

BEGINNER WATCHMAKING

HOW TO BUILD YOUR VERY FIRST WATCH

BY TIM SWIKE



Please Read This FIRST

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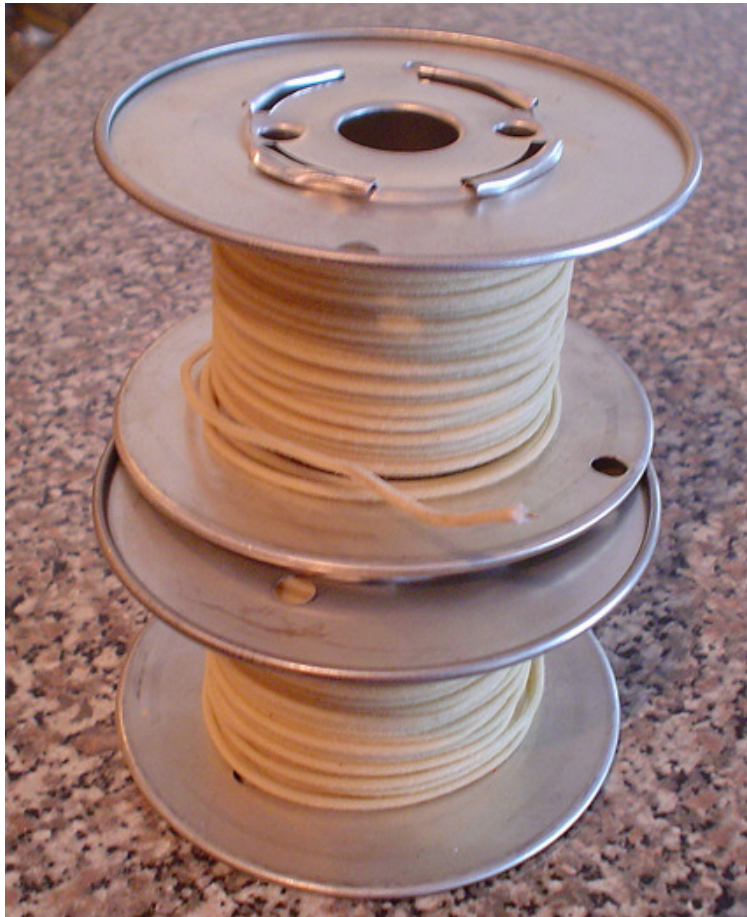
USING SOLDER TO ADD DIAL FEET TO A DIAL

In the book, BEGINNER WATCHMAKING, I discussed using glue to add dial feet to a watch dial. For this update, I wanted to try a more permanent approach, since the glue method does not always seem to work the way you want it to. The watch dial is metal, and the dial feet are metal, so why not solder them? The good news is that the soldering method often works pretty well. Just hold the dial in place with a toothpick and Styrofoam. Then get the metal wire in position, and solder on the feet. Then just grind down the excess solder with a Dremel tool.

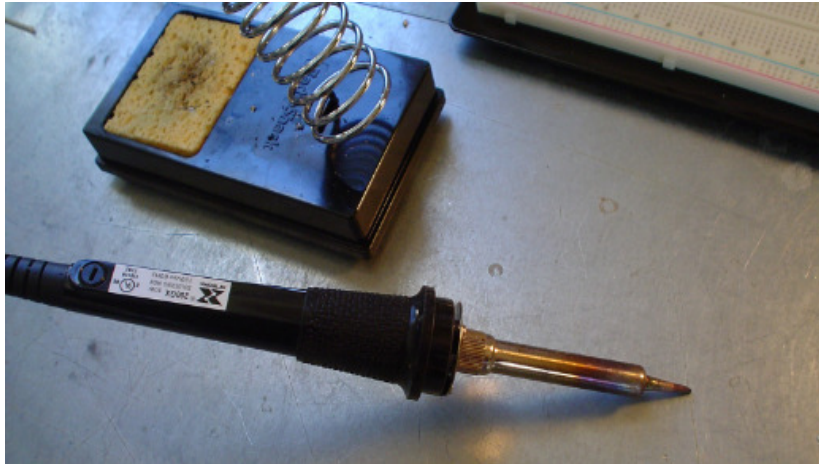
Here is what you need for this project:

A few cheap dials to practice on. You have to practice soldering the dial feet in the exact position. The Styrofoam will help you hold these feet in place. The other obstacle is the dial temperature. Depending on how hot the dial gets, this method may or may not work for you. If you can solder the feet quickly, the dial won't heat up that much. If it takes too long to solder the dial, it will get over heated and the ink will melt off. So please practice on some cheap dials from used watch lots on Ebay.

One roll of 22 gauge AWG wire. Get the stiff kind that comes in a cloth braid. Remove the braid and you have the dial feet wire. Plus, you can use this stuff for hundreds of projects around your house. Here is where you buy the 22 AWG wire. <http://stores.ebay.com/Classic-Clones-Amplification>



A good soldering iron. There are two common types of soldering irons that you can use for your soldering projects. The one directly below is a 30 Watt iron that has a “pencil” tip, which is great for working on small parts in tight areas. It will remain hot until it is unplugged, so it is recommended that you get a holder for it so you don’t catch anything on fire. These holders often come with a sponge that is used for cleaning the tip in between solderings.



The next picture is a “gun” style soldering iron from Weller. When you pull the trigger, you will get up to 350 Watts of power (700 degrees). When you release the trigger, it quickly cools down. The gun soldering irons have a larger tip, so they work best when heating large amounts of solder quickly.



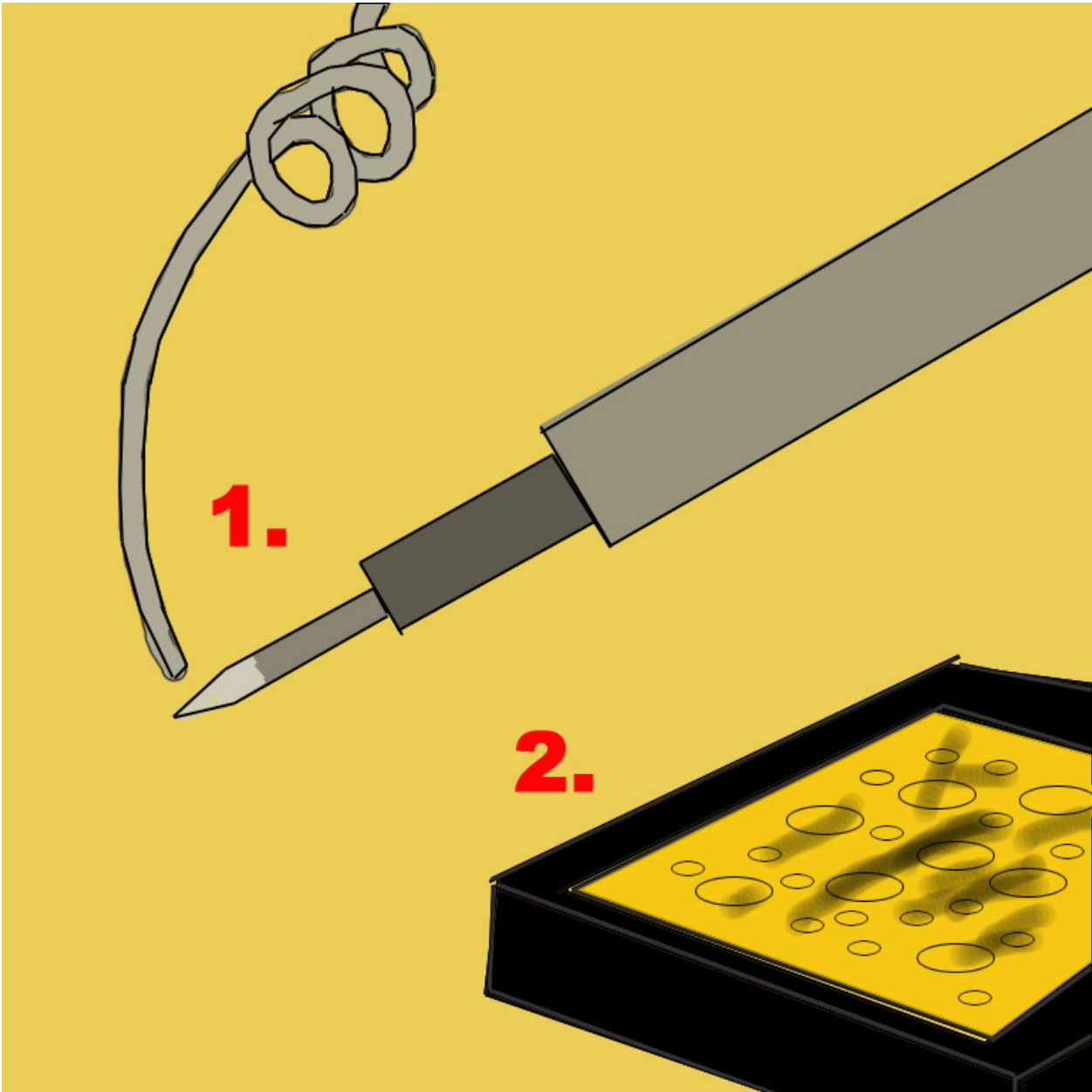
You will also need 60/40 rosin core solder. Every hardware store or Radio Shack should have this in stock. Below is the .032" diameter solder sold in a plastic tube.



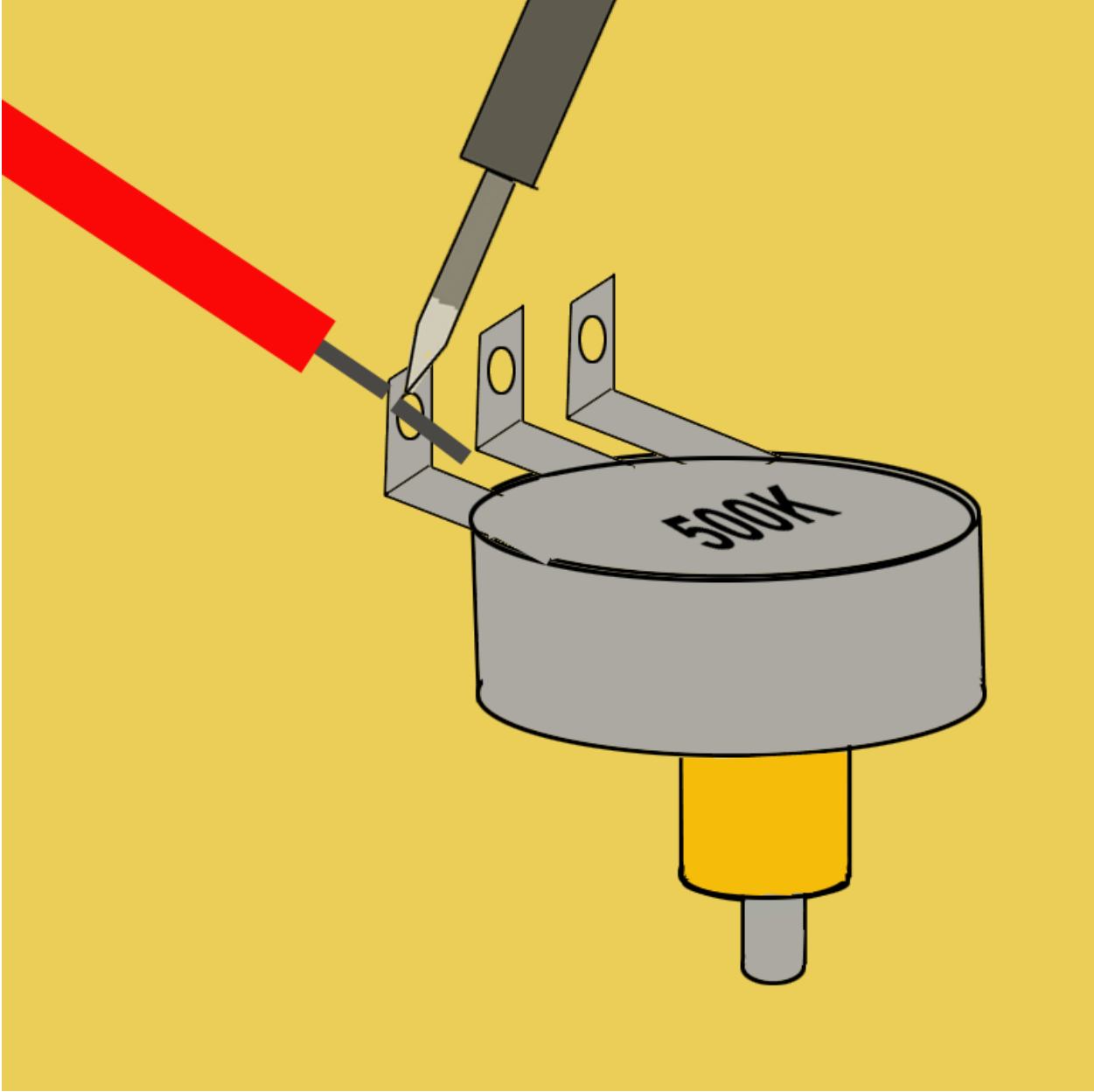
QUICK REMINDER: HOW TO SOLDER

Before you begin soldering the components together, let's quickly review how to solder properly. First, heat up your 25-30 watt (or larger) soldering iron (15-20 watts is too weak). Then tin the tip with the rosin core solder (touch the solder to the tip and let it melt on the soldering iron). Now, wipe off the excess solder on a wet sponge, or wet paper towel. Place the wire you are going to solder inside the appropriate lug hole. Touch the soldering iron to the lug and wire, and heat them up for a few seconds. Now touch the solder to the iron, lug, and wire at the same time. The solder should liquefy and form a ball. Remove the iron and let the solder joint dry for a few seconds. Clean off the soldering iron with the wet sponge or paper towel.

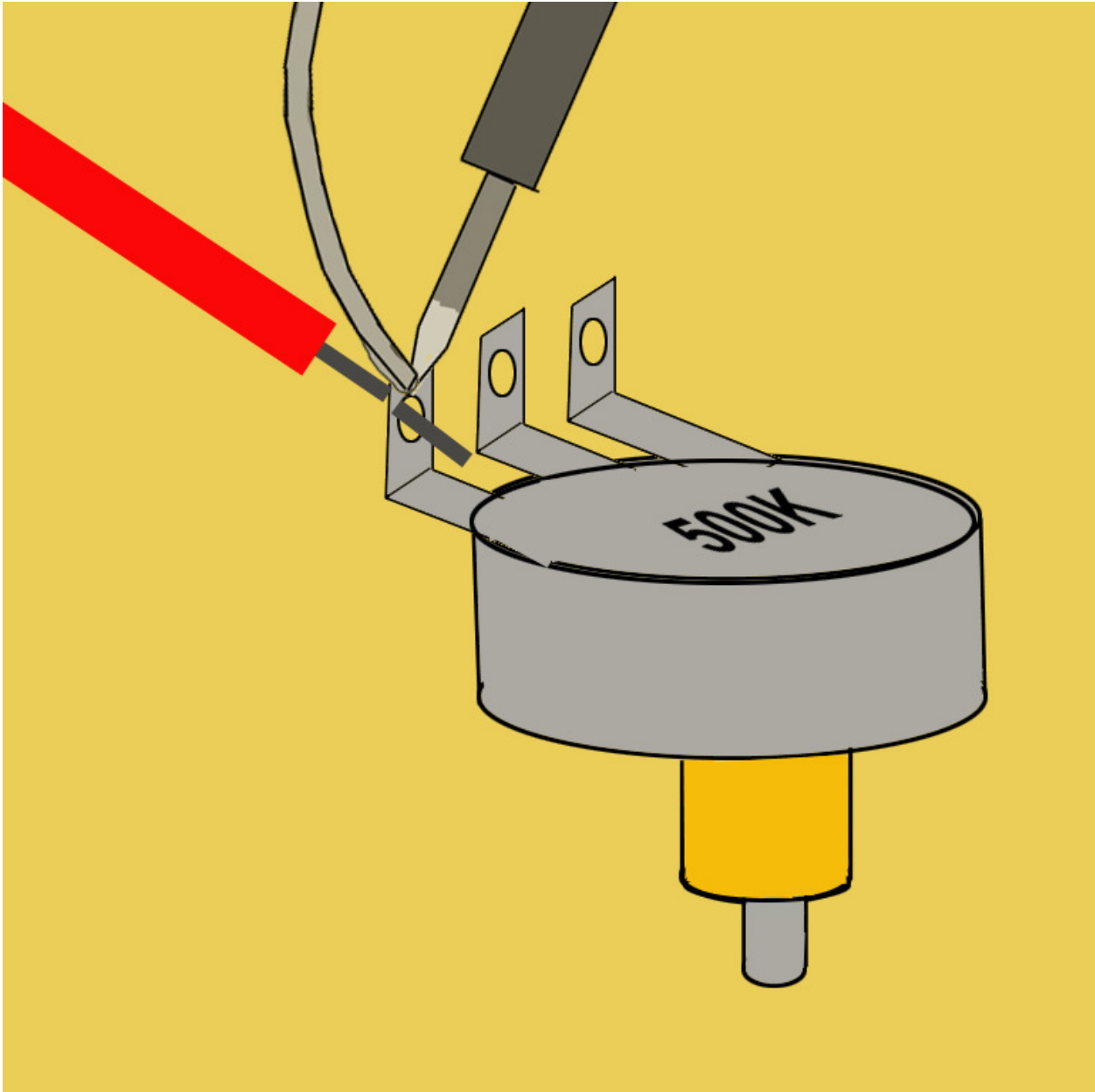
Repeat this process for the next joint that you solder.



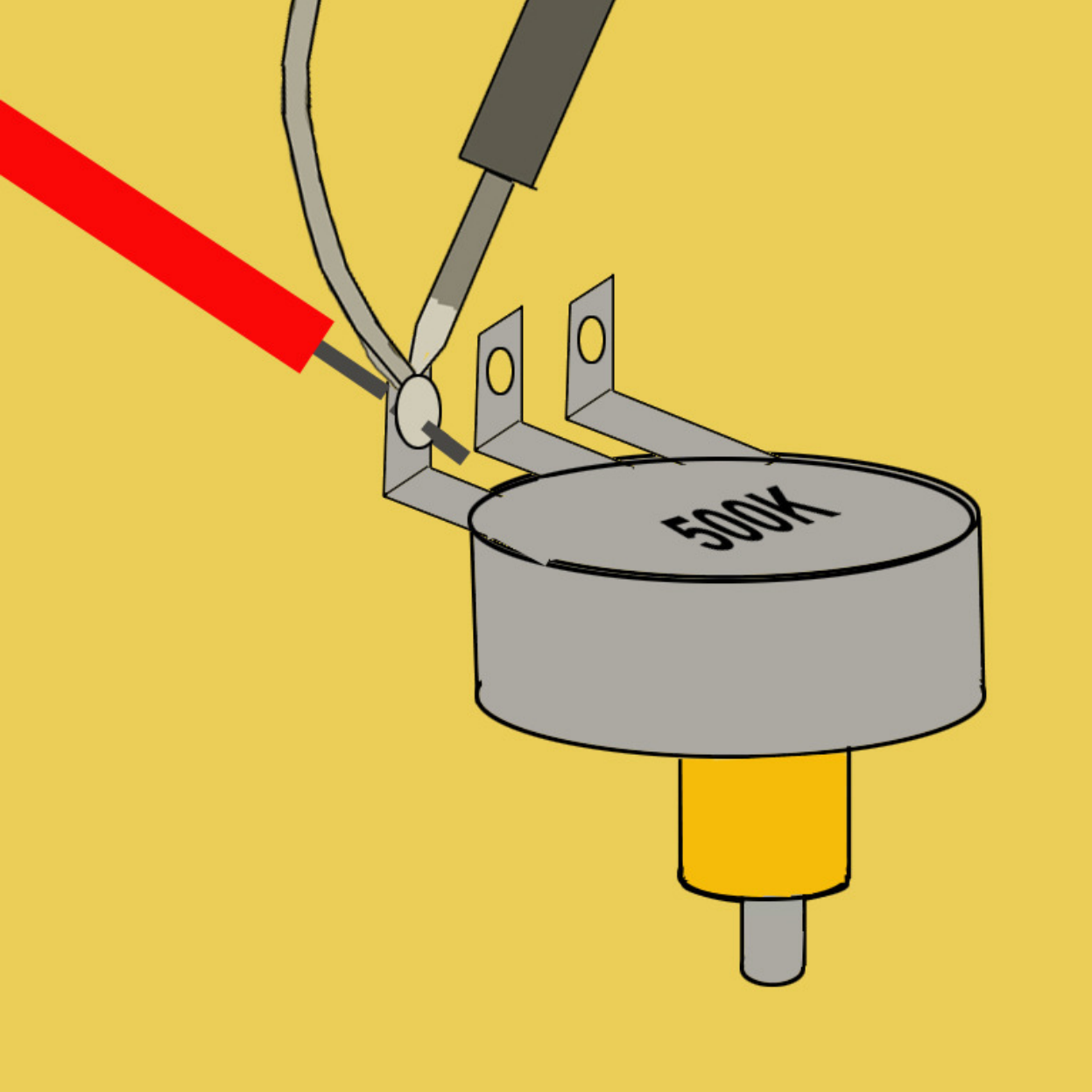
Heat up the wire and the part you are going to solder.



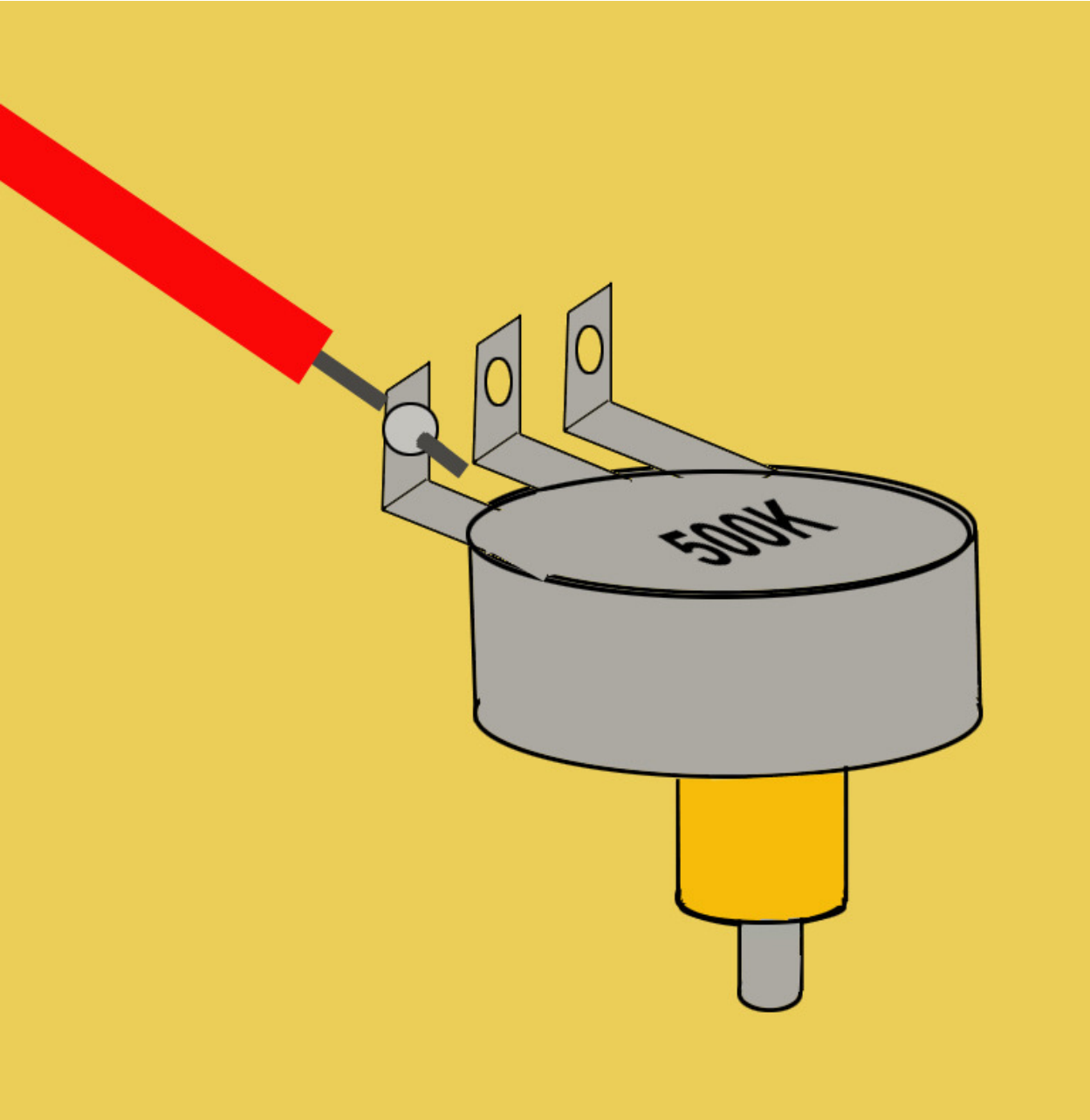
Now add solder to the heated parts.



The solder should flow out and form a ball. Remove the iron and let it cool.

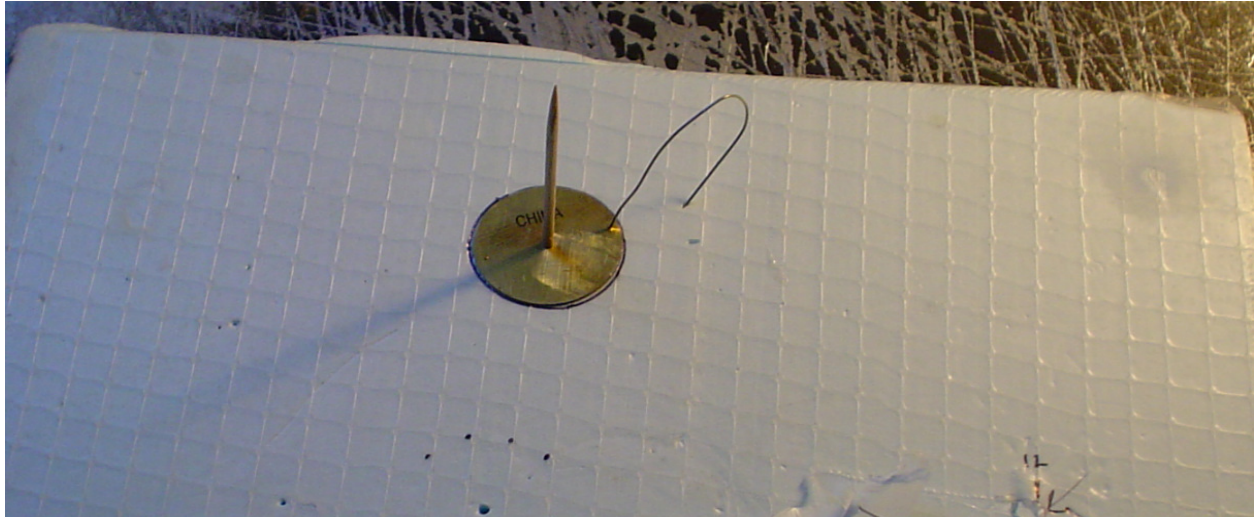


Here is the completed solder joint.

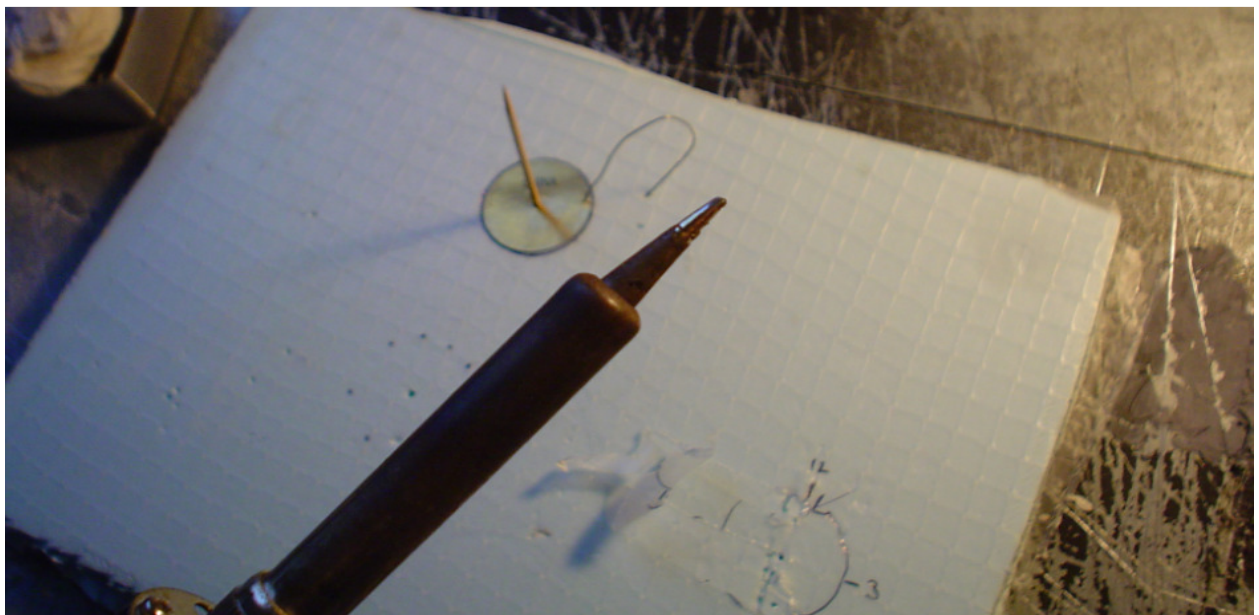


Now let's get started.

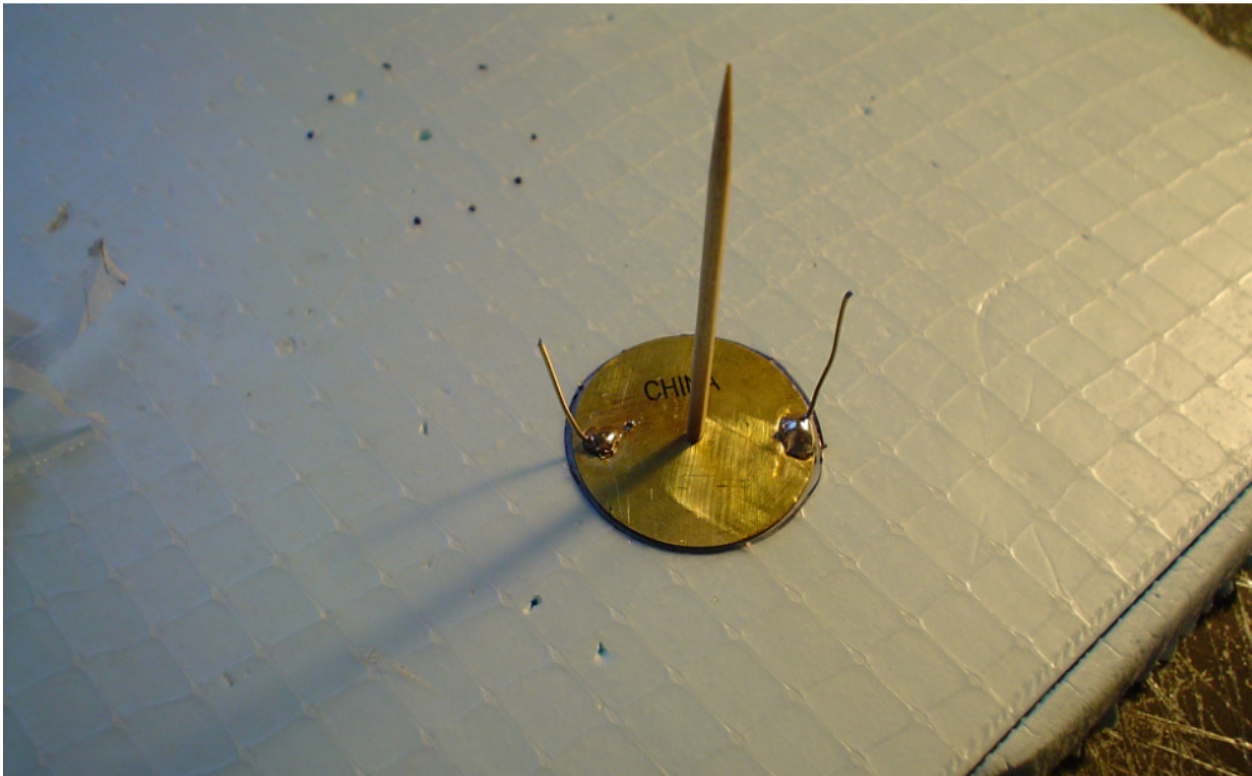
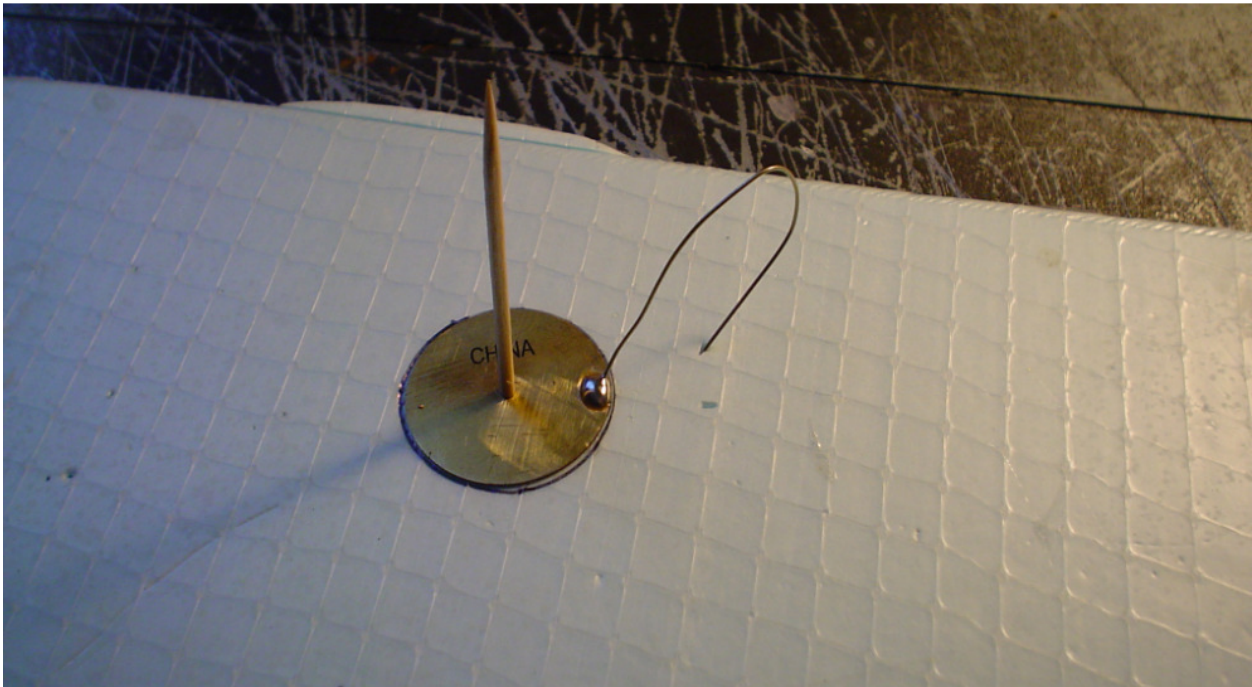
Place a small piece of paper on top of the Styrofoam. It will prevent the dial from touching the Styrofoam, especially if the Styrofoam gets too hot and starts melting. Use a toothpick to hold the dial in place. Stick the 22 AWG wire into the Styrofoam, and have it touch the dial where the dial feet would go.



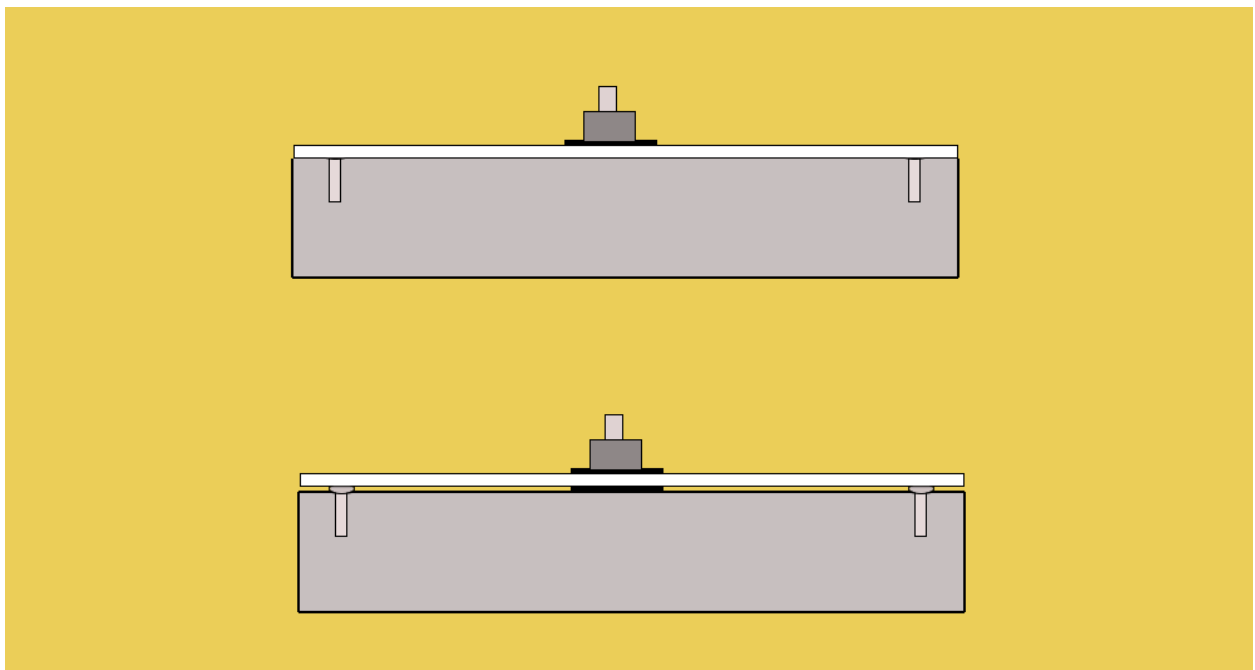
Tin the soldering iron and solder the 22 AWG wire to the dial. Try to solder the wire quickly. The longer it takes, the hotter the dial will get.



The wire is now soldered to the dial.



Use the Dremel tool to remove the excess solder. Some solder is needed to hold the dial feet to the dial, so it's a good idea to use a movement with a longer fourth wheel pinion, cannon pinion, and hour wheel. Check out the diagram below to see how a stock dial would fit into the movement, and how a dial with soldered feet would fit into the movement.



Here is the finished dial with the new feet. I can still grind off more solder if needed.



