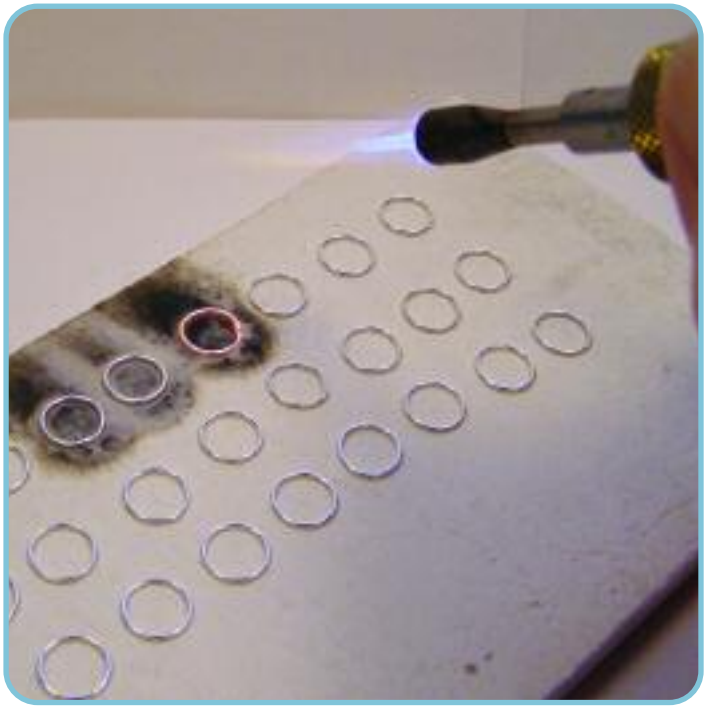
Fusing Fine Silver Rings

by Howard Siegel



Photos courtesy of the author and Herb Halpern.

Now that you've learned how to make your own jump rings, Howard Siegel explains how to fuse them. The rings made in this tutorial can be used in his Chinese Stretched Knot Chain project in the Spring 2008 issue of *Step by Step Wire Jewelry*. Fusing is creating a joint in your rings, without the use of solder.

TOOLS:

Fusing or soldering board with smooth surface
Fire brick or an annealing pan
Butane fueled torch or Bernz-O-Matic propane fueled pencil torch
Tweezers
Open one quart plastic container with water
Optivisor or similar magnifier
Resource: Butane torch from Harbor Freight Tool, harborfreight.com

TECHNIQUES:

Wire, fusing.

Step 1: Place the fusing plate on the annealing pan or on top of the fire brick to lift it from the surface of your bench to prevent burning the bench with your torch.

Step 2: Close the fine silver rings so that the cut edges of the rings are in very good contact. This is done by over-forming the rings (or bringing the cut edges of the rings past each other, carefully pulling them apart, aligning the cut edges so that they are even when viewed from the edge of the ring, and when looking down the center of the ring.

Step 3: Place the closed ring on the fusing plate with the cut facing forward. Close all of the fine silver rings and place them in rows across the fusing plate with the cut in each ring facing the front of the plate.

Step 4: Turn down the lighting in the room to make it easier to see the change in color of the rings as they are heated for fusing. Put on your Optivisor so that you can clearly watch the joint in each ring as it is heated for fusing.

Step 5: Light the torch. Start with the ring at the rear left of the plate if holding the torch in your right hand. This will keep you hand away from previously fused rings, and minimizes the opportunity to be accidentally burned.

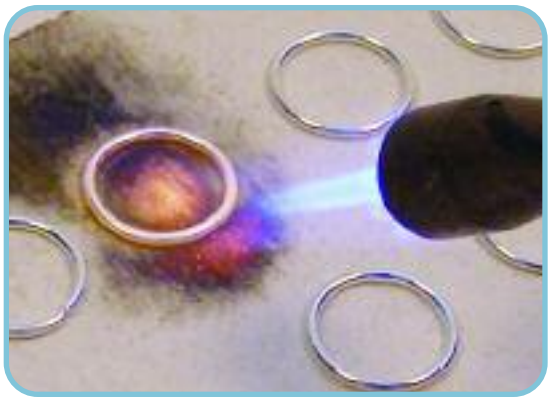
Step 6: Move the torch flame in a circular motion around the ring to be fused until it turns dull red. Move the flame to the joint in the ring and move the flame in a small circle concentrating the heat evenly on both sides of the joint. If the flame continues to be held on the joint, the ring will melt completely through, and a ball of metal will start to form on either side of the joint. If this occurs, toss it, the ring is scrap.

Step 7: Fuse all of the fine silver rings. You will need 30 fused rings to complete the Chinese Stretched Knot Chain in the Spring issue of *Step by Step Wire Jewelry*. Slide all of the fused rings off the fusing plate and into the water filled container to cool them.

Step 8: As an experiment, deliberately overheat the first ring that you try to fuse so that you can observe what happens when a ring is overheated. This operation is called fusing, and creates a joint without the use of solder.

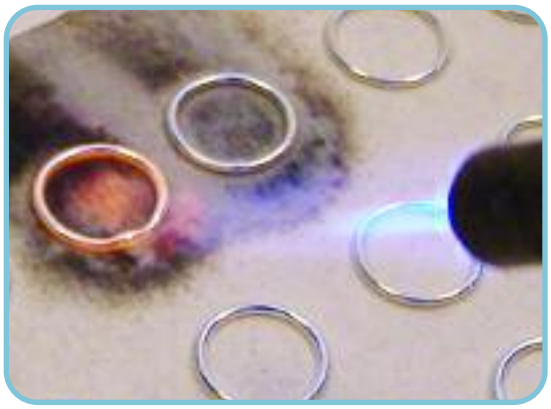
HOWARD SIEGEL
Retired from an engineering career in 1992, and has been taking classes at the William Holland School since 1994. He has been actively working in the lapidary arts, silversmithing and chain making. He teaches lost wax casting and advanced chain making at the William Holland School. He is a past president and active member of the Society for Midwest Metalsmiths in St. Louis, Mo. and has taught chain making workshops for them, Craft Alliance, and the Jacoby Arts Center, Alton, Ill. He has a Masters in Metallurgy, and taught it at Washington University for 10 years. His work will be featured in a soon to be released book, ***Twisted Wire***.

Step 3



Step 6a

In a short time the silver at the joint will melt and surface tension will pull the molten metal together forming a joint. As soon as the metal melts, the flame must be removed from the joint. If the flame is kept on the joint, the joint area will get hotter and begin to thin out.



Step 6b