USB Mini Rotisserie: Roast tiny foods like a champion.

by **BioLite** on March 21, 2016

Author:BioLite The BioLite Site!
A team of engineers and designers constantly breaking things and burning things -- we're on a mission to bring energy everywhere.

Intro: USB Mini Rotisserie: Roast tiny foods like a champion.

So this started as BioLite's annual April Fools Email, but all joking aside, we quickly realized we could give outdoor gourmets a fun and easy way to build their own mini-rotisserie, powered by just about any USB source. S'more lovers, rejoice! Your perfect marshmallow is awaits.

This whole project comes together in seven steps and the parts will run you about $25 (the majority of the costs come from the motor).

A note: The dimensions of this project are built around using the BioLite wood-burning CampStove or CookStove as the source of the cooking fire, but you can tweak according to your needs. We powered the rotisserie itself with the sun via the SolarPanel5+.

Let's get cooking.

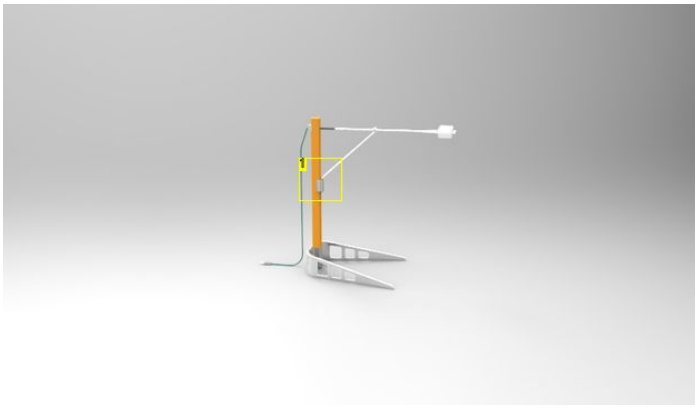
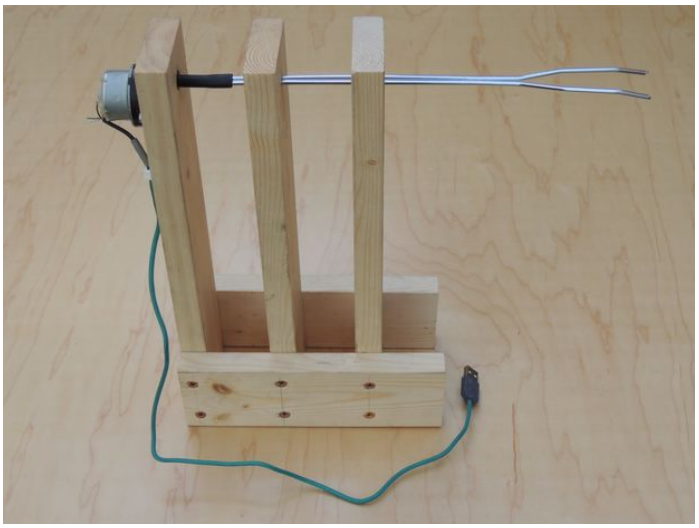


Image Notes
1. BioLite does an annual April Fools Joke with a fake product launch... this year it was the S'Molar: a solar-powered mini rotisserie to roast the perfect marshmallow for the perfect s'more.

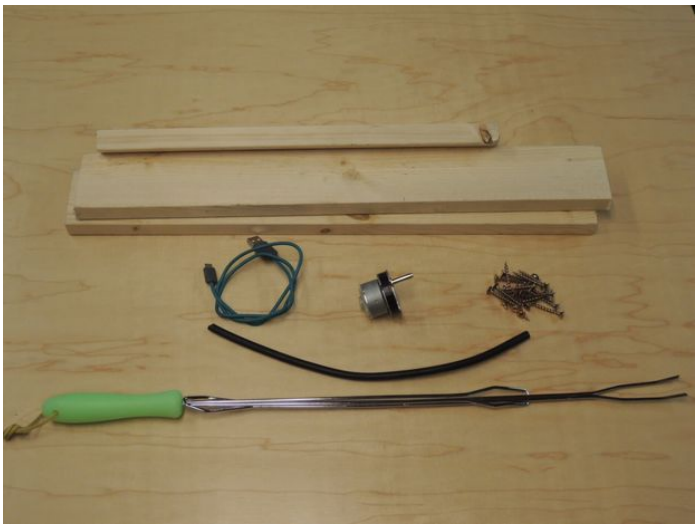
But then we realized - we could actually make it! Enter instructables...



Step 1: Project Materials Overview

Quick rundown of what you need for this project:

- [3] 12" 1x3 or 1x4" pieces of wood.
- [2] 8" 1x3 or 1x4" pieces of wood
- [1] 6v geared reduction DC motor (we found ours on Amazon)
- [1] USB cable
- Electrical tape or heat shrink tube
- Screws
- Hot dog skewer cut to length
- 3/16" or 1/4" rubber tube that fits snugly onto motor shaft and over skewer. You can find this online or easily at an auto parts store.

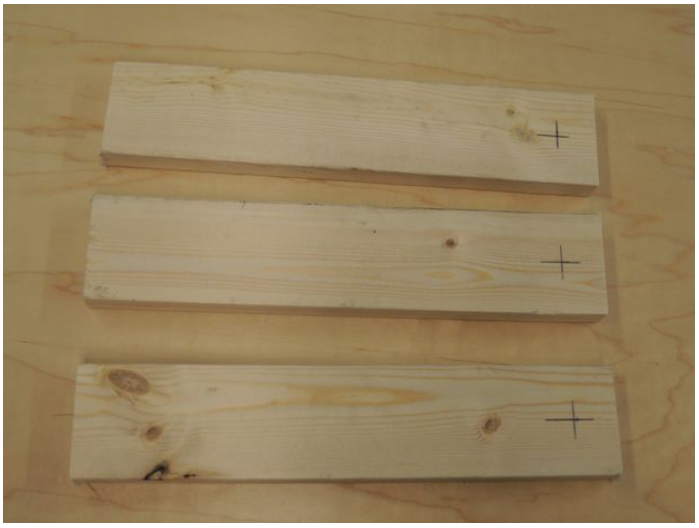


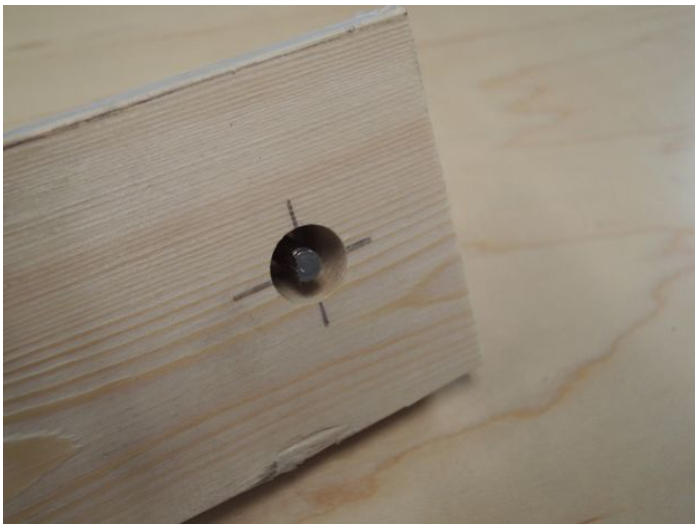
Step 2: Prep the Wood

For the three 12" length pieces of wood

1. Drill one length of wood with a 1/2" hole 1" from the top. Keep it centered!
2. Drill the other two lengths of wood with 1/4" holes (or whatever width your skewer is) 1" from the top. Keep it centered!

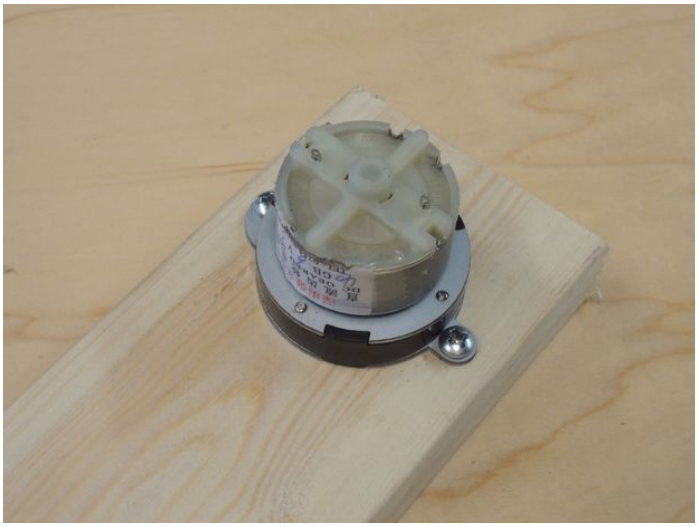
Make sure skewer rods fit loosely so it can rotate within the holes.





Step 3: Attach the Motor

Center motor shaft within the 1/2" hole and attach with screws.

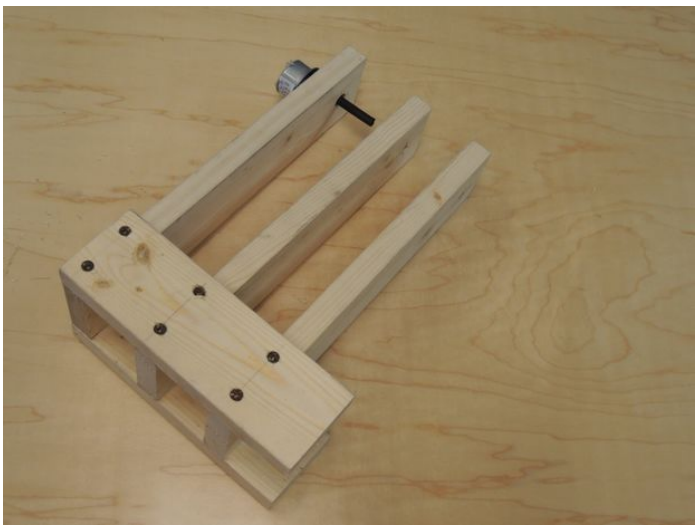


Step 4: Screw wood pieces together

Screw the [2] 8" pieces of wood to the base of the [3] 12" lengths as pictured. This is where the structure starts to come to life.

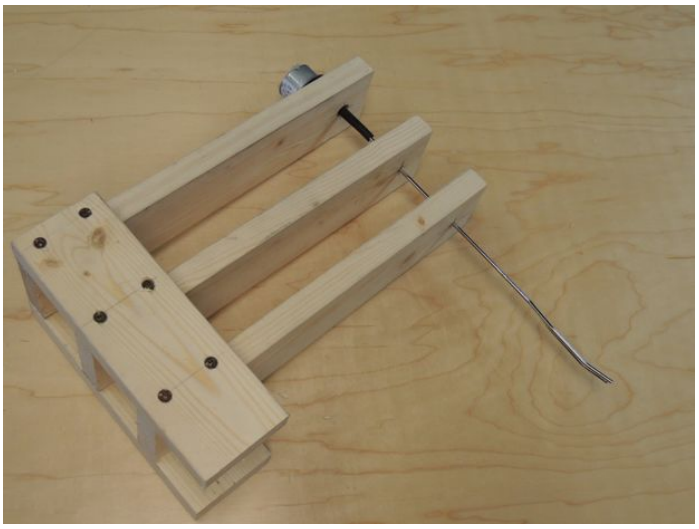
Alignment matters here!

Make sure pieces are attached squarely for stability and that holes are aligned so the skewer rotates freely and easily when in use.



Step 5: Attach Rubber Shaft

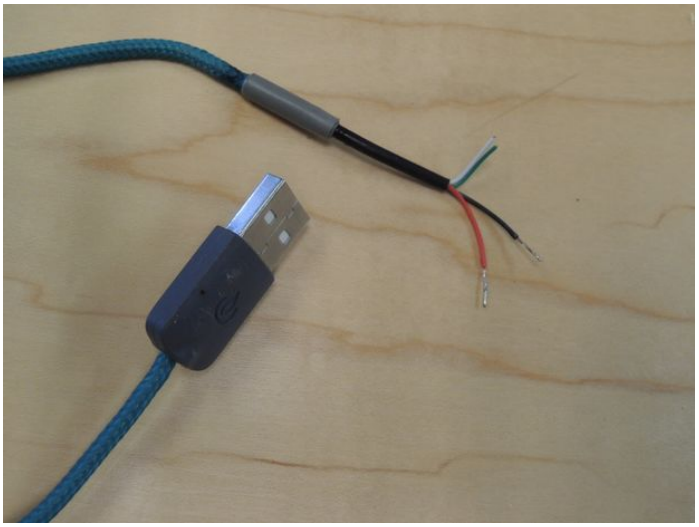
Slip rubber length over shaft and onto skewer. This will help stabilize the rotation of the skewer.

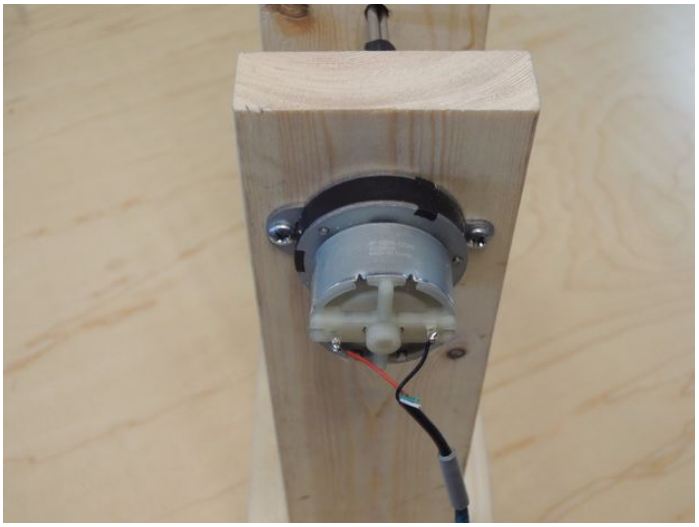


Step 6: Prep and Attach USB Cable

Power Time!

1. Strip one end of the wires on USB cable so that internal wires are exposed for the **red and black wires.** Depending on the USB cord you're using, there may be some other colored wires inside as well - you can ignore those, no need to strip them (for example, in image above, we ignored the teal and white internal wires)
2. Solder **red wire** to [+] positive terminal on motor and **black wire** to [-] negative terminal.

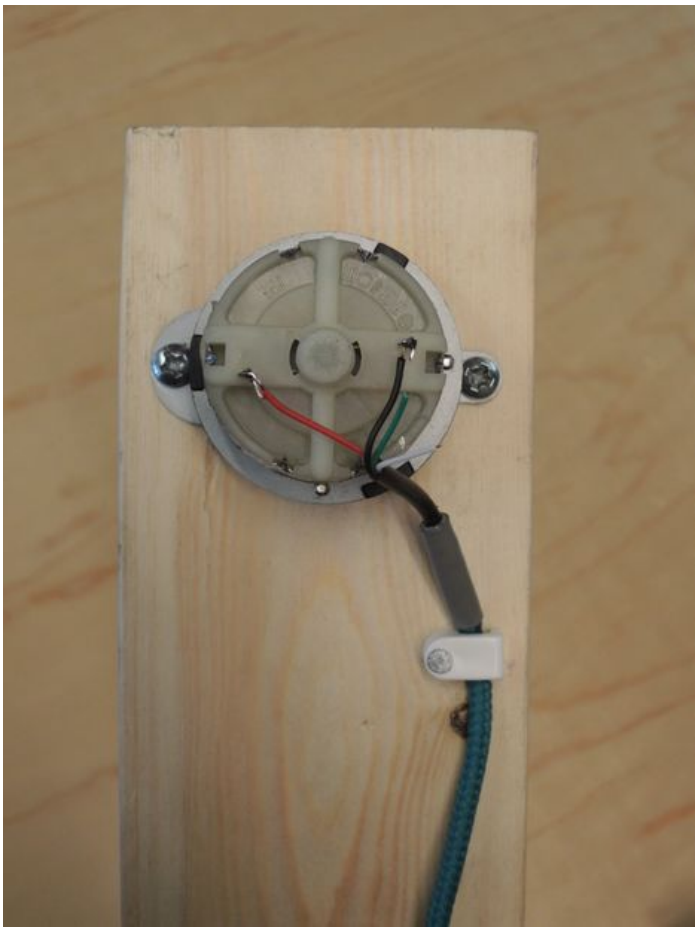




Step 7: Secure USB Cable

A quick best practice:

Secure the top of the USB cable to wooden board. This allows you to plug the other end of the USB cord into your power source without tugging at motor terminals.



Step 8: Test Drive!

1) Attach your desired food to the skewer

2) Set it up over your flame source (the dimensions in this instructable are designed to fit the height of the BioLite wood-burning CampStove or CookStove)

3) Connect the USB to a power source. Pictured here is the BioLite SolarPanel5+

4) Eat something!