No. 647,173. Patented Apr. 10, 1900.

G. ALMCRANTZ.

GUITAR.

(No Model.) (Application filed Aug. 21, 1899.)

FIG. 1.

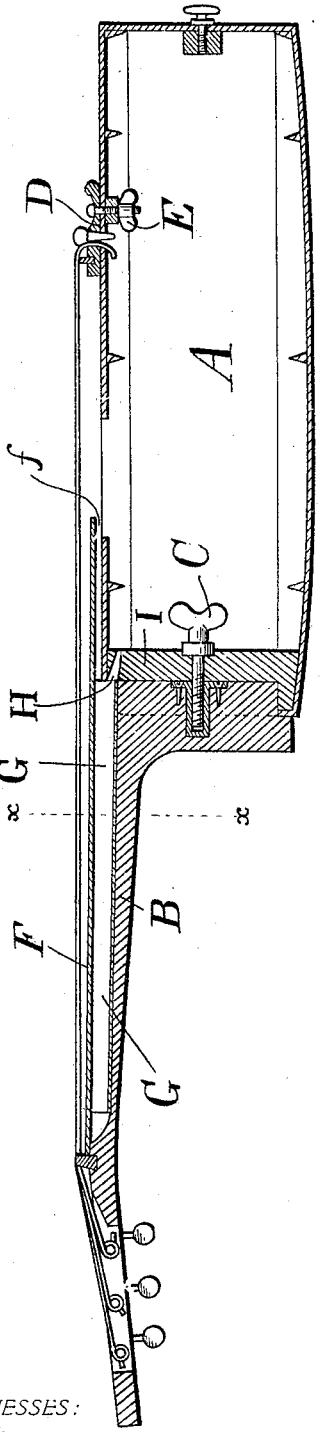


FIG. 3.

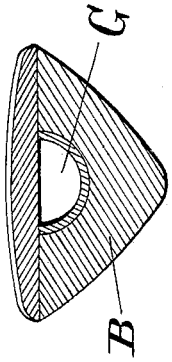
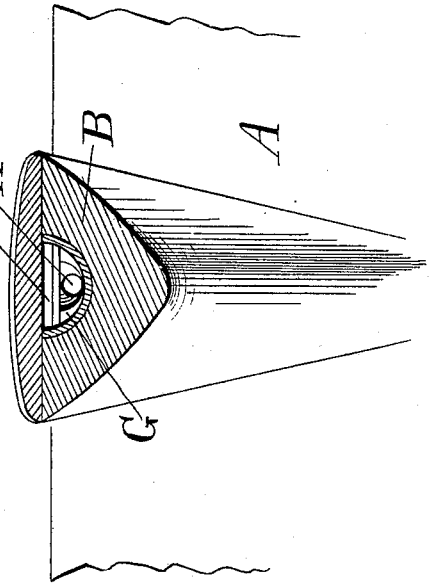


FIG. 2.



WITNESSES:

F. B. Townsend,

George E. Haley

INVENTOR

Gerhard Almcrantz,

BY Samuel N. Pond,

his ATTORNEY.

UNITED STATES PATENT OFFICE.

GERHARD ALMCRANTZ, OF CHICAGO, ILLINOIS.

GUITAR.

SPECIFICATION forming part of Letters Patent No. 647,173, dated April 10, 1900.

Application filed August 21, 1899. Serial No. 727,996. (No model.)

To all whom it may concern:

Be it known that I, GERHARD ALMCRANTZ, a subject of the King of Sweden and Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Guitars, of which the following is a specification.

My invention relates to that class of stringed musical instruments known as "guitars," and has for its object to improve the tone qualities of such instruments both as regards volume and character, but more particularly the latter, such improvement being effected through the agency of what I term a "metallic channel-strip or half-tube" embedded in the neck of the instrument immediately beneath the keyboard and communicating at its open inner end with the interior of the guitar-body and with the narrow space between the upper surface of the body and the projecting end of the keyboard, whereby the sound-waves produced by the vibrations of the strings are in free communication between the body and the long narrow space in the neck inclosed by the said channel-strip and the keyboard.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a central longitudinal section through a guitar of my construction, showing my present improvement applied thereto. Fig. 2 is an enlarged transverse section thereof on line *x x* of Fig. 1, looking toward the body of the instrument; and Fig. 3 is an enlarged transverse section, also on line *x x* of Fig. 1, looking in the opposite direction.

Similar letters of reference indicate similar parts throughout the several views.

The guitar to which my present invention is shown applied in the drawings is similar in its general features of construction to the guitar illustrated in my former patent, No. 542,788, dated July 16, 1895, except that it has the usual single neck instead of the double neck shown in said patent; and my present invention is more particularly designed as a further improvement on my aforesaid patented guitar.

In the drawings, A represents the body or sound-box of the instrument, and B the neck, removably secured thereto by a dovetailed joint and a thumb-screw C.

D is the bridge, removably secured to the body by thumb-screws E.

The keyboard (designated by F) projects over the upper surface of the body and is preferably held slightly separated from such surface, so as to leave a narrow space *f*, as indicated in Fig. 1, the union between the neck and body being made by means of the thumb-screw C and dovetailed parts alone.

The instrument as thus far described is similar in all respects to the guitar shown and claimed in my former patent above referred to. My present improvement is applied chiefly to the neck, its principal element being a metallic channel-strip or half-tube G, which is embedded in the neck B longitudinally and centrally thereof, directly under the keyboard and preferably extending the entire length of the neck. This channel-strip G is preferably made of aluminium in order to secure a desirable combination of lightness and strength, and it is an essential feature of this device that it shall be open at its inner end, which abuts the guitar-body, so that its interior may communicate freely with the narrow space *f* between the projecting end of the keyboard and the upper surface or sounding-board of the body, as plainly shown in Figs. 1 and 2. I have also found it desirable to effect communication between the channel-strip G and the interior of the guitar-body by means of a hole H, formed through the forward end piece I of the guitar-body, immediately below the front end of the upper surface piece or sounding-board of the instrument, and in the lateral or horizontal center of the dovetailed joint uniting the neck and body.

I have found by repeated experiments that a guitar provided with my improvement as above described produces a tone noticeably superior to the tone of the same instrument without it, and this superiority can be readily detected by even an uncultivated ear. The reason therefor appears to be that the channeling of the neck beneath the keyboard and the free communication between such channeled space and the space immediately above and below the sounding-board have the effect, practically, of extending the sounding-board the full length of the neck of the instrument. In other words, the keyboard,

which in the usual form of this instrument is glued fast to the neck over its entire under surface and cannot, therefore, share in the vibrations of the body, is in my improved guitar capable of vibrating throughout its entire length to a certain extent in unison with the vibrations of the sounding-board and the body of the instrument, the sound-waves both above the sounding-board and within the sound box or body being in free communication with the sound-waves created in the channeled space beneath the keyboard by the vibrations of the latter. This result is of course best secured in a guitar like that shown in the drawings, in which the projecting end of the keyboard is not glued fast to the upper surface or sounding-board of the body, but is separated therefrom by a thin space *f*, as shown.

I am aware that it is old to strengthen the necks of guitars and banjos by means of a metal reinforcing strip or rod embedded in the neck beneath the keyboard; but such devices are entirely different both in construction and purpose from my invention as disclosed herein and are incapable of performing the function and securing the results which I attain with my present improvement. While my channel-strip or half-tube G does incidentally reinforce the channeled neck, and for that reason it is better present than absent, its main function and purpose is to improve the tone quality of the instrument by providing a long narrow metal-lined sound-chamber within the neck and immediately beneath the keyboard, which chamber must be in communication with the body or sound-box of the instrument in the manner hereinabve described.

I have described and illustrated my present improvement as applied to guitars; but it is evident that it could, if found desirable, be readily incorporated in other stringed musical instruments of a similar character, as mandolins and violins.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a guitar or similar musical instrument, the combination with the body and neck portions thereof, the latter having a keyboard projecting over but slightly separated from the upper surface of the body, and the former having a hole through its front end immediately beneath the upper surface of the body and in the lateral or horizontal center of the joint uniting the neck and body, of a metallic channel-strip or half-tube embedded in the neck immediately beneath the keyboard, and extending the full length of the neck, the said channel-strip being open at its inner end and in free communication with the narrow space between the projecting end of the keyboard and the upper surface of the body, and also with the interior of the body through the said hole, substantially as and for the purpose described.

Signed at Chicago, Illinois, August 17th, 1899.

GERHARD ALMCRANTZ.

In presence of—
EDW. B. WITWER,
GEORGE E. HALEY.