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3,092,927

SOUND EMITTING DEVICE

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FIG. 1

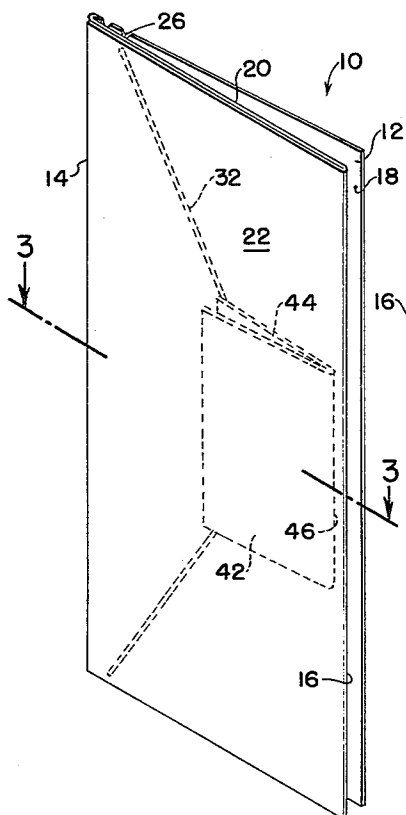


FIG. 2

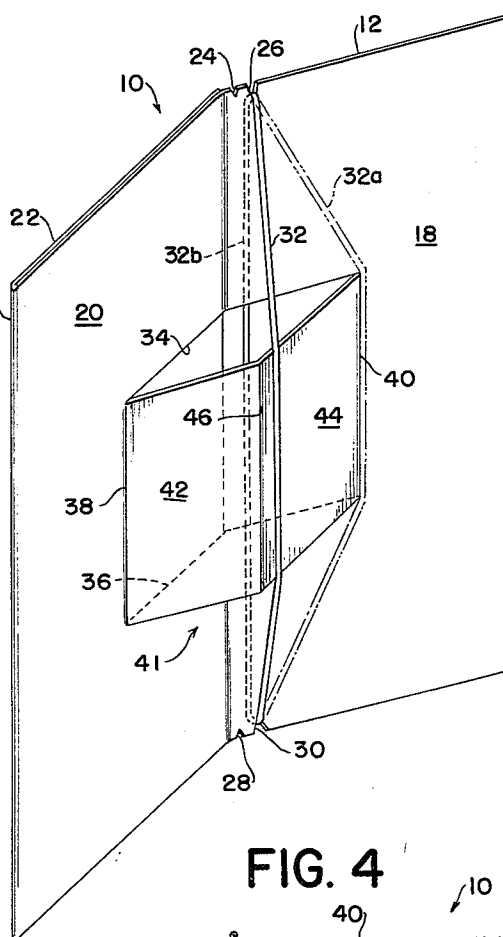


FIG. 3

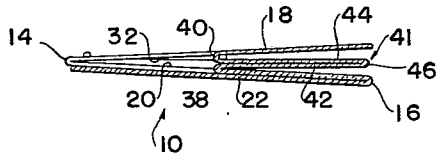


FIG. 4

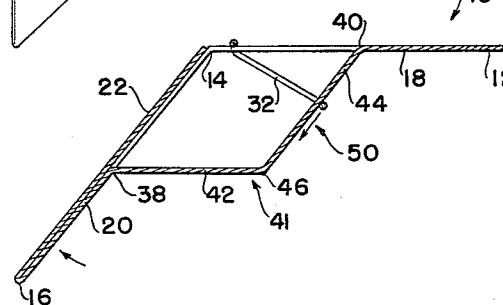
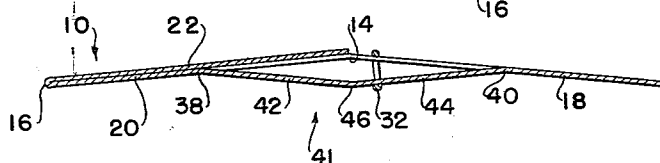


FIG. 5



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SOUND EMITTING DEVICE

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This invention relates to a greeting card, display device or greeting folder in general and more particularly relates to a sound producing greeting card, display device or greeting folder which when folded lies flat and when opened emits sounds of a predetermined characteristic.

Various attempts have been made to provide display devices, greeting cards or folders emitting sounds and noises in conjunction with the visual presentation normally provided. Heretofore, clickers, snappers and whistlers have been used with such devices to make noise or sound when actuated in some manner, such as when compressed. However, these types of noisemakers are not satisfactory when used in greeting cards or devices intended to be sent via mail, since they are bulky, and ordinarily prevent the greeting card, device or folder from lying flat when folded, and also require a heavier paperboard to be used to prevent the individual sheets from tearing when the noisemaker is operated. Further, these noisemakers are relatively expensive and not ordinarily self-actuating, but require a separate actuating movement of the user for operation such as compressing the noisemaker. Additionally, the characteristics of the sound obtained from these noisemakers are limited by the type of device and are difficult to incorporate in the card or device.

Therefore, it is an object of the present invention to provide a greeting card, display device or greeting folder which will emit a sound of a predetermined characteristic automatically when the greeting card is opened.

It is a further object of the present invention to provide a greeting card or greeting folder made from a single sheet of material, such as paper, cardboard or the like, which lies flat when folded and may be inserted in an ordinary mailing envelope and which provides sound when the card is opened without a separate actuating effort by the user.

Still another object of the present invention is to provide a display device which emits sounds of various pitches or characteristics upon opening the device.

A still further object of the present invention is to provide a greeting card which emits a sound whenever opened or closed and which characteristic of the sound can be easily varied.

A still further object of this invention is to provide a greeting card, greeting folder or other type display device producing sounds of predetermined characteristic requiring no special sound producing devices or special means of mounting such devices.

A still further object of the present invention is to provide a greeting card which accomplishes all of the above and which is inexpensive, simple and economical to manufacture, positive in operation and durable in use.

Other and more detailed objects of the invention will be more apparent when the following description is considered in connection with the annexed drawings in which:

FIGURE 1 is a perspective, elevational view of a greeting card in accordance with the present invention showing the panels of the card separated slightly;

FIGURE 2 is a perspective view with the card in semi-extended position;

FIGURE 3 is a cross-sectional view taken along line 3—3 in FIGURE 1;

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FIGURE 4 is a cross-sectional view of the card similar to that of FIGURE 3 and showing the card in its semi-extended position; and

FIGURE 5 is a cross-sectional view similar to that shown in FIGURE 4 showing the card in its fully extended position.

Referring now to the drawings, a greeting card 10 is shown embodying the features of this invention, which is made from a single sheet of paper, cardboard or the like 12. Sheet 12 is advantageously scored twice transversely at 14 and 16 intermediate of its side edges to divide sheet 12 into three integral panels or sections 18, 20 and 22. As shown, panel 22 forms the front face and panels 20 and 18 form the inner surfaces of card 10 and abut when card 10 is folded. The upper and lower edges of panel 18 are cut or notched adjacent fold-line 14, such as by grooves or cuts 24 and 26 on the upper edge and 28 and 30 on the lower edge. Grooves on the upper and lower edge receive the sound or noise-making element, which in the embodiment illustrated is a rubber band 32. The depths of these cuts and their longitudinal positioning may vary as will be discussed hereinafter.

Panels 18 and 20 have a pair of spaced apart, longitudinally extending slits or cuts therein 34 and 36, which intercept fold line 14 and are shown parallel. Disposed between corresponding ends of slits 34 and 36 are transverse score or fold lines 38 and 40. As shown, score line 38 is in panel 20 and score line 40 is in panel 18. Slits 34 and 36 and fold lines 38 and 40 define an area or flap 41. Flap 41 is divided by a score or fold line 46 into a pair of panels 42 and 44. Fold line 46 is contained within a vertical plane passing through fold line 14 and is parallel therewith.

The card is formed by folding sheet 12 about fold line 16 so that the rear faces of panels 20 and 22 abut and the front of card 10 is the forward face of panel 22. The rear faces of panels 20 and 22 are secured together in some convenient manner, such as by placing adhesive therebetween or stapling. When panels 20 and 22 are folded as shown in FIGURE 2, the left hand panel is of double thickness with a continuous front face. This is desirable since the front of the card can be fully utilized for printing thereon a message or design or other indicia. While a double thickness as shown is desirable, it is not essential to the present invention.

Sheet 12 is further folded transversely on fold line 14 so that panels 18 and 20 abut as shown in FIGURE 1. Panels 42 and 44 are folded outwardly, in an opposite direction along fold lines 38, 40 and 46. Fold line 46 is directed toward the outer transverse edges of panels 18 and 20. Rubber band 32 is placed in a notch in the upper and lower edges of panel 18 and as shown in FIGURE 2 is positioned in notches 26 and 30 and stretches over panel 44.

By folding card, 10, along fold lines 14 and 16, as shown in FIGURE 1, card 10 can be conveniently mailed in a conventional envelope. The rear surface of panel 42 is juxtaposed against the rear surface of panel 44, so that card 10 lies, relatively flat in its closed position, as partly illustrated in FIGURES 1 and 3. In this folded position, rubber band 32 is urged into position along fold line 40 and is maintained there between panel 44 and panel 18, as indicated in FIGURES 1 and 3 and by dashed line 32a in FIGURE 2. In this position rubber band 32 is in tension or stretched.

When the card or folder is unfolded to the position shown in FIGURE 2, panels 42 and 44 are drawn inwardly towards panels 20 and 18 respectively. With panel 44 being drawn inwardly towards panel 18, the natural pull of tensioned rubber band 32 causes rubber band 32 to move along the surface of panel 44 towards fold line 46 in the direction of arrow 50 as illustrated

in FIGURE 4. The positions of rubber band 32 illustrated by dashed line 32a and solid lines 32 in FIGURES 2, 4 and 5 are illustrative of three positions through which the rubber band moves during the normal card unfolding process. The movement of the rubber band across the surface of panel 44 provides sound having characteristics which are determined in part by the size and tension of the rubber band and the dimensions of panel 44. This sound is continuously emitted during the movement of the rubber band. In producing sound, panel 44 acts as a sounding board when the card is opened and the flat surfaces of the rubber band, which is preferably square shaped, acts as the sound inducer as the rubber band rolls across panel 44.

In the card's normally open or unfolded position as seen in FIGURE 5, rubber band 32 comes to rest on surface 44 adjacent fold-line 46 and panels 42 and 44 remain spaced from panels 20 and 18 respectively. Thus, rubber band 32 is maintained on panel 44 and flap 41 is folded in the proper direction when card 10 is refolded. In refolding card 10, panels 42 and 44 move outwardly and band 32 moves in a direction opposite to that shown by arrow 50 and panels and band assume the positions as seen in FIGURE 3. Rubber band 32 in moving along the surface of panel 44 again emits sound or noise. In its closed position rubber band 32 is at rest along fold-line 40 between panel 18 and panel 44.

The characteristic of the sound emitted by the movement of rubber band 32 can be varied depending upon the tension and thickness of band 32 or the dimensions of panel 44. An easy manner of varying the tension is to provide a series of notches along the upper and lower edges of panel 18 between fold-lines 14 and a plane containing fold-line 40. Thus, if the rubber band 32 was received in notches 24 and 28 the band would be under greater tension when card 10 is folded, due to band 32 being stretched more by reason of the greater distance between parallel planes passing respectively through fold-line 40 and notches 24 and 28. While only two notches along the upper and lower edges of panel 18 are shown, more can be provided to provide further versatility. Additionally, the distance of the notch from fold-line 40 will determine the duration of the sound emitted. Thus, notches closest to fold-line 14 provide the longest roll and notches closest to fold-line 40 provide the shortest; however, if the notches are too close to fold 40 the rubber band may fail to move at all.

A further manner of varying the tension of rubber band 32 and hence the characteristic of the sound emitted is to vary the length or depth of the notches along these edges. As shown in FIGURE 2, notches 26 and 30 have a greater depth than notches 24 and 28. Still another manner of varying the tension of rubber band 32 is to make panels 42 and 44 larger so that fold-line 40 is closer to the outer transverse edge of panel 18. However, if panels 42 and 44 are made too large, stiffer material must be used to prevent them from collapsing under the inward force of the tensioned rubber band during operation.

While a conventional rubber band has been used as sound emitting member, other expandable or stretchable material may be used. Further, the ends of the rubber band could be fastened in some convenient manner to the upper and lower edges of panel 18 rather than using an entire rubber band. Notches or cuts were shown for maintaining the rubber band in position during operation. Other means for maintaining the band in position may be used, such as fastening the band to the rear surface of panel 18. Also, if the rubber band is not placed in great tension, no specific holding means may be necessary, except possibly roughening the upper and lower edges of the panel, or using varied ridges on the edges.

While sound panels 42 and 44 were shown cut from panels 20 and 18 respectively, separate sheets of material can be mounted on panels 18 and 20 to fold in a similar manner as panels 42 and 44. Also, the sound emitting

member was shown mounted on the rear panel 18, since this has been found to be the most advantageous in allowing fuller use of the front panel. However, the sound producing element may be mounted on panel 20. Further, a sound panel may be provided for actuating the sound emitting member by moving away from the card panels when the card is opened.

There is thus shown a greeting card or greeting folder with an outside face provided with design, illustrative material or printed matter of some type and having some type of sound, emitted automatically upon the opening and closing of the card, yet which card can be formed inexpensively of paperboard or paper and mailed in its folded position in an ordinary and conventional type envelope. The sound producing member is inexpensive and requires no special further acts of the receiver to actuate.

Since many apparently differing structures may be readily devised by those skilled in the art without departing from the scope of the invention, it is understood that the foregoing description is illustrative only, the scope of the invention being defined solely by the claims granted to me.

What is claimed is:

1. A greeting card of flexible paperboard material comprising a first panel and a second panel foldable about a first transverse fold-line, spaced apart slits on said first and second panels intersecting said fold-line, second and third transverse fold-lines in said first and second panels respectively between corresponding ends of said slits, first and second areas in said first and second panels respectively defined by said slits and said fold-lines, said first and second areas foldable away from said first and second panels respectively when said card is closed, said first panel having a notch in its upper and lower edges adjacent said first fold-line, and elastic means received in each of said notches and overlying and abutting said first area when the card is in its open position, said elastic means being adapted to be stretched and being juxtaposed along said second fold-line in said first panel when said card is closed, and being adapted to be urged along the surface of said first area and returning to overlie said first area in response to the opening of said card, whereby said elastic means is vibrated while moving along the surface of said first area in response to the opening and closing of said card and thereby emits sound.

2. A greeting card in accordance with claim 1 having a plurality of notches extending along the upper and lower edges of said first panel, said notches being of varying depth to vary the tension of said elastic means in its stretched position.

3. A greeting card of flexible material comprising a first and second panel connected by a first fold-line and readily foldable thereabout to open and closed positions, said panels having a pair of spaced apart slits therein extending from said first panel across said first fold-line and into said second panel, second and third fold-lines extending between corresponding ends of said slits in said first and second panels respectively, said slits and said second and third fold-lines defining a flap, a fourth fold-line on said flap and axially aligned with said first fold-line when said first and second panels are coplanar, said flap being foldable along said fourth fold-line in a direction opposite to said first fold-line when said card is folded to its closed position, whereby closing said card collapses said flap in an outwardly extending position to allow said card to lie flat, and an extendable resilient means supported by said first panel adjacent said first fold-line and overlying and abutting said flap when said card is in its open position, said resilient means being slidably transposed across said flap and being adapted to engage said second fold-line in response to closing of said card and being extended thereby, said resilient means responding to the opening of said card by slidably returning to over-

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lying said flap and emitting a sound of a predetermined characteristic.

4. A greeting card of flexible material comprising a first and second panel connected by a first fold-line and readily foldable thereabout to open and closed positions, said panels having a pair of spaced apart slits therein extending from said first panel across said first fold-line and into said second panel, second and third fold-lines extending between corresponding ends of said slits in said first and second panels respectively, said slits and said second and third fold-lines defining a flap, a fourth fold-line on said flap and axially aligned with said first fold-line when said first and second panels are coplanar, said flap being foldable along said fourth fold-line in a direction opposite to said first fold-line when said panels are folded to one of said positions, and an extendable resilient means carried by said first panel adjacent said first fold-line and overlying and abutting said flap when said panels are in the other of said positions, said resilient means being slidably transposed across said flap and engaging said second fold-line in response to folding said card to said one position and being extended thereby, said resilient means slidably returning to overlying said flap and emitting a sound of a predetermined characteristic in response to folding said panels to the other of said positions.

5. A display device comprising sheet material, scored and foldable along a panel fold-line to provide a pair of connecting panels, a flap having opposite ends hingedly mounted on a respective panel and extending across the panel fold-line, said flap having a fold-line responsive to the closing of said device for folding said flap in a direction opposite from said panel fold-line, whereby said device is adapted to lie flat in its closed position, said fold-line lying in a plane containing said panel fold-line when said panels are in their coplanar position, and a rubber band mounted on opposite edges of one of said panels adjacent said panel fold-line and in its normal position adapted to overlie and abut said flap when said device is open, said rubber band being slidably moved across said flap and extended thereby in response to the folding of said flap during closing of said device, said rubber band maintained in said extended position while said device is being closed and emitting sound in moving across said flap in returning to its normal position when said device is opened.

6. A device as claimed in claim 5 wherein said panel mounting for said rubber band contains means for varying the extendability of said rubber band for controlling the characteristic of the emitted sound.

7. A device comprising first and second panels connected by a score line and readily foldable thereabout to

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open and closed positions, and means for emitting sound responsive to the folding of said panels, said sound-emitting means comprising an area hingedly mounted to and moveable with respect to said first panel along a second fold line, said area lying substantially adjacent said first panel when said panels are opened and being adapted to be urged outwardly from said first panel when said panels are folded to closed position, and elastic means carried by said first panel and overlying and abutting said area when said panels are in open position, the portion of said elastic means abutting said area being included in a plane passing through said panel score line, said elastic means being adapted to be stretched by movement of said area in response to the folding of said panels to abutting closed position and adapted to be relaxed and returned to its original position, said movement of said elastic means providing sound of a predetermined characteristic in accordance to the tension of said elastic means.

8. A greeting card comprising first and second panels connected by a score line and foldable thereabout, and means for emitting sound responsive to the folding of said panels, said sound-emitting means comprising an area hingedly mounted to and movable with respect to said first panel, said area being normally substantially adjacent said first panel, means responsive to the folding of said panels for urging said area outwardly from said first panel, and elastic means mounted on said first panel and overlying and abutting the outer surface of said area in its normal position, said elastic means being adapted to be slidably moved along said area by the outward movement of said area in response to the folding of said panels and being relaxed and returning along said area in response to said panels being refolded, said movement of said elastic means along the surface of said area providing sound.

9. A greeting card comprising two sections having their adjacent edges secured together by a hinge portion and foldable thereon into overlapping relation, a foldable flap formed by free central portions of said sections adjacent said hinge portion, and an elastic means carried by one of said sections and having a portion thereof extending across said one section's corresponding foldable flap, said portion of said elastic means being substantially parallel to said hinge portion and adapted to be stretched by the outward movement of said flap in response to the folding of said sections.

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