Aug. 9, 1927. 1,638,495

C. H. R. LONGBOTTOM

MUSICAL INSTRUMENT

Filed Dec. 11, 1925

Fig. 1,

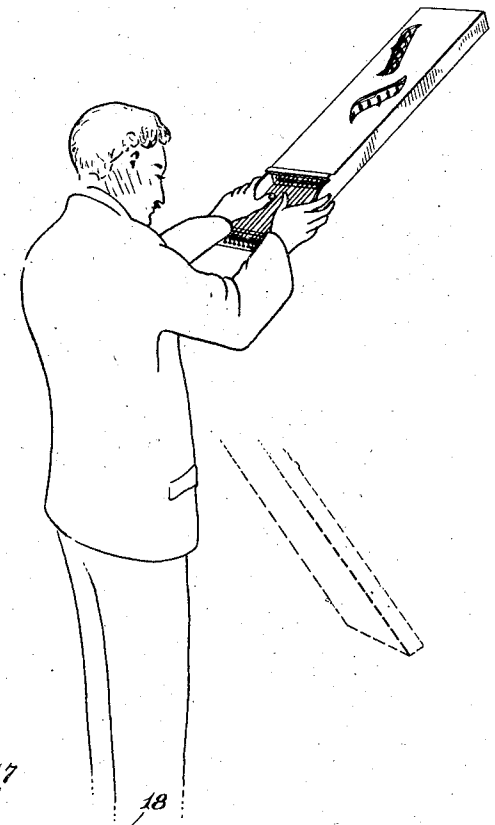
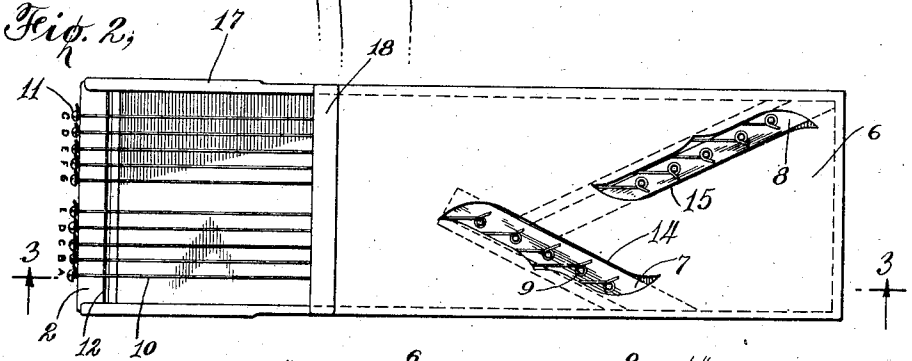


Fig. 2,



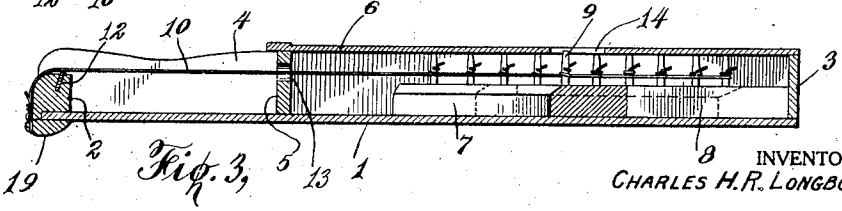


Fig. 3,

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UNITED STATES PATENT OFFICE.

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MUSICAL INSTRUMENT.

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This invention is an improvement in musical instruments, and more particularly in instruments of the harp type.

In all usual constructions of musical instruments, so far as I am aware, which utilize wire strings, the strings are designed to be vibrated by means of a pick as for instance the mandolin, or by means of a hammer, as for instance the piano. In the former case, there is more or less clashing or dissonance from the contact of metal or other unyielding material with metal, while the latter type is not suitable for an instrument to be held in the hand.

In both types the instrument must occupy a fixed position during the playing and any movement of the instrument to attain the beautiful overtones resulting from regular movement with respect to the hearer, such as are possible with bells, is impracticable. Furthermore substantially all instruments are tuned in accordance with the chromatic scale, and striking of the strings in unison or in rapid succession results in clashing or dissonance.

One of the primary objects of the present invention is the provision of a musical instrument capable of being held in the hands and swung through the air while the strings are vibrated to produce an orderly succession of notes, thereby to closely simulate the tones and overtones produced by bells arranged in chimes.

Another object is the provision of an instrument wherein a minimum number of strings is provided, tuned in accordance with the natural scale, so arranged that all are accessible to the player's thumbs from either side of the instrument, and without releasing the hold of either hand from the instrument.

Another object is the provision of a simple inexpensive instrument, requiring a minimum of skill and practice to master the same.

With these and other objects in view, the invention consists in the construction and novel combination of parts fully described hereinafter, illustrated in the accompanying drawings, and pointed out in the claims appended hereto, it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims, may be resorted to without departing from the spirit of the invention.

In the drawings:

Fig. 1 is a perspective view of the improved instrument, showing the manner of its manipulation during the playing thereof.

Fig. 2 is a plan view of the instrument.

Fig. 3 is a section on the line 3—3 of Fig. 2.

In the present embodiment of the invention, the improved instrument includes a sound box, and what may be considered as a key-board. The instrument is composed of a base or bottom 1 of relatively heavy material, preferably wood, of a suitable length and width, and at one end of the base a bridge 2 is secured. The key-board is at the end adjacent the bridge, and the other end is enclosed to form a sound box.

An end plate 3 is secured to the base at the opposite end from the bridge, and side plates 4 extend between the bridge and end plate, at each side of the base.

The sound box is closed at the end adjacent to the bridge by a cross plate 5, and a cover 6 is secured to the upper edges of the plates 3, 4, and 5, between the plates 3 and 5. This plate 6 leaves a portion of the upper face of the base exposed as shown.

Within the sound box bridges or anchor bars 7 and 8 are secured to the base in any suitable manner and rotatable keys 9 are journaled in the bars. Referring to Fig. 2, it will be seen that the bars are arranged on the base in a position inclined with respect to each other, the said bars converging toward the bridge 2. The arrangement is such that the keys, in the present instance ten in number, are spaced apart from each other laterally of the sound box, and also longitudinally of the box. The strings 10, ten in number corresponding to the number of keys are anchored to the outer face of the bridge, in any suitable manner, in the present instance by studs or screws 11 or the like, and at the other end each string winds upon a key.

The anchor studs 11 are spaced apart from each other, distances corresponding to the lateral spacing of the keys, so that the strings 10 extend in parallel laterally spaced relation from the bridge to the anchor bars. A fret 12 of metal or the like is inserted in the bridge over which the strings are

strained, and the cross plate 5 has a longitudinally extending opening 13 through which the strings pass to the keys.

The cover has elongated openings 14 and 15 at the anchor bars 7 and 8, to permit access to the keys journaled in the anchor bars, and preferably the openings 14 and 15 are of ornamental contour as shown.

Each side plate 4 is preferably thickened at the end adjacent to the bridge, and over a distance approximately equal to that of the length of the key-board, as indicated at 17, to provide what is in effect a handle, to facilitate grasping of the instrument during playing. Preferably the cover plate 6 is provided with a transversely arranged reinforcing rib 18 at the cross plate 5 to strengthen the same, and to improve the appearance of the instrument.

A cross bar 19 is arranged transversely of the base at the end adjacent to the bridge, and adjacent the bridge, as shown in Fig. 3, the said rib being rounded to provide a stay for the fingers on the under side of the base, to prevent them slipping during the swinging of the instrument.

The improved instrument may be ornamented in any suitable or desired manner. As for instance the studs 11 may be replaced by a tail piece, of the type used in guitars. The keys instead of those shown, which are adapted to be turned by a wrench may be of any other desired character. Since the strings are of wire, a comparatively strong key arrangement is desirable.

The improved instrument is played in the manner shown in Fig. 1, that is it is grasped at the enlargements 17, with the thumbs extending inwardly above the side plates 4, and with the little fingers of the two hands bearing against the cross bar 19. During the playing, the instrument is swung with a regular movement, upwardly and downwardly, or from side to side, or with a combination of both. Whatever the direction, the movement should be uniform and preferably in time with the air played. So held each thumb may strike the five strings adjacent thereto, and by slightly shifting either hand, while the other retains his grasp on the instrument, either thumb may sweep all the strings. The strings are spaced far enough to permit the fullest vibration without interference, and to permit striking of any with the thumb, without interfering with the others.

The strings which may be ten more or less, ten being preferred, are tuned in accordance with the natural scale. With ten strings the tuning would be from the longest to the shortest, C, D, E, F, G, A, B, C, D, E.

It will be noticed that the improved instrument is relatively long and narrow. The over all width of the instrument is but little more than a span, usually about 8 inches, and is such that without entirely disengaging the fingers from the side of the instrument, the thumb of either hand may reach the most distant string. While the instrument may be played without movement thereof it is primarily designed for swinging movement during the playing, as illustrated in Fig. 1.

I claim:

1. A musical instrument comprising a sound box having a base extending beyond the box at one end and provided at each side edge with a grip for enabling the box to be grasped in the hands and to be swung during playing, said box and base supporting a set of strings adjacent to each grip and so positioned and spaced as to be within reach of the player's thumbs when grasping the grips.

2. A musical instrument comprising a sound box having a base extending beyond the box at one end and provided at each side edge with a grip for enabling the box to be grasped in the hands and to be swung during playing, said box and base supporting a set of strings adjacent to each grip and so positioned and spaced as to be within reach of the player's thumbs when grasping the grips, the sound box having a wrest-plank for each set of strings, said planks converging toward the middle of the box to support the shorter strings at the middle, the strings tuned in accordance with the natural scale.

3. A musical instrument comprising a base having a bridge at one end of the base, a plurality of wrest-planks at the other end, a set of springs stretched between each plank and the bridge, a sound box enclosing the wrest-planks and the major portion of the strings but spaced apart from the bridge to provide a key-board, said base being relatively long and of a width such that all of the strings are within reach of the thumb of either hand, when said hand is grasping the adjacent side of the base without releasing the grasp of the instrument, the base having a stay for the fingers on the under side thereof at the key-board.

Signed at New York in the county of New York and State of New York, this 10th day of December, A. D. 1925.

CHARLES H. R. LONGBOTTOM.