J. C. DEAGAN.
MUSICAL INSTRUMENT OF XYLOPHONE TYPE.
APPLICATION FILED FEB. 14, 1914.


To all whom it may concern:

Be it known that I, JOHN C. DEAGAN, a 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 Musical Instruments of Xylophone Type, 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 musical instruments employing sounding bars and also employing resonating tubes operating in conjunction with the sounding bars in the production of musical tones and resides in providing resonating tubes, funnel shaped extensions for the tubes, vibrant diaphragms closing the outer ends of the funnel shaped extensions and means for adjusting the tension of the diaphragms.

The invention is shown by the accompanying drawing illustrating the preferred features of construction and in which—

Figure 1 is a sectional view; and Fig. 2 is an enlarged view of a lower portion of the structure illustrated in Fig. 1.

Fig. 1 shows a sounding bar 2 threaded by cords 6 that pass through supporting ears 5, this sounding bar having concave sides 24 and 25, the concave side 25 having a further cavity 26. Sounding bars of this construction have been claimed in my two divisions of this application filed April 7, 1915, under Serial Nos. 19,626 and 19,627.

A resonating tube is illustrated below the sounding bar, this resonating tube having an inner section 7 and an outer section 8, these sections being in sliding or telescoping relation whereby the length of the air column within the tube may be adjusted, though the construction of the tube is not important to the present invention. A support is provided for the tubes having clamping jaws 9, each tube being engageable between the jaws of the clamp by means of the clamping bolt and nut structure 12, 13.

The bore of the tube is contracted by making the lower part of the tube 7 funnel shaped as indicated at 14, and the tube terminates at its contracted portion in an exteriorly threaded cylindrical extension 14 with which a cap 15 has threaded engagement, this cap 15 carrying a membranous diaphragm 18 at its lower end. The extension 14 constitutes a pipe portion which is smaller than the tube of which it is an extension. The small pipe portion 14 is connected with its tube by a truncated conical portion that forms, with the pipe portion 14 a funnel-like termination of the associate tube. The diaphragm 16 is carried at the lower end of the funnel stem. The lower end of the cylindrical extension 14 is of the shape illustrated in Fig. 2 so that the diaphragm 16 may be pressed against the same by turning the cap 15, the degree of pressure of the diaphragm 16 upon the tube 14, which is effected by turning the cap 15, determining the tension of the diaphragm 16 and its rate of vibration, whereby said diaphragm 16 may be adjusted to be in sympathy with the air column of the associate tube. The lower ends of the cap 15 and tube 14 are rounded as indicated in Fig. 2 to prevent these elements 14 and 15 from cutting the diaphragm 19. The cap 15 may be provided with radially outsetting set screws 17 with the aid of which the cap 15 may be turned and which set screws 17 may be turned to insure the maintenance of the adjustment of the tension of the diaphragm 16 which has been secured by turning the cap 15. The diaphragm which I preferably employ is composed of a textile fabric indicated at 18 and a coating of rubber 19 held by the fabric which thus constitutes a textile foundation, the entire diaphragm being preferably so thin as to be tissuelike or membranous. The rubber diaphragm is carried over the side of the cap 15 and is bound in place by a string 20 and is further secured by a ring of gum 21 covering the string. The cylindrical curtain 22 is carried by the lower end of each pipe section 7 and surrounds the elements 14, 15, 16, etc., to protect the enclosed diaphragm 16 from injury.

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:

A musical instrument including a resonating tube; a funnel shaped extension for the 5 tube; a vibrant diaphragm closing the outer end of the funnel shaped extension; and means for adjusting the tension of the diaphragm.

In witness whereof, I hereunto subscribe my name this sixteenth day of January 1914.

JOHN C. DEAGAN.

Witnesses:

G. L. Cragg,
Kathryn S. Ready.

Copies of this patent may be obtained for five cents each, by addressing the “Commissioner of Patents, Washington, D. C.”