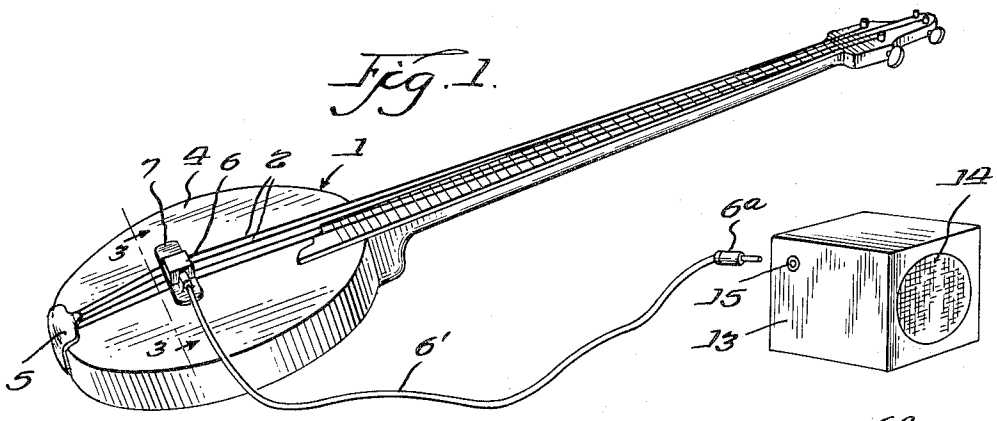
Dec. 6, 1955 J. CRONWELL 2,725,778

SOUND PICK-UP DEVICE FOR THE AMPLIFICATION OF BANJO MUSIC

Filed June 13, 1952

Fig. 1.



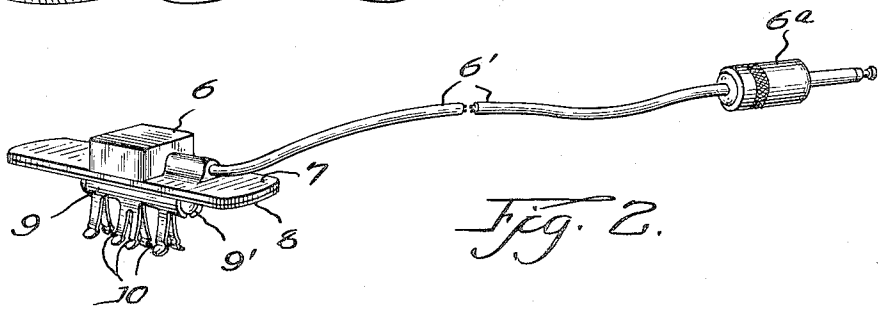


Fig. 2.

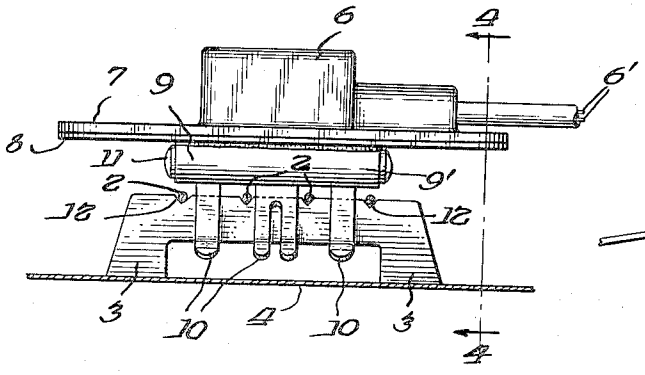


Fig. 3

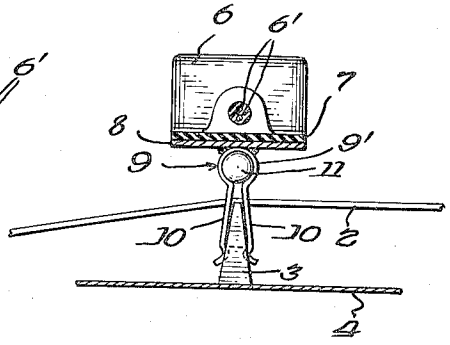


Fig. 4.

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SOUND PICK-UP DEVICE FOR THE AMPLIFICATION OF BANJO MUSIC

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Application June 13, 1952, Serial No. 293,483

1 Claim. (Cl. 84—1.16)

This invention relates to improvements in attachments for banjos and kindred musical instruments, having for an object to provide a sound pick-up device conveniently and readily attachable to a stringed musical instrument, such as a banjo, for amplifying the audio volume of sound vibrations or music produced thereby when strummed, and faithfully reproducing the same without extraneous mechanical vibrations, as for example, mechanical vibrations via its body, resulting from the per se playing of such an instrument.

It is also an object of the invention to provide a pick-up device, as above noted, which when attached to a banjo, will receive from its played or strummed strings, the resulting musical sounds or tones and transmit the same, in their full or pure tonal values, to an electrical sound amplifying means where they may be amplified and translated into corresponding sounds, i. e., modulated to a particularly desired degree.

Yet another object of the invention is to provide a sound pick-up device for stringed musical instruments which is of such construction and form as will permit of its operative attachment to an instrument, particularly, to a banjo, in a manner and position as will not interfere with the proper playing of the same, and which, when desired, can be conveniently and quickly removed therefrom, allowing for the normal playing of the instrument.

The foregoing, as well as other objects, advantages and meritorious teachings of my invention, will be in part obvious and in part pointed out in the following detailed disclosure thereof, when taken in conjunction with the accompanying drawings, it being understood that the form of the invention presented herein is precise and what is now considered to be the best mode of embodying its principles, but that other modifications and changes may be made in specific embodiments without departing from its essential features.

In the drawings:

Figure 1 is a perspective view of a banjo with the invention operatively attached thereto and showing an electrical amplifier in association therewith.

Figure 2 is a perspective view of the invention, a portion of its electrical conductor being broken away.

Figure 3 is an enlarged fragmentary section taken on the line 3—3 of Figure 1, looking in the direction in which the arrows point, and showing the invention and the banjo bridge in elevation, and

Figure 4 is a like section taken on the line 4—4 of Figure 3, looking in the direction in which the arrows point.

Referring in detail to the accompanying drawings, a banjo of conventional design is illustrated and designated, in its entirety, by the numeral **1**. Said banjo is equipped with the usual tunable steel strings **2**, whose normally rearward portions are engaged in horizontally spaced relation, over a bridge **3** received and supported on its parchment or skin head **4** and anchored to the banjo hoop, as at **5**.

The invention includes an electrical contact microphone

whose case **6**, which receives and houses its sound pick-up and transmitting means (not shown), has a substantially open and area enlarged flat base **7** made of plastic, rubber or other suitable material. Said base, as shown in Figure 2, is of rectangular form, though this may be altered or changed, as conditions or preference may dictate.

Electrical conductors **6'** are connected to suitable terminals of and on the microphone pick-up and transmitting means (also not shown) and extend from its case for an appropriate distance where an electrical contact device such as a jack-plug *6a* is connected thereto.

A sound vibration receiving and translating board **8**, made of metal or other satisfactory material, is flatly and flushly engaged over and with the flat base **7** throughout its entire area and over the open case base, being securely joined thereto by cement or some such suitable means. Preferably, the sound board is of a shape and size corresponding to that of the rectangular base **7**.

To an intermediate and preferably medial portion of the under side of the sound board **8**, a mechanical sound vibration receiving and translating device, indicated in its entirety by the numeral **9**, is fixedly and rigidly connected, as by brazing, welding, etc.

The device **9**, which depends from said sound board **8**, is formed of spring metal. Relatively opposed and spaced downwardly divergent spring arms, generally indicated by the numeral **10**, are formed or otherwise provided on the body **9'** of the device. The body, in turn, may be of hollow or sleeve-like formation throughout its length (see Figures 3 and 4). A metal piece or rod **11**, whose shape, size and length substantially correspond to that of the device body, is frictionally received and retained therein at all times, notwithstanding the outward spring spreading of its arms **10**, as when they are straddlingly engaged with and over the opposite sides of the upper and horizontal span portion of the banjo bridge **3** in the manner hereinafter more fully described.

At this point, it is noted that the sound vibration receiving and translating device **9** is arranged in and secured with its spring arms **10** disposed in substantially right angular relation to the contact microphone attached sound board **8**. Thereby, its detachable though positive engagement with and mounting on the span portion of the banjo bridge will be materially facilitated. Such right angular positioning may, however, be altered or modified without departing from the spirit of my invention. Moreover, if desired, it is feasible and practicable that said device **9**, with its body **9'** and rod **11**, be formed in one piece.

The banjo bridge **3**, as is usual, has upwardly opening seats, indicated at **12**, formed in its horizontal span in and over which the banjo strings **2** are individually received.

Any suitable form of electric amplifying means may be utilized in connection with the invention. As illustrative, I have shown a conventional type of amplifier housed in a casing **13** having an outwardly opening so-called loud speaker horn **14** and an electrical plug-in fixture **15** in one wall thereof, connected, of course, to the electrical audio amplification means within the casing.

In usage of my improved sound pick-up device, it is arranged directly over and outwardly of the span portion of the banjo bridge **3**. Then, it is thrust inwardly towards said span whereupon the spring arms **10** yieldably and frictionally engage over the opposite sides of said bridge span in the fashion shown in Figures 3 and 4 of the accompanying drawing. Being thrust inwardly or downwardly with relation to the bridge span, the body **9'** of the device **9** is brought into a position in proximity to the banjo strings **2** engaged in their respective seats **12** in said bridge. At this time, because of the straddling

firm frictional contact of the sound receiving and translating device arms **10** with the banjo bridge, the invention will be securely and cooperatively associated with or related to the banjo strings.

With playing or strumming of the banjo strings, sound vibrations of different frequencies are, of course, produced. Said strings being individually and collectively adjacent the body **9'** of the sound vibration receiving and translating device **9** of the invention, sound vibrations produced by their strumming will be directly transmitted to such body and to the rod or member **11** retained therein and extended therethrough. Said rod will act to receive the thus transmitted sound vibrations, and since it is directly connected to the under side of the medial portion of the sound board **8** attached to the open basal portion **7** of the contact microphone, such vibrations will be transmitted to the pick-up mechanism of the microphone housed within its case **6**. Through the electrical conductors **6'**, these vibrations are carried via the plug-in jack *6a* to the electric sound amplifying device **13** with which said jack is connected. Thereby, the translated sound vibrations will be faithfully reproduced and translated into corresponding sounds by the electrical amplifying means. Modulation of such electrical amplifying means may be effected, as desired or required, whereby to either increase or decrease the volume of the reproduced sound vibrations.

Because of the comparatively small size of my improved sound vibration pick-up device or invention, and its operative association with a banjo, the proper playing of that instrument will in no ways be interfered with.

The invention, when not in use, can be easily and quickly detached from the banjo bridge **3** without in any manner impairing the same or the strings or those portions of the strings **2** engaged thereover.

While I have shown in the presented embodiment of my invention a certain form of contact microphone, it is to be understood that other or different types of contact microphones may be substituted therefor, the essence of my invention, in this particular regard, being the combination of those constructional members hereinbefore identified and described as the sound vibration receiving and translating device **9**, the sound board **8** to which said device is mechanically connected, and a contact microphone whose pick-up means is directly responsive to and/or adjacent said sound board **8**.

I furthermore desire it to be understood that whereas I have herein set forth that the invention is advantageously usable in connection with banjos, it will be understood by workers skilled in the art that it may also be equally well or effectually used in connection with various other types of stringed instruments, such as guitars, mandolins, violins, ukeleles, etc.

I claim:

A sound vibration pick-up device for stringed musical instruments, comprising a microphone, a flat horizontally positioned sound board connected to the microphone, a sound vibration pick-up and conducting means consisting of a solid body of length and width less than that of the sound board disposed intermediately of said board in parallelism thereto and connected directly to and contacting, throughout its length, the lower side of the sound board, and means extended downwardly from said pick-up and conducting means detachably engageable and contactable with the bridge of the instrument in proximity to the strings thereover.

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