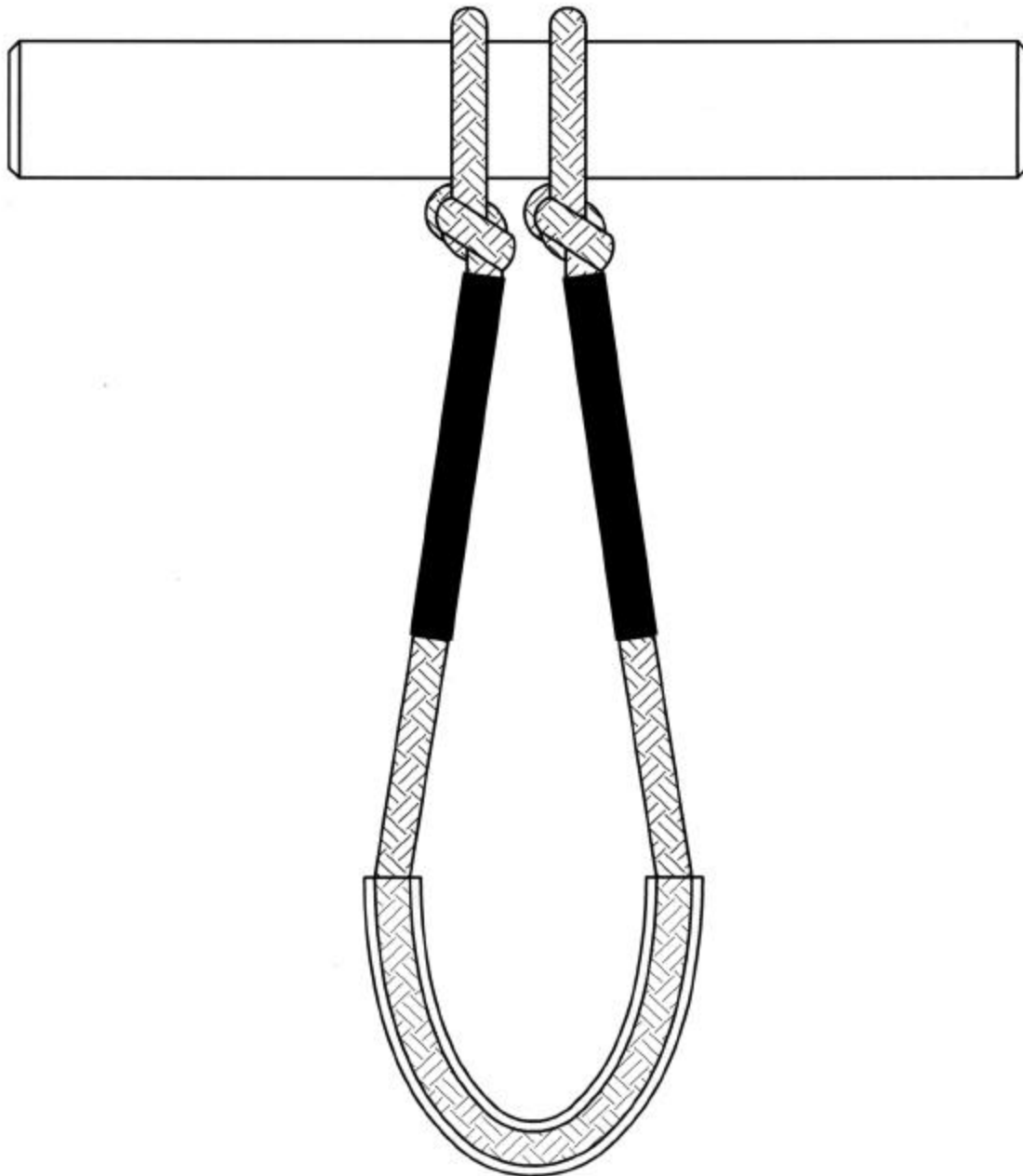


# HOW TO MAKE "The Shapiro" ROOT BALL HANDLE



# HOW TO MAKE "The Shapiro" ROOT BALL BASKET HANDLE

## **Materials List:**

1-1/4" Diameter Hardwood Dowel  
5/16" (.312") Diameter Hollow Braid Polypropylene Rope  
5/16" Inside Diameter (ID) x 1/2" Outside Diameter (OD) PVC Plastic Tubing  
Vinyl Electrical Tape  
Wire Coat Hanger

## **Assembly Steps:**

1. Cut a piece of dowel to a length of 9". Then, chamfer both ends of the dowel using a file or coarse abrasive paper. (See Figure 1)
2. Cut a piece of rope to a length of 43". [Tip: To keep the rope from unraveling, tightly bind the rope with tape on each side of the cut before severing. ] (See Figure 2)
3. Tie a loose "bowline" knot on one end of the rope, and insert the dowel through the loop. (See Figure 3)
4. Remove the slack, rotate the bowline, and cinch the knot around the dowel for a snug fit, adjusting the knot so that the short end of the rope is approximately 3-1/2" long. (See Figure 4)
5. Tightly bind the short end alongside the rope with tape. (See Figure 5) [Tip: to keep the tape from unraveling, release the tension in the tape just at the end of binding.]
6. Cut a piece of plastic tubing to a length of 6". (See Figure 6)
7. Slide the plastic tubing over and beyond the free end of the rope. [Tip: A piece of wire coat hanger with a small hook bent on its end can be used to help pull the rope through the tubing.] (See Figures 7 & 8)
8. Tie a bowline on the free end of the rope, adjusting it for a slightly looser fit around the dowel, and with its short end also approximately 3-1/2" long.
9. Similarly, tightly bind the short end alongside the rope with tape.
10. Center the plastic tubing on the rope, and slip the loops over the dowel to complete the assembly. In use with the rope taught, the distance from the dowel to the loop on the root ball basket should measure approximately 10 inches. (See Figure 9)

**Prepared by Joseph J. Shapiro for UC Green, February 2007**

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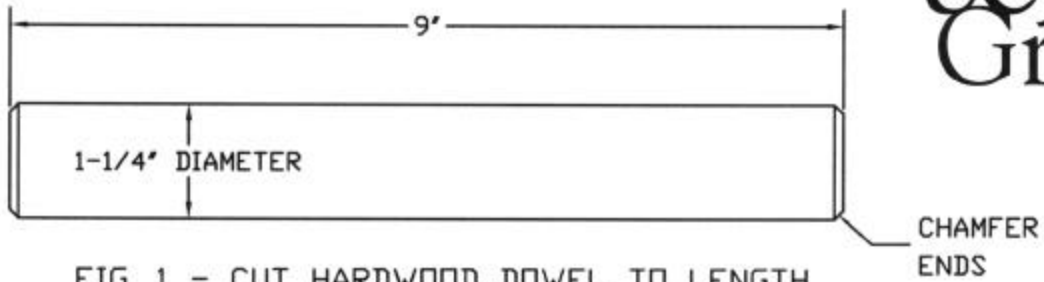


FIG. 1 - CUT HARDWOOD DOWEL TO LENGTH

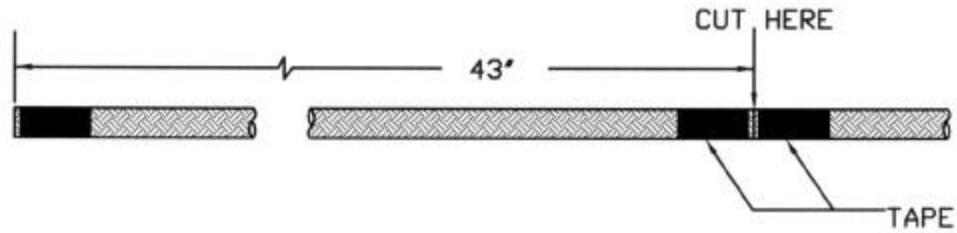


FIG. 2 - CUT ROPE TO LENGTH

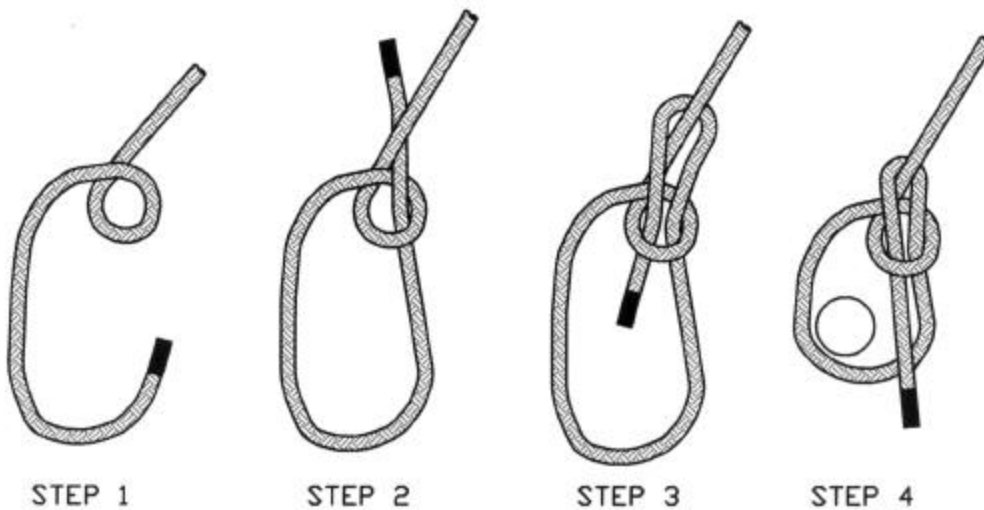


FIG. 3 - TIE A BOWLINE KNOT AROUND DOWEL

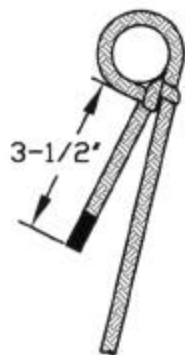


FIG. 4 - REMOVE SLACK FROM KNOT, ROTATE, AND CINCH AROUND DOWEL

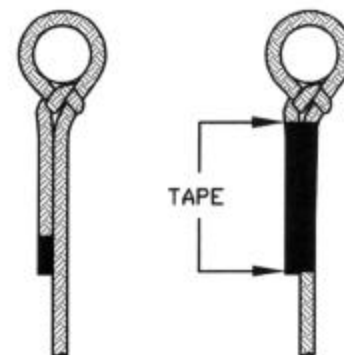


FIG. 5 - TIGHTLY BIND LOOSE END

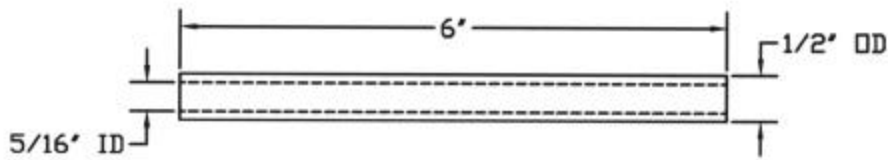


FIG. 6 - CUT PLASTIC TUBING TO LENGTH

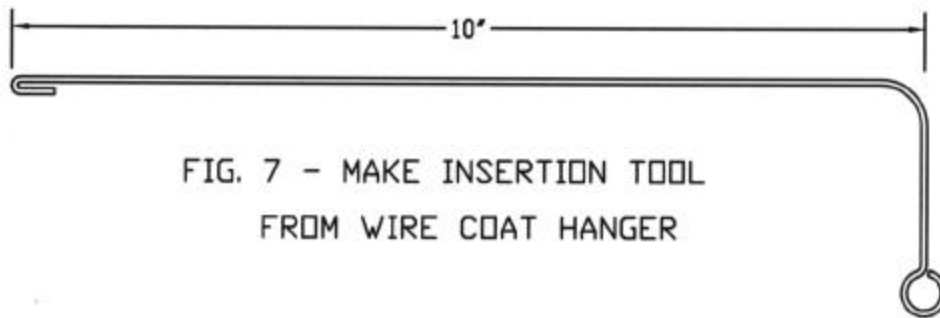


FIG. 7 - MAKE INSERTION TOOL FROM WIRE COAT HANGER

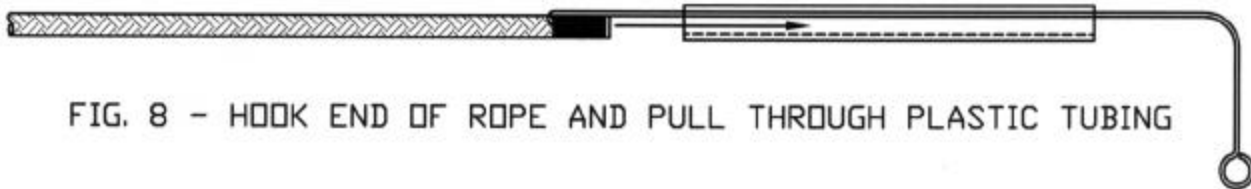


FIG. 8 - HOOK END OF ROPE AND PULL THROUGH PLASTIC TUBING

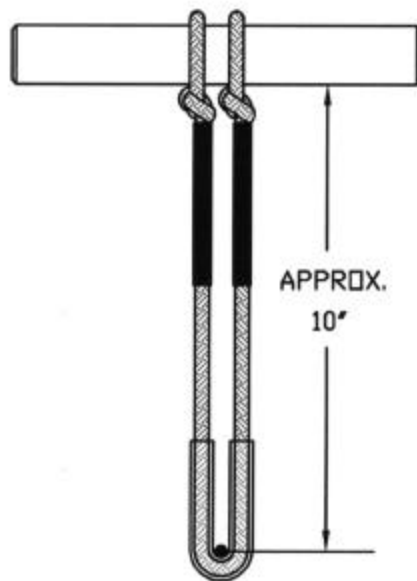


FIG. 9 - FINISHED HANDLE UNDER TENSION