Dec. 2, 1952 M. E. NIXON 2,619,864

STRINGED INSTRUMENT

Filed Sept. 6, 1950 2 SHEETS—SHEET 1

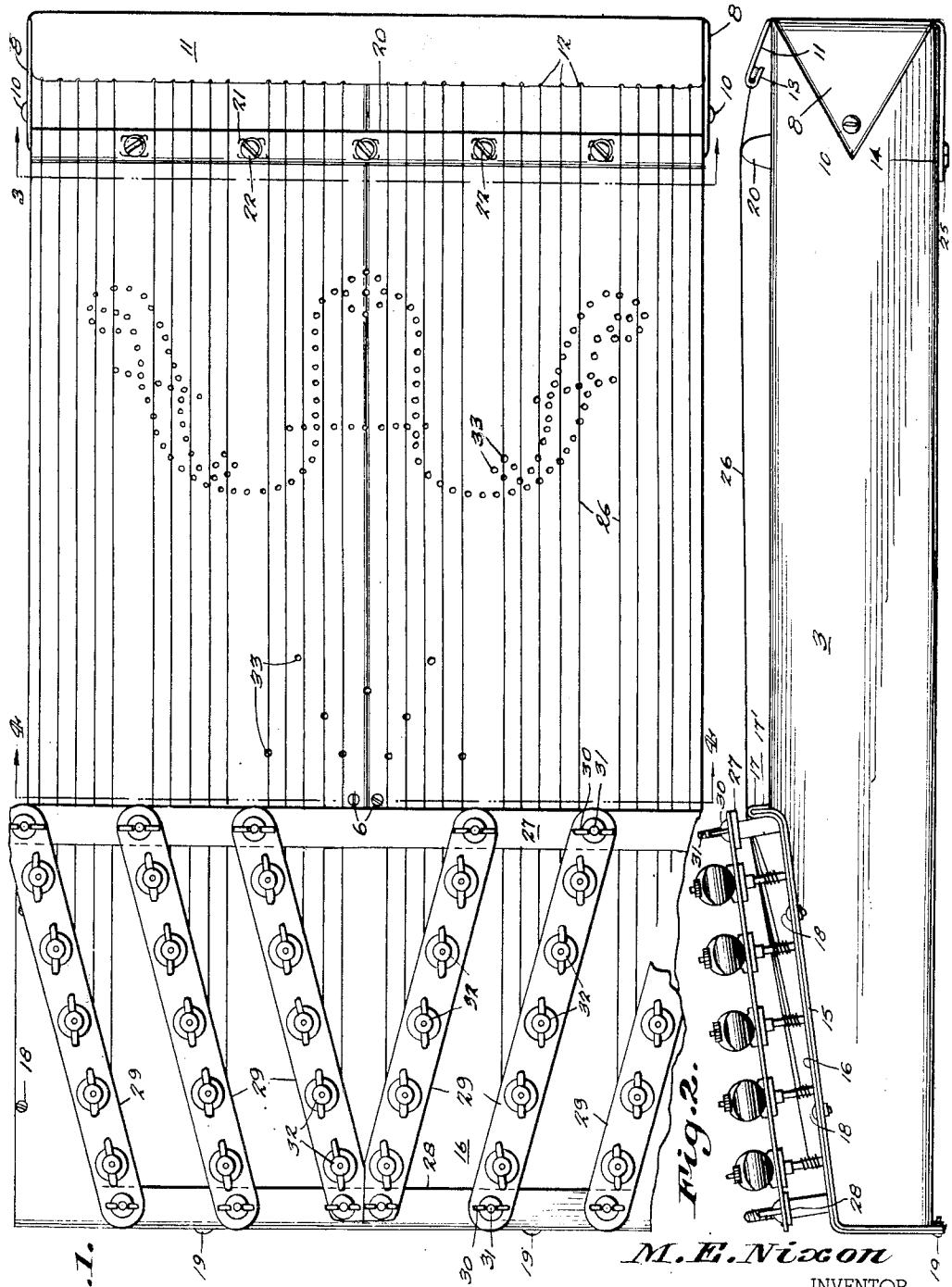


Fig. 1.

Fig. 2.

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Fig. 5.

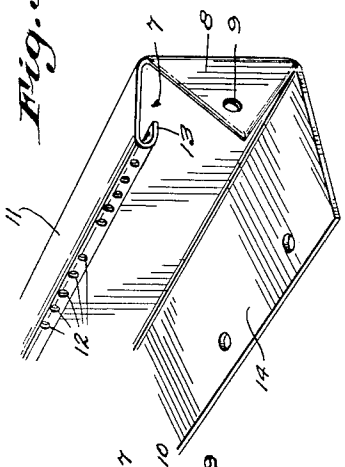


Fig. 6.

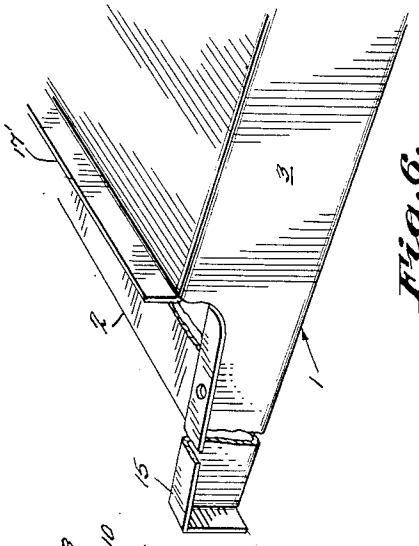


Fig. 3.

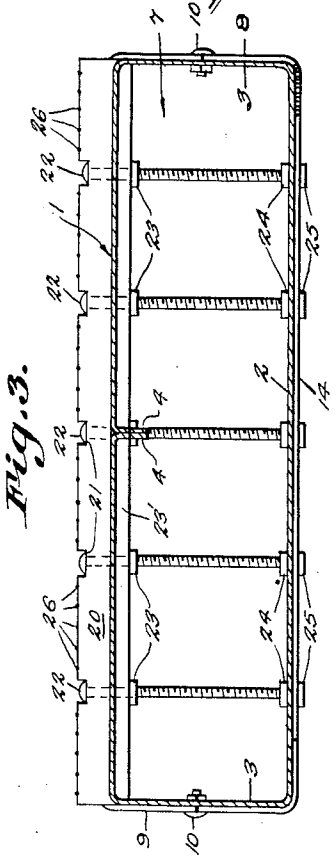
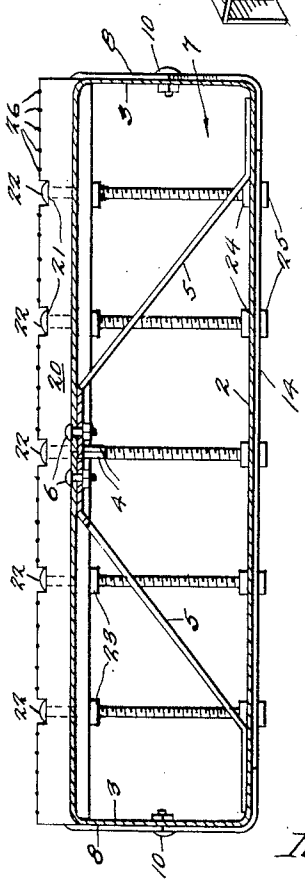


Fig. 4.



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Patented Dec. 2, 1952

2,619,864

UNITED STATES PATENT OFFICE

2,619,864

STRINGED INSTRUMENT

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Application September 6, 1950, Serial No. 183,325

2 Claims. (Cl. 84—285)

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This invention relates to a stringed instrument, and more particularly has reference to a stringed instrument which can be termed a zither or harp.

An important object of the present invention is to provide an improved construction for an instrument of the character stated, whereby a sound box is formed of a novel construction in such a manner as to improve considerably the tonal quality of the instrument.

Another important object is to provide a construction for a stringed instrument as described, which construction will permit construction of the instrument from metal, such as sheet metal material.

Still another object is to provide a stringed instrument of the character stated which is so formed as to permit its fabrication by mass production methods.

Yet another object is to provide a stringed instrument which, considering the desirable tonal qualities thereof and the adaptability thereof for mass production, will nevertheless be capable of low cost manufacture.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings

Figure 1 is a top plan view of the instrument formed in accordance with the present invention, portions being broken away.

Fig. 2 is a side elevational view.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a section on line 4—4 of Fig. 1.

Fig. 5 is a fragmentary perspective view of a back plate.

Fig. 6 is a fragmentary perspective view of the head end of the sound box.

Referring to the drawings in detail, the stringed instrument constituting the present invention includes a sound box which can be formed substantially from a single piece of sheet metal material cut to a desired shape in blank, and readily bent or otherwise fashioned into a closed sound box having desirable qualities so far as appearance and tonal characteristics are concerned. The sound box has been generally designated 1, and includes a metal blank the sides of which are bent upwardly so as to define an approximately rectangular flat bottom 2 from

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which low vertical side walls 3 extend upwardly, from the head to the foot end of said sound box as readily seen from Fig. 2. The side walls 3 at their upper ends are integral with inwardly extended top sections, the edges of which are flanged downwardly along a line extending longitudinally and centrally of the sound box as at 4, and said flanges can be joined in any suitable manner.

Bracing the front portion of the sound box in such a manner as to hold the top portion and bottom portion in parallelism and prevent collapse of the top portion are the angular braces 5 disposed entirely in a concealed position within the sound box, said braces 5 being secured at their upper ends by the bolts 6 or equivalent fasteners to the top sections, the braces diverging downwardly and being rigidly secured in any suitable manner at their lower ends to the bottom plate 2.

Closing the back end or foot end of the sound box is a back plate 7, the construction of which is best illustrated in Fig. 5. This, like the sound box, is formed from a single piece of sheet metal material, formed with forwardly extended side wings 8 each of which has an opening 9 adapted to receive a bolt 10 or equivalent fastener, whereby the wings are securely fastened to the foot ends of the side walls 3.

Formed upon the top edge of the back plate 7 is the forwardly extended top flange 11 extending transversely of the foot of the sound box, and this folded rearwardly upon itself as readily seen in Fig. 5, the folded portion being formed with a series of string-receiving openings 12 extending from side to side of the sound box.

The rearwardly extended folded over portion 13 of the flange 11 is spaced above the top surface of the sound box, as readily seen from Fig. 2.

Extending forwardly from the lower edge of the back plate 7 and integral with said back plate is the bottom flange 14, that underlies the bottom plate 2 of the sound box, and which is secured to the bottom plate 2 in a manner to be presently made apparent.

At the front end of the sound box, the side walls 3 are cut away partially along their top edges, downwardly and at an angle as best seen from Figs. 2 and 6, and the inclined top edges of the cut away portions are flanged outwardly as at 15.

This front or head end of the sound box is closed by a head plate 16 that covers the top portion of the head end of the sound box, this being supported upon the flanges 15, and having

the transversely extended folded over flange 17, the flange 17 straddling the upstanding flange 17' formed upon the front edges of the top sections of the sound box.

Fastening means 18 are used to secure the side portions of the plate 16 upon the flanges 15 of the sound box side walls 3.

The plate 16, at the head end of the sound box, is extended downwardly and is secured by fastening means 19 to the down turned front edge of the bottom plate 2.

At the front end of the sound box there is mounted the transversely extended bridge 20 extending across the top sound box sections, this being formed with spaced recesses 21 as readily seen from Figs. 3 and 4, the recesses 21 receiving securing bolts 22 that extend downwardly through the bridge and through the sections of the top plate of the sound box. The bolts 22 extend downwardly through the bottom plate 2.

Nuts 23 are threaded upon the bolts 22, and are threaded upwardly against a rib 23' underlying each of the sections of the top portion of the sound box.

Nuts 24 are also threaded upon the bolts 22 interiorly of the sound box, and are threaded downwardly upon the inner surface of the bottom plate. Lock nuts 25 are threaded on the bottom ends of the bolts, and are threaded upwardly against the forwardly extended bottom flange 14 of the back plate 7, so as to secure said back flange in place upon the bottom plate 2.

In this connection, it will be seen that by adjustment of the nuts 23, 24, 25, the top and bottom plates of the sound box can be placed under tension to a certain extent or spaced exactly as desired for the purpose of producing the best tonal quality and to cause resonance of the sounds produced. At the same time, the bolts 22 serve as means for effectively securing the sound box components in a rigidly connected manner, and also serve to secure in place upon the sound box the bridge 20.

The strings 26 of the instrument overlie the sound box, and at one end are connected to the folded flange 13, after passage through the openings thereof. From this flange, the strings 26 are extended forwardly in spaced parallel relation and are trained over the bridge 20, after which the strings are trained over the upstanding flange 17 of the head plate 16, which constitutes a bridge for this purpose. The strings are now extended downwardly and at an incline and are secured to keys for adjusting the tension thereof for the purpose of putting the strings in tune.

Considering the mounting of the strings at the head end of the instrument, reference should be had to Figs. 1 and 2. It is here seen that a mounting frame for the keys of the instrument is provided, this frame including transversely extended cross members 27 and 28 respectively, between which extend the obliquely disposed key supports 29. As may be noted, each key support is disposed obliquely to a line extending longitudinally and centrally of the sound box, so as to be disposed in a position to permit connection of a predetermined number of strings, five strings being connected to each in the present instance. At one side of the longitudinal center line of the instrument, the supports 29 are extended obliquely in one direction, while on the other side the supports are extended obliquely in an opposite direction.

The cross bars 27 and 28, in this connection, are mounted in elevated positions above the sound box, and to this end, wing nuts 30 serve as hold down means threadable upon threaded posts 21 extending upwardly from the sound box.

Mounted upon each of the supports 29 is a longitudinal series of spaced keys 32, to each of which one of the strings 26 is secured, said keys being adapted for placing the strings under desired tension for the purpose of placing them in tune.

The top surface of the sound box can if desired be formed with any arrangement of ornamental openings 33, which openings additionally serve to improve the quality of tone.

Important characteristics of the sound box and stringed instrument reside in its simplicity of construction, the instrument being formed from readily fabricated sheet metal material, the external surface of which can be chrome plated or otherwise ornamentally treated so as to impart to the completed instrument an attractive appearance. The sound box, as may be noted, comprises a single sheet of material formed to provide side walls, a bottom plate, and a top portion, and the back and head ends of the stringed instrument are also provided from sheet metal material bent to shape to close the front and back portions of the sound box. Additionally, important characteristics of the invention are believed to reside in the particular string arrangement and the arrangement whereby the bars 29 are mounted obliquely in a manner to receive a plurality of the strings, said bars being supported in elevated positions above the sound box by a specially formed key supporting frame.

What is claimed:

1. A stringed instrument comprising an elongated sound box formed from a single piece of sheet metal material bent to shape and fashioned into a bottom plate, side walls, and top sections, said top sections meeting along a line extending longitudinally and centrally of the instrument and being secured together, a bridge mounted on the sound box adjacent one end thereof and extending over said top sections, means extending through the bridge, top sections and bottom plate and connected to said top sections and bottom plate for moving said bottom plate and top sections towards and away from one another, a back plate closing the back end of the sound box, strings secured to said back plate and extending over said bridge, and means carried by the sound box adjacent the bridge and connected to said strings for tensioning the strings.

2. A stringed instrument comprising an elongated sound box formed from a single piece of sheet metal material, said piece being formed with a rectangular bottom plate, side walls upstanding from and integral with said bottom plate, and top sections integral with the respective side walls and extending inwardly from said side walls, a back plate closing and rigidly secured to the sound box adjacent one end thereof, a bridge carried by the top sections and extending transversely thereacross adjacent the end of the instrument remote from the back plate, the end of the sound box remote from the closed end thereof extending downwardly, spaced parallel cross bars carried by the inclined portion of the sound box, obliquely disposed key supports carried by and extending between the cross bars, upwardly extending longitudinally spaced keys carried by said key supports, a bridge carried by and extending across the top sections, and

strings extending across the bridge and connected to the back plate and to the keys.

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