

# *Leather Blinkers*

Figure makers have installed leather blinkers for many years. Some figure makers still prefer leather to shells for blinkers. (See Shell Blinkers tutorial on **Puppets and Props** website/How To/Figure Making) The figure's eyelids are made of leather and retract into the eyehole when the eyes are open. They are controlled by a brass rod frame which defines the outline of the bottom of the eyelid.

Figure makers traditionally used kid leather to make the blinkers because of its flexibility and smooth texture. If you can't find kid leather, you'll find an adequate substitute at the local auto parts store. Chamois cloth, which is meant to be used for polishing things, works well for making leather blinkers.

Some figures have independently winking eyes, permitting the ventriloquist to wink either eye and blink both eyes together. Some figures allow winking only one eye and blinking the two eyes. These features require complex control mechanisms, and this article does not address such controls. You will learn how to install blinkers, not winkers.

Some figures have only one winker. The other eye does not close at all. You can use this procedure to install a one-winker mechanism. Just do everything once for the one eye you want to wink.

## **Materials**

- Chamois cloth
- 1/16" brass rod
- 3/16" brass tube
- .18 gauge copper wire
- Elmer's white glue
- Epoxy glue
- Sculpting putty
- Masking tape

## **Tools**

- Drill press
- Tube cutter
- Scissors for cutting the chamois
- Pliers for bending the frames
- Carving knife

To begin, you need a head shell with eye openings. The figure might or might not have moving eyes, but in either case the openings need to be unobstructed to allow you to install and operate the blinkers.

Carve grooves inside the head at the inner corners of the eye openings. These grooves are where the wire frame inner axles will mount.



The wire frames that control the blinkers are made from 1/16" brass rod available at most hobby stores. Bend them so that the arcs describe the tops of the eye openings. The outer ends of the frames are bent into short axles. The inner ends are bent into axles and then bent back with loops. These loops are for connecting the control mechanism and the return spring that keeps the eyelids normally open.

When you bend the frames and before you bend the inner extensions back, roll the frames back and forth on a table surface to ensure that the two axle parts of each frame are properly aligned and will not bind or warp when you operate the blinkers. After you bend the extensions, sight down the axles to ensure that they are still properly aligned.

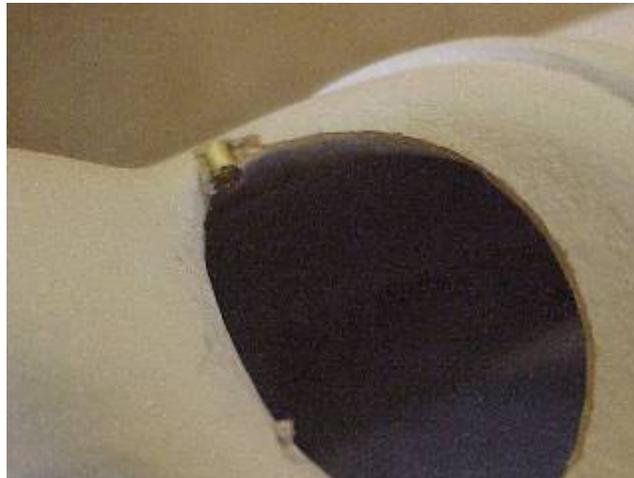


Position both frames inside the head and examine them to ensure they fit the eye openings properly and will roll up and down on the proper axis.



The next picture shows the fitting into which the outer end of the frame fits. The fitting is inserted into a groove that you cut into the outer corner of the eye opening. Make this fitting from a length of brass tube of the correct size to exactly hold the 1/16" brass rod.

The best way to cut brass tubing is with a tube cutter. This procedure flanges inward the opening of the tube where you cut it such that the rod will not go inside the tube. Hold the fitting vertically with a pair of pliers and open the flanges with a drill press and a 1/16" drill bit.



The next picture shows the frame seated in the fitting of the left eye opening.



The next picture shows the right eye opening. Use a sculpting putty to glue the fittings to the face and to smooth the grooves. Make sure that the putty does not bond the frames to the fittings. The frames must be permitted to rotate freely in the fittings.



Tape the frames to the inside of the face until the sculpting putty sets up. This ensures that the fittings remain properly aligned with the frames.



Make hinges for the frames' inner axles by winding .18 guage copper wire around the axles and leaving about an inch of wire at each end as shown here.



Install the frames into the head and form the hinge ends against the head's inner surface. Use a fast drying tacking glue such as Zap to tack the ends to the head. Make sure that none of the glue gets on the winding.

Otherwise you will glue the hinge to the frame and it will not rotate. When the tacking sets and you are sure the frame works properly, reinforce the bond with epoxy glue.



For each eyelid, cut a rectangle of chamois as wide as the distance around the top of the eye opening and long enough to reach up inside the head and down over the frame in front. Insert the strip into the eye opening above the frame. Tape the chamois to the inside of the head as shown in the next picture.



Put a length of tape under the frame in the front so that when you apply glue to the frame, you don't glue it to the figure's cheek.



Fold the chamois up in front of the eye opening.



Apply a bead of Elmer's glue to the top and front of the frame's arc.



Fold the chamois under the frame and press it in place so the glue adheres the chamois to the frame. When the glue dries, trim the excess chamois from the eyelid with a small pair of fingernail scissors.

Use Elmer's glue to glue the chamois to the inside of the head above the eye opening. Put the glue at the top of the strips of chamois to allow the chamois to fold back when the lids open.

Leave a very small amount of slack to compensate for shrinkage that occurs when you reinforce the eyelids in the next step.



Chamois is flexible, which makes it work well for leather blinkers. That quality also makes it want to fold itself in a random pattern when you retract the eyelids. This property will make the eyelids bunch up against the eyeballs and not open correctly. You must give the leather a degree of rigidity so that it tends to keep its eyelid shape when it retracts. With the eyelids down, push the chamois out until it forms into a nice rounded eyelid shape as shown above. Paint a thin layer of epoxy glue on the back of the eyelids as shown below.



Before the epoxy sets up, raise the eyelids to ensure that the fold at the top of the lids forms correct eye openings and will clear the eyeballs. Allow the epoxy to set with the eyelids in this position.



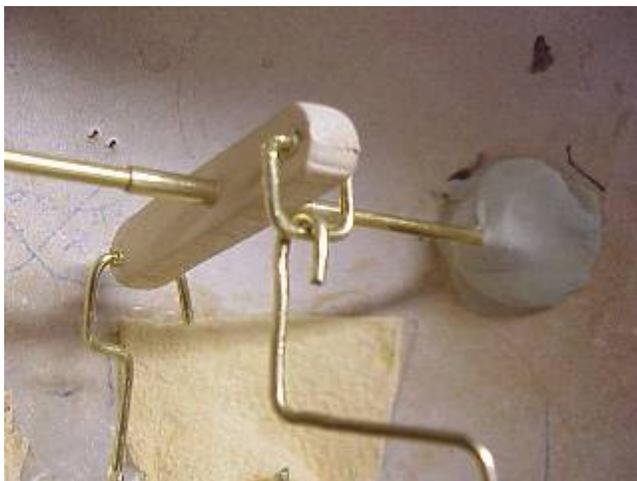
When the epoxy has set up, work the eyelids up and down to ensure that they open and close properly. If you want prominent ridges on the eyelids typical of traditional ventriloquist figures, build them up on the lower edge of the lids with epoxy glue. You can also use a casting compound.



Paint the inside of the eyelids and the ridges. Use acrylic paint mixed with Textile Medium (available at craft and sewing shops) so the paint doesn't harden when it's dry and crack when the lids flex.



The control mechanism on this project uses a lever that acts like a pulley but that is longer on one end to reduce the amount of control movement needed to open the eyes. The lever connects to the two loops on the wire frames by way of a rod and connector combination. You can't see it in the picture, but a small spring is attached to the two loops, too. It's other end is attached below. The spring retracts the eyelids when the control is released.



You paint the eyelids when you paint the rest of the face. Use the same acrylic flesh tone that you use on the face, but mix in some Textile Medium to keep the eyelids flexible. You can add some blue for eye shadow, but use Textile Medium with the blue, too.

Here's Archie with his new set of eyelids.

