

J. BOHMANN,
 MUSICAL STRING INSTRUMENT,
 APPLICATION FILED OCT. 28, 1911.

1,128,217.

Patented Feb. 9, 1915.

Fig. 1

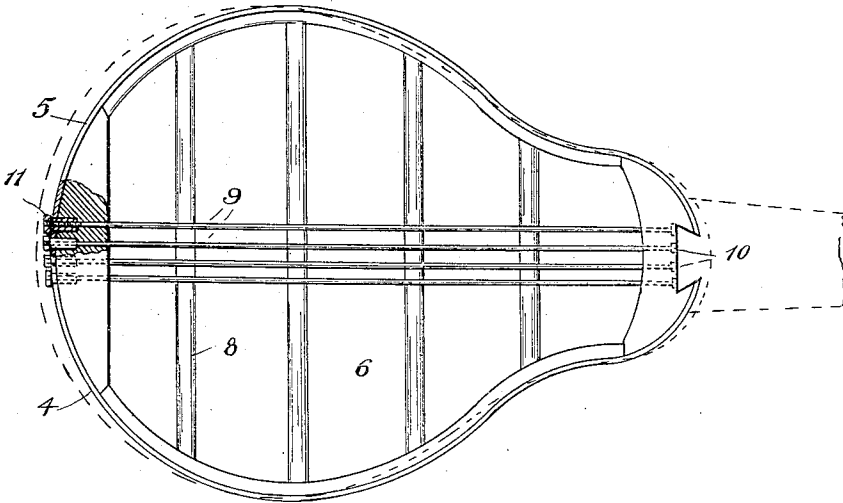


Fig. 2

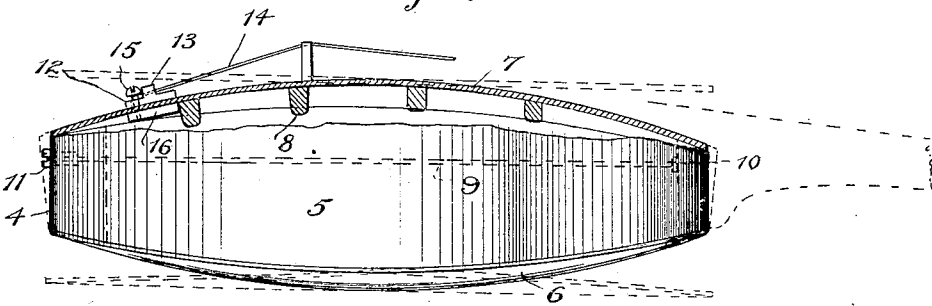
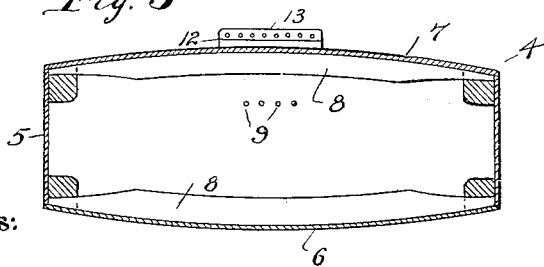


Fig. 3



Witnesses:

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Inventor,

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UNITED STATES PATENT OFFICE.

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MUSICAL STRING INSTRUMENT.

1,128,217.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH BOHMANN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Musical String Instruments, of which the following is a specification.

This invention relates more particularly to stringed instruments such as mandolins, guitars, or the like.

Among the objects of my invention are to improve the general construction of the body of the instrument, to provide the body with one or more tension rods, to provide a novel form of string holder, to improve the tone of the instrument and to provide such other novel features and improvements as will appear hereinafter.

In the accompanying drawings illustrating my invention I have shown the body of a mandolin as indicating the general type of instrument to which my invention is adapted.

In these drawings;—Figure 1 is a plan view of a mandolin body, the top plate or sounding board being omitted to show the interior construction; Fig. 2 is a side view with parts broken away; Fig. 3 is a cross sectional view.

As indicated in these drawings, instead of the common almond-shaped sounding body of a mandolin, the body 4, is made with a peripheral wall 5, of any desired shape, preferably substantially as shown in Fig. 1, and with a sounding back 6, and top 7. The upper and lower edges of the side wall 5, are curved longitudinally so as to give a longitudinal curvature or swell to the sounding boards 6 and 7. These boards are also preferably bent or curved laterally, as clearly indicated in Fig. 3, and are provided with transverse ribs 8, which assist in holding them in such curved position. These ribs are secured in place before the back 6 and top 7 are applied to the sides. The back and top are not shaped before being applied to the sides, and therefore these ribs assist in holding up the centers thereof while such members are being applied or secured to the sides. In other words, these ribs provide supports over which the back and top may be bent to give them their final shape.

I provide the body with one or more tension-rods 9, placed between the sounding

boards and preferably made sufficiently strong or heavy so that they will not be apt to stretch, but will retain their vibrating or tone quality. In practice I have found that the diameter of these rods should vary in proportion to the length in order that the metal thereof may give its proper natural tone. For instance in a mandolin, I prefer to use rods of about $\frac{1}{16}$ of an inch in diameter; for guitars, I prefer to use rods of about $\frac{1}{8}$ of an inch in diameter; and for a harp, in which the members are very long, I prefer to use rods of about $\frac{3}{16}$ of an inch in diameter. These rods may be placed in any desired position within the body, but are preferably arranged longitudinally thereof and somewhat nearer the front than the back, as clearly shown in Figs. 1 and 2. These rods are provided with heads or fastening means 10, at one end thereof to engage with the thickened side wall, which receives the neck of the instrument and are provided at the opposite end with threaded nuts 11, by means of which they may be drawn as tight as desired.

In constructing the body, I prefer to form the sides or walls and then apply the back 6, thereto. The side walls are made sufficiently strong to withstand the tension of the rods 9, and for this purpose I prefer to make them considerably thicker than in the ordinary form of instrument. In the present instance I prefer to make them about $\frac{1}{4}$ of an inch thick, whereas in the old style of instrument they are only about $\frac{1}{16}$ of an inch thick. As above suggested the back is not shaped or formed to conform with the longitudinal curvature before being applied, but is straight longitudinally. Therefore when the back is bent to fit it to the side walls it will be curved longitudinally to conform with the longitudinal curvature of said wall. This binding of the back will tend to deform the sides of the body by bending the upper edges of the opposite ends outwardly, and drawing the upper edges of the sides toward each other as indicated by the dotted lines in Figs. 1 and 2. The rods 9 are then inserted in position and the nipples screwed up until the side walls are brought to normal position and finally the top 7 is applied, the top also being straight longitudinally before being applied, thus completing the body.

On account of this form of construction the body is placed in an extremely sensitive condition

on account of the strains placed thereon, and the rods 9 assist in improving the tone of the instrument and giving it a lasting quality. These rods may be made of steel, iron, brass, copper, silver or other suitable material, or the various rods in the instrument may be made of different materials. I have found that it is preferable to select different metals for the different rods, in order to secure the best results. For instance, copper is used for the rod giving the tone of G; brass for the rod giving the tone of D; steel for the rod giving the tone of C; and German silver for the rod giving the tone of F. These rods are tightened sufficiently so that they will be caused to vibrate by the vibrations being transmitted principally from the body of the instrument to the ends thereof. On account of the different metals used, the desired tones or pitch may be secured with but slight variation in the tension on the rods. It will be noted that with this construction the body is arched in every direction and may be made very strong and substantial and the string holder 12 may be placed directly on the top of the instrument. This improved form of string-holder is provided with an upward extension 13, having holes therethrough for the wires 14, the ends of these wires being secured to screws 15, which pass through the holder and engage with a reinforcing piece 16, on the inner surface of the top 7.

It will be readily seen that the principles embodied in the construction of my improved form of mandolin may be readily applied to other instruments and may be varied without departing from the spirit of my invention. Therefore, I do not wish to limit myself to the construction herein set forth, except as specified in the appended claims in which,

I claim:

1. The combination with a musical in-

strument having a hollow body, of one or more tension rods arranged within the body, means at one end of each of said rods for securing it to the side wall, and means at the opposite end of each rod for engagement with another portion of the side wall, said latter means also serving for tightening the rods.

2. The combination with a musical instrument having a hollow body, of four rods arranged within the body, said rods being formed respectively of copper, brass, steel and German silver, means for securing the ends of said rods to one portion of the wall of the instrument, and means at the opposite ends of said rods for engagement with the opposite portion of the wall of the instrument, said latter means serving to tighten said rods, the arrangement being such that the rods will vibrate when the instrument is being played upon.

3. The combination with the hollow body of a musical instrument, of a plurality of rods of different metals extending through said body, and having their ends engaging with the side walls thereof, and means for tightening said rods, the arrangement being such that the rods will vibrate when the instrument is played upon.

4. The combination with the hollow body of a musical instrument, of a plurality of rods extending longitudinally of the body and having their ends engaging with the side walls, and means for tightening said rods to draw the portions of the side walls, where the ends are fastened, toward each other to hold the body in shape for receiving the top, the arrangement being such that the rods will vibrate in accordance with the vibrations of the body.

JOSEPH BOHMANN.

Witnesses:

ROBERT LINN,
IRENE FORREST.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."