

(No Model.)

G. B. DURKEE.

GUITAR BRIDGE.

No. 358,847.

Patented Mar. 8, 1887.

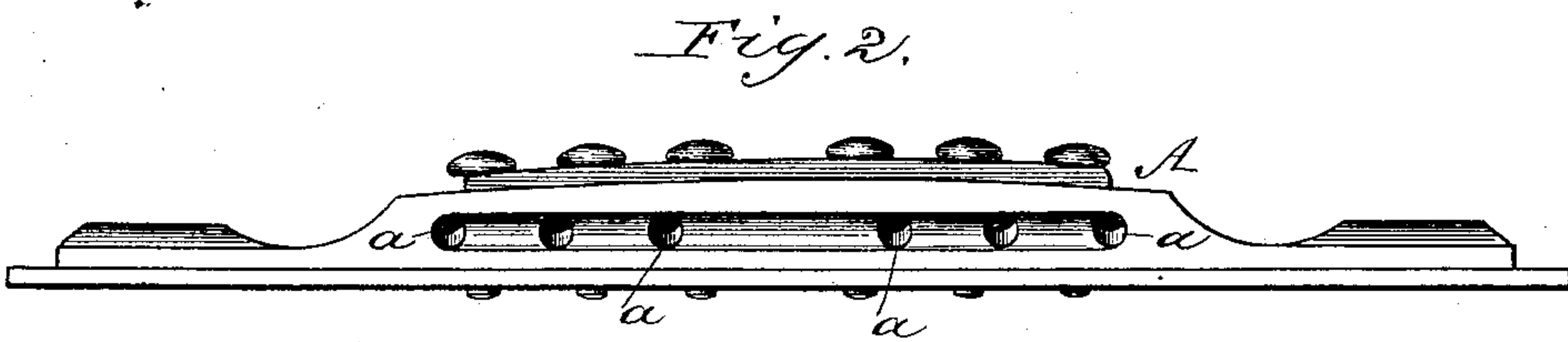
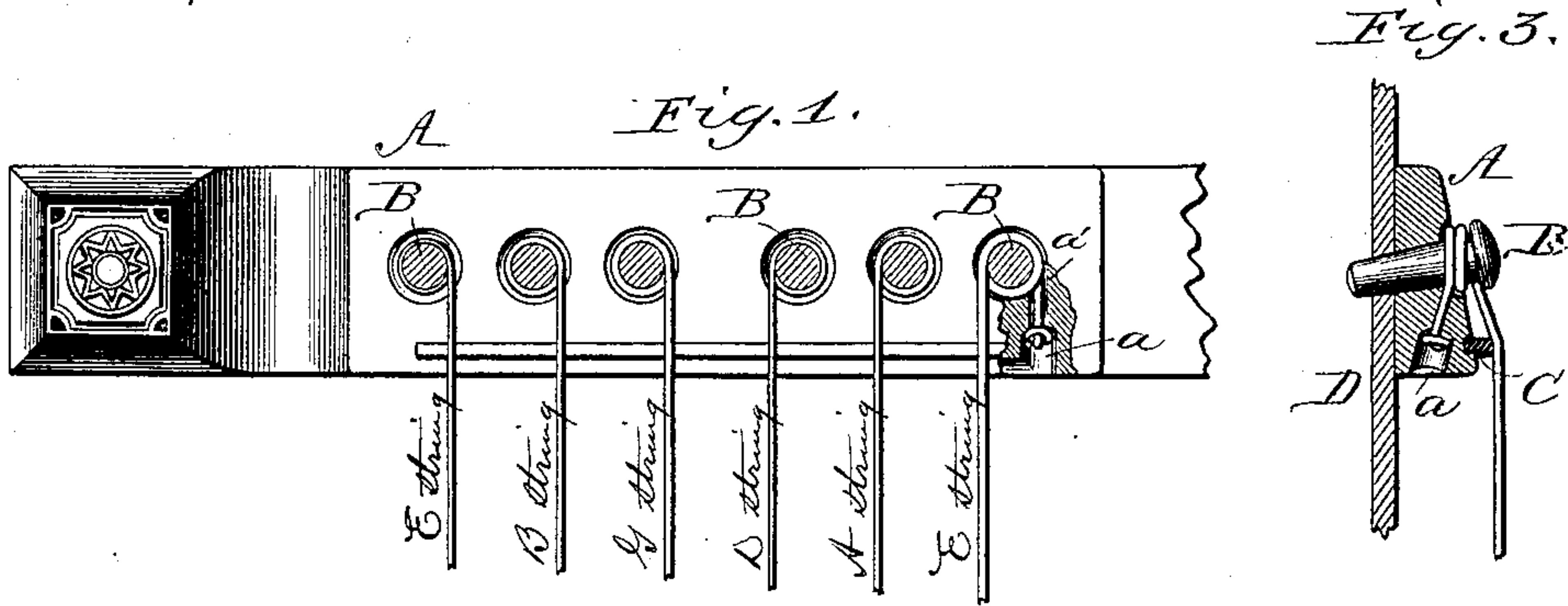


Fig. 4.



Fig. 5.

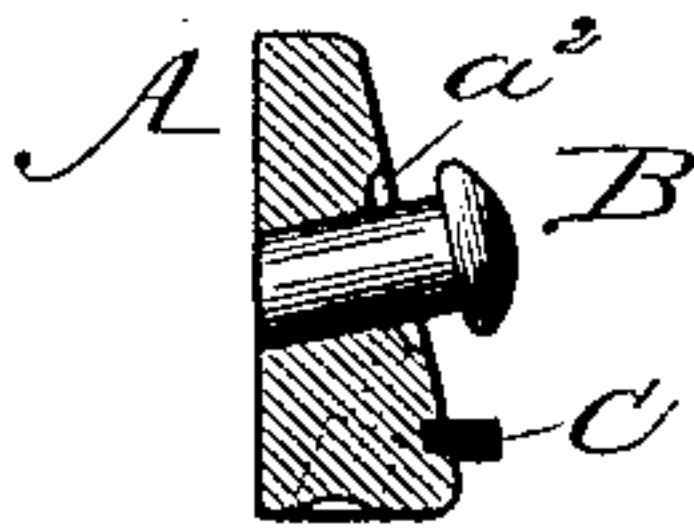


Fig. 6.

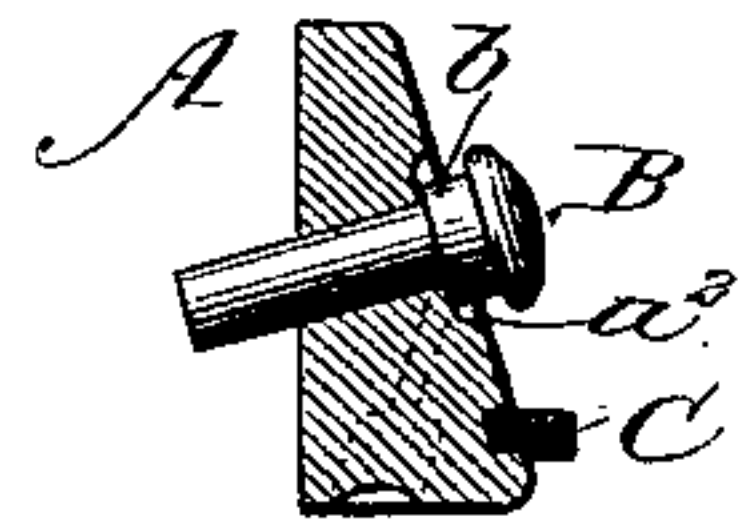


Fig. 7.

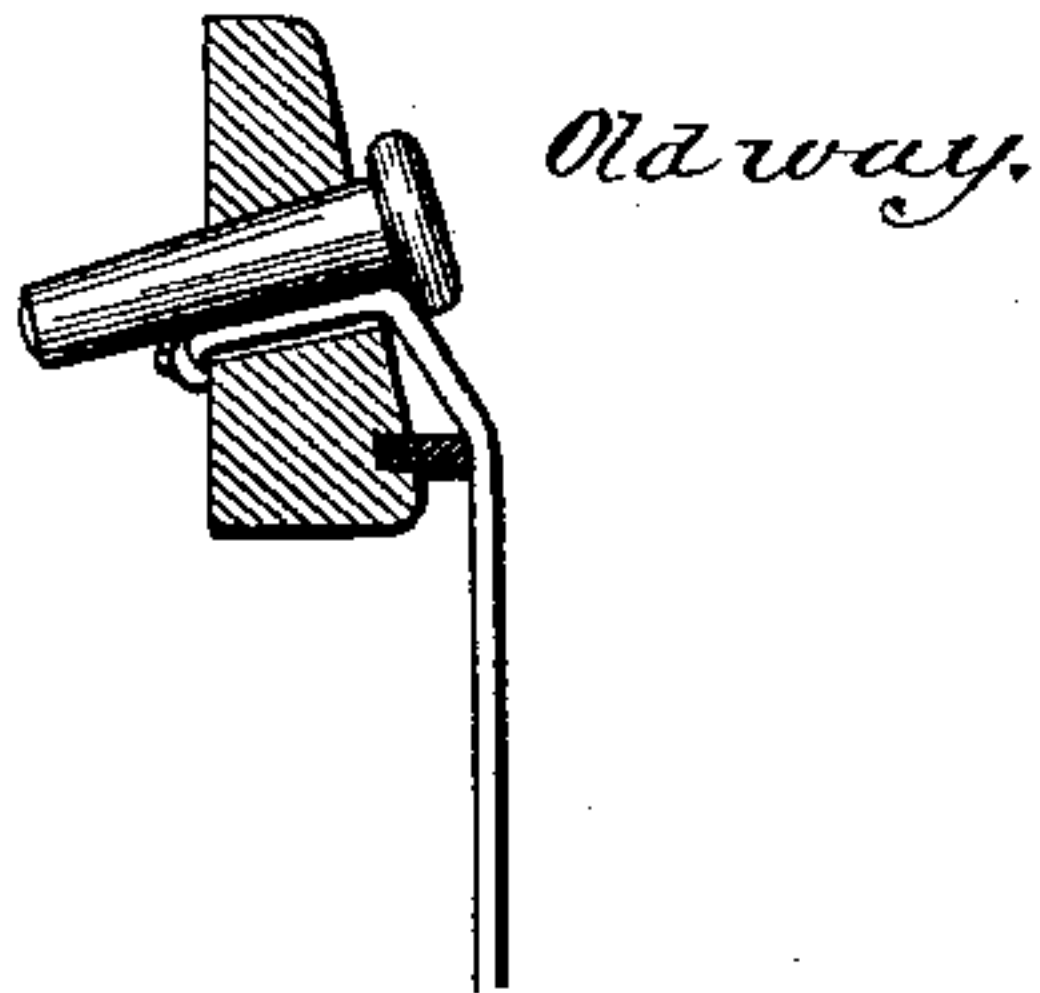
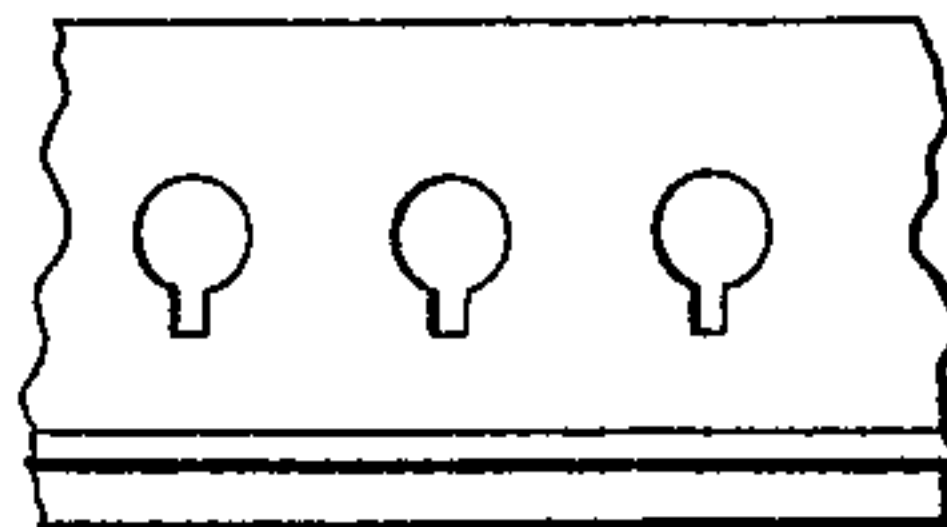


Fig. 8.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE B. DURKEE, OF CHICAGO, ILLINOIS.

GUITAR-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 358,847, dated March 3, 1887.

Application filed February 1, 1886. Serial No. 190,404. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. DURKEE, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in the Method of Attaching Strings to Guitars, of which the following is a specification.

In the construction of guitar-bridges prior to my invention the bridge has been provided with a series of vertical bores or sockets with a notch merging into and at one side of each one of said sockets, the well-known mode of attaching the strings to such bridges being to engage the string in the notches with their knots below the same, and to then fit a set of loose pins in the sockets as keepers for the strings. Under such arrangement the strings frequently break, both by reason of the sharp angular bends occurring at the points where they enter the notches and by reason of the strain exerted upon their knotted terminals, and, in addition to such objectionable features, the notches are apt to become in time so worn as to render it difficult to tie in a string a knot that shall not pull through the notch to which it is allotted.

The objects of my invention are to obviate such defects, and to provide an improved construction whereby greater durability in the structure is attained, all detrimental wear of parts avoided, the feature of notches dispensed with, and the bridge braced and held more securely upon the sounding-board of the guitar.

To the attainment of the foregoing and other useful ends my invention consists in matters hereinafter described, and particularly pointed out in the claims.

In the annexed drawings, Figure 1 represents a top plan view of a portion of a guitar-bridge with my improvement applied thereto, the pins or pegs being shown in cross-section at points just above the strings, and a portion of the bridge being shown broken away at a point adjacent to one of the pins or pegs so as to illustrate one of the string-passages. Fig. 2 is a front elevation of the bridge with a portion of the sounding-board of a guitar shown in cross-section. Fig. 3 is a transverse section through Fig. 2 on a plane through one of the pin or peg sockets, the pin or peg being, however, shown in elevation. Fig. 4 is in the nature of a diagram representing the condition

of a string supposed to be attached to the bridge as in Fig. 3. Fig. 5 represents a transverse section through the bridge with the pin shown in elevation and at its lower end cut off flush with the bottom of the bridge, the string-passage being shown in dotted lines. Fig. 6 is a view similar to Fig. 5, but with the pin extended down through and below the bridge and provided with a stop or shoulder for limiting the extent to which it may be passed into the bridge. Fig. 7 is a transverse section of the old form of guitar-bridge with the string and its keeper applied. Fig. 8 is a top plan view of a portion of the bridge of Fig. 7.

In said drawings, A denotes the guitar-bridge, which, when applied to a guitar, is fitted upon and glued to the sounding-board D of the latter, as usual.

The bridge is provided with a set of pins or pegs, B, (one for each string,) which are fitted and held in bores or sockets arranged to extend down through the bridge. The length of each pin is such that when properly applied to the bridge it shall project to some extent above the same, in order to expose above the bridge a portion of the cylindric stem or body portion of the pin.

The bridge is further provided with a series of small bores, *a'*, arranged to form string-passages extending from the pins toward the front or rear, but preferably toward the vertical front side of the bridge, along which said side the bores terminate in or are expanded in area to form a series of knot-chambers, *a*, one for each string. The string-passages *a'* incline downwardly from and are arranged tangential to their respectively-allotted pins, with their lower ends opening into the knot-chambers and their upper ends opening at points adjacent to but above the points where the pins pass down into the bridge. In this way, after a string has been knotted at one end, it can be inserted through one of the knot-chambers and the string-passage leading therefrom, and then drawn up until the knot is drawn snugly with the knot-chamber, as in Figs. 1 or 3, after which, but before passing the string forward over the bridge-fret C, it can be carried any desired number of times around the pin allotted to this particular string.

It will be observed that the frictional contact between the cylindric surface of the pin and the portion of the string which is coiled around it absorbs, so to speak, the tension which would otherwise be exerted upon the knotted terminal of the string when the latter is tuned up to the proper pitch. In this way the knotted terminal of the string is freed from undue strain, and hence is rendered less liable to break than where the knotted terminal of the string is engaged in a notch formed at one side of a bore or socket and a pin fitted in said base or socket merely as a keeper, as illustrated by Figs. 7 and 8, which serve to represent the commonly-adopted mode of attaching the strings of a guitar to the bridge. It will also be observed that the sharp angular bend in the string incident to the old method of attachment, as exemplified in Fig. 7, is avoided, since under my improvement the string approaches and leaves the pin in lines tangential to the cylindric surface of the pin. This will be fully understood by referring to Figs. 1 and 3, and also to Fig. 4, in which latter the position assumed by the string in the said first-mentioned figures is clearly defined.

At the points where the pegs or pins pass down into the bridge the latter may be recessed, or practically the holes or sockets for the pins expanded at their upper ends, so as to provide shallow recesses a^2 , through which the upper end portions of the pins pass centrally. This arrangement provides around each pin a space for the coiled portion of the string, and by permitting the coil to lie in the body of the bridge allows the head of the pin to be set closer down to the bridge, thus avoiding an undesirable height of pin and rendering the device neat and compact. The string-passages a' open at their upper ends into said recesses, a^2 , where the latter are employed, as indicated by the sectional views in the drawings.

In Figs. 2, 3, and 6 the pins pass through and extend below the bridge, so as to enter and pass through the sounding-board D of the guitar, a portion of said board being represented in Fig. 3.

The pins may be removably fitted in the bridge and sounding-board; but preferably they are firmly glued or cemented, or otherwise permanently fastened in place, this permanency of attachment on the part of the pins not only preventing them from dropping out, but also serving to more effectively hold the bridge on the sounding-board and brace the bridge against the strain which will be exerted upon it when the strings are tightened up.

In order to avoid any undesirable prominence on the part of the knot-chambers a , the bridge is provided with a longitudinally-arranged groove and the knot-chambers formed in a line along the back or bottom wall of such groove, as indicated in Fig. 2, wherein the groove is shown formed along the front side of the bridge.

In some instances it may be desirable to apply the pins to the bridges before the bridges are secured to the guitar and thereby permit the guitar-bridge to be made as an article of manufacture by one party, and applied to the guitar by another party. In such case the lower end of the pins can be cut off flush with the bottom of the bridge, as in Fig. 5, and the pins, if desired, secured in the bridge by glue or cement.

In Fig. 6 I have shown one of the pins reduced in diameter for the greater portion of its length, so as to provide at a point near the head of the pin a shoulder, which, when the pin is inserted in the bridge to the proper extent, will rest upon the bridge. The object of this shoulder is to provide a stop which serves to limit the extent to which the pin can be passed down into and through the bridge, the string being in such instance wound around the enlarged portion b of the pin that occurs between the head of the pin and the said shoulder. This feature serves to prevent an unskilled person from passing the pin too far down into the bridge in instances where it may be found desirable to supply the bridges with the pins loose.

In conclusion, it may be remarked that it has been heretofore proposed to provide the tail-piece of a violin with a set of headed studs arranged upon the body of the tail-piece, and to provide in the front end of said tail-piece a series of notches corresponding in number to the number of studs, with each notch arranged directly in front of one stud, and with a space intervening between said studs and notches. Under such construction the knotted terminals of the strings are engaged in the notches, and the string then carried back and around the studs, after which they are passed forward to the tuning-head of the instrument. Under such arrangement the strings are undoubtedly carried around cylindric bearing-surfaces, but sharp angular bends at the points where the strings enter the notches are not avoided, and where each string crosses itself at a point in front of its allotted stud the wear upon the string at its point of crossing is liable to soon weaken the string. It will also be observed that such construction is not practicable in a guitar-bridge, since a violin tail-piece is at its forward end raised above the body of the instrument, while a guitar-bridge lies flat upon and is rigidly secured to the face or "sounding-board," as it is usually termed, of the guitar.

What I claim as my invention is—

1. A guitar-bridge provided with a series of string-passages, a' , combined with a series of pins rising from the bridge at points adjacent to the upper terminals of the string-passages, substantially as and for the purpose described.

2. A guitar-bridge provided with a series of string-passages, a' , combined with a series of pins rising from the bridge at points adja-

cent to the upper terminals of the string-passages, which latter terminate at their lower ends in knot-receiving chambers arranged along one of the vertical sides of the bridge, substantially as and for the purpose described.

3. A guitar-bridge provided with a series of string-passages, terminating at their upper ends in the recesses a^2 , combined with the pins rising from the bridge at points within said recesses, substantially as and for the purpose described.

4. A guitar-bridge provided with a series of string-passages, combined with the pins B, applied to extend down through the bridge and to rise to some extent above the same at points adjacent to the upper terminals of the string-passages, substantially as described.

5. A guitar-bridge provided with a series

of string-passages, combined with a set of pins extended down through both the bridge and the sounding-board of the guitar, said pins being applied to project to some extent above the bridge, and the string-passages being formed to terminate at their upper ends at points adjacent to the pins, substantially as and for the purpose described.

6. A guitar-bridge provided with string-passages a' , combined with pins fitted into bores formed through the bridge, and provided with shoulders which provide enlarged portions b of the pins at points above the bridge, substantially as described.

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Witnesses:

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