June 19, 1923. 1,459,057

J. G. JONES

BRIDGE FOR STRINGED MUSICAL INSTRUMENTS

Filed Dec. 21, 1921

Fig. 2.

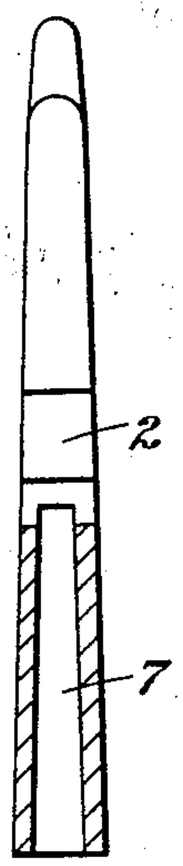


Fig. 1.

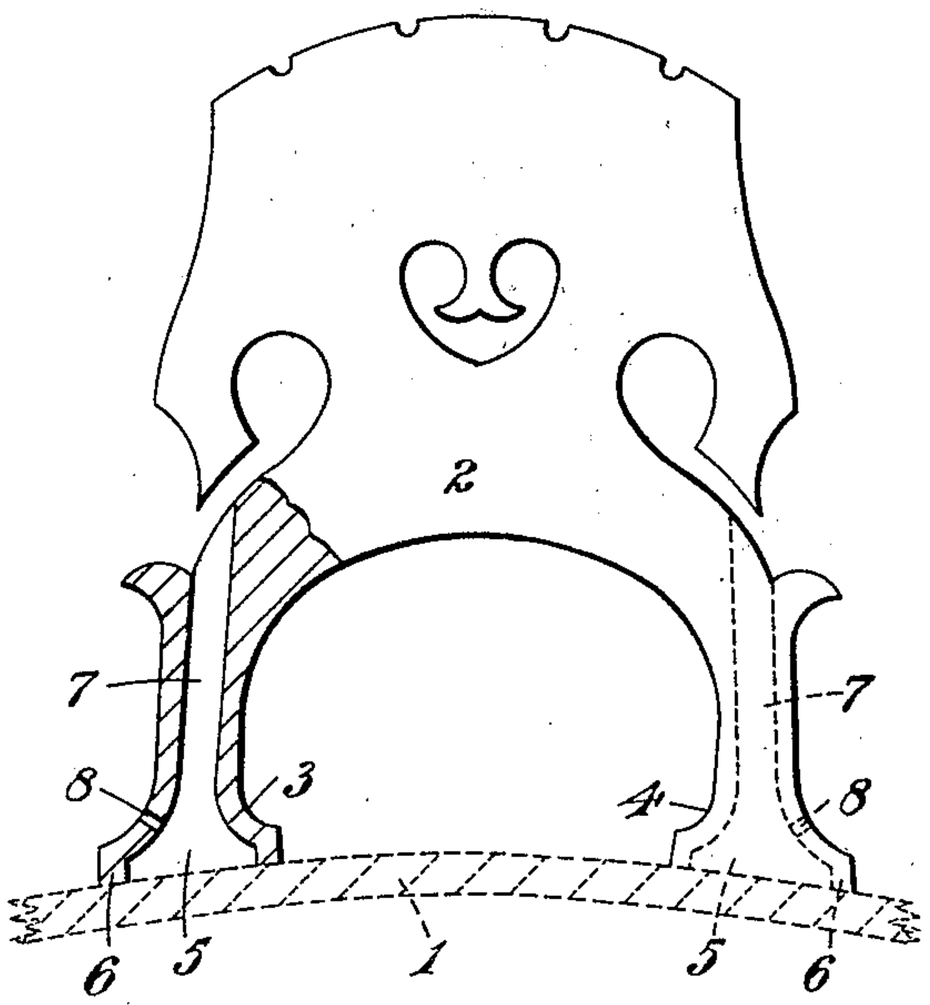


Fig. 3.

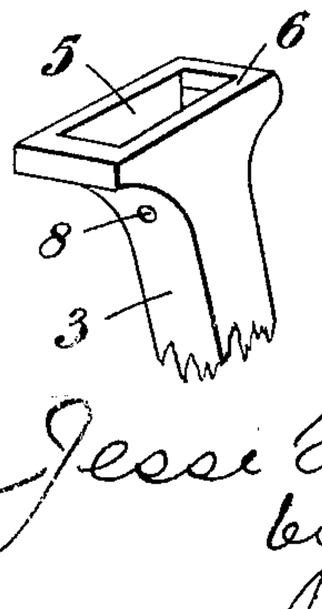
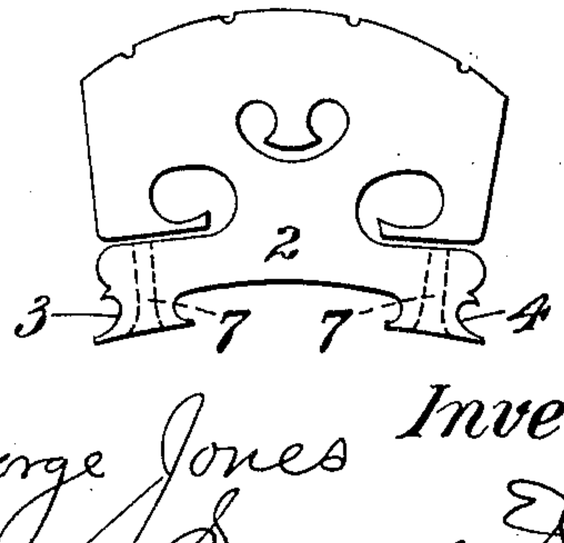


Fig. 4.



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UNITED STATES PATENT OFFICE.

JESSE GEORGE JONES, OF EAST HAM, ENGLAND.

BRIDGE FOR STRINGED MUSICAL INSTRUMENTS.

Application filed December 21, 1921. Serial No. 523,863.

To all whom it may concern:

Be it known that I, JESSE GEORGE JONES, a British subject, residing at 5 Byron Avenue, East Ham, Essex, England, have invented a new and useful Bridge for Stringed Musical Instruments, of which the following is a specification.

This invention relates to improvements in bridges for stringed musical instruments and more particularly to modifications in the construction of that type of violin and like instrument bridge ordinarily used which consists of a solid body portion supported by two solid legs integral therewith and shaped in the manner well known in the art.

Hitherto attempts have been made to improve the tone and quality of stringed musical instruments by the formation of hollow closed spaces within both the body portion of the bridge and its supports. These attempts have not been altogether successful in so far that it has not been realized that hollow spaces in the body of the bridge prematurely restrict the passage of sound vibrations and do not permit them to develop to their fullest extent in that part of the bridge.

Another type of bridge has heretofore been proposed having a solid bar supported by hollow feet but in this case the problem set out to be solved was purely mechanical and the bridge was formed essentially in three separate pieces for the purpose of providing adjustment of the height of the bridge bar. This type of bridge is defective in regard to the proper transmission of sound waves on account of the fact that the medium of transmission is not homogeneous at the joints of these three pieces.

My invention is not concerned with the structure of the bridge from a mechanical point of view except in so far as providing that the structure shall be strong enough to support the strings of the instrument. It deals primarily with the problem of improving the transmission of wave vibrations from the strings to the sound board of the instrument.

According to experiments based on theoretical considerations with regard to the transmission of wave stresses, I have found that by forming the instrument bridge of a single homogeneous piece, preferably shaped in the generally accepted form such as illustrated in the accompanying drawings in respect of violin and violin-cello bridges, and by providing the supporting legs with an axial bore from the base upwards to a point communicating with atmosphere, that the quality and volume of sound given out from the instrument shows a marked improvement over that to be obtained from any bridge heretofore proposed.

My invention is thus distinguished from the prior art and may be stated to consist of a bridge for stringed musical instruments formed of a single piece and comprising a substantially solid string-carrying body portion with supporting legs therefor, said supporting legs being bored out axially from the base into communication with atmosphere without interference with the said body portion.

According to my invention the body portion of the bridge is kept solid whilst the supporting legs and feet only are hollowed out so that the vibrations having fully developed in the body of the bridge are restricted to a narrow passage in the legs, thereby becoming intensified just before transmission to the breast or sound board of the instrument. By these means a greater volume of sound is produced than has hitherto been obtainable and moreover the quality of tone is much improved on account of the slight displacements of the phase relationship of the intensified vibrations due to the presence of air spaces in the legs.

My invention may be stated to consist therefore in a bridge of the ordinary type referred to, characterized only in that each supporting leg is provided with an axial bore.

A further feature of this invention, which serves to give a richer tone, consists in the provision of lateral openings in the legs communicating between the hollow interior thereof and atmosphere. In the accompanying drawings, in which like reference numerals designate like parts.

Figure 1 is an elevation partly in section of a bridge in position of the breast of an instrument such as a violincello or double-bass.

Figure 2 is a vertical section, partly in elevation, through a supporting leg of the bridge.

Figure 3 is a view in perspective of one foot or support, and

Figure 4 is a front elevation of a bridge suitable for a violin or viola.

Referring to the drawings the breast 1 supports the bridge which comprises a body portion 2 supported by feet 3 and 4 and otherwise shaped in the manner well known in the art. A cavity 5 is formed in the sole of each foot leaving for example a rectangular supporting surface 6 in contact with the breast 1. Each cavity 5 communicates with the atmosphere by means of a vertical or axial bore 7, as shewn. Such an arrangement serves to notably increase the volume of sound when fitted to a stringed instrument.

In addition to the axial or vertical bore 7 one or more lateral or radial bores 8 may be provided establishing communication between the hollow interior of each foot or support and atmosphere. These lateral or radial bores modify the volume of sound and also the tone of the instrument.

Variations in the volume of sound and the tone are attained by modifying the dimensions of the cavities and bores in the feet or supports as well as their number and disposition. For instance, the bores 8 may be located at any suitable point between the top and the bottom of each support and their number and dimensions varied as required.

I claim:—

1. A bridge for violins and like stringed musical instruments formed of a single piece and comprising a string-carrying body portion with supporting legs therefor, said supporting legs having substantially vertical openings therethrough extending from the base into communication with atmosphere without interference with the said body portion.

2. A bridge for violins and like stringed musical instruments as set forth in claim 1 characterized by the provision of lateral openings in the supporting legs communicating between the hollow interior thereof and atmosphere.

JESSE GEORGE JONES.