

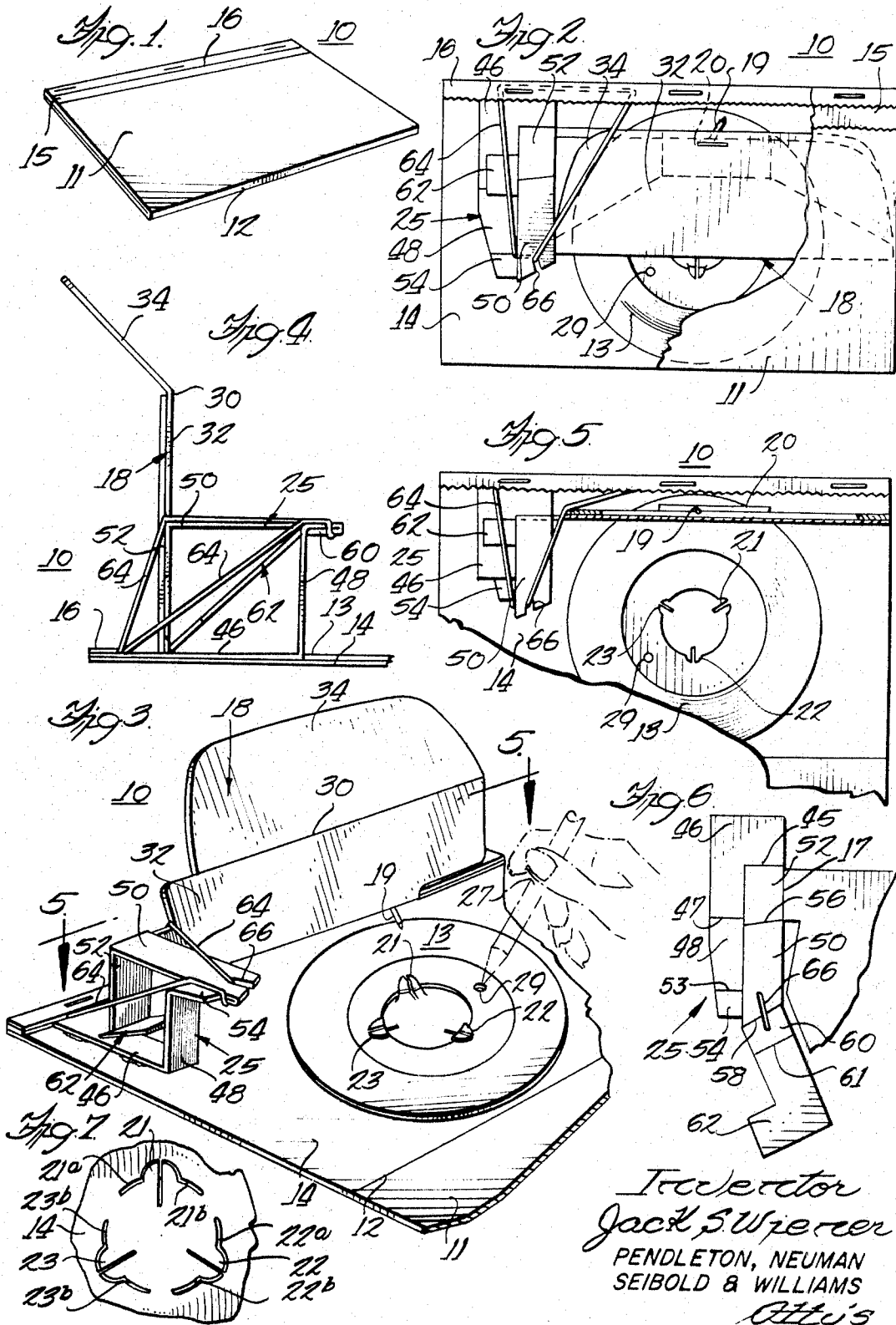
Dec. 10, 1968

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3,415,526

SOUND EMITTING DEVICE

Filed May 29, 1967



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**SOUND EMITTING DEVICE**

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Filed May 29, 1967, Ser. No. 641,997

8 Claims. (Cl. 274-9)

**ABSTRACT OF THE DISCLOSURE**

A sound emitting device comprising a phonographic record mounted on a base, a phonograph needle, and a resonant means or sounding board which carries the needle, all of which elements are combined in a generally flat, compact package. The package is readily adapted to be transported through the mails as, for example, a postcard. When the package is opened the elements readily assume operative position and in this position, the record may be manually rotated and the device will emit audible sound.

*Background of the invention*

The present invention pertains to the field of mechanical sound recording and reproducing devices. The prior art consists of sound emitting devices of various kinds, such as the conventional electrically operated phonograph. Also, foldable phonographs constructed of plastic and paperboard have been heretofore known, but these devices required time-consuming and complicated set-up procedures to put them into operative condition and also were beset with other disadvantages which adversely affected their operability and sound emitting characteristics.

*Summary of the invention*

The sound emitting devices of this invention include a phonograph record mounted on a paperboard base, a phonograph stylus and a sounding board which acts both as a resonator and as the stylus carrying member. The sounding board is biased to assume an upright position which is also its operative position. The record is made with a relatively large central opening and is mounted on a plurality of spaced members struck out of the base. The elements of this invention are adapted to be folded into a generally flat package so that the device can be sealed and transported through the mails similar to a postcard. When the package is opened by removing the cover flap, the sounding board with attached needle automatically stands upright, ready for operation. The needle is inserted into the first groove of the record, the record is manually rotated, and the device thereby emits audible sound. This provides low cost means for transmitting and widely disseminating audible greetings, advertising and publicity messages.

Sound emitting devices of this nature must not only be capable of producing sound which are audible and intelligible to the listener, but it is also highly desirable that they be constructed so as to be readily operable without requiring the operator or listener to undertake a complicated assembly or set-up procedure. It is also desired that such devices be adapted for automative fabrication and have inherent strength and flexibility which permits them to be transmitted through the mails without damage and to be operated many times without undergoing destructive wear.

These and other desiderata are inherent in the sound emitting device of the present invention as will be apparent from the description, the drawings and the claims.

*Brief description of the drawings*

FIGURE 1 is a perspective view of one embodiment of this invention folded and sealed in a form for mailing. FIG. 2 is a plan view of the embodiment with the sealing

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strip and cover flap partially broken away and showing the position of the various elements when the card is in a folded form for mailing. FIG. 3 is a fragmentary perspective view of the embodiment showing the elements thereof in operative position. FIG. 4 is a side elevational view of the embodiment in operative position as shown in FIG. 3. FIG. 5 is a fragmentary cross-sectional view taken along line 5-5 of FIG. 3. FIG. 6 is a plan view of the paperboard or like blank which forms the biasing means for the sounding board and attached needle of the embodiment. FIG. 7 is a fragmentary plan view of the embodiment showing the record retaining means before the record is placed on it.

*Description of the preferred embodiment*

Referring to the drawings, one embodiment of this invention, designated generally by the numeral 10, is shown in FIGURE 1. The embodiment 10 is folded and sealed into a compact package in form adaptable for mailing. The card can be fabricated of cardboard, paperboard or like materials. In the form for mailing, cover flap 11 is folded back along fold line 12 so as to overlie the phonograph record or grooved sound recording disc 13 and supporting base 14 (see FIG. 2, for example). Flap 11 is sealed to base 14 by means of a tear strip 15 which joins flap 11 to the reinforced edge 16 of base 14, which edge is stapled or otherwise affixed to base 14. When the embodiment 10 is sealed into a package for mailing, the elements thereof are in a generally flat position, as shown in FIG. 2. The exterior side of panel 14 can be imprinted with an address and have stamps affixed thereto.

When the tear strip 15 is removed and the cover flap 11 is unfolded, member 18 assumes an upright position, and the stylus or needle 19 carried thereby may be brought into engagement with the grooves of record 13 as shown in FIG. 3. The needle 19 is affixed to the member 18 by a reinforcing strip 20, which is sealed to the lower edge of member 18. The record 13 is retained in proper position on panel 14 by spaced members 21, 22, and 23, which are struck out from base 14. The record is manually rotated by means of a pointed instrument, such as a pencil 27 or the like, inserted into hole 29 provided in the record. The optimum speed of rotation of record 13 can be readily ascertained with a few practice revolutions so that the recorded message is clear and intelligible.

Member 18 is preferably constructed of foldable paperboard. As shown best in FIGS. 3 and 4, member 18 is provided with a fold line 30 which divides it into two portions, 32 and 34. Portion 32 acts as the sounding board or resonant means which acoustically reproduces the sound. Portion 34 is bent sharply along fold line 30 thereby providing suitable mass or weight along the upper periphery of the resonant means 32 to define the resonant area. Portion 34 acts as the volume control; the more it is bent downward, the greater the volume. As stylus 19 moves across the surface of record 13, member 18 moves with it.

The record 13 rotates relative to the base 14 about a fixed center point. As is apparent from the drawings, the record 13 is provided with a relatively large center opening. The struck out members 21, 22, and 23 provide a plurality of bearing surfaces for the record. Referring to FIG. 7, it will be seen that each of the members 21, 22, and 23 is provided with a slit and each has two shoulders 21a, 21b, 22a, 22b, 23a, and 23b, respectively. When these members are folded so that they overlie the inside edge of record 13 and engage the record, the shoulders provide relatively large bearing surfaces for the record 13, as compared to the single point contact which is present when a small record hole and conventional spindle is used. This arrangement is

particularly important here because the record rotates with respect to members 21, 22 and 23, unlike the conventional record player which has a turntable and rotating spindle. In this way pressures inadvertently applied against the side of the record will not cause rapid wear of the record bearing surface, and advantage particularly significant when paperboard is employed.

To mount the record 13 on the base 14, members 21, 22 and 23 are bent upright into a position substantially perpendicular to the base, and the record is dropped or placed thereover. This arrangement provides a simple means for centering the record. After the record 13 is mounted on the base 14, the members 21, 22 and 23 are folded downward so as to overlie the inside edge of the record, as shown, for example, in FIG. 3.

The pop-up actuating mechanism 25 is hingedly connected to member 18 and is biased to move member 18 into an upright and operative position when the cover 11 is opened. The hinge between member 18 and pop-up mechanism 25 may be a fold line 17 and this hinged connection permits the needle 19 to traverse the record 13. As shown in FIG. 6, the pop-up element 25 is constructed out of a single paperboard blank which comprises a generally L-shaped member 46 secured by means of an adhesive or other means to base 14. When in upright or operative position, pop-up element 25 generally defines a quadrilateral parallelogram formed by members 46, 48, 50 and 52. Member 48 is integrally joined to member 46 at fold line 47 and to an extension 54 at fold line 53. Member 52 is integral with member 46 at fold line 45 and integral with member 50 at fold line 56. Member 50 is attached to extension 54 and is also attached at fold line 58 to reinforcement 60, which, when in operative position as shown in FIGS. 3 and 4, extends diagonally downward. Attached to reinforcement 60 at fold line 61 is a strut 62 which abuts against member 52 and limits the extent to which the member 18 will move in the direction of bias. Pop-up element 25 is biased to move upwardly by means of a tension exerting means such as an elastic band 64, which is anchored to the base 14. As shown in FIG. 2, a portion of the band 64 may be disposed between base 14 and reinforcing edge 16 to accomplish anchoring. The band 64 is inserted in slot 66 formed by member 50 and reinforcement 60. Besides urging the pop-up element 25 upward, the band 64 also exerts a predetermined downward pressure on the needle 19 sufficient to maintain the needle in the record groove without causing damage to the groove, and thereby insures satisfactory sound reproduction.

After the device of this invention is constructed, the various elements of the card are folded in position as shown in FIG. 2, flap 11 is folded over the elements, and the card is sealed by means of tear strip 15, as shown in FIG. 1. The device thereby forms a compact, lightweight package which can be readily mailed with postage comparable to conventional postal cards and letters.

To operate the device of this invention, the tear strip 15 is removed and the flap 11 is lifted to expose the operative elements. Pop-up element 25 will then automatically move the member 18 and the attached stylus 19 into an upright position, and the stylus 19 is brought into engagement with the lead groove of the phonograph record 13. Thus, the operator does not have to carry out any complicated assembly procedure to render the embodiment 10 of this invention operable.

Low cost paperboard, cardboard or like materials, which can be readily stamped from suitable blanks, are eminently suited for construction of the present device. Moreover, the device is constructed so that it is lightweight and yet possesses inherent strength, rendering it adaptable to be sent through the mails without risk of damage and with relatively low postage costs. Moreover, the device of this invention is so constructed that the record may be played many times without destructive

wear of the center point or bearing surfaces. The paperboard or cardboard elements used in constructing the sounding device can be produced using fully automated production techniques.

While a specific embodiment is described above, it is understood that modifications and equivalents thereof can be made which will fall within the spirit and scope of the invention, and these modifications and equivalents are to be considered part of the invention.

I claim:

1. A foldable sound emitting device comprising a base, a flap attached thereto and adapted to overlie said base, a phonograph record carried by said base, means for retaining said phonograph record on said base, a resonant means, foldable members attached to said base and connected to said resonant means adjacent one side thereof for allowing the resonant means to be hingedly moved with respect to said base, a stylus carried by said resonant means, a tension means engaging and cooperating with said foldable members for exerting a force sufficient to raise the resonant means to an upright position and to retain the stylus in the record grooves without damaging said grooves, means attached to said resonant means for defining the resonant area and controlling the volume of said device, said defining and controlling means being movable with said stylus and resonant means, and means for rotating said record with said needle engaged in the soundtrack thereof whereby audible sound can be emitted by said device.

2. The device of claim 1 in which the resonant means is a substantially rigid paperboard sheet and said stylus is affixed to one edge thereof.

3. The device of claim 1 wherein said resonant means and said defining and controlling means are constructed of a single sheet of substantially rigid paperboard having a fold line intermediate two of the edges thereof, said fold line dividing said paperboard sheet into the resonant means and the defining and controlling means.

4. The device of claim 1 wherein the tension means is an elastic band.

5. The device of claim 1 in which the phonograph record has a relatively large central opening and the means for retaining the phonograph record on said base comprise a plurality of spaced members struck out from said base which are adapted to overlie said record and contact the inner edge of the record at a plurality of points.

6. The device of claim 5 wherein said struck out members provide bearing surfaces for the inner edge of said record.

7. The device of claim 1 wherein said flap and said base are constructed of a single sheet of paperboard having a fold line intermediate two of its edges, which fold line divides the base and the flap, and the free end of said flap opposite said fold line is detachably connected to said base whereby said device forms a compact package which may be imprinted with an address and transported through the mails.

8. The device of claim 7 wherein the free end of said flap is attached to said base by a removable tear strip.

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