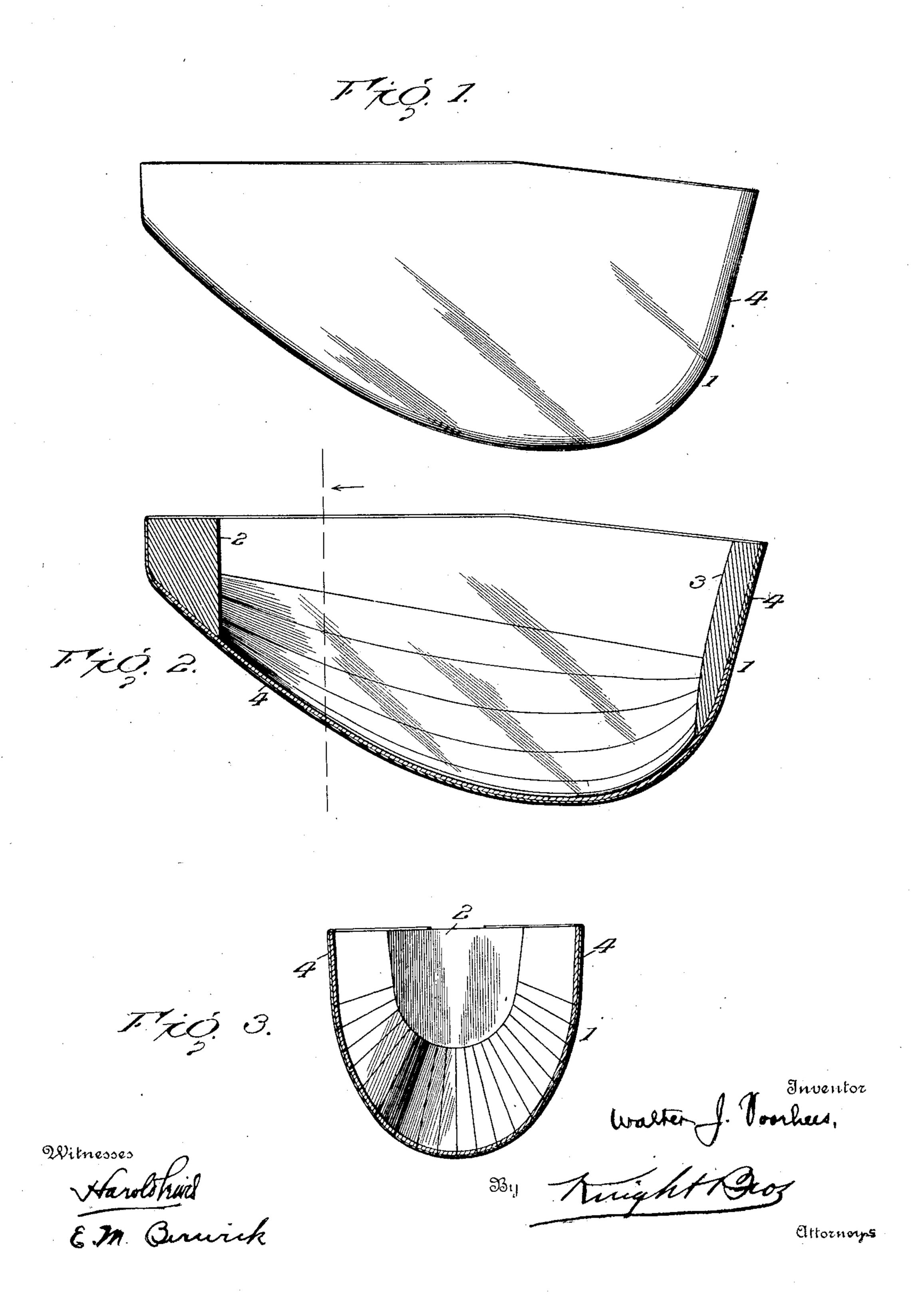
## W. J. VOORHEES.

MUSICAL INSTRUMENT AND PROCESS OF COVERING SAME.

APPLICATION FILED SEPT. 8, 1903.

NO MODEL.



## United States Patent Office.

WALTER J. VOORHEES, OF SAGINAW, MICHIGAN.

## MUSICAL INSTRUMENT AND PROCESS OF COVERING SAME.

SPECIFICATION forming part of Letters Patent No. 755,086, dated March 22, 1904.

Application filed September 8, 1903. Serial No. 172,401. (No model.)

To all whom it may concern:

Be it known that I, Walter J. Voorhees, a citizen of the United States, and a resident of Saginaw, in the county of Saginaw, State 5 of Michigan, have invented certain new and useful Improvements in Musical Instruments and Processes of Covering Same, of which the following is a specification.

In the drawings, Figure 1 is a side eleva-10 tion of the body of a stringed instrument, and Fig. 2 is a vertical longitudinal section thereof. Fig. 3 is a section on the line 3 3, Fig. 2.

For the purpose of illustration I have shown my invention embodied in a mandolin; but of 15 course it will be understood that it can be employed with equal advantage in any instrument built upon the same principle.

In the drawings, 1 represents a body of a mandolin constructed, as is usual, of a series 20 of narrow strips of wood secured together and fastened to the blocks 2 and 3 in the usual

manner. 4 is a covering of rawhide or similar material which forms the exterior face of the body. 25 The rawhide used in carrying out my invention is similar to that used for drum-heads. The skin or rawhide is first soaked in water until it becomes soft, after which it is stretched over the wooden shell or body of the mandolin 30 and drawn tightly around the same and then cemented to the shell or body. It will be noticed that the edges of the skin or rawhide are drawn tightly over the top edge of the shell or mandolin-body. The skin or rawhide is 35 permitted to dry, and in drying, as is well known, the skin will shrink very materially, thus closing tightly the joints between the numerous pieces of wood forming the shell, thereby putting the wood under more or less 40 tension, thus increasing the vibratory powers of the wood, and consequently augmenting the tone of the instrument very materially and improving its resonant qualities. In addition to increasing the quality of the instrument this 45 facing or covering of rawhide materially strengthens the shell or body of the mandolin and protects it against indentations and breakage and more or less obviates the usual warping in such instruments.

Having thus described the invention, the following is what I claim as new therein:

1. In a stringed musical instrument, the combination with the shell, of a covering fixedly secured throughout its area in contact with the exterior of the shell.

2. In a stringed musical instrument, the combination with the shell, of a covering adhesively secured throughout its area in contact with the exterior of the shell.

3. In a stringed musical instrument, the com- 60 bination with the shell, of a skin fixedly secured throughout its area in contact with the shell.

4. In a stringed musical instrument, the combination with the shell, of a skin fixedly se- 65 cured throughout its area in contact with the exterior of the shell.

5. The combination with a shell for stringed instruments of a skin covering secured in contact with the entire bottom and side walls of 7° the shell.

6. In a stringed musical instrument, the combination with the shell, of a covering adhesively secured throughout its area to the exterior of the shell.

7. In a stringed musical instrument, the combination with the shell, of a skin adhesively secured throughout its area to the exterior of the shell.

8. The combination with the shell of a 80 stringed instrument, of a covering fixedly secured thereto throughout its area to the shell under tension.

9. The process of forming a shell for stringed instruments, stretching askin around the shell 85 in a moist condition, and drying the skin on the shell.

10. The process of forming a shell for stringed instruments, stretching and cementing a skin to the shell in a moist condition, and 90 drying the skin.

11. The process of forming a shell for stringed instruments of a number of pieces, stretching and cementing to the shell thus formed a skin in a moist condition, and drying 95 the skin on the shell.

The foregoing specification signed this 13th day of July, 1903.

WALTER J. VOORHEES.

In presence of— MILES MUNGER, RILEY L. CRANE.