

LOCKED IN

JJBuckar's cameo is not just another pretty face

BY SHANNON L. BROWN

Inspired to create more projects in red gold by a 2007 *MJSA Journal* article on the alloy, husband-and-wife team Jacob and Julie Buckareff of JJBuckar in Toronto built an 18k red and 19k white gold Bird's Nest locket brooch, which earned them second place in the 2011 MJSA Vision Awards categories of Professional Design Excellence, Gold Distinction, and Laser Distinction.

The design began with Julie sketching several ideas from a top-down perspective. Her vision for the cameo locket with three-dimensional leaves then received input from Jacob, the fabrication side of the team. "We were looking to push the envelope—make something more technically challenging," he says.

Moving directly from sketch to bench, they decided on an original concept and then allowed the design to evolve through the manufacturing process. After making the alloy, they drew 18k red gold wire in multiple thicknesses, from 0.8 mm through 2.5 mm, and crafted what became about 3.5 of the 4 oz. of gold in the piece.

While searching through hundreds of cameos for the perfect three-dimensional, well-carved piece, this lady caught their eye, and they framed her in a 1.5 mm

wide red gold bezel. The JJBuckar team then carved a round base for the bird's nest in wax to fit around the cameo's curves, cut a hole in the middle, and cast it in silver. (The base would be removed once the nest was formed.)

To construct the nest, they wrapped the wire around the base, building layer upon layer with gradually thinner wires and stopping at 2 o'clock and between 6 and 9 o'clock to ensure that the wires could be twisted into the form they desired. Each wire was laser welded to the silver and to the ends of the other wires.

To reduce memory in the wire, they annealed the "nest" in a furnace for 30 minutes. "If we over-annealed, the piece would become too soft and would lose its structural integrity; if not enough, it would spring open because there's so much memory in the red gold," says Jacob. After cutting the wire free from the silver, the team cut the silver base at three points and slipped it out of the gold, bending back the wire slightly. The ends of the wires between 6 and 9 o'clock were covered with caps, and the cut at 2 o'clock was laser welded together. After careful arrangement, the team laser welded cast and diamond-set 19k white gold leaves in the large gap and atop the seam at 2 o'clock.

With the nest complete, they could

focus on the back of the locket, which was fabricated to fit the undulation of the nest. Julie drew the pattern directly onto sheet metal; it was pierced, hand engraved, and then additional leaves were welded on to flow from the front of the locket to the back. Two picture frames, one in yellow gold and one in white gold, were attached with custom friction hinges to either side of the back door. Openings in the tops enable photographs to be slipped inside.

When the frames are folded in, the back door latches to the nest via a spring locking mechanism that hides in the leaves at the top of the locket. A loop of red gold covers the hinge that attaches the back to the front. The final flourish is a pin stem of twisted red gold with a hand fabricated pump-style catch and a pink sapphire in the end. With the locket construction complete, the bezel-set cameo was laser welded into place in the nest, and the final wires were added to both secure it and complete the design.

From start to finish, this piece required about 400 hours of labor. "We went into this as we do with all of our projects," says Jacob. "We try not to be limited by budget and do whatever we feel needs to be done to make the piece match our vision for it."

The 18k red and 19k white gold Bird's Nest locket brooch by Jacob and Julie Buckareff of JJBuckar was fabricated using only a laser welder.

"As soon as you start heating up red gold to soldering temperatures without quenching it, you risk having micro fractures that can evolve into massive cracking, ultimately destroying the piece," says Jacob. "This piece would have been impossible to construct without a laser welder."

To craft the leaf details on the locket, JJBuckar cast about 100 leaves in five sizes in their proprietary 19k white gold, a bright white alloy that doesn't require rhodium plating. The leaves were micro-cut and bead-set with a total of 830 diamonds ranging in size from 0.8 to 1.5 mm.

To attach the leaves to the large gap in the nest, they filled the gap with plasticine, arranged about two-thirds of the leaves on it, and then removed the component and submerged it in casting investment. When the investment hardened, they removed the plasticine, laser welded the leaves from behind, and then broke away the investment and dissolved what remained in pickle. The leaf component was then laser welded to the nest, with more leaves added to hide any seams there as well as at the cut at 2 o'clock.



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