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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification [3] :		(11) International Publication Number:
B65D 27/34	A1	WO 84/ 03269
		(43) International Publication Date: 30 August 1984 (30.08.84)

(21) International Application Number: PCT/US83/00202

(22) International Filing Date: 15 February 1983 (15.02.83)

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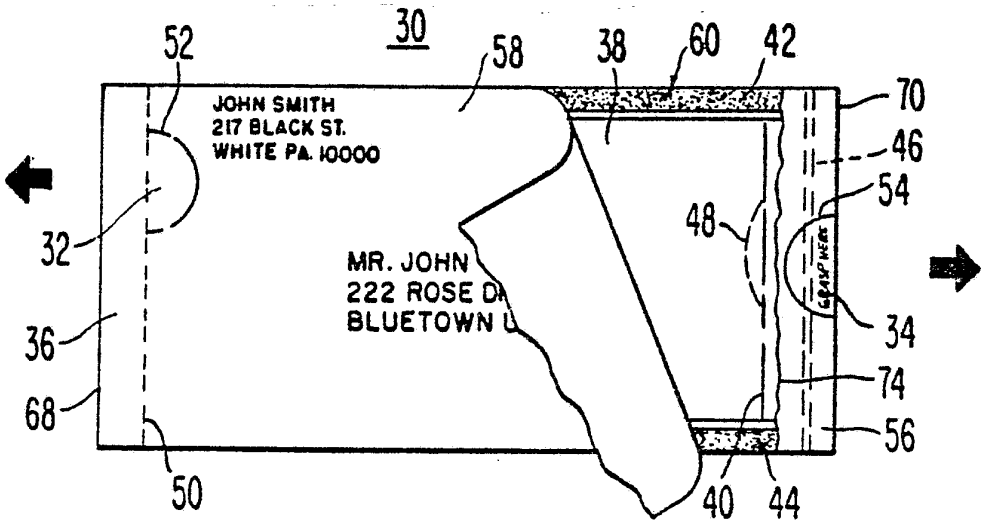
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(81) Designated States: AU, BE (European patent), DE (European patent), FR (European patent), GB (European patent), JP, NL (European patent), SE (European patent).

Published
With international search report.

(54) Title: MAILER SET



(57) Abstract

An improved mailer set which makes for easier removal of the interior plies (38) therefrom. The position of the thumb notches (32, 34) along the opposite edges of the mailer set, which in the past were located directly across from one another, have been relocated in an offset manner. This enables the opposing pressure needed to burst apart the mailer set to be reduced.

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MAILER SET

Cross-Reference to Related Application

This application is a continuation in part of pending U. S. Patent Application S.N. 217,078, filed December 16, 1980 by the same inventor as the present application and assigned to the same assignee as the present application

Background of the Invention

A. Field of the Invention

This invention relates to a mailer set having one or more interior plies. More particularly, it relates to an improved design for such a mailer set in which the thumb notches which are usually positioned directly opposite each other on opposite sides of the mailer are repositioned such that the thumb notches are offset one from another.

B. Prior Art

In the past, mailer sets having interior plies were separated by holding one edge of the mailer set between the thumb and forefinger of one hand, grasping the opposite edge of the mailer between the thumb and forefinger of the other hand and pulling one edge of the

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document away from the other. To insure that the document came apart at the desired locations, perforation lines were judiciously located about the mailer set.

In most of these former mailer sets, a pair of thumb shaped notches, one of which was perforated, were positioned on opposite edges of the mailer set directly across one from another. These notches were used as holding locations for pulling apart the mailer. Since they were directly across from each other, the pulling force was equally distributed along the perforation lines of the left hand thumb notch and the interior plies, and excessive force was needed to burst the document at the perforation seams.

In fact, in many cases, the bursting or tearing occurred at another undesired location of the mailer set.

Brief Description of the Invention

A. Objects of the Invention

Accordingly, it is an object of the present invention to provide a unique and simple system which more easily achieves the correct bursting of the mailer set at the desired locations.

It is another object of this invention to provide a system for applying sequential forces along the different perforated lines rather than applying equal forces along all of the perforated tear lines simultaneously.

It is a further object of this invention to provide a system for bursting a mailer set at a desired perforated line by locating a pair of thumb notches on opposite sides of the mailer set which locations are not directly across one from another.

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It is a still further object of this invention to provide a system for bursting apart a mailer set along perforated lines which system includes a perforated left handed thumb notch positioned in the upper left hand area of the mailer set and a right hand thumb notch positioned approximately in the center of the right hand edge of the mailer set.

It is another object of this invention to provide a system for sequentially bursting apart a mailer set along a plurality of perforated lines in which a perforated thumb notch is positioned in an off-set manner from an opposing thumb notch such that the perforated thumb notch is initially burst apart and thereafter the perforated lines of any interior plies are burst apart starting at the center of the perforated lines thereof.

These and other objects of the present invention will be more apparent from a reading of the detailed description and the drawings.

B. Summary of the Invention

In the preferred embodiment of this invention, a mailer set is provided which has one or more interior plies located between a front and a back ply. A perforated thumb notch is positioned along the left hand edge of the mailer set in the upper portion of that edge. Another thumb notch is positioned in the approximate center of the right hand edge of the mailer set. All of the interior plies have a perforated line passing down their right handed edge, which line is inboard of the right hand thumb notch. In those instances where there are multiple interior plies, the perforated lines are coincident one with another.

By applying opposing pulling pressure on the opposite edges of the mailer set at the thumb notch locations, the pressure is not equally and simultaneously applied along

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all of the perforation lines. Rather, unequal, sequential forces are applied such that the perforated thumb notch bursts apart first and thereafter the interior ply perforation lines burst starting at the center of the perforated lines.

Brief Description of the Drawings

The foregoing objects and the summary will be more readily understood when read in conjunction with the accompanying drawings in which:

Figure 1 illustrates a mailer set having thumb notches on opposite edges thereof as representative of the prior art.

Figure 2 pictorially illustrates the herein proposed mailer set configuration in which the opposite thumb notches are shown in their preferred locations.

Figure 3 again pictorially illustrates the proposed mailer set wherein the front ply is peeled away to reveal the snap perforation lines located on one or more of the interior plies.

Figure 4 pictorially illustrates the front of an alternate embodiment to the mailer set configuration of FIG. 2 in which the thumb notch and gripper portion are shown in their preferred location.

Figure 5 pictorially illustrates the mailer set of FIG. 4 with a portion of the front ply peeled away and further illustrates the glue line beneath the front ply.

Figure 6 illustrates the mailer set of FIG. 4 with stubs attached to enable feeding through a user's printer.

Detailed Description of the Invention

The following detailed description will be more easily comprehended when it is read with reference to the foregoing drawings in which like reference numerals symbolize corresponding parts.

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Figure 1 pictorially illustrates the positioning of the thumb notches 12 and 14 on the mailer set 10 as representative of the prior art. When opposing forces are simultaneously applied to the mailer set 10 at thumb notches 12 and 14, the resulting force is equally distributed along the interior ply perforation 26 shown in Figure 3. Because of this equal force distribution, excessive force is needed to simultaneously burst apart the mailer set at the thumb notch 12 and the perforation line 26 (Figure 3) and many times the excessive force needed to accomplish this exceeds the tearing point of other areas of the mailer set which are not intended to be torn.

Figure 2 pictorially illustrates the preferred embodiment of the present invention. This mailer set 20 has opposing thumb notches 22 and 24 which are not directly across one from another. That is, they are positioned in an offset manner.

The opposed pulling pressures applied, in this instance, to thumb notches 22 and 24 obviously are not simultaneously and equally applied to the perforated thumb notch 22 and the perforated interior ply lines 26 (Figure 3).

Figure 3, which pictorially illustrates the mailer set, also shows the interior ply or plies 28 with their respective perforated snap lines 26. It accomplishes this by showing the mailer set with its front ply peeled back.

Again, considering a pair of opposing forces being applied to the thumb notches 22 and 24, the following bursting sequence occurs. First, the smaller perforated line around thumb notch 22 separates and thereafter the force is applied to the center of the perforated lines

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26 of the interior plies. In this manner, excessive opposing forces are not required and the potential for unwanted tearing is considerably reduced.

In summary, the prior art system has a thumb notch directly across from the snap perforation. This causes the user to attempt to break all of the perforation ties simultaneously. With the thumb notches offset, one from another, the perforation ties are broken in sequence starting with the ties adjacent to the second printed thumb notch and moving toward both corners of the inner ply or plies. This allows the interior plies to snap out much easier.

Fig. 4 shows an alternate embodiment of a mailer set 30 in accordance with the present invention. In this embodiment, a perforated line 50 extends vertically near the left end of the mailer set 30. The perforated line 50 perforates through the front and back outer plies 58,60 and also through all interior plies 38, the perforations through each ply being coincident with each other.

In the preferred embodiment, the interior ply or plies 38 extend to the left beyond the perforated line 50. However, those skilled in the art will appreciate that the length of the interior ply or plies 38 may be such that its left end does not extend beyond perforated line 50.

In the preferred embodiment, the outside plies 58,60 and interior ply or plies 38 (FIG. 5) are joined together by glue or other means at points to the left of perforated line 50. However, those skilled in the art will appreciate that in some applications such joining may be eliminated or unnecessary.

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The thumb notch 32 is formed by perforating the outside plies 58,60 along line 52, the perforated line on the back outer ply 60 (not shown) formed so as to be coincident with the perforated line 52 on the front outer ply 58. The inner ply or plies 38, is not perforated along line 52. In the preferred embodiment, the perforations along line 52 are nearly continuous. As will be explained below, the near continuous perforations on line 52 are used to assure that the perforated sections 32 of the front and back plies 58,60 tear out when end strip 36 is removed.

In the production of the preferred embodiment, manufacturing efficiencies normally require that the section of the perforated line 50 between the two points where line 52 intersects with line 50 be perforated through both the front and back outer plies 58,60 as well as through interior ply or plies 38. However, if manufacturing efficiency is not a prime concern, it may be more desirous not to perforate the front and back outer plies 58,60 along the section of line 50 between the two points where line 50 intersects with line 52. In either case, in the present embodiment the perforations along line 50 are less continuous than those along perforated line 52.

Still referring to FIG. 4, a gripping section 34 on the right hand side of the front outer ply 58 is designated by printed line 54. Line 54 is not perforated. A coincident gripping section (not shown) may optionally be printed on the back outer ply 60 to enable a user to extract the inner plies 38 while viewing the back outer surface 60 of the mailer set 30.

FIG. 5 shows the mailer set 30 of FIG. 4 with a portion of the front outer ply 58 peeled away along

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line 74. In the preferred embodiment, the front and back outer plies 58,60 are joined together along their top and bottom edges by glue lines 42 and 44. Glue lines 42,44 extend horizontally from a point starting at or just inboard of line 50 to a point to the right of perforated line 40. The top and bottom edges of the interior ply or plies 38 do not extend vertically to the glue lines 42,44 so that the inner ply or plies 38 are not joined to the front or back outer plies 58,60 at the top or bottom between lines 50 and glue line 46.

A line of glue 46 between the front outer ply 58 and the top inner ply connects the right hand sides of the front outer 58 and top inner ply. A coincident glue line (not shown) connects the right hand side of the top surface of the back outer ply 60 and the bottom surface of the adjacent inner ply. If there are multiple inner plies, similar adhesive means (not shown) are provided to interconnect the adjoining inner plies along their right ends.

In the preferred embodiment, the glue lines 46 and the adhesive means do not extend to the right hand edge of the mailer set 30. However, those skilled in the art will appreciate that the glue line 46 and the adhesive means may be extended up to the right hand edge of the mailer set 30 shown in FIGS. 4 and 5.

Still referring to FIG. 5, located adjacent to and inboard of the left hand edge of glue line 46 is another vertical perforated line 40. The perforations of line 40 pass through the interior ply or plies 38, but do not pass through the outer plies 58,60. The perforations in line 40 are approximately as continuous as those in line 52, but are more continuous than those in line 50.

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Thus, in effect, perforated lines 40 and 52 are weaker than perforated line 50.

Also shown in FIG. 5 is arcuate broken line 48. This line 48 does not represent any actual printed or perforated line included in the preferred embodiment of the mailer set 30. Instead, as will be explained below, this line 48 merely indicates where the bursting will start when the inner ply or plies 38 removed from the mailer set 30.

In the preferred embodiment, the perforated left hand thumb notch 32 is vertically offset with respect to the gripping portion 34 on the right hand side. More particularly, the left hand thumb notch 32 is positioned between the center and the top of perforated line 50 and the right hand gripping portion 34 is positioned at the approximate center of the right hand edge of the mailer set 30.

With the construction of mailer set 30 now understood, the procedure that a user follows to extract the interior ply or plies 38 will now be explained.

The user first tears off end strip 36 along perforated line 50. This causes the end sections of the front and back exterior plies 58,60 and the end section of the interior ply or plies 38 to be removed from the mailer set 30 in one operation. The notched sections 32 of the front and back outer plies 58,60 tear off along with the end strip 36 due to the relative weakness of perforated line 52. Since the inner ply or plies 38 is not perforated along line 52, when the end strip 36 is torn off, the inner ply or plies will be severed only along line 50.

After tearing off end section 36, the left hand edges of the inner ply 38 and outer plies 58,60 of the body

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of the mailer set 30 are in alignment with each other except between the ends of line 52 where the notched section 32 of the outer plies 58,60 (but not the inner ply or plies 38) have been torn away. Further the left hand edges of the inner 38 and outer 58,60 plies of the body of the mailer set 30 are no longer attached to each other except where the glue lines 42,44 intersect the left hand end of the mailer set 30 body.

Assuming that the notched sections 52 of the outer plies 58,60 have been torn away with the end section 36, the removal operation proceeds as follows.

The user grasps gripping section 34 between the fingers of one of his hands and grasps the inner ply or plies with the fingers of his other hand in the area 32 circumscribed by line 52, the notched sections 32 of the outer plies 58,60 having already been removed. The user then snaps the grasped sections in opposite directions as indicated by the arrows, causing the inner ply or plies 38 to separate from the right hand end 56 of the mailer set 30 along perforated line 40. After separating at line 40, the continued application of the opposing forces results in the inner ply or plies 38 being removed from the mailer set 30.

The fact that the notched sections 32 and gripping portion 34 are offset allows for easier removal of the inner ply or plies 38 and substantially diminishes the probability that the inner ply or plies 38 will be torn away along lines other than perforated line 40.

In prior art systems where the notched section 32 and the gripping section 34 were located opposite each other with respect to their vertical position, the pulling forces applied in removing the inner ply or plies 38 had the effect of attempting to simultaneously break

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the entire perforated line 40 at the same time. This resulted in an inability to predict which section of the perforated line 40 would burst first or whether the bursting would even be along the perforated line 40.

In the improved system of the present invention, the opposing pulling forces are not simultaneously applied along all sections of perforated line 40. The effect of having notched section 32 and gripping portion 34 offset appears to cause maximum tension to be applied between the two gripped positions. Thus, experiments with the mailer set of FIG. 4 indicate that the inner ply or plies initially burst away at the approximate center of perforated line 40. This is shown by line 48 which illustrates the right hand edge of the inner ply or plies 38 partially separated along perforated line 40 after initially reaching the required bursting force. The continued application of the opposing forces causes the inner ply or plies 38 to continue to separate in both upward and downward directions away from the center of and along perforated line 40.

Although not mentioned in the description up to this point, the mailer sets shown are manufactured with printing stubs 62, 64 attached thereto. Thus stubs 62, 64 allow the forms to be fed through a user's printer mechanism by means of feeder holes 66.

In the preferred embodiment, the inner and outer plies 38, 58, 60 extend beyond the ends shown in FIGS. 4 and 5 to form stubs 62 and 64 which are perforated through all plies along lines 68 and 70. The glue lines 42, 44 do not extend into the stubs 62, 64, the plies of the stubs being held together by punched perforations 72. After the mailer set 30 has gone through a user's printer mechanism where the billing or other information

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is printed and before the mailer set 30 is mailed, stubs 62, 64 may be torn off, thus leaving the mailer set shown and described in FIGS. 4 and 5.

It will be understood from the foregoing description that various modifications and changes may be made in the preferred embodiment without departing from the spirit of the invention. It is intended that this description is for purposes of illustration only and should not be construed in a limiting sense. The scope of this invention should be limited only by the language of the following claims.

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What is claimed is:

1. A mailer set comprising:

a front outer ply and a back outer ply;

one or more interior plies positioned in between said front outer ply and said back outer ply;

said interior plies and said outer plies attached together along the edge of a first end thereof;

each of said interior plies having a first perforated line extending adjacent to and inboard of said first end edge attachment;

each of said interior and outer plies having a second perforated line extending adjacent to and inboard the second end thereof; and

a perforated thumb notch, a portion of said thumb notch formed from a section of said second perforated line, the perforations in that said section of the second perforated line being less continuous than the perforations in the remainder of the perforated thumb notch.

2. The mailer set in accordance with claim 1 wherein the remainder of said perforated thumb notch is located inboard of said second perforated line.

3. The mailer set in accordance with claim 2 wherein the perforations in the second perforated line are less continuous than the perforations in the remainder of the perforated thumb notch.

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4. The mailer set in accordance with Claim 2 further including a gripping portion on said front outer ply, said gripping portion and said perforated thumb notch vertically offset from one another.

5. The mailer set in accordance with claim 4 wherein said gripping portion is located outboard of said first perforated line.

6. The mailer set in accordance with claim 5 wherein said gripping portion is positioned vertically in the approximate center of the edge along the first end of said mailer set.

7. The mailer set in accordance with claim 6 wherein said perforated thumb notch is positioned vertically in between the center and top of the second end of said mailer set.

8. The mailer set in accordance with claim 6 wherein said perforated thumb notch is positioned vertically in between the center and bottom of the second end of said mailer set.

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9. The mailer set in accordance with claim 2 wherein the perforations in the remainder of the perforated thumb notch perforates only the front and back outer plies.

10. The mailer set in accordance with claim 2 wherein the perforations in that said section of the second perforated line perforates only the interior plies.

11. The mailer set in accordance with claim 9 further including a gripping portion on said front outer ply, said gripping portion and said perforated thumb notch vertically offset from one another.

12. The mailer set in accordance with claim 11 wherein said gripping portion is located outboard of said first perforated line.

13. The mailer set in accordance with claim 12 wherein said gripping portion is positioned vertically in the approximate center of the edge along the first end of said mailer set.

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14. The mailer set in accordance with claim 13 wherein said perforated thumb notch is positioned vertically in between the center and top of the second end of said mailer set.

15. The mailer set in accordance with claim 13 wherein said perforated thumb notch is positioned vertically in between the center and bottom of the second end of said mailer set.

16. The mailer set in accordance with claim 9 wherein the height of said interior plies is less than the height of said outer plies, said interior plies vertically positioned between the top and bottom edges of said outer plies, the surfaces of the top and bottom edges of said outer plies adjacent to said interior plies connected to each other.

17. The mailer set in accordance with claim 9 wherein said interior plies and said outer plies are attached to each other along the edge of the first end of said mailer set.

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18. The mailer set in accordance with claim 9 wherein said interior plies and said outer plies are attached together along the edge of the second end of said mailer set outboard said second perforated line.

19. The mailer set in accordance with claim 9 wherein the perforations in said first perforated line are more continuous than the perforations in said second perforated line.

20. The mailer set in accordance with claim 19 wherein the continuity of perforations of the first perforated line is the same as that of the remainder of the perforated thumb notch.

21. The mailer set in accordance with claim 19 further including a gripping portion indicated on said front outer ply, said gripping portion and said perforated thumb notch vertically offset from one another.

22. The mailer set in accordance with claim 21 wherein said gripping portion is located outboard of said first perforated line.

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23. The mailer set in accordance with claim 22 wherein said gripping portion is positioned vertically in the approximate center of the edge along the first end of said mailer set.

24. The mailer set in accordance with claim 23 wherein said perforated thumb notch is positioned vertically in between the center and top of the second end of said mailer set.

25. The mailer set in accordance with claim 23 wherein said perforated thumb notch is positioned vertically in between the center and bottom of the second end of said mailer set.

26. The mailer set in accordance with claim 2 wherein the mailer set is fabricated from a light weight paper stock.

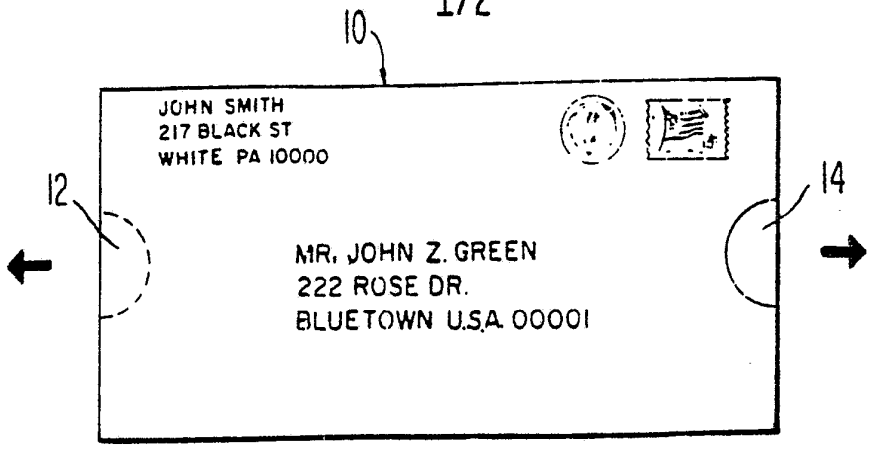
27. The mailer set in accordance with claim 5 wherein said gripping portion includes an outlined area printed on said front outer ply.

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28. The mailer set in accordance with claim 12 wherein said gripping portion includes an outlined area printed on said front outer ply.

29. The mailer set in accordance with claim 22 wherein said gripping portion includes an outlined area printed on said front outer ply.

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PRIOR ART

Fig.1.

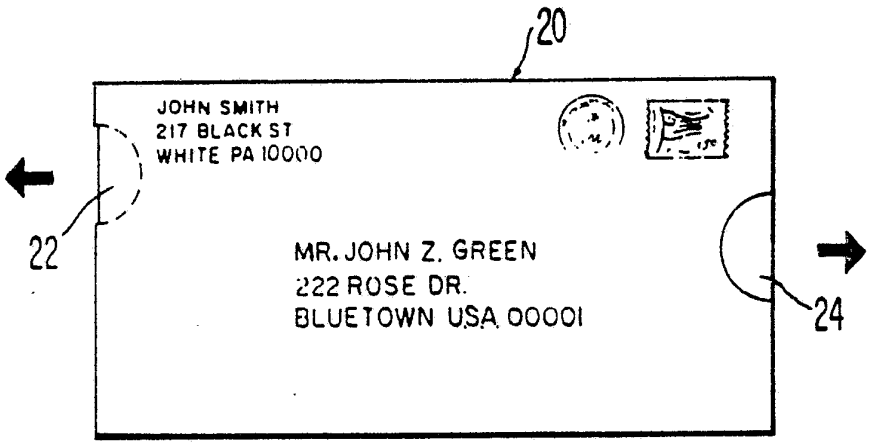


Fig.2.

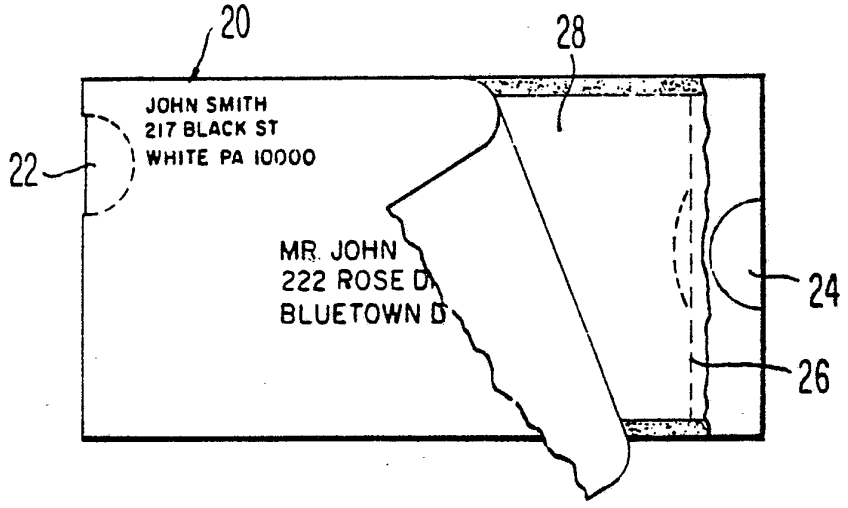


Fig.3.

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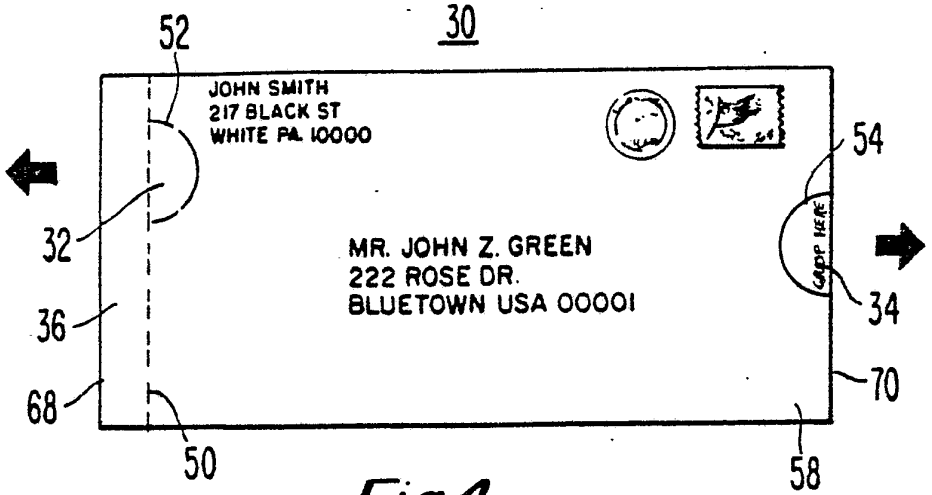


Fig.4

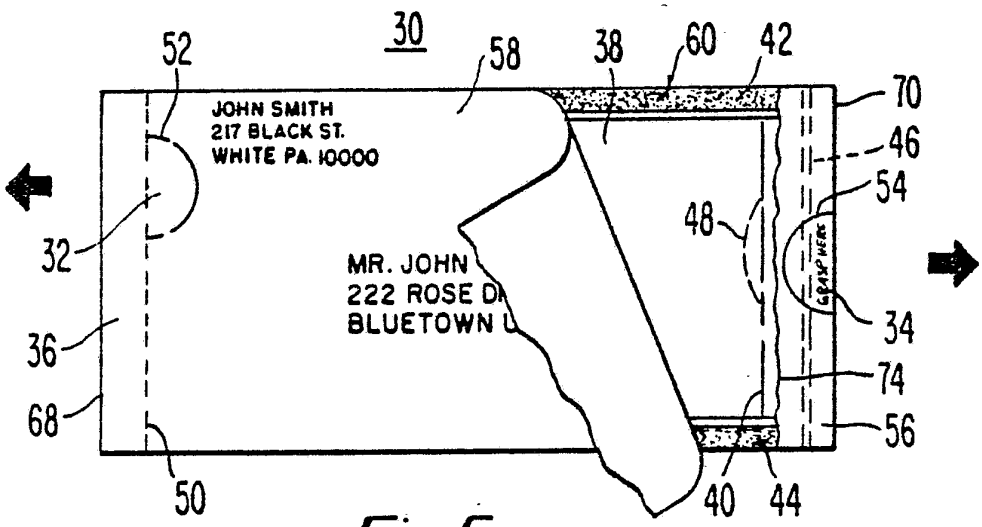


Fig.5

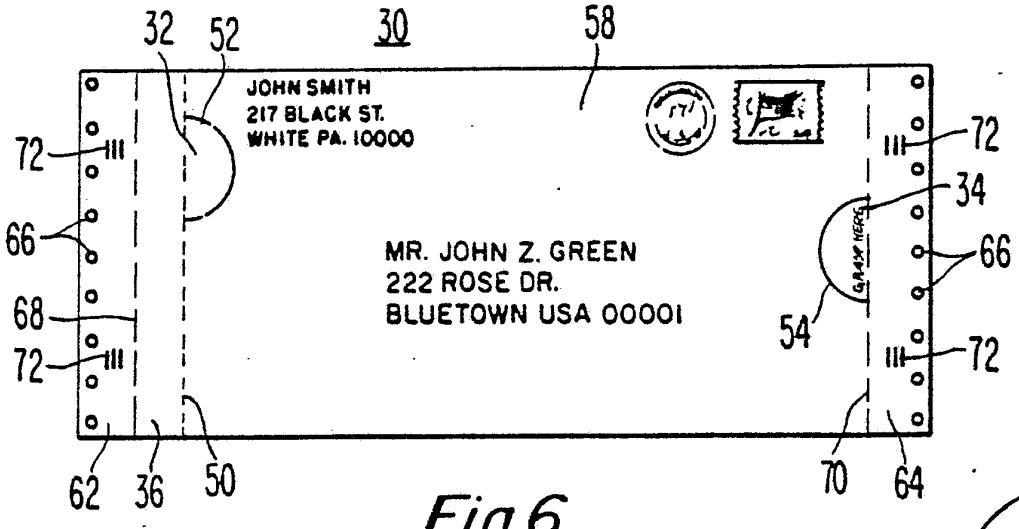


Fig.6

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INTERNATIONAL SEARCH REPORT

International Application No PCT/US83/00202

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC

Int. Cl.[3] B65D 27/34
U.S. Cl. 206/610

II. FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System	Classification Symbols
U.S.	206/610; 229/69; 282/25

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [5]

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
X	US, A 3,902,655 Published 2 September 1975, See Figs. 9-14, Huffman	All
X	CA, A 790,434 Published 23 July 1968, Dorrow	All
X	US, A 1,951,955 Published 20 March 1934, Wilde	4-8, 11-15, 21-25
Y	US, A 3,608,816 Published 20 June 1969, Neubauer	27-29
&	US, A 3,554,438 Published 24 June 1968, Van Malderghem	
&	US, A 3,823,867 Published 16 July 1974, D'Luhy et al.	
&	US, A, 3,841,549 Published 15 October 1974, Wakeman	

* Special categories of cited documents: [15]

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search [2]	Date of Mailing of this International Search Report [2]
15 April 1983	25 MAY 1983
International Searching Authority [1]	Signature of Authorized Officer [20]
ISA/US	Stephen P. Jach