

Plumber's Stove



Materials List

- 1/2 pint (8 fl oz) paint or stain can with press-on lid
- 3-inch-wide by about 12-inch-long piece of sheet metal (thin guage steel - not aluminum)
- (1) Radiator hose clamp - big enough to go around the can
- (1) Bag of cotton balls

Instructions

1. Use paint thinner to clean out the can of all paints or stains then wash out with soap and water.
2. Stuff the can full of cotton balls to the rim. Pack them in, but not too tight.
3. Wrap the sheet metal strip around the can to form a ring, and trim off excess so as to have a 3/4-ring for the burner wind screen.
4. Position the ring about 1 inch down on the can so that 2 inches protrude above the can's top and clamp on the radiator hose clamp and tighten down the metal ring to the can as tight as you can get it. (This may distort the can a bit but the steel can is very tough and it won't break it).
5. Bend over the corner edges of the ring on top, so you or your pack won't get cut on it's sharp edges.
6. Use a pair of sheet metal snips and cut a series of "V" grooves around the top edges of the burner ring, being sure there's enough flat ring surface to support a pot or cup. Pour in enough alcohol fuel to soak the cotton "wick" -- that'll be about 6 to 7 oz. of fuel -- and seal the lid.



Using the Stove

Using the Plumber's stove is pretty straight forward, just pry off the lid with a spoon or pocket knife, light the wick and set your pot or cup of beverage on the stove in order to heat or boil.

To put out the flames , just drop the lid upside-down on the can and let it cool before sealing the lid.

This little stove burns about 50 minutes on one filling and will boil 16 ounces of water in ten minutes. You don't have to fill it every time you need to use it. It's very safe and the bottom stays cool when in use (I've used it indoors many times). As a bonus, in an emergency, you will have a bunch of alcohol-soaked fire starters on hand.

Homemade Fuel Bottle

Take a 16 oz peroxide bottle (very tough plastic) and a drinking spout from a spring water bottle (pull to open /push to close) and you've got a super no-spill fuel bottle for alcohol fuels.



Three-Fuel Stove



Coffee Can

- ▶ Leave the bottom of the can attached.
- ▶ Along the top, cut two 2 inch wide by 1/2 inch high slots about 1 inch apart from each other. These vents will allow air to pass out under your pot and keep it from smothering the fire.
- ▶ Cut three 1 inch wide by 1/2 inch high slots so that their tops will be 3 inches down from the top of the can. Only cut the top three sides of these slots. The bottom is left uncut so that when completed the metal can be bent down into the can to form support tabs for the alcohol/Esbit burner.
- ▶ Along the bottom of the can, and in-line with the top two vents, cut two 2 inch wide by 1 inch high slots. These vents will act as the air intakes when burning wood in the stove.

Using the Stove

To use the stove as a wood burner, just use the coffee can alone. Load it up with very small pieces of wood (I never use anything bigger than pencil-sized), get them going (Vaseline soaked cotton balls make wonderful fire starters), and put your pot on top. Make sure the intake vents face into the wind. The additional air coming in the vents will help the fire burn hotter. When burning wood you'll find that you'll need to keep your eye on the stove. It only holds a small amount of wood which will need to be replenished fairly often. My experience with this stove as a wood burner is that two cups of very cold water will require about two "can-fulls" of wood and 15 minutes to come to a boil. When the first can-full starts to burn down, lift your pot and add another load of wood, making sure that you don't smother the fire in the process.

To use the stove as an alcohol burner, put the 4 inch circle of wire mesh onto the three internal tabs, put the tuna can in the center of the wire mesh, and add alcohol to it. Then put the small wire mesh piece on top and light the alcohol. The wire mesh heats up as the alcohol burns and causes the stove to burn more efficiently. This very simple alcohol burner will get water up to a boil just as fast, if not faster, than a commercial Trangia alcohol stove. When using the alcohol stove make sure that the intake vents face away from the wind. This allows the back of the stove to provide a windscreen for the flame and greatly increases its efficiency. To use the stove as an Esbit stove, put the 4 inch circle of wire mesh onto the three internal tabs and put the tuna can upside-down in the center of the wire mesh circle. Put your Esbit fuel tab on top of the tuna can's bottom and light it. Again, when burning Esbit tablets, make sure the intake vents of the stove face away from the wind. That's it. If you make one of these stoves, I hope you enjoy playing with it as much as I have. Also, there's probably a lot of room for improvement in the design of the alcohol burner for this stove. Once I got to the point where I'd found something that works as well as the commercial Trangia units, I stopped working on it. You don't have to do the same and can likely come up with a design that's more efficient in burning alcohol than mine. In any case, enjoy this three-fuel stove!

Parts List

- ▶ A one pound coffee can (actually a 12 oz can; does anyone still sell coffee in a pound can?)
- ▶ Some 1/4 inch wire mesh (also known as "hardware cloth")
- ▶ A 3 oz tuna can

Wire Mesh

- ▶ Cut a circular piece of wire mesh about 4 inches in diameter. Cut it to fit so that you can easily drop it into the top of the stove and have it rest securely on the three tabs you previously created. This mesh will serve as the platform on which the alcohol/Esbit burner will rest.
- ▶ Cut a smaller piece of wire mesh of sufficient size to cover the top of the tuna can. This wire mesh acts as a catalyst to help improve the efficiency of the alcohol burning.
- ▶ Other than taking its top off, eating the contents, and washing it out, nothing else needs to be done to the tuna can. It will serve as the alcohol/Esbit burner. If you really want to, you can remove the label. That's all there is to it!