

Oct. 9, 1951

L. PATZ
MUSICAL BOOK

2,570,976

Filed Aug. 16, 1948

2 Sheets-Sheet 1

Fig. 1

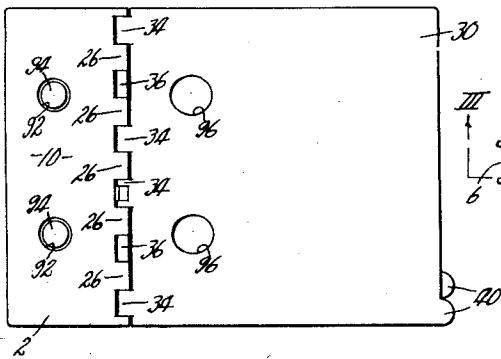


Fig. 2

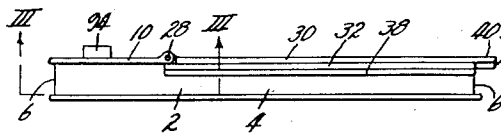
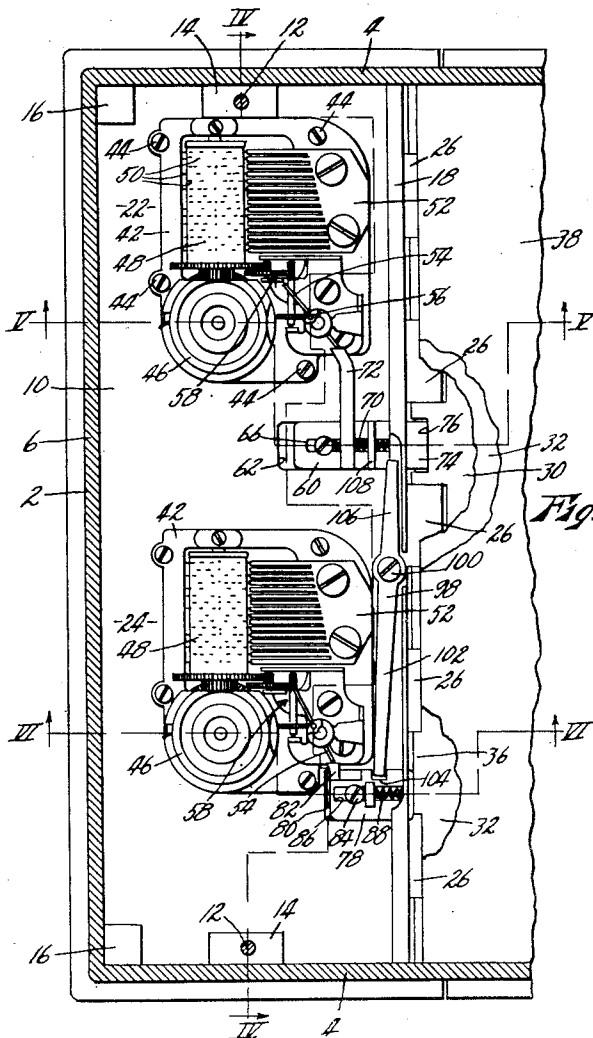


Fig. 3

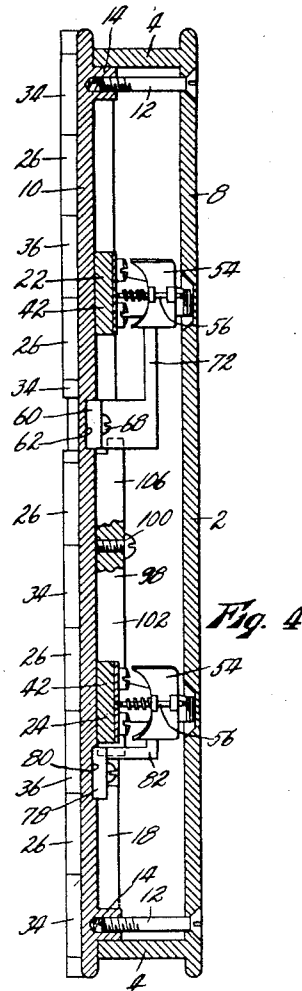


Fig. 4

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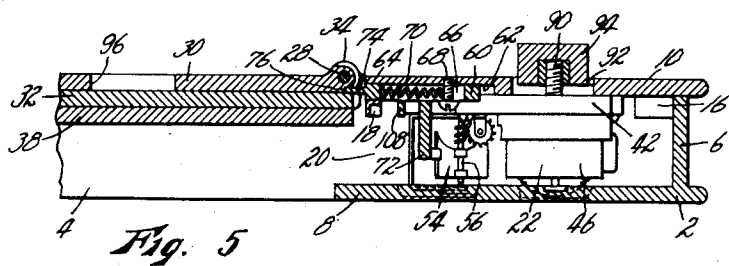
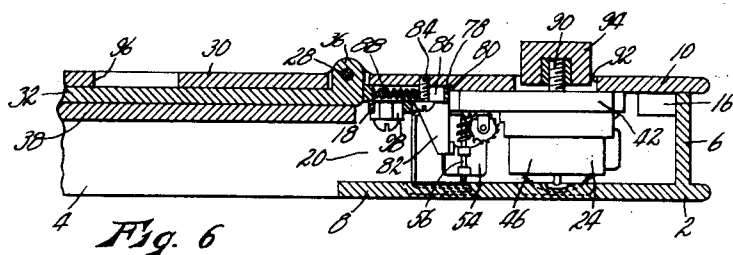
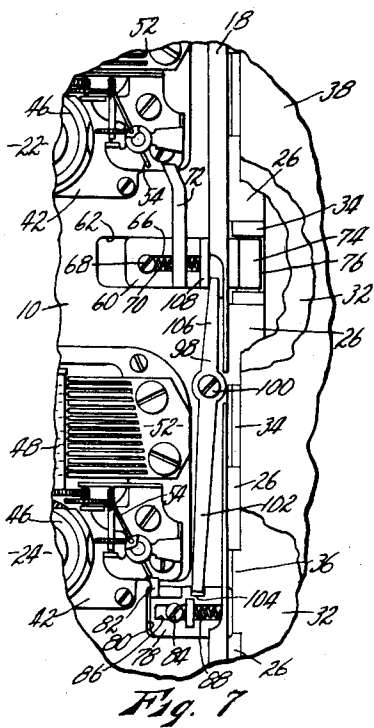
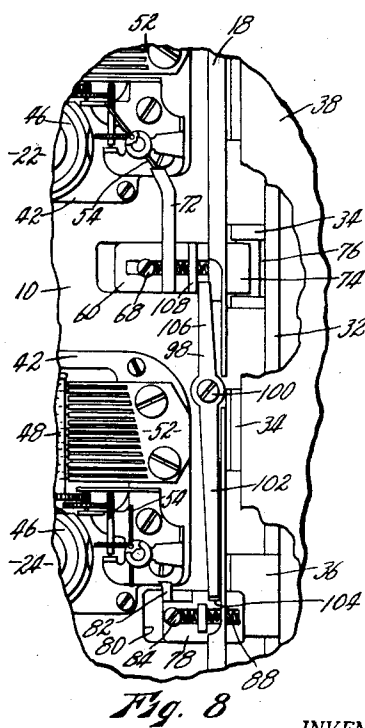
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UNITED STATES PATENT OFFICE

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MUSICAL BOOK

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6 Claims. (Cl. 84-96)

1

2

This invention relates to new and useful improvements in musical toys, and has as its principal object the provision of musical toy having the general form of a book and carrying mechanical musical instruments therein adapted to be controlled by the turning of the leaves of the book.

Another object is the provision of a musical book comprising a body member carrying a plurality of mechanical musical instruments therein and having a like number of leaves hingeably attached thereto, and means whereby as each leaf is opened, the corresponding musical instrument is actuated. It is contemplated that the musical instruments shall play the tunes of nursery rhymes, and that the page corresponding to each instrument shall have imprinted thereon the music, words, and suitable illustrations for the nursery rhyme played by that instrument. However, it is readily understood that this is only one possible use of the device.

Another object is the provision, in a musical book of the class described, of means whereby after the first leaf has been turned to actuate the first musical instrument, the turning of the second leaf both actuates the second musical instrument and turns off the first.

Other objects are simplicity and economy of construction, and ease and dependability of operation.

With these objects in view, as well as other objects which will appear in the course of the specification, reference will be had to the drawing wherein:

Fig. 1 is a front elevation of a musical book embodying the present invention.

Fig. 2 is an edge view of the book.

Fig. 3 is an enlarged, fragmentary section taken on line III—III of Fig. 2 with parts broken away and other parts left in elevation.

Fig. 4 is a section taken on line IV—IV of Fig. 3, with parts left in elevation.

Fig. 5 is a sectional view taken on line V—V of Fig. 3, with parts left in elevation.

Fig. 6 is a sectional view taken on line VI—VI of Fig. 3, with parts left in elevation.

Fig. 7 is a fragmentary view of the parts as shown in Fig. 3, with the parts shown in the relative positions assumed when the top or cover leaf is opened.

Fig. 8 is a view of the parts shown in Fig. 7, with the parts shown in the relative positions assumed when both of the hinged leaves are opened.

Like reference numerals apply to similar parts

throughout the several views, and the numeral 2 applies to a rectangular body member made of plastic, metal, wood, or other suitable material and comprising side walls 4, end walls 6, a bottom 8 extending from the left end of the book as viewed in Figs. 1 to 3, and a removable top 10 substantially coextensive with the bottom 8 and secured to the body member by screws 12 extending through bottom 8 and threaded into bosses 14 formed on the under side of top 10. Bosses 16 integral with top 10 fit into the corners of body member 2 to position said top securely. Top 10 is provided with a depending wall 18 adjacent its inner edge and parallel to end walls 6, and having its lower edge spaced apart from bottom 8 to form an aperture 20 therebetween. Bottom 8, top 10, end wall 6, and wall 18 form an enclosure adapted to carry a pair of mechanical musical instruments 22 and 24, as will be hereinafter described.

Along its inner edge, top 10 is formed to present spaced apart hinge lugs 26 carrying a hinge pin 28. A cover leaf 30 and a second leaf 32 are pivoted on said hinge pin, being formed respectively to present hinge lugs 34 and 36 for this purpose. A third leaf 38 is rigidly fixed to body member 2. Leaves 30, 32 and 38 are of rigid sheet material such as plastic, and leaves 30 and 32 are each provided at their outer ends with a finger tab 40 for easy opening.

Musical instruments 22 and 24 are of the type ordinarily used in music boxes, and each comprises briefly a base 42 secured to the under side of top 10 by screws 44, a spring motor 46 carried by said base, and a drum 48 driven by said motor and having prongs 50 thereon adapted to pluck and vibrate the fingers of a tuned steel comb 52 to produce musical notes. The tune produced of course depends upon the arrangement of the prongs 50 on the drum. The movement further includes a thin, blade-like governor 54 mounted on a rotatable vertical shaft 56 driven by motor 46 by means of a gear train designated generally at 58. Said governor serves to control the speed of the motor, and also commonly is used to start and stop the instrument by placing a stop in its path. The musical instrument and governor so far described is commonly known in the prior art.

A slide bar 60 is carried for longitudinal sliding movement in a groove 62 formed in the lower surface of top 10 adjacent musical instrument 20 and at right angles to hinge pin 28. The outer end portion of said slide bar extends slidably through an opening 64 provided therefor in wall 18. Said slide bar is provided with a longitudinal

slot 66, through which a screw 68 passes, said screw engaging top 10 to support slide bar 60. A compression spring 70 is carried in slot 66 between screw 68 and the outer end of the slot, and resiliently urges said slide bar outwardly. Slide bar 60 carries a finger 72 which projects within the orbit of governor 54 of musical instrument 22 when slide bar 60 is moved inwardly against spring 70, thus preventing the operation of said instrument, but which passes out of the orbit of said governor when slide bar 60 is moved outwardly by spring 70, thus permitting the operation of said musical instrument. That portion of slide bar 60 extending outwardly beyond wall 18 is reduced to form a finger 74 adapted normally to abut against a shoulder 76 formed by cutting away a portion of one of hinge lugs 34 of cover leaf 30, said shoulder being disposed directly beneath hinge pin 28, as best shown in Fig. 5. When leaf 30 is closed, shoulder 76 contacts finger 74 and forces slide bar 60 inwardly against spring 70, thus moving finger 72 carried by said slide bar into the orbit of governor 54 as shown in Figs. 3 and 5. When leaf 30 is pivotally raised, shoulder 76 is moved out of the path of finger 74, and slide bar is moved outwardly by spring 70 to move finger 72 out of the orbit of governor 54, as shown in Fig. 7.

A slide bar 78 similar to slide bar 60 is carried for sliding movement in a groove 80 formed in top 10 adjacent musical instrument 24. Slide bar 78 functions in a manner similar to bar 60, carrying a finger 82 adapted to be moved into and out of the orbit of governor 54 of instrument 24 by sliding movement of the slide bar, and being secured in groove 80 by a screw 84 passing through a longitudinal slot 86 formed therein, and being urged resiliently outwardly by spring 88. The outer end of slide bar 88 is adapted to abut against one of hinge lugs 36 of second leaf 32 at a point below hinge pin 28, as shown in Fig. 6. Thus when leaf 32 is pivotally raised, lug 36 moves away from the outer end of slide bar 78, and said slide bar is moved outwardly by spring 88 to move finger 82 out of the path of the governor 54 of musical instrument 24.

The winding stem 90 of each musical instrument projects upwardly through an opening 92 formed in top 10, and is provided with a knob 94 by means of which spring motor 45 may be manually wound. Cover leaf 30 is provided with a pair of holes 96 therethrough which are adapted to pass over knobs 94 when leaf 30 is opened, thus permitting said leaf to lie flat against top 10.

A lever 98 is pivotally mounted intermediate its ends to the lower surface of top 10 by means of screw 100. Said lever extends between slide bars 60 and 78, the longer arm 102 thereof fitting pivotally into a notch 104 formed in the edge of slide bar 78. The shorter arm 106 of the lever overlaps slide bar 60, and is normally spaced outwardly from a lug 108 formed integrally with said slide bar when the leaves of the book are closed.

In operation, cover leaf 30 is raised to actuate musical instrument 22 as previously described. The words and music corresponding to the melody played by instrument 22 may be imprinted on the upper surface of leaf 32. As cover leaf 30 is opened, slide bar 60 moves outwardly till lug 108 thereof contacts arm 106 of lever 98, as shown in Fig. 7. As leaf 32 is in turn raised, slide bar 78 will be moved outwardly as previously described to actuate musical instrument 24. As slide bar 78 moves outwardly, it pivots lever 98 in a counter-clockwise direction as viewed in Figs.

7 and 8, and arm 106 of said lever engages lug 108 and thereby forces slide bar 60 inwardly to shut off musical instrument 22. The words and music corresponding to the melody played by instrument 24 may be imprinted on the upper surface of fixed leaf 38. It is intended that the parts be so proportioned that as leaf 32 is opened, instrument 22 will be shut off before instrument 24 is actuated. Thus at no time can both instruments run simultaneously, and should both of leaves 30 and 32 be opened together, only instrument 24 will be actuated. It will be noted that lever arm 102 is longer than lever arm 106, thus permitting slide bar 78 to dominate the action of slide bar 60. Of course it would be possible to use a spring 88 stronger than spring 70 in order to accomplish this purpose.

What I claim is:

1. A musical book comprising a body member, a plurality of hingeable leaves carried by said body member, a plurality of mechanical musical instruments carried by said body member and corresponding respectively to said leaves, and means whereby when said book is opened to any given page, the musical instrument corresponding thereto will be actuated, and the remainder of said musical instruments will be deactuated.

2. A musical book comprising a body member, a pair of mechanical musical instruments carried by said body member, a pair of leaves carried hingeably by said body member, means operable as the first leaf is opened for actuating one of said musical instruments, and means operable as the second leaf is opened for actuating the other of said musical instruments and shutting off said first named musical instrument.

3. A musical book comprising a body member, a plurality of mechanical musical instruments carried by said body member each including a member which rotates as said instrument operates, a pair of leaves hingeably carried by said body member, a first stop member carried by said body member for movement to and from engagement with the rotatable member of the first of said musical instruments to control the operation of said instrument, said stop member being operable by the opening and closing movement of the first of said leaves, a second stop member carried by said body member for movement to and from engagement with the rotatable member of the second of said musical instruments to control the operation of said instrument, said second stop member being operable by the opening and closing movement of the second of said leaves, and means operably interconnecting said first and second stop members whereby when said second leaf is opened, said first stop member is moved into engagement with the rotatable member of said first musical instrument.

4. A musical book comprising a body member, a plurality of mechanical musical instruments carried by said body member each including a member which rotates as said instrument operates, a pair of leaves hingeably carried by said body member, a first stop member carried by said body member for movement to and from engagement with the rotatable member of the first of said musical instruments to control the operation of said instrument, said stop member being operable by the opening and closing movement of the first of said leaves, a second stop member carried by said body member for movement to and from engagement with the rotatable member of the second of said musical instru-

5

ments to control the operation of said instrument, said second stop member being operable by the opening and closing movement of the second of said leaves, and a lever pivotally carried by said body member, one arm of said lever being pivotally associated with said second stop member, and the other arm of said lever being adapted to contact and urge said first stop member into engagement with the rotatable member of said first musical instrument as said second stop member moves out of engagement with the rotatable member of said second musical instrument.

5. A musical book comprising a body member, a plurality of mechanical musical instruments carried by said body member each including a member which rotates as said instrument operates, a pair of leaves hingeably carried by said body member, a first stop member carried by said body member for movement to and from engagement with the rotatable member of the first of said musical instruments to control the operation of said instrument, a second stop member carried by said body member for movement to and from engagement with the rotatable member of the second of said musical instruments to control the operation of said instrument, means normally urging said stop members out of engagement with said rotatable members, said stop members being contacted respectively by said pair of leaves and moved thereby into engagement with said rotatable members whenever said leaves are closed, and a lever carried

6

pivotally by said body member, one arm of said lever being pivotally associated with said second stop member, and the other arm of said lever being adapted to contact and urge said first stop member into engagement with the rotatable member of said first musical instrument as said second stop member moves out of engagement with the rotatable member of said second musical instrument.

6. A musical book comprising a body member, a plurality of mechanical musical instruments carried by said body member, a like number of leaves hingeably carried by said body member and corresponding respectively with said musical instruments, and means operable as each of said leaves is opened whereby the corresponding musical instrument is actuated to the exclusion of the remainder of said musical instruments.

LOUIS PATZ.

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