March 10, 1970 P. D. HARLEMAN 3,499,361

RHYTHM INSTRUMENT

Filed July 2, 1968

FIG. 1

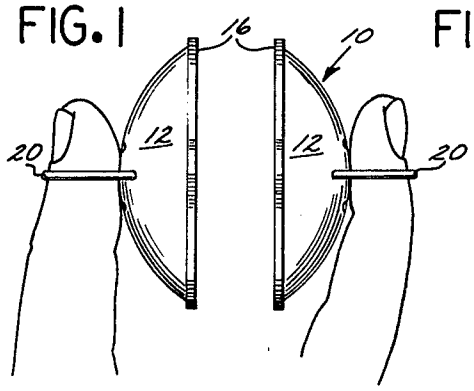


FIG. 2

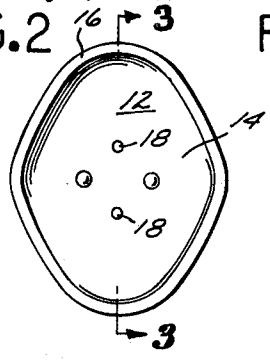


FIG. 3

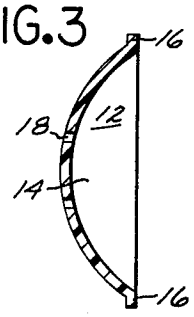


FIG. 6

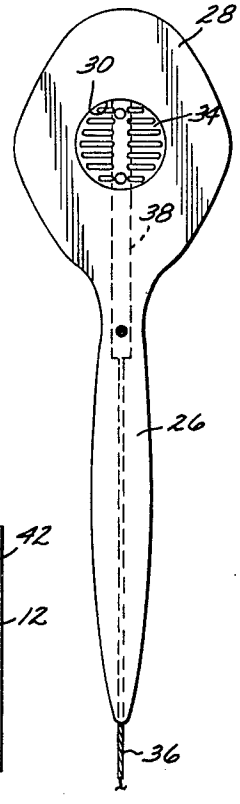


FIG. 4

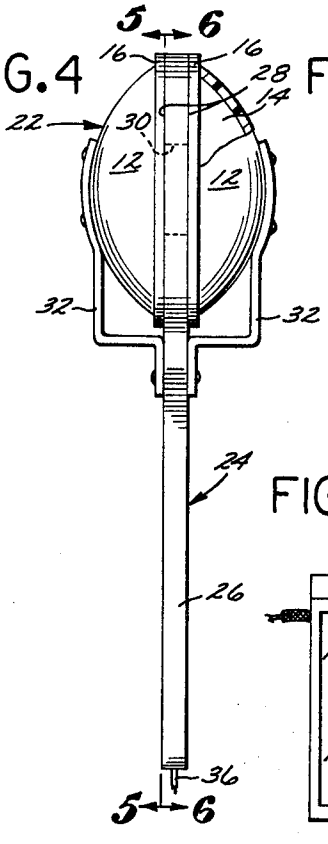


FIG. 5

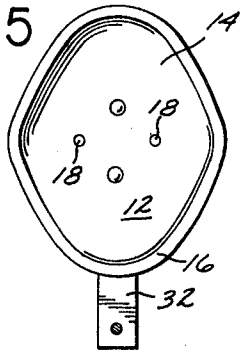


FIG. 7

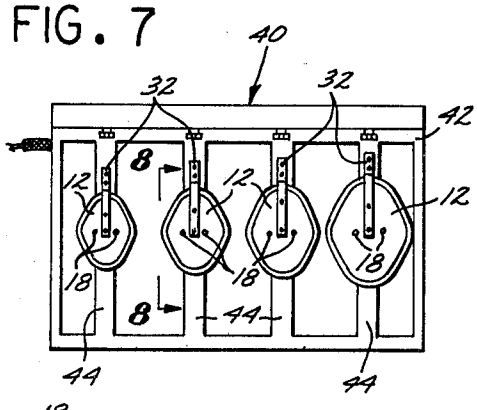
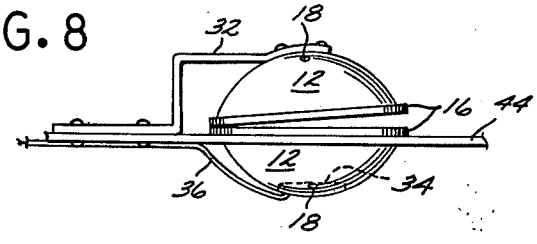


FIG. 8



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RHYTHM INSTRUMENT

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ABSTRACT OF THE DISCLOSURE

A rhythm instrument comprising a pair of elements having concave walls defining the interiors and rims percussively interengageable to produce a sound, the wall of each element including an opening to acoustically modify the sound.

BACKGROUND OF THE INVENTION

Field of the invention

The invention relates to rhythm instruments of the type which employ a pair of elements percussively engageable to produce a sound.

Description of the prior art

An analogous form of rhythm instrument is the castanet, which consists of a pair of shells which are adapted to be fastened to the thumb of the player and tapped together with the middle finger. A sharp clickings ound is produced. However, the complemental elements of the castanet are not adapted for coextensive engagement during the percussive contact between them. Instead, the element margins opposite the cards attaching the elements tend to engage obliquely. Consequently, the tone produced is essentially dependent upon the mass and character of the material of the castanet. Moreover, even if the castanet were capable of coextensive engagement of the elements about their complemental peripheries, no provision is made for venting the interiors of the elements to facilitate percussive interengagement and to acoustically modify the resulting sound.

SUMMARY

According to the present invention, a rhythm instrument is provided which comprises a pair of elements having concave inner surfaces terminating in continuous rims which are percussively and coextensively engageable to produce a sound. The interiors of the elements are vented by a hole or holes in the walls of the elements to facilitate percussive interengagement of the rims and to acoustically modify the resulting sound. The resulting sound is highly distinctive and unlike any known percussive instrument.

The present instrument is adapted to mount loops so that it may be worn on the fingers or thumb and finger. Also, the two elements can be resiliently mounted on a handle to allow one or both of the instrument elements to be harmonically moved, the handle insuring repetitive percussing with minimum player effort. If desired, a plurality of different sizes of such instruments could be mounted side by side on a suitable frame for percussing with a rubber hammer to provide different tones.

Regardless of the embodiment utilized, the instrument produces a unique sound and is relatively inexpensive so that it can be mass produced for wide distribution. The finger models are particularly adapted for popular use, enabling anyone to rhythmically tap time to music, for example.

Other objects and features of the invention will become apparent from consideration of the following description taken in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side elevational view of the rhythm instrument, illustrating its use with loops for mounting the instrument on the thumb and middle finger;

FIG. 2 is a plan view of the interior of one of the elements of the instrument of FIG. 1, but without the mounting loop;

FIG. 3 is a view taken along the line 3—3 of FIG. 2;

FIG. 4 is a side elevational view of a second embodiment of the present rhythm instrument, illustrating the complemental elements thereof mounted to a handle;

FIG. 5 is a view taken along the line 5—5 of FIG. 4;

FIG. 6 is a view taken along the line 6—6 of FIG. 4;

FIG. 7 is a plan view of a third embodiment of the present rhythm instrument; and

FIG. 8 is a view taken along line 8—8 of FIG. 7.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawing, and particularly to FIGS. 1 through 3 thereof, there is illustrated a rhythm instrument **10** comprising a pair of identical, complemental, dished elements **12** wihch are defined by a wall having a concave inner surface **14** which terminates in a peripheral flange or continuous rim **16**.

The elements **12** are preferably made of a suitable impact resistant plastic material or the like, and the rims **16** of the elements **12** are adapted to engage in close-fitting, coextensive relation. Percussing of the elements **12** against one another produces sound waves within the hollow interiors of the elements **12**.

The sound waves are acoustically modified and the coextensive engagement of the rims **16** is facilitated by the provision of one or more openings **18** in the walls of the elements **12**. However, two of the openings **18** illustrated in FIG. 2 are provided to accommodate a finger member or loop **20** of elastic cord for mounting the associated element **12** to the finger or thumb of the player, as seen in FIG. 1.

For an element **12** measuring 2.75 inches in length, 2 inches in width, and ¾ inch in depth, it has been found that the venting openings **18** operate satisfactorily when made approximately 0.10 inch in diameter. That is, this size of opening produced a venting of the interiors of the elements **12** sufficient to facilitate their interengagement and sufficient to acoustically modify the sound in the manner desired.

Referring to FIGS. 4 through 6, there is illustrated a handle-operated rhythm instrument **22**. The instrument **22** includes a pair of the elements **12**, and also includes an elongated frame **24** which mounts the elements **12** and enables them to be moved abruptly back and forth to achieve a rapid, repetitive percussing.

The frame **24** includes an elongated element having one extremity constituting a handle **26**, and an opposite extremity interposed between the elements **12** and provided with opposite, coplanar, and flat faces **28** coextensive with the rims **16** of the elements **12** for percussive engagement with such rims **16**. The handle extremity also includes an opening **30** in communication with the interiors of the adjacent elements **12**.

The elements **12** are mounted upon the handle **26** by a pair of elongated mounting brackets **32**, the elements **12** being thereby precisely oriented for percussive engagement of their rims **16** with the confronting faces **28** of the handle **26**. One end of each bracket **32** is secured by screws or rivets or the like to the handle **26** below the supported element **12**. From that point the bracket **32** is formed into a right angular configuration which spaces or offsets the other extremity of the bracket outwardly of the handle **26**. This offset enables the brackets **32** to be attached to the

elements **12** by suitable fasteners so as to orient the elements **12** in confronting relation, as illustrated.

The brackets **32** are made of a spring-like or resilient metal or plastic material so that rapid movement of the handle **26** back and forth harmonically moves the elements **12** for repetitive percussive engagement of their rims **16**.

If desired, a microphone **34** or similar transducer means responsive to sound waves in the element interiors can be mounted within the opening **30** to pick up the percussive sounds for transmission through a lead **36** to any suitable amplification or recording apparatus (not shown). One suitable means for mounting the microphone **34** within the opening **30** comprises an elongated tube **38** carried within a suitable bore in the handle **26**, the microphone **34** being attached to the upper extremity of the tube **38**. The lead **36** is disposed through the tube **38** and through a suitable elongated passage provided in the handle **26** of the frame **24**.

If desired, one of the elements **12** can be fixed to the frame **24**, and a resilient mounting bracket **32** used for mounting the other element **12**, as will be seen in connection with a description of the embodiment of FIG. 8. Also, the microphone **34** or other pick-up device could be mounted to the interior surface of one of the elements **12** if desired, as also shown in FIG. 8.

Referring now to FIGS 7 and 8, there is illustrated a rhythm instrument **40** which includes a plurality of the pairs of elements **12**, but of successively greater sizes. The instrument **40** includes a frame **42** having a plurality of frame elements **44**, each of which includes an opening within which one of the elements **12** of each pair is suitably secured. Preferably a microphone **34** or like pick-up is adhered or otherwise fixed to the interior surface of this element **12**, the lead **36** coming out of one of the openings **18** and extending along the underside of the associated frame element **44** in any suitable manner. A plurality of such microphones **34** are employed, one for each pair of the elements **12**.

The pairs of elements **12** are arranged in side-by-side relation for percussing by a rubber hammer (not shown) or the like, the microphones **34** carrying the resulting sounds to suitable amplification or recording apparatus (not shown).

The foregoing embodiments of the present invention thus comprise a finger mounted instrument **10**, a handle operated instrument **22**, and a console or plural arrangement **40**, each of such instruments being characterized by one or more pairs of the elements **12** to provide the unique rhythmic sound resulting from the structure disclosed.

I claim:

1. A rhythm instrument comprising:

a pair of elements, each defined by a wall having a concave inner surface and a continuous rim, the rims of said elements being adapted for percussive coextensive engagement to produce a sound, each said wall including an opening therethrough to vent the interior of the associated one of said elements and thereby acoustically modify said sound.

2. A rhythm instrument according to claim **1** wherein said walls each mount an arcuately configured finger member for mounting the elements to the fingers of the player.

3. A rhythm instrument according to claim **1** and including transducer means mounted to said interior of one of said elements and responsive to sound waves therein.

4. A rhythm instrument according to claim **1** and including frame means mounting said elements and including resilient means supporting at least one of said elements whereby said one of said elements tends to move harmonically toward and away from the other of said elements after such percussive engagement.

5. A rhythm instrument according to claim **4** wherein said frame means includes an elongated element having one extremity constituting a handle and an opposite extremity interposed between said elements and provided with opposite faces coextensive with said rims of said elements for percussive engagement therewith, said opposite extremity having an opening in communication with the interiors of said elements, said resilient means supporting both said elements upon said handle.

6. A rhythm instrument according to claim **5** and including transducer means mounted to said opposite extremity of said handle in said opening thereof and responsive to sound waves in the interiors of said elements.

7. A rhythm instrument according to claim **4** including a plurality of pairs of different sizes of said elements; including a corresponding plurality of said resilient means for said pairs of said elements; wherein said frame means mount said pairs in side by side relation for percussing by a hammer; and further including transducer means responsive to sound waves resulting from said percussing.

8. A rhythm instrument according to claim **7** wherein said transducer means includes a separate transducer mounted adjacent each of said pairs of said elements.

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L. R. FRANKLIN, Assistant Examiner

U.S. Cl. X.R.

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