

**MAKING A UKULELE.****By J. E. Bangerter, Los Angeles, Cal.**

DURING the past two years the musical world has received a new instrument. The bringing of the Ukulele to the Pacific Coast States has created much interest. It is used in accompanying the voice in the native Hawaiian melodies or in other Popular Airs. It is an instrument that can be played with only a little instruction. The construction is so simple that many students in Manual Training Shops of Southern California have made their own instruments.

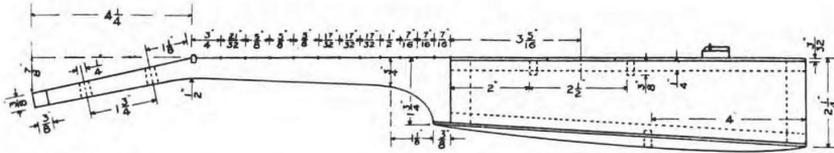
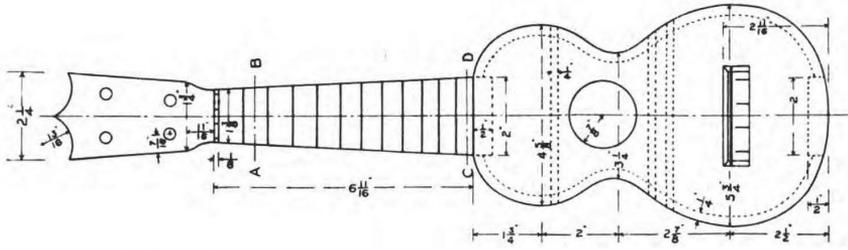
Being a teacher of Manual Arts I became interested in the making of the Ukulele and found that the instrument would be a good project for advance grade or high-school students to make, provided careful instructions

were given. The following is the method that I used in the Carroll Park School of Long Beach, California, and found it to be both satisfactory and practical.

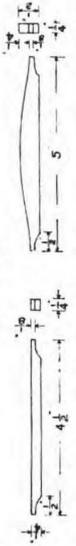
**Materials Required for the Ukulele.**

- 1 Pc. Tobasco Mahogany  $1\frac{3}{4} \times 2\frac{1}{2} \times 12$ " net S4S Neck.
- 1 Pc. Tobasco Mahogany Veneer  $\frac{1}{8}$  full x  $6\frac{1}{2} \times 20$ " net S2S Top and Bottom.
- 1 Pc. Tobasco Mahogany Veneer  $\frac{1}{8} \times 2\frac{1}{2} \times 27$ " Sides.
- 1 Pc. White Pine  $\frac{1}{4} \times 6 \times 20$ " S2S Support, Braces, etc.
- 1 Pc. White Pine  $\frac{1}{2} \times 2 \times 2\frac{1}{2}$ " S2S Sounding Post.
- 1 Pc. White Pine  $\frac{5}{8} \times 10 \times 14$ " S4S Clamping Board.
- 1 Pc. White Pine  $2\frac{1}{4} \times 10 \times 14$ " S4S Form.
- 1 Dozen Frets.
- 1 Violin A String.
- 1 Violin E String.

Designed, Drawn and Traced  
By John E. Bangerton.



SUPPORTS

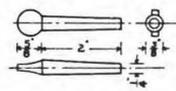
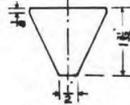
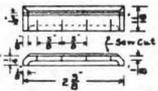


BRIDGE

CROSS SECTION AT AB

CROSS SECTION AT CD

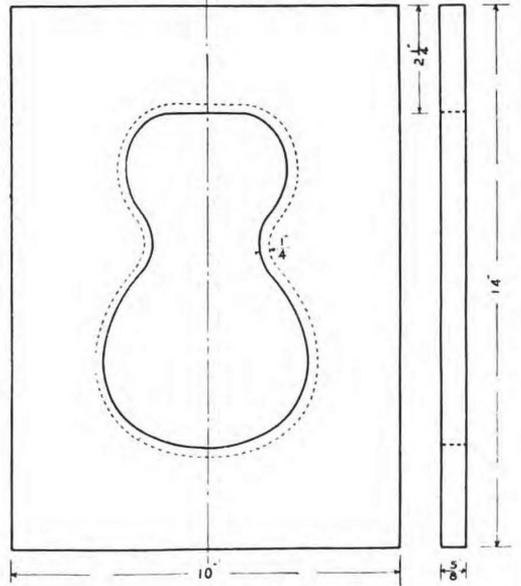
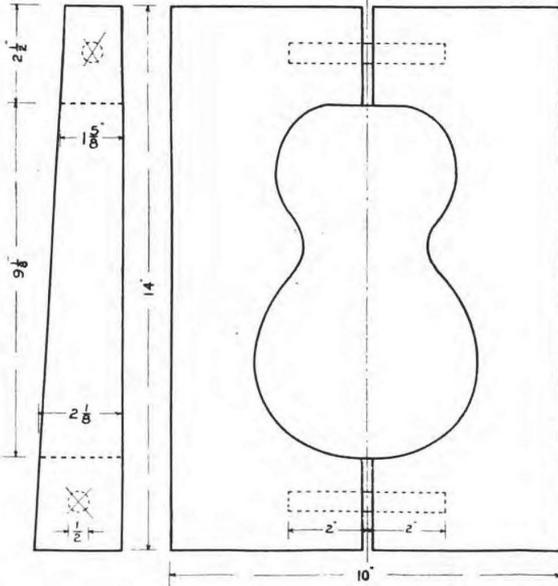
KEY



SCALE: 6"=1'-0"

FORM FOR SIDE

BOARD FOR GLUING ON BACK



SCALE: 6"=1'-0"

John E. Bangerton

**Directions.**

The first part to make is the form for the bending of the sides of the Ukulele. The form will require a piece of wood  $2\frac{1}{4}$  by 10 by 14 inches in size as stated in lumber bill. Lay out the outline of the Ukulele body as shown on drawing. Make the slant required before the form is sawed out. In sawing, be sure to use a saw that has enough kurf that will be equal to the thickness of the veneer. After this form is made we are ready for the bending of the sides. Take a piece of string or paper and measure the distance around the outside of the inside of the form, to find out the exact length of the strips of veneer that are required for the sides. Cut them to the dimensions found and boil in water or steam for one hour, when they will be ready to put in the form. Be careful not to let any blisters form when clamping. Use two bar clamps to hold form together and do not remove clamps for 24 hours. The surplus wood may then be removed and the clamps taken off being careful to mark the edge that is to join the top of the Ukulele, so there will be no mistake when the neck and the sides are glued together.

While the sides are drying, the neck, sounding post, supports, braces, keys and bridge may be made according to the drawing.

the  $\frac{5}{8}$  inch board and trace the outline of the body of the Ukulele as shown in drawing. Make another line  $\frac{1}{4}$  inch inside of this outline which will be the required line to saw on. This leaves the outside piece whole. This follow board will allow the back to rise and help to make a good joint at the same time. Before gluing on back, moisten it with hot water to make it bend easier, and then clamp on tight. Dry out back by holding over a fire and then remove clamps. It may now be glued and clamped again and allowed to dry for 48 hours. Wedges may be driven between follow board and back to help make a better joint.

The frets and bridge may then be glued on after the top and back have been trimmed even with the sides, and the Ukulele sandpapered all over until all the mill and tool marks have been removed.

**Finishing the Ukulele.**

After it has been sandpapered give the instrument a heavy coat of boiled linseed oil, and then put on a coat of paste wood filler. Rub this filler in good with the hands; and then remove the surplus with a rag and allow to dry over night. Several coats of shellac or varnish may then be put on, rubbing down between coats with pumice stone and finishing with rotten stone. If a flat

The sides are fastened to the neck by making a saw cut just large enough to let the veneer slip into and then glued. Also glue in the sounding post and leave the glue set over night. In order to get the sounding post in the center, measure half the distance around the side by the use of a string or a strip of paper. The supports which are made out of the  $\frac{1}{4}$ " piece of white pine may now be glued in around the sides; their shape being traced from the inside of the form used in forming the sides. After the glue that holds the supports to the sides has set, the braces may be mortised in to the supports by making a half lap joint and gluing.

To make the top: Trace from the form the shape of the top and back on the piece of mahogany 6 by 20 inches and allow about  $\frac{3}{8}$  inches all around the outline drawn, as it will be easier to make the exact size after it has been glued on. Cut out the hole and then glue to sides. When gluing on the top, be sure to keep the center of the neck and the body of the Ukulele in a straight line and lying in the same plane. To do this clamp the instrument to a long, flat board. Leave the instrument set over night and then remove clamps.

We may now proceed with gluing on the back. In order to get the desired curve in the back a device for clamping will have to be made which is as follows: Take

finish is desired use water with pumice stone, or oil, if a polish is cared for.

*Note*—The word ukulele is pronounced u-ku-lay'-lee.