# United States Patent [19]

**Gendron**

[11] **3,900,159**

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[54] **CONTINUOUS FORM ENVELOPES**


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[73] Assignee: **United States Envelope Company,** Springfield, Mass.



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[21] Appl. No.: **774,261**

[52] **U.S. Cl.** ..... **229/69**

[51] **Int. Cl.** ..... **B65d 27/10**

[58] **Field of Search** ..... 229/69, 53; 206/56 AB



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[57] **ABSTRACT**

Continuous form or series-connected envelopes are made by folding an elongated web of sheet material onto itself along at least one longitudinally extending fold line to form a lower ply and at least one upper ply partially overlying the lower ply. The plies are connected in face-to-face relation by a longitudinally spaced series of transversely extending lines of adhesive to form a succession of envelopes having longitudinally extending mouth openings. Lines of weakening are provided along which the envelopes may be separated from each other and from a longitudinally extending marginal connecting strip on the lower ply and opposite the mouth openings. A series of holes or other configurations may be formed in the latter connecting strip for operative engagement with a feeding device and/or a line of adhesive may be applied to the connecting strip for attaching each of the envelopes to an associated article.


**5 Claims, 9 Drawing Figures**

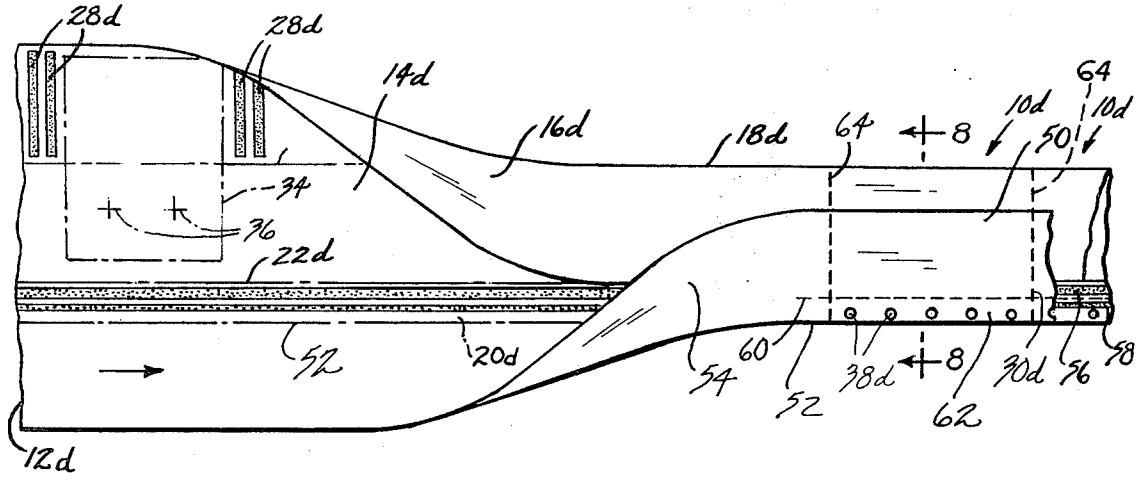

Fig. 1

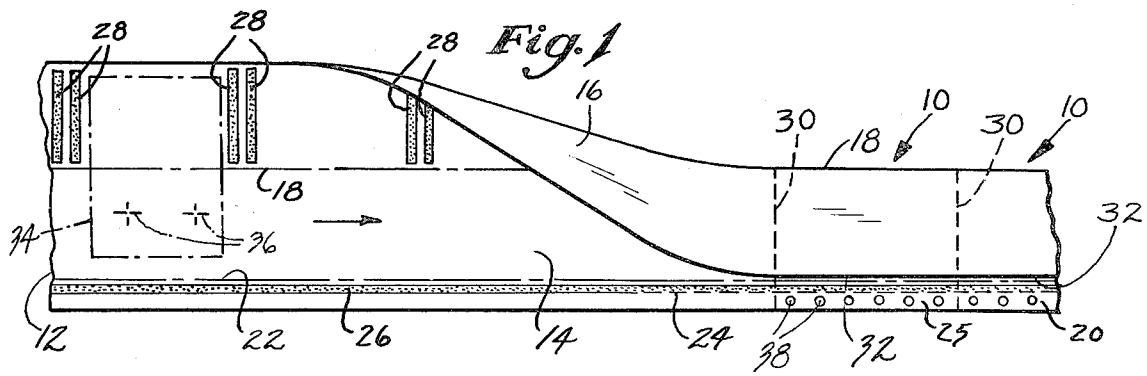


Fig. 2

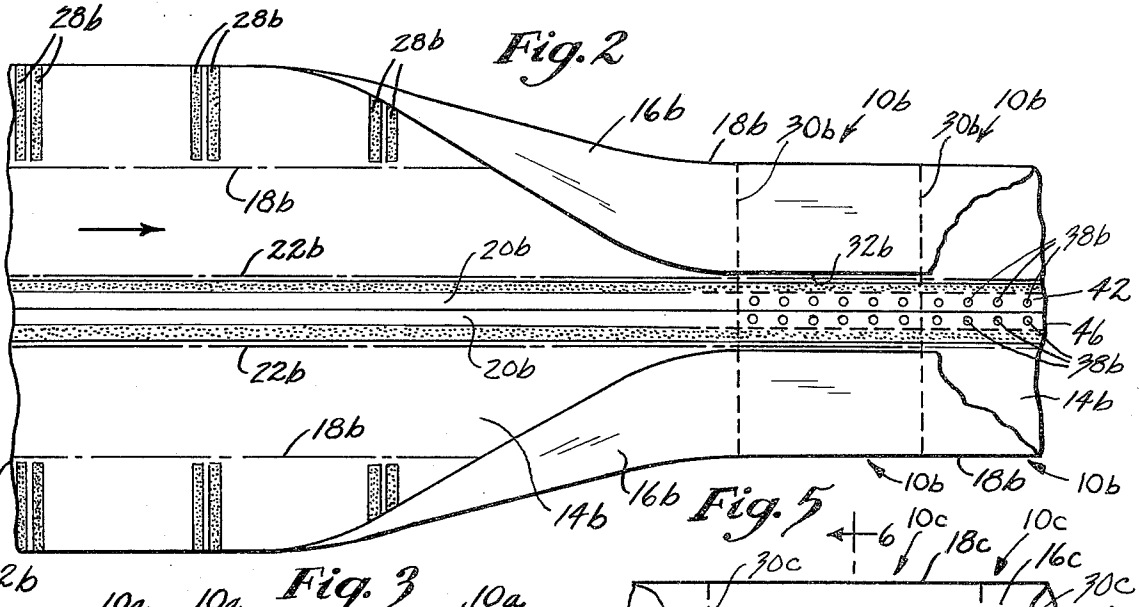


Fig. 3

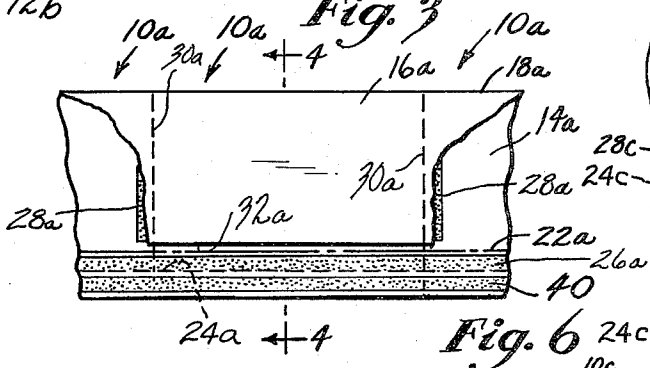


Fig. 5

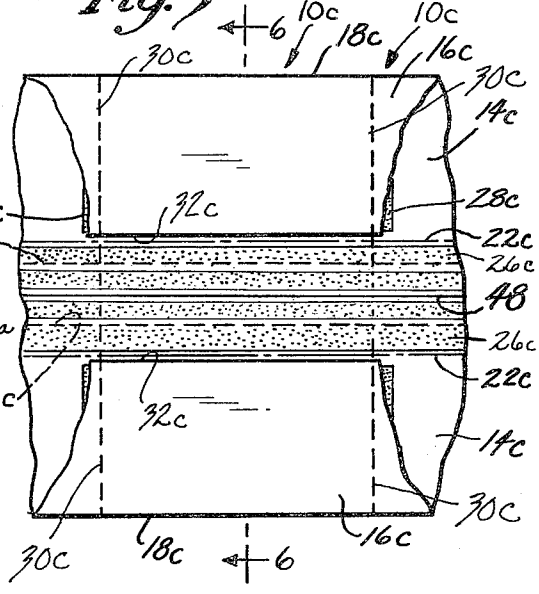


Fig. 4

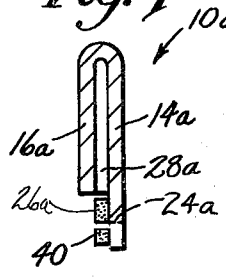


Fig. 6

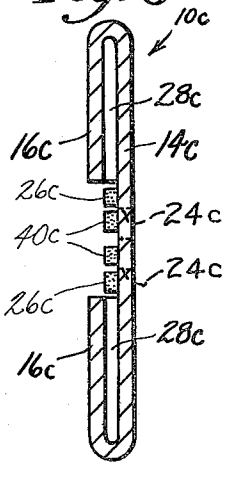


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Fig. 7

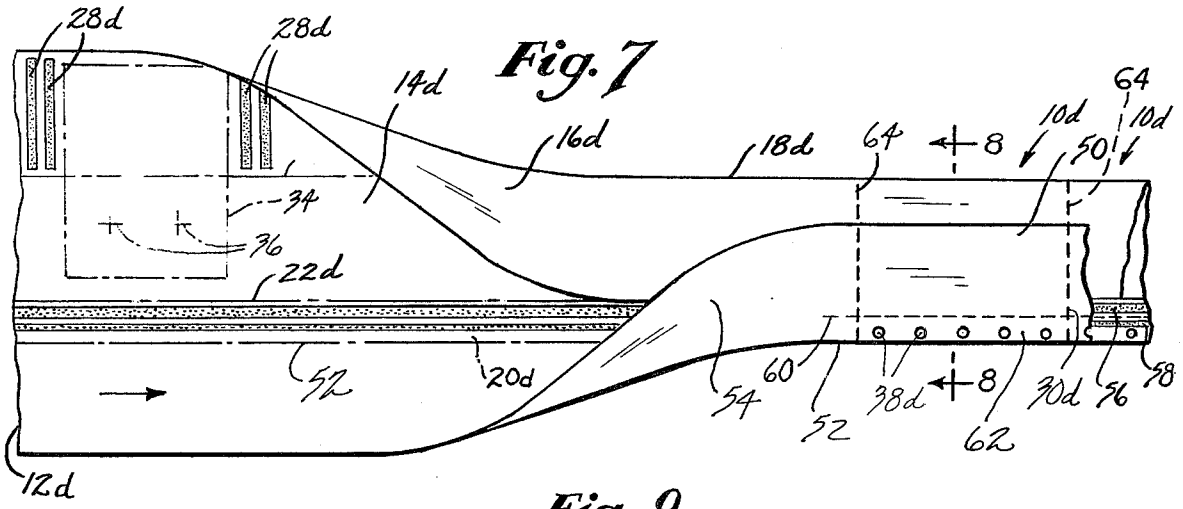



Fig. 8

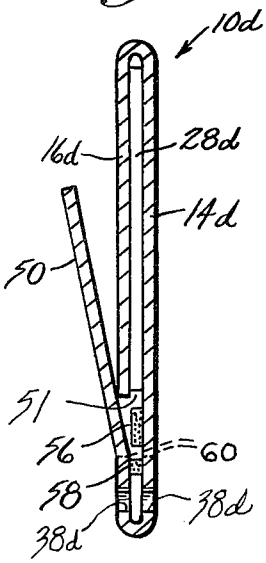
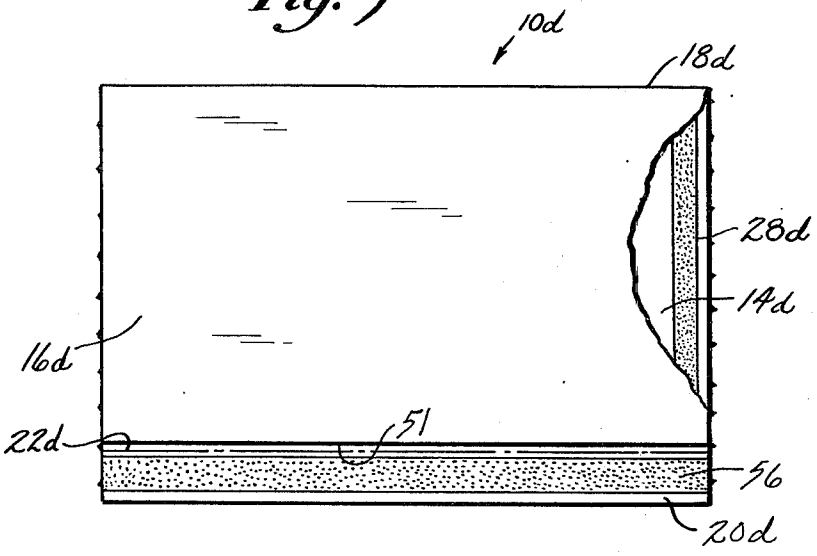



Fig. 9



# CONTINUOUS FORM ENVELOPES

## BACKGROUND OF THE INVENTION

This invention relates in general to continuous form stationery and deals more particularly with improved continuous form or series-connected envelopes. Envelopes of this general type are usually adapted to be successively automatically or semi-automatically fed through a typewriter, printing machine or the like and readily separated from each other after addresses or other messages have been imprinted thereon. Envelopes made in accordance with the present invention are particularly adapted to be attached in groups or separately to newspapers, catalogues or the like for ready separation therefrom at some later time.

The general aim of this invention is to provide improved continuous form envelopes which may be made on high-speed envelope making machinery.

## SUMMARY OF THE INVENTION

In accordance with the invention, continuous form or series-connected envelopes are formed by folding an elongated web of sheet material longitudinally onto itself to form at least two plies and connecting the plies in face-to-face relationship along a longitudinally spaced series of transversely extending lines of attachment. Lines of weakening are formed to separate the envelopes from each other and from a longitudinally extending marginal connecting strip on at least one of the plies and opposite the mouths of the envelopes. In accordance with one method, holes or other configurations are formed in the connecting strip for operative engagement with a feeding device such as a pin-wheel feed mechanism. In accordance with a further method, adhesive is applied to the connecting strip so that individual envelopes or groups thereof may be attached to associated articles for later separation therefrom.

## BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of a web of sheet material, showing from left to right successive changes in the material as continuous form or series-connected envelopes are formed therefrom.

FIG. 2 is generally similar to FIG. 1 but shows another method for forming continuous form envelopes from an elongated web.

FIG. 3 is a fragmentary plan view of other of series-connected envelopes made in accordance with another method of the invention.

FIG. 4 is a somewhat enlarged sectional view taken along the line 4—4 of FIG. 3.

FIG. 5 is a fragmentary plan view of still other series-connected envelopes made in accordance with still another method of the invention.

FIG. 6 is a somewhat enlarged sectional view taken along the line 6—6 of FIG. 5.

FIG. 7 is generally similar to FIG. 1 but shows still another method for making continuous form envelopes from an elongated web.

FIG. 8 is a somewhat enlarged sectional view taken along the line 8—8 of FIG. 7.

FIG. 9 is a somewhat enlarged plan view of an envelope of FIG. 7.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to the drawings and referring first to



FIG. 1, continuous form or series-connected envelopes indicated generally at **10, 10** are shown in process of formation from an elongated web of sheet material or paper **12.** The envelopes are preferably made on an automatic high-speed envelope making machine (not shown) which advances the web in the direction indicated by the arrow and simultaneously performs a series of operations thereon. Successive changes in the web as envelopes are formed therefrom is shown in FIG. 1 as viewed from left to right.

The web **12** is folded onto itself to form a lower ply **14** and an upper ply **16** connected to one side edge of the lower ply along a longitudinally extending fold line **18.** The lower ply **14** is somewhat wider than the upper ply **16** and includes a marginal portion **20** adjacent its free side edge which extends transversely outwardly beyond the free side edge of the upper ply and has a fold or score line **22** formed thereon near the latter side edge. A line of weakening **24** is formed on the marginal portion **20** spaced outwardly of the score line **22** and parallel thereto to separate a marginal connecting strip **25** from the remaining portions of the plies. A strip of adhesive **26** which may, for example, be of a pressure-sensitive or remoistenable type is applied to the marginal portion **20** between the line of weakening **24** and the score line **22.**

The envelopes **10, 10** are formed by connecting associated portions of the two plies in face-to-face relationship along longitudinally spaced transversely extending lines of attachment defined by longitudinally spaced pairs of transversely extending lines of adhesive **28, 28.** A longitudinally spaced series of lines of weakening **30,** 30 are formed on the plies and extend transversely thereof to separate the envelopes **10, 10** from each other. Thus, each envelope **10** is connected to an adjacent one along one of the latter lines of weakening. Each envelope **10** is defined by associated portions of the upper and lower plies bounded by a portion of the fold line **18** and two lines of adhesive **28, 28** and has a longitudinally extending mouth **32** opening toward the marginal portion **20.**

The envelopes **10, 10** may, if desired, be formed with inserts therein, a typical insert being indicated at **34** in FIG. **1.** Each insert **34** is preferably positioned on the lower ply **14** before the upper ply **16** is folded into overlying relation therewith. One or more spots of release-type adhesive material such as indicated at **36, 36** may be employed, if desired, to retain each insert in proper position while the envelopes **10, 10** are formed thereabout.

The continuous form envelopes **10, 10** are preferably adapted to accommodate a positive feed device such as a pin-wheel feed mechanism for advancing the envelopes. For this purpose a longitudinally spaced series of configurations in the form of feed holes **38, 38** is punched through the connecting strip **25** for operative engagement with a feed device of the aforedescribed type. After the envelopes **10, 10** have been advanced by the feed mechanism they may be separated from the connecting strip **25** and from each other along the various lines of weakening. The remaining part of the marginal portion **20** of each envelope serves as a closing flap for the envelope and may be folded along the score line **22** to a closed position with respect to the mouth **32** and sealed in the latter position by the adhesive strip **26.**

Additional series-connected envelopes made in accordance with another method of the present invention and indicated generally at **10a**, **10a** in FIGS. **3** and **4** are particularly adapted for manual or semi-automatic tipping-on operations in which envelopes are attached to newspapers, catalogues or the like by strips of adhesive applied along one edge of each of the envelopes. The envelopes **10a**, **10a** are substantially indentical in many respects to the envelopes **10, 10** previously described and parts which are substantially identical to parts previously described bear the same reference numerals with a letter "*a*" suffix and will not be hereinafter further described. More specifically, these two series-connected envelopes differ in the construction and purpose of their respective marginal connecting strips. Referring to the envelopes **10***a*, 10*a*, it will be noted that each connecting strip **25***a* does not include a series of feed holes, but instead has a continuous strip of adhesive **40** applied thereto. The latter adhesive, which may, for example, be of a pressure-sensitive or remoistenable type, ultimately serves to adhere each individual envelope to an associated carrier such as a newspaper, catalogue or the like. Application of adhesive to the connecting strip eliminates the need for a separate adhesive application to either the envelopes or the carrier material when the envelopes are adhered thereto. Belted or series-connected envelopes may be conveniently handled in large quantities and may be manually or semi-automatically moved through adhesive moistening units or the like and thereafter applied either separately or in connected condition to recipient material.

Referring now to FIG. **2**, a two-up method for making series-connected envelopes indicated generally at **10***b*, 10*b* is illustrated, the preferred sequence of operations being evident from consideration of FIG. **2** as viewed from left to right or in the direction of the arrow indicated thereon. In accordance with the latter method two belts of series-connected envelopes **10***b*, 10*b* are formed simultaneously by folding an elongated web of sheet material **12***b* onto itself along opposing longitudinally extending fold lines **18***b*, 18*b* to form a lower ply **14***b* and two upper plies **16***b*, 16*b* connected in face-to-face relation with the lower ply. The inner or free longitudinally extending edges of the upper plies **16***b*, 16*b* are transversely spaced apart to expose a lower ply central portion **42** therebetween. The two belts of envelopes may be separated by cutting or shearing the central portion along a center line **46** and it should be noted that a marginal portion **20***b* adjacent each side of the center line **46** has a score line **22***b*, a line of weakening **24***b*, a line of adhesive **26***b* and a marginal connecting strip **25***b* which includes a longitudinally spaced series of feed holes **38***b*, 38*b*. Thus, each belt is comprised of series-connected envelopes **10***b*, 10*b* which are identical in all respects to the envelopes **10,** 10 of the embodiment illustrated in FIG. **1.**

In FIGS. **5** and **6** there is shown still another embodiment of the invention comprising two belts of series-connected envelopes **10***c*, 10*c* which are made in accordance with the two-up method hereinbefore described. However, the envelopes **10***c*, 10*c* are particularly adapted for application to recipient material by tipping-on operations as previously described with reference to the embodiment **10***a*. The envelopes **10***c*, 10*c* are substantially identical to the envelopes **10***a*, 10*a*, but are made in accordance with a two-up method as described with reference to FIG. **2**. The two belts are separated from each other by cutting the central portion of the lower ply along a line **48.**

In accordance with the present invention, belts of series-connected envelopes may also be made with separable or detachable inserts which may, for example, be order blanks or the like. Considering now FIGS. **7** – **9** and referring first to FIG. **7**, an assembly of series-connected envelopes indicated generally at **10***d*, 10*d* which have a series of panels or inserts **50, 50** associated therewith are shown in process of formation from an elongated web **12***d*. The web is folded onto itself along one fold line **18**d to form a lower ply **14***d* and an upper ply **16**d which are connected in face-to-face relation in the manner generally aforedescribed to form the envelopes **10***d*, 10*d* which have longitudinally disposed mouths **51, 51.** The web **12***d* is further folded onto itself along another fold line **52** spaced from the free edge of the upper ply **16**d to form another upper ply **54** which overlies an associated portion of the upper ply **16***d* and a marginal portion of the lower ply adjacent the fold line **52** and indicated at **20***d*. Preferably, a score line **22***d* is formed on the marginal portion **20**d and parallel spaced apart lines of adhesive **56** and **58** are applied thereto before the web is folded along the line **52.** The line of adhesive **56** is ultimately used to seal the envelopes **10***d*, 10*d*. It extends along the marginal portion **20***d* near the free side edge of the upper ply **16**d and may, for example, be of pressure-sensitive or remoistenable type. The line of adhesive **58** adheres the upper ply **54** to the lower ply **14**d as best shown in FIG. **8** and serves to stabilize the upper ply **54** or maintain it in generally overlying relationship with respect to the upper ply **16**d. A line of weakening **60** is formed on the plies **54** and **14**d between the lines of adhesive **56** and **58** to separate a marginal connecting strip **62** from the remaining portions of the plies. The connecting strip **62** includes portions of the plies **14***d* and **54** connected by the fold line **52** and reinforced by the line of adhesive **58** which provides connection therebetween. Transversely extending lines of weakening **64, 64** are also formed on the plies **14***d*, 16*d* and **54** to separate each envelope **10**d and its associated insert **50** from an adjacent envelope **10**d and its associated insert.

The illustrated envelopes **10***d*, 10*d* are adapted to accommodate a feed device; therefore, feed holes **38***d*, 38*d* are formed in the marginal strip **62.** It should be understood, however, that these envelopes may also be adapted for a tipping-on operation and, as previously discussed, when such is the case, a line of adhesive may be applied to either side of the connecting strip **62** in place of the feed holes **38**d, **38**d.

The envelopes **10***d*, 10*d* may be separated from each other and from the connecting strip **62** along the various lines of weakening and it will be evident that when the envelopes are so separated the inserts **50, 50** will also be separated or detached from the envelopes and from each other. After the envelopes have been separated, the remaining part of the marginal portion **20***d* of each envelope may be folded along the score line **22***d* to a closed position with respect to the mouth **51,** the associated adhesive strip **56** being used to seal the envelope.

I claim:

**1.** An assembly of series connected separable envelopes comprising an elongated web of sheet material folded onto itself and having at least two plies including

a lower ply and at least one upper ply connected to one side edge of said lower ply along a longitudinally extending fold line and overlying an associated portion of said lower ply, said lower ply having a longitudinally disposed marginal portion transversely extending beyond the free side edge of said one upper ply, means connecting said one upper ply and said lower ply in face-to-face relation along longitudinally spaced transversely extending lines of attachment to form a succession of envelopes each having a pocket including a mouth open at one side thereof and partially defined by said free side edge, a longitudinally spaced series of lines of weakening extending transversely of said plies, each of said envelopes being connected to an adjacent one of said envelopes along one of said transversely extending lines of weakening, at least one generally longitudinally extending line of weakening disposed on said marginal portion transversely spaced from said free side edge and separating a connecting strip from the remainder of said marginal portion, one longitudinally extending line of adhesive disposed on said marginal portion between said line of weakening and said free side edge, another longitudinally extending line of adhesive disposed on said connecting strip, another upper ply connected to the other side edge of said lower ply along another longitudinally extending fold line, said other upper ply overlying at least a portion of said one upper ply, said one line of weakening and said other side edge defining the transverse extent of said connecting strip, a portion of said other ply overlying said connecting strip and attached in face-to-face relation thereto by said other line of adhesive, said other ply portion forming a part of said connecting strip, and another line of weakening disposed on said other ply and separating the portion of said other ply which forms said connecting strip from the remaining portion of said other ply.

**2.** An assembly of series-connected separable envelopes comprising an elongated web of sheet material folded onto itself and having a plurality of plies including a lower ply, one upper ply connected to one side edge of said lower ply along a longitudinally extending fold line and overlying an associated portion of said lower ply, said lower ply having a longitudinally disposed marginal portion transversely extending beyond the free side edge of said one upper ply, means connecting said one upper ply and said lower ply in face-to-face relation along longitudinally spaced transversely extending lines of attachment to form a succession of envelopes each having a pocket including a mouth open at one side thereof and partially defined by said free side edge, a longitudinally spaced series of lines of weakening extending transversely of said plies, each of said envelopes being connected to an adjacent one of said envelopes along one of said transversely extending lines of weakening, one generally longitudinally extending line of weakening disposed on said marginal portion transversely spaced from said free side edge and separating a connecting strip from the remainder of said marginal portion, one longitudinally extending line of adhesive disposed on said marginal portion between said line of weakening and said free side edge, another longitudinally extending line of adhesive disposed on said connecting strip, another upper ply connected to the other side edge of said lower ply along another longitudinally extending fold line, said one line of weakening and said other side edge defining the transverse extent of said connecting strip formed by said lower ply, a portion of said other upper ply overlying said connecting strip and attached in face-to-face relation thereto by said other line of adhesive, said other upper ply portion forming a part of said connecting strip, and another line of weakening disposed on said other upper ply and separating the portion of said other ply which comprises said connecting strip from the remaining portion of said other ply.

**3.** An assembly of series-connected separable envelopes as set forth in claim **2** wherein said lines of attachment comprise lines of adhesive extending generally between said fold line and said free side edge.

**4.** An assembly of series-connected separable envelopes as set forth in claim **2** wherein said connecting strip includes a succession of longitudinally spaced configurations for operative engagement with a strip-feed device.

**5.** An assembly of series-connected envelopes as set forth in claim **2** wherein said other line of adhesive is transversely spaced from said one line of adhesive.

* * * * *