

DEVELOPMENT OF TECHNIQUES WITH CHASING AND  
REPOUSSE IN RELATION TO CONTAINERS

An abstract of a Creative Project by  
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The problem. The specific problem undertaken in this creative effort has been to get totally involved with the process of chasing and repousse, using tools and hammers with precision and control. An explanation of the process in making the container as it relates to the chasing techniques is a major consideration.

Procedure. The procedure has been to continue research in the development of the container. That research has involved the construction of four containers, each having a chased and repoussed lid.

I have also gone into the construction of the container itself, the processes having been recorded with camera and these photos are used to be self-explanatory in the development of the containers.

Findings. This experiment in the development of the use of the metalsmith's tools has given me a better sense of awareness of the metal.

An intense study of these processes has defined a strong artistic sense within me. This project also has given an opportunity to experience the container as an art object as well as a useful utilitarian piece.

The techniques of chasing and repousse lends itself toward a fine textural surface and gives the metal a whole new perspective. In that way, it has expanded my whole concept of metal.

Conclusions. Experience with tools has broadened my perspective of the capabilities of the metal. It has also taken the fear out of using the tools. That was the original reason for starting such a problem. Therefore, this project has helped achieve my goals.

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## Chapter 1

### INTRODUCTION

"Since the dawn of civilization, jewels have compensated for three of man's basic insecurities: vanity, superstition and the desire for material wealth. These three facets of human character are as old as man himself."<sup>1</sup> These three characteristics have defined a need that has given a strong reason and direction for my art.

After beginning research about a year ago in the study of containers, a decision was made to continue work with the container, incorporating new direction in the development of chasing and repousse as a decorative technique.

Before going into the new series of containers, a brief summary of work done previous to this thesis is included. These objects represent work done over the past two terms (Figures 1-11).

The overall involvement has been with the container as a sculptural object, these objects being a medium of understanding in relation to art.

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<sup>1</sup>J. Anderson Black, The Story of Jewelry (New York: William Morrow and Company, Inc., 1974), p. 13.



Figure 1

Case at Jan's Gallery 1975  
West Des Moines, Iowa

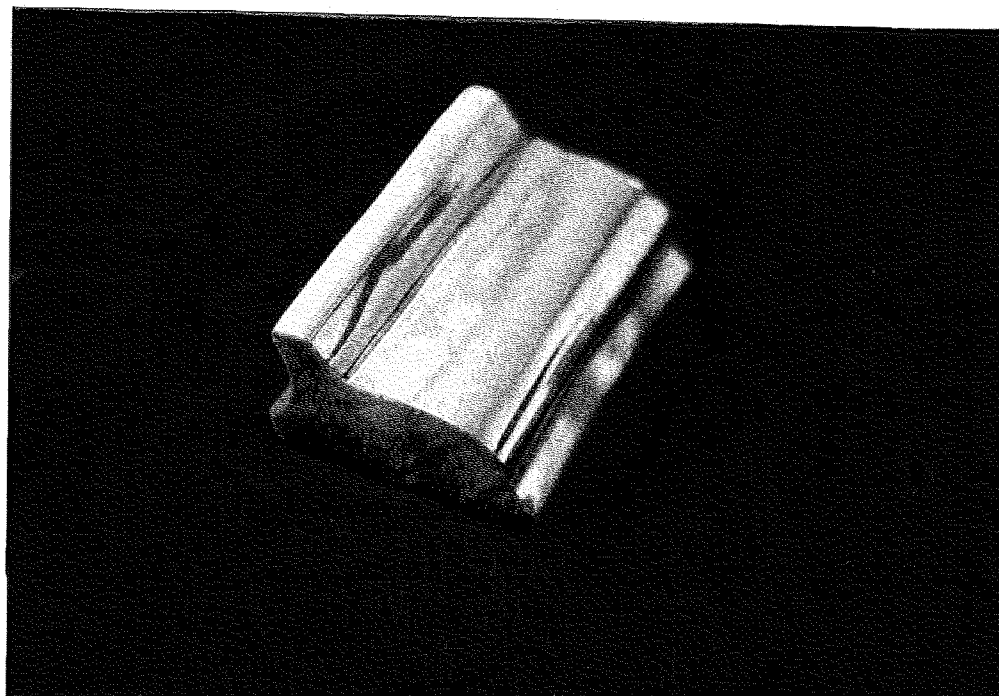


Figure 2  
Cigarette Box 1974



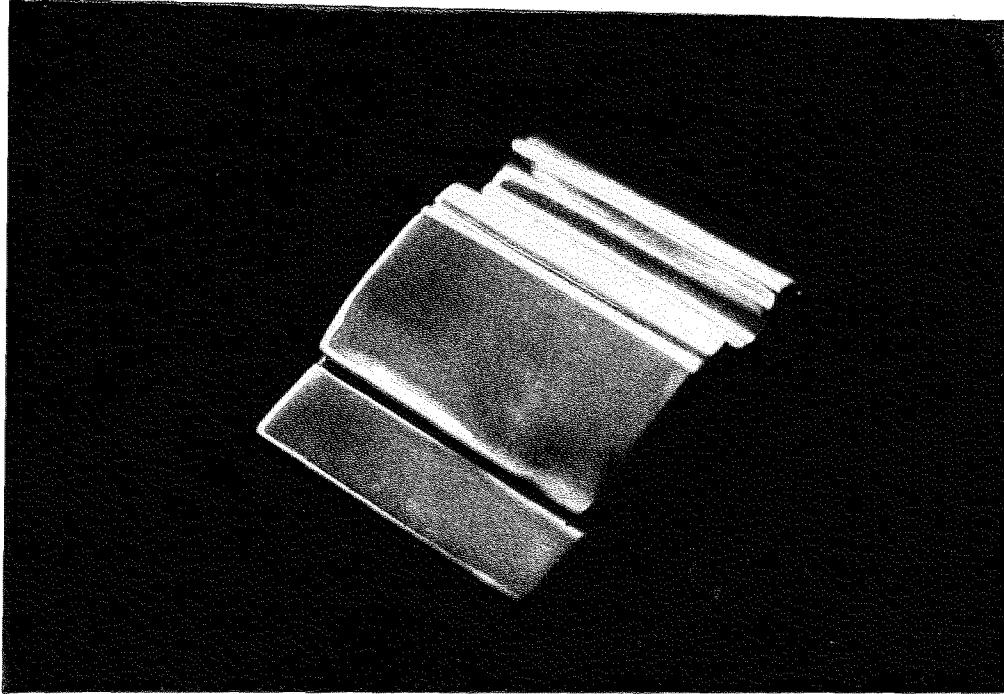


Figure 3

Container, Drake Student Show 1974

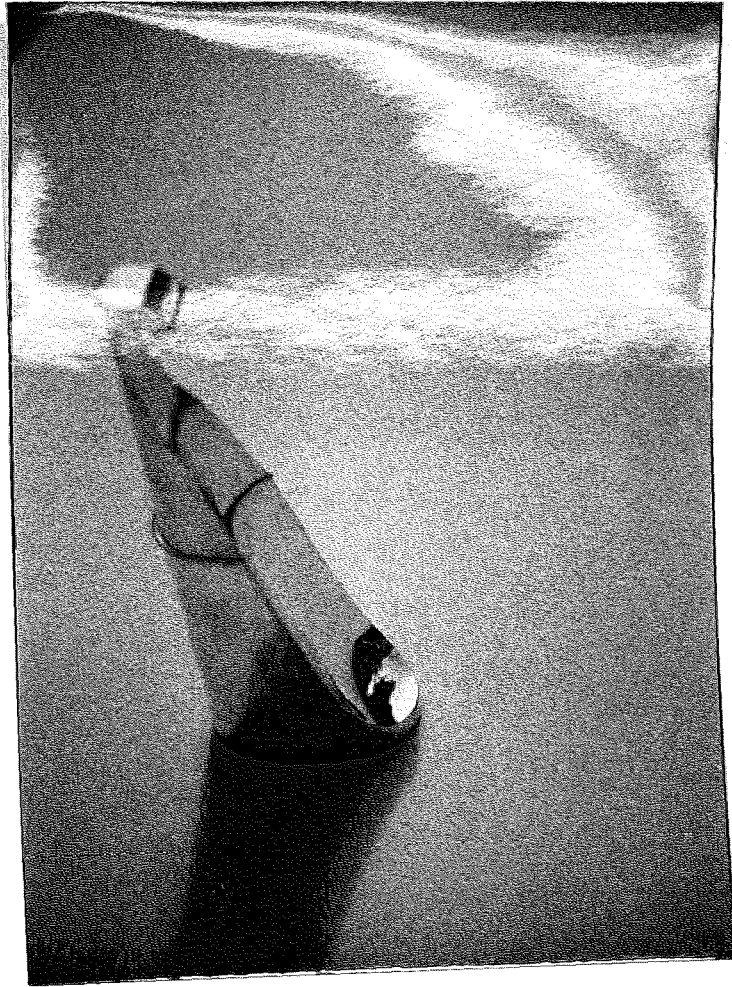


Figure 4

Decanter and Cup  
Mason City Show 1974



Figure 5

Decanter and Cup  
Mason City Show 1974

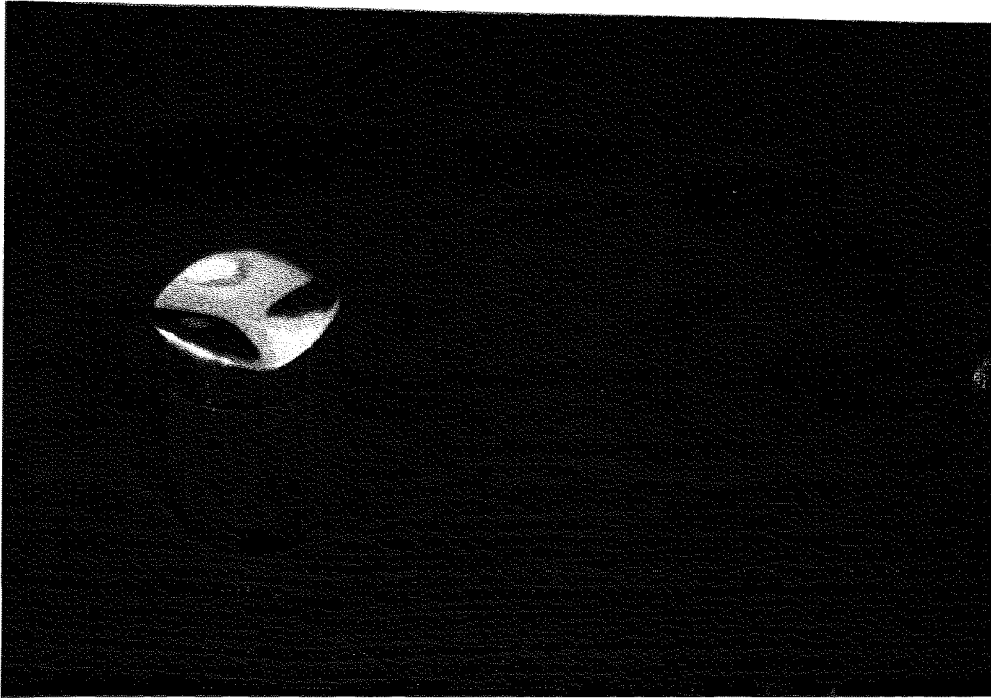


Figure 6  
Pillbox 1974

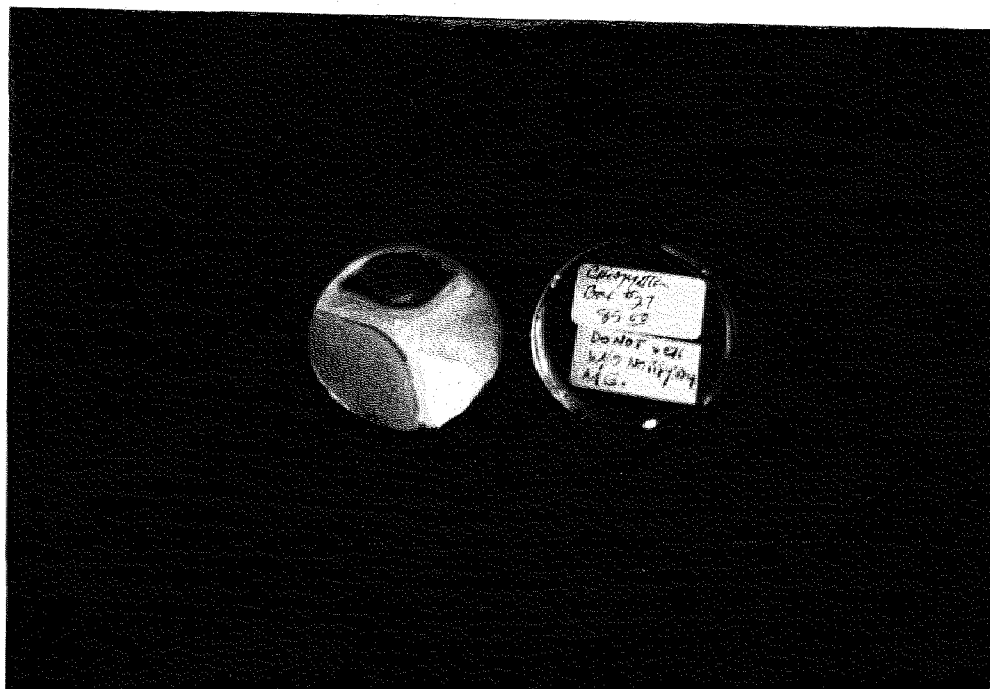


Figure 7

Pillbox 1974



Figure 8

Jan's Box 1974



Figure 9

Jan's Box 1974



Figure 10  
Cigar Box 1974





Figure 11  
Debra's Box 1975

The whole basis for direction was simply a curvelinear line in space. This concept has been taken through the design processes of these containers. I am now involved with chasing and repousse to express hard and soft contrasts in relation to the container.

## Chapter 2

### THE PROBLEM

The specific problem undertaken in this creative effort has been to get totally involved with the process of chasing and repousse, using tools and hammers with precision and control. An explanation of the structure in making the container as it relates to the chasing techniques is a major consideration.

An explanation of the process of chasing is included for a clearer picture of what the involvement entails.

Chasing Tools and Punches. A wide range of textures can be achieved by the use of chasing tools and punches. These tools are specifically designed and used for making marks in metal. Chasing is usually done on sheet metal prior to any further construction or soldering operation. The sheet of metal is placed on a chasing plate, which is a soft iron plate of any reasonable dimension and about one inch thick. The plate is provided with clamps which may be screwed down to hold the sheet metal in place during chasing or texturing operations.<sup>1</sup>

For a further explanation of "Form for Chasing,"<sup>2</sup> refer to the Appendix.

Drawing out a chasing pattern is difficult. Therefore,

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<sup>1</sup>Philip Morton, Contemporary Jewelry, A Studio Handbook (New York: Holt, Rinehart & Winston, Inc., 1970), p. 190.

<sup>2</sup>Ibid., pp. 190-191.

a slightly different approach was considered. The design is more conceptual until the metal is touched. The outer perimeter is designed with a brief elevation drawing to be used as a guide allowing flexibility to adjust its form as the work progresses.

## Chapter 3

### PROCEDURES

Included in the report are statements written while being involved with each container.

"Sketchy, yet structured in my mind, I began my first container. A decision was made, after doing at least four round containers, some photos of which are included to show a progressive pattern (refer to Figures 1-11) that another shape would reassociate me with exact lid fittings. Technical development is as important as design progress.

The lid will become part of the side, giving a feeling of fluid movement and interrelate top to line motion of the object.

Technically, the cuts are clean and direct. The edge relates a long, sweeping line."

At this point, control of the chasing tools to cause a soft, natural curve was the objective. The chased lid was cut from a 24 gauge sheet of sterling. The forming hammers as well as the chasing tools were used to execute the shaping.

The container is slightly egg shaped; therefore, a few alternatives were considered for the lid. Contrast was needed for dramatic effect. A curvilinear relationship between container shape and lid were the main considerations.

Two concave dips, one on each side with a defined center of interest, was the direction chosen.

There were a few technical difficulties, one being 24 gauge is very thin and has to be handled with utmost awareness of that thinness. The metal (24 gauge) can take a lot of stress, but when final buffing stages are reached, and fire-scale is penetrated, the last buffing can be tricky.

Fire-scale - An oxide that forms below the surface of copper-bearing alloys such as sterling silver; when thick, the oxide is due mainly to overheating or unprotected heating. It is sometimes difficult to remove and can be avoided by painting the surface with flux before heating or by quick dipping, after subjection to heat, in a 50 percent solution of nitric acid and water, followed by thorough rinsing in water.<sup>1</sup>

I prefer the color of the silver without fire-scale so all of it was buffed off the piece. The slides included for container #1 are figures 12 through 16.

The second container has a specific purpose. It was made to hold my business cards (Figure 17). Therefore, the design is related to the crest used as my logo. The container's design had a stylized body for a better relation to the card.

Since the curve would be difficult to match for the lid and bottom, both were cut from one piece. Later, after

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<sup>1</sup>Oppi Untracht, Metal Techniques for Craftsmen (Garden City, New York: Doubleday and Company, Inc., 1968), p. 483.



Figure 12

Container #1 1975

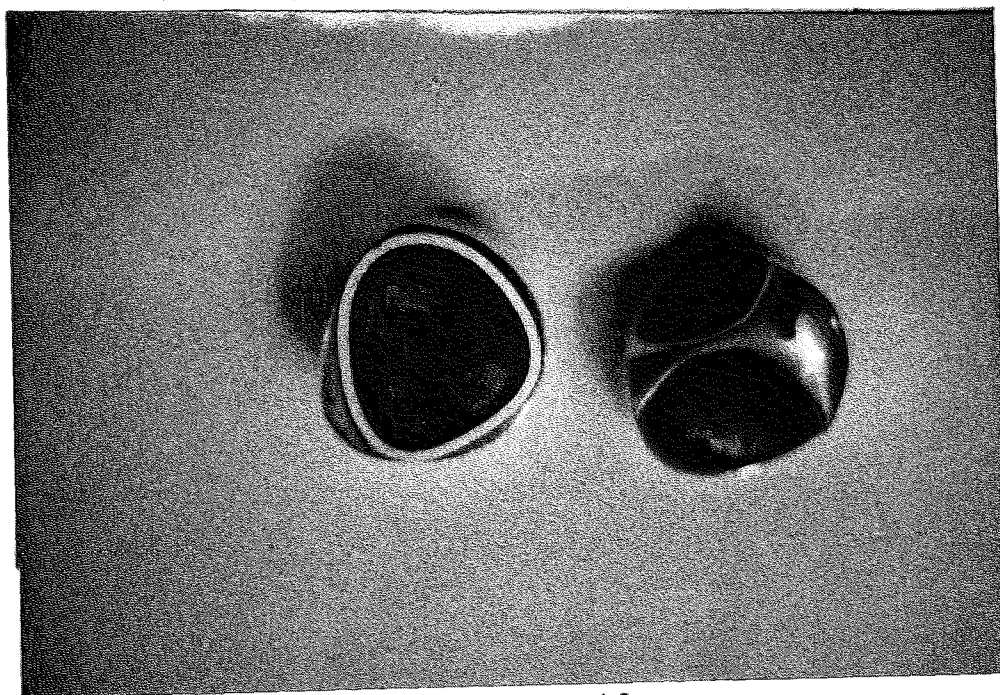


Figure 13  
Container #1 1975



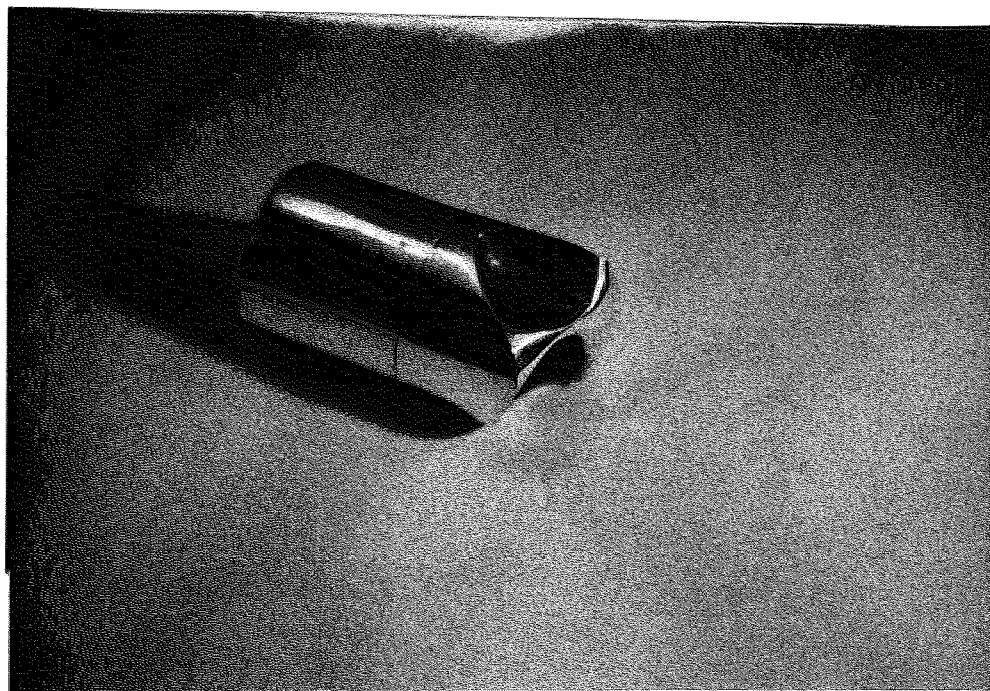


Figure 14  
Container #1 1975

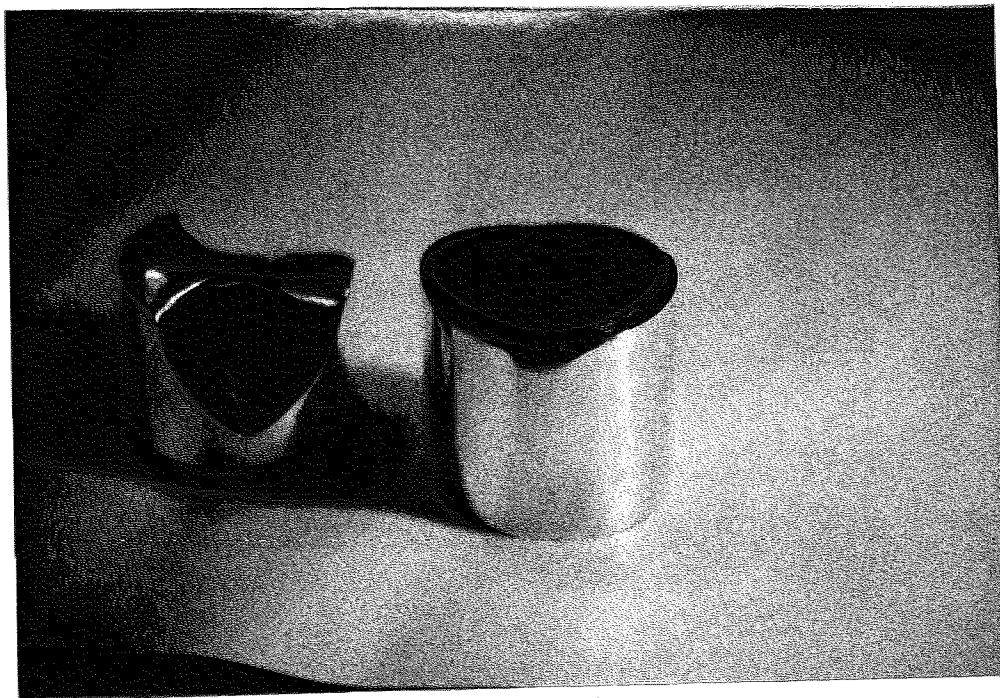


Figure 15

Container #1 1975

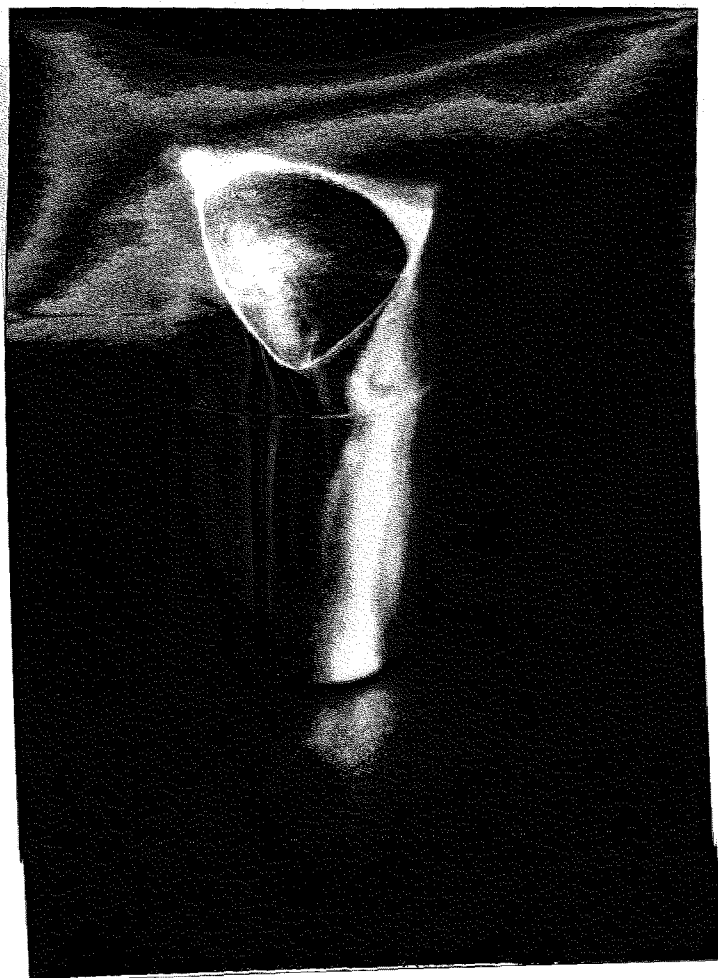


Figure 16  
Container #1 1975

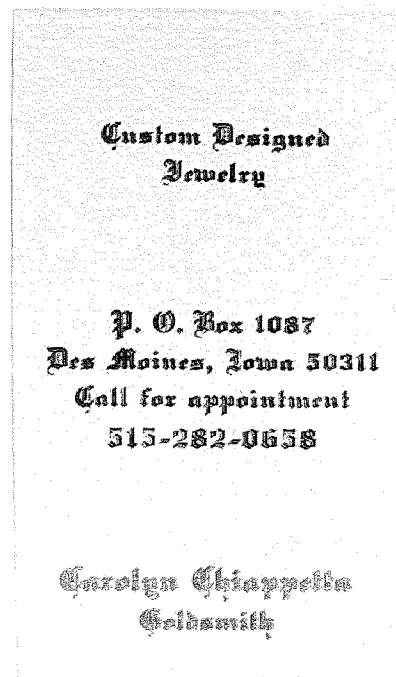
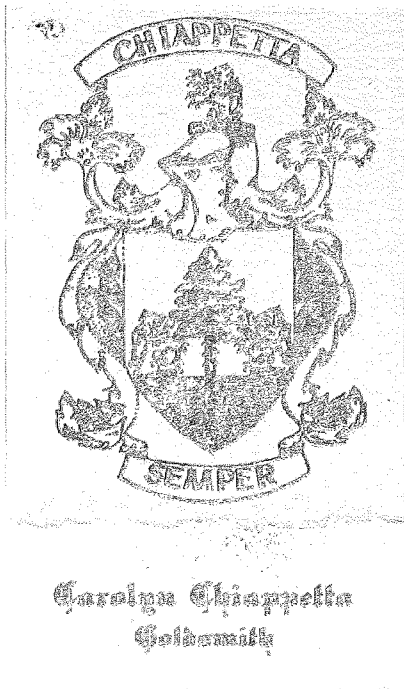


Figure 17  
Business Card

shaping and soldering, the piece was cut apart and sanded flat.

The drawing of elevations for the box lid were handled carefully to get a better idea how to visualize the movement and design.

As the piece progressed, the lid was too flimsy to hold its shape. Slight warping, from overheating, occurred, the inner ring had to be cut out and another method of connection was executed. An outer plate was soldered all the way around the container for connection (Figure 18).

After completing container #2 (Figures 18-21), several observations were noted. Fitting was the most difficult part of this project. A simpler design was in order. I did not want to change the point of emphasis. Chasing was the main concern, fitting secondary. Therefore, the new direction was to concentrate more closely on the lid, its problems and simplify the design.

For the third container, the whole procedure will be discussed.

The thought process, in making the third box, took longer than both the other containers. This box contained a simple, yet congruent flow of lines. It incorporated some of the same problems as the first two.

I began with a basic drawing which is an outline of the shape and a sketch to give a realistic idea of the process (Figure 22). Figure 22 includes an evaluation to



Figure 18  
Container #2 1975



Figure 19  
Container #2 1975



Figure 20  
Container #2 1975



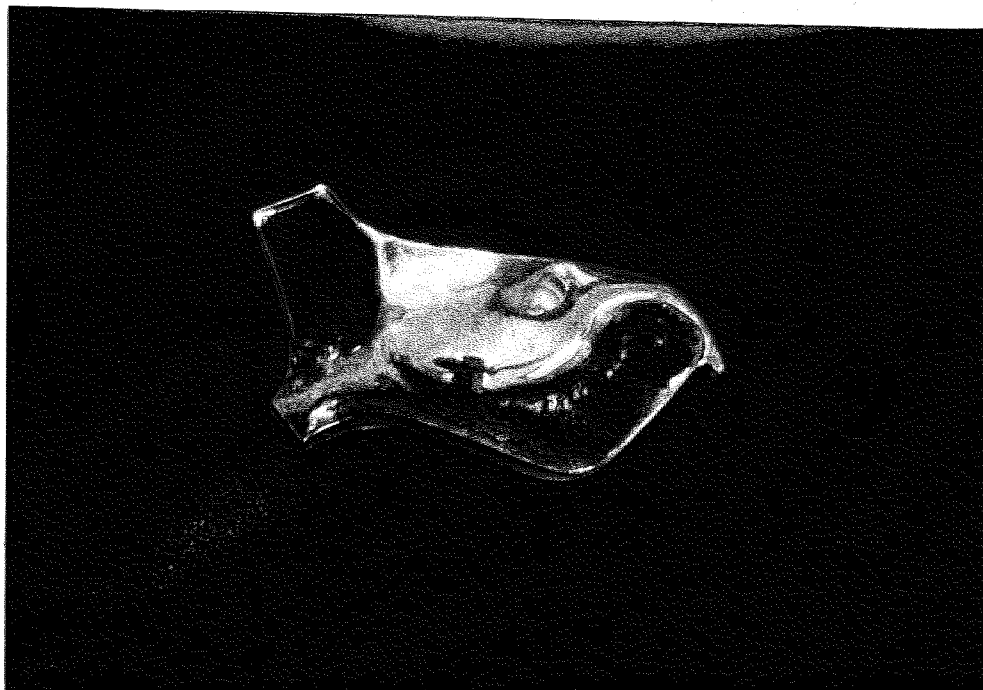


Figure 21

Container #2 1975

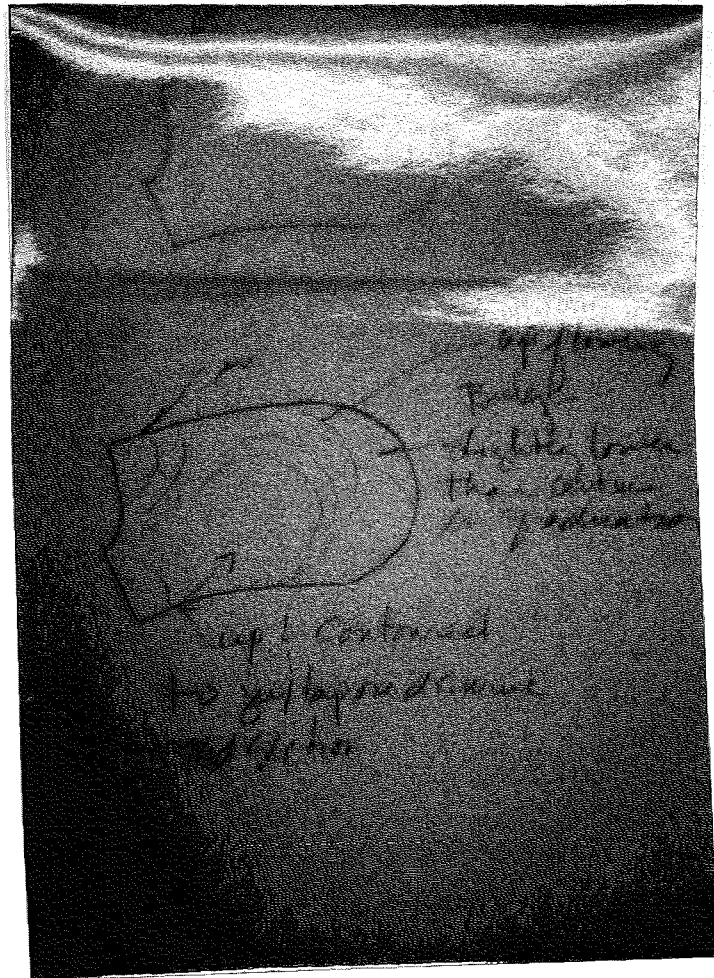


Figure 22

Elevation #3 1975

give an idea of how the lines flow and work for the piece.

When the shape was chosen, it was drawn on tracing paper and cut out to be retraced on sheet metal with a graver (Figure 23). Usually, a french curve, that matches the curves in the design is used to draw the lines on the metal. The bottom plate is always cut approximately one-eighth inch larger all the way around the pattern to insure a good soldering edge.

When there are sharp bends or curves right before a corner, it is easier to secure the bend, then begin making the v-cuts.

For a sharp corner, two points are measured from top and bottom edge to insure a straight line. Then a line is drawn with the scribe. An engraver can be used to deepen the scribed line. A square file is used to carve out a  $90^{\circ}$  cut in the metal (Figure 24). When this process is completed, the metal will bend fairly easily. Solder has to be flown into the joint after bending to secure a strong corner.

After the complete outer shape was formed, it was soldered to hold the piece in shape (Figure 25).

The side of the lid was cut from the body after the bottom plate was soldered to the sides so it would make the piece stable and would hold the original contours. In soldering the bottom to the sides, heating from the inside of the shape was more successful. The solder flowed evenly all the way around.



Figure 23

Drawing on Sheet Metal #3 1975



Figure 24  
V-Cut Box #3 1975



Figure 25  
Soldering #3 1975

Before the plate was secured to the body and the lid was sawed away from the bottom, I made sure a line was scribed on both sides of the frame before soldering. That makes it easier to cut the lid away from the base. An accurate cut is obtained by watching the inside line as well as the outside line.

The side of the lid and base were level and fit perfectly flush before the inner plate was secured to hold the pieces together (Figure 26).

The decision was made to construct a two-chamber box. The center section has both lips to secure the lid to the mid-chamber and the mid-chamber to the bottom (Figure 27).

The top had to relate to the outer shape in its undulating form. The lines were soft, yet crisp as the lines on the chased lid.

When the plate for the lid was started, the outer line pattern was scribed on the sheet metal and the pattern was cut out, leaving a wide area around the scribed line to allow for stretching and/or forming in the metal.

A pattern was drawn with magic marker on the plate and forming with chasing tools was initiated. The chasing was started on a lead block until there was some kind of definite shape. Then the metal was chased in the pitch (Figures 28-29). The metal has to be annealed after totally working the surface each time.



Figure 26  
Flush Fit #3 1975





Figure 27

Mid-Chamber Lips #3 1975

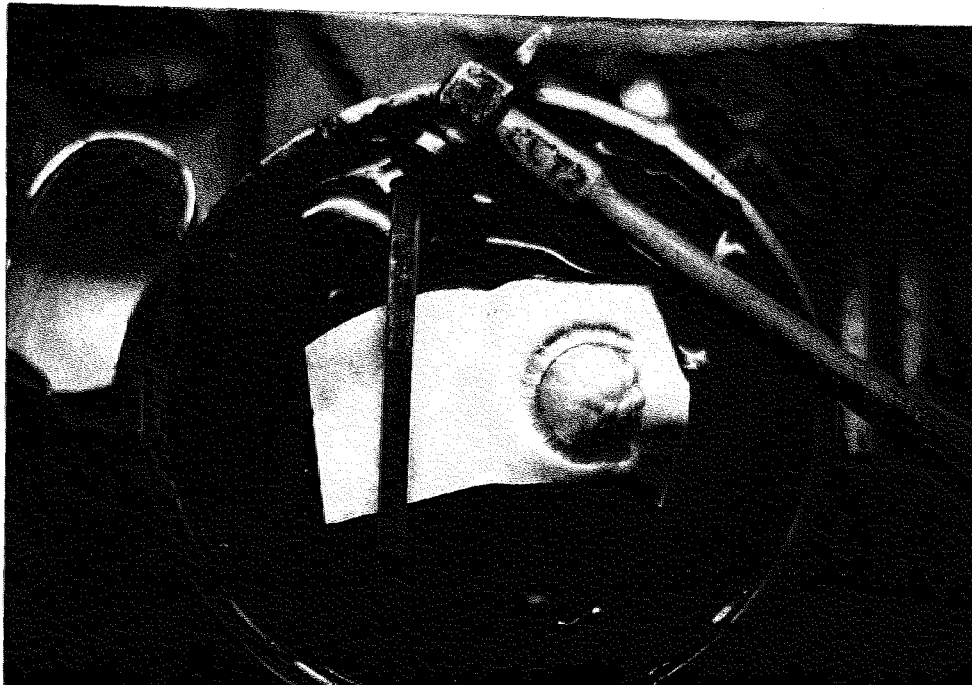


Figure 28

Chasing in Pitch #3 1975



Figure 29  
Chasing in Pitch #3 1975

Annealing is heat-treating a metal to a temperature below its critical range, mainly to relieve residual stresses but also to render the metal soft for further cold working. After annealing, copper may be immediately quenched; iron and steel may be cooled in air; brass- and zinc-containing alloys must be slow cooled because the zinc in them, if subjected to sudden cooling, would cause cracks. Aluminum can be judged to be annealed when soap previously applied to its surface turns black under heat.<sup>1</sup>

Pitch is a heatable material in which metal can be secured and can be worked with a good deal of support.

After shaping the plate with the chasing tools, watching the edge fit was important. As the piece progressed, after three or four planishings, it began to take solid form and direction (Figures 30-31).

When the piece was planished to where it needed a final buffing and fit closely to the side, they were soldered together. After the side was secured, excess silver was trimmed from the edge. The lid was then filed with the rest of the container. Filing was done all at once to insure an even and consistent surface.

The foot was secured to the bottom. This was done before final stages of filing or buffing which eliminated the need to sand the surface twice to remove fire-scale.

The box was completed (Figures 32-35) after three stages of buffing:

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<sup>1</sup>Ibid., p. 481.



Figure 30

Mid-Stage Chased and Repoussed Lid #3 1975



Figure 31

Mid-Stage Chased and Repoussed Lid #3 1975



Figure 32  
Finished Container #3 1975

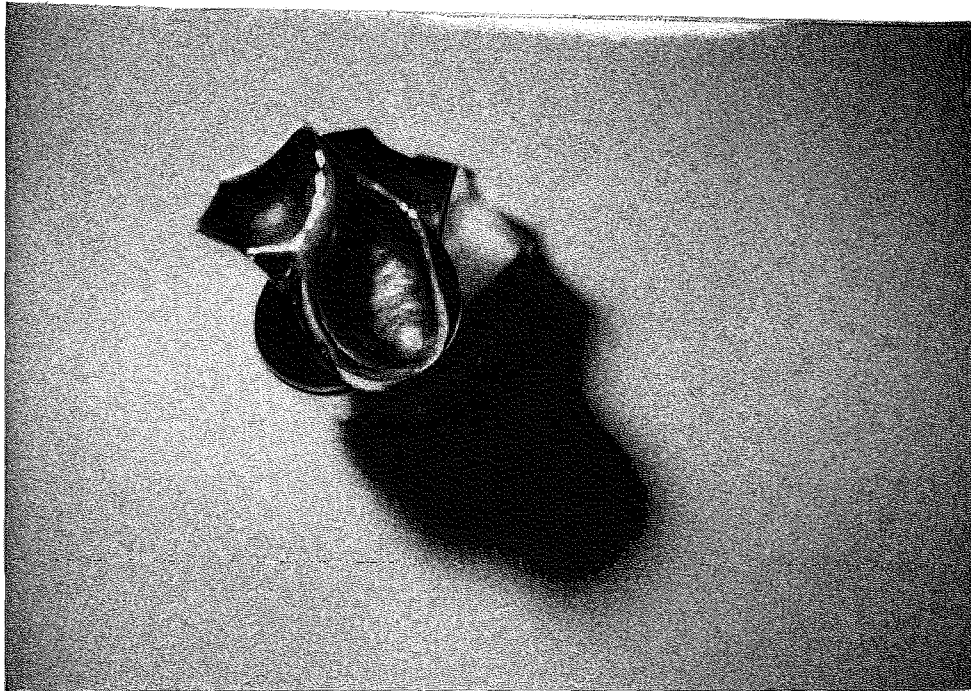


Figure 33

Finished Container #3 1975





Figure 34

Finished Container #3 1975



Figure 35

Finished Container #3 1975

1. Bobbing compound (coarse grit for beginning stages)
2. Whitediamond (medium)
3. Rouge (fine)

### ANALYSIS

The results of the container was as follows:

1. Fittings were improved over last container.
2. Lines were improved in crispness and accuracy, but still lacked the finish wanted.
3. Hammer marks were controlled and even.
4. Continuity of lid and shape of container was good.

Work began on the final container of the series.

Every container completed up to this point had a flat bottom with some kind of foot. The new direction was to design the bottom with a different consideration of a fluid movement around and through the piece. The bottom curve had a direct relationship to the curve intended in the chased lid.

The construction did not present any problem. The curves were simple to form and the joints crisp and clean. The design was symmetrical in one direction and was counter-balanced with asymmetrical chased and repoussed patterns.

The metal responded better, and a more sensitive and confident feel for the curves and surface developed. My thoughts became planned, hammer marks more controlled and a personal understanding of the material was achieved.

The process and results of container #4 are shown in Figures 36 through 40.



Figure 36

#4 Container in Process 1975

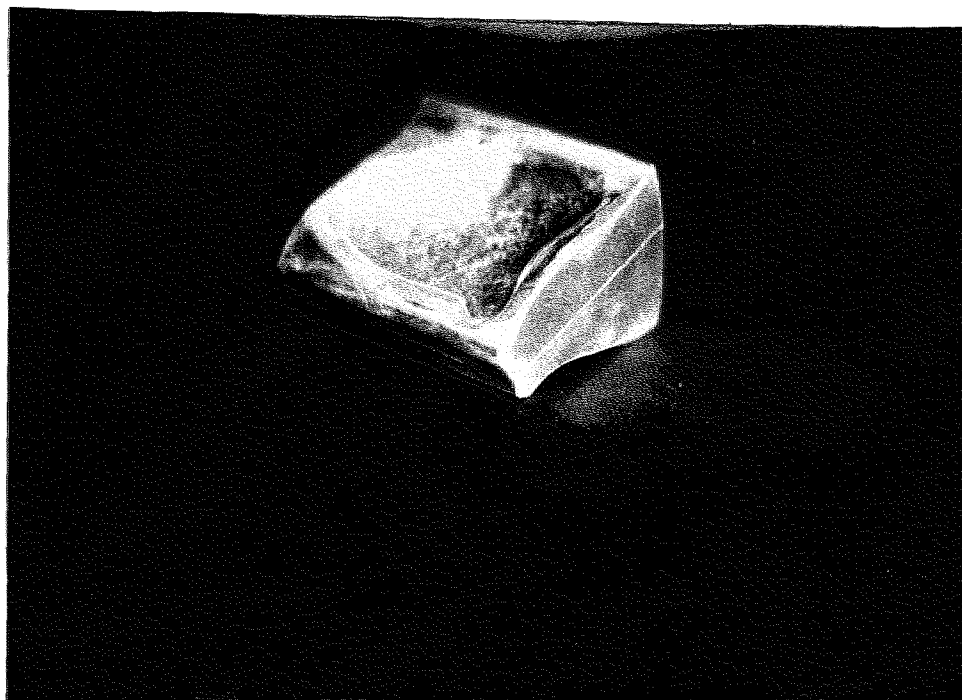


Figure 37

#4 Container in Process 1975

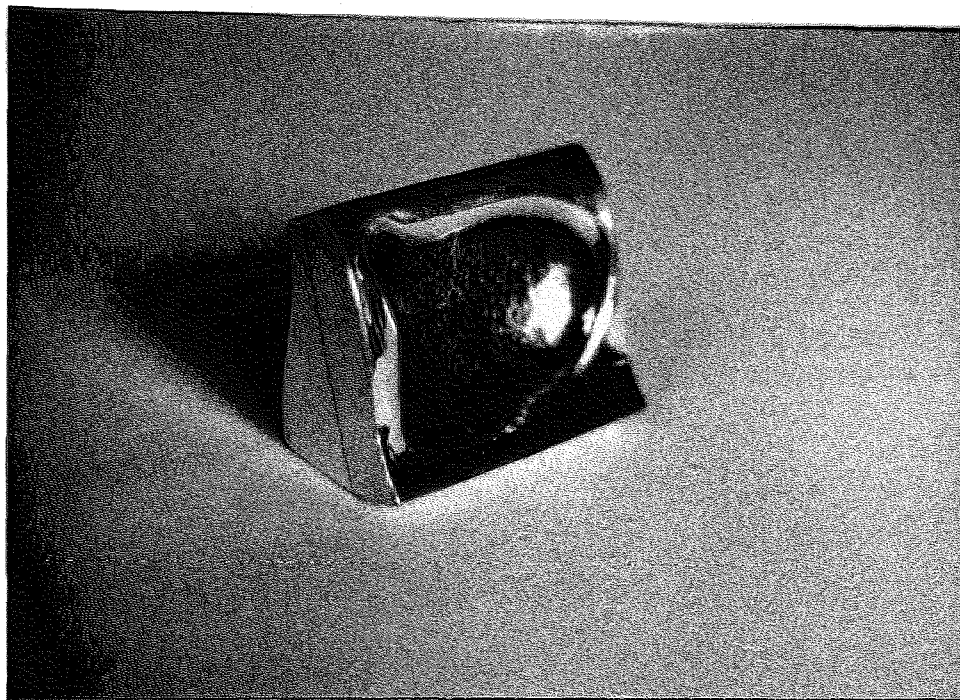


Figure 38

#4 Finished Container 1975

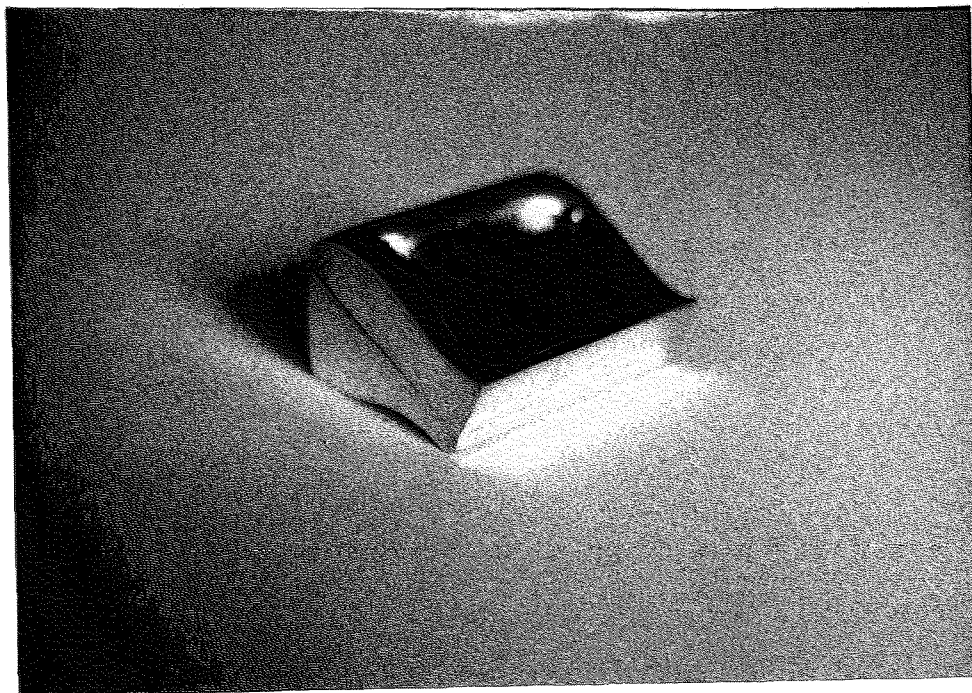


Figure 39

#4 Finished Container 1975



Figure 40

#4 Finished Container 1975



## Chapter 4

### CONCLUSION

Problems in relation to this thesis connected to the techniques of chasing and repousse have been to develop control and precision with the specific tools. It also involved an explanation of process in making a container.

The technical conclusions have been to note that striking the metal with equal force with each blow is necessary whether it be with the chasing tools or with the planishing hammer. This equality of stroke keeps the surface of the metal consistent. Using the right tool or stake for chasing or planishing is also important. This is an additional way to control surface texture.

In construction of the container, establishing a working order of events such as putting bends in metal before carving v-cuts saves time and material. Proper controls over the soldering process like heating and soldering evenly helps prevent pits in joints. Other technical achievements have been mentioned in the body.

Artisitcally, the project has strengthened my philosophy and direction in metal. The curvelinear line in space has remained a solid form for direction.

The experience with tools has broadened a perspective

of the capabilities of the metal. It has also taken the fear out of using tools. This was the objective and by the process of working intensely with this problem for a long period of time, confidence has developed. The main objective has been accomplished.

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## APPENDIX

## APPENDIX

"Form for Chasing. Chasing requires the development of form, which can be mastered by observance of the following rules:

Hold the chasing tool firmly, but not tightly, in the left hand. Notice that the little finger rests upon the surface of the sheet. The other three fingers are spread along the tool, one finger near the top, one at the middle, and one near the bottom of the tool. The tool is tilted slightly back, away from the direction you wish to move, but is vertical in the side directions.

Using a chasing hammer or a small ball-peen hammer, strike the upper end of the tool steadily and continuously with light blows.

As each blow strikes the tool, it will drive it into the metal, and, if the angle of the tool is adjusted correctly, will also move the tool along the surface of the metal.

As the tool moves along, the impression helps to hold the point of the tool in line. It is a good practice to chase your lines lightly at first, going over them a second time for more depth.

Straight lines should be chased with a straight "liner". All but very flat curves must be chased with a curved "liner". All flat curves can be made by gradually rotating the straight liner as you move the tool along.

Do not expect too much from yourself at first. Chasing is a delicate technique and requires much practice. Skill will increase in relation to time spent.

When striking with the hammer, remember that the face of the hammer must always be held in normal relationship to the axis of the tool; otherwise, each blow will deflect the tool out of line and the force of the blow

will be lost. When the hammer and the tool are held in the proper alignment, the force of the blow goes directly into the metal.<sup>1</sup>

The only difference between chasing and repousse is that chasing is done from the front side and repousse is done from the backside of the sheet of metal.

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<sup>1</sup>Oppli Untracht, Metal Techniques for Craftsmen (Garden City, New York: Doubleday and Company, Inc., 1968), pp. 190-191.