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(19) **United States**

(12) **Reissued Patent**

Warther

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(54) **INTEGRAL PRINTED SELF-MAILER SHEET PRODUCTS**

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(73) Assignee: **Vanguard Identification Systems, Inc.**, West Chester, PA (US)

(21) Appl. No.: **10/040,107**

(22) Filed: **Jan. 4, 2002**

Related U.S. Patent Documents

Reissue of:

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Issued: **Jan. 4, 2000**
Appl. No.: **09/067,090**
Filed: **Apr. 27, 1998**

U.S. Applications:

(63) Continuation-in-part of application No. 08/724,077, filed on Sep. 30, 1996, now Pat. No. 5,743,567.

(51) **Int. Cl.**
B42D 15/00 (2006.01)
B32B 9/00

(52) **U.S. Cl.** **283/61**; 283/62; 283/81

(58) **Field of Classification Search** 283/61, 283/62, 116, 81, 82, 83, 56, 51, 74, 75, 904; 462/64, 65; 428/42.2, 42.3, 43; 40/299, 638
See application file for complete search history.

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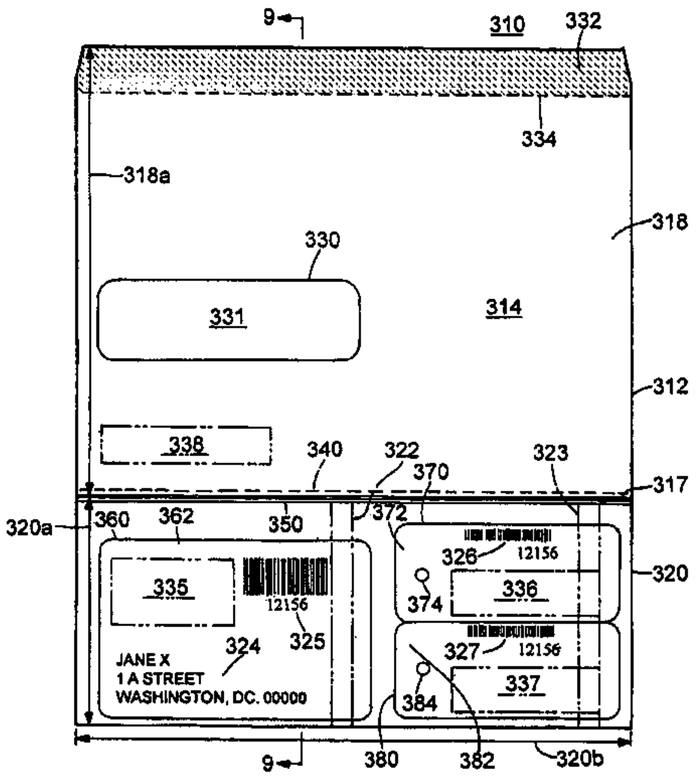
(Continued)

Primary Examiner—Willmon Fridie
(74) *Attorney, Agent, or Firm*—Panitch Schwarze Belisario & Nadel LLP

(57) **ABSTRACT**

An integral printed self-mailer sheet product has a generally planar core formed by first and second core strips of different materials permanently joined together side-by-side by a cover strip. A plurality of variable data fields are printed on the core including at least the name and address of an individual person in a character format and a unique numeric code assigned to the individual person in a machine readable format. Scoring extends through the sheet product in the second core strip to define at least one and typically plural printed element(s) removable from a remainder of the sheet product, each including at least one of the printed variable data fields. The first core strip has a width in a direction perpendicular to the joint greater than and preferably at least twice the width of the second core strip in the same direction so as to completely wrap around the second core strip. The unique name and address may be printed on the first core strip and exposed on the outside of the completed mailer or printed on the second core strip and exposed through a window scored through the first core strip. If printed on the second core strip, the name and address may be included as part of a removable printed element scored in the second core strip. At least one and usually two transparent cover strips are bonded to the second core strip overlapping the outer sides of the scored, removable printed elements.

40 Claims, 8 Drawing Sheets



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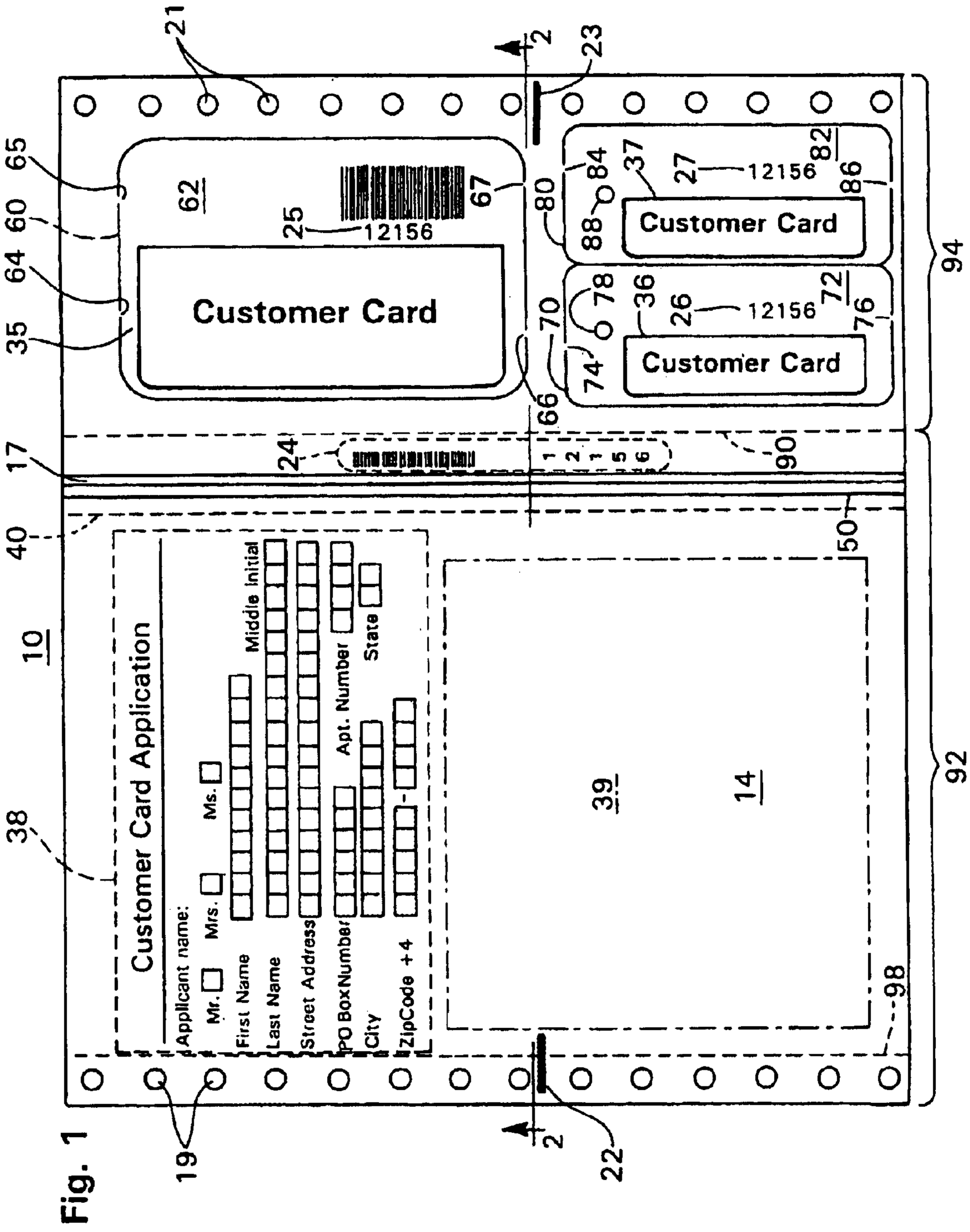
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94
78
70
74
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26
12156
72
76
Customer Card
66
17
24
90
40
10
38
50
39
14
92
Customer Card Application
Applicant name:
Mr.
Mrs.
Ms.
First Name
Middle Initial
Last Name
Street Address
PO Box Number
Apt. Number
City
State
ZipCode +4
98
19
2
22

Fig. 1

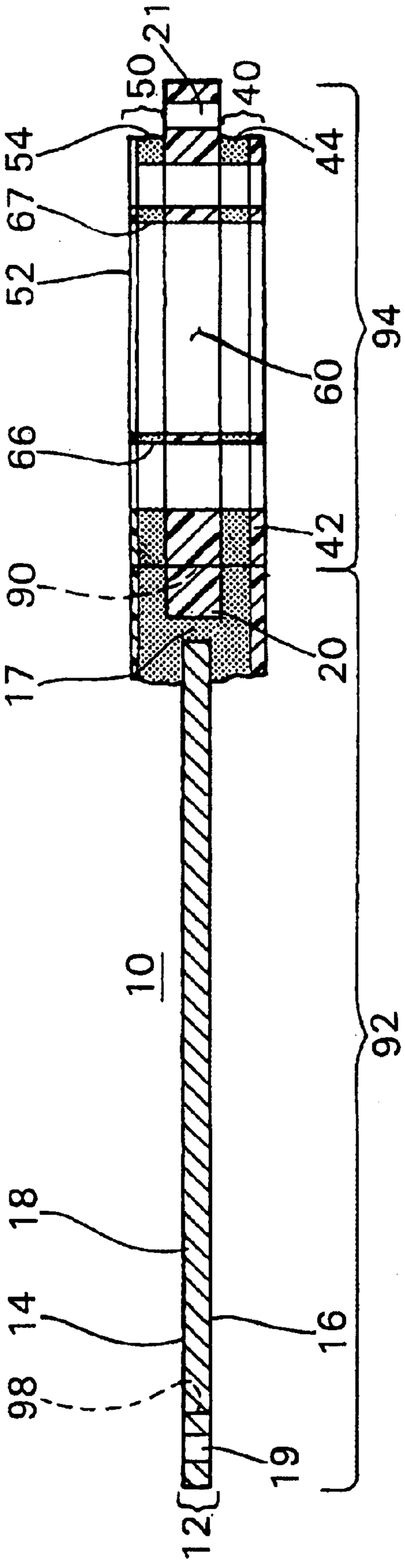
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Fig. 2

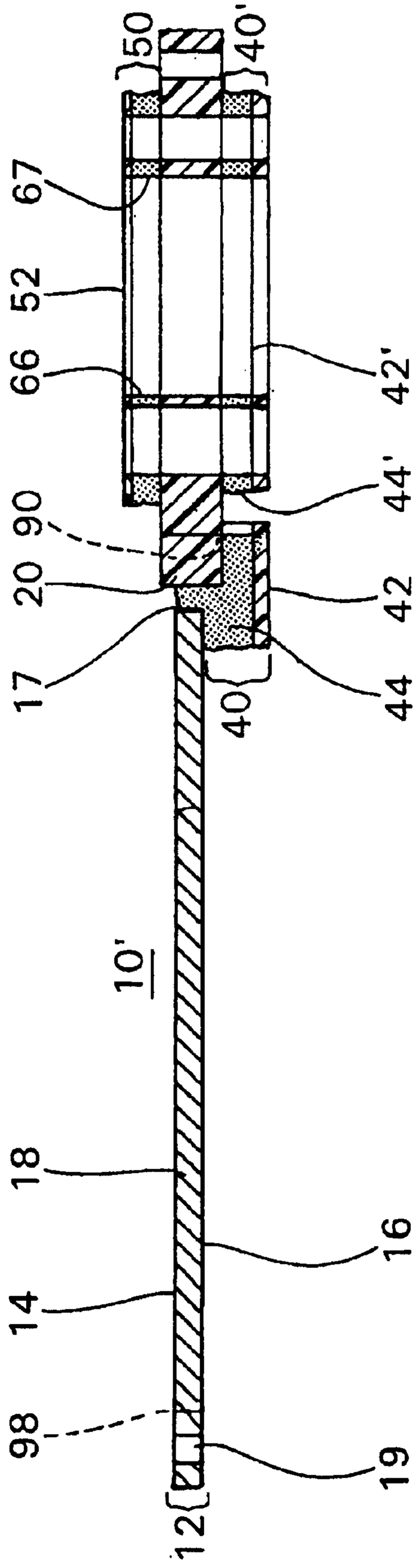
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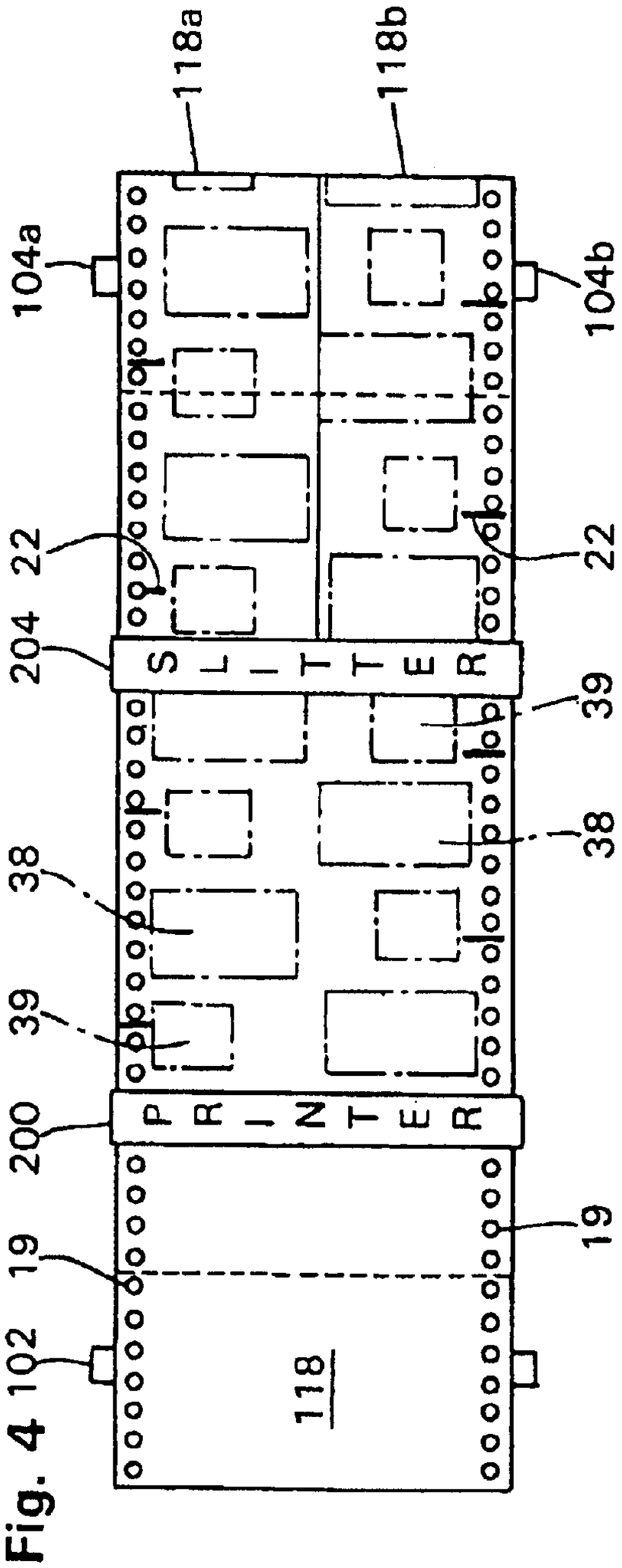
Fig. 3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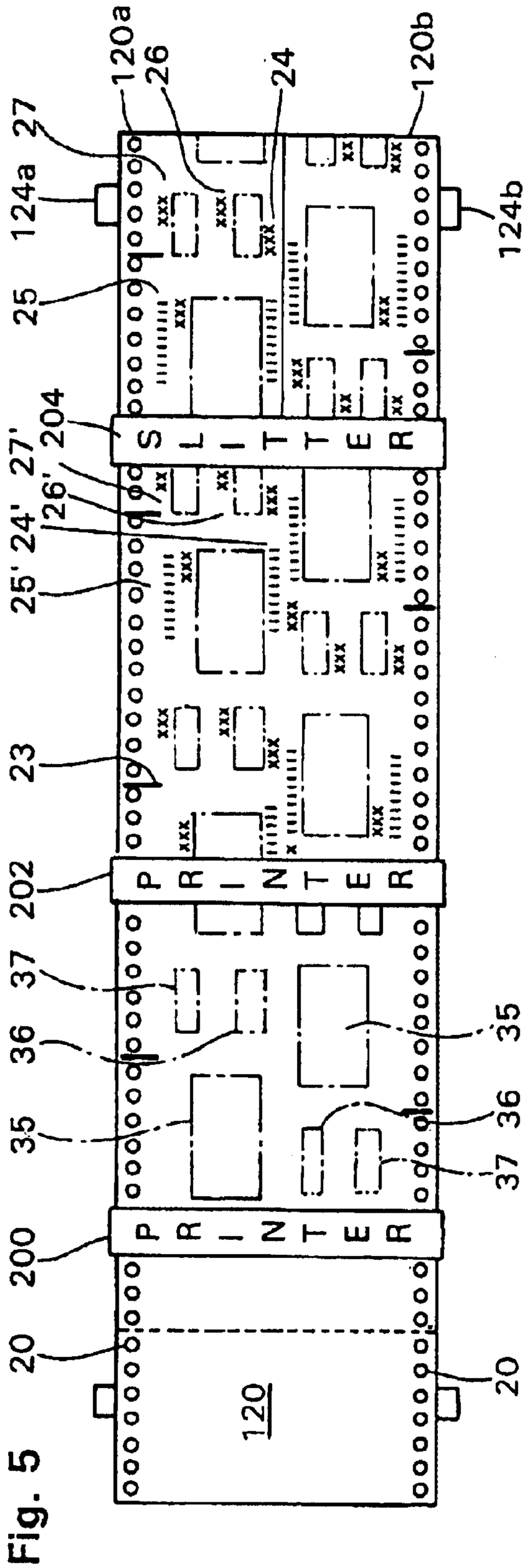
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202
PRINTER
37
36
35
200
20
120

Fig. 5

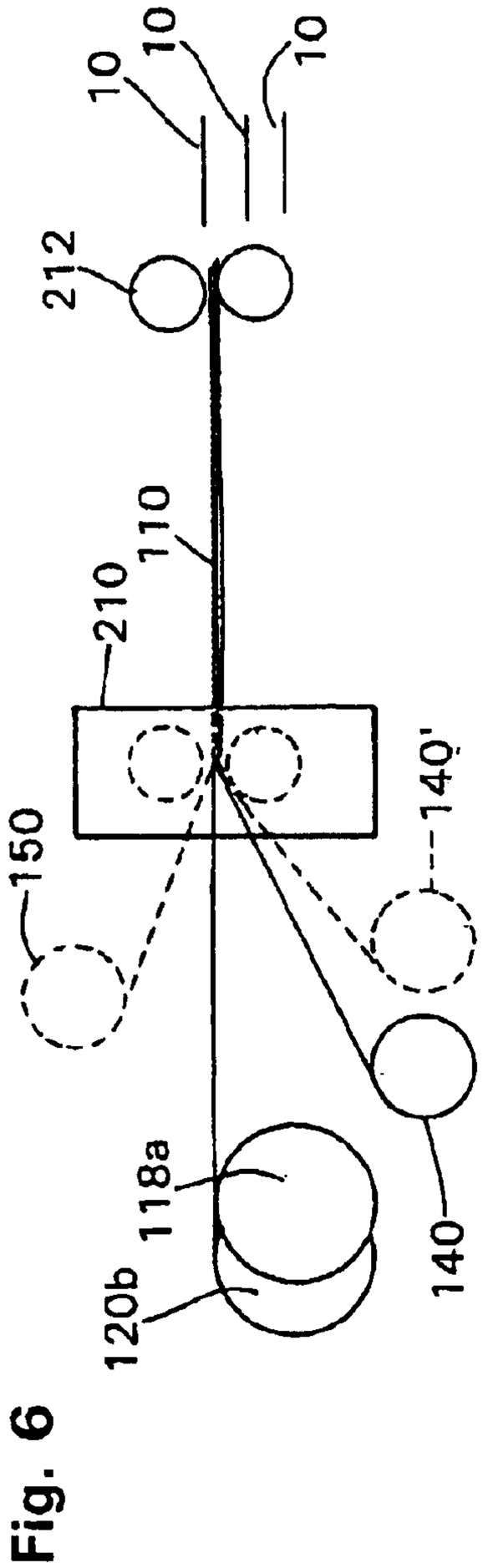
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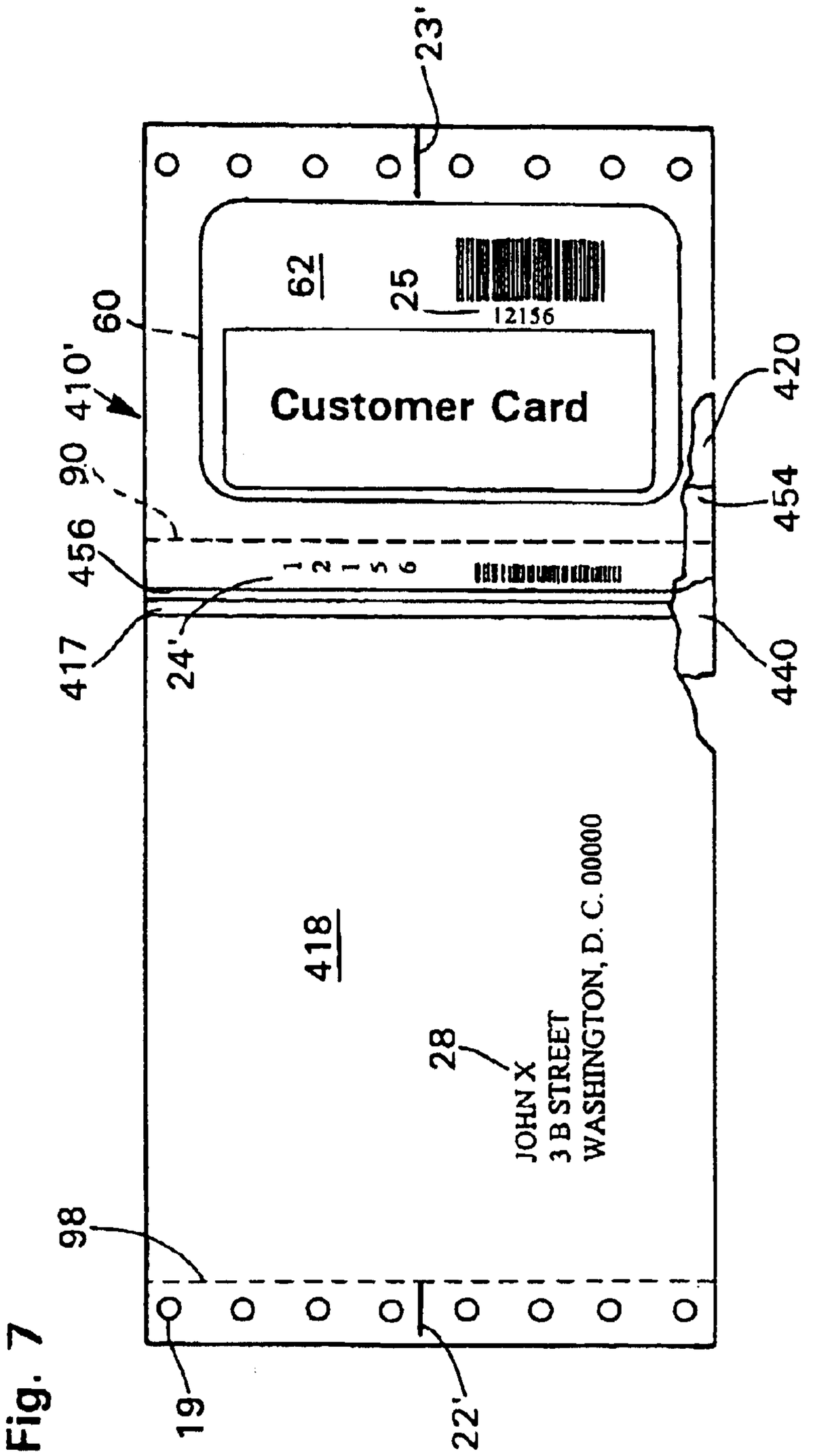
Fig. 6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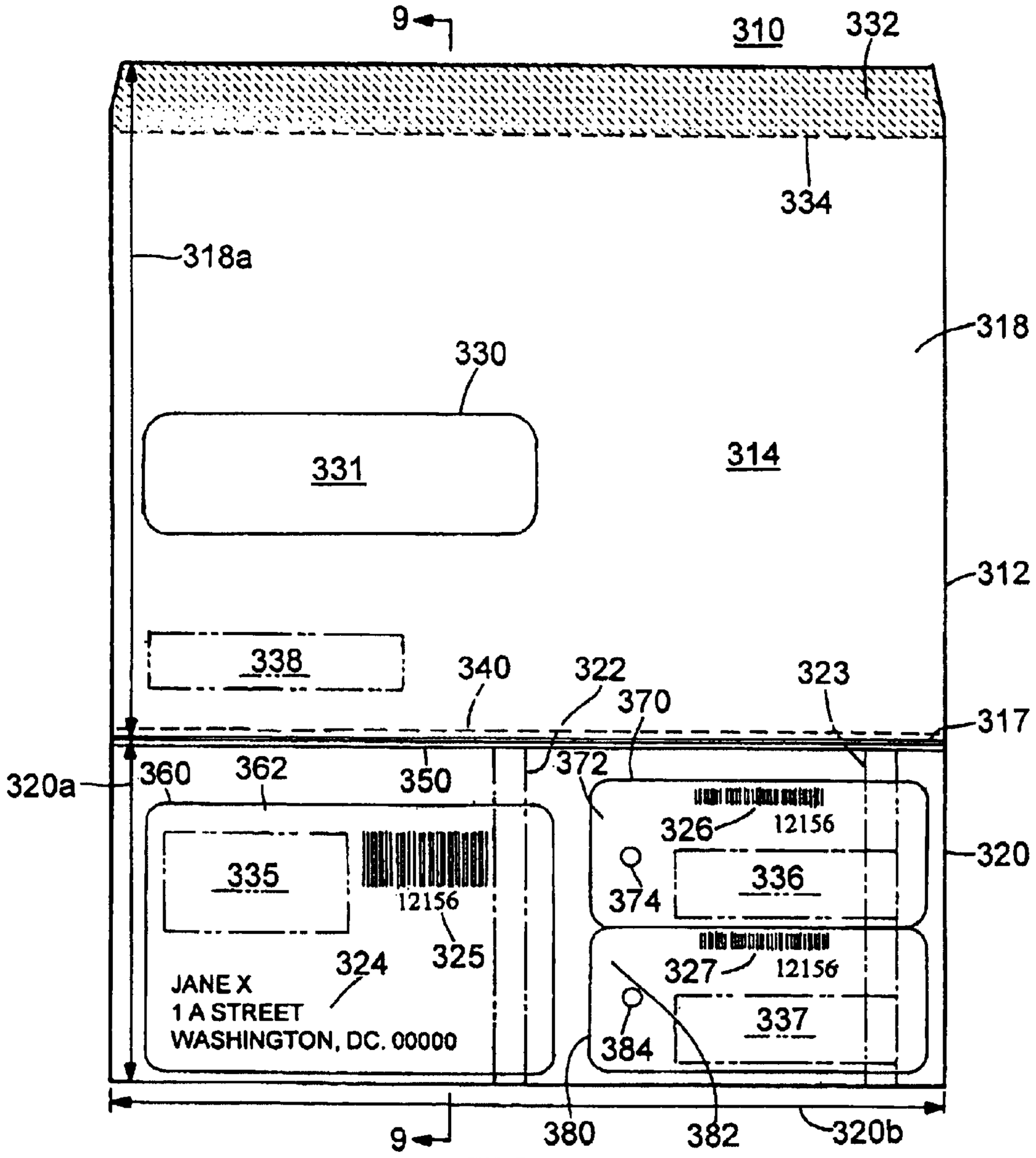
JOHN X
3 B STREET
WASHINGTON, D. C. 00000
98
19
22'

Fig. 7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335
12156
326
12156
336
374
320
324
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JANE X
1 A STREET
WASHINGTON, DC. 00000
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320b

FIG. 8

FIG. 9

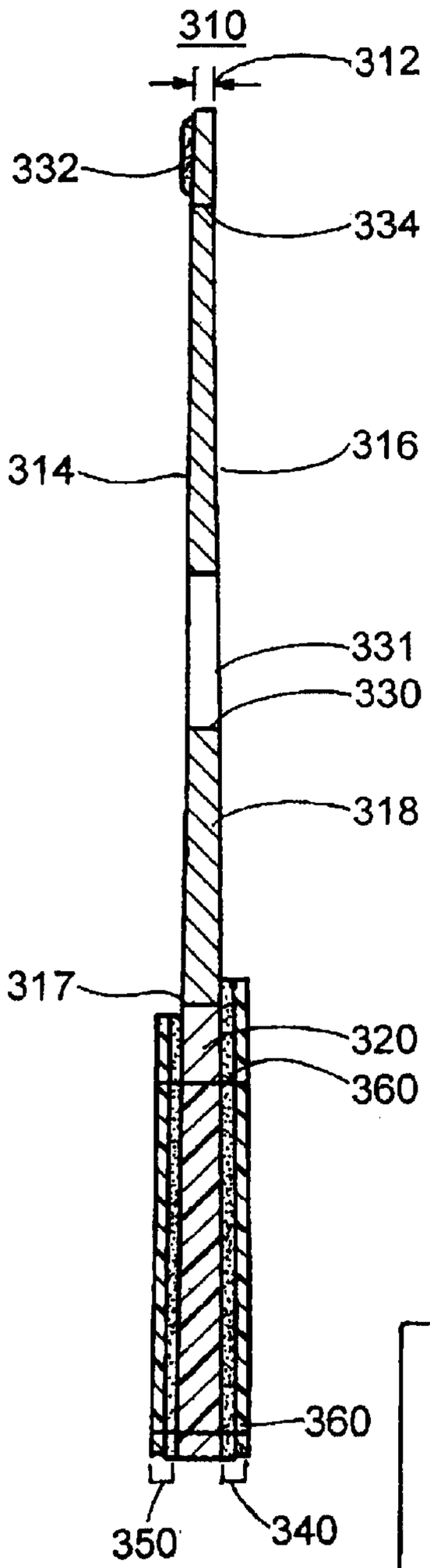
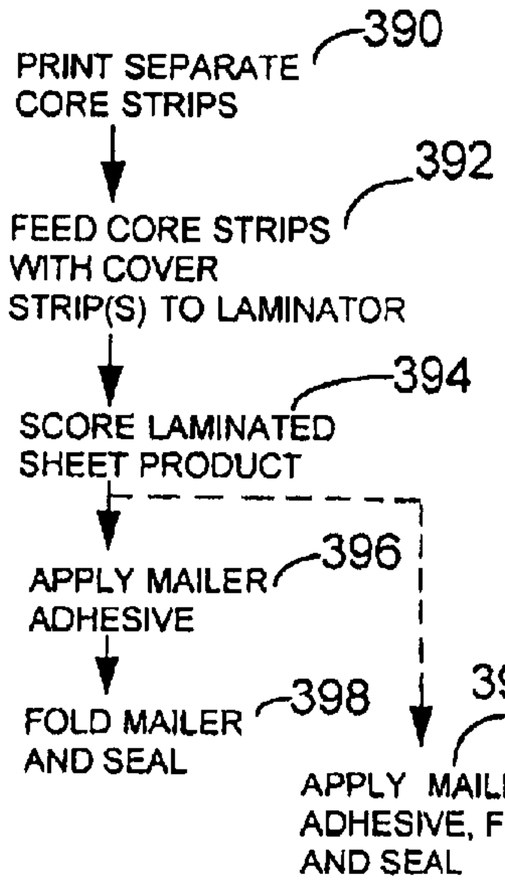


FIG. 10



Amended FIG. 13

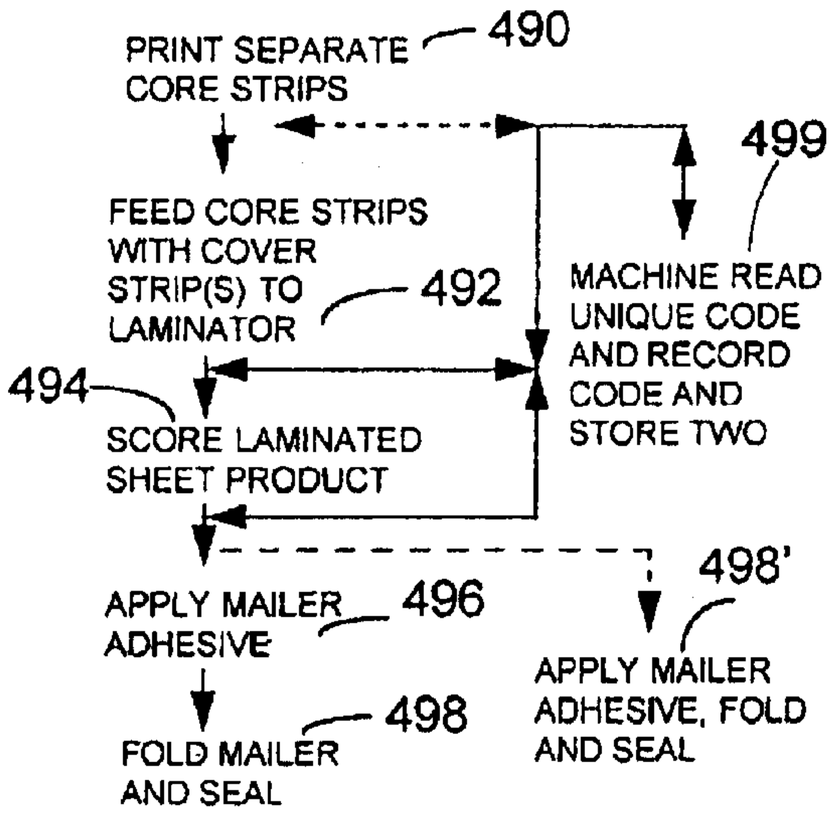
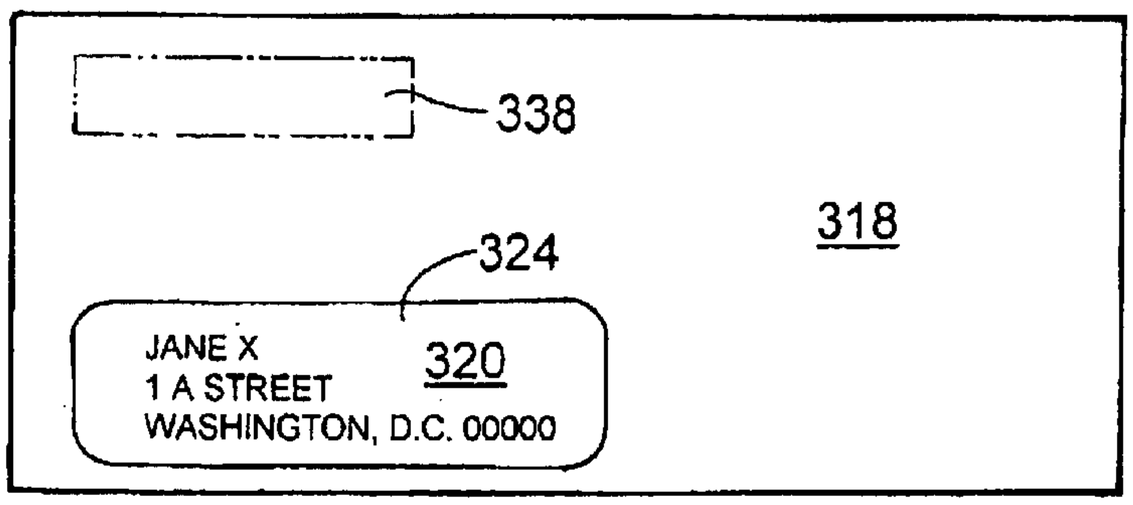
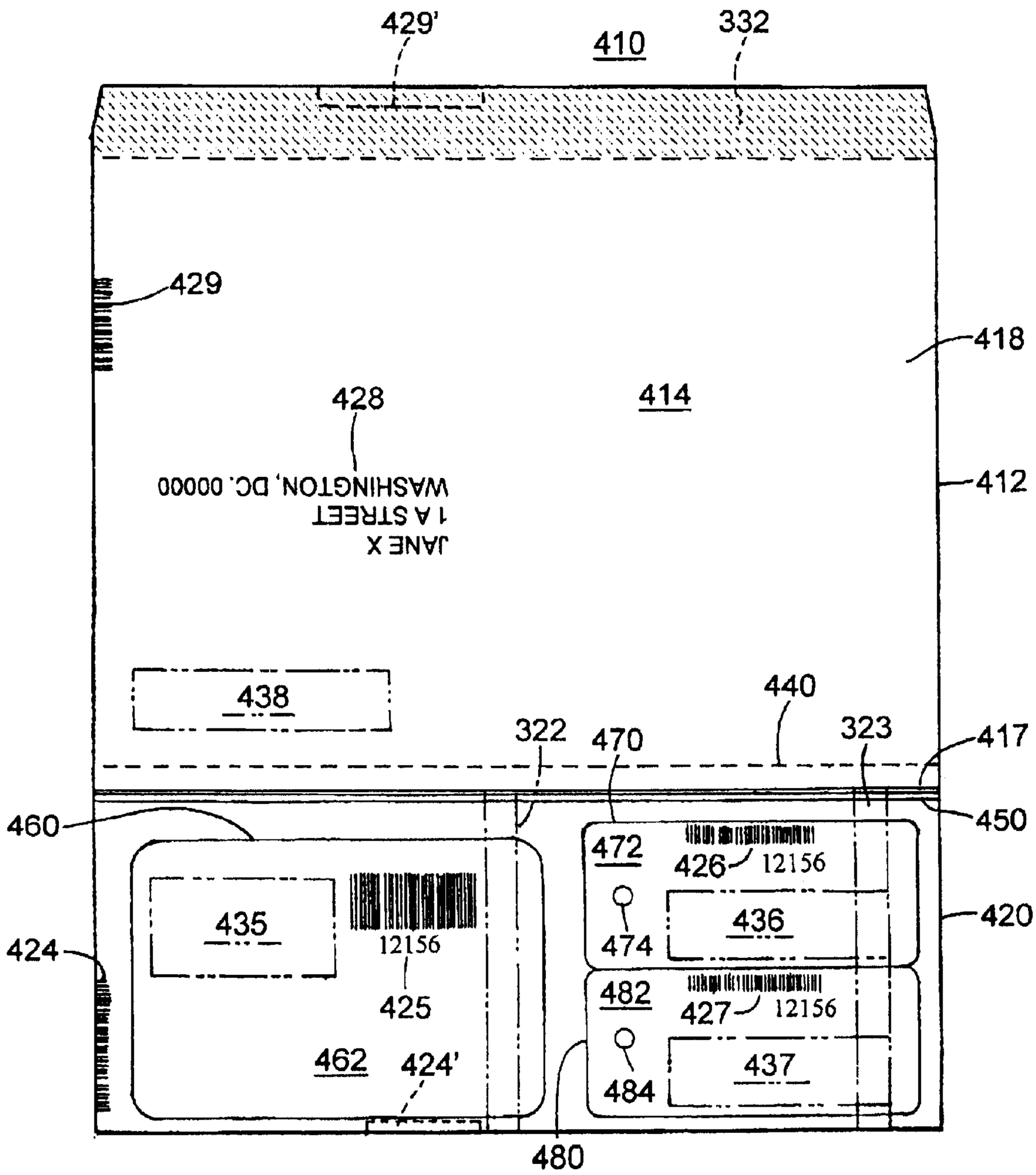
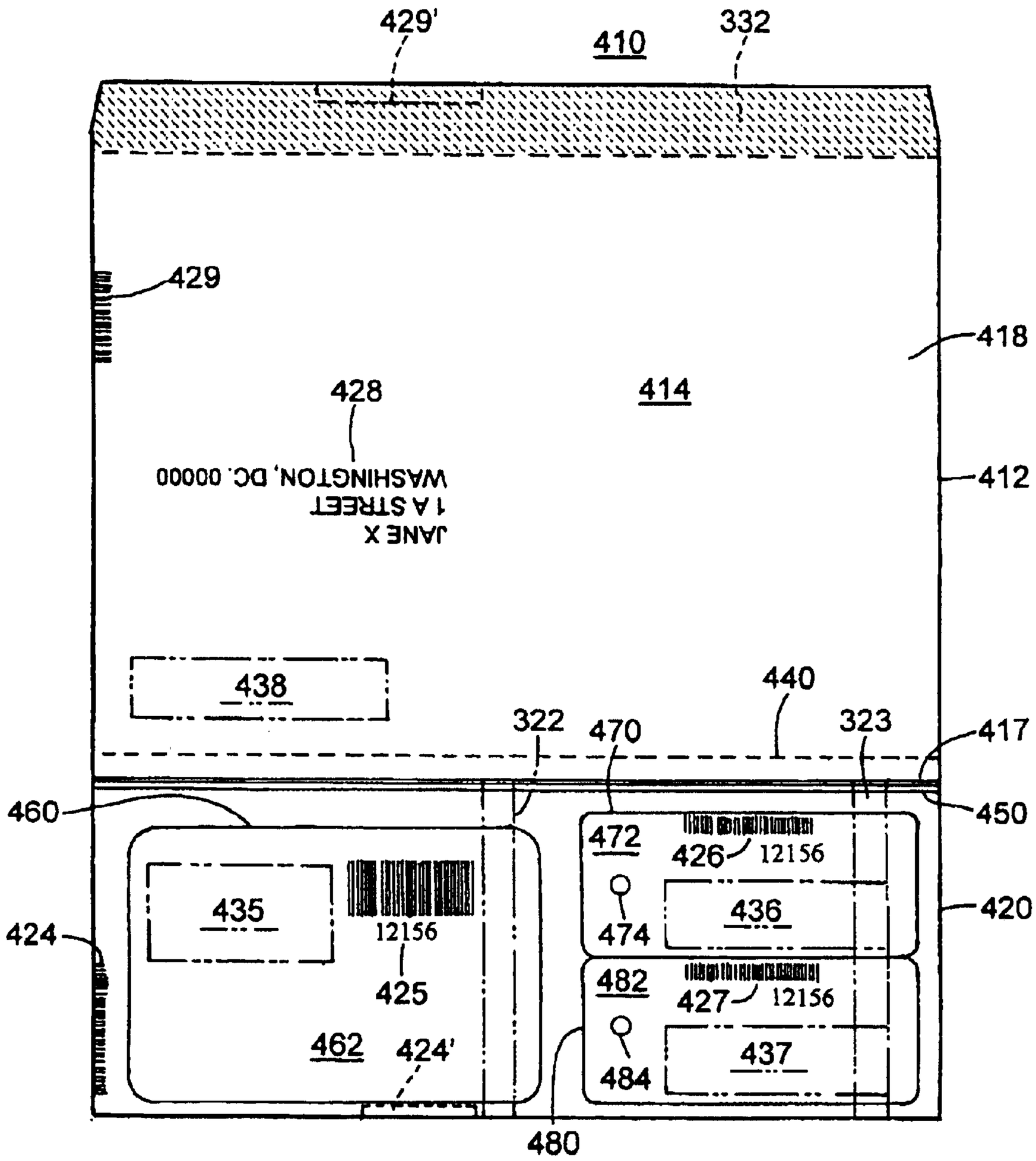


FIG. 11





Amended FIG. 12


429'
410
332
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418
428
414
JANE X
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WASHINGTON, DC. 00000
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323
417
460
450
472
426
12156
435
436
420
424
12156
474
425
482
427
12156
462
424'
437
484
480

FIG. 13

INTEGRAL PRINTED SELF-MAILER SHEET PRODUCTS

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

RELATED APPLICATION(S)

This application is a continuation-in-part of U.S. application Ser. No. 08/724,077 filed Sep. 30, 1996, now U.S. Pat. No. 5,743,567 *and U.S. application Ser. No. 08/911,806, filed Aug. 15, 1997, now U.S. Pat. No. 5,863,076.*

BACKGROUND of THE INVENTION

The present invention relates to sheet products and, in particular, to printed mailers, particularly those in the form of sheet products with sets of uniquely encoded transaction cards, tags, labels and/or other removable printed elements.

A substantial market has developed in recent years for inexpensively manufactured, individually encoded transaction cards for such uses as store credit cards, membership cards, I.D. cards, etc. Such cards typically bear a unique code in a bar code format to permit automatic machine scanning of the codes. Such cards typically were supplied in sheets of multiple sets with one or more labels, adhesive tags, etc. being supplied with each set and bearing the same individual code number as the transaction elements for attachment to separate application forms, membership lists, etc.

U.S. Pat. No. 4,978,146 discloses, among other things, a printed sheet product including multiple, removable, transaction cards, which each bear a unique code in both machine readable format (e.g. bar code) as well as conventional human readable characters and adhesive labels printed on and cut from the same sheet and the same material of the sheet forming the core of the transaction cards. An adhesive backing is provided along the sheet underlying the labels so that the labels can be removed and attached to an application form, a membership list, or other record bearing information identifying the recipient of the transaction card(s). The core of the single sheet would be printed with the unique codes of each transaction element and label in one pass, thereby ensuring complete integrity between the codes of each card and each adjoining label.

In addition to distributing these transaction cards at point of sale locations, they have been distributed by mail. U.S. Pat. No. 5,495,981 discloses the manufacturer of such cards and key tag elements in mailer insert form, several of which can be simultaneously made in a larger sheet and then cut from the sheet and individually tipped into conventional business envelopes with windows. In such mailers, the person to whom the uniquely encoded card is being provided is printed with the unique code assigned to that individual at the same time while the mailers are being created to insure 100% integrity. To reduce costs, the mailer inserts can be made from two different materials and joined together by lamination.

SUMMARY OF THE INVENTION

In one aspect the invention is an integral printed self-mailer sheet product comprising: a generally planar core having first and second opposing major planar sides, the core being formed by first and second core strips of different materials positioned side-by-side, the planar core being

printed on its major sides with a plurality of variable data fields, at least a first variable data field being printed with a name and address of an individual person and at least a second variable data field being printed with a unique numeric code in a machine readable format assigned the individual person, at least two of the plurality of variable data fields being printed on the second core strip; a first cover strip permanently fixed to one major side of each of the first and second core strips irremovably holding adjoining ends of the first and second core strips together in a joint to define the generally planar core, the first cover strip only partially covering one major side of the first core strip and at least partially covering one major side of the second core strip; scoring extending at least sufficiently through the sheet product in the second core strip to define at least a first printed element removable from a remainder of the sheet product, the first removable printed element including only a portion of the second core strip bearing at least one of the at least two variable data fields printed on the second core strip; the second core strip having a width in a direction perpendicular to the joint between the first and second core strips and a length in direction parallel to the joint; and the first core strip having a width in a direction perpendicular to the joint at least twice as great as the width of the second core strip.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing summary, as well as the following detailed description of preferred embodiments of the invention, will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there is shown in the drawings embodiments which are presently preferred. It should be understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown. In the drawings which are diagrammatic:

FIG. **1** is a first major planar side of a first embodiment individual printed sheet product of the invention;

FIG. **2** is a cross section taken along the lines **2**—**2** in FIG. **1**;

FIG. **3** is a cross section like that of FIG. **2** of another sheet product of the present invention;

FIG. **4** depicts manufacture of a portion of a continuous length of a first printed sheet material;

FIG. **5** depicts manufacture of a portion of a continuous length of a second printed sheet material;

FIG. **6** depicts manufacture of a plurality of the sheet products of the present invention using the printed sheet materials of FIGS. **4** and **5**;

FIG. **7** depicts another individual sheet product of the present invention;

FIG. **8** is a plan view of a first integral printed self-mailer sheet product of the present invention;

FIG. **9** is a cross-sectional view taken along the lines **9**—**9** in FIG. **8**;

FIG. **10** is a block diagram of one possible set of steps for fabricating the sheet product of FIGS. **8** and **9**;

FIG. **11** is a front elevation of the mailer made with the sheet product of FIGS. **8**–**9**;

FIG. **12** is a plan view of a second integral printed self-mailer sheet product of the present invention; and

FIG. **13** is a block diagram of one possible set of steps for fabricating the sheet product of FIG. **12**.

DETAILED DESCRIPTION OF EMBODIMENTS

Certain terminology is used in the following description for convenience only and is not limiting. The words "right,"

"left," "lower" and "upper" designate directions in the drawings to which reference is made. The words "inwardly" and "outwardly" refer to directions toward and away from, respectively, the geometric center of the and designated parts thereof. The terminology includes the words above specifically mentioned, derivatives thereof and words of similar import. U.S. patent application Ser. No. 08/482,634, filed Jun. 7, 1995, is incorporated by reference herein.

In the drawings, like numerals indicate like elements. FIGS. **1** and **2** depict an integral, individual printed sheet product **10** of the present invention which is an application form that maintains the integrity of the identification of uniquely encoded transaction card elements when the form is completed. Sheet product **10** is merely one of a number which would be produced at the same time in a manner to be subsequently described, each with a different unique code.

The individual sheet product **10** includes a planar core indicated generally at **12** having first and second opposing major planar sides **14** and **16**, the first or "front" major planar side **14** being seen in FIG. **1**. As is best shown in FIG. **2**, core **12** is formed by first and second core strips **18**, **20**. The core strips **18**, **20** are planar and flexible and, according to an important aspect of the invention, are of different materials each of which can accept printing. The strips **18** and **20** are positioned side-by-side, to define preferably monolayer core **12** of one thickness of material with a junction or joint **17**. Machine or tractor feed holes **19** and **21** are located along the free side edge margins of each strip **18** and **20**, respectively.

Referring back to FIG. **1**, the second core strip **20** is printed on the first major planar side **14** of the core **12** with a plurality of spaced-apart, variable data fields, four variable data fields being identified at **24**, **25**, **26** and **27**. Each variable data field **24**–**27** is printed with a unique code and the codes printed in the variable data field **24**–**27** are identical, namely, "**12156**" in the indicated example. The variable data fields **24**–**27** constitute a set. The location of the variable data fields **24**–**27** would remain the same in each sheet product **10** but the unique code printed in the fields would change from sheet product **10** to sheet product. In addition to being printed in human readable characters, the codes are printed in machine readable formats, bar codes being depicted in the first and second variable data fields **24**, **25**.

In addition to the variable data fields **24**–**27**, the sheet product **10** includes printed static graphic fields **35**–**39**. The static graphic fields **35**–**39** would remain unchanged from printed sheet product **10** to printed sheet product within a plurality or set or run of such products **10**. Fields **35**–**37** of the second strip **20** are associated with the second, third and fourth variable data fields **25**–**27**, respectively. The first core strip **18** has preprinted static graphic fields indicated generally at **38** and **39**. Static graphic field **38** is an identification block preprinted to indicate where on the first core strip **18**, a name and address of an individual is manually entered to identify an individual to whom the unique code of the sheet product **10** is assigned. The particular formats of the various static graphic fields **34**–**39** are not important to the present invention beyond the provision on the first planar strip **18** of a location to manually enter an identification of an individual to whom the unique code of the sheet product **10** is assigned. Also, preferably printed on each core strip **18** and **20** is at least one visible optical alignment mark **22** and **23**, respectively.

Referring back to FIG. **2**, a first cover strip indicated generally at **40** is integrally secured to each of the first and second core strips **18** and **20** holding the first and second core strips **18**, **20** in side-by-side position as shown in FIGS. **1** and **2**. The first cover strip **40** partially covers the second or "rear" major planar side **16** of the core **12** and at least partially covers each of the first and second core strips **18** and **20** while preferably extending completely across the second major planar side **16** and each of the first and second core strips **18** and **20** (top to bottom in FIG. **1**). The first cover strip **40** covers enough of each of the first and second core strips **18** and **20** to assure that each is integrally secured with the other. The first cover strip **40** may be provided by a polymer film **42** and an appropriate adhesive layer **44**.

In the depicted embodiment **10**, a second cover strip **50** is integrally secured to each of the first and second core strips **18** and **20**, partially covering the first, front major planar side **14** of the core **12** and each of the first and second core strips **18** and **20**, extending completely across the first major side **14** and each of the first and second core strips **18** and **20**, again top to bottom in FIG. **1**. In embodiment **10**, both cover strips extend essentially the full width of second core strip **20** within the holes **21**.

Still referring to FIG. **1**, scoring indicated generally at **60** is provided in the sheet product **10** and extends at least sufficiently through and along the sheet product **10** and through the second core strip **20** and, in this embodiment **10**, through the provided first cover strip **40** and the second cover strip **50**, to define at least one transaction card element **62** removable from a remainder of the sheet product **10**. The scoring **60** separates the second variable data field **25** from the other data fields **24**, **26**, **27**.

The removable card element **62** includes at least the second variable data field **25** of the plurality of variable data fields **24**–**27** but only a portion of second core strip **20**, the first cover strip **40** and the second cover strip **50**, if provided. Preferably, one or more bridges of continuous material **64**–**67** spanning the removable card element **62** and the remainder of the sheet product **10** on opposite sides of the card element **62** releasably retain the card element **62** in the sheet product **10** until removed. Scoring indicated at **70** and at **80** through the sheet product **10** in the second core strip **20**, define two smaller card elements **72**, **82**, respectively, which are also removable from the sheet product **10**. Each is printed with a separate variable data field **26**, **27** each bearing the code, "**12156**", which is unique to sheet product **10** and common to all of its variable data fields **24**–**27**. Again, bridges **74**, **76** and **84**, **86** at opposing ends of each card element **72**, **82** releasably retain each element **72**, **82** in the sheet product **10** until the elements **72**, **82** are manually removed by breaking the bridges. Preferably, each card element **72**, **82** is provided with a closed perimeter opening **78**, **88** by the scoring to enable the element **72**, **82** to be attached to a key ring or other key holder (neither depicted).

Still referring to FIG. **1**, according to another important aspect of the present invention, a line of perforations **90** or other line of weakness extends across the sheet product **10** and sufficiently through the second core strip **20**, the first cover strip **40** and the second cover strip **50**, if provided, to define first and second separable sheet components **92** and **94**. At least one of the printed variable data fields, the first variable data field **24** in this embodiment, is not made part of any removable card element **62**, **72**, **82** but instead is left on an integral remainder of the sheet product **10** which includes the first core strip **18**. The first separable sheet component **92** is integral and includes the entirety of the first core strip **14** and a portion of the second core strip **20** including the first printed variable data field **24**. The second separable component **94** includes each of the removable card elements **62**, **72** and **82** and a scrap portion of the second core strip **16**, which is connected to and releasably retains each of the removable

card elements **62**, **72**, **82**. The second separable component **94** can be separated from the first component **92** and given to a customer or client who keeps the removable card element (s) **62**, **72**, **82**. The first separable sheet component **92** is retained with identification information of the individual to whom the second separable sheet component **94** was given. The first variable data field **24** with the code unique to all of the removable card elements **62**, **72**, **82** remains attached with the identification information (which is manually entered into the static graphic field **38**) and kept as a permanent record by the card provider. If desired, a vertical line of perforations **98** or other form of line of weakness can be provided along the free side edge of the first core strip **18** to permit separation of a distal edge portion of the first core strip **18** with the tractor feed holes **19**.

Specific manufacturing details and materials, including preferred materials and manufacturing techniques, have been disclosed in prior U.S. Pat. Nos. 4,978,146 and/or 5,495,981 and application Ser. No. 08/482,634, each of which is incorporated by reference herein in its entirety. Suggestedly, first core strip **18** comprises and, preferably, consists essentially of cellulose material, namely paper stock, to reduce the overall cost of the product **10**. The second core strip **20** comprises a polymer material stiffer and thicker than the paper sheet stock to provide stiffness and thickness to the card elements **62**, **72**, **82**. The polymer material is one that accepts printing, preferably one which accepts laser printing. Strip **20** preferably consists essentially of such polymer material.

The first cover strip **40** on the second or rear major planar side **16** of the planar core **12** suggestedly comprises or consists essentially of a polymer film carrier **42** bonded to core **12** with an appropriate adhesive **44**. Polyester provides good strength, wear and soil resistance properties to the outer surface of each of the removable card element **62**, **72**, **82**. However, if durability of the removable element(s) is not a factor and reduced cost would be advantageous, the polymer film carrier **42** of the first cover strip **40** can be a less expensive material such as conventional cellophane or 3M brand magic invisible or transparent tape or any of their industry equivalents with a pressure sensitive adhesive. If provided, the second cover strip **50** on the first, front major planar side **14** of the core **12** and sheet product **10** would suggestedly be a more durable, polyester material that is transparent to visible light or at least infrared light so that the variable data fields beneath the cover strip **50** can be seen by humans, if desired, or at least read by machine such as by infrared scanner.

Sheet product **10** of FIGS. **1** and **2** having polyester cover strips **40** and **50**, would be preferred where providing the most durable, removable card elements **62**, **72** and **82** and sheet product **10** was desired. While strip **50** is shown to extend over the junction **17** between the first and second core strips **18** and **20**, only one of the two cover strips, first cover strip **40**, need span the junction **17** between the two core strips **18** and **20** for purposes of the present invention. The first cover strip **40** need only have a width sufficient to span the junction **17** to assure that the core strips **18** and **20** remain together during manufacture and use. Cover strip **40** need not extend so far as the scoring **60**, **70**, **80** or even perforations **90**.

Similarly, cover strip **50** need not be provided at all. The primary purpose for providing second cover strip **50** is to protect the faces of the removable card element **62**, **72** and **82** and to further prevent tampering with the printed variable data fields. Second cover strip **50** need only span the second core strip **20** overlapping the scoring **60**, **70** and **80** defining the removable card elements **62**, **72** and **82**. The left edge of cover strip **50** might, for example, terminate at a location between the scoring **60** and the first printed variable data field **24**, or at a location to the left of variable data field **24** spanning the scoring **60** and first variable data field **24**.

FIG. **3** is a cross sectional view similar to FIG. **2** of an alternate sheet product **10'** including the same core **12** formed of the same core strips **18** and **20**. Sheet product **10'** further has, in addition to a first, relatively narrow cover strip **40** spanning the junction **17** between the core strips **18** and **20** and a second cover strip **50** on the front side **18** of the core, a third cover strip **40'** on the rear planar side **16** of the sheet product **10'** covering only the portion of the second core strip **20** including the removable card element(s) **62**, **72**, **82**, etc. The second core strip **50** would only be sufficiently wide to also cover those removable card elements. The first variable data field **24** would remain coupled with the first core strip **18** by only first cover strip **40**. Cover strip **40** would preferably be the less expensive cellophane or other transparent, adhesive tape.

Sheet products **10** and **10'** may be manufactured in a variety of ways. The present invention provides sheet products **10**, **10'** which may be manufactured more quickly and inexpensively and with greater data integrity than previous similar products. The present invention is most valuable where a large number of individual sheet products, e.g. thousands need to be or can be manufactured at a given time or in a single run to fill an order.

One preferred method of forming sheet products **10**, **10'** is now explained with reference to FIGS. **4**–**6**. Referring to FIG. **4**, a continuous strip **118** of paper stock is fed from a single continuous roll **102** and is printed in a conventional fashion, such as offset printed, with consecutive sets of the static graphic fields **38**, **39** and optical marks **22** found on the first core strip **18** of the sheet products **10**, **10'**. Strip **118** can have a width equal to the width of core strip **18**. However, for convenience and reduced cost, it may be desirable to simultaneously print two or more columns of the static graphic fields **38**, **39** in opposite or reversed directions on the elongated continuous strip **118** which can thereafter be slit into separate, elongated strips **118**a, **118**b, which can be simultaneously wound on separate rolls **104**a, **104**b. Machine or tractor feed holes can be supplied originally in strip **118** as depicted or added at any time during or after the process. Printing two columns of static graphic fields on paper stock supplied with tractor holes **19** along the side edges is very effective. The elongated flexible imprinted feed stock **118** such as paper with tractor holes **19**, along its two lateral side edges is continuously fed through an offset printer **200** which prints two columns of consecutive sets of static graphic fields **38**, **39** and optical alignment marks **22**, side-by-side but facing in opposite directions along stock **118**. Stock **118** may be simultaneously or consecutively printed with sets of static data fields at the same uniform intervals on both of its major sides. The printed stock is then passed through a slitter **204**, which splits the stock **118** longitudinally through its center to provide two separate strips **118**a, **118**b of continuous stock each bearing consecutive sets of the static graphic fields **38**, **39**.

Referring to FIG. **5**, an elongated continuous strip **120** of the selected polymer material used to provide second core strip **20** is offset printed with at least one column and preferably two columns of sets of static graphic fields **35**–**37**. Because the identified polymer strip materials tend to stretch, tractor or machine feed holes **20** should provided along both free edges of elongated strip **120** and used to control the tensioning of the strip **120** during processing to

obtain a uniform stretch of the strip **120** such that the static graphic fields and variable data fields are in alignment. Strip **120** preferably is first offset printed with consecutive side-by-side sets of the static graphic fields **35**–**37** and optical alignment marks **23**, again facing in opposite or reversed directions. Next, the elongated strip **120** is preferably run through a variable data field printer **202**, such as a computer controlled laser printer, which prints sets of the variable data fields **24**–**27**, **24'**–**27'**, etc. on the strip **120**, incrementing the code of each variable data field set as it is printed. Next, strip **120** is preferably slit into two separate strips **120**a, **120**b, which are simultaneously wound into separate rolls **124**a, **124**b. Again, strip **120** can be offset and laser printed on one or both major planar sides simultaneously or sequentially, then slit and separately wound in two rolls in a single continuous operation as shown. Optical marks can be printed in either fashion.

Referring to FIG. **6**, one strip from each of the two sets printed strips **118**a, **118**b and **120**a, **120**b are fed with at least one and up to three elongated cover strips **140**, **150**, **140'** through a bonder **206** which may be a pair of nip rolls where only cover strips with a pressure sensitive adhesive is being used or heated roll(s) or lighted roll(s) where, for example, a polyester continuous strip **140** and/or **150**, **140'** with more aggressive heat or light activated adhesive is used to laminate cover strip(s) **140**, **150** and/or **140'** to core strips **118**a and/or **120**b. Preferably, the paper elongated core strip **118**a is simply fed at a desired processing speed through the bonder **206**. Second elongated core strip **120**b would be fed under tension at a speed to match the speed of paper core strip **118**a. Optical marks **22** on elongated strip **118**a and marks **23** on strip **120**b can be used to control the feed speed of strip **120**b to strip **118**a to keep the various printed field sets in alignment. After bonding, the resulting elongated, continuous, intermediate sheet product **110** can be scored to define a plurality of the individual sheet products **10** (or **10'**) with removable transaction cards **62**, **72**, **82** and perforation lines **90**, **98** by conventional means, such as opposing roll cutters **208**.

In addition to making the sheet products **10**, **10'** previously described, the aforesaid method of using an inexpensive polymer film tape with pressure sensitive adhesive could also be used to join together strips of different materials, both of which are printed with variable data fields like the sheet products **410** of U.S. Pat. No. 5,495,981, to reduce the costs of such sheet products. One such individual sheet product **410'** is shown in FIG. **7** and indicated at **210** herein. Sheet product **210** has a cross section like sheet product **10'** of FIG. **3** except that the first core sheet indicated at **218** in FIG. **7** bears, in addition to any static graphic field, a variable data field **28** with the printed name and address of an individual to whom the transaction card **62** is being assigned. This product permits the individual core strips **218** and **220** to be separately printed, for example, the information for core strip **218** to be supplied by a business seeking to distribute the transaction card and the strip **220** being supplied by the card manufacturer. The resulting sheet product **210** can be used as a mailer with a standard size envelope as indicated in U.S. Pat. No. 5,495,981. Individual sheet products **210** can be fabricated using continuous core strips in the manner previously described which, after joining, can be scored to separate the individual card sheet products **210** and define the removable transaction card elements. In such embodiments, the core strips **218** and **220** would be joined at their junction by a thin, inexpensive adhesive tape **240** and the more expensive polyester cover strips **254**, **256** applied only over the front and rear sides of the portion of second core strip **220** that include the removable card element(s) **62**.

FIGS. **8** and **9** depict a first integral printed self-mailer sheet product of the present invention indicated generally at **310**. The product **310** includes an at least generally planar core **312** having first and second opposing major planar sides **314** and **316**, the first or "front" major planar side being seen in FIG. **8**. The core **312** is again formed by first and second core strips **318**, **320** which planar, flexible and of different materials, preferably each of which can accept printing. As is best seen in FIG. **9**, the strips **318** and **320** are preferably positioned side-by-side, to define a preferably monolayer core **312** of two materials with a junction or joint indicated by a broken line **317** between them. Machine or tractor feed holes **319**, **321** in phantom, like holes **19** and **21** of FIGS. **1**–**5** and **7**, may be provided for continuous feed fabrication of products **310** or may be omitted as indicated in FIGS. **8** and **9** for sheet feed.

The second core strip **320** is printed on the first major planar side **314** with a plurality of spaced-apart variable data fields, four of which are identified at **324**, **325**, **326** and **327**. According to this invention, at least one of the variable data fields, variable data field is **324**, is printed with the name and address of an individual person. Also according to the present invention, at least one other variable data field and preferably at least a plurality of the other variable data fields are printed with a unique, preferably numeric code, which is uniquely assigned to the individual identified in the first variable data field **324**. The remaining three variable data fields **325**–**327** of product **310** are printed with the same unique code, namely "**12156**". Further, according to the present invention, the unique numeric code is preferably printed in at least a machine readable format in at least one of the variable data fields and in a character format in at least a separate one of the variable data fields. Preferably the unique code is printed in both machine readable and character formats in all code fields **325**–**327** as indicated. In addition to machine readable bar code format, the unique code can be printed in other, machine readable formats including, but not limited to, magnetic stripe printing. A pair of magnetic stripe tapes are indicated in phantom at **321** and **322** extending entirely across the second core strip **320**.

In addition to the variable data fields **324**–**327**, the sheet product **310** preferably include a plurality of printed static graphic fields **335**–**338**. These would remain unchanged from printed sheet product to printed sheet product within a plurality or set or run of such products **310**. Static graphic field **335** is associated with variable data fields **324** and **325**. Static graphic fields **336** and **337** are associated with variable data fields **326** and **327**, respectively. Static graphic field at **328** is separate, could be printed on either side **314**, **316** of the sheet product **310** and is a return address for the mailer. Static graphic fields can be provided on either or both sides **314**, **316** as can variable data fields.

Referring to FIG. **9**, a first cover strip indicated generally at **340** is permanently fixed to each of the first and second core strips **318** and **320**, holding the strips **318**, **320** in a preferably side-by-side, monolayer position to define the at least generally planar core **312**. The first cover strip **340** partially covers the second or "rear" major planar side **316** of the core **312**. It further only partially covers one side of the first core strip **318** and at least partially covers one side of the second core strip **320** while preferably extending completely across the second major planar side **316** of the core **312** and at least part of the second core strip **320**, in one or two mutually perpendicular directions, namely a direction generally parallel to joint **317**. The first cover strip **340** again covers at least enough of each of the first and second core strips **318** and **320** to assure that each is integrally secured

with the other. Preferably the first cover strip covers each removable element of the second core strip as will be explained. The first cover strip **340** may again be provided by a polymer film **42** and an appropriate adhesive **44**.

A second cover strip **350** is preferably further provided and is further permanently fixed to the core **312** and the second core strip **320**, partially covering the first "front" major planar side **314** of the core **312** and at least part of the second core strip **320**, preferably extending completely across the first major planar side **314** in only one of two mutually perpendicular directions and entirely across the second core strip **320** in the same direction, namely parallel to the joint **317**.

Scoring indicated generally at **360** is provided in the sheet product **310** and extends at least sufficiently through and along the sheet product **310**, the second core strip **320** and through the provided first and second cover strips **340** and **350**, to define at least one element **362** removable from a remainder of the sheet product **310**. Scoring separates the first and second variable data fields **324** and **325** from the other variable data fields **326** and **327**. Removable card element **362** preferably includes each of the first and second variable data fields **324** and **325**, at least one static graphic field **335** and only portions of each of the second core strip **320**, the first cover strip **340** and the second cover strip **350** (if provided). Further scoring indicated at **370** and **380** through the sheet product **310** is further preferably provided to define two smaller elements **372** and **382**, respectively, which are also removable from a remainder of the sheet product **310**. Each element **372**, **382** is printed with a separate static graphic field **336** and **337**, respectively, and a separate variable data field **326** and **327**, respectively, each bearing the code which is unique to the sheet product **310** and common to all of the unique code variable data fields **325**–**327**. The scoring further preferably provides closed perimeter key ring openings **378** and **388**, respectively through each element **372**, **382**.

The second core strip **320** has a width in a width dimension indicated at **320**a which is perpendicular to the joint **317** between the first and second core strips **318** and **320**, and a length in a length dimension **320**b, which perpendicular to the width dimension **320**a. According to an important part of the invention, the first core strip **318** has a width in a width dimension **318**a also perpendicular to the joint **317** which is greater than the width of the second core strip **320** and preferably, at least twice the width of the second core strip in its width dimension **320**a so that the first core strip **318** may be wrapped at least once completely around the second core strip **320** to form a fully wrapped mailer. Preferably, first core strip **318** has a width more than twice the width of the second core strip **320** so that the first core strip **318** wraps more than once completely around the second core strip **320**. Scoring indicated generally at **330** further preferably defines a closed perimeter cutout forming a window **331** extending completely through the first core strip **318** and located on the first core strip **318** to overlap the name and address of the first variable data field **324** when the first core strip **318** is wrapped around the second core strip **320**. An adhesive layer indicated by stippling at **322** may be provided at the free edge of the first core strip **318** remote from the joint **317** on an appropriate side (**314**) before the sheet product **310** is folded or while the sheet product **310** is being folded. A line **334** of perforations or other suitable weakness can further be provided extending across the length of the first core strip **318** proximal at the free end to permit easy opening of the mailer. After fabrication of the planar sheet product **310** in the form shown in FIGS. **8**–**9**, the sheet product **310** can then be folded a plurality of times to form a one piece mailer indicated at **310'** in FIG. **11**, including an insert element provided by second core strip **320** and an outer wrapper provided by first core strip **318**.

FIG. **9** depicts in block diagram form the steps of assembly of the sheet product **310**. The first and second core strips **318** and **320** are first separately prepared in a manner similar to the preparation of core strips **18** and **20** of the first embodiment described above, including printing with the static graphic fields **333** and **335**–**337** and the variable data fields **324**–**327** as indicated at step **290**. The static graphic field **335**–**337** and variable data fields **324**–**327** may be printed simultaneously or sequentially. The individual core strips **318** and **320** are fed to a laminator in step **392** which applies the first cover strip and any additional cover strips, if provided. The laminated blank is passed preferably through a die which scores the laminated product defining the individual removable elements **362**, **372** and **382**, the window **331**, the line **334** of perforations or other weaknesses and the key ring holes **374** and **384**. This scoring can further be used to bevel the two outer corners at first core strip **318** remote from the joint **317**, if desired. Adhesive layer **332** can then be separately applied at step **396** and the product shipped unfolded for later folding at a step **398**. Alternatively, sheet product **310** can be folded and sealed in one combined operation as indicated in phantom at **398'**.

FIG. **12** depicts a second integral printed self-mailer sheet product of the present invention indicated at **410**. It again includes an at least generally planar core **312** having two opposing major, at least generally planar sides, one of which is indicated at **414**. Planar core **412** is again formed by first and second core strips **418**, **420**, which are planar, flexible and of different materials, preferably each of which can accept printing, to define a preferably monolayer core of the two materials **418**, **420** with joint **417** between them. First cover strip **340** permanently fixes the two core strips **418**, **420** together, only partially covers the first core strip **418** and covers at least part and preferably all of the second core strip **420**, or at least all of its removable elements. Second core strip **450** is preferably provided preferably covering at least the opposite sides of the elements removable from the second core strip and can lap onto an edge of the first core strip.

The second core strip **420** is printed on the first major planar side **414** of the core with a plurality of spaced-apart variable data fields, four of which are identified at **424**–**427**, each containing the same unique code. That code is printed in at least one of a machine-readable formal, a character-readable format or both formats for at least variable data fields **425**–**427**. There is further preferably printed on one of the major sides of the first core strip **318**, fifth and sixth variable data fields **428** and **429**. Variable data field **428** contains the unique name and address of an individual person to whom the mailer is addressed while variable data field **429** contains a unique record number identifying that individual in a data set containing a multiplicity of such individuals each identified by a different record number. Variable data field **428** is printed in character format while the record number printed in the variable data field **429** is printed in a machine-readable format, preferably a bar code, along the same edge of the core **312** bearing the first variable data field **424**. An adhesive layer **432** and line of perforations **434** are again provided. Sheet product **410** is otherwise similar to sheet product **310**. First and second cover strips scoring **460**, **470** and **480** define first, second and third elements **462**, **464** and **466** removable from the remainder of the sheet product **410**. Each element **362**, **372**, **382** bears one of the variable data fields **325**–**327** and further preferably includes one of

the static graphic fields **436**–**438**. Again, the scorings further preferably define closed perimeter key ring holes **474** and **484** in key tag elements **472** and **482**, which are smaller than the transaction card element **462**.

FIG. **13** depicts a series of steps for one preferred method to fabricate a sheet product **410**. The first and second core strips **418**, **420** are preferably first printed with their variable data fields and any static graphic fields at step **490**. Depending upon how they are printed, individual core strips **418** or **418** and **420** may be cut from longer lengths containing a plurality of different sets of variable data fields **424**–**427** and/or **428**–**429**. Core strips **418** and **420** are thereafter joined together side-by-side by the application of one (or two) cover strip(s) at step **492**. Again, two cover strips can be applied simultaneously or sequentially in a manner appropriate for the materials selected, preferably to form a lamination with the core strips **418**, **420** and each cover strip **440** and/or **450**. Next, the laminated sheet products is scored at step **494** to define the removable element **462**, **472**, **482** as well as any closed perimeter key ring hole(s) **474**, **484**, line of perforation **434**, and to separate individual self-mailers **310** from one another if multiple self-mailers were being simultaneously made. After scoring, an adhesive is applied at step **496** and the mailer folded and sealed at **498** or the two operations combined in a single step at **498'**. In addition, at some point preferably after the joining step **492** and before the adhesive application step **496**, each of the two edge-positioned variable data fields **424** and **429** are machine-read and the two codes recorded in a common data set to identify the unique numeric code of the second core strip variable data fields **424**–**427** assigned to the individual whose name and address is indicated at variable data field **428**.

It will be appreciated that the individual variable data fields **424** and **429** can be otherwise located and read at different stages. For example, referring back to FIG. **12**, the variable data field may alternatively be located at locations **424'** and **429'** and read before or as the two core strips were being joined in step **492** or in any of the subsequent steps prior to the folding and closure step(s) **498**, **498'**.

While two embodiment self-mailers have been disclosed in detail and several variations to them suggested in their descriptions, still other variations will occur to those of ordinary still in the art and are intended to be included as part of the invention. These variations are currently less preferred because, at the present time with available equipment, they would be more difficult to make or involve more steps and/or greater cost. For example, the unique numeric codes can be applied to the second core strip of the self-mailer in the manner indicated above, machine-read after the first and second core strips were joined, and then used to control a printer printing the name and address of the unique individual to whom the mailer was to be send on the second core strip, preferably at some point after the first and second core strips are joined together in step **492**. Clearly, other possible arrangements of data on self-mailers and forms of self-mailers can be provided. Also while a printed bar code is preferred for ease of manufacture and/or use, printed magnetic codes can also be used. Furthermore, the size of the mailer can vary from that depicted and the length dimensions of the core strips can vary with the length of the first core strip forming the outer cover of the mailer preferably greater than the length of the contained second core strip bearing the removable card elements. Furthermore, instead of a one-piece, integral first cover strip joining the two core strips together and overlapping the removable printed elements, the self-mailer sheet products can be provided with separate cover strips, one joining together ends of the first and second core strips and another separate cover strip overlapping those portions of the second core strip forming the removable element(s) on the same side of the core as the first strip.

It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

I claim:

1. An integral printed self-mailer sheet product comprising:

a generally planar core having first and second opposing major planar sides, the core being formed by first and second core strips of different materials positioned side-by-side, the planar core being printed on its major sides with a plurality of variable data fields, at least a first variable data field being printed with a name and address of an individual person and at least a second variable data field being printed with a unique numeric code in a machine readable format assigned the individual person, at least two of the plurality of variable data fields being printed on the second core strip;

a first cover strip permanently fixed to one major side of each of the first and second core strips irremovably holding adjoining ends of the first and second core strips together in a joint to define the generally planar core, the first cover strip only partially covering one major side of the first core strip and at least partially covering one major side of the second core strip;

scoring extending at least sufficiently through the sheet product in the second core strip to define at least a first printed element removable from a remainder of the sheet product, the first removable printed element including only a portion of the second core strip bearing at least one of the at least two variable data fields printed on the second core strip;

the second core strip having a width in a direction perpendicular to the joint between the first and second core strips and a length in direction parallel to the joint; and

the first core strip having a width in a direction perpendicular to the joint at least twice as great as the width of the second core strip.

2. The sheet product of claim **1** wherein the first cover strip spans a portion of the second core strip including the first removable printed element and the scoring defining the first removable printed element further extends through the first cover strip.

3. The sheet product of claim **1** wherein the first planar strip comprises a cellulose material and the second planar strip comprises a polymer material.

4. The sheet product of claim **1** wherein the second planar strip consists essentially of a polymer material.

5. The sheet product of claim **4** wherein the first planar strip consists essentially of a cellulose material.

6. The sheet product of claim **1** wherein the scoring defines a second printed element including the second variable data field printed on the second core strip removable from a remainder of the second core strip and from the first core strip.

7. The sheet product of claim **1** wherein one of the plurality of variable data fields is printed in at least machine readable format along an outer edge of both the second core strip and the printed sheet product.

8. An elongated integral printed identification element comprising:

a core having opposing first and second major planar sides and bearing printing on at least one of the major planar sides, the core being coextensive in area with the element, the core and the element having a common width and a common length generally perpendicular to the width, the length being greater than the width such that the core and the element have a pair of opposing longitudinal ends at opposite ends of the length;

a magnetic stripe permanently fixed over one of the opposing major planar sides of the core extending across the width of the core proximal one of the pair of longitudinal ends; and

a closed perimeter opening extending entirely through the core and the element proximal a remaining one of the pair of longitudinal ends.

9. The element of claim 8 wherein the printing includes at least one variable data field with a unique code assigned to an individual to receive the element.

10. The element of claim 9 wherein the unique code is printed in a bar code format.

11. The element of claim 10 wherein the unique code is printed on the one major side of the core bearing the magnetic stripe.

12. The element of claim 9 wherein the unique code is printed in numeral format.

13. The element of claim 12 wherein the unique code is printed on the one major side of the core bearing the magnetic stripe.

14. The element of claim 9 wherein the unique code is printed on the core in both numeral and bar code formats.

15. The element of claim 14 wherein the unique code is printed at least in the bar code format on the one major side of the core bearing the magnetic stripe.

16. The element of claim 8 further comprising a first transparent cover strip fixed over one of the first and second major sides of the core, the magnetic stripe extending across the first transparent cover strip.

17. The element of claim 16 wherein each of the first transparent cover strip and the core is a different flexible web material.

18. The element of claim 16 further comprising a second transparent cover strip fixedly secured over a remaining one of the first and second major sides of the core.

19. The element of claim 16 wherein each of the first and second transparent cover strips and the core is a flexible web material.

20. An integral printed sheet product comprising:

a core having opposing first and second major planar sides and bearing printing on at least one of the sides;

a magnetic stripe permanently fixed over one of the opposing major planar sides of the core and extending across the sheet product; and

scoring extending at least sufficiently through the sheet product and the core to define at least a first elongated integral element removable from a remainder of the sheet product, the removable first elongated integral element having a pair of opposing longitudinal ends, the first elongated integral element further including at least a portion of the magnetic stripe extending across the element proximal one the pair of longitudinal ends of the element, and the scoring further defining a closed perimeter opening extending through the element proximal a remaining one of the pair of longitudinal ends of the element and spaced away from the magnetic stripe.

21. The printed sheet product of claim 20 further comprising a first flexible transparent cover strip fixedly secured to one of the first and second major planar sides of the core, the scoring extending through the first transparent cover strip with only part of the first transparent cover strip covering one major planar side of the core portion of the removable first elongated integral element and a remainder of the first transparent cover strip overlying at least part of a remaining portion of the core outside the scoring defining the removable first elongated integral element.

22. The printed sheet product of claim 20 wherein the scoring defines a second elongated integral element removable from a remainder of the sheet product, the second elongated integral element having a pair of opposing longitudinal ends.

23. The printed sheet product of claim 22 further comprising at least part of a magnetic stripe extending across one major side of the second removable elongated integral element proximal one longitudinal end of the second removable elongated integral element.

24. The printed sheet product of claim 23 wherein the scoring further defines a closed perimeter opening entirely the removable second elongated integral element proximal a remaining one of the pair of opposing longitudinal ends.

25. The printed sheet product of claim 24 wherein the removable second elongated integral element bears at least a second one of the variable code fields printed with the one unique code.

26. The printed sheet product of claim 24 further comprising a second flexible transparent cover strip fixedly secured to a remaining one of the first and second major planar sides of the core, the scoring extending through the second transparent cover strip with only part of the second transparent cover strip covering a remaining major planar side of the core portions of the removable first and second elongated integral elements and a remainder of the second transparent cover strip overlying at least part of a remaining portion of the core outside the scoring defining the removable first and second elongated integral elements.

27. The printed sheet product of claim 21 further comprising a second flexible transparent cover strip fixedly secured to a remaining one of the first and second major planar sides of the core, the scoring extending through the second transparent cover strip with only part of the second transparent cover strip covering a remaining major planar side of the core portion of the removable first elongated integral element and a remainder of the second transparent cover strip overlying at least part of a remaining portion of the core outside the scoring defining the removable first elongated integral element.

28. The printed sheet product of claim 21 wherein the printing on the core includes at least a plurality of variable data fields, each of at least two of the plurality of variable data fields being printed with one unique code assigned to an individual to receive the sheet product.

29. The printed sheet product of claim 28 wherein at least one of the at least two variable data fields printed with the one unique code is located on the one side of the core bearing the magnetic stripe.

30. The printed sheet product of claim 28 wherein at least one of the at least two variable data fields printed with the one unique code is located on the removable first elongated integral element.

31. The printed sheet product of claim 30 wherein at least one of the at least two variable data fields printed with the one unique code located on the removable first elongated integral element is covered by the first, flexible transparent cover strip.

32. The printed sheet product of claim 30 wherein at least the one variable data field located on the removable first elongated integral element is located on the one side of the core bearing the magnetic stripe.

33. The printed sheet product of claim 30 wherein at least the one variable data field located on the removable first elongated integral element is printed in at least bar code format.

34. The printed sheet product of claim 30 wherein at least the one variable data field located on the removable first elongated integral element is printed in at least numeral format.

35. The printed sheet product of claim 30 wherein at least another of the at least two variable data fields printed with the one unique code is printed on a remaining portion of the core outside the scoring defining the removable first elongated integral element.

36. The printed sheet product of claim 35 wherein at least part of the remaining portion of the core outside the scoring defining the removable first elongated integral element further bears an exposed strip of adhesive.

37. The printed sheet product of claim 36 wherein at least the part of the remaining portion of the core bearing the exposed strip of adhesive is separated from a portion of the core including the scoring defining the removable first elongated integral element by a line of perforations spaced from the scoring and extending through and across the core.

38. The printed sheet product of claim 28 wherein the scoring defines a second elongated integral element removable from a remaining portion of the sheet product and bearing at least another of the at least two variable data fields printed with the one unique code.

39. The printed sheet product of claim 28 wherein at least another of the at least two variable data fields printed with the one unique code is printed on the removable second elongated integral element.

40. The printed sheet product of claim 39 wherein the scoring defines a closed perimeter opening entirely through the removable second elongated integral element proximal one longitudinal end of the removable second elongated integral element.

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UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : RE41,925 E
APPLICATION NO. : 10/040107
DATED : November 16, 2010
INVENTOR(S) : Richard O. Warther

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 1, line 8, above the heading, "RELATED APPLICATION(S)" insert: -- Notice: More than one reissue application has been filed for the reissue of patent 6,010,159. The reissue applications are application numbers 12/912,846 (a divisional reissue application of 10/040,107, now Patent No. RE41,925) and 10/040,107, now Patent No. RE41,925, (a patented reissue application of Patent No. 6,010,159). --

Signed and Sealed this
First Day of October, 2013

Teresa Stanek Rea
Acting Director of the United States Patent and Trademark Office