

H. C. MARX.
 BRIDGE WIRE FOR STRINGED INSTRUMENTS.
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1,190,929.

Patented July 11, 1916.

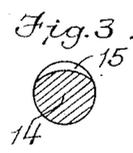
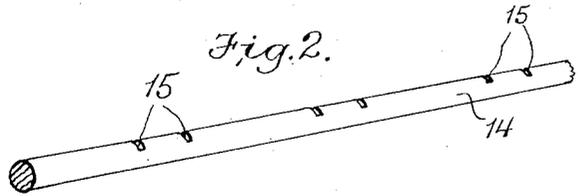
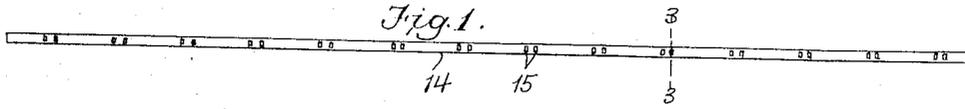


Fig. 4.

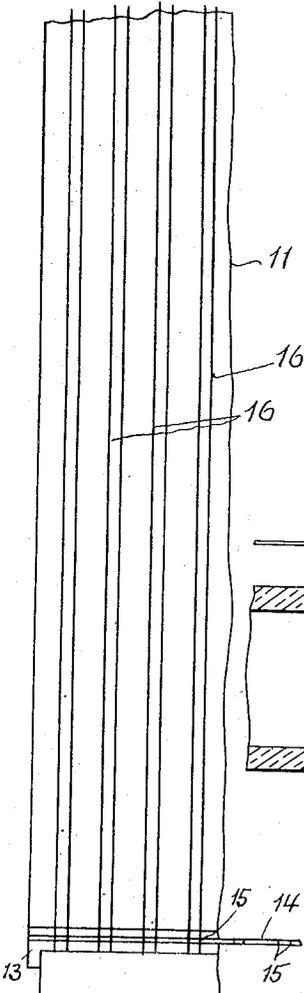


Fig. 6.

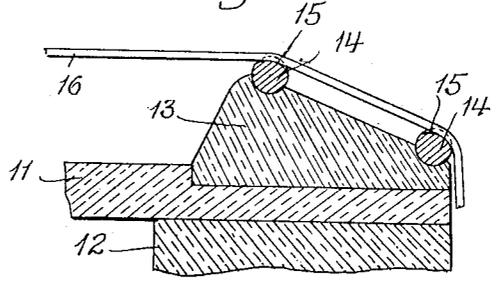
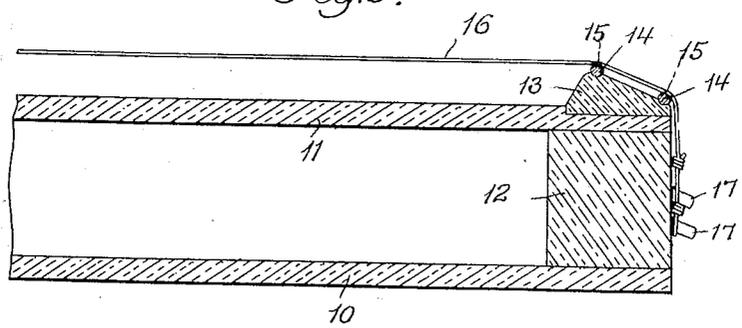


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY C. MARX, OF PALMER, KANSAS, ASSIGNOR TO THE PHONOGRAPH COMPANY, OF EAST BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

BRIDGE-WIRE FOR STRINGED INSTRUMENTS.

1,190,929.

Specification of Letters Patent. Patented July 11, 1916.

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To all whom it may concern:

Be it known that I, HENRY C. MARX, a citizen of the United States, and a resident of Palmer, in the county of Washington and State of Kansas, have invented certain new and useful Improvements in Bridge-Wires for Stringed Instruments, of which the following is a specification.

In such stringed musical instruments as zitherns, autoharps so-called, and the like, the strings of which are picked manually, or are vibrated mechanically by hammers, as shown in Letters Patent No. 1,004,553, granted to me on the 19th day of November, 1912, it is customary to employ a wire running longitudinally of the bridge on which the strings rest.

The present invention has for its object to provide certain improvements in the formation of such bridge wires, to permit the strings to be accurately separated and located, to reduce the tendency of the strings to break where they cross such wires, and yet not interfere with the vibrations of the strings. To accomplish the ends named, I form the bridge wire with a series of depressions or grooves, the bottoms of which are convexly curved in the direction of the length of the strings.

On the accompanying drawing,—Figure 1 represents a bridge wire embodying the invention. Fig. 2 is a perspective view of a bridge wire, magnified. Fig. 3 represents a cross section on a magnified scale of the bridge wire taken on the line 3—3 of Fig. 1. Fig. 4 represents a portion of a zithern provided with my improved bridge wire. Fig. 5 represents an enlarged section through a portion of such zithern on a plane perpendicular and transverse to the bridge. Fig. 6 represents a magnified section through the bridge.

On the said drawing, I have not shown any complete instrument, as it is unnecessary. I have shown, however, a portion of a zithern, comprising the base 10, the sounding board 11, the hitch pin block 12, the bridge 13 having the bridge wires 14, 14, arranged in semi-circular grooves therein, the strings 16, and the hitch pins 17. Fre-

quently the strings are arranged in pairs as shown in Fig. 4.

The bridge wire may be cylindrical, as shown, and at intervals, according to the desired spacing of the strings, it is provided with shallow transverse grooves indicated generally at 15. Each groove may have parallel side walls, but its bottom wall is convexly curved as shown in Fig. 3, so that, when said wire is cylindrical, the bottom wall is eccentric to the axis of said wire and the side walls of the grooves present the shape of a crescent. Hence, when a string is stretched across the wire and located in a groove therein, the straight portions of said strings are tangential to the bottom of the groove, the string bending gradually over the convex bottom wall and not being bent at a sharp angle as when it is curved over a straight edge. These grooves are preferably formed in the wire by dies under pressure, and are sufficiently shallow so as not to cause any lateral displacement of the metal of the wire. The compacting of the metal at the bottom of the groove hardens it, as will be readily understood by workers in metal, so that it is not worn by the sawing action of the string when the latter is being turned.

From the foregoing explanation, it will be seen that, by my improved bridge wire, I prevent the breaking of the strings at the bridge, by the convex groove formation; I prevent interference with the vibration of the strings, since the vibratory portions thereof are tangential to the convexly curved grooves; and I am able by said grooves to facilitate the accurate location of the strings.

Having thus explained the nature of my said invention and described a way of making and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:

1. A bridge wire for stringed musical instruments, having a series of transverse grooves, each groove having its bottom curved convexly longitudinally of the groove.

2. A cylindrical bridge wire for stringed

musical instruments having a series of transverse grooves, the bottoms of which are convexly curved and are eccentric to the peripheral surface of the remainder of said wire.

3. A bridge wire for stringed musical instruments, having a series of transverse grooves formed therein, the bottoms of the grooves being convexly curved longitudinally

of such grooves, and the metal forming such walls being compacted and harder than the metal of the wire between such grooves.

In testimony whereof I have affixed my signature, in presence of two witnesses.

HENRY C. MARX.

Witnesses:

W. P. ABELL,

P. W. PEZZETTI.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."