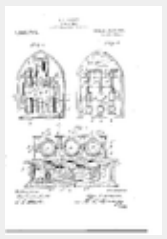
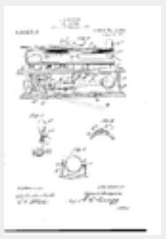
Google Patents

Musical bell.

Images (2)

Classifications

G10K1/066 Devices in which sound is produced by striking a resonating body, e.g. bells, chimes or gongs the resonating devices having the shape of a bell, plate, rod, or tube electrically operated the sounding member being a tube, plate or rod

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US1052713A
United States

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Inventor: John C Deagan

Current Assignee : Individual

Worldwide applications

1908 • ~~US~~

Application US42659308A events

1908-04-11 • Application filed by Individual
1908-04-11 • Priority to US42659308A
1910-03-14 • Priority to US549224A
1913-02-11 • Application granted
1913-02-11 • Publication of US1052713A
1930-02-11 • Anticipated expiration
Status • Expired - Lifetime

Info: Similar documents, Priority and Related Applications

External links: USPTO, USPTO PatentCenter, USPTO Assignment, Espacenet, Global Dossier, Discuss

Description

J. U. DEAGAN,

MUSICAL BELL,

APPLIGATION FILED APR. 11, 1908.

Patented Feb, 11, 1913.

2 SHEETS-SHEET l.

wmg 1$ 6,5

J. G. DEAGAN.

MUSICAL BELL.

APPLICATION FILED APR.11, 1908.

1,5231% Patented Feb. 11,1913.

2 SHEETS-SHEET 2.

as will appear JOHN C. DEAGAN, OF CHICAGO, ILLINOIS.

MUSICAL BELL.

Specification of Letters Patent.

' Patented Feb. 11,1913.

Application filed April 11, 1908. Serial No. 426,593.

. the accompanying drawings, forming a part of this specification.

My invention relates to musical lnstruments, and has a number of objects in view,

by a description of the accompanying drawings, showing the preferred embodiment thereof, and as will be pointed out in the claim.

In the drawings-Figure 1 is a front view.

of an embodiment of my invention. Fig. 2 is a rear view of the structure-shown in Fig. 1. Fig. 3 is a sectional view on an enlarged scale, on line 3 3 of Fig. 1. Fig. 4 is a

sectional view on an enlarged scale, on line 4. 1 of Fig. 1. Fig. 5 is a detail view illustrating certain operating mechanism entering into my improved construction. Fig. 6 is a view in cross-section taken on line 6 6 of Fig. 4. Fig. 7 is a view in cross-section taken on a vertical line through the pivotal mounting of a tubular bell forming a part of the structure. 1 Like parts are indicated by similar characters of reference throughout the different figures.

In the embodiment of the invention shown, a plurality of tubular resonating elements at is employed, though the invention is not to be restricted in all of its embodiments to such elements. The tubular elements at, when struck, will be set into vibration so as to emit musical sounds. Each of these tubular resonating elements is provided with trunnion pins 7) I) provided with suitable sound damping material where they are supported by the trunnion supports 7). A pair of pillows is provided for each resonating element a, these pillows possessing suitable blocks of sound damping material 0 against which the corresponding tube is adapted to rest, the trunnion supports 6 defining an axis of movement for each tube, being interposed between the pillows c 0, whereby the bodily swing of each resonating tube about its axis is limited without impair ing the vibratory qualities of the tube. The pillows c c serve, as has been suggested, to hold the tube engaged thereby substantially stationary, though permitting sufficient movement of'said tube when struck, as to allow the tube to vibrate. The upper pillow 0 engages the closed end of the tube and takespart in eliminating overtones.

I have illustrated several tubes in the embodiment of the invention shown and have employed mechanism for simultaneously striking the tubes, so that the tubes, which are of differing lengths, may jointly produce a sound similar to that of a large cathedral bell. NVhere a plurality of resonating tubes is employed, I desirably provide a hammer e for each tube, each of these hammers being carried by an arm 6 journaled at its rear end upon a pivot rod e*, the pivoted ends of the arms 6 being led into slots providedin a block 6 th'roughwhich slots the pivotal rod 6 also passes, the slots permitting the .pivoted ends of the arms 6 to play therein. A striking lever f, suitably curved and mounted, is adapted for simultaneous engagement wit-h all of'the arms e whereby the resonating tubes may be simultaneously struck. A horizontal portion of this striking lever lies underneath thefarms 6 so that when the lever f is operated said arms are raised to force the hammers against the resonating tubes. The lever fmay project outwardly, as illustrated, for example, in Figs. 4 and 5,

where it is prpvided with an enlargement f that may be struck by the hand in order to effect the operation of the striking lever and which is also provided with an ear f, to which a cord maybe attached if it should be desired to place the instrument "out of- 'reach, a pull upon the cord enabling the operation of the striking lever.v I preferably rely upon momentum to complete the final movement of the hammers, to which end the arms e carrying the hammers are desirably formed in sections, the section- 9 immediately supporting each hammer being'pivoted at its rear end toits companion section of the arm e A suitablestop h is provided, againstwhich; aprojection carried by the arm e such as 'a s'crew k, may strike when the striking lever f is actuated, the portions h 11, being so related that the hammers cannot reach the resonating elements a upon a very slow movement of the operating lever f. When, however, a quick movement is'given to the operating lever, the momentum ac quired by the hammers will be sufficient to cause movement of said hammers and the arm sections 9 supporting the same with respect to the balance of the arms 6 so that the vibrating elements a 'will beimpinged upon by the hammers with a' force that is -n1cely adapted to sounding the vibrating elements, the hammers falling back from the vibrating elements as soon as they have struck the vibrating elements, so that said hammers do not damp the sound they occasion in the'vibrating elements a. To further insure the short duration of the contact of the hammers with the vibrating elements a, I provide springs g, which tend to maintain the sections of the arms 6 in line, but which yield to the momentum acquired by the hammere 6 and which cooperate with gravity in restoring the ,hammers after they have struck the sound-producing elements. If itshould be desired to damp the sound produced by the resonating elements, I may attach a sound-damping element 2' to the operating lever f, the operating lever serving to apply the damper z to the resonating elements when saidlever is released.

It may be desired to cause the instrument to produce a vibrating or tremolo sound, and to this end I provide a vibrating tremolo element 70, which when set into motion, is adapted to re-act against the sound waves emitted by the instrument, in a manner to effecta" variation of the sound. This vibrating element 70 may be set into motion in any suitable or preferred way and may be associated with any selected portion of the instrument where said vibrating element will I have effect. I

The embodiment of the invention herein shown includes structural characteristics embraced within the scope of my Patent 818,874, dated April 24, 1906, which structural characteristics include two longitudinal slots Z in each tube and an opening m in each tube facing the plane in which the i said slots lie, the said opening being at that which end one of the arms 6 may carry a rod 72 having its upper end projecting into the range of the plate 70, so that when the arms 61 re elevit e in response to the movement of the actuating lever, the striking rod n is also lifted to engage the vibrating plate k to set this plate into motion for the purpose stated-i I desirably cause the striking rod n to have direct engagement with the vibrating plate is by attaching said striking 'rod to the section o of one of the arms 6 gravity and the'spring g cooperating to remove said rod from engagement'with the association with each tube, which valve may be adjusted in posltion to regulate the 8 amount of issuing sound. The valve is de-- sirably in the form of a curved or arc-shaped plate 0 having a curvature that conforms somewhat to the curvature of the tube, but when not under stress, of lesser diameter than such tube. The valve plate 0 is of spring sheet metal which has a slot 0 therein through which the shank of a screw 0 is passed, this screw being threaded into the associated tube a. The plate 0 may be moved longitudinally of the associated tube to cover more or less of the opening m, whereafter the screw 0 may be tightened to secure the plate 0 in its position, and inasmuch as the plate is put under compression against the force of its own resiliency by the clamping action of said screw, such plate will not vibrate to produce any jarring noise.

As shown, the mechanism is mounted upon and within a box 79, and, if desired,-

this box may be set in an inclined position, for which purpose the bottom of the box may be provided with an easel leg Where a plurality of tubes enter into my improved construction, it is obvious that they may be operated by tapping the sam individually, as by a hand mallet.

Certain features shown herein form the subject matter of my divisional application, Serial No. 549,224, filed March 14, 1910.

It is obvious that changes may readily be made in the device of my invention herein shown and particularly described, without departing from the spirit of the invention, but,

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following A hollow cylindrical resonating element provided, with an opening in its cylindrical wall through which sound issues and an arcshaped valve plate of springsheet metal of lesser radius than the radius of the cymy name this seventh day of April A. D., lindrical surface to which said valve plate 1908. 1

is to be a plied and valve holding means fer changl iig the curvature of the plate to JOHN DEAGAE 5 have it substantially conform to the curva- Witnesses:-

ture of said cylindrical Surface. G. L. CRAGG,

In witness whereof, I hereunto subscribe L. E. STROH.

Similar Documents

Publication	Publication Date	Title
US2275252A	1942-03-03	Electrical musical instrument fob
US4058044A	1977-11-15	Electrical musical instrument
US2873640A	1959-02-17	Striking mechanism for music instrument

US991704A	1911-05-09	Musical bell.
US2705936A	1955-04-12	Musical door movement signal
US632029A	1899-08-29	Chime.
US2156711A	1939-05-02	Musical instrument
US2811071A	1957-10-29	Toy musical instrument
US2920522A	1960-01-12	Musical instrument
US1805863A	1931-05-19	Keyboard operated musical instrument
US2261345A	1941-11-04	Electrical musical instrument for producing bell tones
US1453968A	1923-05-01	Musical toy
US4314494A	1982-02-09	Electric keyboard musical instrument
US818874A	1906-04-24	Musical bell.
US513152A	1894-01-23	Staff-bell
US2742875A	1956-04-24	Striking clock
US2260195A	1941-10-21	Chime ringer
US552141A	1895-12-31	Caleb c
US1806595A	1931-05-26	Piano action
US1843034A	1932-01-26	Musical instrument
US1571315A	1926-02-02	Musical instrument
US570582A	1896-11-03	John a
US580966A	1897-04-20	Instrument
US4433602A	1984-02-28	Keyboard musical instrument
US3524008A	1970-08-11	Reed-type musical instrument with electromagnetic pickups

Priority And Related Applications

Priority Applications (2)

Application	Priority date	Filing date	Title
US42659308A	1908-04-11	1908-04-11	Musical bell.
US549224A	1908-04-11	1910-03-14	Musical bell.

Applications Claiming Priority (1)

Application	Filing date	Title
US42659308A	1908-04-11	Musical bell.

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
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