Advanced Pewter Casting in Soapstone
Creating Hollows

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Slush Casting

The most basic form of hollow is created by slush casting. This is the method where there is not a significant sprue for the mold. Metal (typically mainly tin) is poured in and then poured back out again. This method is very simple and is used for items like ampulla and larger, 3-D designs. The downside to this method is that it is quite difficult to control precisely what the inside of the mold will look like. Wall thickness (and completeness) can be extremely variable. The upside is that this is a very simple method to reducing material costs of a piece.

Figure 1 shows the mold of a small hooded male and how to slush cast with it. The timing in the example is extremely relative to the temperature of the metal.

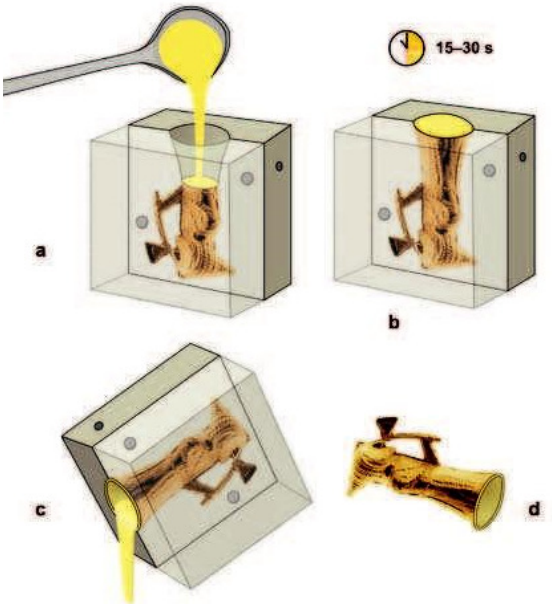

Figure 1 – Slush casting example. (Berger, 49)

Forked Spacer Buckle

The forked spacer buckle is fairly easy to carve and cast. The complexity here comes in the assembly. You will need to carve two separate pieces: The frame, with the buckle and the forked spacer would be carved much like the annular brooch. Then a separate sheet plate, with holes for rivets either included in the mold or drilled later, is carved to match the outline of the forked spacer. Two sheet plates are poured and soldered onto the forked frame (Figure 2). The belt end is inserted and rivets are placed through the holes to secure the belt.

A tip for this design is to make your sheet plate and your forked frame as symmetrical as possible. That will make it easier to use the same sheet plate on either side of the frame. To make soldering easy, make the plate and spacer fit together very closely.

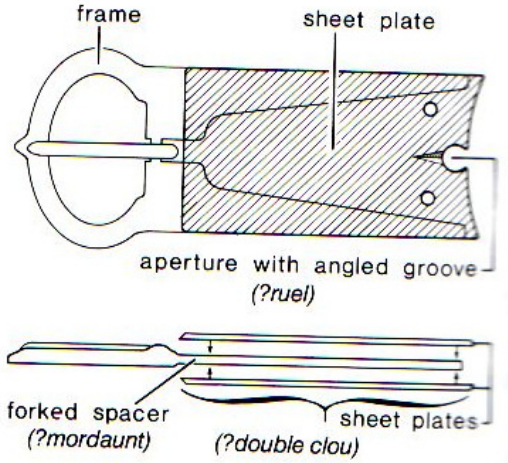

Figure 2 - Diagram of Forked Spacer Buckle (Egan, 78)

The Many Uses for Wood Inserts

Many hollows can be created by putting an object into the mold. The metal would pour around this object, but not adhere to it. In many cases, wood can easily be used for these inserts. While wood burns below the melting point of pewter, oxygen is required to burn. With the metal coating the wood, it will be preserved and can be reused many times.

Ensure that the wood that you are using is ***dry***. New or wet wood will steam when the hot metal touches it, producing a Horrible Foundry Accident. Dowels, shims and other seasoned wood should be fine for this purpose. Ensure that the surface of the wood is smooth and has no significant grain texture, otherwise, removing the insert may be an issue.

To make multiple items, you may need more than one insert. With multiple pourings the insert will dry out and shrink slightly, or the insert may be damaged in other ways.

Buckle with Integral Hollow Plate

This buckle is carved in a registered two-part mold. The buckle itself would be much like carving an annular brooch. The plate is poured with the buckle with holes for rivets either included in the mold or drilled later. The tricky part of this mold is that there is a hollow in the buckle plate, into which the belt is inserted and secured, that is formed during the pouring.

The "front" mold piece should be carved with the buckle and the plate roughly the same depth. The depth of the plate carving should the thickness of your belt insert plus the desired thickness of the skin of the plate. Beyond the end of the plate carving, an additional carving should be done that is ½ as deep as the plate carving and comes in a bit from the sides. Into this slot, slide a wood or metal insert. This will form the hollow when the mold is poured. Wood shims, rulers or even paint stirrers may be easiest to find and shape to the right size and consistent thickness.

On the "back" mold piece, carve any desired added thickness or features on the buckle. Also carve the back of the plate to 1/3 of the desired thickness of the plate. This will form the back of the plate enclosure.

The assembly is completed, like the forked spacer buckle, by inserting the belt into the opening and using rivets to secure it.

This exact process can also be used to create a belt end with an integral plate, as in Figure 4.

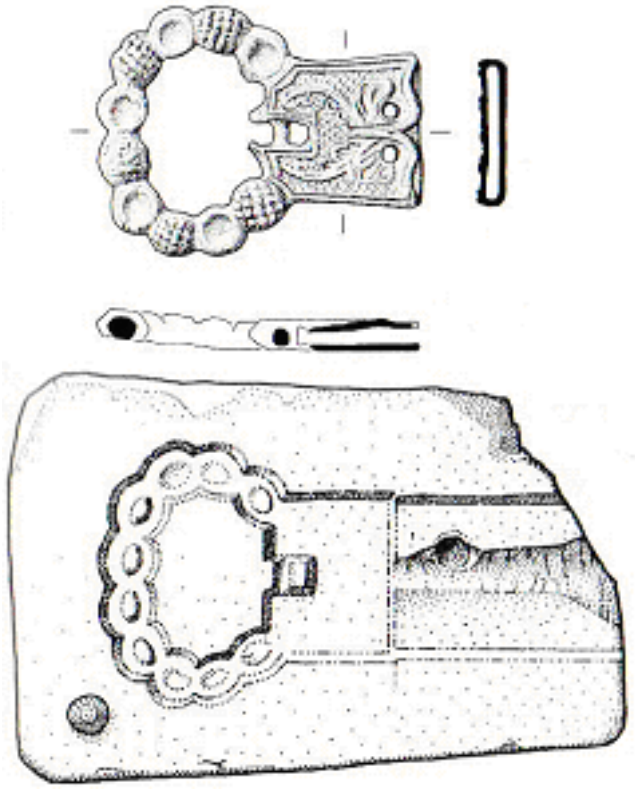

Figure 3 - Example and Mold of Buckle w/ Integral Plate (Egan, 66-67)

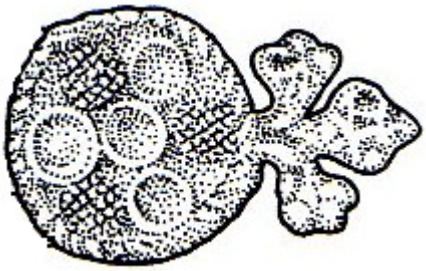

Figure 4 - Example Belt End w/ Integral Plate (Egan, 246)

Eyelets

Eyelets are much like tack mounts in terms of complexity to carve. There is the eyelet face and a rounded back area. There is an additional, smaller diameter hole into which can be put a rod of wood or metal (carve hole to match diameter of rod). This rod will stick down the back of the mold and rest on/in the mold face. This will create the hollow middle of the eyelet.

The center of your eyelet face should also have a carved spot for the rod to rest into. This will help to ensure that the hollow spot goes all the way through the eyelet. You will likely have to file away edges on your finished project.

For your rod, wooden dowel would be effective. It comes in standard diameters and can easily be cut to needed lengths. Do not make the barrel of your eyelet overly thick since that will make it very difficult to mount on your belt. To mount the eyelet, use an eyelet mounting kit from Tandy or other such stores.

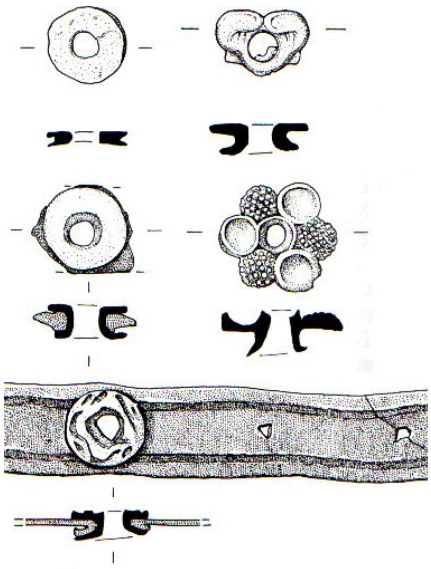

Figure 5 - Example of Eyelets (Egan, 228)

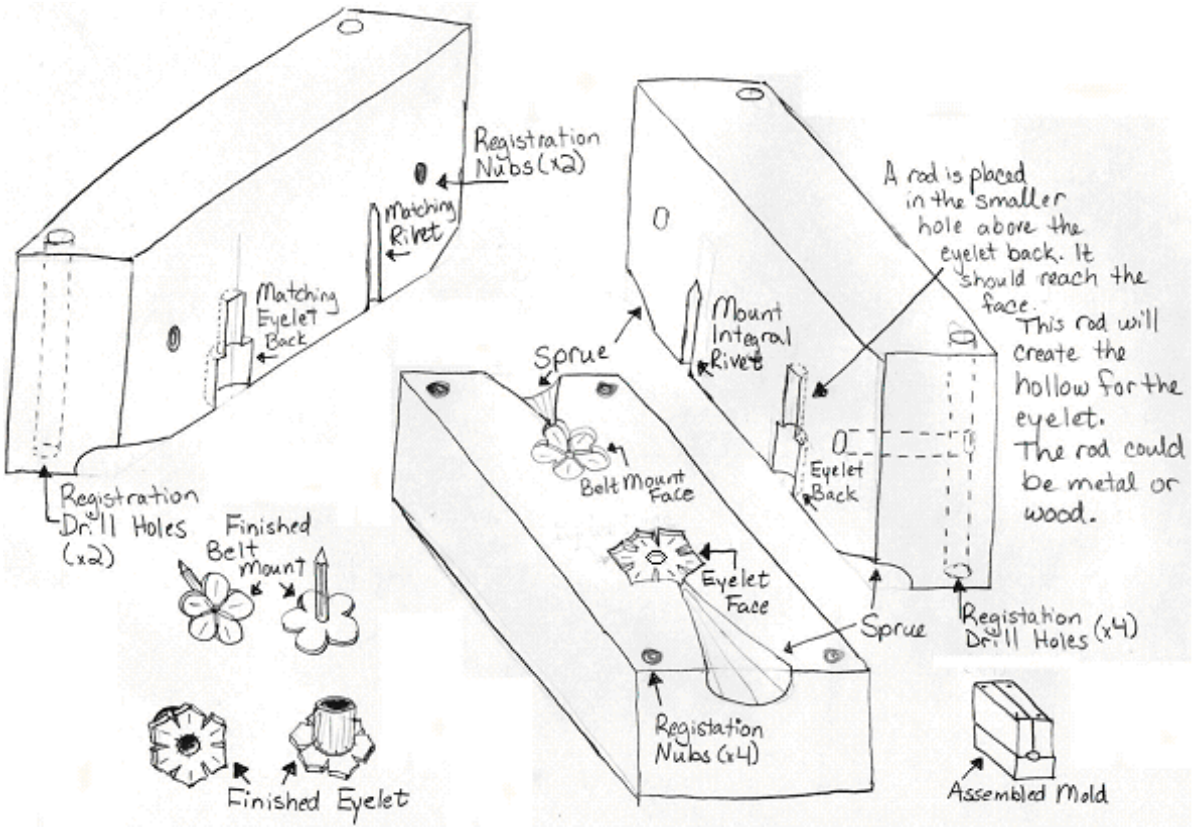

Figure 6 - Diagram of Three-Part Tack Mount and Eyelet Mold

Hinges

As anyone who has had to use a drill press on pewter knows, getting a decent hole through a flat piece of metal to hang a string through is tricky enough. If you need a hole to line up precisely, as in a hinge, a drill is not the way to go!!

The key to a great hinge is to design the mold(s) so that it lines up exactly how you want, including the hinge pin hole. Do this on card stock and then use that as your template. For your pin hole, you will use a piece of wooden dowel (or metal stock might work). Carve a smaller channel on either side of the hinge barrel (figure 6) to hold the dowel piece. Once the pewter is cooled, use pliers to pull out the dowel. I would not try to put one piece of dowel across multiple barrels as pulling it out would likely be tricksy.

When your piece is cleaned, assemble it and use a properly gauged length of wire as the hinge pin.

This same concept can be used for perpendicular hangers on site tokens or other items as well.

Figure 7 - Salt pot with hinges (Tegner - 297)

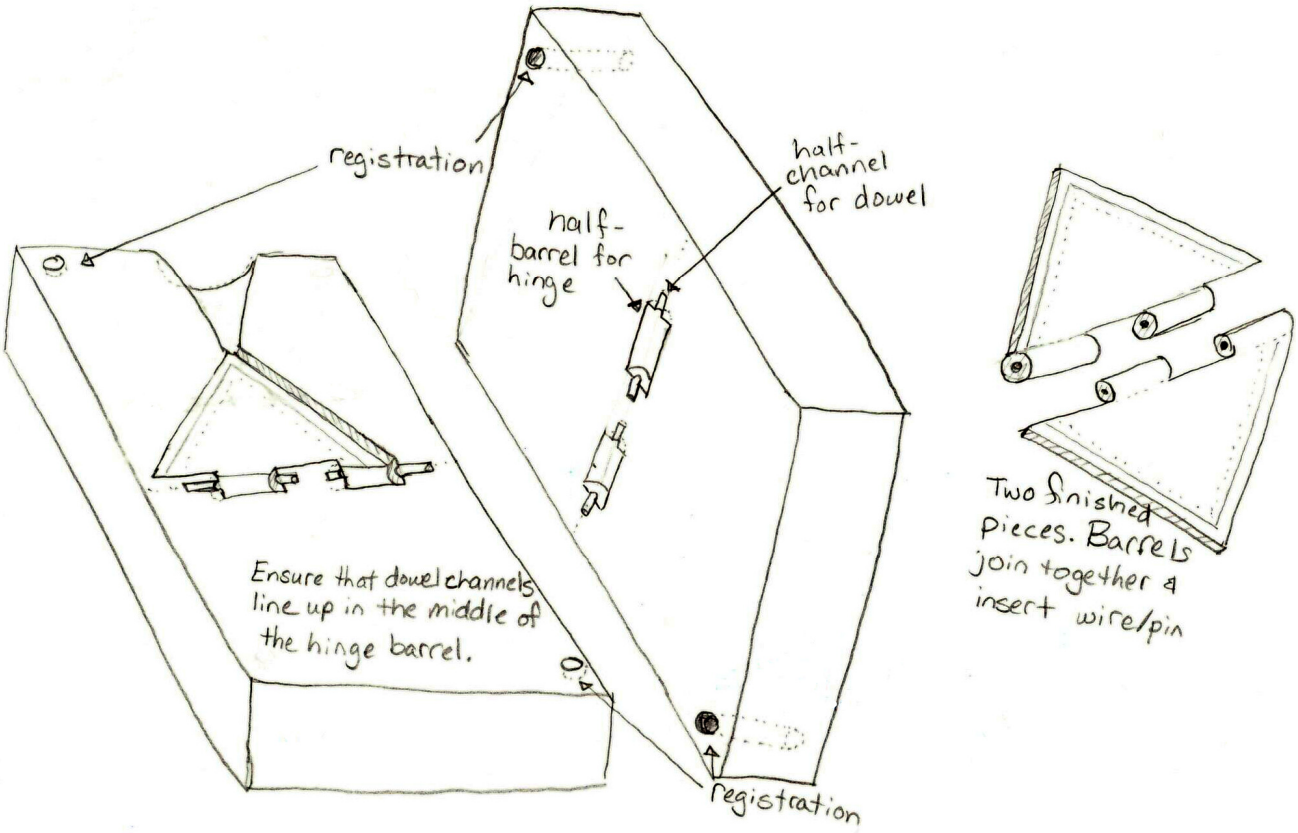

Figure 8 - Diagram of Two-Part Hinged Lid Mold

Other Uses for Wood Inserts

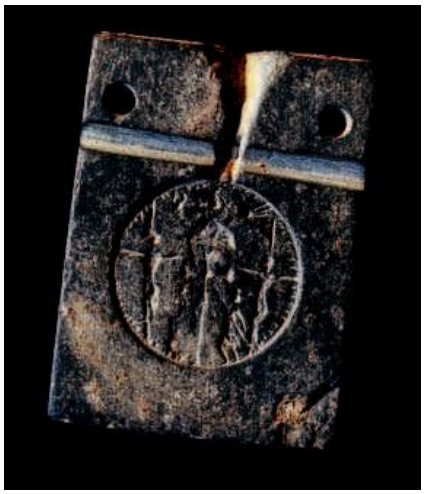

Figure 9 – Perpendicular Medallion Shank (Berger, 47)

Figure 10 – Brooch Pins (Berger, 47)

Figure 11 – Ornamental Axe Head (Berger, 48)

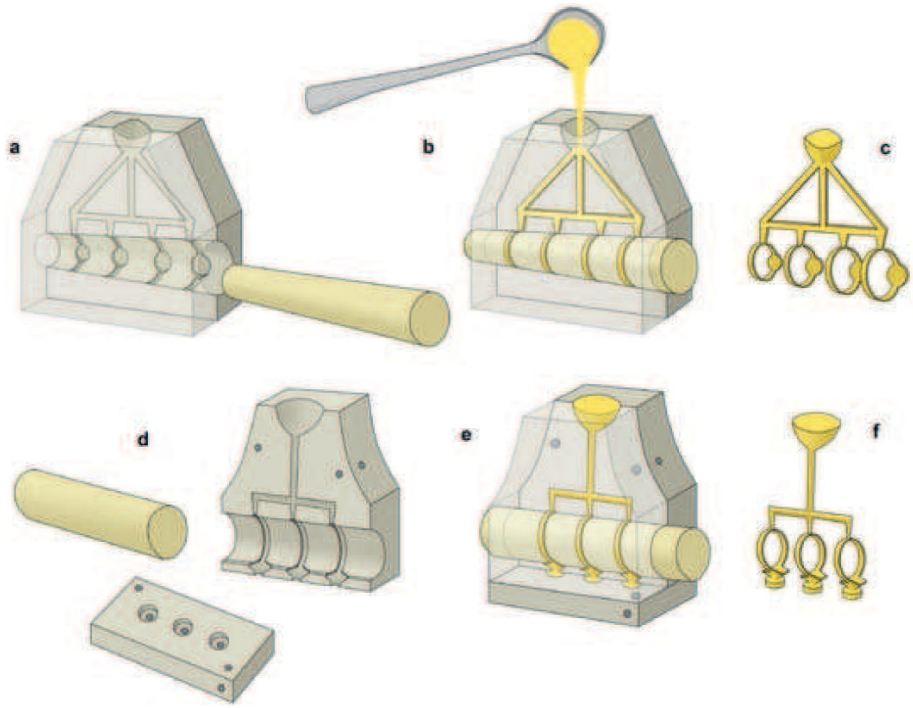

Figure 12 – Example Molds for Finger Rings (Berger, 48)

References

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