Nov. 5, 1935. W. F. LUDWIG 2,020,150

PERCUSSION MUSICAL INSTRUMENT

Filed June 11, 1934 2 Sheets-Sheet 1

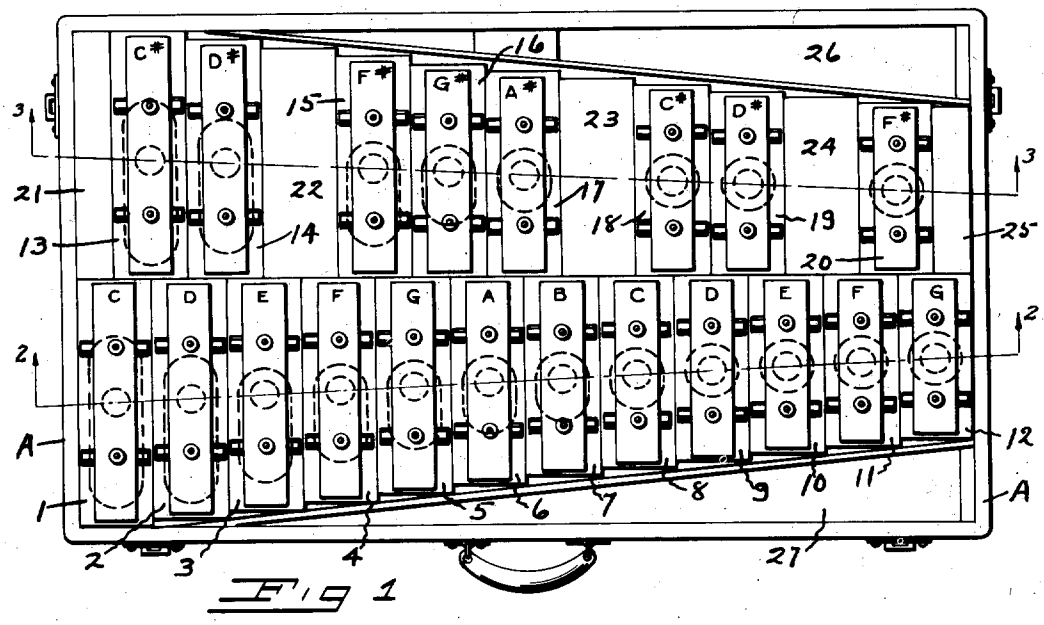

Fig 1

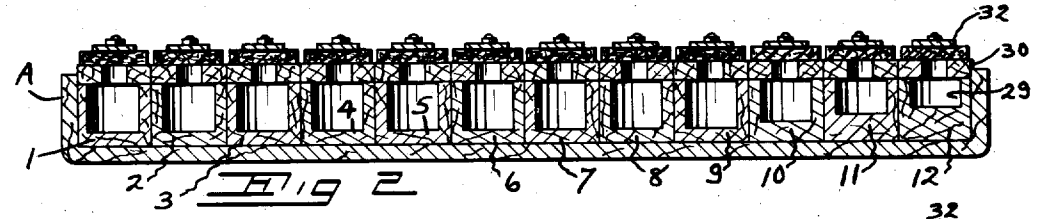

Fig 2

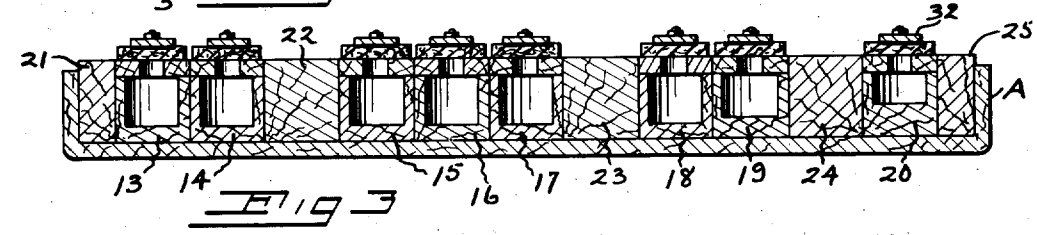

Fig 3

Inventor

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PERCUSSION MUSICAL INSTRUMENT

Filed June 11, 1934 2 Sheets-Sheet 2

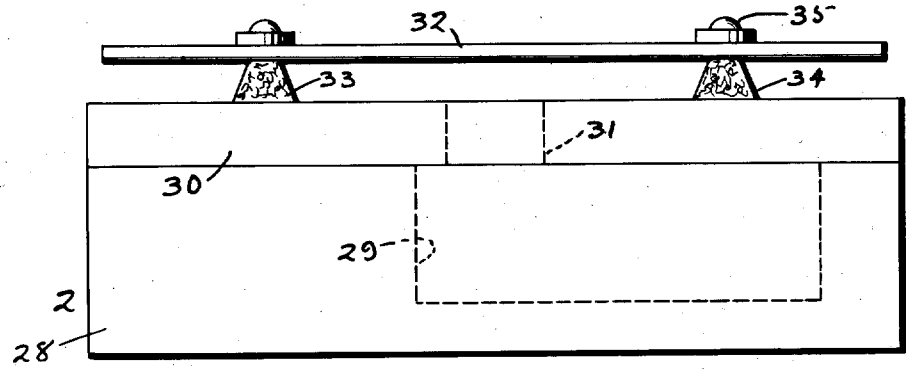

Fig 4

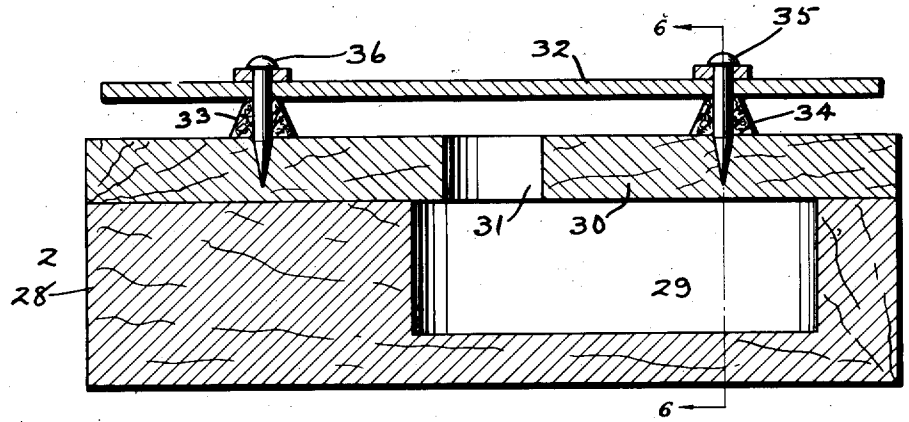

Fig 5

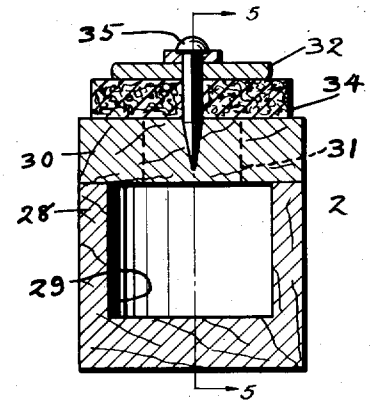

Fig 6

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Patented Nov. 5, 1935 2,020,150

UNITED STATES PATENT OFFICE

2,020,150

PERCUSSION MUSICAL INSTRUMENT

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Application June 11, 1934, Serial No. 730,014

2 Claims. (Cl. 84—403)

This invention relates to musical instruments, and particularly to percussion musical instruments.

In the use of percussion musical instruments, generally known as zylophones, the professional or skilled player need not interchange the chromatic with the diatonic scale. In fact, they prefer the conventional fixed type of mounting for the tone units. But for elementary instruction for the beginner, or young student, and even the kindergarten grades, something different is required to enable interchangeability of the tone units to simplify even the simplest melodies.

The principal object of this invention is to provide a percussion musical instrument in which the tone units are arranged according to the standard piano key-board and interchangeable into any desired scale.

Another object of the invention is to provide a percussion musical instrument in which each tone unit is an independent entity and independently movable within a case or container, or removable therefrom, whereby the tone units may be used in a case, or container, either as a complete or partial set, or removed individually for use by a music reading class.

Still another object of the invention is to provide a percussion musical instrument in which the entire chromatic scale is formed by an assembly of independent resonators functioning as a support, or mount, for the tone bar, all of the tone units being arranged in chromatic key-board style.

And a further object is to provide a percussion musical instrument in which the entire chromatic scale is formed by an assembly of independent non-metallic resonators functioning as a support for the tone bar, all of the tone units being arranged in chromatic key-board style.

Other objects of the invention are mentioned and described herein.

The invention is illustrated in the accompanying drawings, wherein

Figure 1 is a top plan view of my improved percussion musical instrument illustrating the assembled tone units arranged in a box, or case, according to the standard piano key-board;

Figure 2 illustrates a section taken on line 2—2 of Figure 1 through the whole tone bank of tone units;

Figure 3 illustrates a section taken on line 3—3 of Figure 1 through the half tone bank of tone units;

Figure 4 illustrates an exterior side view of one of the tone units;

Figure 5 illustrates a longitudinal sectional view thereof; and

Figure 6 illustrates a section taken on line 6—6 of Figure 5.

Similar numerals of reference indicate like parts throughout the several views on the drawings.

Referring now to the details of the drawings the letter A indicates a box, case, or container within which are arranged the two banks of the tone units which constitute the chromatic and diatonic scales, and in which arrangement of tone units the front bank comprises the twelve tone units indicated by the numerals 1 to 12, inclusive, which produce the chromatic scale, and in which assembly the rear or upper bank includes the eight tone units indicated by the numerals 13 to 20, inclusive, which produce the diatonic scale, both of said banks of tone units being arranged according to the standard piano keyboard.

In the arrangement of the front bank of tone units they are all disposed parallel with and adjacent each other. And in the disposition of the upper or rear bank of tone units, which produce the half tones, or diatonic scale, certain filler blocks or dummies 21, 22, 23, 24 and 25 may be introduced and incorporated in the box A to effect the proper spacing and juxtaposition of said half tone units 13 to 20 inclusive to produce the desired standard piano keyboard arrangement of all the tone units. Also, certain triangular filler blocks 26 and 27 are incorporated and arranged at the ends of the tone units to maintain the desired alinement of said units, due to the varying lengths of the tone unit bodies. All of the tone units 1 to 12 and 13 to 20 are generally alike in construction, the only difference being one of dimension in the tone bar and the area of the resonator tone chamber. It is therefore believed that a description of one of the tone units will be sufficient for all.

For that reason the tone unit 2 is selected for description and function, and said tone unit may comprise the rectangular wood resonator body 28 provided with the tone chamber 29 over which the cover 30 is rigidly secured in any suitable manner, adhesively, or otherwise, said cover being provided with the circular tone hole 31. The particular tone chamber 29 is elongated relatively of the body 28 and the area of said chamber is of sufficient and the desired extent to produce the tone D of the chromatic scale. Preferably, the resonator body 28 and its cover 30 are of uniform length and width.

The tone unit 2 includes also a substantially rectangular tone bar 32, made of metal, or other suitable material, which is mounted upon a pair of spaced felt supports 33 and 34 and secured to the resonator cover 30 by nails 35 and 36, or otherwise in any suitable manner. The tone hole 31 may be placed midway of the length and width of the tone bar 32 to produce the best tonal results. As stated, and as illustrated, each of the tone units 1 to 12 is an individual and independently movable unit in the box A, and said units may readily be interchanged or severally or collectively removed from said box. And as stated, each of the tone units 13 to 20 is an individual and independent unit, and all are interchangeable or removable from said box A, certain of said tone units being spaced from adjacent units and the box wall by the filler or dummy blocks 21 to 25 inclusive to place said units in the necessary relation to the chromatic tone units 1 to 12 to effect the arrangement which accords with the standard piano keyboard.

It will be evident from the foregoing that each of the tone units 1 to 12 and 13 to 20 inclusive, is a self contained tone unit, and that each of said tone units constitutes an individual or independent tone unit which may be readily segregated from the others. Thus, several of the tone units may be removed from the box A and coordinated exteriorly thereof, as a set, in the teaching of harmony to demonstrate to a young student, by an arrangement of the individual tone units, the general construction and fundamental reasons for all of the scales, sharps, and flats used in music. Also, the tone units may be used in the teaching of time in music. To that end, each student may receive a single tone unit, or block, and plays only the one note of that composition. This would not be possible in any other form of percussion musical instrument where the student might be tempted to play more than the one note assigned to him.

In the case of this invention the student, having only one note to play, must necessarily count the rest and concentrate on time and tempo in music, which is the object sought by an instructor of music. The combination of individual and independent percussion tone units, however, is arranged in sets to enable the student to play the individual tone units in the conventional manner as regular orchestra percussion units. Or he may arrange the sharps, or flats, for fast position purposes, thereby simplifying the playing of the instrument units selected.

I claim:

1. A percussion musical instrument comprising a plurality of individual and interchangeable tone units arranged according to the standard piano keyboard, and filler blocks between certain of said tone units.

2. A percussion musical instrument comprising a plurality of individual and interchangeable tone units arranged according to the standard piano keyboard, whereby chromatic and diatonic notes are interchangeable, and filler blocks between certain of the diatonic tone units.

WILLIAM F. LUDWIG.