Feb. 26, 1924. 1,484,655

J. B. KOHLER

CHIMES

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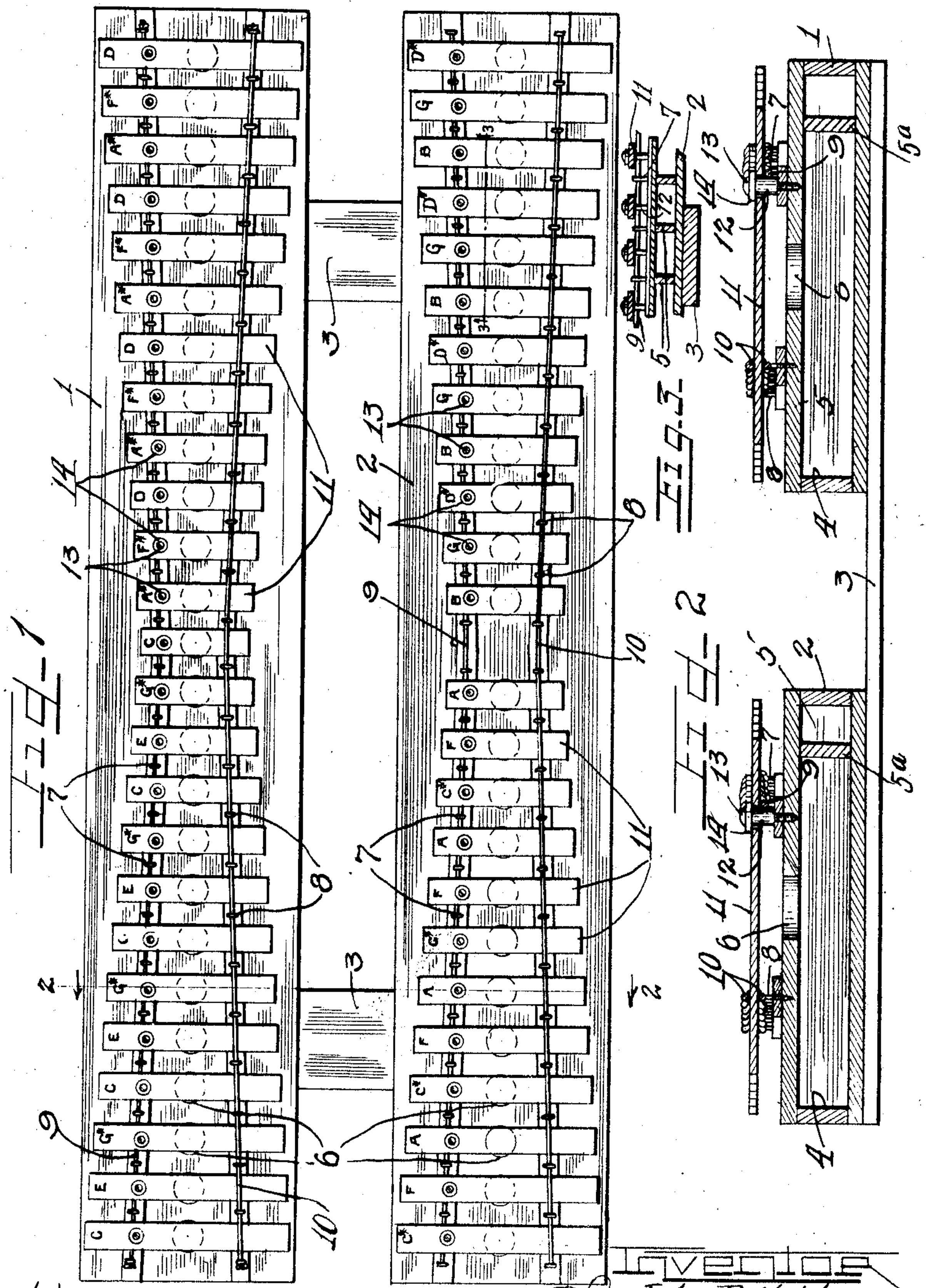

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UNITED STATES PATENT OFFICE.

JOHN B. KOHLER, OF CHICAGO, ILLINOIS.

CHIMES.

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To all whom it may concern:

Be it known that I, JOHN B. KOHLER, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Chimes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates more particularly to improvements in musical instruments of the percussion type wherein the apertured sound boxes or resonators have mounted thereon graduated sound bars which are so arranged that adjacent tone bars are disposed four semi-tones apart so as to afford a succession of major thirds to obviate tonal interferences which often occur when the tone bars are spaced two semi-tones apart.

It is an object of this invention to provide a chime wherein the sound bars are spaced four semi-tones apart to eliminate interference.

Another object of the invention is the construction of a percussion chime having the tone bars distributed on connected parallel apertured sound boxes in such a manner that tonal interferences are substantially eliminated.

A further object of the invention is to provide a musical instrument wherein the tone bars comprising each octave are distributed on different resonating bases to permit adjacent tone bars to be four semi-tones apart.

It is furthermore an object of the invention to provide a chime wherein a plurality of apertured sound resonators have the graduated sound bars mounted one over each of the apertures and with adjacent sound bars four semi-tones apart with the longer or lower note tone bars mounted near the ends of the resonators while the shorter or higher note tone bars are positioned at the middle portions of the resonators.

It is an important object of this invention to provide a chime wherein the tone bars are gradually reduced in length from both ends toward the center and with adjacent bars sufficiently differentiated in tone to eliminate interferences.

Other and further important objects of this invention will be apparent from the disclosures in the specification and drawings.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a top plan view of a percussion chime embodying the principles of this invention.

Figure 2 is an enlarged cross section thereof taken on line 2—2 of Figure 1.

Figure 3 is a fragmentary detail section taken on line 3—3 of Fig. 1.

As shown on the drawings:

The reference numerals 1 and 2 indicate parallel wooden sound boxes or resonators connected by means of cross bars or supports 3. Each sound box is divided into a plurality of graduated chambers 4 formed by a plurality of small longitudinal partitions 5^a and a plurality of spaced partitions 5 disposed parallel to one another transversely of the sound box. The top wall of each sound box is provided with a plurality of openings or apertures 6, one for each of the tone chambers 4.

The chime disclosed in the drawing is of a two base type covering forty-nine notes C to C, four octaves chromatic.

Secured equidistantly on the top wall of each sound box are a plurality of eye pins 7 and 8 respectively. Threaded through the eye pins 7 is a single heavy silken cord 9, and threaded through the eye pins 8 are two silken cords 10. The ends of the cords 9 and 10 are secured to the end eye pins. The silken cords 9 and 10 are provided for the purpose of supporting a plurality of metal or wooden tone bars 11 which are graduated in length in the arrangement disclosed in Figure 1 to produce the notes of a musical scale when the sound bars are struck to vibrate the same.

Each of the tone bars 11 has inserted through an aperture near one end thereof a

rubber sleeve 12, through which a retaining screw 13 projects and is threaded into the top wall of the sound box. A felt washer 14 is engaged on the upper end of each rubber sleeve above the tone bar and below the screw head. The apertured ends of the tone bars rest on the cords 9, while the opposite ends of the tone bars are disposed between the double cords 10. Each of the tone bars or sounding members 11 is mounted to permit free vibration thereof in response to a blow imparted thereto to give forth the desired tone. The tone bars 11 are mounted so that each bar is disposed over one of the sound box openings or apertures 6, communicating with the sounding chamber 4 for that particular tone bar.

Referring to Figure 1, attention is specifically directed to the novel arrangement of the tone bars 11 on the two resonator bases or sound boxes 1 and 2. The tone bars for each octave are divided into four groups, two groups being mounted on each of the sound boxes on opposite sides of a transverse center line thereof. The tone bars for the first group of each octave are mounted on the left half of the primary sound box 1 and comprise the tones C, E and G#. The second group of tone bars for each octave are mounted on the left half of the secondary sound box 2 and comprise the tones C#, F and A in the order named. The third group of tone bars for each octave is mounted on the right half of the primary sound box 1 and embraces the tones D, F# and A# reading inwardly. The fourth group of tone bars for each octave is mounted on the right half of the secondary sound box 2 and embraces the tones D#, G and B reading inwardly. The tone bar high C for the fourth octave is the shortest bar and is mounted in the middle of the sound box 1, as illustrated in Figure 1. The tone bars on each sound box are arranged with the longest bars near the ends and with the other bars placed in graduated relation inwardly toward the center from both ends.

The important feature of the novel arrangement of the tone bars of each group of the various octaves lies in the fact that the tones of adjacent tone bars of each group are four semi-tones apart, which allows increased volume of tone and the elimination of interference. The mode of suspension of the tone bars permits unhindered vibration of the tone bars when struck with a beater or hammer.

I am aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. A musical instrument comprising a plurality of sound members, and tone bars mounted thereon in groups with adjacent tone bars of each group four semi-tones apart.

2. A percussion chime comprising tone bars arranged to afford octaves with the tone bars constituting each octave divided into groups, each group arranged so that adjacent tone bars are four semi-tones apart.

3. A musical instrument comprising a plurality of apertured sound boxes, a plurality of tone bars of different lengths, and means for supporting the tone bars on the sound boxes in graduated relation with the longest tone bars at the ends and with the shortest tone bars at the middle of the sound boxes, said tone bars being of different pitch and arranged to give a succession of major thirds so that adjacent bars are four semi-tones apart to eliminate tonal interferences.

4. A musical instrument comprising a pair of connected apertured sound boxes, and a plurality of tone bars supported thereon over the apertures therein, said tone bars arranged with the tone bars of each octave divided into groups which are mounted on opposite ends of both sound boxes with the adjacent tone bars arranged to give a succession of major thirds and four semi-tones apart.

5. A chime embracing a plurality of apertured sound boxes, means connecting the same, and a plurality of tone bars supported on said sound boxes in a manner to permit free vibration of the tone bars, said tone bars arranged with the tone bars of each octave divided into four groups, two of which are mounted on each sound box, each group consisting of three tone bars with adjacent bars arranged to give a succession of major thirds and four semi-tones apart.

6. A chime comprising sound boxes having the tone bars arranged in the order shown and described to give a succession of major thirds with adjacent tone bars four semi-tones apart.

7. A chime comprising primary and secondary apertured sound boxes, and a plurality of graduated tone bars supported thereon over the apertures thereof with the tone bars of each octave divided into four groups and distributed on said sound boxes as follows; the first group positioned on the left half of the primary sound box and comprising bars having tones C, E and G#, the second group positioned on the left half of the secondary box and comprising bars having tones C#, F and A, the third group positioned on the right half of the primary sound box and comprising bars having tones D, F# and A# reading inwardly, and the

fourth group positioned on the right half of the secondary sound box and comprising bars having tones D#, G and B reading inwardly.

8. A percussion instrument having tone bars arranged to give a succession of major thirds with adjacent tone bars four semitones apart.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JOHN B. KOHLER.

Witnesses:
FRED E. PAESLER,
EARL M. HARDINE.