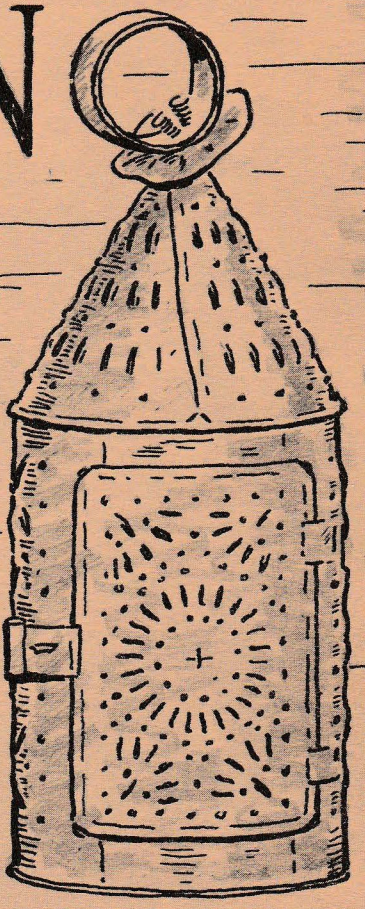
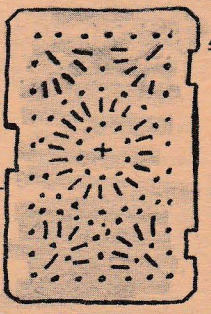
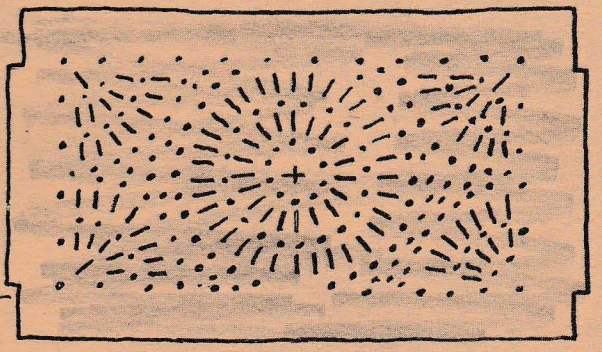
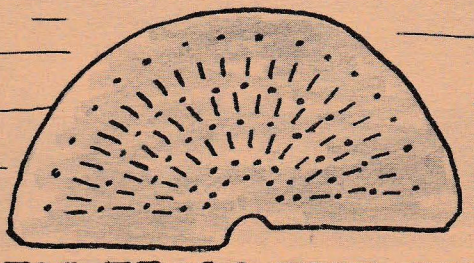
HOW TO MAKE A PIERCED TIN LANTERN

Bud Dudley
&
Albert Lees
TINSMITH
Old Sturbridge Village









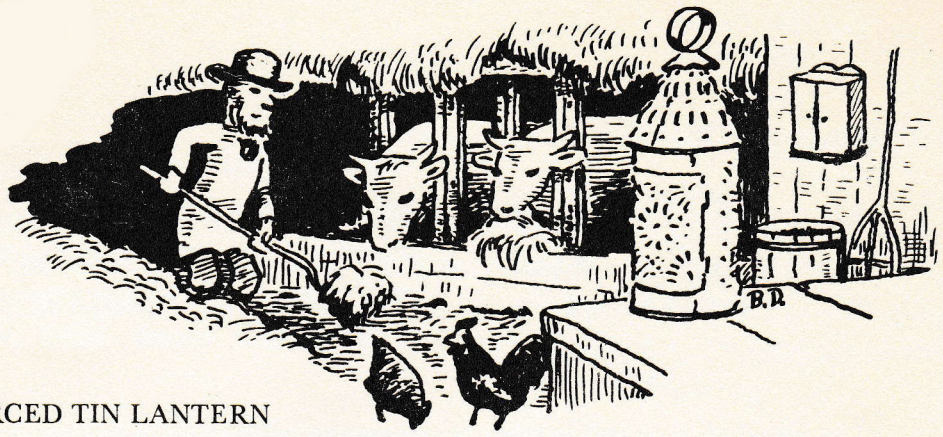
COMPLETE
INSTRUCTIONS
and
PATTERNS

LANTERN FROM THE COLLECTION OF

Old Sturbridge Village

Notes:

Patterns 1 and 4 need to be cut and pieced together as they are larger than the standard letter sized paper. Cut off the left edge of the "B" or left page and overlay it over the right page and tape toghether using clear tape.



THE PIERCED TIN LANTERN

The origin of the pierced tin lantern is lost in antiquity, but we know it was used in Europe in the 14th Century and may have first appeared in Spain. The earliest lanterns were made of brass or copper.

While their first purpose is to provide light, they were also used for religious activities, and were decorated with crosses and other symbols. Fraternal societies also decorated them with their emblems. Henry Clay had a lantern pierced with his name during a campaign for the Presidency.

This lantern is sometimes referred to as a "Paul Revere Lantern," but this is incorrect. He made few if any lanterns, and this was not the type that was hung from the belfry of the Old North Church on that fateful night in '75.

The farmers of Colonial times used the pierced tin lantern in their barns and stables. The threat of fire was uppermost in their minds, and if these lanterns tipped over or were dropped in the hay, the flame of the candle was shielded. It could also be carried in a high wind and the flame would not blow out.

The lantern on which this pattern is based was given to Old Sturbridge Village by a person in whose family it had been for over a hundred and fifty years. It is interesting to note that a slash in the pattern on the barrel, near the lower right corner of the door opening, is missing. It is not known if it was the trade-mark of the tinsmith, or if he just forgot to punch it.

If it is the latter, the old craftsman would be surprised if he knew that his oversight is being repeated every time his lantern is reproduced one hundred and fifty years later!

Bud Dudley and
Albert Lees, Tinsmith
Old Sturbridge Village

GENERAL INSTRUCTIONS AND COMMENTS

This attractive lantern can be made by anyone with reasonable ability in using hand tools. However, one should work slowly and carefully. Rome wasn't built in a day and you shouldn't expect to be too speedy making a pierced tin lantern the first time either!

The metal used in this lantern is commonly referred to as tin, but it is actually tin plate. Tin is a soft and very expensive metal, and is usually used as an alloy. Tin plate is either sheet iron or sheet steel coated with tin. This is the same metal used in tin cans and pots and pans.

Although the patterns are carefully made and the tolerances are reasonable, it must be remembered that this is a hand crafted lantern and slight variations are to be expected. It may be that a little extra trimming here and there may be necessary.

Read the instructions completely before you make the first cut in the tin plate. Tin plate is expensive and patches don't add to the beauty of the lantern!

If tin plate is unavailable other metals may be used. Copper was used in earliest times and makes a beautiful lantern. Terne plate has the appearance of pewter. Aluminum and galvanized iron may also be substituted. Soldering may be difficult if aluminum is used.

A word about soldering. If tin plate is used, you should use rosin flux. However, if one of the other metals is substituted, the soldering technique will be different. We suggest you go to your local library and borrow a book on sheet metal work. An excellent book on this subject is "Sheet Metal Shop Practice" by Leo A. Meyer published by American Technical Society. Chicago, IL.

We have followed the construction of the original lantern except for the seam in the cone. We show it as a flat soldered seam while in the original lantern it is a grooved seam. We do this because most readers of this book probably will not have the Tinsmith's tool known as a "folder." If you do have this tool and want to make the grooved seam you can use the same pattern and allow 3/32" on each end for the bend.

The special tools pages show various tools you should make to facilitate shaping the tin for the lantern. Some may be by-passed if you have something similar available. If you need help in making some of these tools, your local High School or Trade School shop might be persuaded to make them for you.

Only one set of patterns is included but if you intend to make more lanterns, you can reproduce them in a duplicating machine, or the way the ancient craftsmen did, by putting paper under the tin while doing the piercing. After cutting out the other pieces, they may be traced around the edges on separate pieces of paper.

Care should be used when striking through the pattern not to pierce the tin too deeply. Practice on a piece of scrap tin. Only a slight opening is needed. An example of opening sizes is shown on another page. If you make several lanterns, be sure to keep your piercing tools sharp. File them occasionally.

The block of wood used under the tin while piercing can be made into a decorative wall plaque. It can be rubbed down and stained or painted. Use a large plank with room for an arrangement of all three patterns or three separate blocks.

Never use a candle more than six inches long in the lantern.

Do we need to warn you that the tin plate has sharp edges that can cut your fingers if you are not careful? No, of course not! Gloves are recommended.

After soldering be sure to wash off flux with alcohol.

MATERIAL LIST.

Tin Plate. 28 gauge. 19" x 21".

Soft Wire. 1/16" diameter. 28" long. Light coat hanger wire could be used, or try a TV/Radio repair shop.

TOOLS.

Hammer

Tin Snips

Needle-nose Pliers

Cold Chisel. 3/8" blade

Cold Chisel. 1/2" blade

Cold Chisel. 3/4" blade

Bench Vise

Awl

Center Punch

File

Rubber Cement and Brush

C-Clamp. 2 1/2" capacity

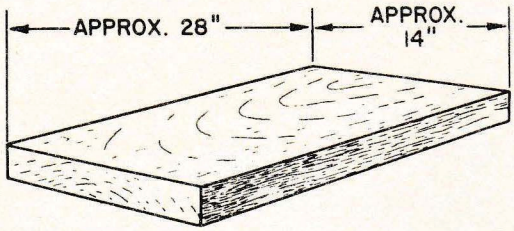
Friction Tape

Soldering kit (Rosin Flux)

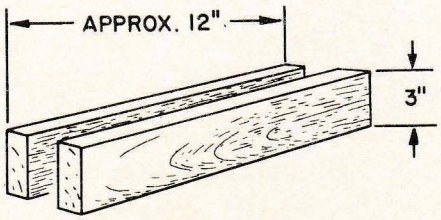
Short Length of 7/8" Dowel

SPECIAL TOOLS (Will be indicated by ST)

ST1 — Piercing plank 2" Softwood plank without knots, preferably white pine

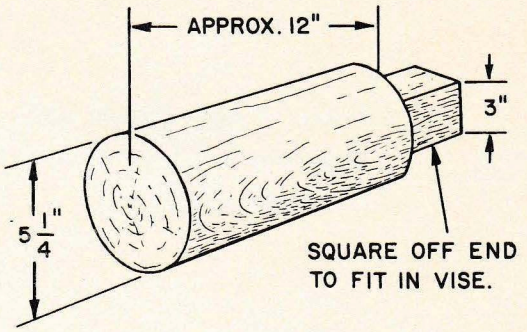


ST2 — Two pieces of 3/4" hardwood for bending tin in vise. They can also be used as an anvil.



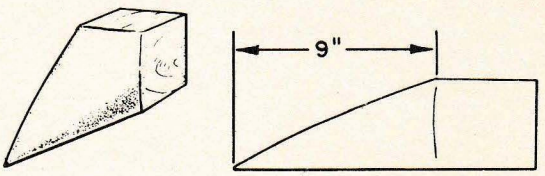
ST3

Barrel form. Hardwood cylinder for shaping barrel. 5 1/4". diameter of barrel is critical.



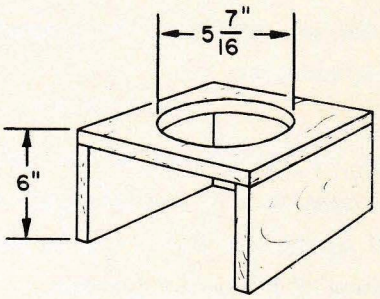
ST4

Form for shaping cone. 4" x 4" tapered to a point.



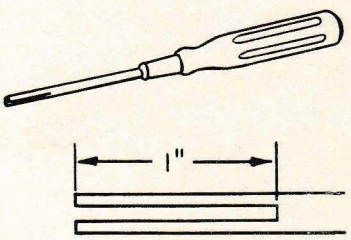
ST5

Form for holding cone while barrel is attached. Top piece is hardwood. 5 7/16" hole opening is critical.



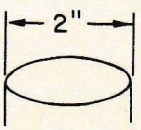
ST6

For rolling hasp handle. An old screwdriver with the blade cut off and a slot cut in the end.



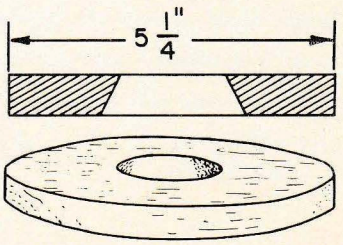
ST7

For shaping ring handle. Any 2" diameter cylinder.

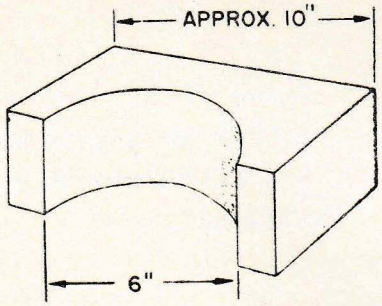


ST8

Form for ends of barrel. Hardwood. 5 1/4" diameter. Tapered holes in center should be approximately 2" and 3". Make two.



ST9 Form to hold barrel while attaching base. 4" x 6" with half circle cut out.



After you have read the instructions thoroughly and made the special tools, you are ready to start.

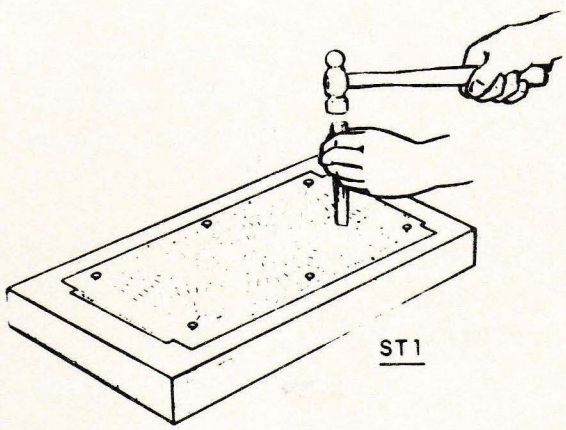
Pry up the staples in the center of the book and remove the paper patterns. Replace staples. Cut out all of the patterns and rubber cement them to the tin plate. Cut off excess tin. Be careful to follow the lines. Failure to do so may make it hard to fit some of the pieces together.

CONSTRUCTION

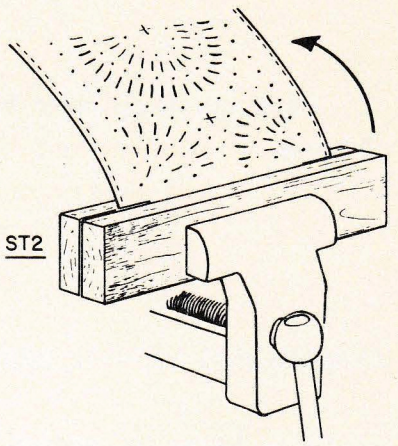
BARREL ASSEMBLY

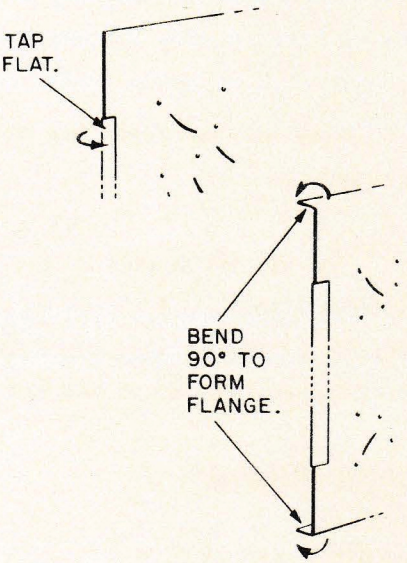
Barrel

Place pattern and tin on piercing plank ST1. Punch six holes for nails at locations indicated on pattern. Holes will be part of the decorative piercing of the lantern, so care should be taken to make them the size you intend the others to be. Nail to the plank with six 3d nails. Leave nail heads sufficiently high so they may be removed later without damage to the tin. Next, shape cutting edge of the 1/2" blade cold chisel as shown in the diagram. Now you are ready to do the piercing. Note indicated sizes for the openings and reread suggestions on piercing in General Instructions and Comments.



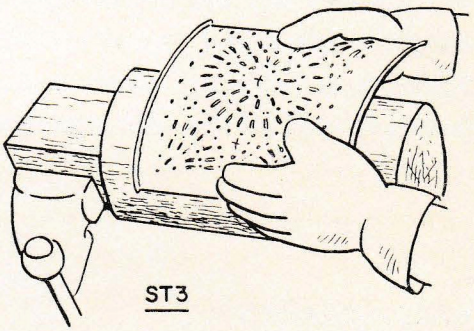
After piercing remove from plank and place one end of barrel between the two pieces of hardwood ST2 in vise at indicated depth as shown by dashed lines on pattern. Bend 90° toward inside (smooth side) of lantern. All straight bends shown hereafter will be made using this method. The outside of the lantern will have the projecting points of the piercings. Remove from vise and tap flat against back. Repeat with the other end.





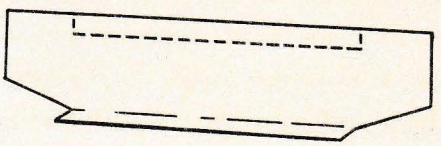
Using above method bend the top and bottom edge of barrel at indicated lines toward outside of lantern 90° to form flanges to attach base and cone. Peel off pattern.

Place barrel form ST3 horizontally in vise. Slowly bend barrel around form being careful not to kink.

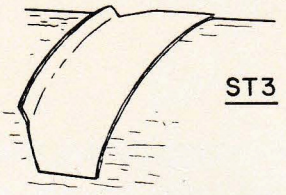


Door Spacers (2)

Using methods shown above bend top edge toward back and tap flat. Bend bottom edge outward 90° to form flange corresponding to flange on barrel. Peel off pattern.

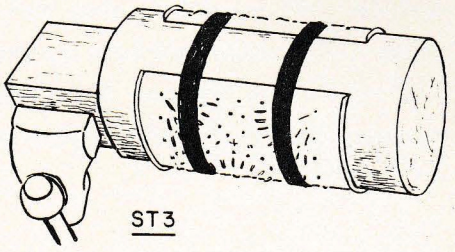


Bend spacers on barrel form ST3 to conform to barrel.

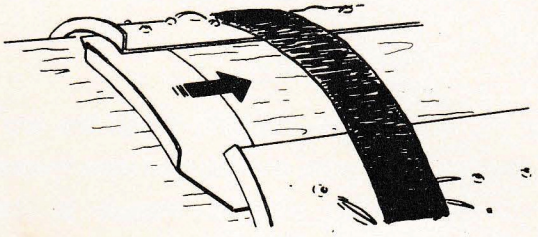


ASSEMBLING BARREL AND DOOR SPACERS

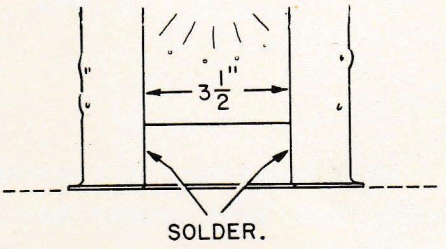
Turn barrel so opening is at top of form ST3 and secure with friction tape approximately 2" from ends of barrel. Barrel must be held tight to form.



Slide door spacers under each end of barrel for door opening. Door opening should be 6" x 3 1/2".



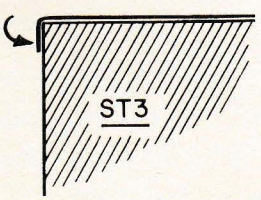
Be sure top and bottom ends are even and flanges of barrel and spacers are properly aligned. Solder at points where spacer ends contact barrel. Be sure to wash off flux with alcohol after soldering.



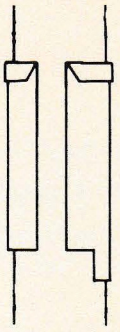
BASE ASSEMBLY

Base

Mark center of base with awl. Place barrel form ST3 in upright position in vise. Carefully tap over all around edge of base at 90° as shown in dashed lines on pattern. Peel off pattern.

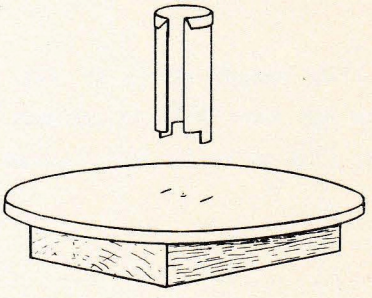


Candle Holder



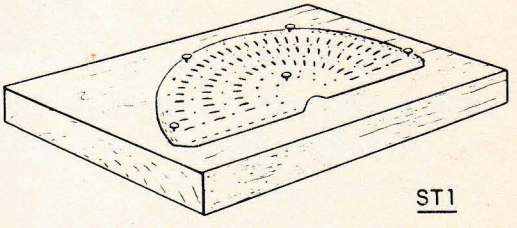
Care should be taken to cut bottom edge in a straight line. Bend top edge and tap flat as shown in dashed line on pattern. Peel off pattern. Roll around 7/8" dowel, folded top edge toward outside of holder.

ASSEMBLING BASE AND CANDLE HOLDER

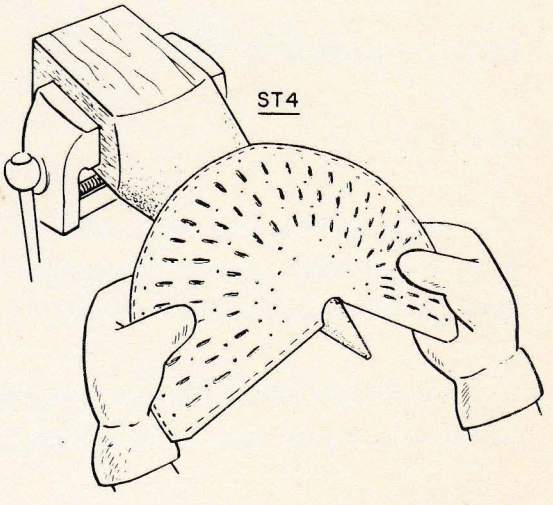


Place base, turned edge down, on a block of wood small enough to fit inside base. Center candle holder using awl mark as guide and mark position of one of the tabs. Punch slot with 3/8" cold chisel. Reposition candle holder with tab in slot and mark for second tab. Punch slot for second tab. Do not fasten candle holder to base at this time.

CONE

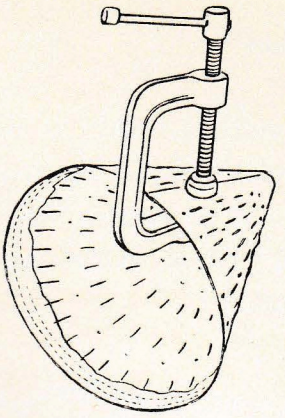


Fasten pattern and tin to piercing plank ST1 using same method as with barrel, but with five 3d nails in holes indicated on pattern. Pierce as before.

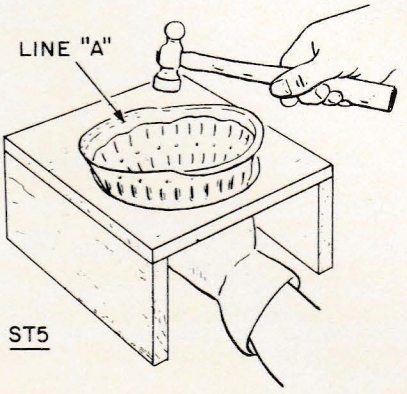


Remove from plank and mark reverse side of tin with awl on end where lap is to be made. Peel off pattern except on edge where bends are to be made. Mark line "B" on reverse side of tin. Carefully bend into shape of cone. This can be done by bending over ST4 as it is held in vise. Start at one end of cone and keep peek centered at point of form. Bend slowly and be careful not to kink.

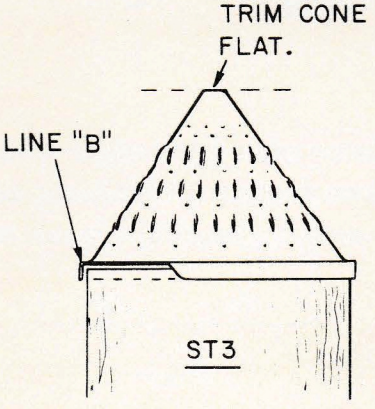
Lap seam at scribed line and hold with C-clamp. There should be a small hole in the point of the cone for the ring handle to go through. Solder seam.



Hold upside down in ST5 and tap edge as shown on line "A" on pattern to about a 60° angle. This is to fit flat against flange of barrel.



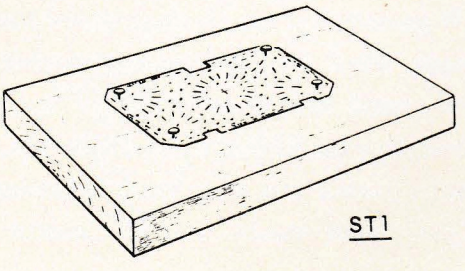
Place ST3 in vertical position in vise. Hold cone on end and tap down outside edge at line "B" as shown 90°. Peel off rest of pattern and trim point of cone flat.



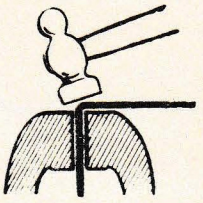
DOOR, HINGES AND HASP

Door

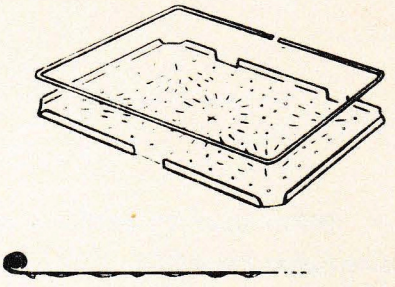
Fasten pattern and tin to piercing plank ST1 as in the previous manner using four 3d nails at indicated locations on pattern. Pierce.



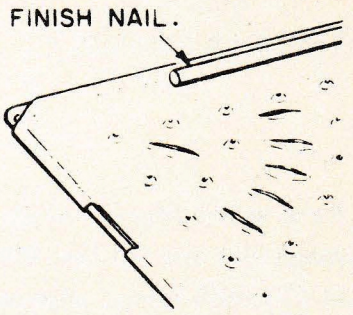
Bend edges 90°, as shown with dashed lines on pattern, toward back of door. Peel off pattern.



Cut approximately 22 1/2" of soft wire. Bend in vise to fit inside bent edges of door. Ends of wire should meet half way between door hinge openings. Tap edges of tin over wire securely.

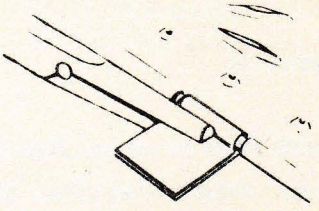


There should be a slight indentation around outside edge of door. This can be made by placing a finish nail, with the head filed smooth or cut off, close to the edge of the door and tapping lightly. This will also help clinch the tin around the wire.



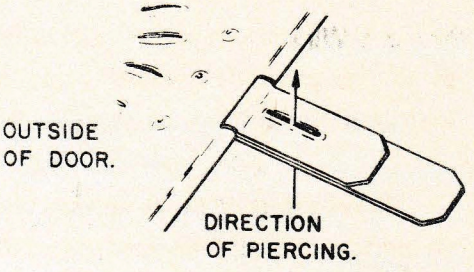
Hinges

Bend hinges 90° on dashed line. Remove pattern and bend hinges around wire of door. Roll of hinge should be on outside of door. Secure around wire tightly with needle-nose pliers.

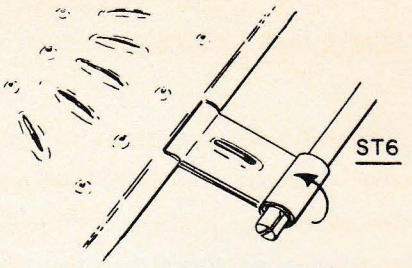


Hasp

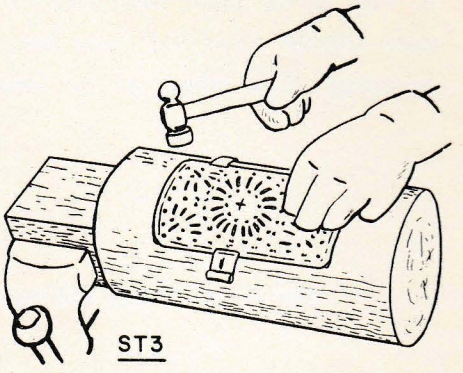
Bend hasp over wire in door at point shown in dashed lines on pattern and pierce close to wire with 1/2" cold chisel. This is for a slot to go over the catch and the direction of the piercing should be from the inside of the door to the outside.



Using ST6 roll end of hasp toward door.



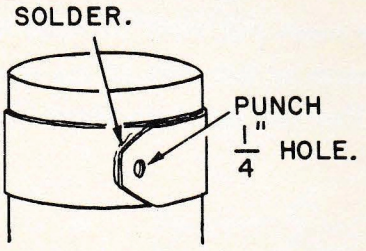
Shape door to conform to curve of lantern using barrel form ST3.



RING HANDLE ASSEMBLY

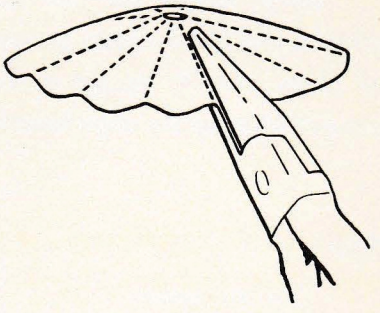
Ring

Bend edges where indicated by dashed lines on pattern 90° and tap flat. Remove pattern. Roll around ST7 with turned edge on the inside. Solder ends together. Punch hole about 1/4" in diameter in soldered connection.



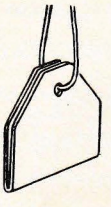
Heat Deflector

Punch hole in center. Bend slightly concaved. Crimp with needle-nose pliers at the divisions indicated by dashed lines on pattern. Remove pattern.

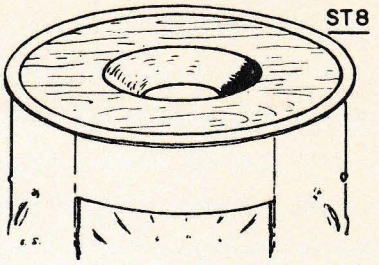


Stop and Wire

Fold stop together along dashed lines on pattern and punch hole for wire as indicated. Remove pattern. Cut 5 1/2" of wire and run through hole half way and bring ends together as shown.

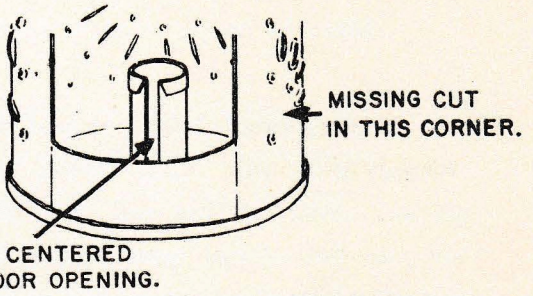


ASSEMBLING LANTERN

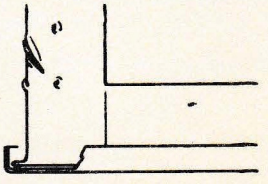


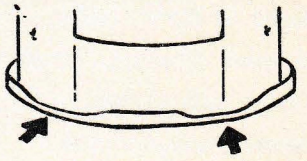
Position wooden disks in each end of barrel. Smaller opening of center hole should be toward center of barrel. If disks do not fit snug in barrel, they should be shimmed to size with friction tape or scrap tin.

Base

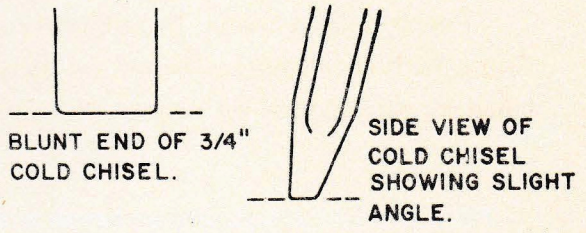


Position candle holder in base temporarily. Place barrel in base. Remember the missing cut in the piercing of the barrel should be at the bottom of the lantern. Slot in candle holder should be centered in door opening. (This is to make it easier to remove the candle stub if it is burned below the top of the holder.) It may be necessary to trim the barrel flange somewhat to make a good fit.

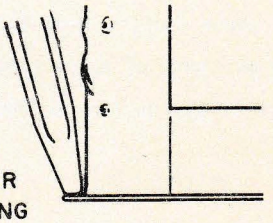




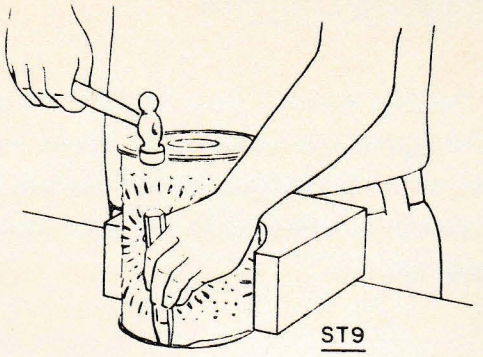
Tap bent edge of base over barrel flange at intervals around circumference. This is to be sure base and barrel are centered. Remove candle holder.



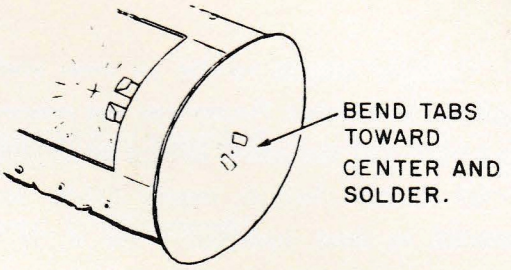
Grind off cutting edge of 3/4" cold chisel as shown. Blunt end should have slight angle. Using ground down chisel, clinch edge of base to barrel flange all around circumference.



Assuming you are doing this on a bench use ST9 to help hold barrel steady against your body as you work. Remove wooden disk at base. You may have to pry it out. Give it a wiggle and a twist as you pull it out.

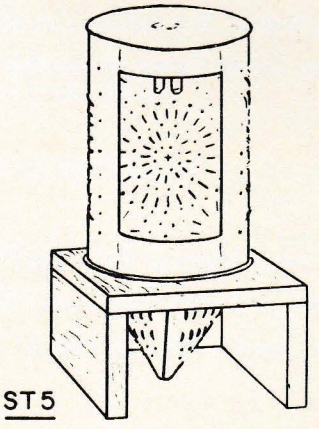


Replace candle holder in base, tabs projecting through slots. Seat holder firmly and bend tabs toward center of base and press down. Be sure tabs are flat against base. Solder. Solder should seal off all openings around tabs so candle wax will not leak out as candle burns.



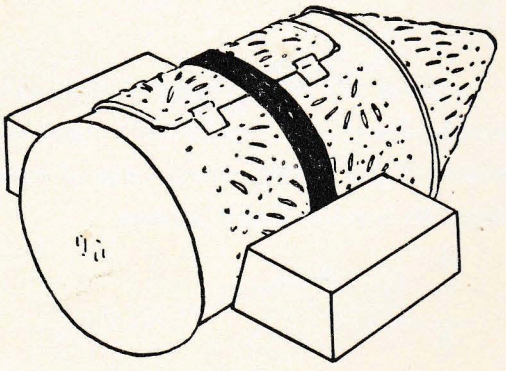
Cone

Place cone upside down in ST5. Place barrel upside down in cone. Seam of cone should be in center of door opening. Bend edge of cone over barrel flange and clinch as was done with base. Remove second wooden disk.

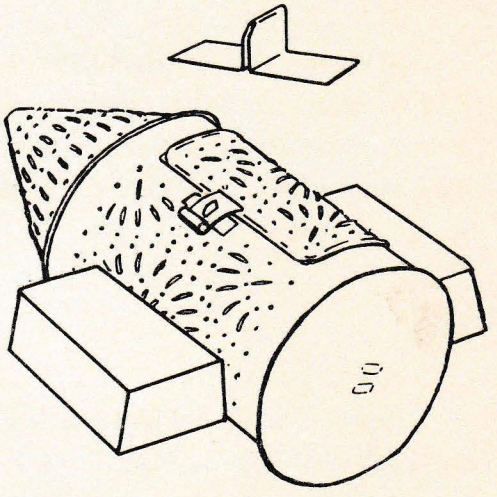


Door

Place lantern horizontally on bench with door opening at top. Brace so it will be held steady as you solder door hinges and catch. Center door with hinges at right of door opening and tape in place. Solder hinges to barrel. Remove tape.

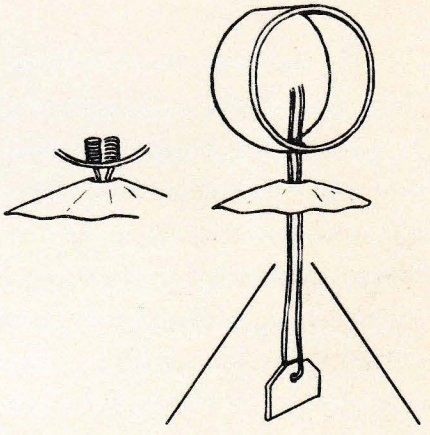


BEND CATCH
FOR HASP.

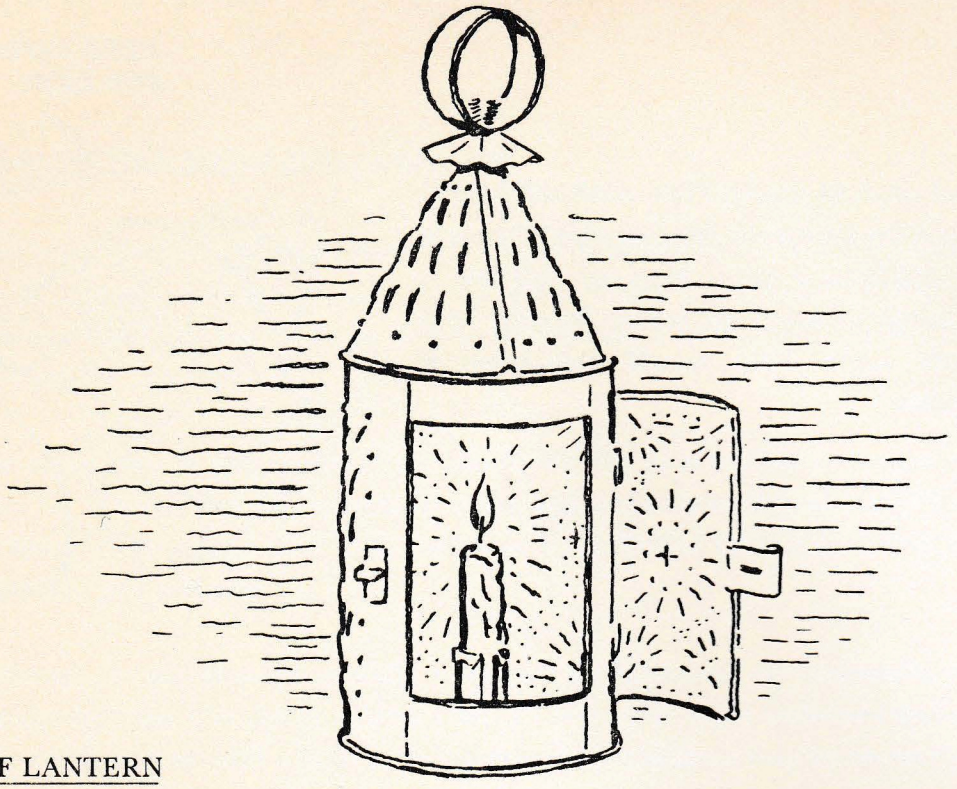


Bend catch as shown. Place catch and hasp in closed position on barrel. Beveled edge of tongue of catch should be at left so hasp can slide over it. Mark location of catch on barrel. Remove hasp and solder catch. Hasp should snap when it engages catch.

Ring Handle

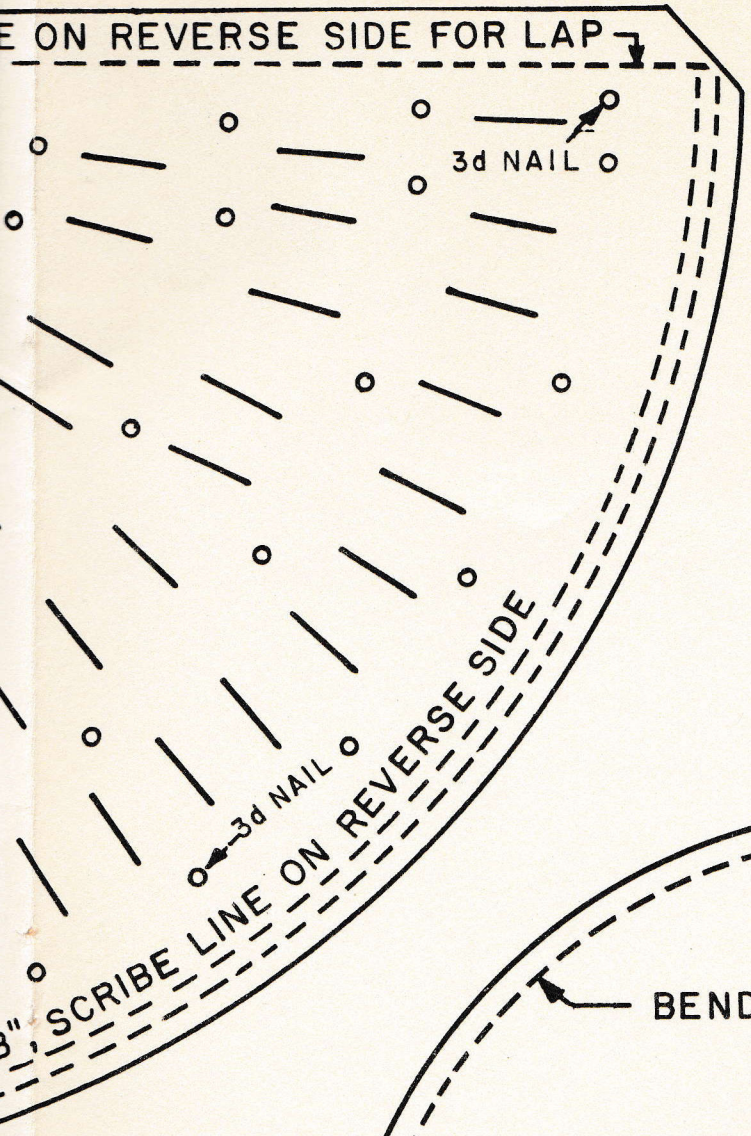


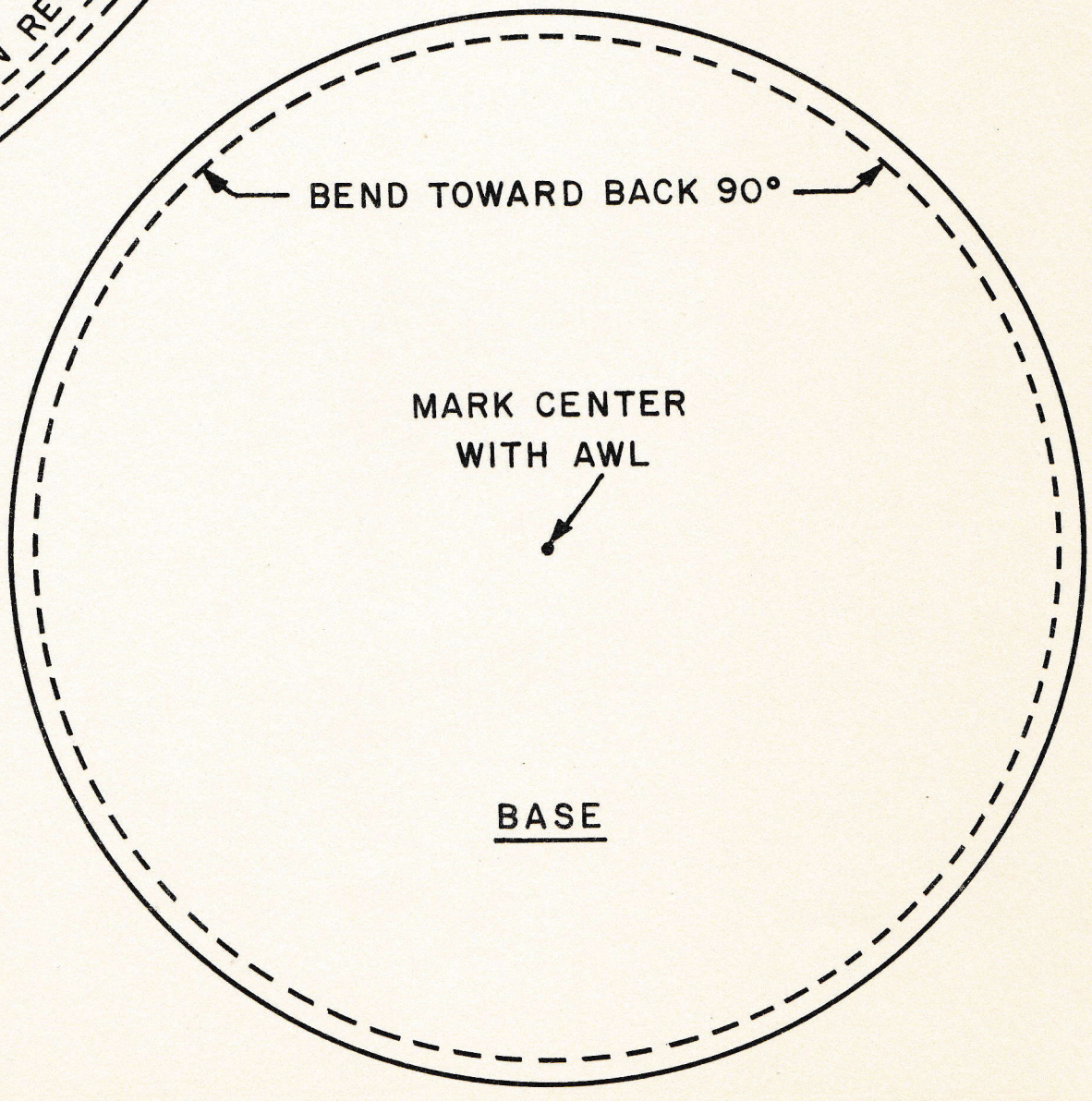
Bring doubled wire and stop up inside cone. Thread wires through opening in top of cone, heat deflector and hole in ring handle. Coil wire inside ring handle with needle-nose pliers. This assembly should be pulled snug but not too tightly. If it is too tight ring handle will overheat when candle is lighted.

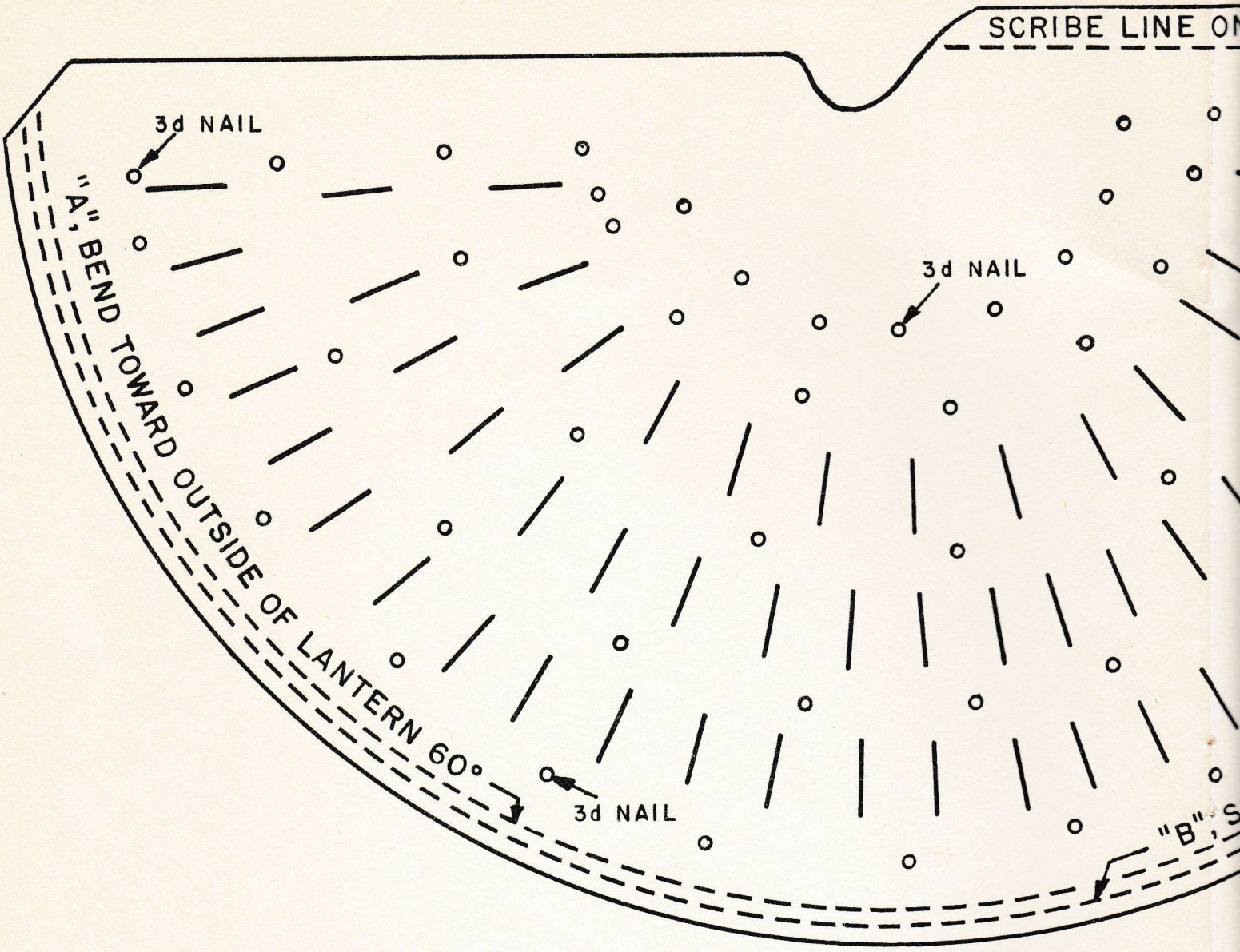


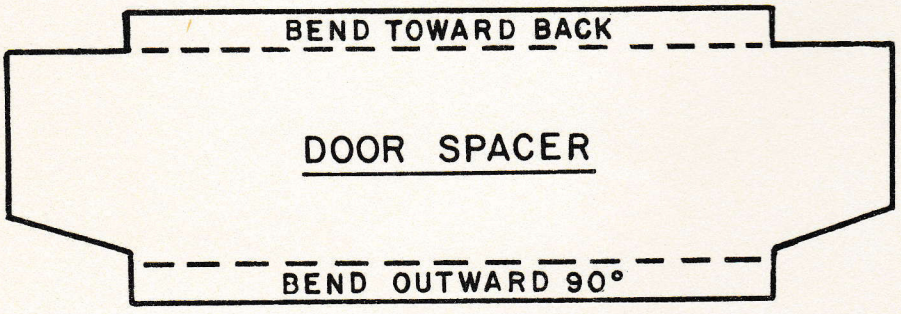
CARE OF LANTERN

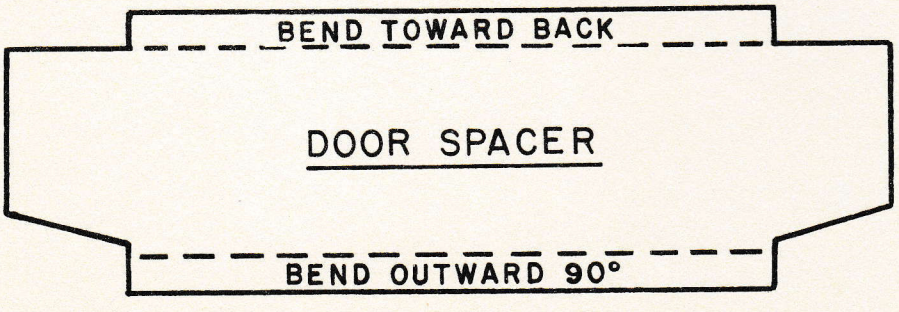
At the time these lanterns were in regular use, nothing was done to preserve them. They were used outdoors in the rain and snow and eventually they rusted, but in spite of this rough treatment they lasted many years. The original of this one is over one hundred and fifty years old and is still in reasonably good condition. Undoutedly, the most care the lantern received was to be wiped off after getting wet. Since the lanterns today are more decorative objects than utilitarian and there is no reason to expose them to the elements, why not just let your lantern age and turn a beautiful pewter gray? Even a little rust will add to its charm! Paint, or most any preservative, will burn off from the heat of the candle burning inside. So we suggest you light up the candle and enjoy this beautiful lantern just as your ancesters did. Wipe it off with an oily rag if it gets wet, but otherwise let it gather its own patina as time goes on. However, it is your lantern, you made it. So enjoy it any way you wish, and we certainly hope you do!

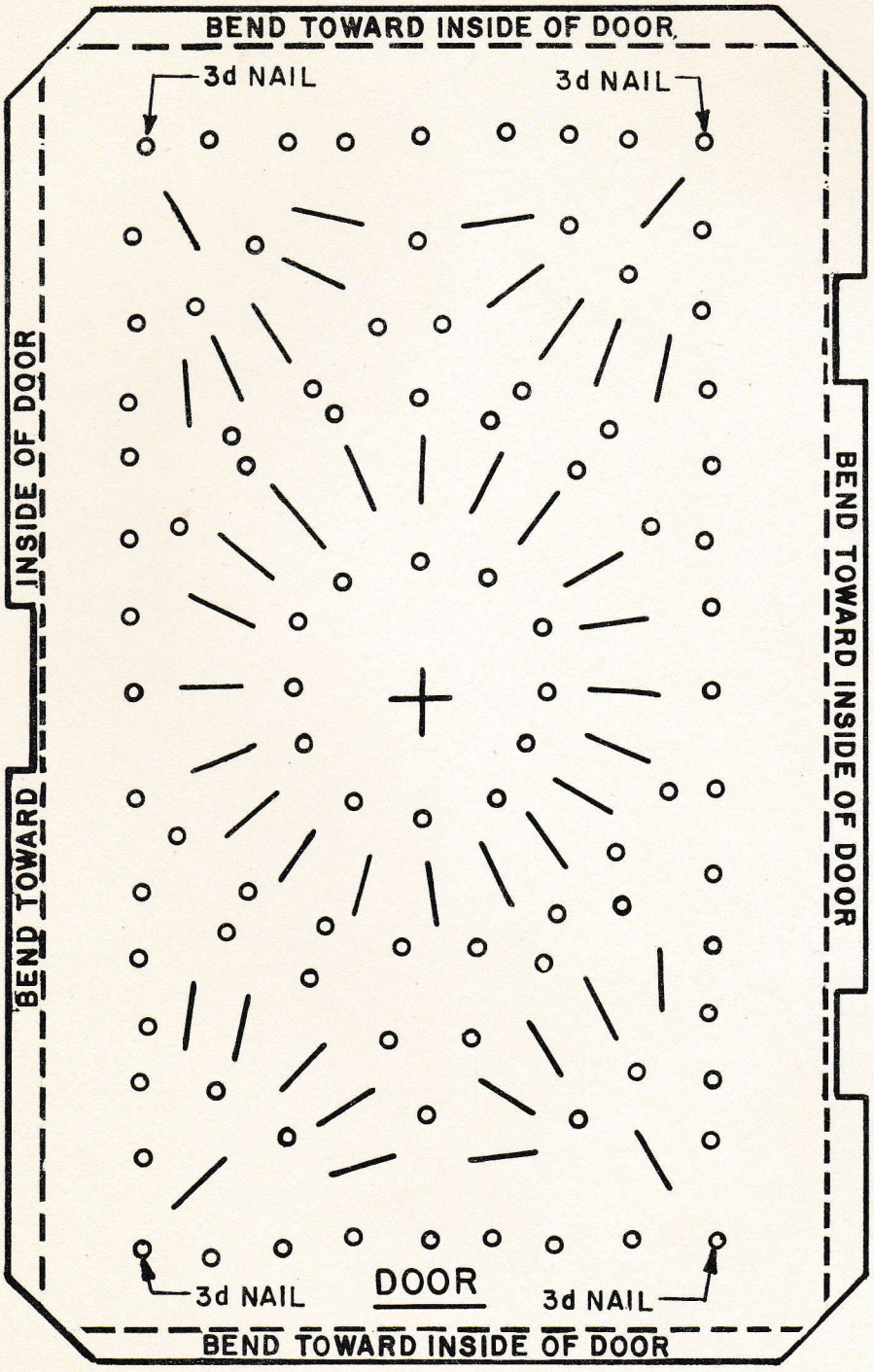


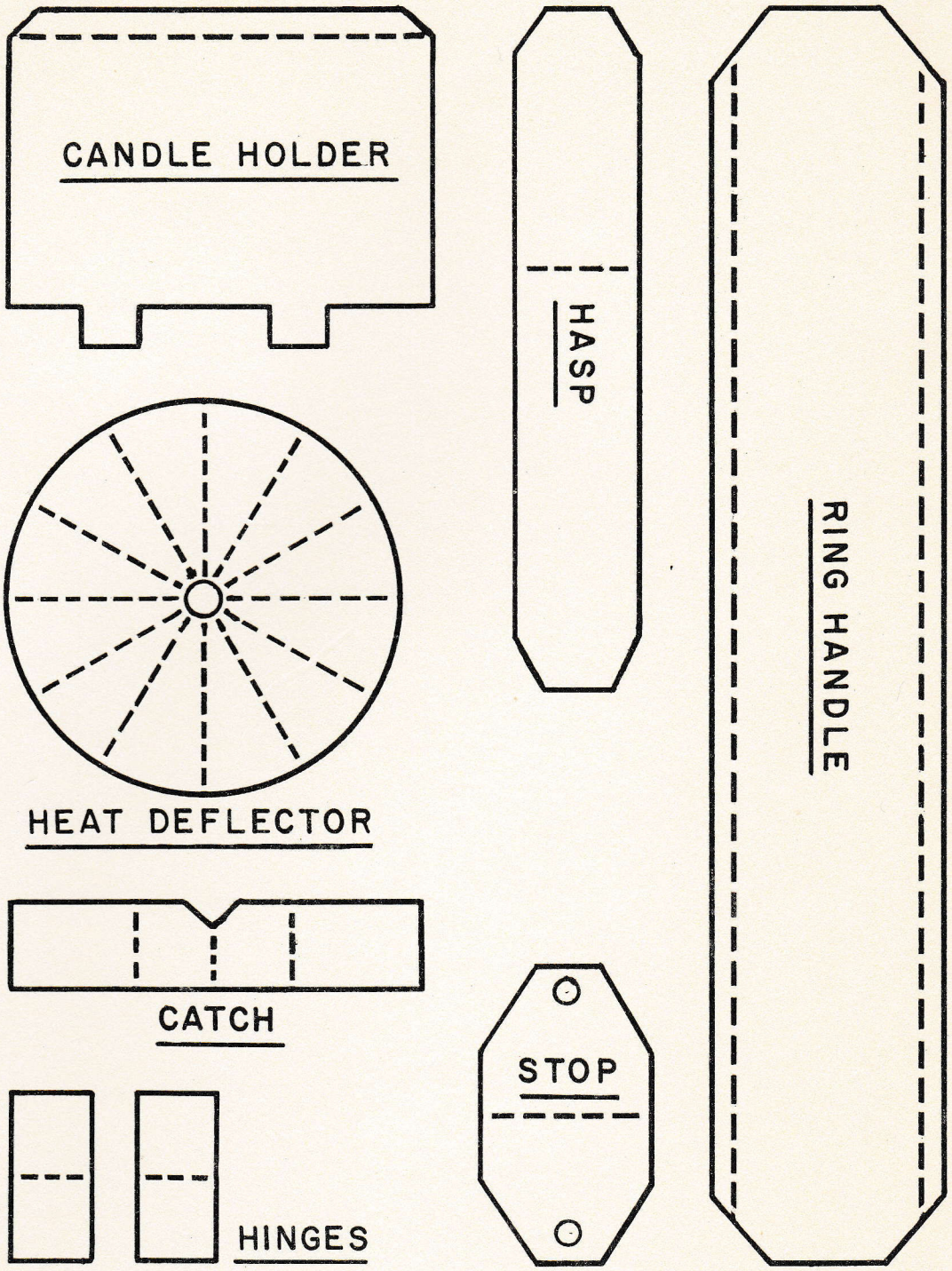












READ INSTRUCTION PAGES FOR BENDING THESE ITEMS