

H. E. WINTERHOFF.  
PERCUSSION MUSICAL INSTRUMENT.  
APPLICATION FILED MAR. 1, 1909

967,477.

Patented Aug. 16, 1910.

Fig. 1.

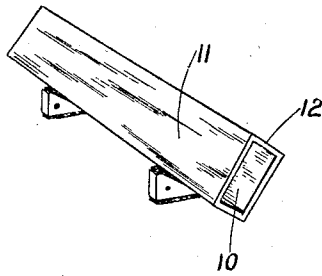


Fig. 3.

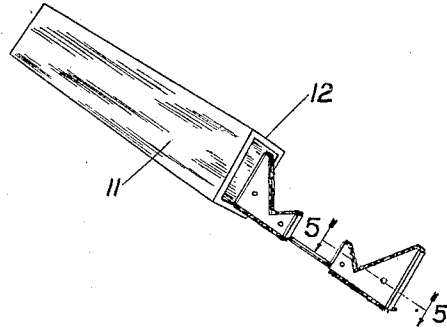


Fig. 2.

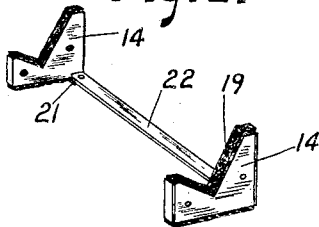


Fig. 5

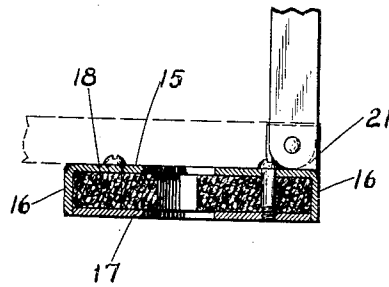
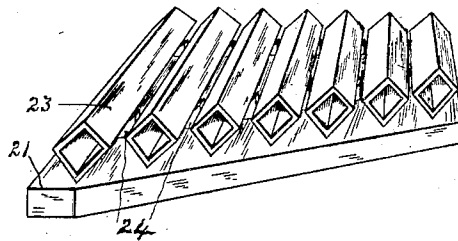


Fig. 4.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## PERCUSSION MUSICAL INSTRUMENT.

967,477.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed March 1, 1909. Serial No. 480,507.

*To all whom it may concern:*

Be it known that I, HERMAN E. WINTERHOFF, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Percussion Musical Instruments, of which the following is a specification.

The object of my invention is to produce a musical instrument on the order of a metallophone wherein each element is capable of producing either one of two distinguishable tones, depending upon the portion of the element operated upon.

The simplest form of my invention comprises a single element capable of producing either one of two distinguishable tones, such an instrument being especially available for use by a trap drummer in simulating the sound of an anvil and for this purpose it is desirable to provide a supporting stand which will bring out the tone of the instrument and which can be folded and packed within the tube.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view of a primary form of my invention for producing anvil effects; Fig. 2 a perspective of the supporting stand; Fig. 3 a view showing the stand folded and ready for insertion within the tube; Fig. 4 a perspective view of a metallophone constructed in accordance with my invention; and Fig. 5 a section on line 5 5 of Fig. 3.

I have discovered that a polygonal bar, particularly a rectangular bar, and especially a rectangular tubular metallic bar, if properly dimensioned with a broad face and a narrow face, will produce either one of two distinguishable tones, having different pitches, depending upon whether the bar be struck upon its broad face or its narrower face, and that, if these two dimensions be properly proportioned, any desired relation of pitch may be obtained, *i. e.*, if the two faces are equal the two tones will be the same in pitch; if the bar be solid or tubular, the pitch of one side relative to the other may be heightened by increasing the dimension of the other side, that is to say, by increasing the depth of the bar with relation to the blow-receiving face. Both tones may be simultaneously produced by simultaneous

blows on the two faces or a single blow upon the corner between the two faces.

In the drawings, 10 indicates a hollow metallic bar having a broad face 11 and a narrower face 12, the walls being of uniform thickness so that if the broad face be struck with a suitable instrument and then the narrower face be struck with a suitable instrument there will be developed two successive distinguishable tones the one resulting from the stroke upon the narrower face being of higher pitch.

In practice I have found that an excellent imitation of an anvil may be produced by a hollow steel tube 14 inches long rectangular in cross section with one face 2 inches and the other face  $1\frac{1}{8}$  inches, and a thickness of wall of  $\frac{1}{8}$  inch. This instrument when struck on its 2 inch face will produce G of the second line of the treble staff, and when struck on its  $1\frac{1}{8}$  inch face will produce D of the fourth line of the treble staff.

In order to support the bar 10 so as to bring out the characteristic tones it is necessary to support it at its nodes in a manner similar to the support of an ordinary xylophone bar but such support is not sufficient in the present instance because the bar must be supported in such way that either one of its two sound producing faces may be readily struck. It is also desirable that an instrument of this kind be readily carried about and I have therefore deemed it advisable and commercially necessary to so form the support referred to that, for transportation, it may be of such form that it may be projected into the tubular bar 10. For this purpose I have provided two crotch seat members 14 14 each of which is composed of a piece of sheet metal 15 having lips 16 16 at its vertical sides, and a plate 17 fitting between the edges of lip 16. Between plates 15 and 17 I mount a block of felt 18 which block, in its upper edge is cut into a crotch-shaped seat 19 adapted to receive the bar 10. Plates 15 and 17 are correspondingly cut into crotches at their upper edges as clearly shown in the drawings. Each plate 15 is provided at its lower edge with a lip 21 which projects from plate 15 to a position opposite to the projection of lips 16. The two lips 21 are then pivotally connected to the opposite ends of a distance rod 22 the arrangement being such

that the two crotch members 14 14 may be turned at right angles to bar 22, as shown in Fig. 2, to form a self standing support, or may be folded down into the same plane and parallel with bar 22. The height of the crotch blocks 14, and the length of bar 22, are such that when the parts are folded into the position shown in Fig. 3, the supporting standard may be projected into the interior of bar 10 for transportation.

In Fig. 4 the instrument shown is merely a development of the instrument shown in Figs. 1 and 2, the base 21 in this case being provided with a plurality of crotch blocks 24 in which are supported any desired number of sounding bars 23 each of which is supported as to present two of its faces for reception of sounding blows, the said two faces being properly dimensioned relative to each other to produce any desired relation of pitch.

I claim as my invention:

1. A musical instrument comprising a hollow bar having two differing but substantially uniform diameters to produce, under blow, two sounds differing in pitch, and a pair of separated supports arranged to receive and sustain said bar in vibrating condition and in position to receive blows

in either of the directions of its two differing diameters.

2. A musical instrument comprising a bar having two differing but substantially uniform diameters to produce, under blow, two sounds differing in pitch, and a pair of separated supports arranged to receive and sustain said bar in vibrating condition and in position to receive blows in either of the directions of its two differing diameters.

3. A musical instrument comprising a hollow bar and a support stand therefor, comprising a pair of crotch blocks adapted to receive the bar having dimensions permitting insertion into the hollow bar, and a distance rod to which said crotch blocks are pivotally connected, whereby the crotch blocks may be folded upon the distance rod for insertion into the hollow bar, for the purpose set forth.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this twenty-fourth day of February, A. D. one thousand nine hundred and nine.

HERMAN E. WINTERHOFF. [L. s.]

Witnesses:

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