

No. 698,955.

Patented Apr. 29, 1902.

E. E. JACKSON.  
BRIDGE FOR MUSICAL INSTRUMENTS.

(Application filed Nov. 23, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig: 1.

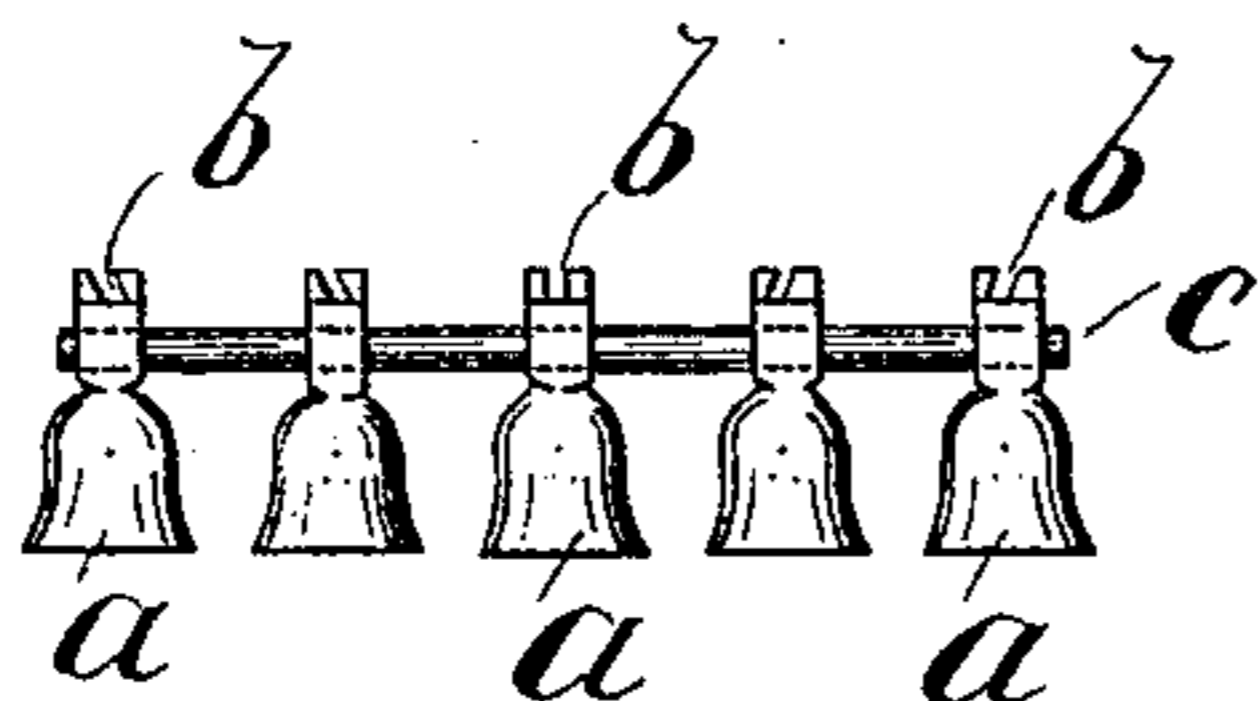


Fig: 2.

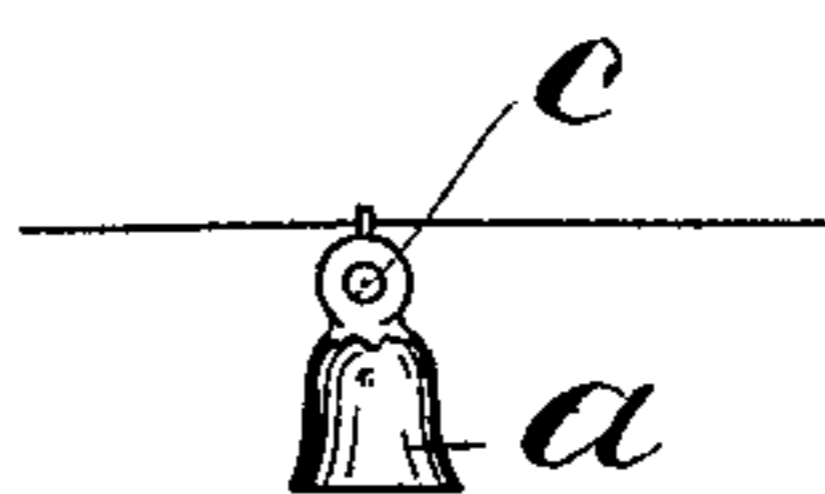


Fig: 3.

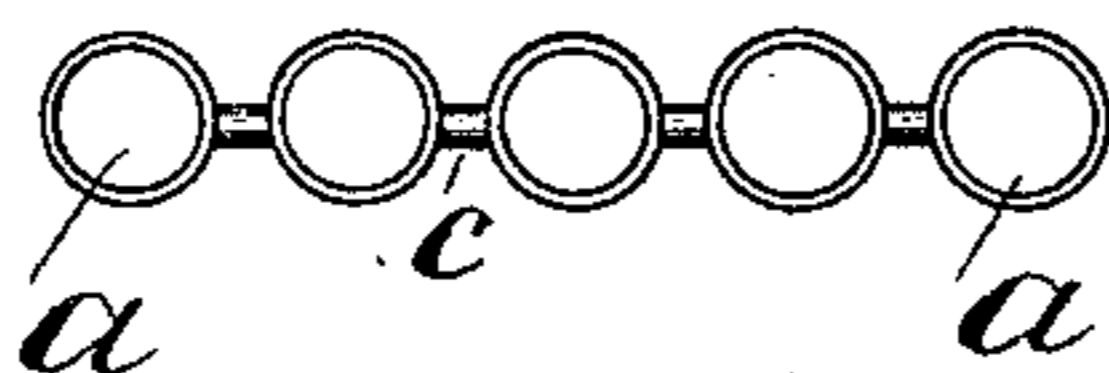


Fig: 4.

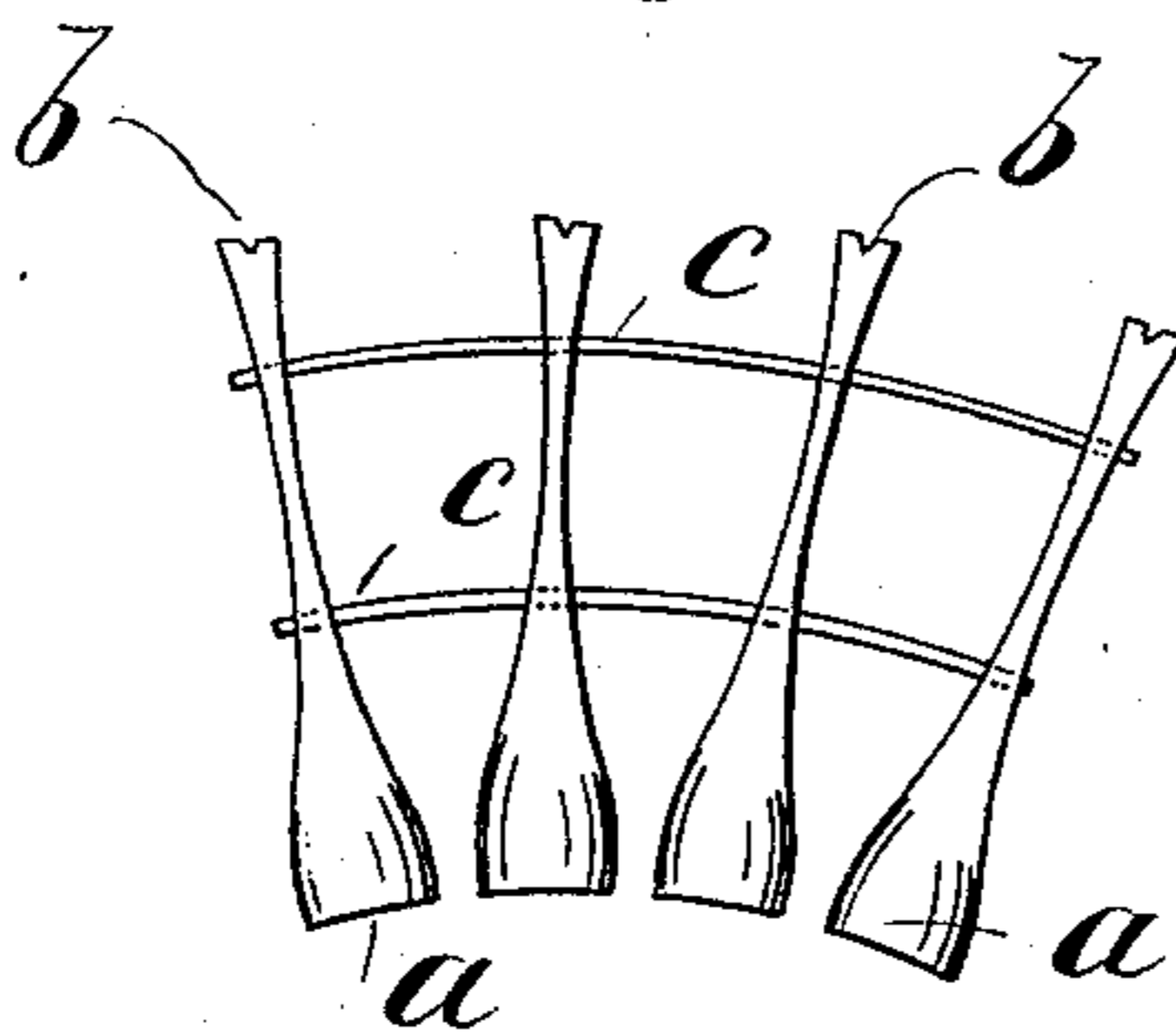
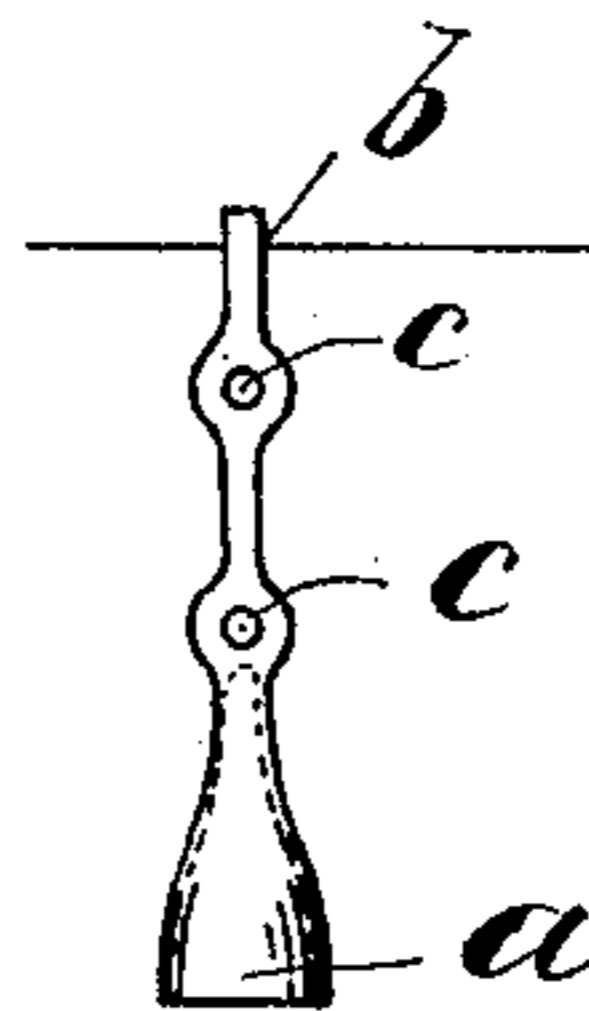


Fig: 5.



Witnesses:

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Inventor

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By

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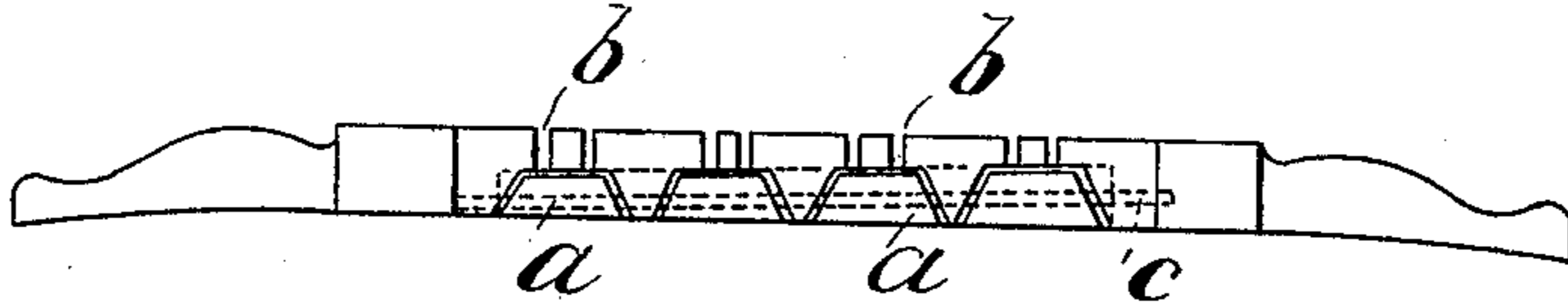
(No Model.)

2 Sheets—Sheet 2.

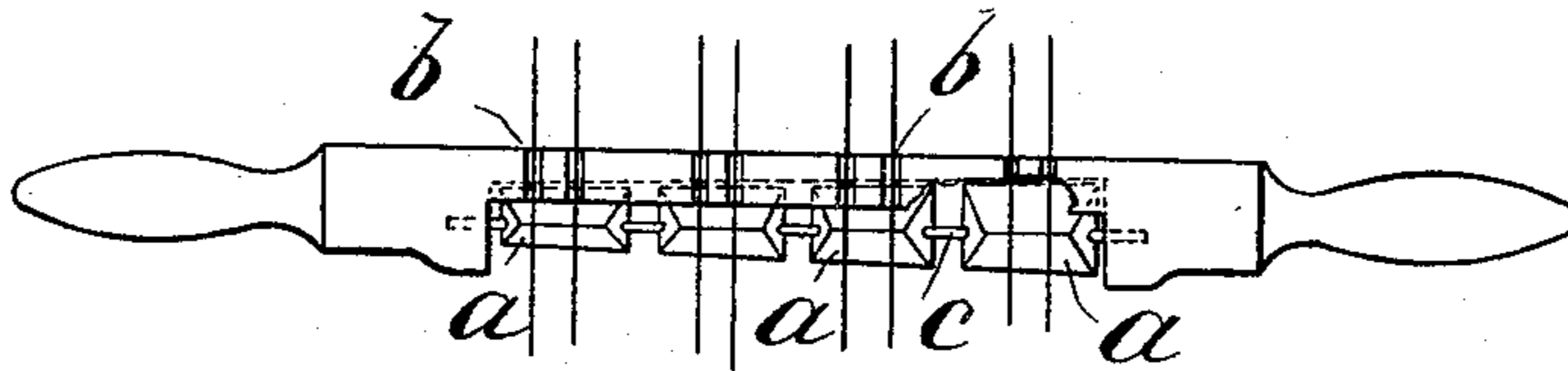
*Fig. 8.*



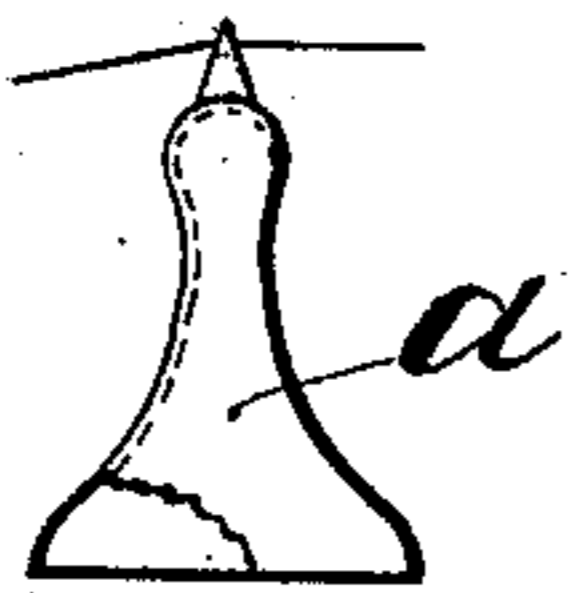
*Fig. 6.*



*Fig. 7.*



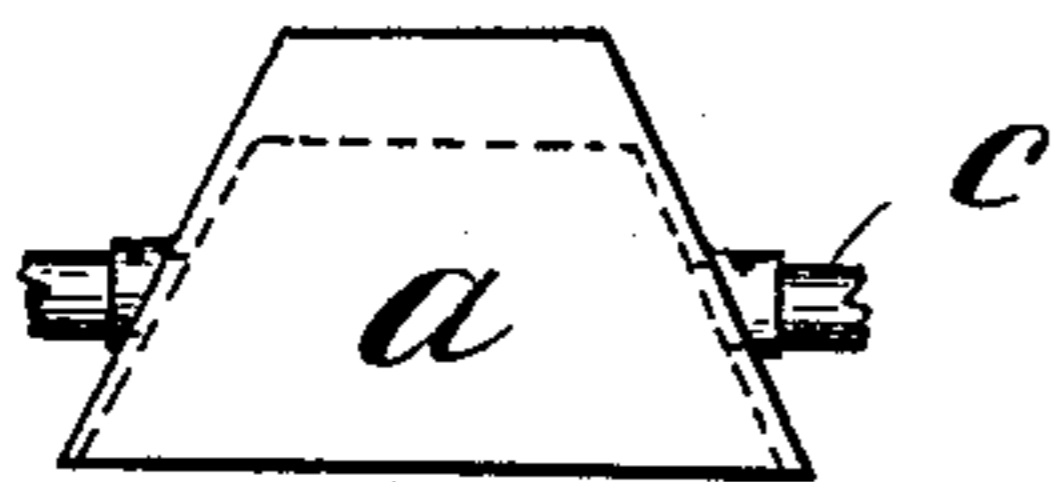
*Fig. 9.*



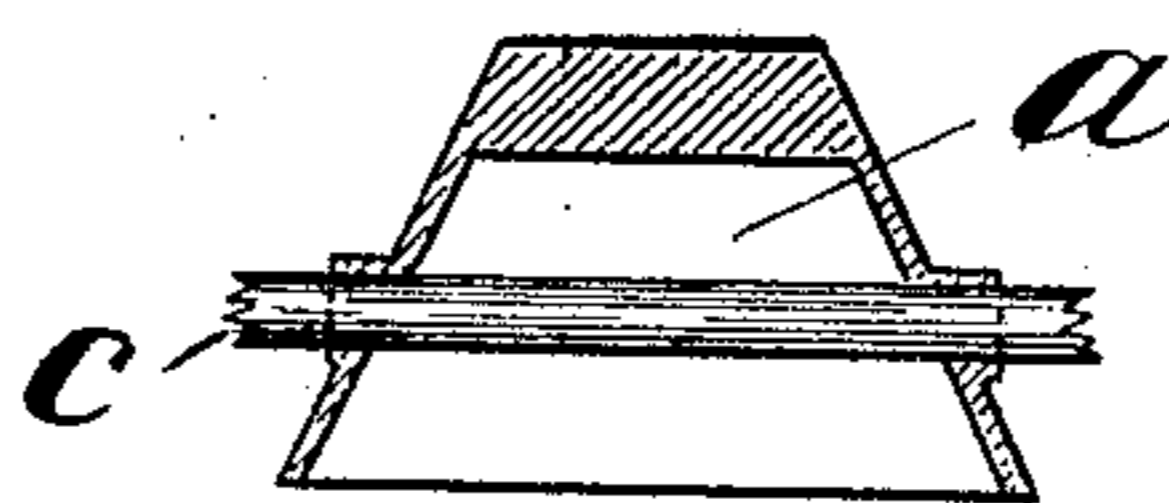
*Fig. 10.*



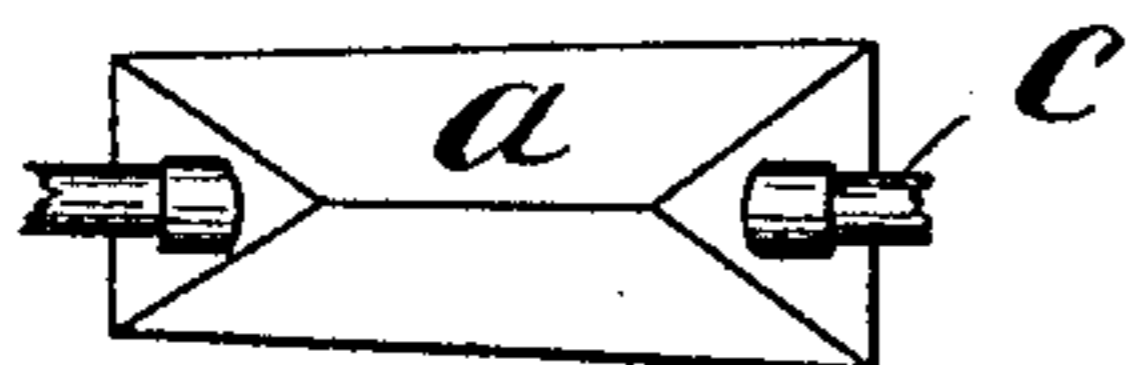
*Fig. 11.*



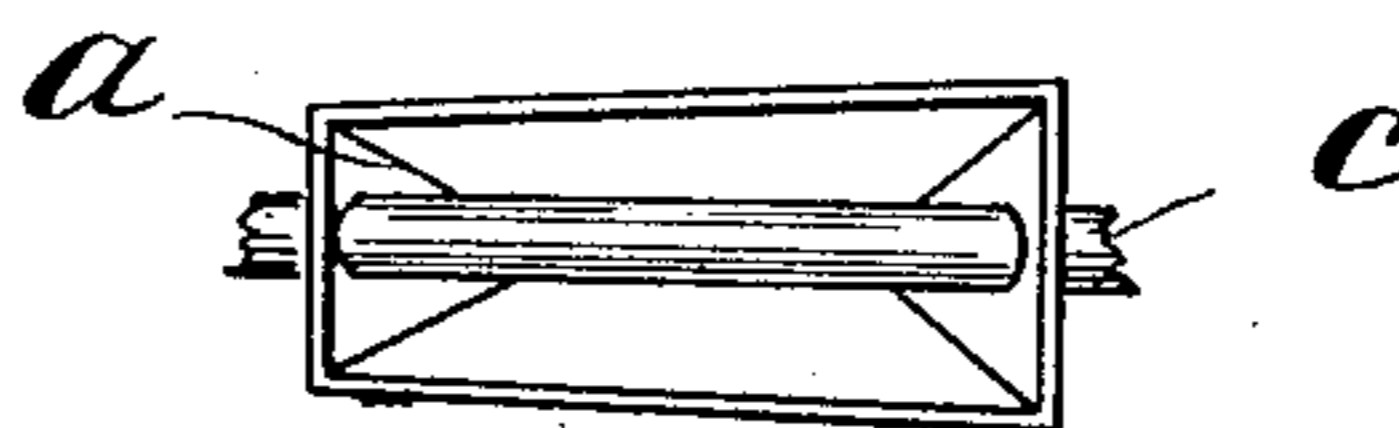
*Fig. 13.*



*Fig. 12.*



*Fig. 14.*



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# UNITED STATES PATENT OFFICE.

EDWARD ELLIS JACKSON, OF LONDON, ENGLAND.

## BRIDGE FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 698,955, dated April 29, 1902.

Application filed November 23, 1901. Serial No. 83,462. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD ELLIS JACKSON, engineer, a subject of the King of Great Britain, residing at 43 Longridge road, Earls Court, London, England, have invented certain new and useful Improvements in Bridges for Musical Instruments and the Like, (for which an application was made in Great Britain, dated May 16, 1901, No. 10,150,) of which the following is a specification.

This invention relates to improvements in bridges for supporting the strings or wires of musical instruments, and particularly to bridges for such stringed musical instruments as banjos, mandolins, violins, violas, violoncellos, double basses, and the like; and the main object of my invention is to preserve the freshness and purity of tone in the sounds produced by the vibrations of the strings whether the vibrations are produced by plucking the strings by hand, as in a banjo, or by an instrument such as a plectrum in a mandolin, or by the friction of a bow, as in the case of a violin and kindred instruments, or by a blow from a "hammer" or equivalent striker. This and other objects I attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a bridge as it is arranged to meet the requirement of a musical instrument of the banjo type, in which five strings are employed. Fig. 2 is a side view of the bridge or a view taken at right angles to Fig. 1. Fig. 3 is an under side view of Figs. 1 and 2, showing the under surface of the bell-shaped supports where they rest on the vellum. Fig. 4 shows the like front elevation of a bridge to Fig. 1, but modified to fit such an instrument as a violin, where only four strings are used and where the base has a more restricted area, while the strings have to be given a wider splay, and where the tension is great. Fig. 5 is a side view of Fig. 4. Fig. 6 is a front elevation of a bridge according to the invention, but modified to fit an instrument of the mandolin type, where the strings are widely splayed and are not supported on a plane parallel with the vellum or in a curve, but are supported on a plane inclined to the plane of the vellum at wide distances apart, the bell-like surfaces being here

shown of rectangular form and inclosed in a hollow bridge of the usual external contour. Fig. 7 is a plan or top view of Fig. 6, and Fig. 8 is an edge view of Figs. 6 and 7. Fig. 9 is a side view, and Fig. 10 a front view, of a bridge modified to suit an instrument such as a "dulcimer," wherein three, four, or other number of strings are used not relatively widely splayed, but somewhat relatively highly supported from the belly of the instrument; and Fig. 11 is a front view, Fig. 12 is a plan or top view, Fig. 13 is a section, and Fig. 14 is an under side view, of one of the bell-bridge members represented assembled in Figs. 6 and 7, here shown separately and to a larger scale, so that its construction and means of connection to its fellows may be better understood.

Similar letters refer to similar parts throughout the several views.

The bell-bridge when composed of a number of bells, each bell supporting an individual string giving one note or a double string of one note, is organized as follows: The individual bells *a*, of resonant material of light specific gravity, for which purpose I find aluminium or aluminium alloy of, say, ninety per centum aluminium and ten per centum copper to answer well, are connected together into bridge form by means of a tie-rod *c*, which, although here shown round, may be of any convenient form in cross-section, of a soft iron, vulcanized fiber, or other material of sufficient tensile strength and of a low sound conductivity passed through the necks of the respective bells between the string-notches *b* and the hollow bell portions *a*, such tie-rod *c* merely serving for preserving the bells at the desired distance apart in use; but when, as in the case of stringed instruments of the violin, violoncello, double bass, and kindred instruments where the bridge has to take its support on a curved base or belly of wood and the strains need such a provision, the tie-rod may be duplicated or multiplied, as in Figs. 4 and 5, and at the same time the strings may be correspondingly splayed, so as to preserve the vertical line of pressure strain from the string to the supporting-belly. Again, for mandolins the appearance of the ordinary bridge may be preserved and the

bell-bridge according to the invention be employed by modifying the shape of the bells from that of the round-coned bell to that of the oblong cow-bell form and cutting away  
 5 the usual wooden bridge, so as to admit of the bell-bridge lying within it, as shown by the three figures 6, 7, and 8, or to suit musical instruments of the dulcimer type, where the three or four strings are restricted  
 10 to a limited area and the bridge has to be correspondingly narrowed, the bridge has its top widened and its pier or mouth portion enlarged, as in Figs. 9 and 10; but the essential feature of the bell is maintained.

15 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A bridge for supporting the strings of a  
 20 musical instrument composed of a string-support resting on a bell-mouthed pier.

2. A bridge for the strings of a musical instrument having a plurality of bell-mouthed supports, and a tie-bar of low-sound conductivity connecting and separating said bell-  
 25 mouthed supports.

3. A bridge for the strings of a musical instrument composed of a plurality of tie-bars of low conductivity of vibration affixed to a

series of hollow bell-mouthed feet supporting 30 the strings of the said instrument.

4. In a stringed musical instrument a bridge supported upon a bell-shaped base enclosing between its walls and the vibratory surface of the instrument a volume of air. 35

5. In a musical instrument provided with vibratory strings, a bridge composed of a string-support, a connecting-neck, and a bell-shaped hollow support.

6. In a stringed-musical-instrument bridge 40 a plurality of string-retaining supports, connecting-necks and bell-shaped hollow air-enclosing feet and a tie-rod connecting said bell-shaped feet at adjusted distances apart.

7. In a stringed-musical-instrument bridge 45 the combination of a plurality of string-retainers, a corresponding number of connecting-necks and attached bell-shaped hollow feet and a plurality of tie-rods holding said feet in adjusted position. 50

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDWARD ELLIS JACKSON.

Witnesses:

ALFRED GEORGE BROOKES,  
 JOHN COOK HOWE.