THE ALTOID FUSE LIGHTER

By George White

At our recent annual meeting, during which the best “show and tell” is awarded with some fresh money, Ken Achee showed an ingenious device he'd put together using ordinary items to make a fuse lighter that you can rely on to light your fuse.

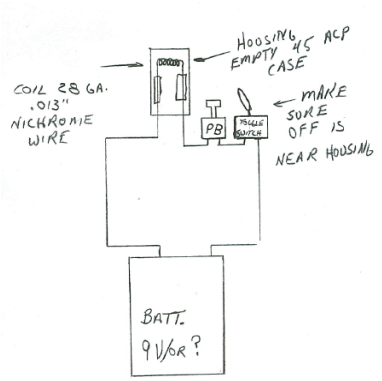
You can make one yourself. First, buy a tin of “curiously strong” Altoids (any flavor will do), eat them yourself or give them to someone near you whose breath needs cleaning.

Then go to your friendly Radio Shack store and purchase the following:
#275-0324 Toggle switch
#275-1547 Push “ON” switch
Two #64-3114 Sta-Con connectors (also at Home Depot or any electric supply house.)
A bit of #22 hook-up wire, some black, and some red
A 9 volt battery snap connector

You'll also need a a bit of 28 guage .013” Nichrome wire. That stuff is available at Sig at:
http://www.sigmfg.com/IndexText/SIGSH135.html

You'll also need an empty 45-calibre ACP shell case. Your friendly neighborhood gun-nut should surely be able to let you have one of those! You can also find them laying around at any gun range (if there are any gun ranges remaining after the current anti-gun madness).

Here's the wiring diagram:



The process:

1. Make the heater element by winding the nicrome wire 8 times around a 3/32” piece of music wire. Leave a tag at each end which will be clamped into the connectors, together with a couple of 2” pieces of the #22 hook up wire (one red, one black). Clip the ring terminal off the connectors before crimping. See Figure 4.
2. Carefully drill a 1/8” hole through the shell case primer. Then drill two 3/32” holes in the <u>base</u> of the shell casing at the outer edges.
3. In the center of one end of the box, drill matching holes for the central screw from the shell casing and the two peripheral holes.
4. Pass the two wires from the nicrome wire through the small holes in the shell casing and the box, then run a #4 screw through the center hole and tighten a nut to hold it in place. See Figure 5. You may need to cut away some of the insulation on the clamps to seat the heating element below the lip of the shell casing.
5. Drill holes for the two switches as seen in the photos.
6. Hook up the wires as shown in the diagram and photos.

Make sure the on/off switch is mounted so that the “off” direction is toward the shall casing. You don't want to accidentally turn the thing on when you aren't paying attention.

Rubber cement the 9-volt battery to the box and you're in business. If you're careful, you could also rubber cement a spare battery in the box so you know you'll always have it when the other doesn't treat you right!
Here's the finished product:

Fig 1

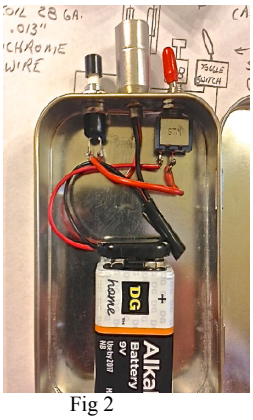


Fig 2

This is the view inside the lighting element housing:


Fig 3

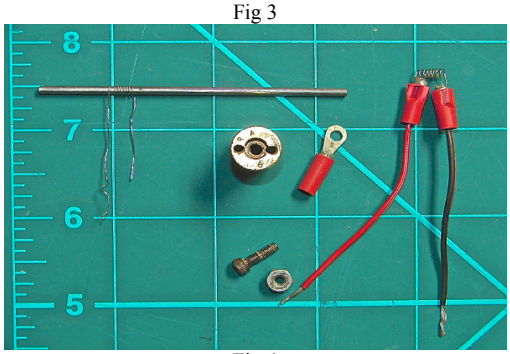


Fig 4

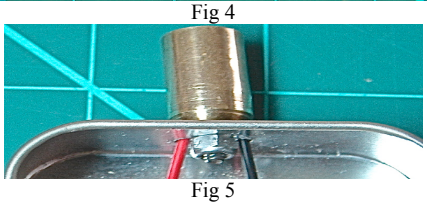


Fig 5