ABSTRACT OF THE DISCLOSURE

A bridge for stringed musical instruments of the guitar or sitar type having a relatively wide upper surface which is contacted linearly by the strings, the bridge having a front to rear convexly arcuate upper surface and being angularly adjustable by rocking and then locking the bridge in a desired position. The rocking adjustment of the bridge effectively shifts the position of contact by the strings axially of the instrument in accordance with requirements of dimensional guitar characteristics.

This invention relates to stringed musical instruments of the guitar type. In particular, it relates to a guitar-like instrument which apparently originated in India and which is often referred to as a sitar. This instrument produces somewhat of a buzzing sound as the melody is played. The buzz results from the use of a relatively wide bridge against which the strings slap during the playing of the instrument. This is, of course, far different from the function of conventional bridges as found in various stringed instruments wherein the bridge is very narrow and serves principally as a string support and separator. The buzz has found high favor as an intriguing sound throughout the history of sitar playing.

A good sitar often requires months in the making. While the usually elaborate construction accounts largely for this, a particular factor is the production of the bridge. This is a most exacting task, requiring many hours of hand filing and shaping to achieve the necessary curved formation of the upper surface as will be explained hereinafter. Once completed, the sitar bridge is fixed in place and is never thereafter tampered with, except by an expert craftsman in that art. According to this invention we have made possible the mass production of sitar bridges which are moreover superior in operation to hand made bridges. Thus the bridge of this invention is sturdy, highly accurate, and most importantly, is easily adjustable. This itself is a new concept in sitar bridges, which have classically been thought of as delicate and virtually unchangeable or un-touchable once finally installed in place. However, adjustability is very desirable as will be described hereinafter.

The invention will be further understood from the following description and drawings wherein:

FIGURE 1 is a perspective view of a guitar-like musical instrument provided with the sitar bridge;

FIGURE 2 is an enlarged, fragmentary, plan view of the bridge portion of the instrument;

FIGURE 3 is a cross-sectional view as taken along the line 3-3 of FIGURE 2;

FIGURE 4 is a front end elevation view of the bridge portion shown in FIGURE 2; and

FIGURE 5 is a substantially side elevation view of the bridge portion shown in FIGURE 2.

The general construction of the instrument as a whole may vary considerably. In the illustrated embodiment it comprises a body 10, a neck 11, a head 12, and strings 13, all serving their conventional functions, as well as electronic amplifier pick-ups 14 and control knobs 15, all as conventional. The instrument also includes a series of pre-tuned, non-fingered strings 16 which are sometimes referred to as drone strings, since they are tuned to vibrate spontaneously in sympathy with the sound waves produced in playing the instrument, as will be understood by those skilled in the art. However, the player may if he likes strum across the series of non-fingered strings 16 for whatever effect he aspires to. Strings 16 have tuning screws 17 generally factory-set and requiring a suitable tool for actuation.

The bridge 20 of this invention is interposed forwardly of the conventional tail section 21. In the form shown, the bridge comprises a substantially rectangular molded phenolic body member 22, representative dimensions being as follows: Upper boss 23 has a front to rear width of almost 2 inches (specifically 1 1/8 inches in a satisfactory embodiment). The transverse width is about 2 1/2 inches, or enough to support the six strings 13. Integral with boss 23, and on a lower level therefrom are side wings 24. For example, the thickness or height of boss 23 may be about 1/4 inch, while the thickness of wings 24 is about 1/8 inch.

Boss 23 has a central, rearmost, two-diameter hole 25 for fastening to the body 10 as by screw 26, while wings 24 have forward holes for fastening to the body 10 as by screws 28. The action of these screws is of importance as will be described hereinafter. From the underside of boss 23, are formed two forward, transversely spaced, chambers 29 which receive biasing coil springs 30, the lower terminals of which are seated in wells 31 formed in body 10. The action of these springs will be referred to hereinafter.

Secured as by pins or adhesive to the rear wall of boss 23 is the vertical metal plate 32 having top grooves 33 for supporting and separating the strings 13.

The front to rear conformation of boss 23 is of great importance. As observed in FIGURES 3 and 5, this conformation is non-planar. On the contrary, the front to rear surface, (1 1/8 inches as above set forth), is convexly arcuate, the radius of curvature being about 4 inches.

FIGURE 3 shows the normal or rest position of the strings 13. It will be observed that a considerable crest portion of about 1/8 inches or 22 1/2 degrees of arc is contacted by the string 13. As the string 13 is strummed or plucked, almost the entire width, or about 26 degrees or so may be contacted by the string during a forceful excursion thereof. Of course the string will also lift relative to the position of FIGURE 3 at another period of its vertical excursions so that less than 22 1/2 degrees will then be contacted.

The relatively extended contact length between the strings 13 and the front to rear slightly convex upper surface of boss 23 produces the characteristic and peculiar sitar or somewhat buzzing sound. Of course, that characteristics per se are not the subject of this invention because the classic hand produced bridge provides substantially the same sound as above explained. However, the particular form shown has marked advantages as will hereinafter be further explained.

Theoretically the strings 13 may be considered to make tangential contact with the front to rear convex upper surface of boss 23, although the normal resiliency of the strings produces a somewhat hugging action to the extent where about 20 degrees or so are contacted as above described. However, assuming for purposes of explanation that the contact is tangential, it will be recognized that each string is contacted at the crest of the convex upper surface of boss 23. The axial position of the crest is of great importance. In other words a sitar bridge should...
be positioned with respect to the length of the string so that the said crest contacts the string at a particular point relative to the string length. Specifically, and as a sitar or expert guitar player will know, the said contact point marks the effective length of the string and the distance therefrom to the twelfth fret of the guitar neck should be the same as the remaining distance to the nut 35. This is standard guitar construction. Accordingly, it is highly desirable that the tangential contact point be axially adjustable to compensate for guitar body deviations from precision measurements, either as originally produced or as the instrument ages.

In this invention, such axial adjustment along the length of the instrument is accomplished by rocking and thus effectively re-positioning the bridge 20. It will be understood that as the bridge is rocked fore and aft, the above-mentioned crest will necessarily shift axially along the length of the instrument. This adjustment is accomplished by loosening screws 28 and then "playing" center screw 26 against bias springs 31 to accomplish the desired tilted position of the bridge 20. Thereafter, the screws 28 are re-tightened.

It will be recognized that as the center fastening screw 26 is screwed in, the forward end of bridge 20 is forced upwardly by springs 30 to cause the bridge 20 to assume a new tilted position and thus effect re-adjustment. The opposite result is achieved by loosening or upwardly re-positioning the screw 26.

We have shown a preferred embodiment of our invention, but it is obvious that numerous changes and omissions may be made without departing from its spirit.

What is claimed is:

1. The combination with a stringed instrument elongated body, of a bridge therefor, said bridge being secured to said instrument body and having an upper surface width of more than one inch extending axially of said elongated body, said upper surface being convexly arcuate along said width and being disposed so as to support each of the strings of said instrument body linearly along at least one inch of said convexly arcuate surface, said con-

References Cited

UNITED STATES PATENTS

2,196,531 4/1940 Larisch 84—299 X
2,469,091 5/1949 Watts 84—307
2,573,254 10/1951 Fender 84—307
2,714,326 8/1955 McCarty 84—299
3,014,395 12/1961 Blair 84—312

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