

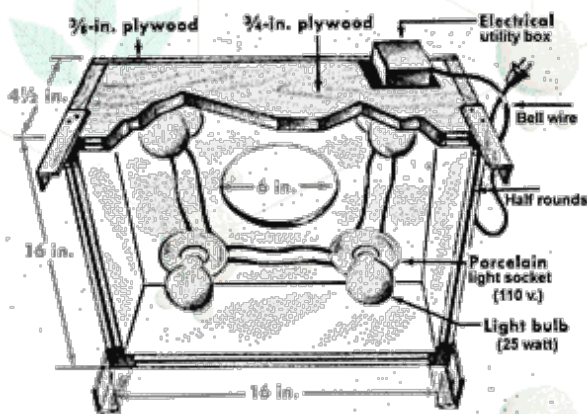
Bizarre Stuff

You Can Make in Your Kitchen

Home made hurricane

This is a classic from the 1950's editions of the World Book Encyclopedia. I have fond memories of seeing one of these as a kid. It is a good, silly science project, and fairly safe for the kids. You need:

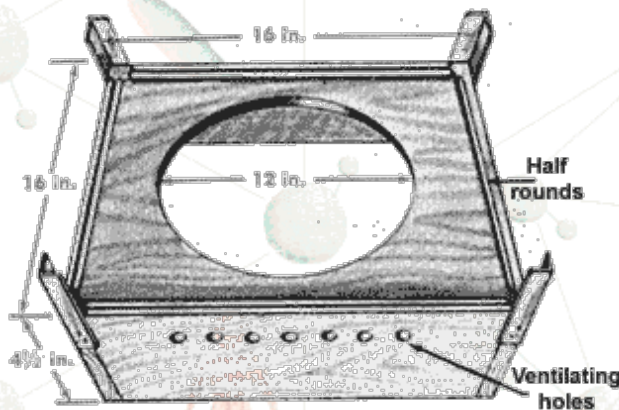
- o 4 pieces plywood 3/4" x 4 1/2" x 16" (19mm x 114mm x 406mm)
- o 4 pieces plywood 3/4" x 4 1/2" x 14 1/2" (19mm x 114 mm x 368mm)
- o 2 pieces plywood 3/8" x 16" x 16" (9.5mm x 406mm x 406mm)
- o 4 ceramic standard incandescent light bulb holders
- o wiring for above
- o 3 pieces glass 14" x 20" (355mm x 508mm)
- o 1 piece masonite 14" x 20"
- o quarter round, 21 feet (6.5m)
- o four 2-foot (610 mm) sections of 1" (25mm) angle iron
- o pie pan
- o stove or vent pipe
- o hot plate



Assemble a box from 2 pieces each of the 16" and 14 1/2" 3/4"plywood, using a 16" square for the top. This is the top of the unit, and will orient so the open end is at the bottom. The finished box should be 16" (406mm) square. Cut a 6" (150mm) hole in the top for the

stovepipe (adjust if the pipe you are using is a different diameter). Install and wire in 4 ceramic light bulb holders between the hole and the corners (inside the box). These will hold 25-watt bulbs. Glue thin (1/4" or 6mm) quarter rounds to the outside and inside edges of the open-end of the box. These will be guides for the glass and masonite.

Build a second box as before. It should also be 16" square. This one will be oriented so that the open end is the bottom. Add quarter rounds as before, but on the closed (top) side of the box. One edge will only have an inside half round



so that the masonite wall can be easily removed. Cut an app. 12" (30cm) hole in the top center. This hole needs to be the correct size to hold the pie pan, so use it to measure. Drill 7 1/2" (20cm) ventilating holes near the top of any two facing sides. You can fashion adjustable legs to the bottom (open) end if you wish.

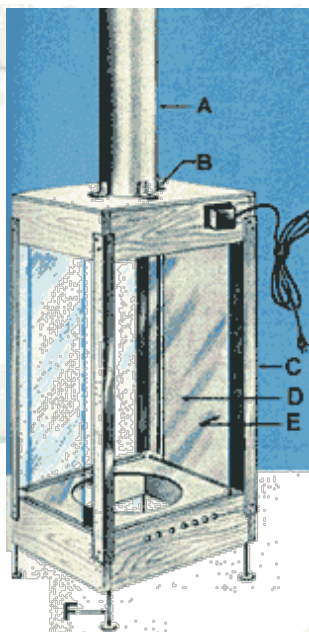
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The inside of the top box should be painted white; the rest of the assembly can be painted black. Attach the angle irons to the bottom of the unit. They should attach about halfway up each outside corner. Insert the glass and masonite pieces, and attach the top box. Attach the stovepipe to the top.

To run, take off the masonite, place a pie pan in the bottom, fill it with water, and replace the masonite. Slide the glass and masonite panels to the left (relative to each face). Put the hot plate under the pie plate and turn it on, turn on the lights, wait for the water to boil and voila! The hurricane!

Annotation for this picture:

- o A. Stovepipe
- o B. Angle brace
- o C. 1 inch angle iron
- o D. Double weight glass (14 in. X 20 in.)
- o E. Masonite (14 in. X 20 in.)
- o F. Adjustable legs



How does it work?

The air inside the box heats up due to the heat from hot plate and the lights. It should rise up through the stovepipe, carrying the steam with it. Cooler air from outside of the box enters through the slits in the side. Since there is one slit per corner, the air tends to flow in a spiral inside the box. This is what forms the "hurricane".

Troubleshooting

Most problems reported by folks constructing this have to do with ventilation. Make sure that all four sides are open along the same edge - that is, as you face each side, there should be an app. 1 inch vertical slit running along each opening. Also, make sure there is enough water in the pie plate so that it doesn't all boil away before the steam begins to spiral.

Sometimes there is a problem of not having enough "draw" through the stovepipe. Gary Kaye wrote to add: "I put a small fan at the top of the inside of the stove pipe. This solved the problem and now the effect looks like a real funnel cloud." Thanks, Gary!

There is also a slightly different design at [Science Hobbyist](#).

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