April 12, 1966 H. GORMAN 3,245,691

INTEGRAL RECORD-ENVELOPE ASSEMBLY AND METHOD FOR MAKING THE ASSEMBLY

Filed Oct. 14, 1963 2 Sheets-Sheet 1

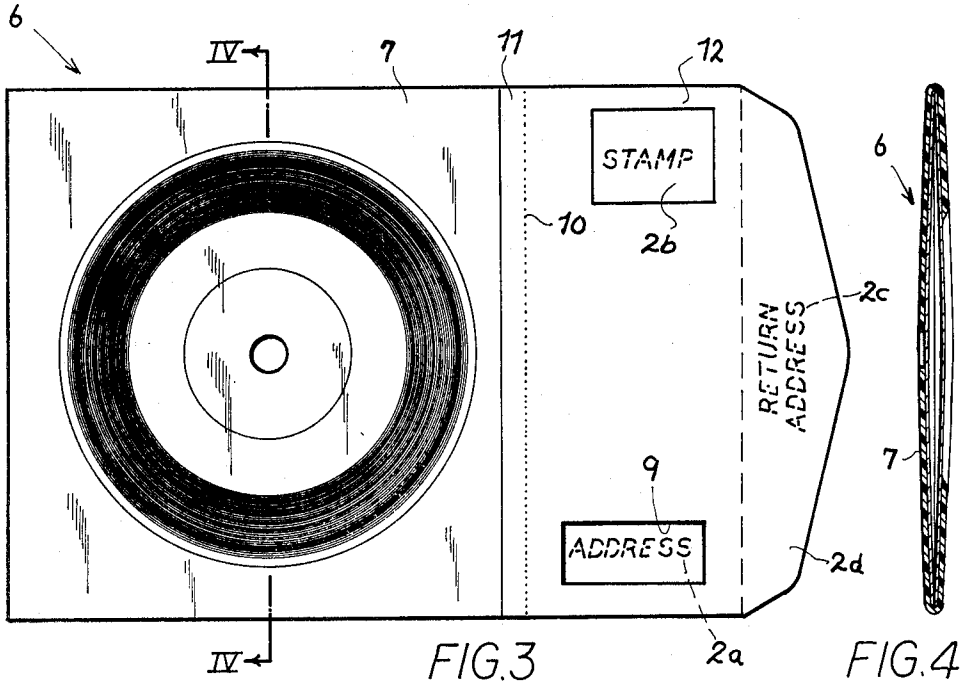


FIG.3 FIG.4

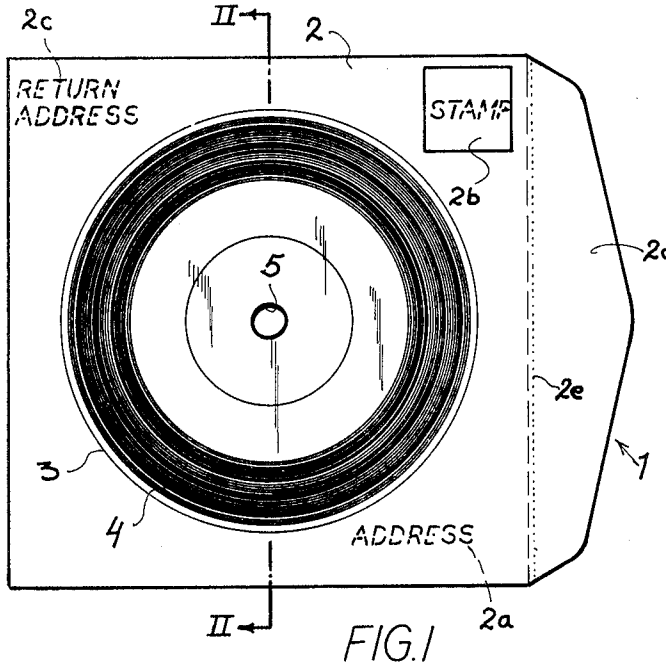


FIG.1

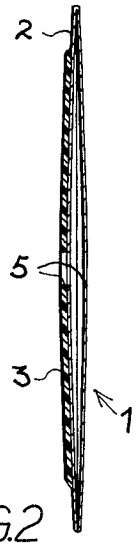


FIG.2

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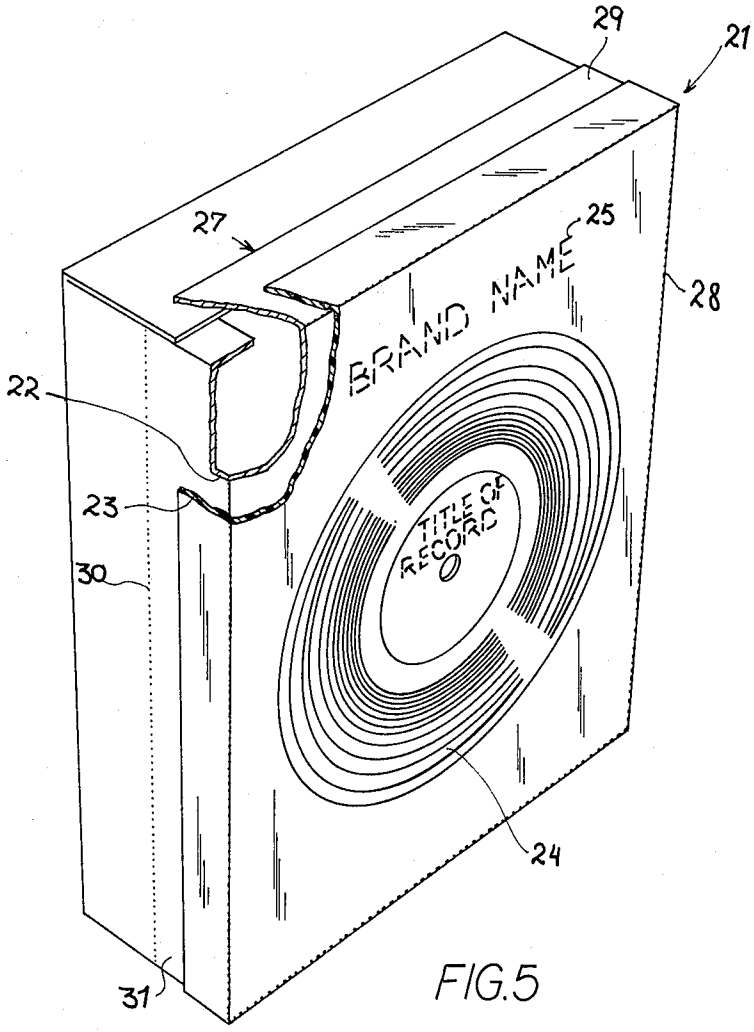


FIG.5

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3,245,691

INTEGRAL RECORD-ENVELOPE ASSEMBLY AND METHOD OF MAKING THE ASSEMBLY

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Filed Oct. 14, 1963, Ser. No. 315,988
3 Claims. (Cl. 274—42)

This application is a continuation-in-part of my application Serial No. 258,020, filed Feb. 12, 1963.

My present invention relates to receptacles provided with sound-reproducing means upon a surface thereof and, more particularly, to envelopes and the like composed essentially of flexible material and having sound-reproducing means, adapted to be used with phonograph-record-playing devices, upon a surface thereof as well as to a method of producing such receptacle.

It is well known that flexible sheet material can be provided with layers of synthetic-resin material laminated thereto and impressed with modulated spiral grooves constituting sound-reproducing means. Phonograph records of this type can have relatively good fidelity of sound reproduction and, because of their light weight and flexibility, are particularly suitable for transmission through the mails and are inexpensive as compared with pressing made upon rigid substrates. In my copending application Ser. No. 258,020, filed February 12, 1963, of which the present application is a continuation-in-part, I disclose a laminated flexible phonograph record wherein some of the disadvantages of earlier devices of this type can be eliminated. One of the drawbacks of such earlier records was the tendency of the substrate to deform during transmission and subsequent use. In the aforementioned copending application I have described a method for avoiding such deformation. In accordance with this method, a sheet of flexible fibrous material, e.g. paper or cardboard, is provided with a synthetic resin laminate and then folded into a plurality of layers, one or more of which are provided with sound-reproducing faces, the superposed layers stiffening the sound-reproducing faces against deformation. Moreover, the laminate of this copending application extends beyond the folded edge or edges to provide further reinforcement against deformation.

I have now discovered, surprisingly, that similar results can be obtained, and the use of envelopes for transmitting the phonograph record eliminated as an independent insert together with other legible matter, when the phonograph record is incorporated in the transmission receptacle. This arrangement offers great advantage, as will become apparent hereinafter, since the independent and separate production of the receptacle and the record can be avoided. The economy of this method will be readily apparent when it is realized that the conventional technique of including the record as an insert in envelopes of a mass mailing requires extra postage as a consequence of the separate weight of the record, separate forming steps for the record and envelope, and the additional step of inserting the record into the envelope.

It is, therefore, the principal object of the present invention to provide a receptacle having sound-reproducing means incorporated therewith.

Yet another object of my invention is to provide a method of producing a receptacle having sound-reproducing means incorporated therewith.

The novel article of manufacture of the present invention is a receptacle having at least one broad interior or exterior face with a sound-reproducing means, i.e. a modulated spiral groove engageable by the stylus of a phonograph-record-playing device, formed thereon. This improvement is based upon the discovery that, although it has long been the belief in the phonograph-record art

that it is essential to provide protective coverings for the grooved surfaces of records, such sound-reproducing means can be impressed upon laminated sheet material of receptacles such as envelopes without significant danger of deterioration of the recording in the normal handling of mail. Thus it is an essential feature of the instant invention that a flexible fibrous sheet of paper, cardboard or the like can be laminated with a plastically deformable synthetic-resin layer into which the modulated sound-recording groove can be impressed, the recording surface constituting either the inner or outer face of an envelope or other receptacle folded from the sheet. Preferably, the receptacle is of rectangular configuration, with the broad laminated surface juxtaposed with another broad surface and joined thereto along three edges of the rectangle, a closure means in the form of a flap or the like, integral with the sheet, being disposed along one or more of the edges.

More generally, the polygonal receptacle has one or more sides interconnecting the two broad surfaces which are superimposed and thus provide support against deformation, the connecting edges providing further reinforcement. Advantageously, the synthetic-resin laminate covers at least part of the broad surface carrying the sound-reproducing means and extends over one or more of the connecting edges onto the other surface and thus serves to stiffen these edges and limit deformation. At least the sound-record surface and preferably both surfaces are provided with respective apertures located at the axis of the spiral grooves for receiving the upright centering post of the phonograph, the apertures of both surfaces registering for satisfactory mounting upon the turntable. The apertures referred to herein need not, of course, be throughgoing holes upon original formation, since it is satisfactory if the outline of the aperture is perforated to facilitate extraction of the sheet material at the aperture. The synethetic resin can be of any conventional type (e.g. a cellulosic ester, a polyvinyl chloride or polyester) readily laminated to the cellulosic substrate.

According to another feature of the invention, the sound-reproducing groove may be impressed in the laminated layer concurrently with blanking of the sheet material and/or the die-cutting thereof to form the closure flap. Advantageously, the die-cutting operation also includes the formation of a throughgoing opening in a portion of the fibrous substrate extending beyond the laminate layer and provided to expose legible matter, such as the address of the individual to whom the envelope is directed, advertising matter, the title of the subject matter of the recording or the like, contained upon an insert within the envelope. Thus the insert may be a reply card, sales contract or the like which is preaddressed, the address serving as the address for the envelope into which the recording is incorporated. Simultaneously with the die-cutting of the sheet, the latter can be perforated intermediate the closure means and/or the opening and the sound-reproducing means so that these superfluous portions of the receptacle can be removed. When the sound-recording surface is provided upon one or more inner faces of the envelope, the latter can be perforated along at least two edges for separation along these edges and the edge previously provided with the closure means so that the broad surfaces can be inverted about the remaining connecting edge and reveal the sound-reproducing surface for playing. In this case, corresponding outer edges of the broad surfaces can be provided with bands of a pressure-responsive adhesive capable of forming a bond when the two edges are brought into contact but incapable of bonding to other materials. This arrangement ensures that the inverted surfaces will be held together along at least one other edge in addition to their

common connecting edge. The term "perforated" is used herein to indicate weakening of the junction between two regions to facilitate separation.

The above and other objects, features and advantages of the present invention will become more readily apparent from the following description, reference being made to the appended drawing in which:

FIG. 1 is a plan view of an envelope-type receptacle provided with sound-reproducing means, according to the invention;

FIG. 2 is a cross-sectional view taken along the line II—II of FIG. 1;

FIG. 3 is a view similar to FIG. 1 of a modified embodiment;

FIG. 4 is a cross-sectional view taken along line IV—IV of FIG. 3; and

FIG. 5 is a perspective view of still another receptacle, according to the invention.

FIGS. 1 and 2 show a paper or cardboard envelope **1** having part of one of its outer broad surfaces **2** provided with a layer **3** of synthetic resin (approximately 1 mil cellulose acetate) laminated thereto. The laminate **3** is impressed with a spiral modulated groove **4** for the reproduction of sound when tracked by the stylus of a phonograph. A throughgoing aperture **5** is provided in both of the broad surfaces of the envelope to permit the entire receptacle to be centered upon the phonograph turntable, the two broad faces, secured together along their three adjoining edges, providing a doubled stiffness and, consequently, increased stability of the synthetic-resin laminate. In all of the figures, the thickness of the laminate has been greatly exaggerated for clarity of illustration. In the embodiment of FIGS. 1 and 2, the unlaminated portions of surface **2** can be imprinted with legible matter, such as the address **2***a* of the individual to whom the envelope is to be directed and a return address **2***c*, postage stamps or meter indications being provided in the usual manner at **2***b*. The flap **2***d* constitutes the closure means for the envelope which is scored at **2***e*, concurrently with the blanking of the sheet from which the envelope is folded. It is then cemented conventionally. Advantageously the blank can be imprinted prior to lamination, the laminate then being transparent and serving as a protective layer overlying the imprint.

FIGS. 3 and 4 show a modified envelope which is perforated at **10** along its front and rear faces so that the receptacle can be subdivided into two sections. Section **11** is completely or partly covered by a synthetic-resin laminate **7**, provided with the sound-reproducing means, which extends over the three connecting edges onto the lower broad face **8** of the envelope from the upper face **6**. The connecting edges and the lower surface are thus further stiffened to limit deformation of the unit. It will be understood that the laminate **7** can also completely cover the lower surface which can then be provided with additional sound-reproducing means. The remaining section **12** of the envelope, which can be detached along the perforated line **10** and discarded when it is desired to play the recording, is provided with a cutout or opening **9**, serving as a window through which legible matter on an insert received within the envelope can be observed. Generally, the legible matter will include the address to which the envelope is directed.

In FIG. 5 I show a cardboard carton **21**, at least one of the broad upper faces **22** of which carries a cellulose acetate laminate **23** into which is impressed a phonograph record **24** as previously described. The legends **25** and other legible matter can be imprinted prior to lamination so that the laminate serves as a protective covering. The laminate **23** extends onto the narrow sides **26**, **27** of the carton and thus stiffens the latter, the carton being perforated at **28** along the edges of the record-carrying face to facilitate separation thereof from the remainder of the carton and the closure flap **29**. If desired, the narrow faces can be perforated at **30** to form marginal portions **31** having masked strips of contact adhesive upon their upper faces. When the masks are removed, the marginal portions **31** can be folded under and adhered to the underside of the recording surface to limit bending of the latter.

The invention described and illustrated is believed to admit of many modifications and variations within the ability of persons skilled in the art, all such variations being considered encompassed in the spirit and scope of the appended claims.

What is claimed is:

1. A method of producing a receptacle having sound-reproducing means upon a surface thereof, comprising the steps of laminating a plastically deformable layer of a synthetic resin onto at least one face of a sheet of flexible fibrous material; impressing a modulated spiral groove engageable by a stylus of a phonograph-record-playing device in said layer; die-cutting said sheet to form closure means on said sheet, an aperture in a central region of said layer coaxial with said groove, and a throughgoing opening is said sheet for exposing legible matter within the receptacle; perforating said sheet intermediate said groove and said opening; and folding said sheet into a generally flat, rectangular receptacle closed on three sides with said closure means on the fourth side of the rectangle and a broad surface in the region of said groove.

2. A record-envelope assembly comprising a substantially rectangular receptacle composed of a flexible laminated sheet material folded along at least one edge of the rectangle and having two substantially planar juxtaposed surfaces joined together at least along three edges of said rectangle including said one edge whereby said surfaces define an envelope structure, said sheet material including an inner layer of fibrous material along both of said surfaces with said layer of said surfaces unitarily joined at said one edge, and an outer plastically deformable layer laminated to said inner layer and extending over at least a substantial part of one of said surfaces and around each of said three edges to lie along at least marginal parts of the other of said surfaces adjacent said three edges; sound-reproducing means impressed in said outer layer of said one of said surfaces, said sound-reproducing means including a modulated spiral groove terminating at a central region and engageable by a stylus of a phonograph-record-playing device, said surfaces both being provided with means at said central region for forming throughgoing apertures in said surfaces for receiving a turntable spindle of said apparatus; and closure means for joining said surfaces together along the remaining edge of the rectangle.

3. The assembly defined in claim **2** wherein the fibrous material of said inner layer extends beyond said outer layer at said remaining edge of the rectangle and is provided with an opening communicating with the interior of said receptacle for exposing legible matter contained therewithin, said closure means including a flap on the portion of said fibrous material extending beyond said outer layer whereby said opening lies between said flap and said outer layer, said surfaces each being perforated intermediate said opening and said sound-reproducing means for separating at least part of said portion from the remainder of said receptacle.

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