J. C. DEAGAN.

XYLOPHONE.

APPLICATION FILED FEB. 15, 1915.

1,173,784. Patented Feb. 29, 1916.

Fig. 1.

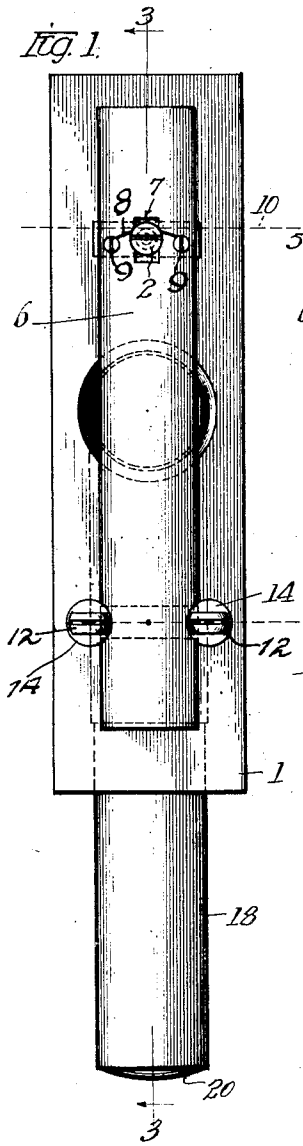


Fig. 2.

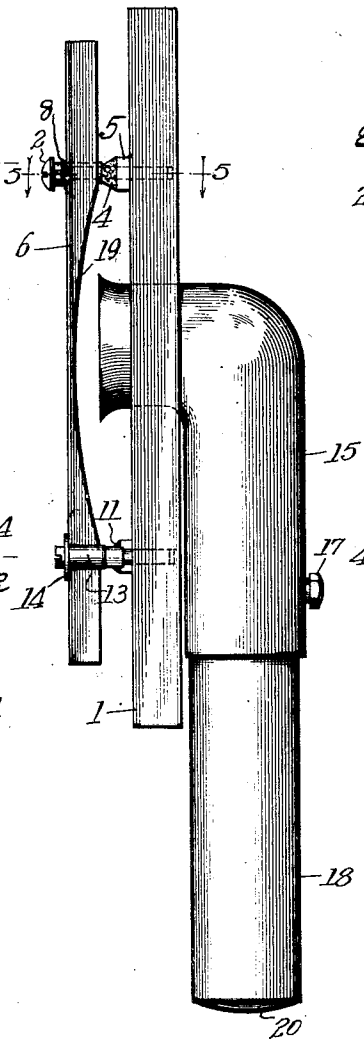


Fig. 3.

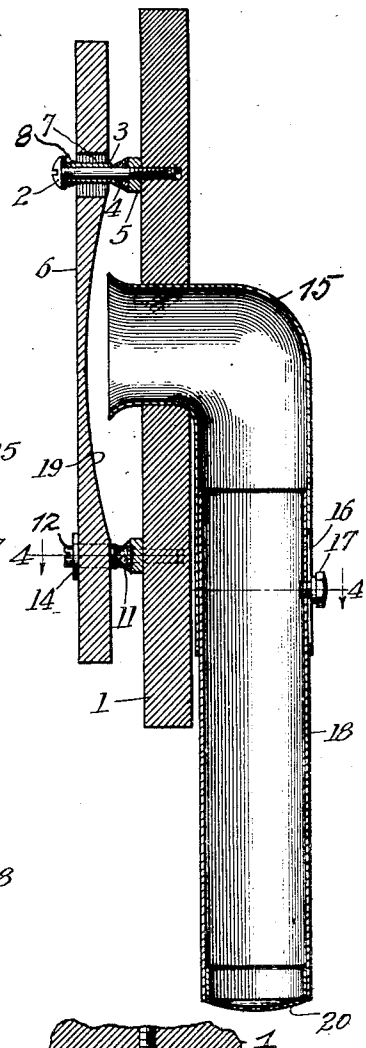


Fig. 4

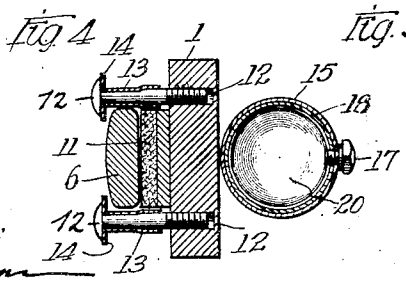
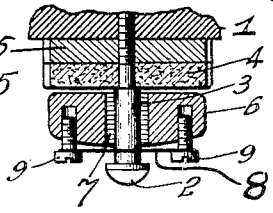


Fig. 5.



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UNITED STATES PATENT OFFICE.

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XYLOPHONE.

1,173,784. Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed February 15, 1915. Serial No. 8,156.

To all whom it may concern:

Be it known that I, JOHN C. DEAGAN, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Xylophones, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to sound producing devices and may constitute a component part of a musical instrument having a number of similarly constructed sound producing devices made in accordance with my invention.

My invention, in one of its characteristics, includes an elongated upright vibrating element, a support therefor adjacent a nodal line of the vibrating element, and a support-engaging part upon the vibrating element adjacent said nodal line and having its support-engaging portion adjustable longitudinally of said vibrating element.

My invention has, as another of its features, a string, preferably non-metallic, which is carried by the vibrating element and which in turn enables the vibrating element to be carried upon its support, this string being desirably adjustable in length to carry out the feature of the invention previously set forth. The means for adjusting the place of support for the vibrating bar is thus individual to such bar and may be made effective for its purpose without affecting the adjustment of the support of any other bar in the same musical instrument.

The invention has other features and characteristics and will be more fully explained by reference to the accompanying drawing in which—

Figure 1 is a front view of a sound producing device; Fig. 2 is a side view of the structure shown in Fig. 1; Fig. 3 is a sectional view on line 3—3 of Fig. 1; Fig. 4 is a sectional view on line 4—4 of Fig. 3; and Fig. 5 is a sectional view on line 5—5 of Fig. 2.

Like parts are indicated by similar characters of reference throughout the different figures.

The drawing illustrates one sound producing device of which a number, designed and adjusted to produce the differing tones of a musical scale, may be assembled to form a complete musical instrument. The device illustrated includes a mounting board or support 1 which carries a forwardly projecting support 2 preferably in the form of a screw which is surrounded by a sleeve of rubber 3, this screw passing through a V-shaped element 4 of cushioning material such as felt which may have a rigid base 5 through which the screw also passes to its threaded connection with the mounting board 1. An elongated upright vibrating element is preferably suspended from the screw 2, this vibrating element being preferably in the form of a bar 6. I preferably form the vibrating bar with a hole 7 that extends above and below the nodal point at the upper end of the bar, the supporting screw 2 passing through this opening. The bar desirably carries a string 8 (which is preferably non-metallic, being desirably in the form of a linen thread) extending transversely of the bar and bridging the opening 7 so as to engage the rubber sleeve 3 and support the bar clear thereof. I preferably provide means for enabling the selection of the position of the support 2 with respect to the bar and as the embodiment of the invention illustrates a suspended bar, the means is carried by the bar, though the invention is not to be limited to this arrangement. As I desirably employ a string 8, the means for determining the point along the bar at which the support of the bar upon the pin 2 occurs, is of a character which will enable the string to be lengthened or shortened or otherwise repositioned whereby the bight in the string that receives the screw 2 may have its position lengthwise of the bar adjustably determined. To this end the ends of the string 8 are desirably secured to shanks of screws 9 either or both of which screws may be turned to wind or unwind the string for the purpose stated. In Fig. 1 the bight of the string is shown as being coincident with the nodal line 10 of the bar, either or both of the screws 9 having been turned to bring this string in exactly this adjustment. If it should be desired to have the string engage its support 2 above or below or upon either side of the nodal line, the string may be correspondingly slackened or tightened as the case may be.

While I prefer to employ a string which is adjustable in length for the purpose stated I do not wish to be limited to a device that is carried by the bar for determining

the place of support of the bar with respect to its nodal line adjacent such support, and while I also show a string provided with means for adjusting the length of the string I desire to claim the string as a support whether it is adjustable in length or not.

Where the bar is suspended another cushion 11 is mounted to the rear of the bar near the nodal line at its lower end. Screws 12 are carried by the support 1 at the lower or swinging nodal line, these screws being provided with rubber sleeves 13 and felt washers 14, the sleeves, normally free of the bar, serving to limit the extent to which the bar may swing in its plane while the felt washers coöperate with the cushion 11 to limit the swinging movement of the bar which is normally spaced apart from its cushions 4, 11 and the washers 14. The heads of the screws 12 are desirably oblong so as to overhang the bar to limit its forward swinging movement (Fig. 1) while extending longitudinally of the bar to a minimum extent, the narrow heads of the screw being in substantial alinement with the nodal line at the lower end of the bar. The mounting board 1 desirably supports a resonator which is preferably inclusive of a tubular elbow 15 that has one branch passing forwardly through the board 1 and flared at its end which faces the rear side of the bar. The other branch of the elbow desirably parallels the board and has a slot 16 extending lengthwise thereof through which the shank of the bolt or screw 17 passes, this shank being in threaded connection with a tubular extension 18 of the elbow and which extension has telescopic engagement with the balance of the elbow. By loosening the screw 17 the tubular extension 18 may be moved along the rear branch of the elbow whereby the length of the rear branch of the elbow may be adjustably determined to tune the resonator.

The rear of the bar may be recessed at 19.

The lower end of the extensible section 18 of the elbow may contain a hollow plug 20 which is preferably adjustable longitudinally of the tubular portion 18 to determine its effective length. The plug has tight driving fit with the tube 18 so as to be held in any position to which it is adjusted. The vibrating bar is set into vibration by any suitable means well known to those skilled in the art, as by means of a hammer applied to the bar over the flaring end of the elbow.

While I have herein shown and particularly described the preferred embodiment of my invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention, but

Having thus described my invention I claim as new and desire to secure by Letters Patent the following:—

1. A sound producing device including an elongated upright vibrating element; a support therefor adjacent a nodal line of the vibrating element; and a support engaging part upon the vibrating element adjacent said nodal line and having its support-engaging portion adjustable longitudinally of said vibrating element.

2. A sound producing device including an elongated upright vibrating element; a support therefor adjacent a nodal line of the vibrating element; and a support-engaging string upon the vibrating element adjacent said nodal line and having its support-engaging portion adjustable longitudinally of said vibrating element.

3. A sound producing device including an elongated upright vibrating element; a support therefor adjacent a nodal line of the vibrating element; and a string carried by said element adjacent said nodal line for engaging said support, there being means for lengthening and shortening the string to adjust its support engaging portion with respect to and longitudinally of said element.

4. A sound producing device including an elongated upright vibrating element; a support therefor adjacent a nodal line of the element; and means carried by the vibrating element whereby the place where the vibrating element is supported may be at differing places longitudinally of said element.

In witness whereof, I hereunto subscribe my name this 11th day of February A. D., 1915.

JOHN C. DEAGAN.

Witnesses:

FRED WITTENBERG,

G. L. CRAGG.