

CAST MODIFICATION

CHAPTER 23

PRESENT CAST CUTTING



PRESENT CAST CUTTING AND MODIFICATION

The Murrays experimented and developed several different methods of cast cutting and modification techniques. This present technique has been in use since the 1950's, 1960's or earlier. It did become the general production method for the Bridgeport, CT manufacturing facility.

Changes are made to suit the individual wearer as required. That is why observation of the feet is so important, listening to the wearer and taking into consideration the physical status of the wearer.

It is up to the artisan and/or craftsperson to understand the wearer (that will be you if you are making shoes, boots or sandals for yourself). There is no fixed formula. You will observe and develop some expertise about how to best modify the cast into a last as you practice this art.

You have to make the footwear and let the wearer wear it. If the wearer is happy, you should be satisfied. If it doesn't feel right to the wearer, they should take it off. You should make whatever adjustments are needed to accommodate the requests of the wearer.

Molded shoe, boot and sandal making is always a process of experimentation and development until the desired perfection is reached. That is why it is not a mass production item. Molded shoes need to always remain custom made in order to properly fit and serve the individual wearer.

If you generally follow the examples and guidelines given in these four books, you will probably be able to make your own shoes, boots and sandals satisfactorily on your first attempt. You will then be able to figure out the refinements you need to make for future shoes, boots and sandals.

I have always taught people to learn to do good work by hand first. Machinery will save you time, but you don't need machinery to do fine quality artistic work. In fact, you really need very little machinery to make high quality custom made molded shoes, boots and sandals.

If you are just making your own molded footwear, keep it very simple.

Do almost everything by hand and you will enjoy your results a lot more.

These pictures were taken using a band saw from the Bridgeport, CT factory. The plaster cutting blade was made by the cast cutter. The blade was made from 1/8" or 3/16" stainless steel aircraft cable which was untwisted and re-twisted with only three strands of wire. The blade worked very well.

However, for the ultimate in accuracy, I prefer to use a variety of different hand saws.



1 Cutting the top off the cast.



2 Ditto.



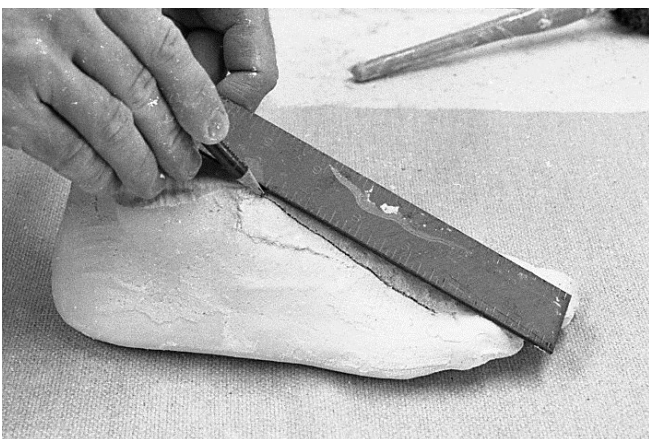
3 Ditto.



4 Marking the front of cast with the first line.

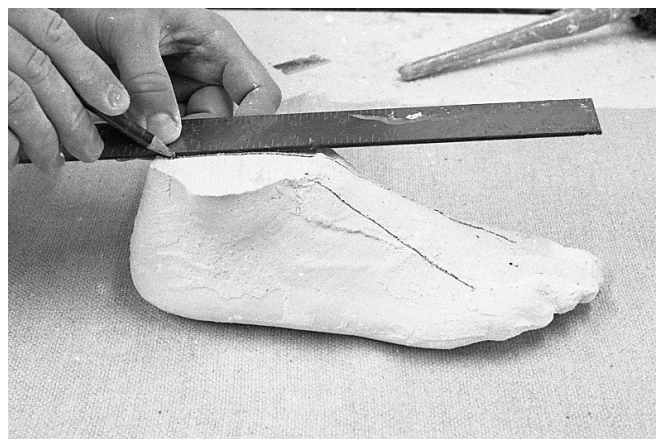
One line centered is used for men.

Two lines are used for women.

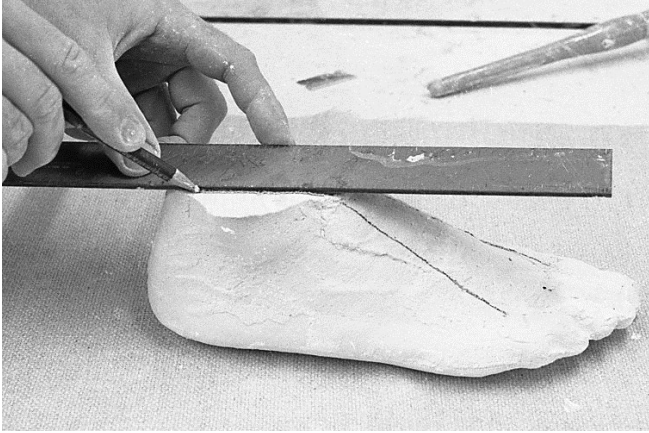


5 Marking the front of cast with second line.

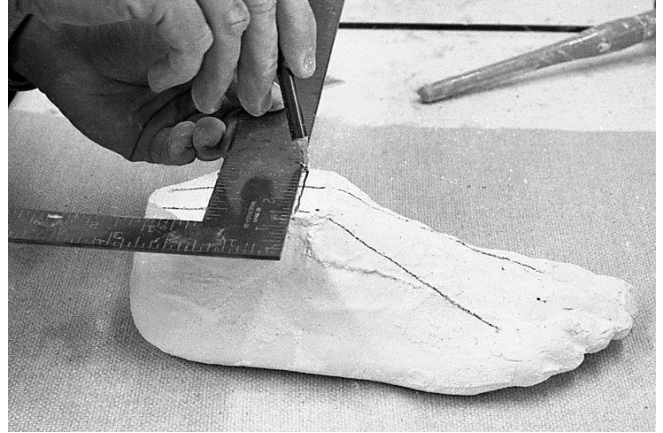
Marking is done with an indelible pencil.



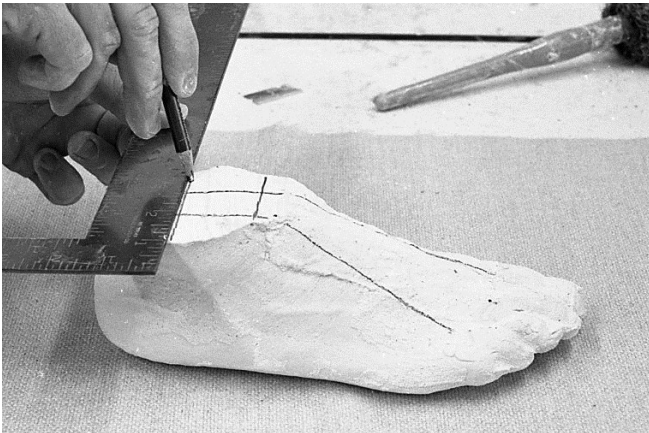
6 Marking the top of cast with the first line.



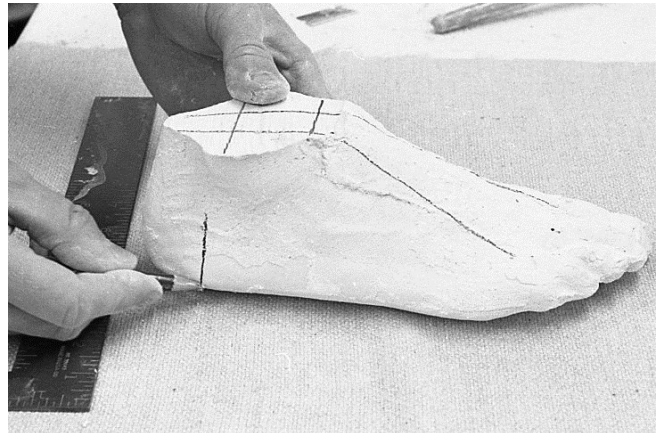
7 Marking the top of cast with the second line.



8 Marking first line across top of cast.



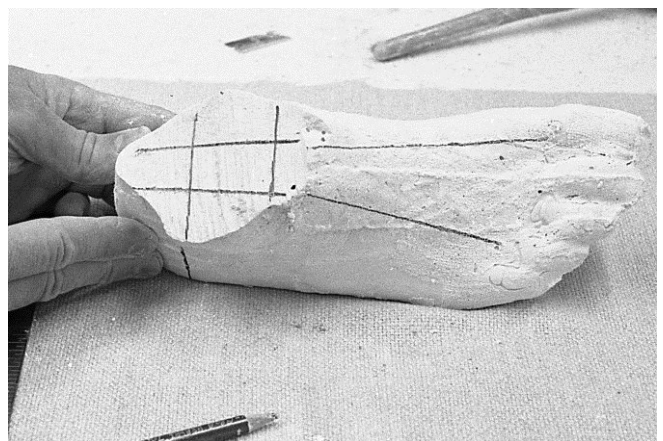
9 Marking second line across top of cast.



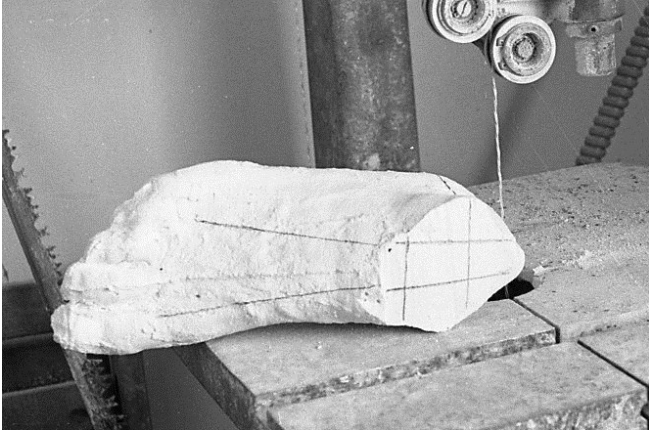
10 Marking lateral heel.



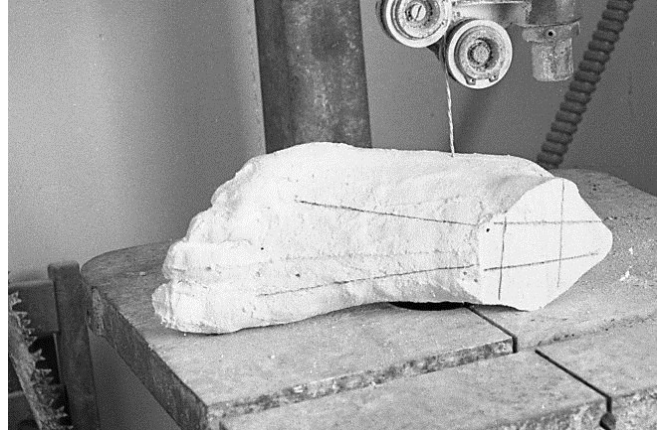
11 Marking medial heel.



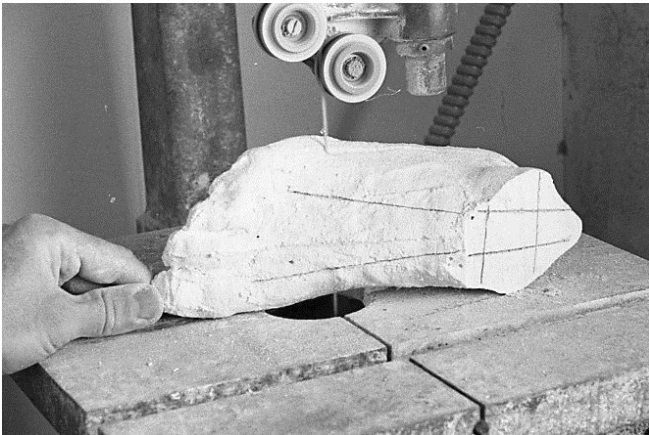
12 Top view.



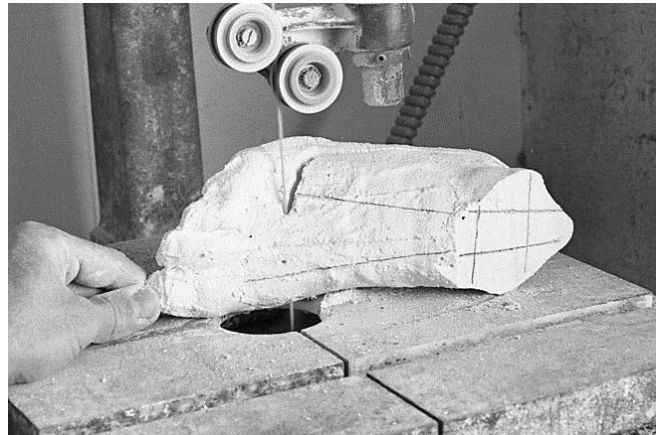
13 Making the horizontal cut.



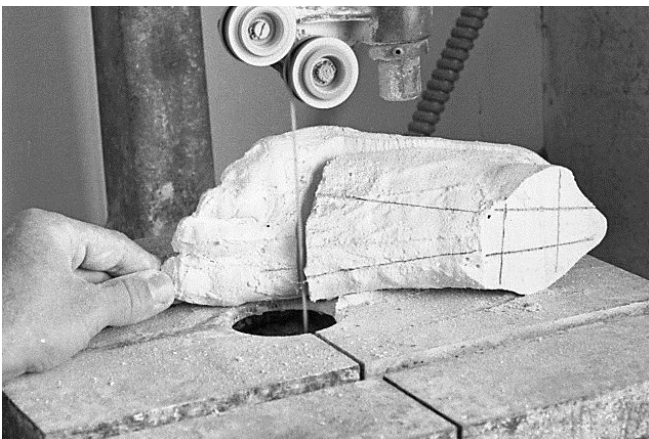
14 Ditto.



15 Ditto.



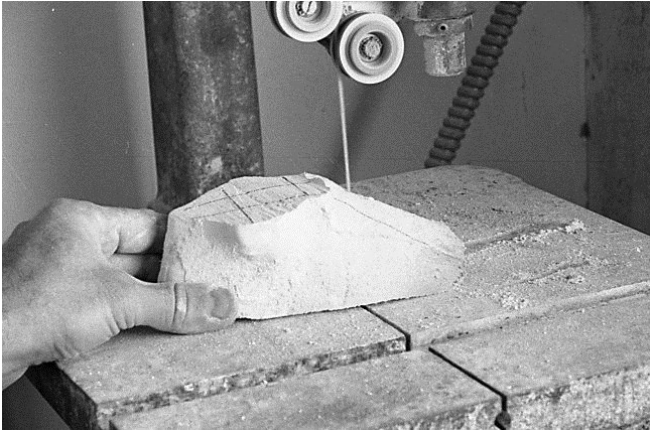
16 Making the angled vertical cut.



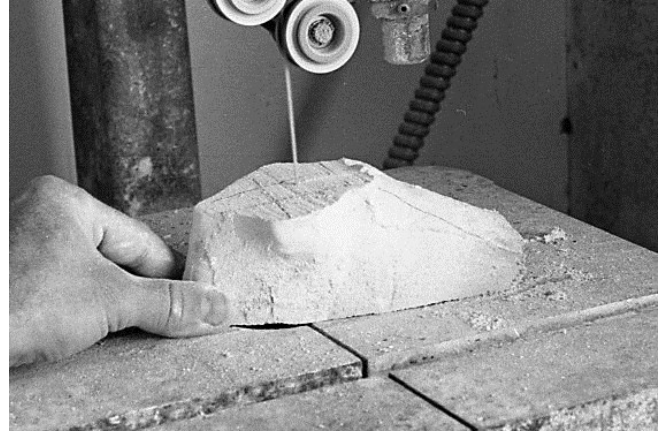
17 Ditto.



18 Making a center cut on top.



19 Ditto.



20 Ditto.



21 Ditto.



22 Making a cross cut through the ankle.



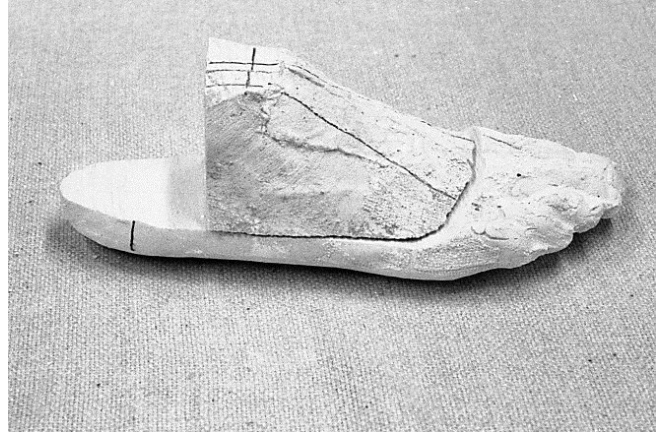
23 Ditto.



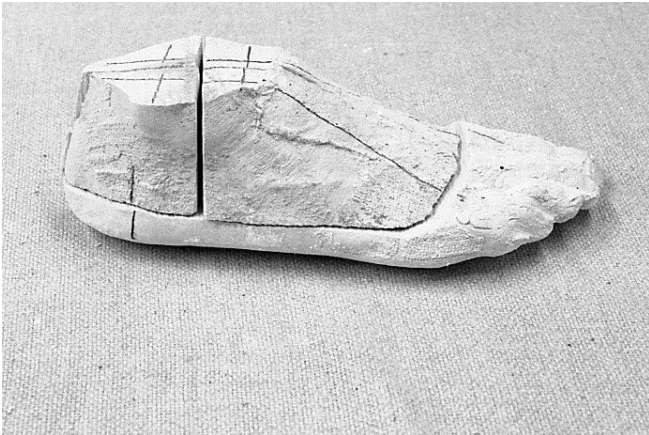
24 Ditto.



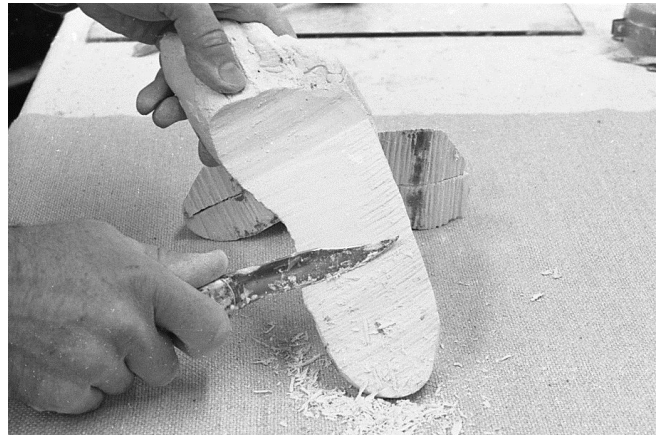
25 Brushing the fines off the bottom.



26 Front tops in place (2 pieces).



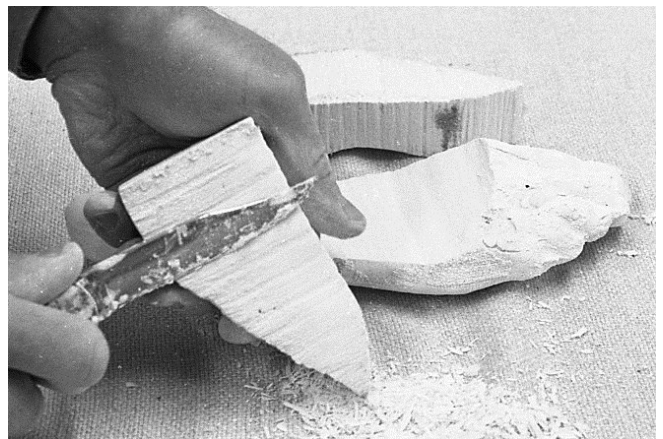
27 Back and front tops in place (4 pieces).



28 Scraping the bottom.

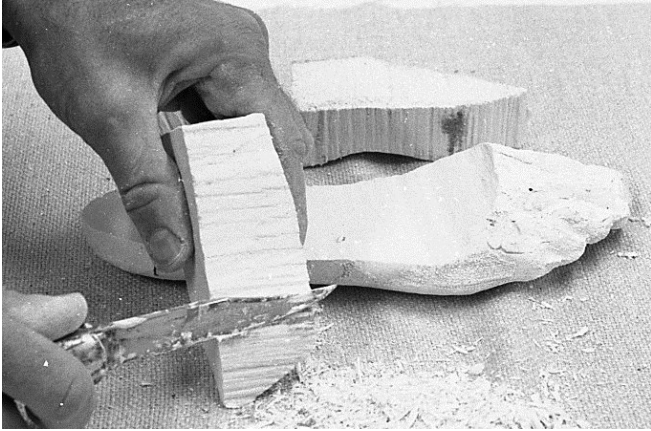


29 Ditto.

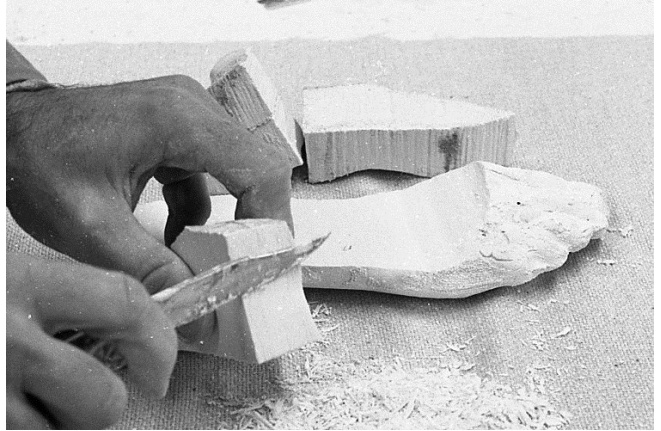


30 Scraping a front half.

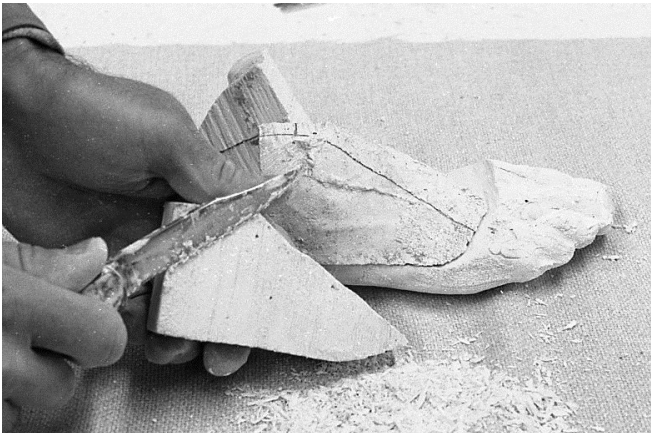
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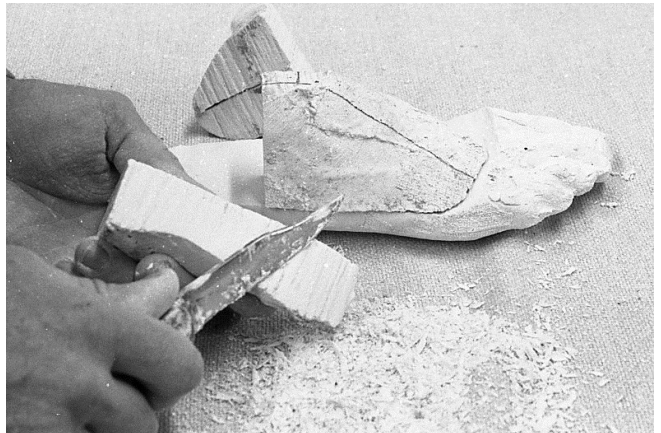
31 Ditto.



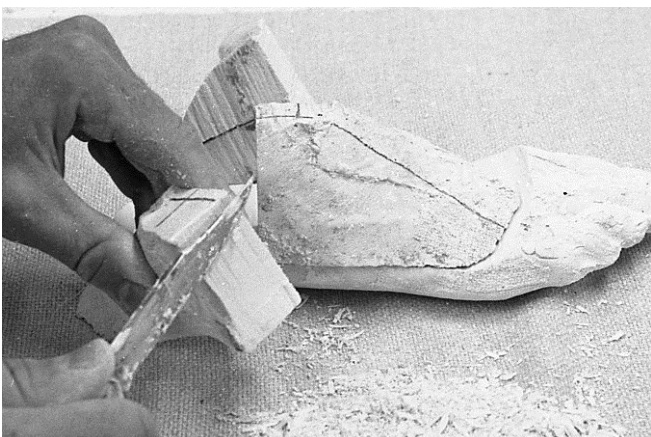
32 Ditto.



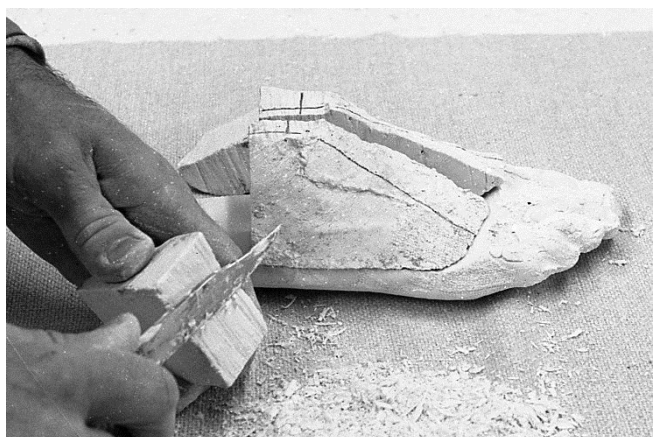
33 Ditto.



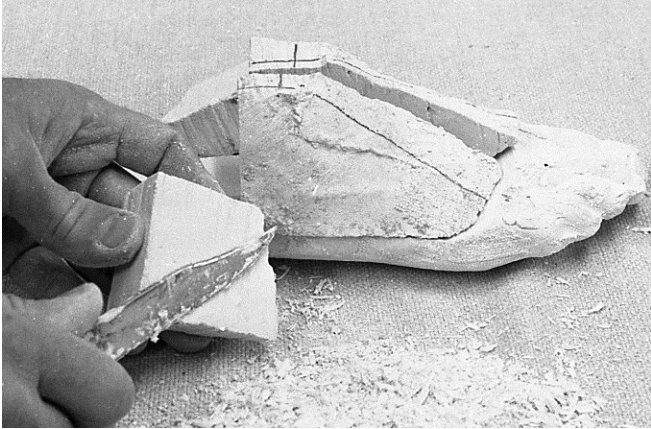
34 Ditto.



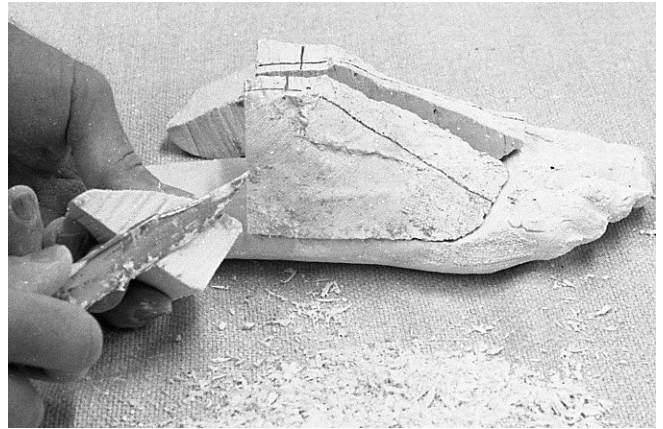
35 Ditto.



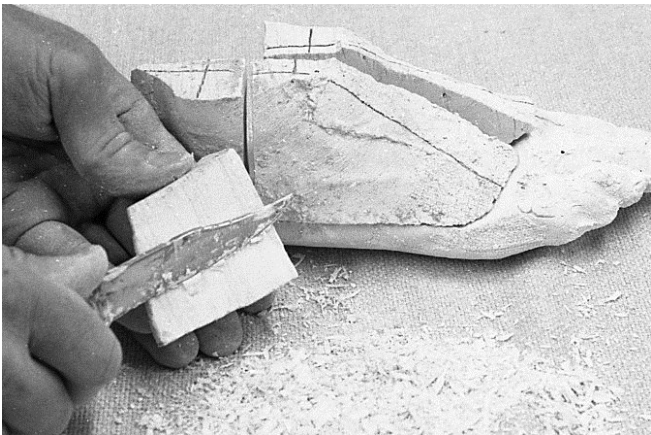
36 Ditto.



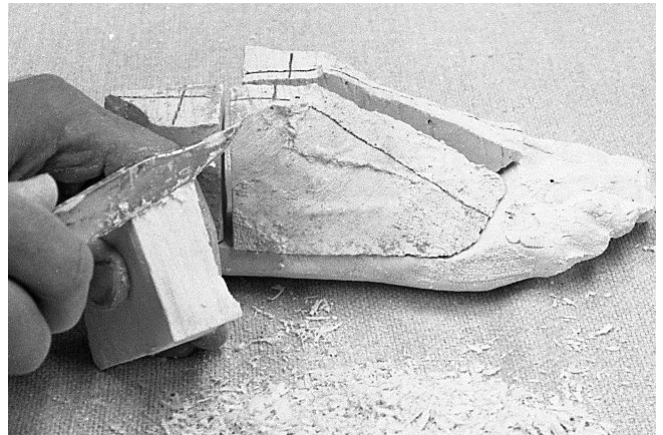
37 Ditto.



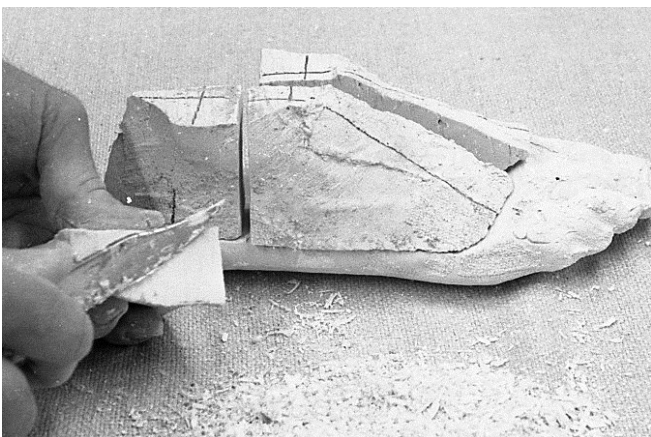
38 Ditto.



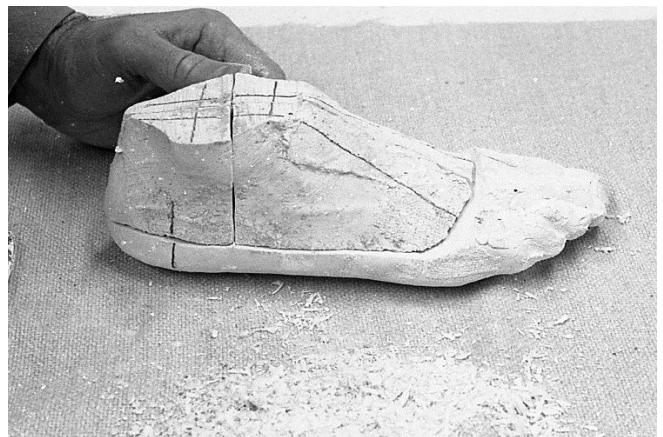
39 Ditto.



40 Ditto.



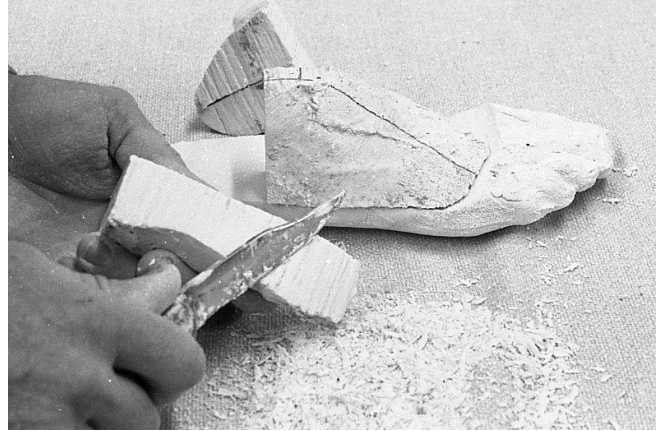
41 Ditto.



42 The cast is back together.



43 Applying glue.



44 Ditto.



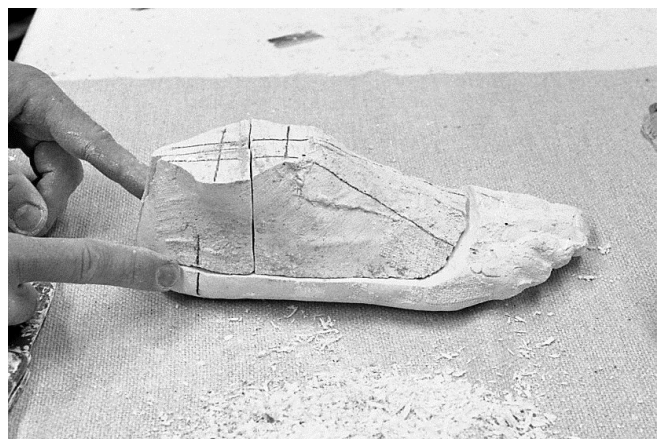
45 Ditto.



46 Ditto.



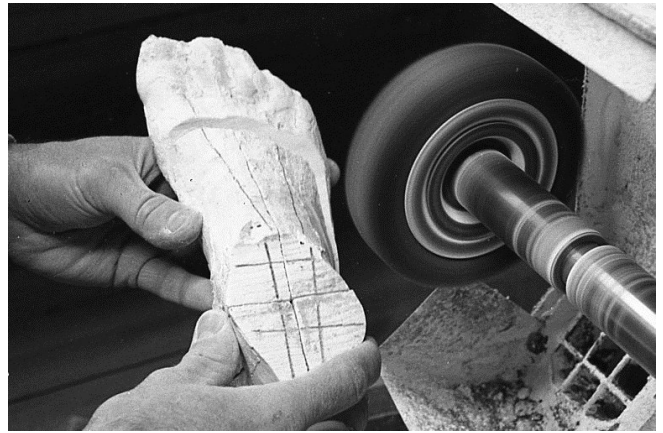
47 Ditto.



48 Aligning the parts with the marks.



49 Align the parts and then press lightly together.



50 When the glue is dry and the pieces are firmly together, remove excess plaster with stiff wire brush on the sanding machine.



51 This is a coarse wire brush. The objective is to size it all uniformly and make it all smooth. If your skills are not good with the machine, you can probably do a lot better work by hand, it just takes longer.



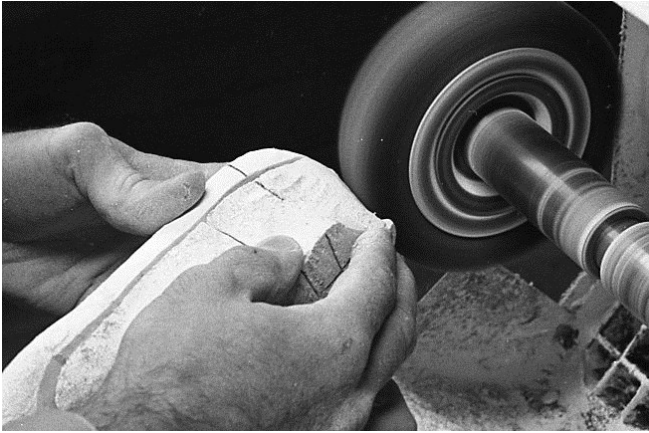
52 Develop a consistent pattern with this work so you can repeat it on the other foot. I have always taught people to learn to do good work by hand first.



53 Ditto.



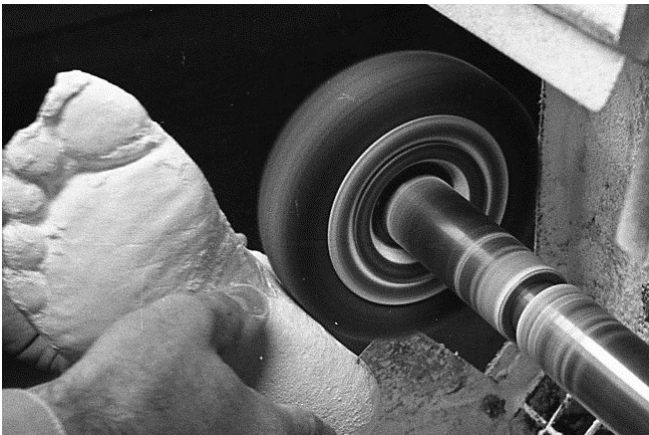
54 Ditto.



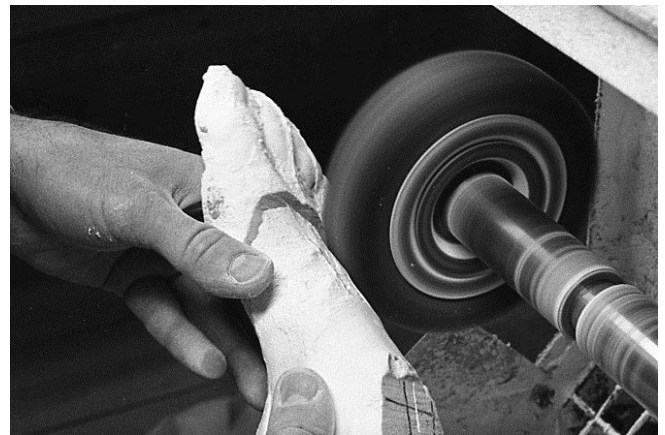
55 Go around the back.



56 Under the ankle.



57 Ditto,



58 Across the front.



59 Ditto.



60 Take some off the upper metatarsal to toe joint area. Otherwise, this area will end up too full of extra space inside the footwear.



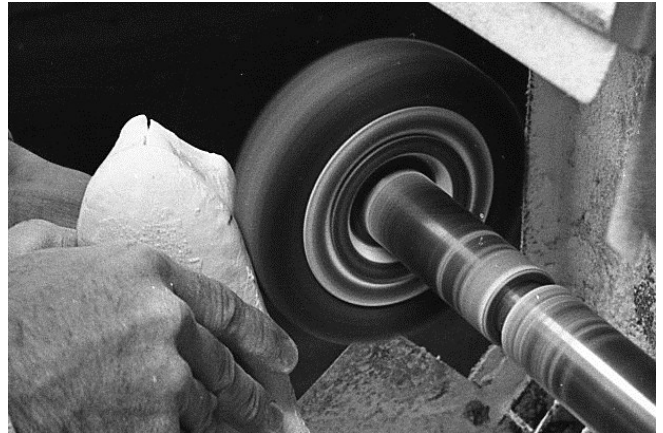
61 Ditto.



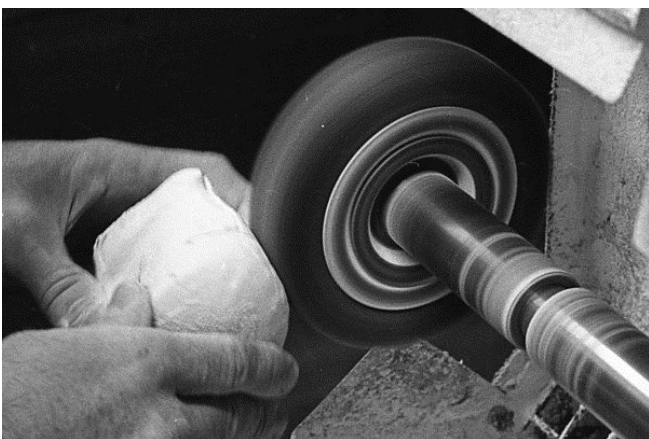
62 Observe how shoe shapely this cast is beginning to look. It will be the shape of the foot.



63 The shoe needs to be tight or snug enough not to fall off the foot.



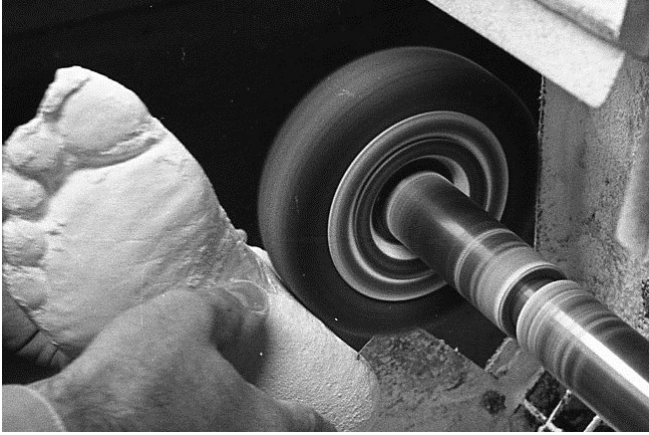
64 Continue under opposite side of ankle bone.



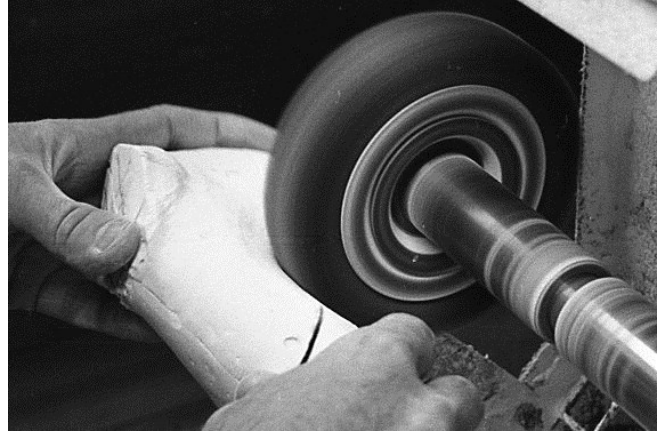
65 Go back around heel.



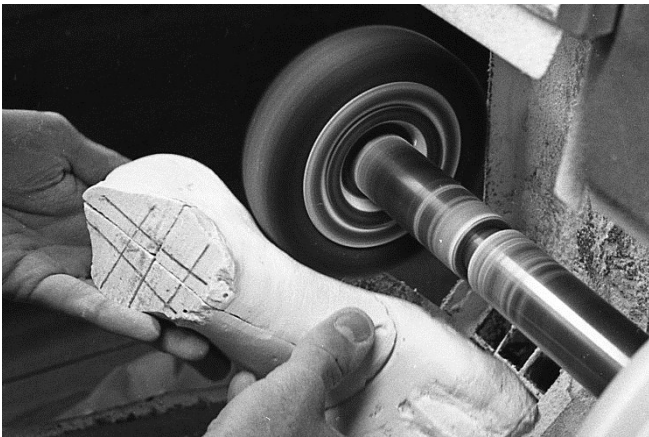
66 Ditto.



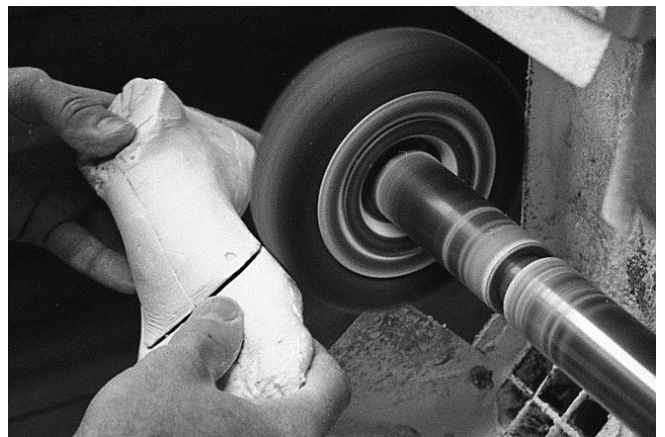
67 Keep it slim underneath the heel.



68 Clean up the arch, but don't change the arch.



69 Ditto.



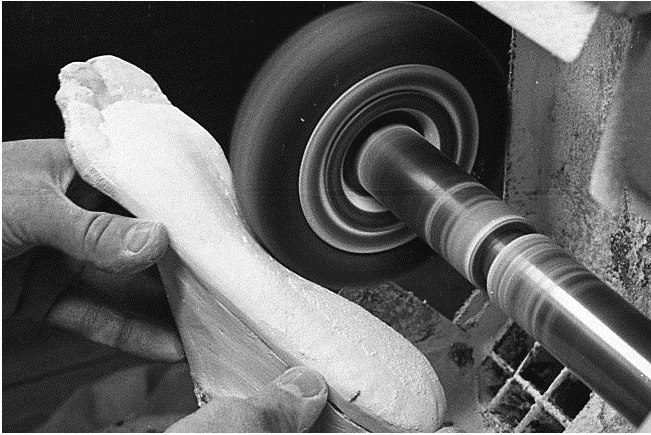
70 Ditto.



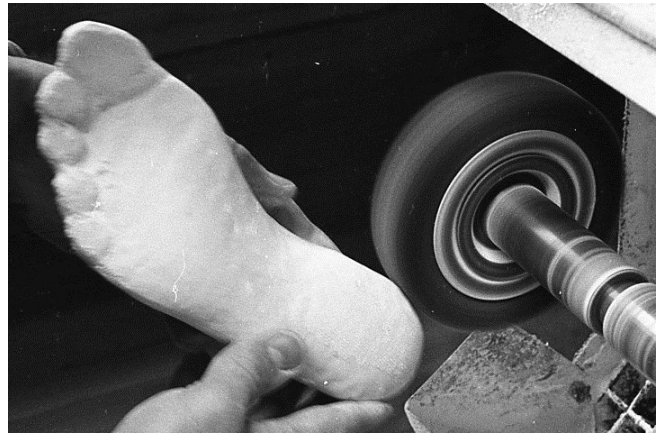
71 Clean up the edges along the bottom.



72 Ditto.



73 Ditto under the arch.



74 Ditto around the heel.



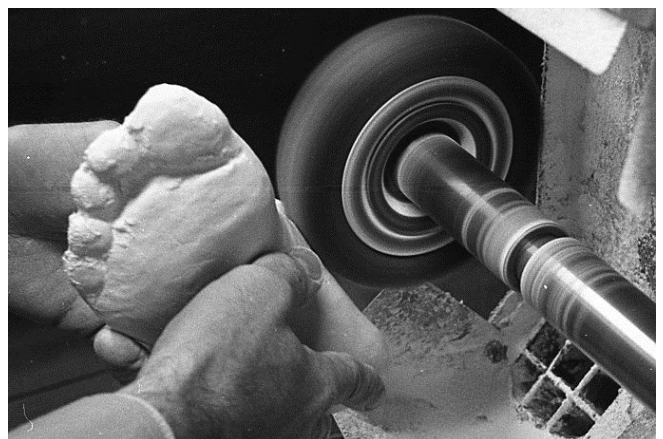
75 Think about this phase as polishing.



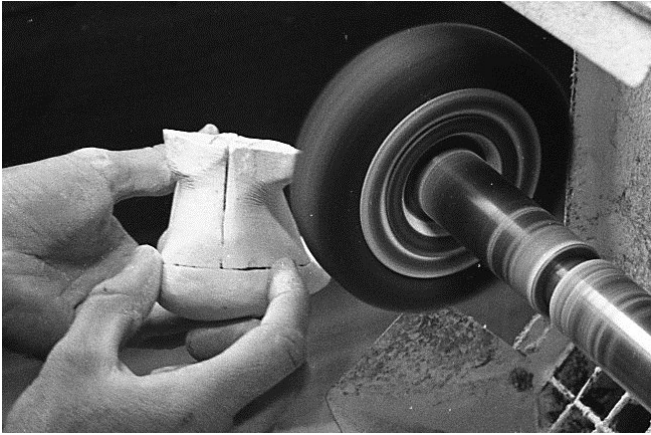
76 Ditto.



77 Lastly, tighten under the lateral heel bone.



78 And, tighten under the medial heel bone.



79 Observe from the back.



80 Observe from the side.



81 Cut the splints.



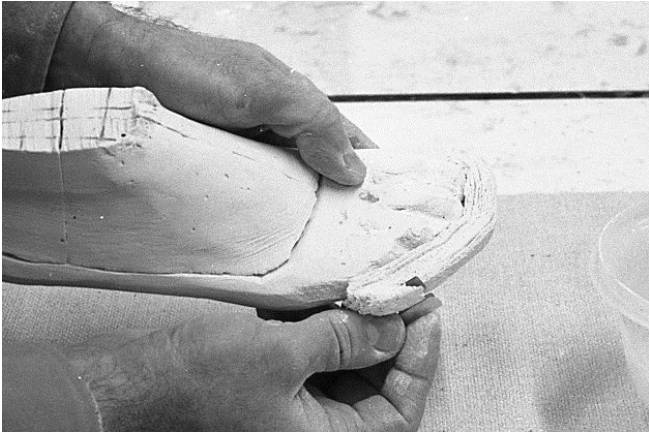
82 Soak the splints.



83 Let the splints drain.



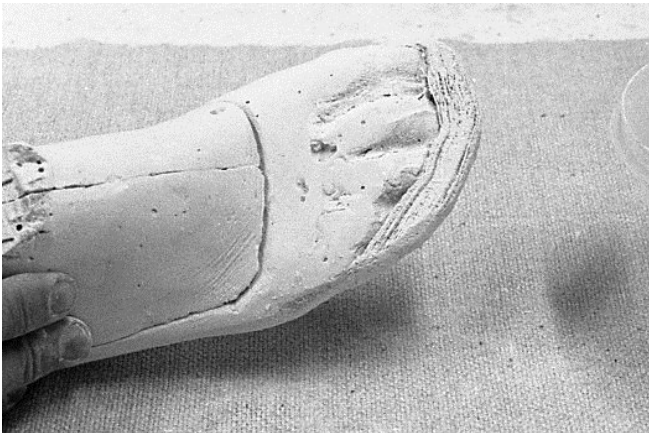
84 Add the splints to the front of the toes.



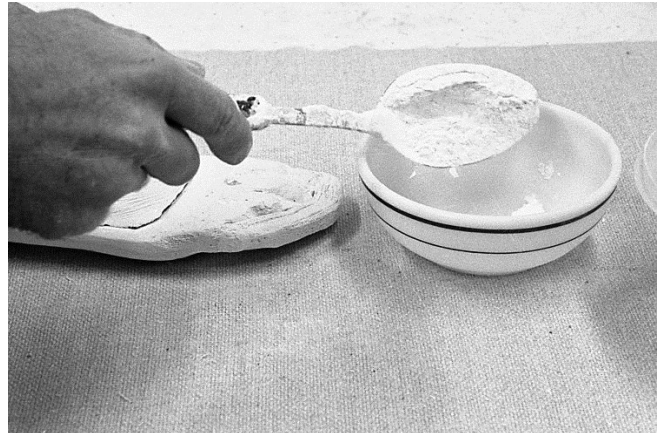
85 Trim off the excess splint material.



86 Ditto.



87 Observe.



88 Mix plaster and water.



89 Add plaster over tops of toes.



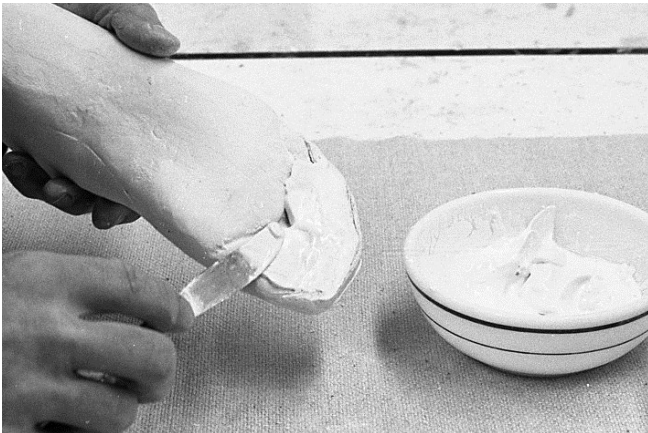
90 Ditto.



91 Bring plaster over toe joints toward the vamp.



92 Wet fingers are the best smoothers of wet plaster. You control the final shaping with your fingers.



93 Add plaster to the bottom.



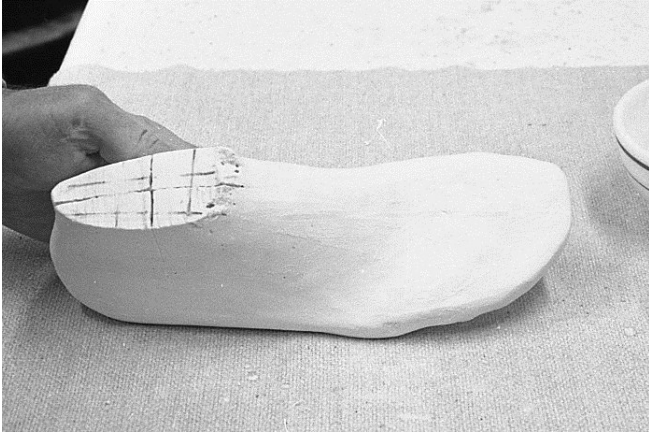
94 Shape and smooth the plaster.



95 This is the area called the "pyramid" or "crest". It is between ball of foot and toes. As the artisan, you determine how you want it to be when you are finished.



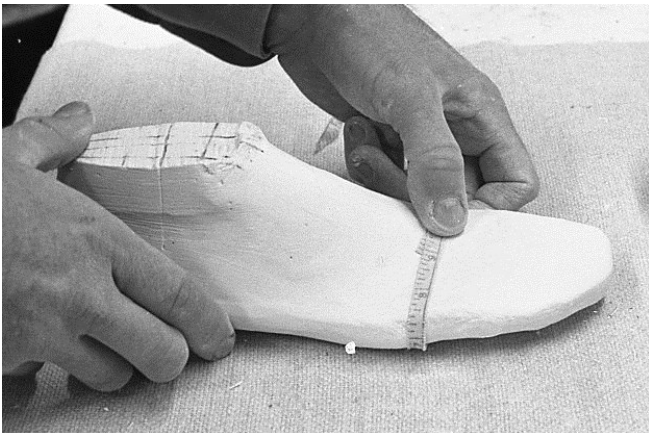
96 Smooth the rest of the cast.



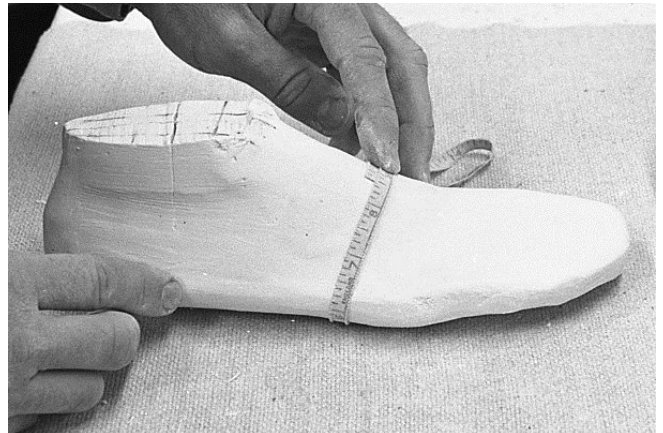
97 The finished "LAST"!



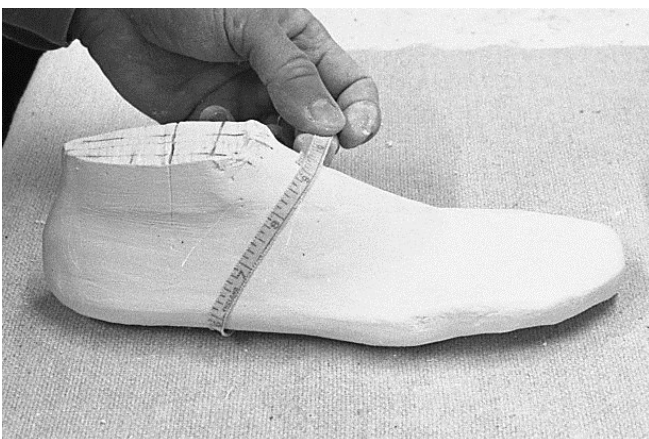
98 Medial view.



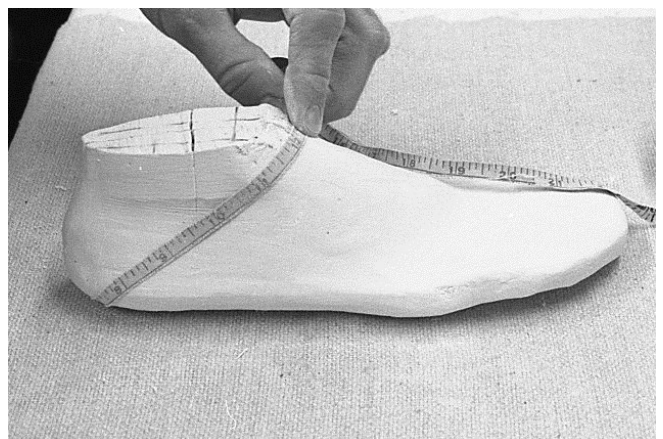
99 Checking measurements at the ball.



100 Checking measurements at the waist.



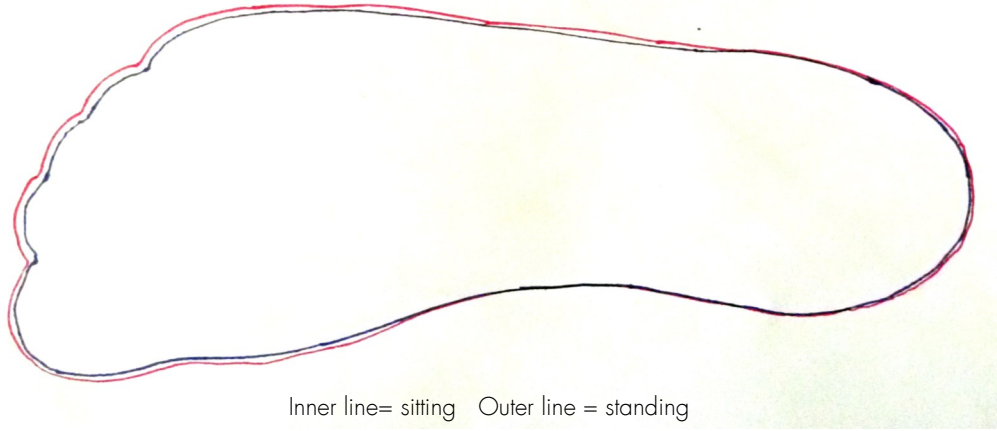
101 Checking measurements at the instep.



102 Checking measurements at the heel.

PRESENT CAST CUTTING MODIFICATIONS FOR SHOES

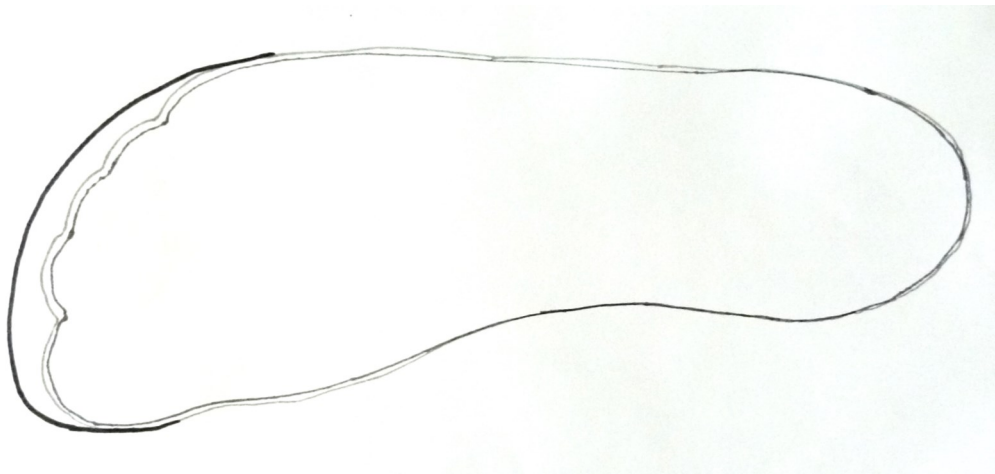
Elongation Drawing



Tracing Last Over Elongation Drawing Especially Around Toe Box



Traced Elongation Drawing Showing Size and Length of Last Toe Box in Front of Standing and Sitting Lines



SUMMING UP PRESENT CAST CUTTING MODIFICATION TECHNIQUES

Modifying and plastering the cast is a subjective art. Wearing a molded shoe, boot or sandal is a subjective experience. The results of modifying and plastering a cast will be best understood when the artisan and/or craftsperson is the wearer.

Remember: every person and every foot is different. No two articles of molded footwear are going to come out exactly alike. There is no precise formula of modification that fits every article of molded footwear.

Look at the common likenesses in the procedures. Then adjust according to your own ideas and expectations about what might work the best for what you are trying to do.

Measurements are just a tool to help you achieve what you want to do.

Comparison Chart for Present Cutting and Modification for a Shoe

This chart should be viewed as a theoretical example of one foot.

	Measurements				
	BALL	WAIST	INSTEP	HEEL	LENGTH
RAW FOOT	9	8 1/4	9 1/4	12	9
RAW CAST	9 1/2	9	9 1/2	12 3/4	9 1/8+
CUTS MALE	1 Horizontal 1 Vertical (maybe 2 or 3 depending on saw width)				
CUTS FEMALE	1 Horizontal 1 Vertical lengthwise and 1 Vertical crosswise (maybe 2 or 3) and (maybe 1 center cut)				
SPLINTS	25 Splints and application of plaster				
FINISHED LAST MALE	9	8 1/4	8 3/4	12 1/4	9 1/2+
FINISHED LAST FEMALE	8 7/8	8 1/8	8 5/8	12 1/8	9 1/2+