

(No Model.)

G. B. SHEARER.
HARP.

No. 593,818.

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Fig. 1.

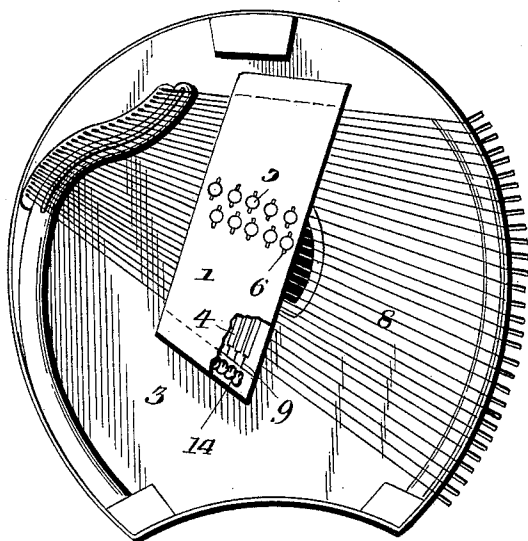


Fig. 2.

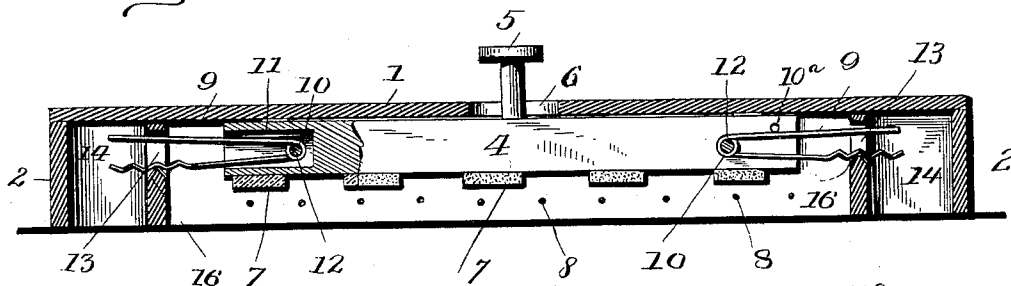


Fig. 3.

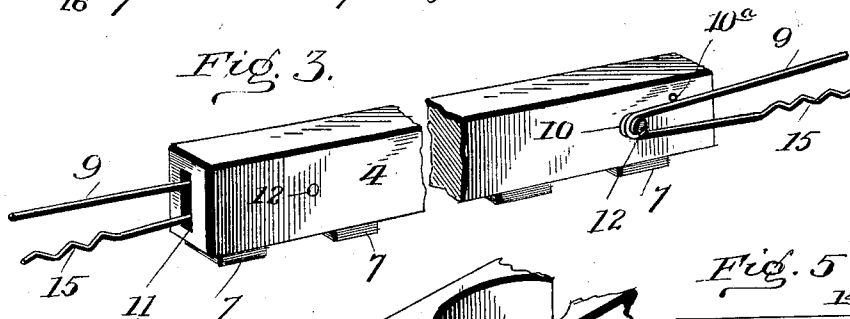


Fig. 4.

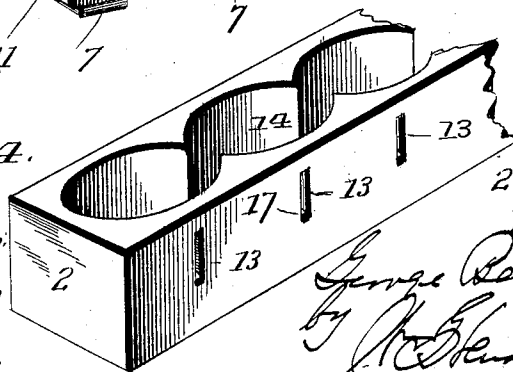
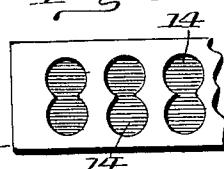


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE BENTON SHEARER, OF ONEONTA, NEW YORK.

HARP.

SPECIFICATION forming part of Letters Patent No. 593,818, dated November 16, 1897.

Application filed May 21, 1896. Renewed April 3, 1897. Serial No. 630,632. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BENTON SHEARER, a citizen of the United States, residing at Oneonta, in the county of Otsego and State of New York, have invented certain new and useful Improvements in Harps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of stringed instruments operating on the principle of the harp, and has for its object to provide improved means for sustaining the damper or muting bars, the construction being such as to permit the muting-bar to be shifted longitudinally, so as to bring it into position that will cause its damping or muting pads, when depressed, to contact with more or less of the strings, as desired.

It has also for its object to provide an improved construction whereby the muting-bars will be held to their various longitudinal adjustments, at the same time permitting the bars to be easily shifted when desired.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the construction and also in the combination of parts hereinafter particularly described, and then sought to be specifically defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a plan view of the meloharp; Fig. 2, a longitudinal section through the muting-bar bridge; Fig. 3, a perspective of one muting-bar, enlarged scale, showing two methods of applying the supporting-springs; Fig. 4, a perspective of one end support for the bridge, on an enlarged scale, and Fig. 5 a plan view of another construction of bridge-support.

In the drawings the numeral 1 designates the top of the muting-bar bridge, 2 the upright supports therefor, and 3 the sounding-board of the instrument.

The muting-bars are designated by the numeral 4 and are provided with the push-but-

tons 5, the shanks of which pass through the elongated slots 6 in the top of the muting-bar bridge, so as to permit a longitudinal movement of the muting-bars, said bars being provided with the muting-pads or dampers 7, which are arranged on the respective bars, so that they will come in contact with the necessary strings 8 to form the desired chord when the damper-bar is pressed down so as to bring its dampers in contact with the strings which are to be muted. The dampers will also be so positioned that by shifting the damper-bars longitudinally the dampers will contact with certain other strings of the series, so as to produce different chords from those produced when the dampers are in contact with certain other strings of the series, as will be understood by those skilled in the art.

The damper-bars will be supported by springs which will permit the bars to be shifted longitudinally, said springs thus not only constituting supports for the damper-bars, but also the means by which the bars are restored to their normal position out of contact with the strings. The springs which I have devised for this purpose are designated by the numeral 9. One of these springs is connected to each end of a damper-bar and extends beyond the end of the bar and into a recess or chamber formed in each upright support of the bridge, so that the spring may move in and out of the support as the damper-bar is shifted back and forth. The construction of spring which I have found best for this purpose is illustrated in the drawings and is formed of wire of suitable strength and elasticity, which is bent so as to form a loop, said spring at one point in its length being formed into a coil 10, which gives greater elasticity to the spring, and while it is much preferred to form it with this coil, still the same might be omitted without departing from other features of my invention involved in the formation and application of this spring. I prefer to attach the spring to the damper-bar by having the portion adjacent to the coil 10 laid along the side of the bar or inserted in a slot 11, formed in the bar, and securing it in place by means of a suitable pin 12, passed through the coil 10 and into the body of the bar. The projecting end of

each spring passes through a vertical slot 13, formed in the face of the supports of the muting-bridge, and each support back of the slots in its face is formed with a recess or chamber 14, adapted to receive the portion of the spring which extends into the same and permit it to move back and forth therein without binding contact with its walls. I prefer to form these recesses or chambers by boring one or more vertical bores in the support, and where two or more bores are made, in order to form the recess or chamber, to have one intersect the other so that the several bores together will form an elongated chamber or recess for the extended portion of the spring. The under side of the spring will have its bearing in the bottom of the slot 13, the bottom of the slot terminating at such point that when the spring rests thereon the dampers or muting-pads will be held above and out of contact with the strings. I prefer to have the springs 9 to fit snugly in the slot 13, so as to prevent slipping or vibration of the damper-bars, but not so snugly as to interfere with the easy movement of the bars in being shifted back and forth across the strings. It will be observed that this construction enables the bars to be shifted longitudinally, so that their dampers may be brought in contact with different strings of the series, so that one chord will be produced when the bar is in one position and a different chord when the bar is shifted across the strings. While the springs permit this movement of the bars, they at the same time constitute the means for restoring the bars to their normal position above the strings when they are released from contact with the strings by taking the finger from off the push-button.

For the purpose of holding each damper-bar in the position to which it may be shifted across the strings I corrugate or flute the under parts of the springs and taper or bevel the bottom of each slot, so as to form an inclined projection which will enter one of the flutes or corrugations in the springs and thus serve to temporarily lock or fasten the bar in the position to which it may be shifted. The corrugations in the springs are designated by the numeral 15, and the beveled projections which enter the same by the numeral 16. The elasticity of the springs allows them to yield, so that the corrugated or fluted portion is easily drawn over the beveled projections, and the expansion of the springs will cause them to hug snugly to the projections in whichever corrugation or flute the projection may for the time lie. The projections 16 may be beveled on either or both faces, as desired, and may be faced with rawhide 17 or other suitable material, so as to afford a suitable bearing-surface. This corrugating or fluting of the spring serves a very useful purpose; but it is obvious that however desirable it is to employ this feature other features of the invention can be employed without this with good results.

Particular attention is directed to that feature of the invention which involves the employment of a spring-support that permits the damper-bar to be shifted across the strings and at the same time to move vertically, so as to contact with the strings and be moved out of contact therewith, the means for effecting this being a spring, which constitutes at the same time a support and which is moved with the damper-bar in its back-and-forth movement and is guided in its movement by the slot in the bridge-support.

Another particular feature to which attention is directed is the corrugating or fluting of the spring-support by which the damper-bar is held in its adjustment and a spring-pressure is exerted between such corrugated portion and the tapered or beveled bearing with which the spring-support contacts.

When the supporting-springs are connected to the side of the muting-bar, I employ a pin 10^a above the top member of the spring to form a bearing therefor. This is not necessary where the spring is inserted in a slot, as the top wall of the slot will form the bearing.

I have illustrated and described with particularity the preferred details of construction of the several parts and their arrangement; but it is obvious that changes can be made therein without departing from the essential features of the invention.

Having described my invention and set forth its merits, what I claim is—

1. The combination with a muting-bridge, its supports, and a vertically and longitudinally movable damper-bar, of a spring connected to and movable with and affording a vertical elastic support for the damper-bar and projected beyond the end of said bar lengthwise thereof and into the bridge-support in which it is guided and has a sliding movement, substantially as and for the purposes described.

2. The combination with a muting-bridge, its supports, and a longitudinally and vertically movable damper-bar, of a spring connected to and affording an elastic support for said bar and projected from the bar into the bridge-support in which it is guided and has a sliding movement, said spring having a portion thereof fluted or corrugated, and a bearing for said corrugated portion to contact with, substantially as and for the purposes described.

3. The combination of a muting-bridge, a vertically and longitudinally movable damper-bar formed with a spring-support projected from its end lengthwise of the bar, and a support for the muting-bridge formed with a slot to receive the projecting spring and a chamber or recess in the support back of the slot for the reception of the spring, substantially as and for the purposes described.

4. The combination of a muting-bridge, a vertically-movable damper-bar, a supporting-spring secured to and projected lengthwise

from each end of the bar, and supports for the muting-bridge formed on their faces adjacent to the ends of the bar with slots into which the projected ends of the supporting-springs extend, substantially as and for the purposes described.

5 5. The combination of a muting-bridge, a vertically and longitudinally movable damper-bar, a spring projected from the damper-
10 bar lengthwise of the bar and having its bearing in the bridge-support, a portion of said spring being corrugated or fluted, and a bearing for the corrugated portion of the spring to contact with, substantially as and for the
15 purposes described.

6. The combination of a muting-bridge, a vertically and longitudinally movable damper-bar, a spring carried thereby in the vertical and longitudinal movement of the bar,
20 and a member for said spring to engage with, substantially as and for the purposes described.

7. The combination of a muting-bridge, a vertically and longitudinally movable damper-bar, a corrugated or fluted spring carried
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by the damper-bar, and a member for the corrugated portion of said spring to engage with, substantially as and for the purposes described.

8. The combination of a muting-bridge, a damper-bar, a corrugated or fluted spring-support for the bar, and a member to engage the corrugations of said spring-support to retain the bar in position at the point of contact between said member and the spring-support, substantially as and for the purposes described.

9. The combination of a muting-bridge, a damper-bar, a spring connected to said bar and extending lengthwise thereof, and a bearing for said spring to rest upon, said bearing and spring being free from a fixed connection with each other, substantially as and for the purposes described.

In testimony whereof I affix my signature
45 in presence of two witnesses.

GEORGE BENTON SHEARER.

Witnesses:

RALPH HARDY REED,
SEYMOUR BARTLETT SHEARER.