Aug. 21, 1962 M. DECKER 3,049,961

MUSICAL JUMPING ROPE

Filed Sept. 20, 1960

Fig. 1

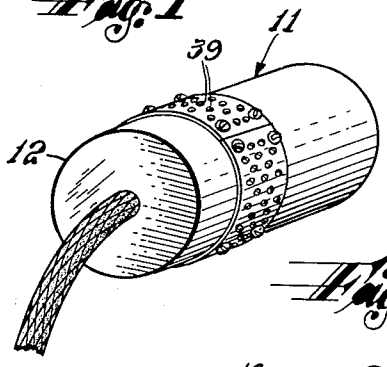


Fig. 3

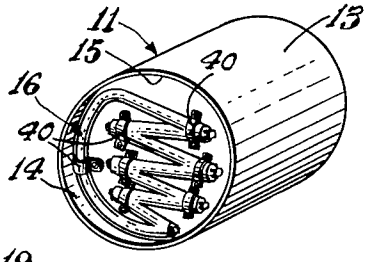
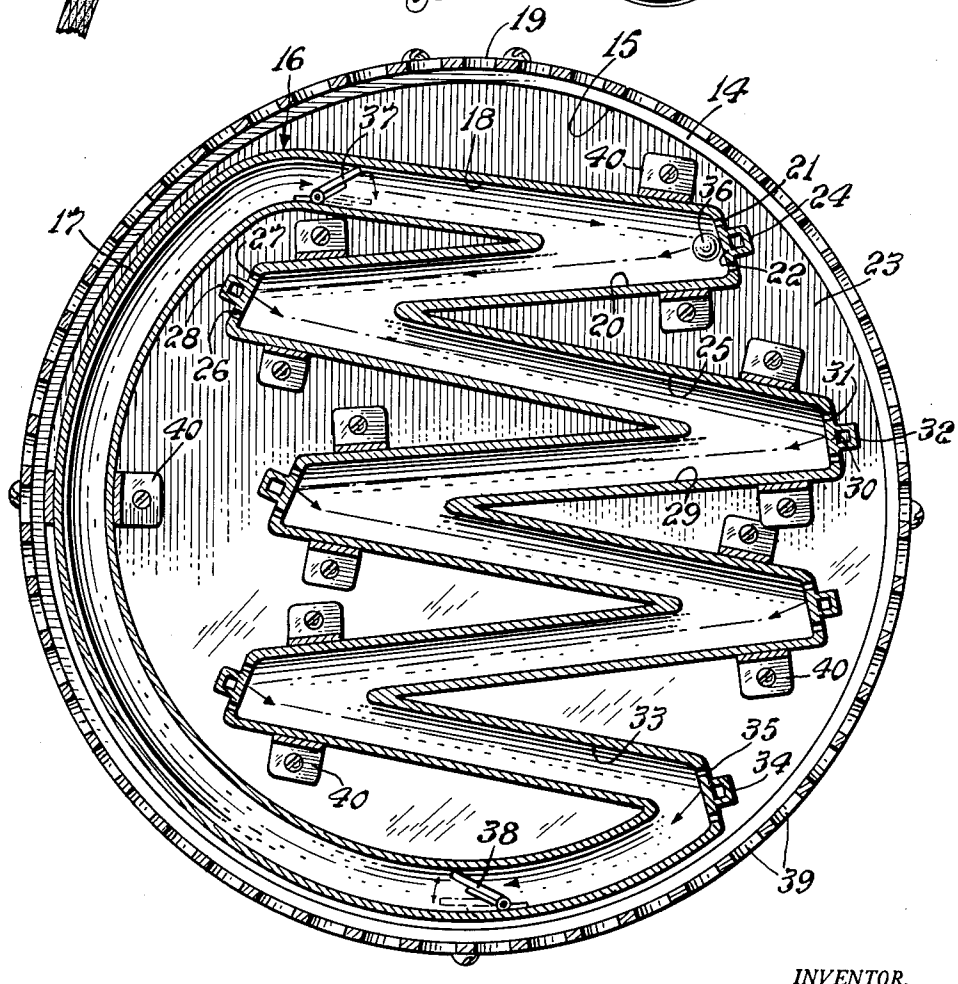


Fig. 2



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United States Patent Office 3,049,961 Patented Aug. 21, 1962

3,049,961

MUSICAL JUMPING ROPE

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Filed Sept. 20, 1960, Ser. No. 57,284
5 Claims. (Cl. 84—404)

My invention relates to musical devices generally and to a musical jumping rope operated by the normal oscillatory motion of the jumping rope handle when in use.

A number of musical jumping ropes have been devised with sound producing means seated within one or both handles. However, the sound producing means usually comprise a bell-like structure with a clapper or striker secured thereto or therein for random movement with the handle. Such devices are unable to produce a song with a regular sequence of different notes. Devices which can produce of song having a regular sequence of different notes employ springs, gears, shafts and other mechanical elements. These mechanical elements form a power transmission to the common music box pinned cylinder engaged to a comb having resilient tongs which produce different notes when plucked. Such devices are highly complex and costly and are subject to damage by shock and moisture.

Therefore, it is among the objects and advantages of my invention to provide a musical jumping rope in which a number of different musical notes may be sounded in a regular sequence to produce a song.

Another object of my invention is to provide a musical jumping rope wherein the sound producing means is seated within a cartridge which is easily attached to any conventional jumping rope handle.

Yet another object of my invention is to provide a musical jumping rope in which the normal oscillatory motion of the handle, when in use, actuates the sound producing means without the use of gears, springs, shafts or other mechanical elements which are complex and costly and are subject to damage by shock and moisture.

A further object of my invention is to provide a musical jumping rope in which a regular squence of different notes are percussively sounded by a free-moving striker circulating in a plurality of conduits.

A still further object of my invention is to provide a musical jumping rope in which the different musical notes may be produced by chimes, bells, strings or any other means which may be percussively operated.

Yet another object of my invention is to provide a musical jumping rope which is virtually impervious to damage by shock or moisture.

Still another object of my invention is to provide a musical jumping rope which may be easily fabricated of inexpensive materials.

These objects and advantages as well as other objects and advantages may be achieved by my invention one embodiment of which is illustrated in the drawings, in which:

FIGURE 1 is a view in perspective of my musical jumping rope having the musical cartridge secured to the handle of a conventional jumping rope.

FIGURE 2 is an end elevational cross-sectional view of the musical cartridge on an enlarged scale.

FIGURE 3 is a view in perspective of the musical cartridge with the jumping rope handle removed therefrom.

Referring now to the drawings in detail, my invention comprises a musical cartridge **11** which is attached to the handle **12** of a conventional jumping rope. The musical cartridge **11** itself comprises a generally cylindrical body **13** having an annular flange **14** on one end, thereby defining a circular recess **15**.

Secured within the recess **15** is a music producing device **16** comprised of a plurality of interconnected conduits which may have any convenient cross-sectional configuration such as circular or rectangular. There is provided

a circumferential conduit **17** seated within the recess **15** which is arcuate and conforms generally to the interior surface of the annular flange **14** on the body **13**. The circumferential conduit **17** is connected to an upper cross conduit **18**. The upper cross conduit **18** is generally straight and inclined downwardly with respect to a plane tangential to the body **13** at its topmost portion **19**. The upper cross conduit **18** is connected to a first intermediate cross conduit **20** at a sharp intersection. The first intermediate cross conduit **20** is generally straight downwardly at an incline from the tangential plane aforementioned toward the circumferential conduit **17**. The intersection between the upper cross conduit **18** and the first intermediate cross conduit **20** is provided with an opening **21**. The opening **21** may be circular, rectangular, or any other convenient shape. Seated within the opening **21** is a chime **22** which is attached to the floor **23** of the recess **15** by some suitable mounting element **24**.

The first intermediate cross conduit **20** sharply intersects with a second intermediate cross conduit **25** at its end opposite its intersection with the upper cross conduit **18**. The second intermediate cross conduit **25** is inclined downwardly in the manner of the upper cross conduit **18** and intermediate conduit **20**, and extends in a direction opposite from the circumferential conduit **17** to a point a short distance from the annular flange **14**. The intersection between the first intermediate cross conduit **20** and the second conduit **25** is provided with an opening **26**. Seated within the opening **26** is a chime **27** which is attached to the floor **23** of the recess **15** by a suitable mounting element **28**. The second intermediate cross conduit **25** connects to a third intermediate cross conduit **29** similar to the other cross conduits, **18**, **20** and **25**. The intersection between the cross conduit **29** and cross conduit **25** is sharp and is provided with an opening **31**. A chime **30** is seated within the opening **31** and is attached to the floor **23** of the recess **15** by a suitable mounting element **32** in the same manner as chimes **22** and **26**.

Any desired number of generally straight, intermediate cross conduits may be provided, interconnected and sharply intersecting in the manner of conduits **18**, **20**, **25** and **29**. Each intersection is provided with an opening into which is seated a chime. The lowermost intermediate cross conduit **33** sharply intersects with the end of the arcuate, circumferential conduit **17** and is connected thereto. A chime **34** is similarly seated within an opening **35** in the intersection of the lowermost intermediate cross conduit **33** and the circumferential conduit **17**. There is thus created a closed, circuitous passage consisting of the interconnected arcuate circumferential conduit and the various, generally straight, intermediate cross conduits.

A ball **36** fabricated of hard metal or any other suitable material is positioned within the sound producing element **16** consisting of the closed circuitous passage aforementioned. In addition, the upper intermediate cross conduit **18** is provided with a one-way spring trap **37**. The trap **37** is adapted to open by pressure exerted by the ball **36** when traveling in the direction of the arrows but to close in response to pressure exerted by the ball **36** in the opposite direction. A similar, one-way spring trap **38** is provided in the arcuate, circumferential conduit **17** near its intersection with the lowermost, intermediate cross conduit **33** and is adapted to permit movement of the ball **36** only in the direction of the arrows.

The musical cartridge **11** may be attached to the handle of any conventional jumping rope. However, it is necessary that some opening be maintained in the vicinity of the sound producing element **16** in order to permit the sound to escape. This may be accomplished by an annular, perforated shield **39** which may be screwed

to both the flange 14 of the cartridge 11 and the handle 12 of the jumping rope, maintaining the cartridge 11 and the handle 12 in displaced relationship to each other. Music produced within the recess 15 can escape through the perforated shield 39 without being distorted or otherwise muffled.

The music producing element 16 is secured to the floor 23 of the recess 15 by a plurality of generally U-shaped strips 40 secured across the intermediate cross conduits at their intersections. Thus, the music producing element with but one moving part, the ball 36, is virtually impervious to shock damage. Still further, the various conduits may be easily fabricated of inexpensive, noncorrosive material, thereby rendering the device impervious to moisture or water damage. Since there are no gears, springs and shafts to move, there is virtually no wear from usage.

In operation, the normal, oscillatory motion of the hand while turning the jumping rope will cause the ball 36 to travel through the closed, circuitous passage of interconnected conduits. Starting with the arcuate, circumferential conduit 17, the ball 36 will be forced therethrough by a combination of centrifugal force and rotational movement produced by the hand when turning the rope. The ball 36 will be forced into the upper, intermediate cross conduit 18 with considerable speed and force. The trap 37 will open permitting the ball 36 to travel down conduit 18. At the intersection of conduit 18 with the first intermediate conduit 20, the ball 36 will percussively strike the chime 22 producing a musical note. The ball will then rebound into the first intermediate cross conduit 20 and normal oscillatory motion of the hand will propel the ball down conduit 20 to percussively strike chime 27 and thereafter rebound into the second, intermediate cross conduit 25. Thus, the normal motion of the hand while jumping rope will cause the ball 36 to traverse the various conduits, striking the chime bars at the intersections of the generally straight, intermediate cross conduits. The traps 37 and 38 prevent the ball 36 from moving in an opposite direction. The cartridge 11 should be oriented so that the normal motion of the hand tends to propel the ball in the direction of the arrows.

In this fashion, a plurality of different notes will be sounded in a regular sequence as the ball 36 strikes one chime after the other. The length of each intermediate cross conduit may be varied to alter the time lag between notes thereby creating rhythm.

The foregoing description is merely intended to illustrate an embodiment of the invention. The component parts have been shown and described. They each may have substitutes which may perform a substantially similar function; such substitutes may be known as proper substitutes for the said components and may have actually been known or invented before the present invention; these substitutes are contemplated as being within the scope of the appended claims, although they are not specifically catalogued herein.

I claim:

1. A musical jumping rope comprising,
(*a*) a rope having a handle secured to at least one end thereof,
(*b*) a body member secured to the handle in spaced relationship thereto,
(*c*) a generally tubular, arcuate partial circumferential conduit secured to one end of the body member,
(*d*) a plurality of generally tubular, straight conduits connected end to end between the ends of the arcuate conduit, each straight conduit disposed at an acute angle to the straight conduit to which it is connected,
(*e*) sound producing means positioned at the intersection of the straight conduits with each other, and
(*f*) means within the conduits for percussively sounding the sound producing means.

2. A musical jumping rope comprising,
(*a*) a rope having a handle secured to at least one end thereof,
(*b*) a body member secured to the handle in spaced relationship thereof,
(*c*) a generally tubular, arcuate partial circumferential conduit secured to one end of the body member.
(*d*) a plurality of generally tubular straight conduits connected end to end between the ends of the arcuate conduit, each straight conduit disposed at an acute angle to the straight conduit to which it is connected, the respective conduits defining a close circuitous passage,
(*e*) the straight conduits being provided with openings at their intersections with each other,
(*f*) sound producing means seated within the said openings in the conduits, and
(*g*) means within the circuitous passage for percussively operating the sound producing means.

3. A musical jumping rope comprising,
(*a*) a rope having a handle secured to at least one end thereof,
(*b*) a body member secured to the handle in spaced relationship thereto,
(*c*) a generally tubular, arcuate partial circumferential conduit secured to one end of the body member,
(*d*) a plurality of generally tubular straight conduits connected end to end between the ends of the arcuate conduit, each straight conduit disposed at an acute angle to the straight conduit to which it is connected, the respective conduits defining a closed circuitous passage,
(*e*) sound producing means positioned at the intersections of the straight conduits with each other,
(*f*) means within the circuitous passage for percussively sounding the sound producing means, and
(*g*) means within the conduits to permit the said percussive means to circulate through the passage in but one direction.

4. A musical jumping rope comprising,
(*a*) a rope having a handle secured to at least one end thereof,
(*b*) a perforated, annular collar secured to the end of the handle opposite the rope,
(*c*) a body member secured to the perforated, annular collar in spaced relationship to the handle,
(*d*) a generally tubular, arcuate partial circumferential conduit secured to one end of the body member,
(*e*) a plurality of generally tubular straight conduits connected end to end between the ends of the arcuate conduit, each straight conduit disposed at an acute angle to the straight conduit to which it is connected, the respective conduits defining a closed circuitous passage,
(*f*) sound producing means within the circuitous passage, and
(*g*) means adapted to circulate within the circuitous passage for percussively sounding the sound producing means.

5. A musical jumping rope comprising,
(*a*) a rope having a handle secured to at least one end thereof,
(*b*) a perforated, annular collar secured to the end of the handle opposite the rope,
(*c*) a body member secured to the perforated annular collar in spaced relationship to the handle,
(*d*) a generally tubular, arcuate partial circumferential conduit secured to one end of the body member,
(*e*) a plurality of generally tubular straight conduits connected end to end between the ends of the arcuate conduit, each straight conduit disposed at an acute angle to the straight conduit to which it is connected, the respective conduits defining a closed circuitous passage,

(*f*) the straight conduits being provided with openings at their intersections with each other,

(*g*) a chime seated within each of said openings,

(*h*) a striker seated within the circuitous passage free to circulate therein, and

(*i*) a spring trap located within the circuitous passage adapted to permit the striker to circulate in but one direction.

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