Jan. 9, 1940. J. L. PRINCE 2,186,175

AMUSEMENT DEVICE

Filed June 28, 1938

Fig. 1.

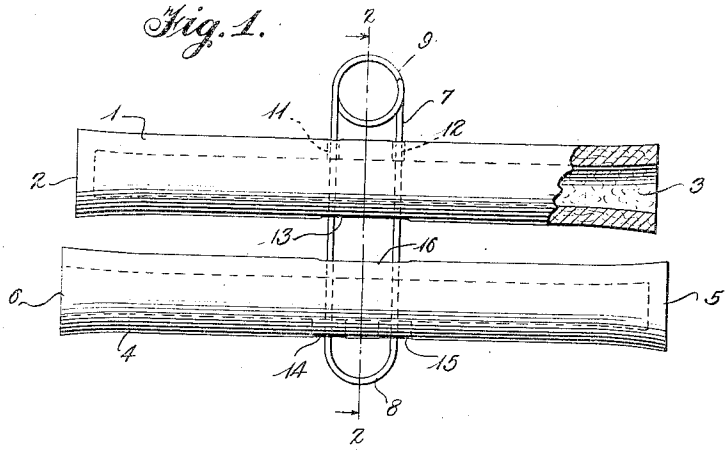



Fig. 2.

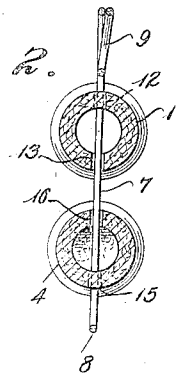



Fig. 4.

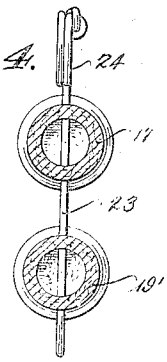
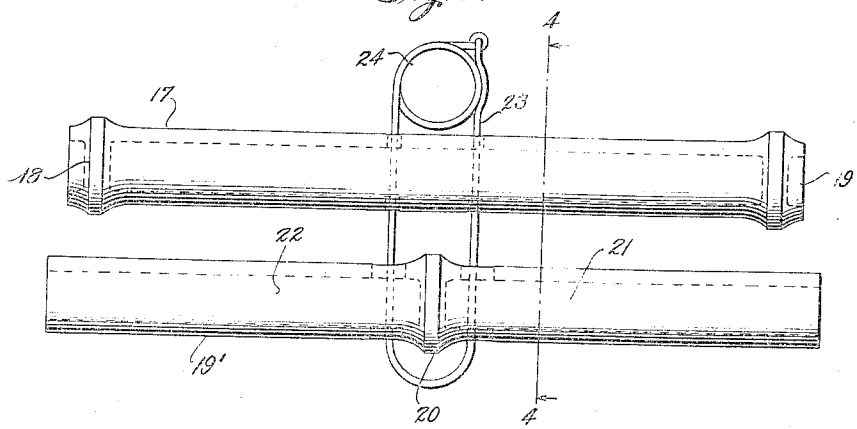



Fig. 3.

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# UNITED STATES PATENT OFFICE

2,186,175

## AMUSEMENT DEVICE

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Application June 28, 1938, Serial No. 216,354

4 Claims. (Cl. 46—191)

This invention relates to an amusement device and more particularly to a device adapted to be manipulated by a player to produce a rhythmic beat.

The device is adapted for individual or concert play and may well be employed by one or more members of an orchestra, particularly in the production of the so-called "swing" music.

It is an object of the invention to produce such an amusement device embodying the principle of vibrating air columns.

More specifically, it is an object of the invention to provide an instrumentality for producing a rhythmic beat comprising a pair of tubular members each adapted to accommodate a predetermined air column and to be so arranged as to be contacted one with the other by a player to produce a pleasing and effective sound rhythm.

It is an additional object of the invention to produce such an amusement device in an extremely simple and inexpensive manner which can be made available to users at a low cost.

Other and more detailed objects of the invention will become apparent as the description of the invention proceeds.

In the drawing, in which like reference characters are used to designate like parts throughout the same:

Figure 1 is a side elevation, partly in section, disclosing one embodiment of the invention;

Figure 2 is a view on the line 2—2 of Figure 1;

Figure 3 is a view in side elevation of a modified form of the invention; and

Figure 4 is a view on the line 4—4 of Figure 3.

Referring to Figure 1, it will be observed that there is provided an upper elongated tubular member 1 having a closed end 2 and open end 3 to accommodate a vibrating air column. There is additionally provided a somewhat longer lower tubular member 4 having a closed end 5 and an open end 6 to accommodate a second vibrating air column.

The two tubular members are adapted to be freely suspended on the wire link indicated generally at 7. This link is provided with a U-shaped lower end 8 and at its upper end with a circular ring 9 to accommodate the middle finger of the player. The upper wall of the tubular member 1 is provided with openings 11 and 12 to accommodate the side portions of the link 7. The lower wall of the tubular member 1 is cut away as shown at 13 to provide an elongated narrow slot to permit freedom of movement therethrough of the central portion of the link 7. In like manner the lower wall of the tubular member 4 is provided with openings 14 and 15 to accommodate the side portions of the link 7, and the upper wall of the lower tubular member 4 is cut away as shown at 16 to form a narrow slot to permit free movement of the central portion of the link therethrough.

In operation, a player places his middle finger through the ring 9 with the index finger resting on the upper wall of the tubular member 1 and to one side of the link 7 and the smaller fingers resting on the upper wall of the tubular member 1 at the opposite side of the link 7. The thumb of the player is preferably placed in the link intermediate the upper tubular member 1 and the lower tubular member 4. The link is then drawn upwardly by the middle finger of the player to hold the lower tubular member 4 snugly against the player's thumb. In this position the player can, by means of a wrist movement, effect relative oscillation of the tubular members 1 and 4, and due to the vibrating air columns in the respective tubular members 1 and 4, the contacts between the opposite ends of the tubular members will emit a pleasing rhythmic beat timed to the oscillation of the tubular members under the control of the player.

As is well-known, the pitch of a sound depends upon the frequency of vibration. The pitch is raised by an increase in the rate of vibration, and accordingly a change in the pitch of a sound may be effected by a change in the frequency of vibration. These factors are availed of in the applicant's invention since, by suitably controlling the length of the tubular members such as 1 and 4, the frequency of vibration of the air column can be controlled and a sound of definite predetermined pitch obtained.

In a tubular member having a closed end such as the closed end 2 of the tubular member 1 of applicant's invention, there is a node at the closed end since the air next to this end cannot move. At the open end 3, however, the condition is very different. Here the air has greater freedom of vibration than at any point within the tube. There is a loop at the open end of the tube, and the amplitude of vibration of the air increases from the node at the closed end of the tube to the loop at the open end.

As a further feature of this invention, it is possible to produce beats of different pitch by varying the length of the vibrating air column. An illustration of the possible variations is shown in the modification of Figures 3 and 4. In this modification the upper tubular member 17 is closed at both ends, as indicated at 18 and 19,

so that there is no vibrating air column in the upper tubular member 17, whereas the lower tubular member 19' has a central partition 20 to thereby provide the two complementary air columns 21 and 22. In this modification, the upper and lower tubular members 17 and 19' are suspended on a link 23 provided with a finger-receiving eye 24, and the mode of operation of this modification, insofar as its use by the player is concerned, is comparable to that hereinbefore described for the modification of Figure 1. In the device of Figure 3, however, much shorter vibrating air columns are provided than in the device of Figure 1. Accordingly the frequency of vibration will be greater and the pitch of the sound correspondingly raised.

It is apparent that it is possible to predetermine the pitch of the sound produced by the device through control of the length of the respective vibrating air columns.

In actual practice, it has been found that hollow bamboo canes afford excellent tubular members for use in the construction of the device. These bamboo canes are exceedingly light and sturdy and provide, even in their natural color, a pleasing and attractive amusement device.

The device is exceedingly simple in construction and is so easy to operate that even children readily acquire marked proficiency in its use.

Having thus described my invention, I claim:

1. An amusement device comprising a pair of elongated tubular members, means for loosely securing said tubular members in spaced substantially parallel relationship, said means including positioning supports for a finger and thumb of a player, one of said tubular members being closed and the other of said tubular members being open at corresponding ends thereof whereby an open end of one tubular member will strike a closed end of the opposite tubular member upon vibration of said members.

2. In a device of the type described the combination of a pair of elongated tubular members closed at at least one point along their length to provide a pair of air columns closed at one end, said members being loosely secured together centrally of their length in such relationship that the open end of each of said air columns will be struck by a closed end of the opposite tubular member upon vibration of said members.

3. In a device of the type described the combination of a pair of elongated tubular members closed at one end, said members being loosely secured together centrally of their length in such relationship that the open end of each of said members will be struck by the closed end of the opposite member upon vibration of said members.

4. In a device of the type described the combination of an elongated tubular member closed at each end and a second elongated tubular member open at each end and closed intermediate the open ends, said members being loosely secured together in substantially parallel relationship whereby the open ends of said second member will be struck by the closed ends of said first member upon vibration of said members.

JOHN L. PRINCE.