An envelope assembly, the assembly consisting of a small envelope or bag made from flexible material, and a strip of flexible material, such as a label, adhesively attached to the envelope or bag sufficiently near its opening edge to improve stability in the open position when equal opposing forces are applied to the envelope edges adjacent the opening edge.
SMALL ENVELOPE WITH LABEL-ASSISTED OPENING

BACKGROUND

[0001] The present invention relates to small envelopes typically used for the packaging, archival storage or transmittal of small items, powders or other materials. The use of pocket-sized envelopes as a packaging method is common for small articles due to low cost and ready availability.

[0002] Small envelopes may be fabricated from at least two basic families of materials: paper and elastomeric. The manufacture of paper envelopes typically involves the cutting and folding of paper and adhesive bonding of edge flaps to form a container. The fabrication of elastomeric envelopes might involve, for example, longitudinal folding of a long strip of the elastomeric material followed by the use of a heating element transverse to the strip to melt edges together and cut them apart in one economical operation.

[0003] An envelope often has a flap along one edge, which in this document will be designated the top edge for convenience, and the term “opening edge” will be applied to the adjacent free edge without the flap. The top flap may ease loading of items or material into the envelope by serving as an extension of one envelope wall to form the equivalent of a “loading chute.” A top flap may also serve as a closure for the envelope when it is folded over the opening edge, and optionally fixed in that position by glue or adhesive, thereby securing the contents from escape.

[0004] Envelopes can be made of translucent paper, but the contents will not be perfectly visible in such an envelope, unless it contains a transparent window of suitable dimensions. In contrast, an elastomeric envelope may readily be made of transparent material, such that the contents are clearly visible, without the need for incorporating a separate window. Inherent transparency imparts a desirable advantage relative to paper envelopes, in that it allows the user or the person filling the envelope to quickly ascertain the nature and condition of the contents, and even to read printing or embossing on the contents, if present. For certain contents, printed or embossed pills for example, this aspect of function is highly desirable.

[0005] A further advantage of elastomeric envelopes that they typically act as a barrier to moisture which might otherwise come into contact with and potentially degrade the contents. Such moisture can come from atmospheric humidity, from rain, or even from body sweat if the envelope is carried in a pocket. In contrast, paper envelopes not only can transmit moisture, but also are vulnerable to degradation by moisture. Moist paper can even support microbial growth much more readily than elastomers.

[0006] One further advantage of elastomeric envelopes formed with heat-sealed edges is that their thickness is equivalent to two plies of material, whereas the folded and glued edge flaps of a paper envelope can increase its maximum thickness to as many as four plies. Moreover, elastomeric envelope material is typically thinner than paper envelope material. Thus, a stack of empty elastomeric envelopes can require as little as 1/3 the storage volume required by the same number of paper envelopes of similar capacity.

[0007] One potential disadvantage of elastomeric envelopes is that they may lack a stable open position. Elastomeric envelope materials are typically more flexible and structurally weak compared to paper, by virtue of their very thinness, or by virtue of their lower modulus of elasticity, or both. As a result, a typical small elastomeric envelope have a stable closed position, but an unstable open position, when squeezed at its edges adjacent the opening edge by thumb and forefinger of one hand. Even after being initially forced into the open position with the free hand, elastomeric envelopes can have a tendency to close once the free hand is withdrawn. This can be inconvenient, even annoying, for a user loading the envelope by hand, particularly daily pill users who may have lost some manual dexterity, for example, by virtue of advancing age.

[0008] So-called zipper-lock elastomeric bags suffer less from lack of a stable open condition, due to the extra stiffness provided by the molded-in zipper. However, it is demonstrably difficult for users to open small zipper-lock bags, even those users of normal manual dexterity.

[0009] A further potential disadvantage of clear elastomeric envelopes designed with a top flap is the difficulty a user will likely experience in visually determining whether the opening edge is on the near side or far side of the envelope. Often, the user must employ a “trial and error” approach to determine this fundamental information. This is not normally a problem with paper envelopes.

[0010] Some elastomeric envelopes are printed on the inside or outside. While such printing may be informative, it is typically non-functional in other respects. For example, on-envelope printing may clarify to the user whether the opening edge is on the near side or far side, but it typically does not sufficiently modify the physical properties of the envelope opening walls enough to enable the envelope to hold itself open reliably when squeezed by its edges in one hand.

[0011] It therefore is desirable to identify a small envelope design which is as easily held open with one hand as small envelopes made of paper, but which accrues the advantages (inherent transparency, moisture-resistance, reduced storage volume) of elastomeric materials in an easy-to-open non-zipper-lock geometry.

SUMMARY

[0012] In one embodiment, the invention provides an envelope assembly or bag assembly, consisting of a small envelope or small bag and an adhesive label, or other adhesively attached sheet of material, strategically-placed to eliminate the inconveniences described above.

[0013] Since a label is frequently needed for identifying the contents of an envelope, such strategic placement of a label potentially adds little or no cost to the assembly.

[0014] Other aspects of the invention will become apparent by consideration of the detailed description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 is an elevation view of an envelope assembly according to the embodiment of the invention.

[0016] FIG. 1a is a side view of the an envelope assembly according to the embodiment of the invention.
FIG. 2 is a perspective view of the an envelope assembly according to the embodiment of the invention, said envelope assembly being held in the open position by a one-handed squeeze action for loading with parts or material.

DETAILED DESCRIPTION

Before any embodiments of the invention are explained in detail, it is to be understood that the invention is not limited in its application to the details of construction and the strict arrangement of components set forth in the following description or illustrated in the following drawings. The invention is capable of other embodiments and of being practiced or of being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. The use of “including,” “comprising,” or “having” and variations thereof herein is meant to encompass the items listed thereafter and equivalents thereof as well as additional items. Unless specified or limited otherwise, the terms “mounted,” “connected,” “supported,” and “coupled” and variations thereof are used broadly and encompass both direct and indirect mountings, connections, supports, and couplings. Further, “connected” and “coupled” are not restricted to physical or mechanical connections or couplings.

The envelope 1 shown in FIG. 1 includes a top flap 5. One purpose of the top flap 5 is to serve as a closure means by folding it over the opening edge 2 with the intent of preventing the loss of the envelope contents.

FIG. 2 illustrates a second purpose of top flap 5, that is, to serve as an extended loading surface, or “chute”, improving the ease with which items 4 may be loaded into the envelope when the envelope is held open by squeezing it at opposite edges adjacent its opening edge 2.

As shown in FIG. 2, it is a desirable characteristic of a small envelope that it stay open reliably when squeezed at its edges adjacent the opening edge 2 by the finger and thumb of one hand, such that small items 4 may be loaded using the other hand.

Unfortunately, due to the extremely flexible nature of thin polymeric material, envelope walls made of this material tend to respond to small forces, such as electrostatic forces, or internal stresses which are the residual of manufacture. Such small forces may impart a natural tendency to an elastomeric envelope to close when squeezed at its edges adjacent the opening edge 2 by the finger and thumb of one hand. The stable state of such an envelope is for the opening edge 2 to align itself along the same arc as the top flap 5, thereby closing the entrance to the envelope and preventing the loading of small items 4. Even if the initial open state is forced upon the envelope with the aid of the opposing hand, such a state is unstable, and once that hand is removed the envelope wall adjacent the flexible opening edge 2 may pass readily through an S-shaped configuration to a stable end state in which the envelope is closed, or nearly so, and the loading of the envelope is hindered.

The use of a label strategically placed on the outside, or inside, of the envelope can transform the nature of the envelope such that the open position becomes stable under a “one-handed squeeze”; that is, the envelope tends to stay open when squeezed at its edges adjacent the opening edge 2 by the finger and thumb of one hand.

The inventors have found by experiment that placing the label on the envelope wall adjacent the bottom edge of top flap 5 does not impart a stable open position to the envelope.

In the specific embodiment shown in FIG. 1, a small clear elastomeric envelope, intended to hold pills, has been enhanced by strategic placement of a label, adhesively affixed on the outside of the envelope, just below the opening edge 2 of the envelope.

The distance “a” between the label edge and the opening edge of the envelope is sufficiently small so that the stiffness imparted by the label improves the stability of the envelope in the open position when squeezed at its side edges between thumb and forefinger.

FIG. 2 shows such an enhanced envelope assembly being held in the open position for loading. The additional stiffness imparted by the label to the envelope wall adjacent the opening edge 2 stabilizes said opening edge 2 during a “one-hand squeeze” and prevents it from collapsing into contact with the envelope wall opposite said opening edge 2 and adjacent the top flap 5. The combination of label and envelope wall has transformed the open state into a metastable state, imparting to the envelope assembly the natural characteristic of maintaining an arc shape while its edges are squeezed in one hand of the user.

Furthermore, for clear, see-through envelopes or flat plastic bags, locating the label in this position has the additional benefit of unambiguously identifying the side of the envelope upon which the opening edge is located, eliminating the need for the user to determine whether opening edge 2 is on the side of the envelope nearest the user, or on the opposite side, by “trial and error.”

The foregoing description of the present invention has been presented for purposes of illustration and description. Furthermore, the description is not intended to limit the invention to the form disclosed herein. Consequently, variations and modifications commensurate with the above teachings, and the skill or knowledge of the relevant art, are within the scope of the present invention. The embodiments described herein are further intended to explain best modes known for practicing the invention and to enable others skilled in the art to utilize the invention in such, or other, embodiments and with various modifications required by the particular applications or uses of the present invention.

What is claimed is:

1. An envelope assembly, said assembly comprising:
   an envelope or flat bag made of flexible material; and
   a sheet of material adhesively attached sufficiently near the open end of the envelope to improve stability in the open position when equal opposing forces are applied to the envelope edges adjacent the opening edge.
   2. The envelope assembly of claim 1, wherein the sheet of adhesively attached material spans 75% to 100% of the width of the envelope opening edge.
   3. The envelope assembly of claim 2, wherein one edge of the sheet of adhesively attached material is substantially parallel to the opening edge of the envelope.
4. The envelope assembly of claim 2, wherein the distance between one edge of the sheet of adhesively attached material and the opening edge of the envelope is 0% to 40% of the length of the opening edge of the envelope.

5. The envelope assembly of claim 4, wherein the sheet of adhesively attached material serves as a label.

6. The envelope assembly of claim 4, wherein the sheet of adhesively attached material is mounted inside the envelope.

7. The envelope assembly of claim 4, wherein the sheet of adhesively attached material is mounted inside the envelope.

8. An envelope assembly, said assembly comprising:
   
   an envelope or bag made of clear flexible material and having a flap at the open end; and

   a label adhesively attached sufficiently near the opening edge of the envelope or bag to improve stability in the open position when equal opposing forces are applied to the envelope edges adjacent the opening edge.

9. The envelope assembly of claim 8, wherein the label spans 75% to 100% of the width of the envelope opening edge.

10. The envelope assembly of claim 9, wherein one edge of the label is substantially parallel to the opening edge of the envelope.

11. The envelope assembly of claim 9, wherein the distance between one edge of the label and the opening edge of the envelope is 0% to 40% of the length of the opening edge of the envelope or bag.

12. The envelope assembly of claim 11, wherein the label is mounted outside the envelope.

13. The envelope assembly of claim 11, wherein the label is mounted inside the envelope.

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