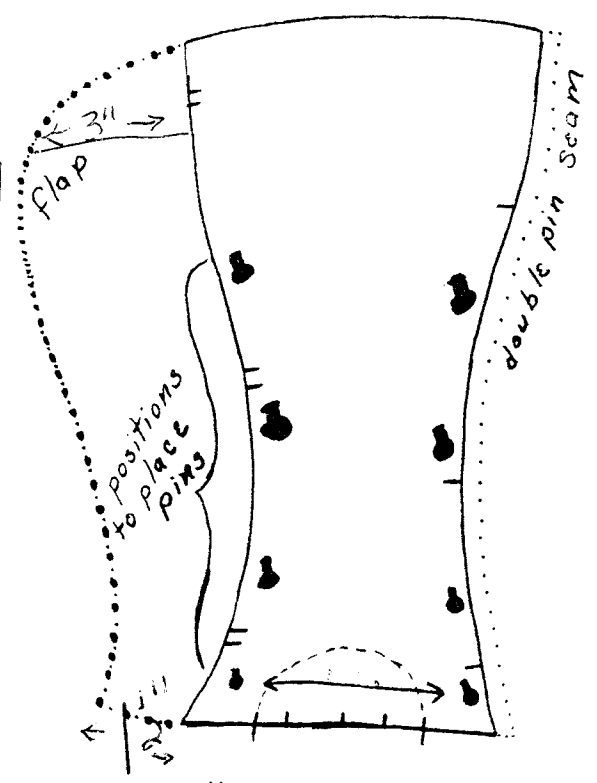


illustration 14

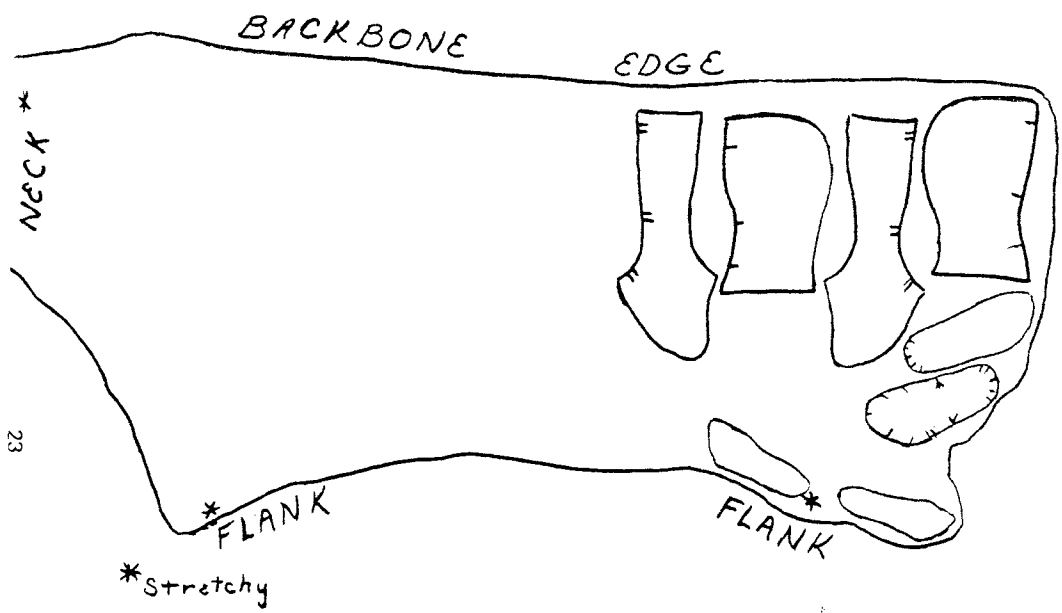


illustration 16

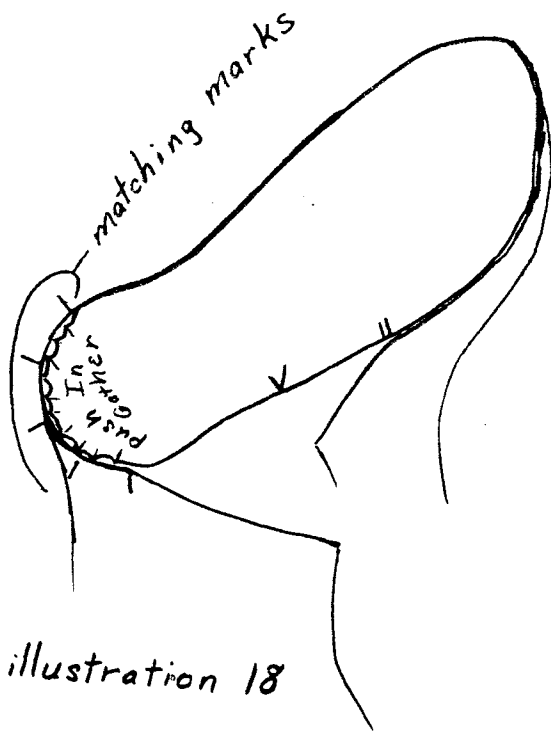


illustration 18

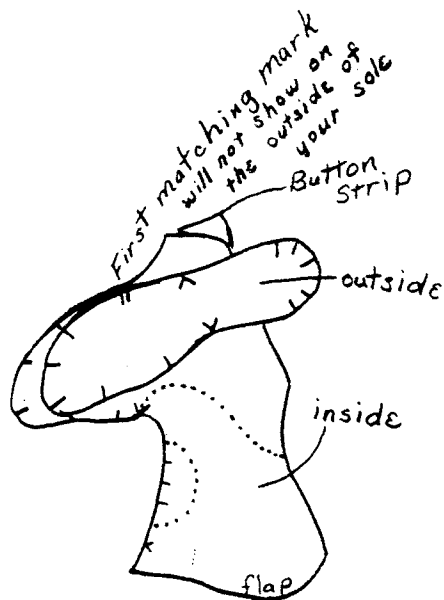
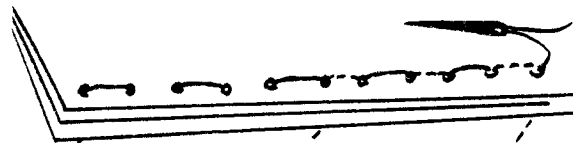


illustration 17



simple running stitch

double needle running stitch



outside cross stitch

simple running stitch

Trim edge very close to stitching

25

illustration 20

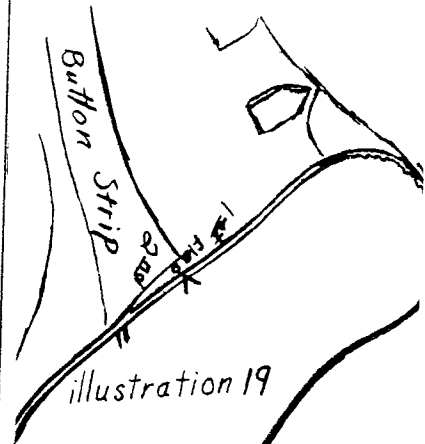


illustration 19

illustration 21

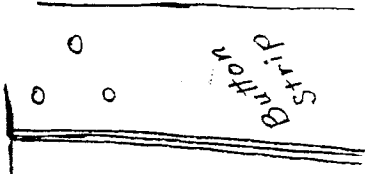
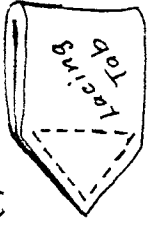
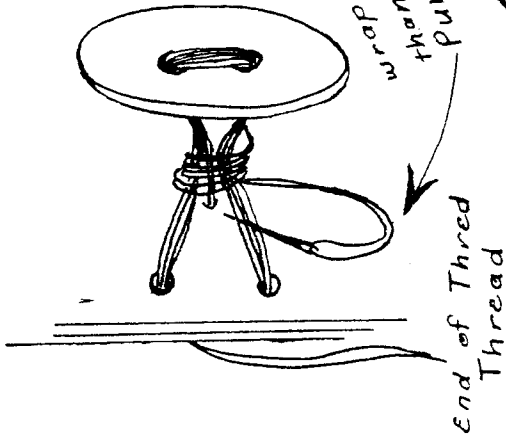
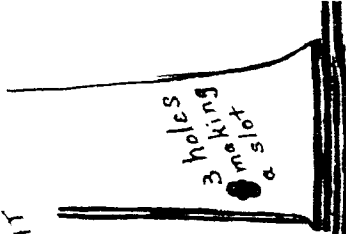


illustration 22



wrap more times than illustrated (6 times)  
TIGHT pull

illustration 23



UPPERS  
SOLE

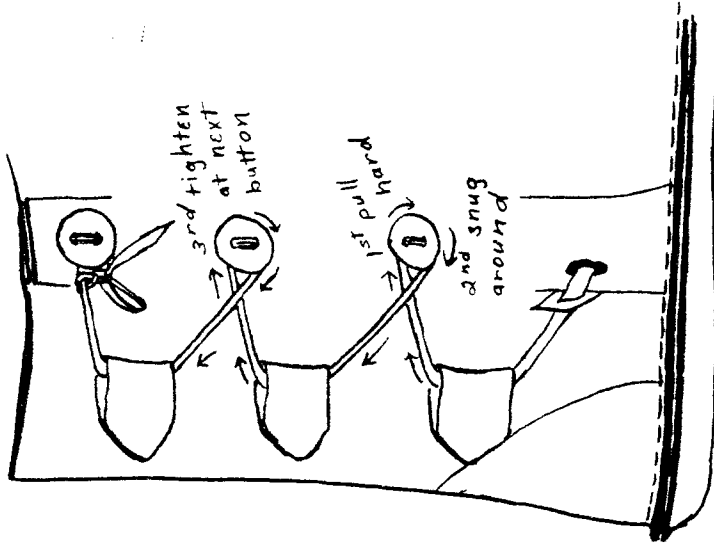


illustration 24

illustration 25

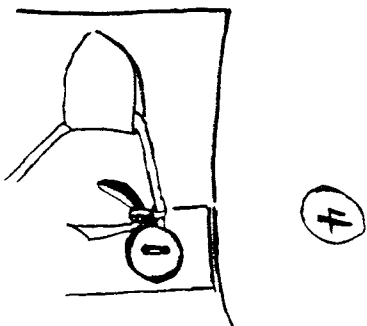
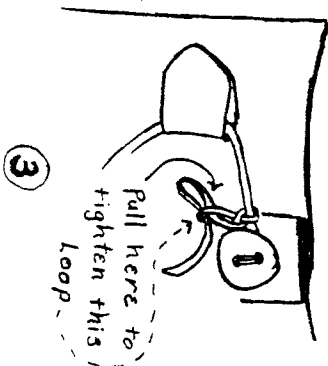
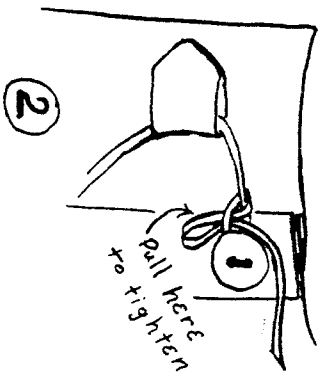
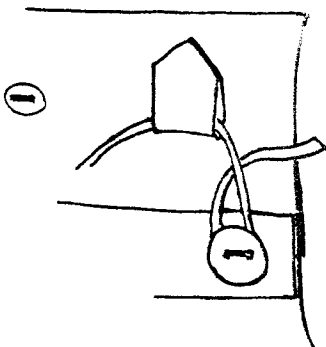


Illustration 25

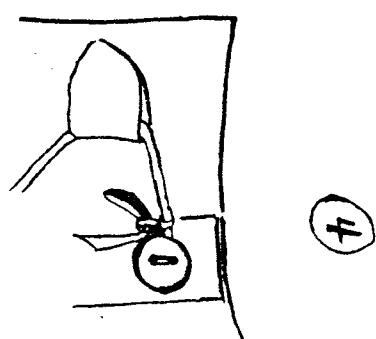
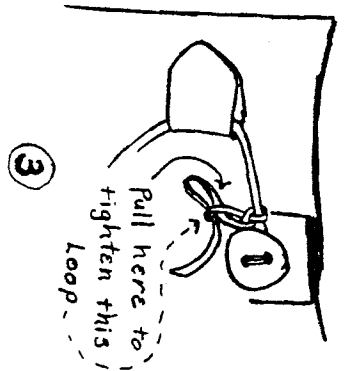
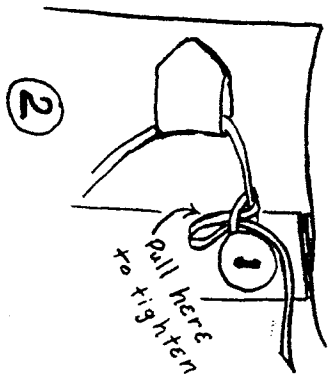
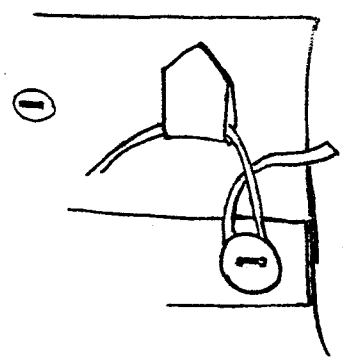


illustration 21

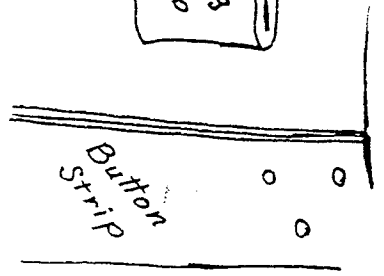
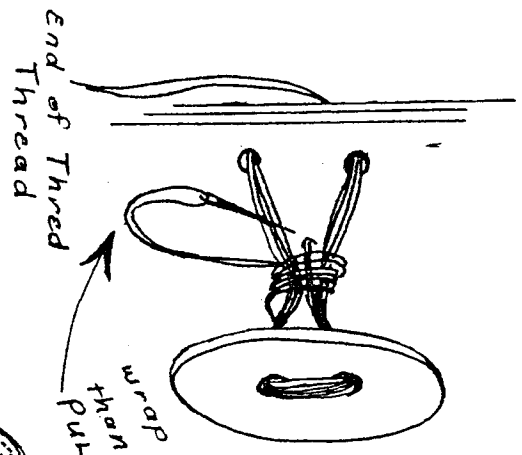


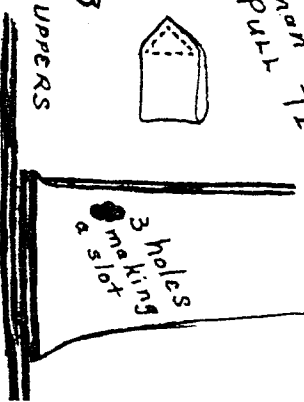
illustration 22



End of Thread

wrap more times (9 times)  
than illustrated  
pull TIGHT

illustration 23



UPPERS  
SOLE

Illustration 17

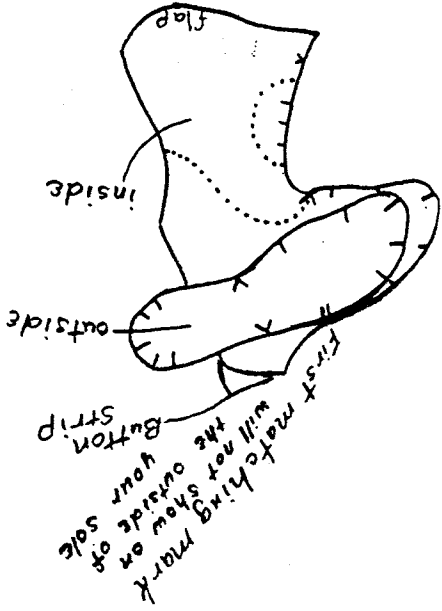
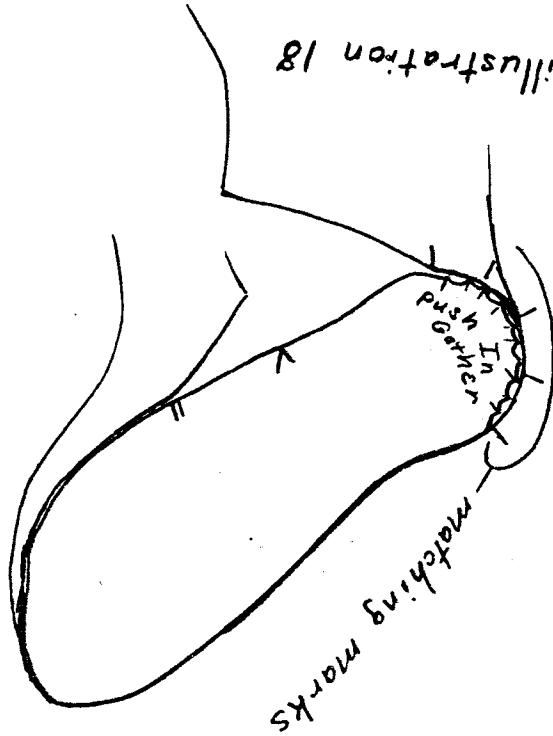


Illustration 18



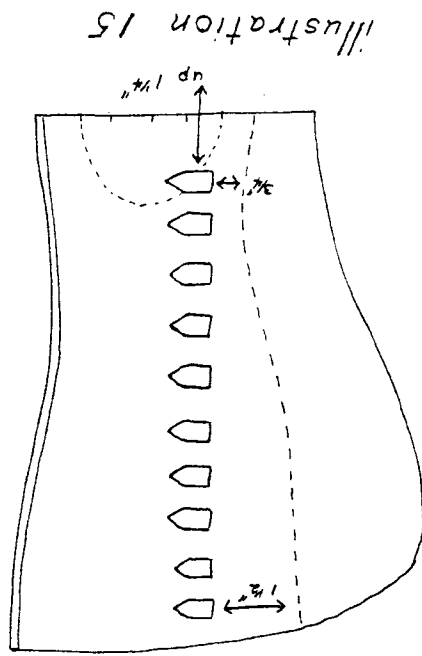
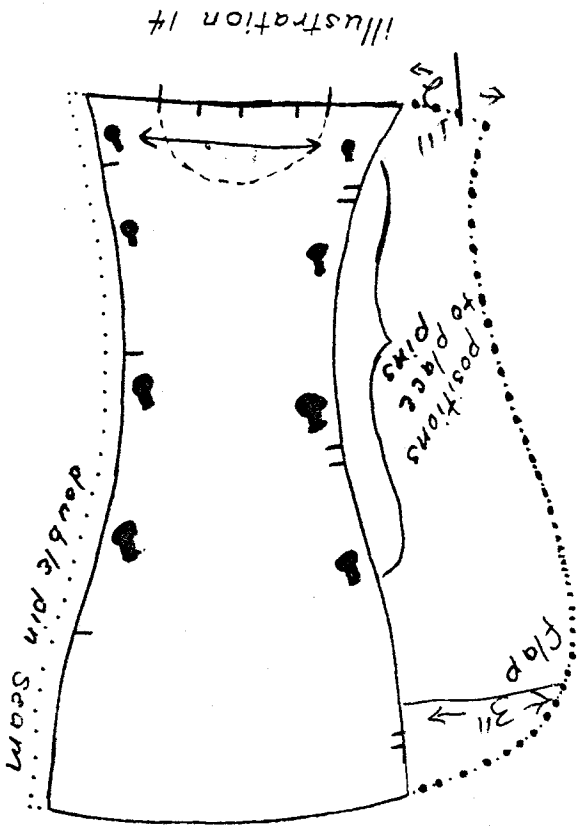


illustration 10

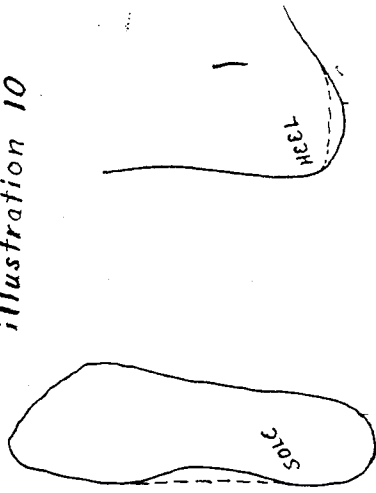


illustration 11

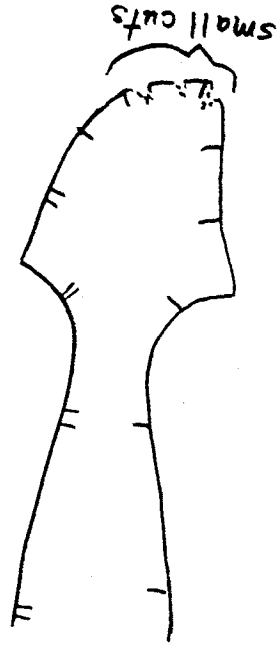
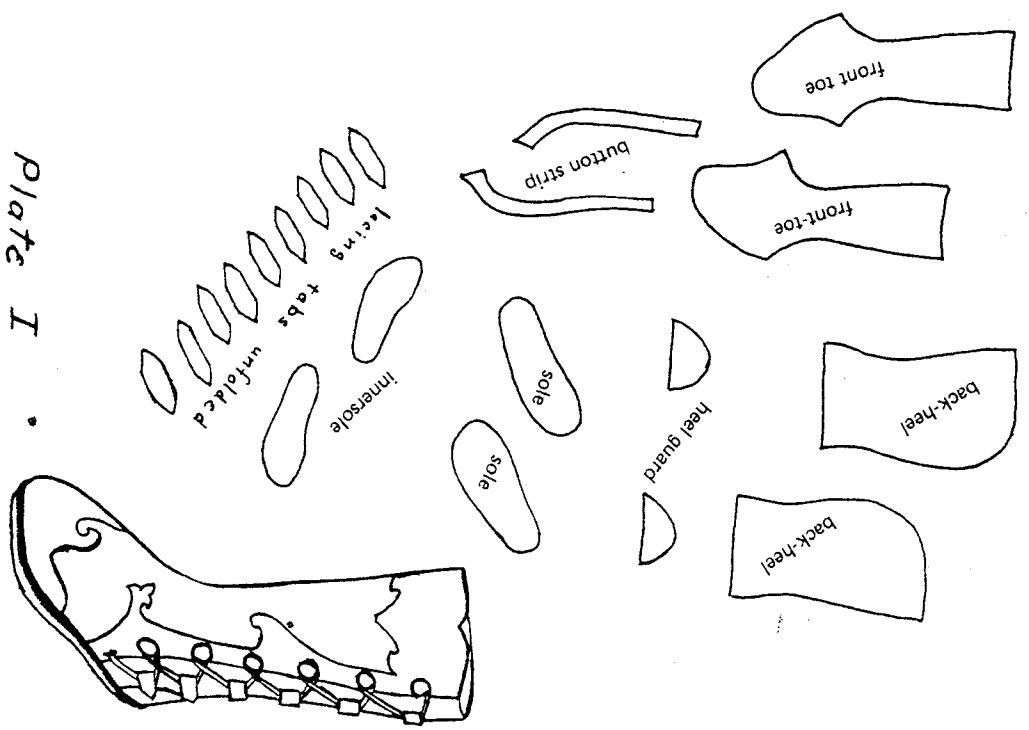
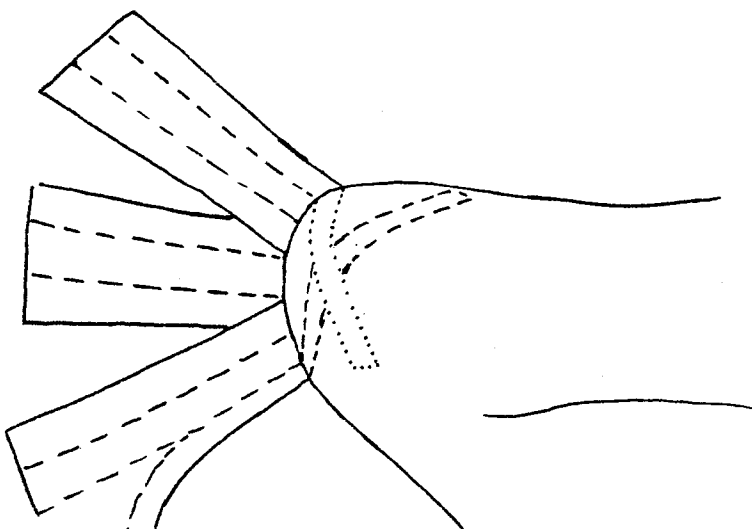


Plate I





1st tear strip  
ready to place  
across  
heel

Illustration 5

