No. 660,953. Patented Oct. 30, 1900.

# F. B. HAMMANN.

## BANJO BRIDGE.

(Application filed Sept. 3, 1897. Renewed Apr. 28, 1900.)

(No Model.)

FIG. 1.

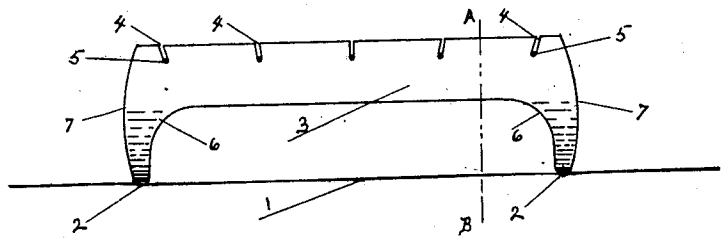



FIG. 2.

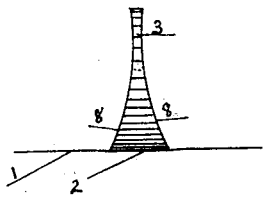



FIG. 3.

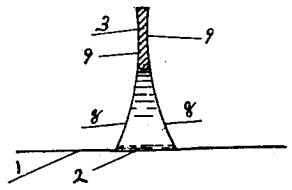
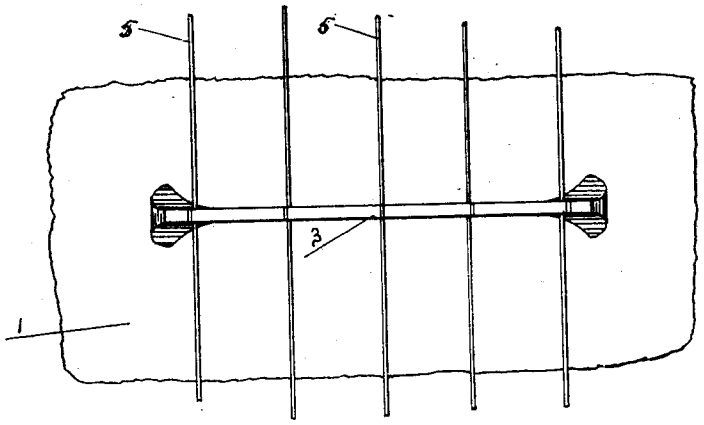



FIG. 4.




Witnesses
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# UNITED STATES PATENT OFFICE.

FREDERICK BURT HAMMANN, OF BALTIMORE, MARYLAND.

## BANJO-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 660,953, dated October 30, 1900.

Application filed September 3, 1897. Renewed April 28, 1900. Serial No. 14,761. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK BURT HAMMANN, a citizen of the United States, residing at Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Banjo-Bridges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in bridges to be used on the banjo, banjorine, mandolin, guitar, mandolin-banjo, and other similar musical instruments, and has for its objects the following: to obviate or prevent the falling of the bridge, the preventing of lateral motion, sliding, or shifting of the bridge, the lightening of the bridge, at the same time strengthening it, and improving the tone of the banjo caused by the decreased muffling-surface on the head. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of my invention. Fig. 2 shows an end elevation of the same; Fig. 3, a sectional view of the bridge at right angles to that shown in Fig. 1 and taken through line A B of Fig. 1. Fig. 4 is a plan view of my bridge, showing short length of strings and small area of the head.

Similar numerals refer to similar parts throughout the several views.

1 represents the head of the banjo, which in Figs. 1 and 2 is shown in section under the bridge; 2, the foot of the bridge, consisting of a curved or partially-sharp edge of sufficient length running parallel with the strings 5 of the instrument.

3 is the bridge or body, upon which the strings 5 are let into through-slots 4, which bind the strings tightly.

6 represents fillets connecting feet 2 and bridge or body 3.

7 represents exterior curved fillings to avoid a flat surface on end of bridge and to add strength to the structure.

8 represents fillets connecting ends of feet of bridge 2 to bridge or body 3.

9 represents concave surfaces of the bridge or body 3. By means of this concave section of said bridge or body I retain substantially the same strength and reduce the amount of material, thereby allowing freer vibration and improved tone. The addition of fillets 6, 7, and 8 insures great strength and durability, especially at those points of the bridge which might be called the junction of the feet with the top, suspended portion, or body. These points in the ordinary banjo-bridge are the weakest portions. In my improvement they become the strongest. The tone of the instrument is much improved because of the fact that I have avoided in a measure sharp turns, which are not conducive to good tone, and because of the fact that by the curved or sharpened shape of the feet the bridge rests upon lines or elements rather than surfaces, thereby reducing the amount of face contact with the head or sounding-board to a minimum, thus interfering to the least possible degree with the vibrations of the said head or sounding-board. On such portions of the feet as are likely to come in contact with the head I smear with a resinous varnish. This holds the bridge and head in adhesive contact, which improves the tone and assists in preventing the bridge from sliding.

My object in designing this bridge is to have as little wood as possible in the bridge consistent with strength and as small surface as possible in contact with the head and strings as is consistent with durability and stability.

I am aware that prior to my invention banjo-bridges have been made with feet of surfaces flat and square and flat and round, and that resinous adhesives have been put into cavities in the feet of bridges, and that bridges have had internal fillets, such as I have shown at 6. I therefore do not claim these features broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a musical instrument a flexible head, strings stretched across said head, a bridge between said strings and said head consisting of a body running under and at right angles to said strings, feet attached to said body and resting upon said flexible head upon the elements of a curved surface running parallel to said strings, substantially as described.

2. In a musical instrument the combination of a vibratory head, strings stretched over said head, with a bridge between said strings and said head consisting of a body running

under and at right angles to said strings, having feet attached to said body and resting upon said vibratory head upon the elements of a curved surface said curved surface being formed by a straight generatrix parallel with the said strings governed by a curved directrix, substantially as described.

3. In a musical instrument the combination of a vibratory head, strings stretched over said head with a bridge between said strings and said head consisting of a body of concave sides and parallel edges running under and at right angles to the said strings, having feet attached to said body and resting upon said vibratory head upon the elements of a curved surface said curved surface being formed by a straight generatrix parallel with said strings governed by a curved directrix and curved fillets in the plane of said body joining said feet to the said body, substantially as described.

4. A banjo-bridge consisting of a body, feet attached to said body said feet having convexly-curved surfaces coated with an adhesive where the same comes in contact with the banjo-head and designed to rest along an element of the said surface parallel with the strings upon the flexible head of the banjo, substantially as described.

5. A banjo-bridge consisting of a body, feet attached to said body said feet having convexly-curved surfaces where the same comes in contact with the banjo-head and designed to rest along an element of the said surface parallel with the strings upon the flexible head of the banjo, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK BURT HAMMANN.

Witnesses:

CLARK T. COLLINS,

C. W. WISNER.