

RECYCLED 3-STRING BANJO



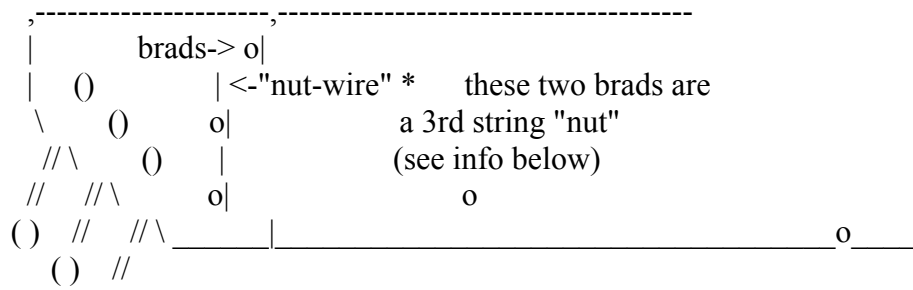
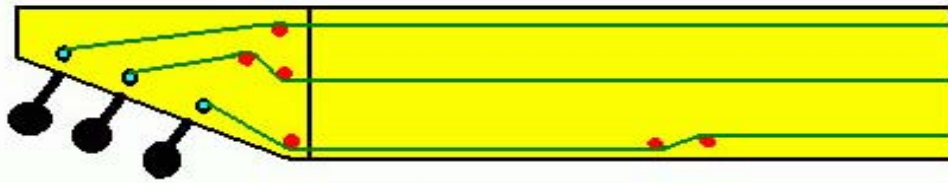
Materials used in construction include:

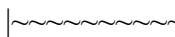
- A 7 1/4" diameter (or so) cookie-tin.
- A bit less than 7 1/4" diameter piece of 1/8" plywood. My favorite source of this material is from old discarded doors. Hobby shops sell or can order small pieces of this plywood for a few dollars.
- One strip of 3/4" thick, by 1 1/4" wide, by 26 1/2" long knot-free soft or hard wood. I find that pine works nicely.
- One half of a set of guitar machine tuning heads, which can cost as little as \$4. A half of a mandolin set with one gear sawn off works fine too.

- After much experimentation, I find the ideal strings to be .050 (yellow) (for the two outside strings) and .065 (blue) (for the middle string) "Shakespear" nylon mono-filament weed-whip line. Great stuff!

NECK ETC.

THIS ILLUSTRATES HOW THE SMALL BRADS (IN RED) SPACE & PUSH-DOWN THE STRINGS, ALSO HOW TWO BRADS ARE USED TO CREATE A 5TH STRING



cut off neck-end at an angle * this is made from a short length of fret-wire or simply use a  shaped piece of a paper-clip inserted into two mounting holes.

The three flat-headed brads nearest the tuning gears serve to determine the string spacing (there are no grooves in the "nut-wire") and to keep the strings pushed-down so that they pass solidly over the "nut-wire" without buzzing.

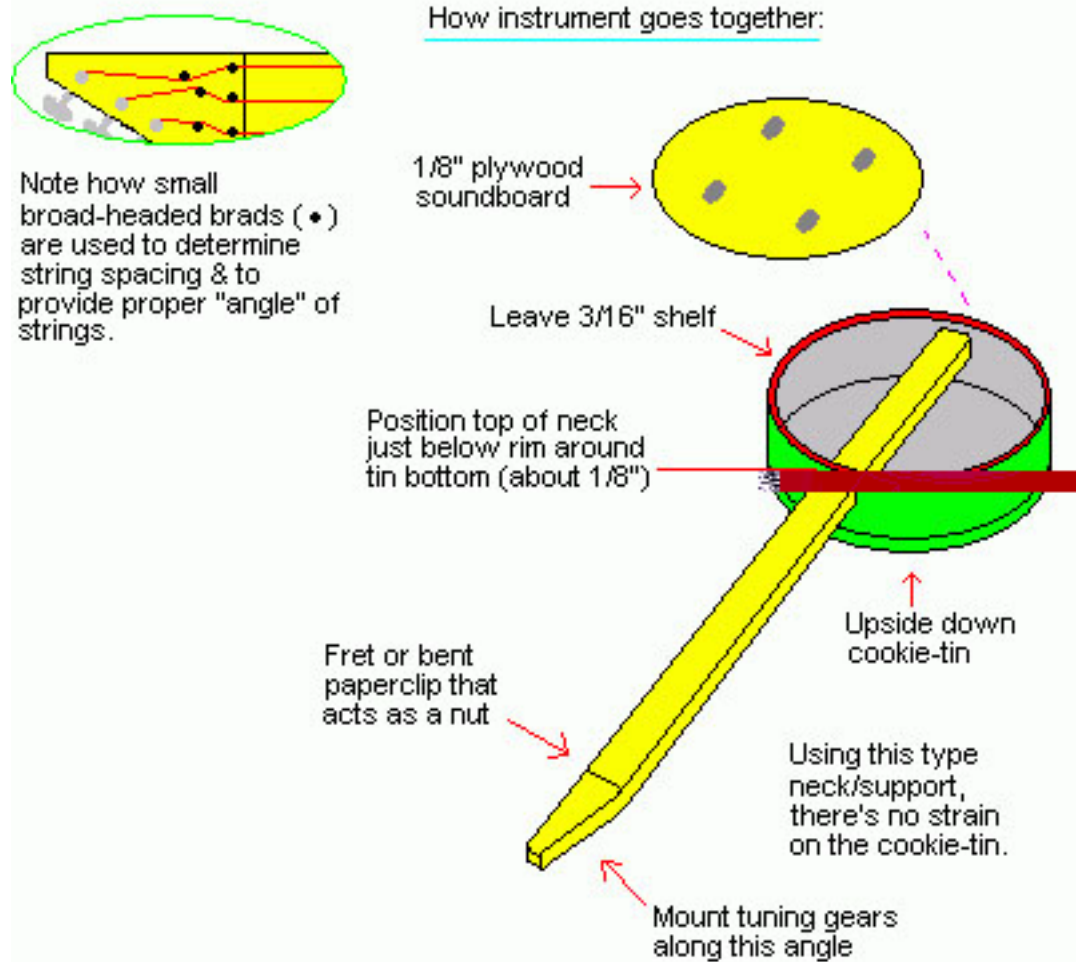
The two flat-headed brads up the neck serve as a "nut" for the higher-pitched "3rd string" (quite unlike how the 5th string on a conventional banjo is tuned). Position the right-hand brad where the 5th fret would be. In reality, the two brads don't bend the string as much as shown here, nor should the right-hand brad be as close to the neck-edge as shown here.

Sand/shave the backside of the neck to round it off some. I find that, given there are only 3 strings, the neck bottom need not be rounded much.

Whittle a bit off the right hand end of the neck so that it follows the contour of the cookie-tin diameter.

Other dimensions include: Place the "nut-wire" 4 1/8" from the left end of the neck; place the bridge so the edge closest to the tuning head is 2 5/8" from the right hand end of the instrument. The string length is approximately 19 3/4", nut to bridge. Being fretless, not much is critical in the overall construction of the instrument.

COOKIE-TIN HEAD



Dennis Havlena - W8MI
<http://www.ehhs.cmich.edu/~dhavlena/>

Although the tin-bottom will itself act as a fair resonator, a thin plywood sound-board greatly improves the tone and volume. Using a utility knife, cut a disk out of the bottom of the Cookie tin. Leave only about a 3/16" "shelf" remaining around the entire perimeter of the bottom. This is the ledge upon which the plywood sound-board rests.

Cut a 1/8" plywood disk and sand/fit it's edges until it nicely "plugs into" the "shelf" described above. Drill several 3/4" diameter sound-holes in the plywood (stay away from the center-line where the neck will run) and then glue the plywood disk into the shelf area.

Using the utility knife carefully cut a rectangular hole in the side of the cookie tin just big enough to pass the neck through. Locate this hole JUST inside the reinforcing rim that runs around the outside of the tin's bottom - so that only the thin metal need be cut.

Insert the neck through this rectangular cut until it hits the opposite side of the tin. Where the neck attaches here determines the string-height and fingering "action", so it deserves some careful attention. The best way to determine this is to "mock-up" a string (or carefully use a straight-edge) and fasten the neck-end to the cookie-tin so that there is just a bit over 3/8" clearance between the string and the fingerboard surface at the point where the neck disappears into the tin (at the high end of the fingerboard). Once this is determined, simply drill a pilot hole and insert a 1 1/2" long (or so) woodscrew through the tin and into the end of the neck. Leave about 1/4" to attach the strings to.

I keep the lid on for rigidity. This seems to project the sound out the sound-holes better as well.

A scrap of wood, notched deep enough to keep the strings from popping out, makes the bridge. Space these notches so that the strings run parallel down the length of the neck. Glue the bridge down lightly to keep it from wandering.

TUNING

My favorite tuning is G-D-d (small d being the 3rd or shortened string). The instrument can be tuned considerably higher, but I'm particularly fond of this pitch due to its mellow sound and ease of fingering and sliding (slides like butter!).

It takes a few days before the new weed-whip strings settle-in properly, but once they do, retuning is seldom needed.

TUNES THAT WORK NICELY ON THIS BANJO

- The Cuckoo (start with a nice slow slide on the G string)
- Don't Get Weary Children (a la Uncle Dave Macon)
- Mary's Wedding
- The Schoolhouse on the Hill (a la Carter Family)
- 8th of January
- Fly Around my Pretty Little Pink
- Waterbound

Having only two playing strings forces one to go up the neck a bit (generally no further than where the 7th fret would be). While awkward at first, within a week's diddling this becomes second nature.

Plans provided with permission from
Dennis Havlena - W8MI (formerly W8UR)
Mackinac Straits, northern Michigan
5/9/97

Other sources of interest

Hart, Avery & Paul Mantell, Kids Make Music: Clapping and Tapping from Bach to Rock!.
Williamson Publishing, Charlotte, VT. 1993.

Waring, Dennis, Cardboard Folk Instruments. Sterling Publishing Co., New York, 2002.

Summit, Ginger & Jim Widess, Making Gourd Musical Instruments. Sterling Publishing Co.,
New York, 1999.

<http://www.ehhs.cmich.edu/~dhavlena/#my>

a recycled instrument site

<http://www.geocities.com/painless47/waste/>