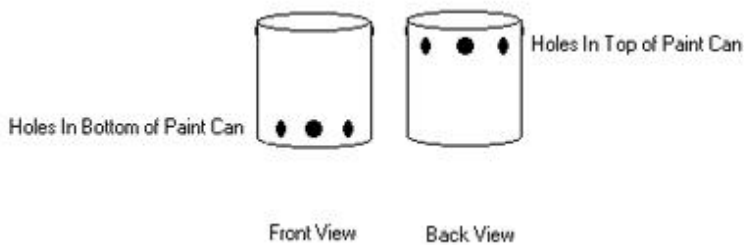


The Hobo Stove

Take a gallon paint can (exact size not important-- experiment).
Cut holes in sides of can as below:



Chuck anything combustible in and light it up.

The air flows in the bottom hole, and the aerodynamics of the can suck the exhaust out of the top holes. This forms a vicious through draught, and the fire burns almost white hot in a strong wind! It also uses very little fuel. Fire temperature can be controlled by turning can away from the wind a bit, or by obstructing the inlet hole.

Put a pan directly on the top of the can without the can lid (unless you are very fussy about carbon deposits on your pan) for maximum heat transfer. Or to bake, put lid on can, and baking receptacle on lid. Alternatively use a large lidded tin, like a biscuit tin, directly on the can, supporting the item to be baked above the bottom of the tin, so it bakes in the distributed temperature of the tin rather than the direct heat on the base.

These things are unbelievably effective, dirt-cheap and fun to make. You can easily make one on the fly with a Swiss Army knife and a tin you pick up. You will probably find yourself making lots of different designs just for the hell of it!! They are also useful in that you can burn up your camp rubbish to cook your next meal!

Volcano kettle

"My father had something called a 'volcano kettle' back when he was prospecting in the '50s which was an incredibly efficient way of boiling water (two good mugs of coffee from one sheet of newspaper). I found it a year or two ago and use it regularly when camping. It is a simple water jacket boiler. The whole thing is a cylinder about 40 cm high with a diameter of about 15cm and is made from aluminium (this one was spun into shape but I have successfully made one out of 6inch and 2inch aluminium irrigation tube). The unit works best with direct flame rather than coals (newspaper, twigs, leaves) and there is absolutely no comparison to gas -- it holds about 2 litres of water and I can have coffee within 23 minutes while people using gas rings have to wait about 20 minutes for the water to boil. The secret of operation is the large area directly exposed to the flame and the fact that the flame is still burning in the chimney (it looks really spectacular at night -- just like an actual volcano)."

-- From Ian Bennett, Zimbabwe

Here's a commercial version, the **Kelly Kettle**, with a "how it works" and a Shockwave animation -- "With the optional grate & pan, you can toast or cook a light meal! For boiling water it is the ultimate camping stove!"

http://www.y2k-millennium-supplies.co.uk/wood_burn/index.html



Backpack stove

Home Made -- Lightweight Backpack Stove

Here's how to make a camping stove for your backpack that weighs just about nothing and takes up hardly any space. These little stoves are great -- they're fun to make and it only takes a few minutes. Not just a toy -- they really work! They put out a hot ring of blue flame like a gas stove and hold enough fuel for about 15 minutes -- so if you're cooking something that takes longer than that, better make two so you can alternate them to keep up the heat.

All you need is a couple of aluminium soft-drink cans, some perlite, a wire coat-hanger and a bottle of denatured alcohol (spirits, usually dyed purple).



Invented by: Unknown.

Construction directions by: LaMar Kirby -- Utah Lake District, Orem Ut., US

What you'll need

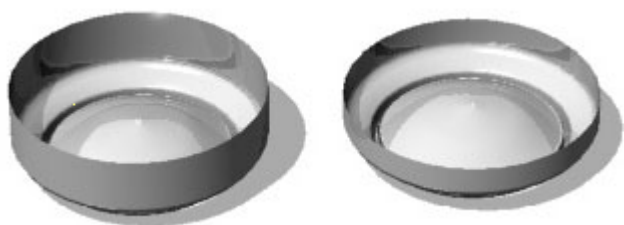
Parts List

- 2 Aluminum soda cans (soft-drink cans or beercans)
- 1/4 cup of perlite (found in the gardening department)
- Wire coat hanger
- De-natured alcohol (found in the paint dept. or boating supply)

Tools

- Scissors
- Drill
- 1/16" (2 mm) drill bit
- Wire cutters

Step 1



For the base, neatly cut one can about 1-1/2" (3.5cm) from the bottom.

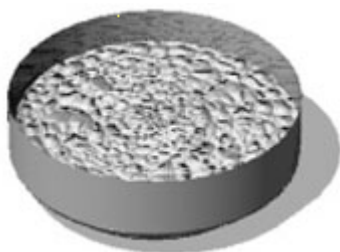
For the top, cut the other can about 1" (2.5cm) from the bottom.

Step 2



Drill a number of holes (18-30) around the edge of the top and in the center as shown; use a 1/16" drill bit.

Step 3



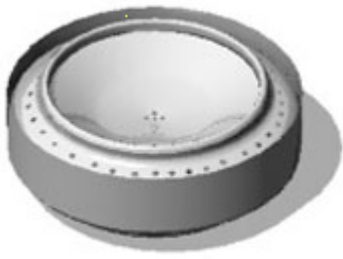
Fill the base with perlite, just more than half full.

Step 4



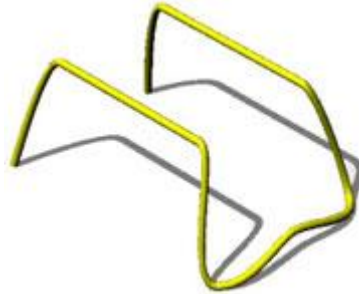
Make 6-8 vertical cuts around the top. Make the cuts up to but not over the rounded edge. Slowly press the top into the bottom. (A small board can help make it even.)

Step 5



Fill the stove about half full of alcohol. Light the burner by slowly moving a match or lighter over the edge of the burner. Note: If it does not stay lit, tip the burner up to leak some fuel into the rim and relight. Hold it until it stays lit or gets too hot.

Step 6



Cut and straighten a coat hanger. Use fine sandpaper to remove any paint or coating. Bend the coat hanger wire (or any large gauge wire) into a shape that will hold a pot a few inches above the burner (see the example). Note: with a little imagination you can create a number of stove bases.

That's it!

If you have any experiences that will improve this design please let me know.

Email: glkirby@usa.net

© Copyright G.LaMar Kirby, Utah 1996

Scott Henderson's **Pepsi Stove**

<http://wings.interfree.it/html/Pepsi.html>

The Home Made Stove Archives

<http://wings.interfree.it/index.html>

SuperShioshio lives in Yokohama in Japan, he's a mountaineer and he collects backpack camping stoves. "I seem to be attacked by stoves," he says -- he has more than 200 of them, stoves of every possible type, all on display at his website.

<http://www.asahi-net.or.jp/~we2a-sod/index.htm>

PicoTurbine

Pico (pee'ko) very small

Turbine (ter'bine) a motor driven by curved vanes

A great energy project! PicoTurbine is a miniature, 8" (20 cm) high, wind -driven power generator, producing electricity from a direct-drive, single-phase, brushless, permanent magnet alternator.

With adult supervision, PicoTurbine can be assembled by children as young as 10 years old, making it an excellent project for renewable energy education.

The entire project costs only a few dollars, and uses commonly available materials. Midori made one out of a pencil, a wire coat-hanger, a bit of wood, an old CD, some paper and cardboard, four magnets, some other bits and pieces, and these free plans and directions:

PicoTurbine Renewable Energy

<http://www.picoturbine.com/>

Or you can buy a special kit at the same site (also parts, bigger models, other projects).

"The PicoTurbine can produce 1/3 watt -- that's a lot of power when converted to education!"

says the designer, J. Stephen Pendergrast. More advanced versions the same size can produce a full watt, but are more challenging to build.



PicoTurbine (Home Power #71, June-July 1999)

The PicoTurbine site has general lessons on wind power and renewable energy. Teachers' guide, classroom experiments and activities.

The project includes lots of challenges for more advanced students, for instance DC experiments (kit available), and blade design: the blade offset can be increased or decreased, or the shape altered, the results tested and compared -- an excellent science fair project.



PicoTurbine in action (Home Power #71, June-July 1999)