Dec. 2, 1958 W. J. KREIZEL 2,862,412

PORTABLE XYLOPHONE BAR SUPPORT

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FIG. 1.

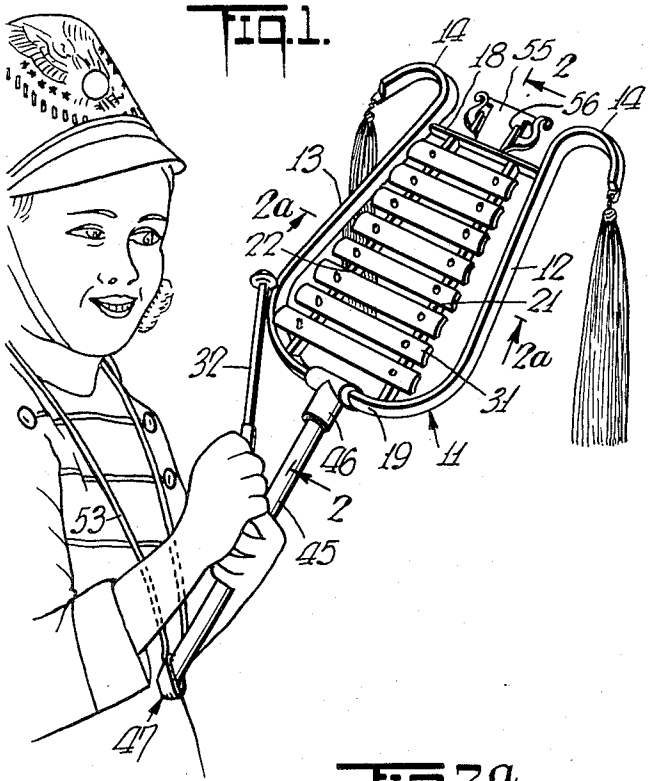


FIG. 2.

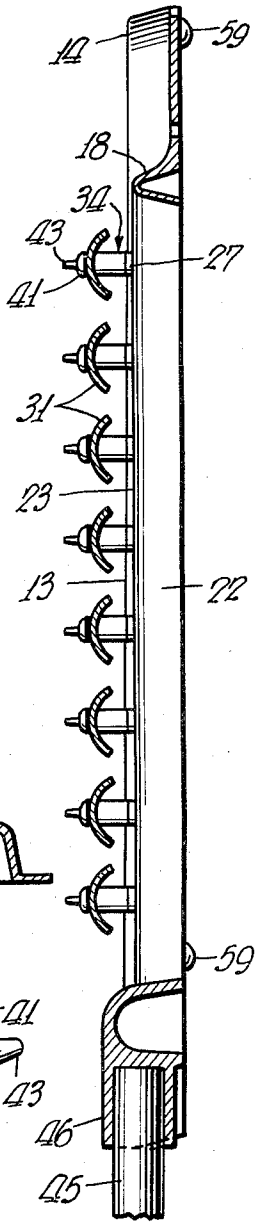


FIG. 2a

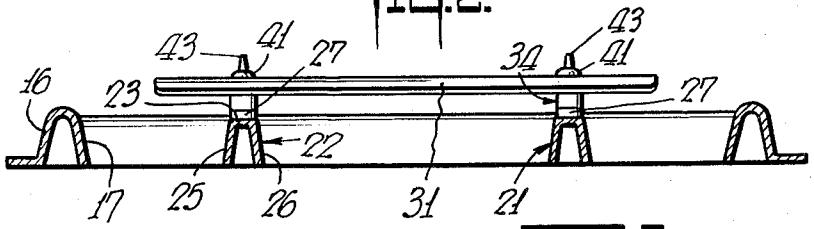


FIG. 4.

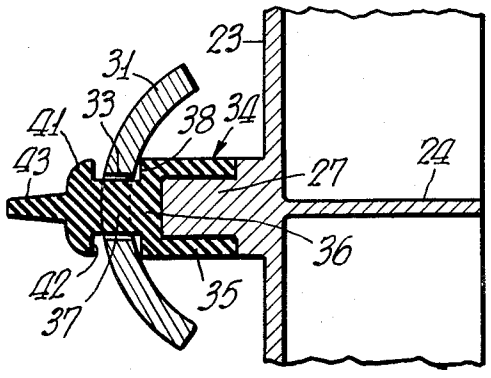


FIG. 5.

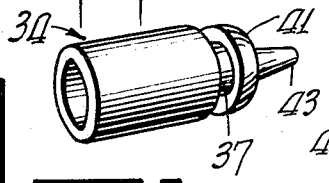
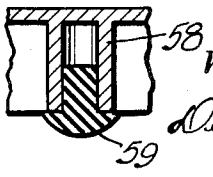


FIG. 6.



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FIG. 3.

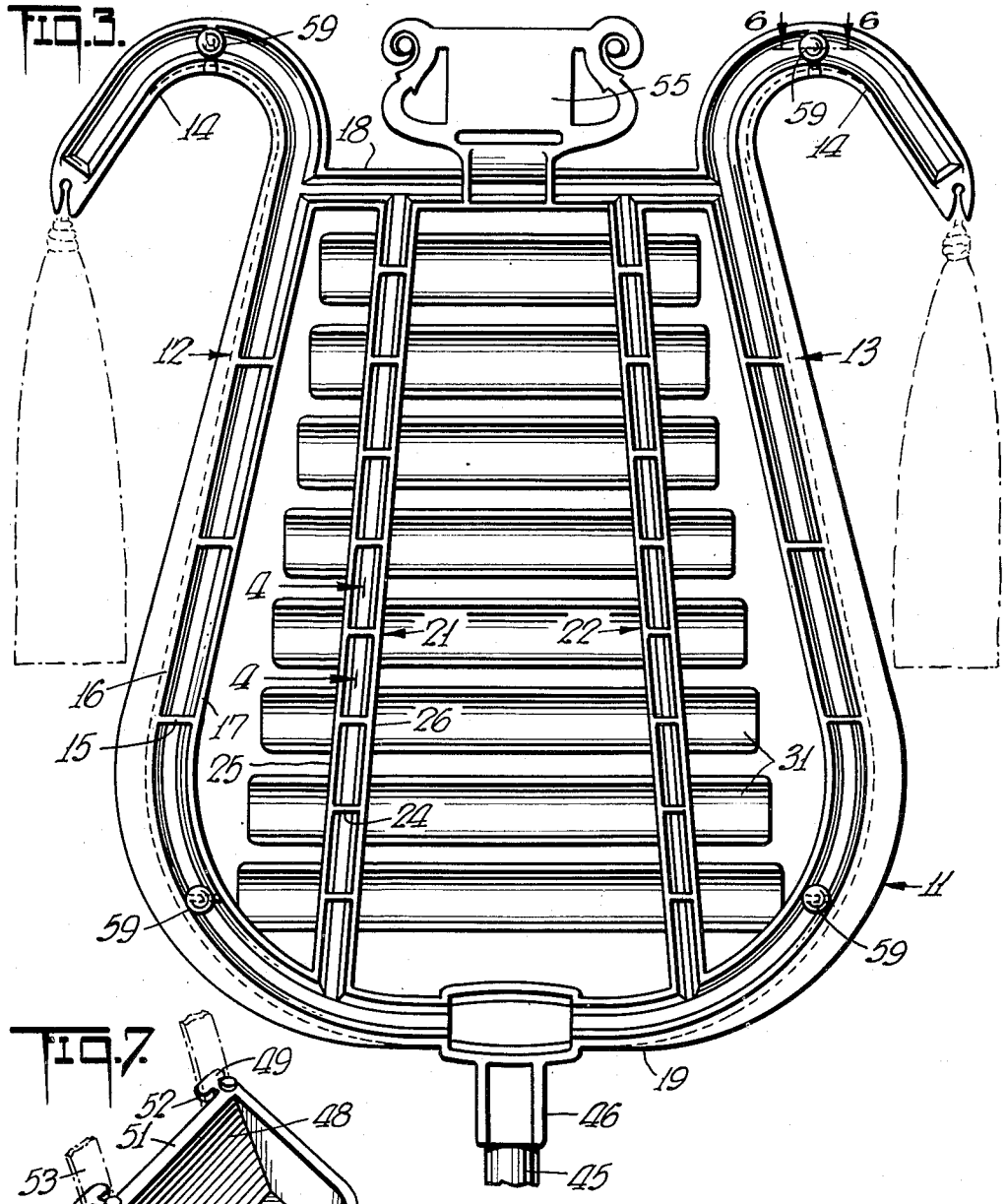
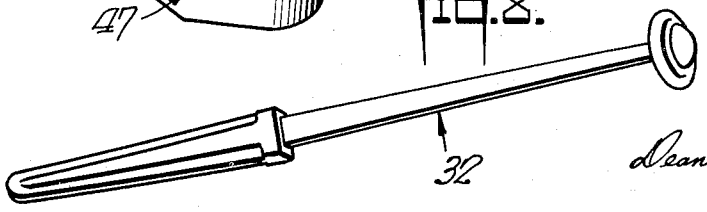


FIG. 7.

FIG. 8.



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PORTABLE XYLOPHONE BAR SUPPORT

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2 Claims. (Cl. 84—403)

This invention relates to the art of musical instruments, more particularly of the type known as xylophones.

In order that the standard portable xylophone usually called a "Glockenspiel," of the type used in bands, and which is carried in substantially vertical position, produce tones of the desired fidelity, it must be made with great precision, with resultant high cost.

Where to reduce the cost, in order to provide an inexpensive instrument for use by children, the individual musical bars are mounted on supporting bars of wood, by nails or rigid pegs, for example, the musical tones are damped with resultant poor fidelity. Such poor fidelity also results when the musical bars are held together by strings or cords.

When the musical instrument is used in a horizontal position, in the manner of a conventional xylophone, and the musical bars rest directly against the supporting bars therefor, the musical notes are also damped with resultant poor fidelity.

It is accordingly among the objects of the invention to provide an instrument of the above type, which is light in weight, has few inexpensive components that may readily be fabricated without need for great precision, and which may readily be assembled to form the completed instrument without the use of any tools, and which will simulate in both appearance and sound reproduction, conventional standard instruments of the same type and of much greater cost, and which will provide high fidelity response, regardless of the position in which it is used.

According to the invention, these objects are accomplished by the arrangement and combination of elements hereinafter described, and particularly recited in the claims.

In the accompanying drawings, in which are shown one or more of various possible embodiments of the several features of the invention,

Fig. 1 is a perspective view of the instrument,

Fig. 2 is a longitudinal sectional view, on an enlarged scale, taken along line 2—2 of Fig. 1,

Fig. 2*a* is a transverse sectional view on a greatly enlarged scale, taken along line 2*a*—2*a* of Fig. 1,

Fig. 3 is a rear view of the instrument, also on a greatly enlarged scale,

Fig. 4 is a detail sectional view, taken along line 4—4 of Fig. 3,

Fig. 5 is a perspective view of the musical bar mounting member,

Fig. 6 is a detail sectional view, taken along line 6—6 of Fig. 3,

Fig. 7 is a perspective view of the carrying socket, and

Fig. 8 is a perspective view of the hammer.

Referring now to the drawings, the instrument comprises a substantially U-shaped frame **11**, the legs **12** and **13** of which are inclined toward each other, and the free ends of which are reversely bent, as at **14**.

To impart rigidity to the frame, which is desirably molded from suitable plastic, it desirably is substantially

U-shaped in cross-section, as shown in Fig. 2*a*, and a plurality of strengthening ribs **15** (Fig. 3) are provided at the rear thereof, extending transversely between the walls **16** and **17** of the legs **12** and **13**, and molded integrally therewith.

The frame is also reinforced by a substantially U-shaped support bar **18**, molded integrally with the legs **12** and **13**, and positioned therebetween near their reversely bent ends **14**, said bar **18** extending parallel to the cross piece **19** of the frame **11**.

Extending between the bar **18** and the cross piece **19**, are a pair of elongated, spaced supporting members **21** and **22**, also substantially U-shaped in cross-section and desirably having a flattened top surface **23**. The supporting members **21** and **22** are strengthened by means of a plurality of transverse ribs **24** (Fig. 3) molded integrally therewith, and positioned between the side walls **25** and **26** of each of the supporting members. The supporting members are also molded integrally with the bar **18** and the cross piece **19**, and the distance between said supporting members gradually increases from bar **18** to cross piece **19**.

Extending outwardly from the top surface **23** of each of the supporting members, molded integrally therewith, and equally spaced along the length thereof, are a plurality of pegs **27** (Fig. 4), illustratively eight in number, the pegs being transversely aligned on said supporting members.

The respective pairs of transversely aligned pegs **27** serve as the support for the musical bars **31** of the instrument. As illustratively shown, eight bars are provided for one octave, and they are of dimensions such as to provide the selected frequency range.

Although the bars **31** could be of any desired shape and any suitable material, as is well known in the art, they are illustratively formed from strips of aluminum that are concave in cross-section, and which are cut to predetermined lengths, which differ for each desired frequency in the selected range. The bars are mounted on the supporting members, with their concave surfaces positioned outwardly, so that they may readily be struck by a suitable hammer **32** (Fig. 8).

To mount the bars **31**, each is provided with a pair of openings **33**, so spaced that they will be aligned with an associated pair of transversely aligned pegs **27** on the supporting members **21** and **22**.

As the supporting members **21** and **22** are inclined toward each other, in order that the musical bars **31** will be within the legs **12** and **13** of the frame **11**, the longest bar **31** for the lowest note in the octave is positioned adjacent the cross piece **19** of the frame, and the shortest bar **31** for the highest note is positioned adjacent the bar **18**.

To mount the bars **31** on the pegs **27**, a resilient member **34** is provided, preferably formed from pure gum rubber. The mounting member **34**, as shown in Fig. 4, has a base, in the form of a cylindrical cup **35**, at its lower end, of internal diameter such that it may fit snugly on the associated peg **27**. To ensure that the cup will remain on the peg **27**, a suitable cement may be coated on the peg **27**, before the sleeve is positioned thereon.

Extending axially from the face **36** of cup **35**, and formed integral therewith, is a stem **37** of diameter less than that of cup **35**, so as to define an annular shoulder **38**. The diameter of stem **37** is slightly less than that of the opening **33** in the musical bar **31**, and the length of stem **37** is slightly greater than the thickness of said musical bar **31**.

The free end of stem **37** mounts a cap **41**, formed integral with stem **37**, and of diameter substantially

equal to that of cup 35. The cap 41 is flat on its undersurface as at 42, and is of sufficient thickness so that it will be relatively rigid. To facilitate mounting the bars 31 on the mounting members 34, each of the caps 41 has a projection 43, formed integrally therewith, and extending axially therefrom.

Thus, to mount the musical bars 31, after the mounting members 34 have been affixed to stems 27, the bars 31 are positioned on the respective pairs of transversely aligned mounting members 34, so that the projectings 43 extend through the associated openings 33. The projections 43 are then grasped and pulled outwardly, while the bars are pressed against the shoulders 38 of the mounting members 34. As a result, the stem 37 will be stretched slightly and the resilient caps 41 will snap through the associated openings 33 in the bars 31.

The bars 31 will then be securely retained between the caps 41 and the shoulders 38, and as the diameter of the stem 37 is less than that of opening 33 and the length of the stem 37 is greater than the thickness of the musical bar 31, the bars will not be gripped. As a result of such relatively loose support and also due to the resilience of the mounting members 34, when the bars 31 are struck by the hammer 32, the musical notes will not be damped, regardless of the position of the instrument.

The instrument may be held by the player by means of a handle or rod 45, which fits at one end into a sleeve 46, molded integrally with the cross-piece 19 of the frame 11, and extending at right angles thereto.

To give further support for the instrument, when it is carried by the player in the manner shown in Fig. 1, a carrying socket 47 (Figs. 1 and 7) may be provided, also desirably molded from plastic.

As shown in Fig. 7, the socket 47 has an inclined rear wall 48, with a finger 49 extending outwardly from its upper edge 51, at each side thereof, each of said fingers having a pair of lateral ears 52 at its free end. The fingers extend through openings in a perforated supporting strip 53, which may be worn around the neck of the player in the manner shown in Fig. 1, the ears 52 retaining the fingers in the associated openings.

In order that the player may have music readily available while he is carrying the instrument, a plate 55, which is molded integrally with the frame 11, extends outwardly from the bar 18 at right angles thereto, and in a plane parallel to the plane of the frame 11. Molded integrally with the plate 55, are spaced fingers 56, which are spaced from said plate and extend parallel thereto. Thus, sheets of music may be positioned between the fingers 56 and the plate 55, so that they are readily viewable by the player.

As the instrument may be positioned on a table to be used in the manner of a conventional xylophone, the back of the frame between the side walls 16, 17, of the legs 12 and 13 is desirably provided with suitable holders 58 (Figs. 3 and 6) for resilient feet 59, desirably of rubber or the like.

With the construction above described, a musical instrument is provided which may be used in any desired position, without detracting from the high fidelity of the musical tones produced, and the U-shaped frame provides a chamber which affords an efficient sounding board, so that the musical notes continue for a relatively long period after the musical bars 31 are struck by the hammer 32.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description, or shown in the accompanying drawings, shall be interpreted as illustrative, and not in a limiting sense.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a musical instrument of the type comprising a frame having a pair of spaced legs of plastic, musical bars extending transversely between said legs and of graduated pitch, and means for affixing said bars to the respective legs; the combination in which the affixing means comprises pegs unitary with the legs and rising therefrom and in which each peg mounts a unitary resilient bar support, said support comprising a cup telescoped over the peg, with its face covering the peg, a solid, cylindrical resilient stem unitary with said cup face and coaxial therewith extending with clearance through a corresponding aperture in the musical bar and a cap unitary with the stem, of diameter larger than the stem and the aperture, whereby the musical bar is mounted resiliently about the stem and between the end of the cup and the cap of the resilient member.

2. The combination recited in claim 1 in which the resilient bar support is of gum rubber and includes a resilient handle coaxial with the cap and protruding outward therefrom, whereby in assembly the musical bar may be laid upon the cap with the stem protruding through the aperture in the bar and upon exerting tension on the handle and pressing downward against the musical bar, the bar will pass under the resilient cap and be retained in place.

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