

# Chapter One

## Simple Wire Wrapping

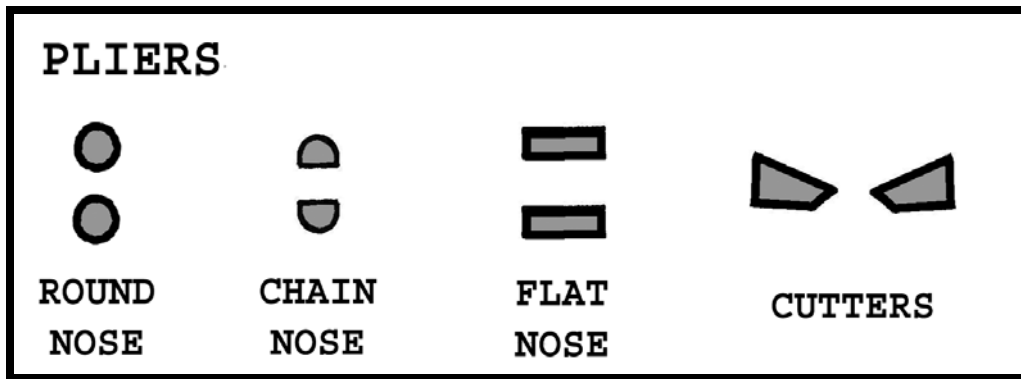
**P**liers are the tools most frequently used by jewelers and silversmiths. With them, the artisan creates both functional and decorative components of many pieces. So many, in fact, that the proper usage of the pliers is the very first skill a beginner must master.

In the days of the apprenticeships, the beginner often spent weeks watching the processes, then learning the names and uses of the tools by handing them when called by the workers in the shop. Next came the time-consuming tasks of the shop, beating ingots into thin plates and making wire, freeing the creative time of the masters whose work consumed large quantities of these materials. Fortunately for today's student, the invention of the rolling mill in the eighteenth century began a mechanization of the heavier work in the shop, and by the early twentieth century precious metals were supplied in both sheet and wire forms of many gauges, or thicknesses.

We begin with the modern student learning how to manipulate wire, an art form dating back to the prehistoric jewelers of the Mesopotamian and Hallstatt cultures.

A set of four pliers is needed to begin. Many supply houses and hobby stores carry moderately priced sets that will do. Of course, these places also carry more expensive pliers, but I encourage the beginner to try the basic, or economy, set first, adding other pliers once the usefulness is understood.

The pliers are distinguished by their profiles, as shown below.



*Fig. 1*

The **round nose pliers** are used for forming small rounded loops or circular bends in wire, such as those holding together parts of dangle earrings. Because they taper to almost points, these can be used for very tiny bends. Be careful not to squeeze too hard on a wire with them because the rounded jaws will leave permanent notches in the metal!

The **chain nose pliers** have flat jaws, rounded exterior, and taper to a point. These look very much like a mechanic's needle nose pliers, except the jaws of these are not serrated, but smooth, so that the metal will not be marred. Use them for general holding, as well as making chains. They are the preferred tool for opening and closing jump rings and other connectors used to join many components.

The **flat nose pliers** have smooth, rectangular jaws with parallel sides. These do not come to a point. Use these any time a parallel or right angle bend is needed. They can also be used to straighten a wire or other small piece of metal, such as the post of an earring.

The **cutters** are simply for cutting the wire by pinching it in two. Even a pair of side cutters will work, but for finer jewelry work, a pair with a pointy end is needed to cut very close in tight places for a neater job.

While working with your pliers, simply leave them lying flat on a convenient surface. When stored, lay them in a box or drawer. They may be wrapped in cloth if desired. The best storage is to place the handles straddling a thin wood slat with the working jaws safely up in the air and away from any possible damage, as shown in Figure 2. It is not a good idea to store them under other items, especially steel or other hard materials. Harder surfaces can scratch them, and you will see these scratches reproduced onto every jewelry surface you touch with them.

Finally, use your jewelry pliers only for jewelry; copper, brass, silver, and gold are all too soft to hurt them. Do not use them on steel or any other hard material, or the jaws will be ruined with scratches.



*Figure 2*

Pliers stored properly on a rack built on to the back of the author's jeweler's bench.

## Project 1: Wire wrapped stone pendant

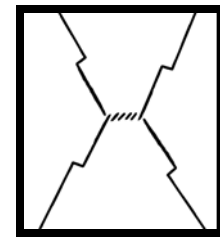
Materials needed:

- Pliers set
- 24 inches of 20 gauge brass wire
- Tumbled stone, 1 to 2 inches long

Steps:

1. Cut the wire into two pieces of about 12 inches each.
2. Cross the wires and twist them together tightly with 3 or 4 hard turns. They should lie flat on a surface when you complete this step. Artisans using thinner wire may prefer more turns.

3. Using the flat nose pliers, go about one half inch away from the twist on each of the four arms and make a slight Z bend. About 45 degrees is good for this first project. Everything should remain flat. No wires should cross beyond the twist.



*Fig. 3*

Check your work with the illustration.

4. Decide which end of the stone should be up. Then place the bottom of the stone on the twist in the wire. Bend each of the four arms up over the stone.

If your twist is very hard or the stone very irregular, you may need to bend the twist itself with your chain nose pliers. Simply set the stone aside, bend the twist, and then try the stone again. The majority of the twist should touch the wire. Small gaps are acceptable at this stage.

5. Make sure your Z bends are about the middle of the stone. Then gather all four arm wires at the top as tightly as you can.

Straighten them so they will lie flat and all point up together. Try to have any long wire to the outside. (Fig. 4A)

6. Take the longer outside wire and wrap it once around the other three close to the stone. Use the chain nose pliers to bend it if necessary. The other three wires should be flat, not bunched up.

7. Using the round nose pliers, go up about three-quarters of an inch from the longer wrapper wire and bend a loop in the cluster of three wires. Bring the far ends back down to the stone. (Fig. 4B)

8. Wrap the longer outside wire around the looped three. Keep it very tight and move toward the stone as you wrap. This secures the loop and tightens the grip on the stone. Tighten and compress the resulting coil with the chain nose pliers.

9. Using the cutters, trim off the exposed ends of the three looped wires as neatly as possible. Ideally, the coil of the fourth should hide their ends. Trim the end of the fourth coiled wire if necessary.

10. Go around the stone, pushing the four wires close to it. If you need to take up more slack, use the flat nose pliers to twist the Z bends tighter. Your work should appear somewhat like Fig. 4C.

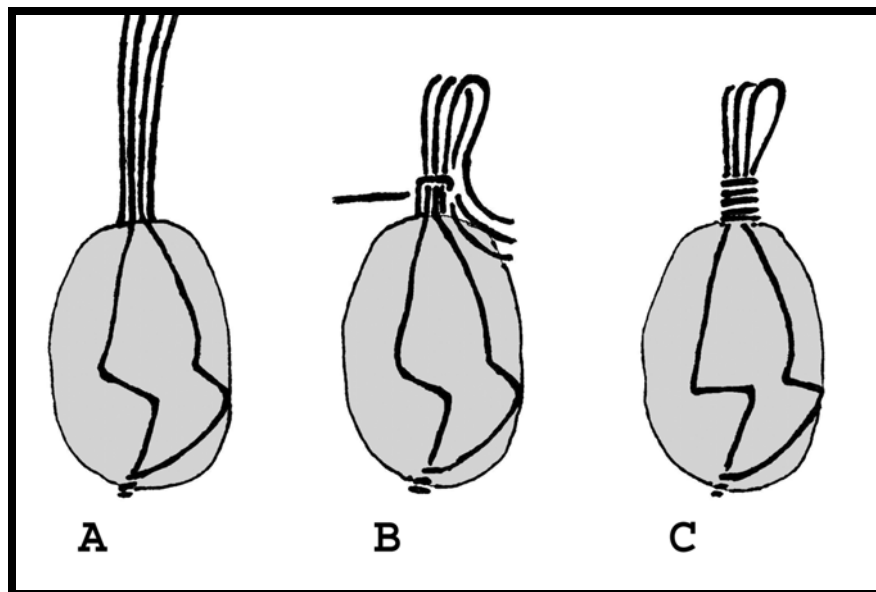


Fig. 4

## Project 2: Catch and eyelet for bracelet or necklace

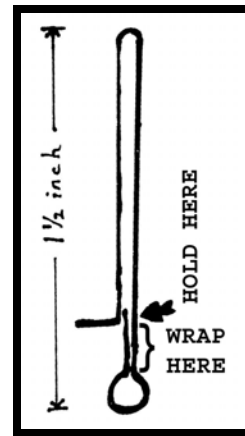
Materials needed:

- Pliers set
- About 12 inches of 20 gauge brass wire

Steps:

1. Using the largest part of the round nose pliers, make a tight loop three-fourths of an inch from one end of the wire. Use the chain nose pliers to pinch the two stems of the loop together before you remove the round nose pliers.

2. Using the smallest part of the round nose pliers, bend a second similar loop one and three quarters inches from the first loop. You may pinch it a little, but not as much as the first.



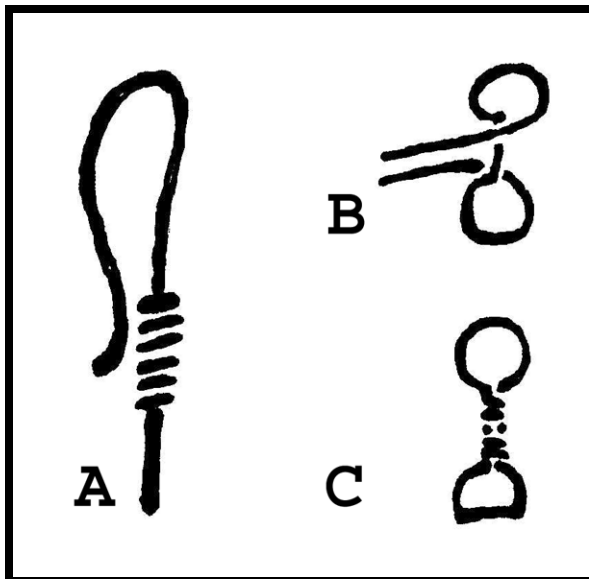
*Figure 5*

3. Hold all three wires together with the flat nose pliers at the very tip of the cut end. Bend the long end of the wire out at a right angle, then wrap it tightly around the stems of the first loop six to ten rounds, or until the coil reaches the first loop. Compare your work with Fig. 5.

4. Using the cutters, cut off the long excess wire near the first loop. If it sticks out, you may push it down between other wires with the chain nose pliers.

5. Grasp the long stem of the second loop with the largest part of the round nose pliers about one inch from the far end of the first loop. Bend the second loop gracefully back to the place where the coil meets the first loop. You may also use them to adjust the evenness of the coil's windings.

6. With the chain nose pliers, bend the very end of the second loop slightly away from the coil so it can catch the other loop better. (Fig. 6A)
7. Make the catch's eyelet with the remaining wire. Near the center of the piece, bend two loops about one-quarter inch apart with the largest part of the round nose pliers. The ends should go off in about the same direction. (Fig. 6B)
8. Holding the eyelet through one loop with the round nose pliers, wrap its end tightly around the wire between the loops for about half its distance. Cut the end of the wire off close to its last turn; it may be pushed down with the chain nose pliers.
9. Put the round nose pliers through the other loop and wrap its end back to meet the first coil. Cut off the end and push down with the chain nose pliers as before.
10. You may distinguish the loop you designate for the catch's eyelet by using the chain nose pliers to flatten the outer side of that loop. The other loop should be left round. (Fig. 6C)



*Figure 6*

A. The far end of the loop should come very close to the coils so the catch will hold the eyelet securely.

B. The long ends of the wire should pass on opposite sides of the bar connecting the loops.

C. Eyelet with flattened loop.

### Project 3: Wire wrapped bead necklace (or bracelet)

Materials needed:

- Pliers set
- About 36 inches of 20 gauge brass wire
- 18 (6 for bracelet) 6 mm beads, must slide on 20 ga. wire
- 36 (12 for bracelet) 4 mm beads, must slide on 20 ga. wire
- Catch and eyelet (from Project 2)

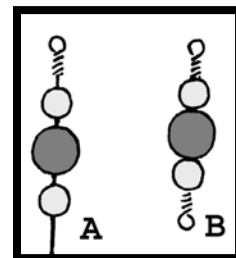
Steps:

1. You may wish to cut your wire into segments about a foot long for easier handling. Use the round nose pliers to make a loop about one-half inch from the end of a wire. Wrap the end tightly around the long wire two or three turns. Use the chain nose pliers to tighten it; any excess may be removed with the cutters.

2. Slide a small bead, then large bead, and then a second small bead onto the free end of the wire. Push the beads up to the coil below the first loop. (Fig.7A)

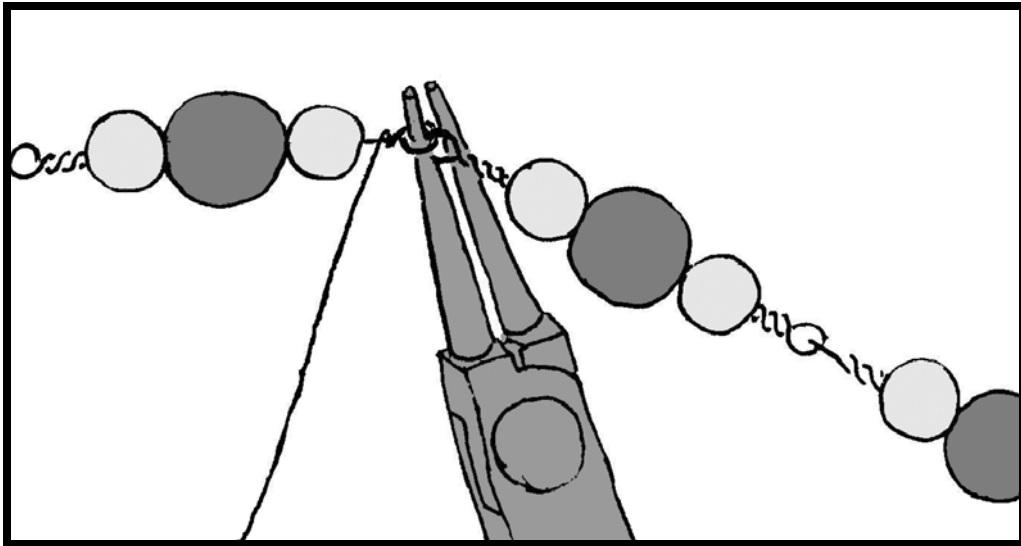
3. Leaving enough space for a coil to match the first one you made, place a second loop of the same size behind the beads. Use the round nose pliers to make this and all remaining loops in this project.

4. Holding the loop with the round nose pliers, wrap the end of the wire in a tight coil back to the end bead. Cut off the wire there. Push the cut end tightly against the end bead with the chain nose pliers. (Fig.7B)



*Figure 7*

5. Make a second unit with wire and three more beads, repeating Steps 1, 2 and 3. Each unit should be about one inch long.
6. Before wrapping the wire of the second loop, place the loop of the previous unit on the wire. Hold the unclosed loop loosely but carefully with the round nose pliers and then wrap the wire, completing with the cutters and chain nose pliers as before. Hold the work as shown in the diagram below.



*Figure 8*

7. Continue making and attaching units until you have all but two of the needed number for your chosen length.
8. Make a loop with the round nose pliers. Before wrapping it, pass the end through the round loop of the eyelet. Continue wrapping as before, add the beads, and attach the combined unit to one end loop of the necklace (or bracelet).
9. Make another such loop for the large loop of the catch and complete the last unit as in Step 8, attaching it to the other end of the necklace (or bracelet).
10. Drag the finished piece lightly through your fingers. If you feel any sharp end, press it down with the chain nose pliers.

## Project 4: Wire wrapped earrings

Materials needed:

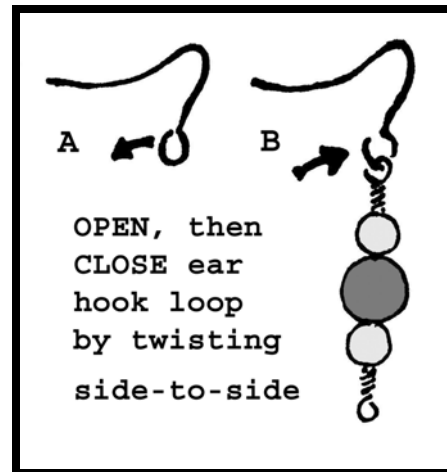
- Pliers set
- About 5 inches of 20 gauge brass wire
- Two 6 mm beads, must slide on 20 ga. wire
- Four 4 mm beads, must slide on 20 ga. wire
- Plated ear hooks

Steps:

1. Since these earrings are to match the necklace and/or bracelet you have previously completed, make two units of three beads each as described in Steps 1 through 4 of Project 3. Do not attach them to each other.

2. Hold the first hook near the loop with your flat nose pliers. Open the loop of the hook by twisting its end to the side with the chain nose pliers. (Fig. 9A)

3. Slip an end loop of one beaded unit onto the ear hook loop. Close the ear hook loop by twisting it back into alignment while holding it as in Step 2. (Fig. 9B)



*Figure 9*

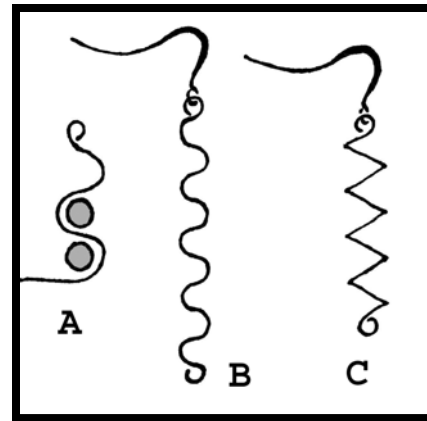
4. Complete the second earring by repeating Steps 2 and 3 for the other ear hook and beaded unit.

5. Make sure there are no sharp ends on the earrings as you did for the other piece in Project 3.

## Design Ideas and Variations

Now that you have learned the basic skills of using pliers, try making more pieces for practice. Here are some ideas to get your creativity flowing.

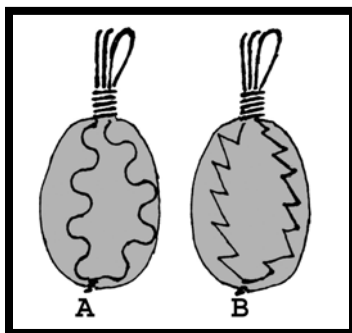
**Dangling Earrings:** Wire can be decorative by itself, as shown in Figure 10. Try making a long, wavy strand of semicircles. Make a half loop, as shown in Fig. 10A, then hold it on one jaw of the round nose pliers to bend the next half circle. Then grab that one to bend a third. Put smaller, closed loops on each end and attach an ear hook (Fig. 10B). Or, try a line of Z bends.



*Figure 10*

Put your Z bends on a hook as in Fig. 10C. End all your wire dangles in a loop for now; this will protect the wearer from any sharp ends.

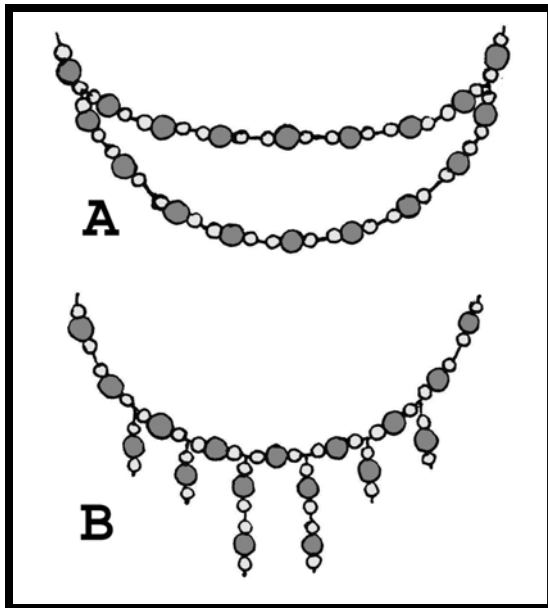
**Bent Wire Wrapped Stones:** Try wrapping stones with wire you have bent into either waves or multiple Z bends, as in



*Figure 11*

Figure 11. Twist the two wires together before you make the decorative bends, and try to get them to line up. Be careful to end them before you reach the top, or making the loop will be difficult. Figure 11A shows the waves; Figure 11B shows the Z bends. When tightening, be sure to tighten each bend or loop just a bit using the pliers with which you first bent it.

**More Sophisticated Beaded Necklaces:** Use the same size beads and units to make a variety of necklace patterns. Two



possibilities are shown in Figure 12; you can come up with many more. Most involve one extra step: You must connect two units with a third unit's loop. Hold your round nose pliers carefully but firmly for this step. Strands of units may be joined for a multi-strand necklace, as in Fig. 12A. Or, you may attach units as dangles between the units of a strand (Fig. 12 B).

*Figure 12*

**Practice, Practice, Practice!** There are as many variations as you can dream up. You can make multi-strand necklaces with dangles, or make necklace dangles of wire, as for the earrings in Figure 10. Most importantly, practice until you are comfortable with using the pliers.

**Design Considerations:** How strong should jewelry be?

Any jewelry (including wire jewelry, if you have been wondering) should be strong enough that it will not break or come apart with everyday wear. But it should give or come apart if subjected to enough pressure to hurt the wearer. This is why only a bent loop holds the dangles on an ear wire; it will hopefully come loose should the earring be pulled very hard.