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(54) Improvement in thickness-wise transverse perforation line registration in web of printed multiple-ply business forms.

(57) A web of two-wide potentially separate business forms adjoined in series by transverse perforation lines is provided, with a respective longitudinal row of sprocket holes bordering each edge. Printing is placed on left and/or right portions of at least one face of the web, at least one portion of one face being variably printed. At the appropriate stages in relation to the printing, the web is severed along a medial longitudinal line and the resulting two portions are moved laterally, without rotation, towards superimposition, and each resulting one-wide, multiple ply potentially separate business form is marginally sealed, e.g. by activation of a pre-applied ring of adhesive. Severing of this composite web into separate business communications is facilitated because of substantial registration of the respective transverse perforation lines in the multiple plies.

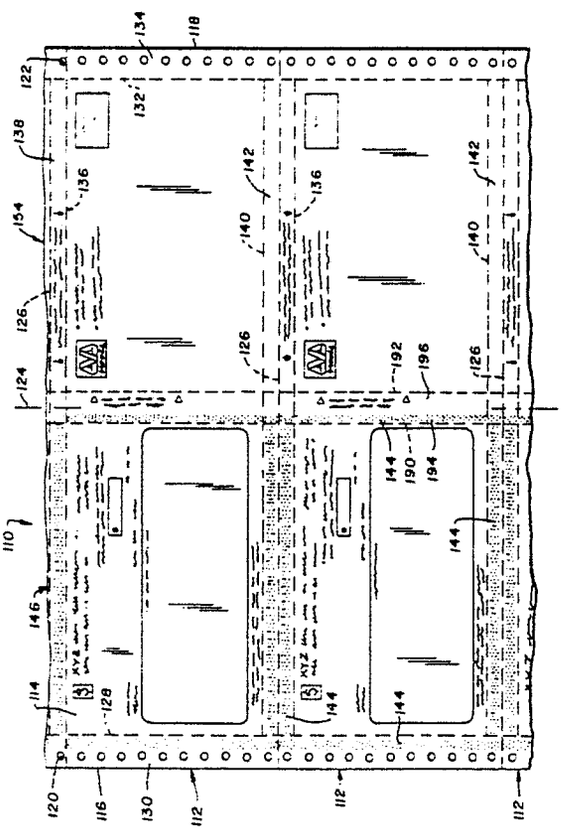

Fig.2

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Improvement in Thickness-wise Transverse Perforation Line Registration In Web of Printed Multiply-Ply Business Forms

Background of the Invention

The present invention arose in the course of seeking a solution to another problem.

Referring to Figure 1, an existing product of Moore Business Forms, Inc. is a web 10 of printed business forms 12 the inner face 14 of which is shown.

Briefly, this web has a left edge 16 and a right edge 18. At least one longitudinal row of web drive sprocket receiving holes 20, 22 borders each of the edges 16, 18, and a longitudinal perforation line 24 is provided through the web 10 intermediate the edges 16 and 18. The web 10 is divided into a longitudinally extending series of potentially individual business forms, by a series of tranverse perforation lines 26, which extend between the edges 16 and 18.

In the particular example depicted, on each potential form the web 10 has additional features, including a left longitudinal perforation line 28 disposed adjacent but inboard of the left line of drive sprocket holes 20 so as to define a left marginal strip 30, a right longitudinal perforation line 32 disposed adjacent but inboard of the right line of drive sprocket holes 22 so as to define a right marginal strip 34, an upper transverse perforation line 36 disposed adjacent but below the particular transverse perforation line 26 which defines the potential upper edge of a respective potential form so as to define an upper marginal strip 38, and a lower transverse perforation line 40 disposed adjacent to but above the particular transverse perforation line 26 which defines the potential lower edge of a respective potential form so as to define a lower marginal strip 42.

The medial longitudinal perforation line 24 is located substantially precisely half-way between the left and right longitudinal perforation lines 28 and 32.

A squared C-shaped band 44 of heat-activatable adhesive is shown provided on the left portion 46 of each potential form, this band of adhesive, preferably applied as a pattern of closely-spaced dots, extends along the upper marginal strip 38 from the medial longitudinal perforation line 24, down the left marginal strip 30 and along the lower marginal strip 42 back to the medial longitudinal line 24.

Within the region bounded by the perforation lines 24, 28, 36 and 40, each left portion 46 is shown provided with a transversally elongated, rounded-corner rectangular aperture 48 which is glazed by a window patch 50 e.g. made of conventional transparent or translucent glassine, plastic packaging film or the like, mounted in place by a bond of adhesive 52 which spacedly surrounds the perimeter of the aperture 48. The patched aperture provides a window through which a postal address or the like may be viewed.

In the particular instance depicted, the right portion 54 of the web of potential forms is plated with a second web 56 which is substantially coextensive with the right-portion except that it terminates at a left edge 58 slightly short of the medial perforation line 24. The row of sprocket holes 22 also is formed through this web, as are the perforation lines 26, 32, 36 and 40. A squared C-shaped band of adhesive (not shown) the placement of which is a complementary counterpart to the placement of the band of heat actuable adhesive 44 adheres the upper, lower and right marginal strips 38, 42 and 34 of the right portion 54 of the web 10 and the second web 56 to one another. The second web 56 is shown further provided on each potential form, with an additional transverse perforation line 59 located parallel to, but above the respective lower perforation line 40. The perforation line 59 is not also formed through the web 10. (Accordingly, after the upper, lower and right marginal strips have been torn away from a form 12, the respective portion 60 of the top sheet is separated from the web 10, and its height may be reduced by further tearing off the lower transverse strip 62 along the perforation line 59 in order to constitute a check, a voucher, a remittance slip, or the like.)

Printing, e.g. a relatively unchanging information may be provided on the front and rear faces of both the left and right portions of the web 10 and on the front and rear faces of the second web 56.

For understanding the principles of the present invention, it is not very important that the second web 56 exits. If it did not, and in instances where it does not, its role can be served by the underlying portion of the web 10. In instances where it is present, it may be present as a single ply, or it may be present as multiple plies, e.g. with interleaved carbon paper or sheets or coatings of encapsulated inks for producing copies on each ply of matter imprinted on the right portion 54 by impact printing.

Accordingly, in the present description, use of the product shown in Figure 1 will be further described in a generic sense, regardless of whether there are no, a single or a stack of second webs 56 on the right portion 54 of the web 10.

In practice, some of the relatively non-varying printing provided on the unshown outer face of the web 10 typically includes return address, postal class, franking information and instructions (for opening by severing respective marginal strips along respective perforation lines) printed on the left portion 46 of each potential form. Similar instructions may be printed on the unshown outer face of the right portion 54 of the web 10.

In practice, some of the relatively non-varying printing provided on the shown inner face of the left portion 46 of web 10 typically includes instructions, notices, warnings, etc., for the recipient and/or indicia for obscuring to viewers from the outside of a business form 12 matter printed on parts of the inner face of the right portion 54. Typically there are four types of information printed on the inner face of the right portion 54 of the form: first, relatively non-varying information such as instructions and the outlines and headings for various spaces, on check-stock or the like the name of the issuer, maker, and the like; second, document serial number information, e.g. a unique one-up number applied to each potential form so that regardless of whether the form is ever filled-in or used, it can be distinguished from others; third, an addressee/payee block, typically containing the name and postal address of the intended recipient of an individual form 12; and fourth, various unique information relating to a particular account for a particular period of time.

Typically, the first and second types of information are preprinted on the form stock, by the form stock manufacturer, at which time spaces are printed for receipt of information of the third and fourth types, but these spaces are left blank by the forms manufacturer. The conventional form stock product of Figure 1 is then shipped to the business or other institutional customer which has a need to provide its clientele with individualized written communications based on the potential individual forms 12.

At the business or other institution, by a process of variable printing, which may use an impact printer such as a simply typewriter all the way up to a computerized daisy wheel or pin dot matrix printer, or a non-impact printer such as a computerized laser printer, other xerographic printer or the like, variable information of the third and fourth types is applied to the respective spaces on the right portions 54 of the potential forms in succession, typically while the form stock remains spread open and in web form as shown in Figure 1.

The addressee/payee variable information typically is applied to each potential form in a space 64 the position of which bears a mirror image relationship, about the medial longitudinal perforation line 24, to the respective window aperture 48.

A reason why the form stock represented by the web 10 is particularly attractive is that all of the variable information may be applied to one face of one portion, the right portion 54 of the stock, and the addressee/payee information need only be printed once, since, when the forms are assembled, that which is provided on the inner face will show out through the window.

There is another reason why the utilitarian design of the form stock of Figure 1 is attractive to business users, and the attractiveness of that feature comes into play at a stage of use subsequent to the one that is depicted in Figure 1: after the variable information of types three and four has been printed on each potential form, the web 10 of form stock is folded about the medial longitudinal perforation line so that the former left portion 46 is superimposed facewise on the former right portion 54. This causes the band of heat actuatable adhesive 44 to be juxtaposed facewise against the comparable region of the marginal strips of the former right portion of the form. Heat and moderate pressure are applied to activate the adhesive 44 and thus seal the series of individualized business forms. Finally, each individualized business form is separated from the series by severance along the respective transverse perforation lines 26. Because the two portions 46 and 54 which will constitute each form have had their transverse perforation lines 26 formed by the same perforator means, at the same time, the chances are very excellent that when a fold is made on the medial perforation line 24, at the top of each potential form, the superimposed former left and right halves of the respective perforation line 26 now lie substantially perfectly superimposed. And the same at the bottom of each potential form. After the adhesive 44 has been activated, this excellence of superimposition makes severing the web into individual thus-enveloped business communications a task that is especially easy to accomplish whether by use of conventional severing equipment or by manual means.

Forms of the type which have been described above have been well received, and they have been found to be compatible with increasingly popular laser printers, inasmuch as the heat activatable adhesive and window patch are at the left, whereas all of the variable printing by the business customer is done on one face, at the right where the window will not interfere with feeding or printing, and the heat generated by the printer will not prematurely activate the adhesive 44.

And now the reason why the present invention arose:

Increasingly, postal services are installing optical character readers in order to further automate the task of classificating, sorting and delivering the mail. At the present stage of sophistication of some of the equipment which has been acquired by certain postal services, the computerized optical character readers become confused and fail to acquire a correct reading when their reading head, in attempting to read an address looks at a glassine or plastic film window. Some of the reader devices are confused by the reflectance, others by the thicknesswise spacing and others by the effect of translucence on dispersion of light. There are two ways that a postal service can attack such a problem. One way is to encourage its vendors of optical character readers to push development of readers which will not become confused when looking at an address through a glazed window aperture. More to the point, a postal service, at least until better readers are acquired, can simply prohibit the mailing of business communications which have glazed window apertures for addresses, or create a strong economic incentive against mailing such communications.

In fact, a major postal service recently has done just that, and that sent the product innovators for the manufacturer of the form stock shown in Figure 1 'back to the drawingboard' in order to see if a product could be devised which would preserve for the category of users which need to send business communications through such a postal service, and others, many if not all the advantages of the Figure 1 product, particularly including the ease of precise registration of the superimposed transverse perforation lines between adjoining potentially separate business forms in the series on the composite web thereof.

Summary of the Invention

A web of two-wide potentially separate business forms adjoined in series by transverse perforation lines is provided, with a respective longitudinal row of sprocket holes bordering each edge. Printing is placed on left and/or right portions of at least one face of the web, at least one portion of one face being variably printed. At the appropriate stages in relation to the printing, the web is severed along a medial longitudinal line and the resulting two portions are moved laterally, without rotation, towards superimposition, and each resulting one-wide, multiple ply potentially separate business form is marginally sealed, e.g. by activation of a pre-applied ring of adhesive. Severing of this composite web into separate business communications is facilitated because of substantial registration of the respective transverse perforation lines in the multiple plies.

The principles of the invention will be further discussed with reference to the drawings wherein a preferred embodiment is shown. The specifics illustrated in the drawings are intended to exemplify, rather than limit, aspects of the invention as defined in the claims.

Brief Description of the Drawings

Business Forms in accordance with the present invention will now be described by way of example with reference to the accompanying drawings, wherein:

Figure 1 is a top plan view of a portion of a web of PRIOR ART business form stock of indeterminate length, which stock is described in the foregoing introductory Background section of this specification;

Figure 2 is a comparable view of a portion of a web of form stock provided in accordance with principles of the present invention;

Figure 3 is a plan view of the opposite face of the form stock shown in Figure 2; and

Figure 4 is a schematic side elevation view showing in a simplified manner use by a business or other institution of the form stock of Figures 2 and 3 to create a series of separate, individualized business communications.

Detailed Description

Referring to Figure 2, a face 114 of a portion of a web 110 of form stock of printed business forms 112 prepared in accordance with principles of the present invention is shown.

Briefly, this face of this web has a left edge 116 and a right edge 118. At least one longitudinal row of web drive sprocket receiving holes 120, 122 borders each of the edges 116, 118, and a longitudinal perforation line 124 may provided through the web 110 intermediate the edges 116 and 118. Alternatively, the numeral 124 may simply denote an imaginary line along which the stock will later be cut. The web 110 is divided into a longitudinally extending series of potentially individual business forms, by a series of transverse perforation lines 126, which extend between the edges 116 and 118.

In the particular example depicted, on each potential form the web 110 has additional features, including a left longitudinal perforation line 128 disposed adjacent but inboard of the left line of drive sprocket holes 120 so as to define a left

marginal strip 130, a right longitudinal perforation line 132 disposed adjacent but inboard of the right line of drive sprocket holes 122 so as to define a right marginal strip 134, an upper transverse perforation line 136 disposed adjacent but below the particular transverse perforation line 126 which defines the potential upper edge of a respective potential form so as to define an upper marginal strip 138, and a lower transverse perforation line 140 disposed adjacent to but above the particular transverse perforation line 126 which defines the potential lower edge of a respective potential form so as to define a lower marginal strip 142.

The medial longitudinal perforation line 124 is located generally half-way between the left and right longitudinal perforation lines 128 and 132. Longitudinal perforation lines 190 and 192 are provided on opposite sides of the line 124, adjacent thereto but spaced therefrom so as to define potential marginal strips 194 and 196. The panel width transversally of the web 110 between the marginal strips 30 and 194 equals the panel width transversally of the web 110 between the marginal strips 196 and 34.

A squared O-shaped band 144 of heat-activatable adhesive is shown provided on the left portion 146 of each potential form, this band of adhesive, preferably applied as a pattern of closely-spaced dots, extends along the upper marginal strip 138 from the medial longitudinal line 124, down the left-marginal strip 130, along the lower marginal strip 142 back to the medial longitudinal line 124, and up the potential marginal strip 194.

Printing, e.g. of relatively unchanging information may be provided on the front and rear faces of both the left and right portions of the web 110.

In practice, some of the relatively non-varying printing provided on the other face 166 of the web 110 (shown in Figure 3) typically includes fields 168, 170 of contents-obscuring patterns of indicia or the like which later can serve the purpose of rendering it difficult or impossible for the contents of the internal communication provided by each business form 112 to be read without opening-up the form. The face 166 of the portion 154 may also include instructions, notices, warnings, etc., for the recipient, typically printed as non-varying information at the same time that the field 168 is printed.

(In contrast to the prior art form stock 10 shown in Figure 1, on which the left and right portions 46 and 54 of the depicted face will become the inner faces of the respective individual business communications, on the form stock 110 of the present invention, the face 114 of the left portion 146 shown in Figure 2 will become an inner face of the respective individual business communications, but the face 114 of the right portion 154 shown in Figure 2 will become an outer face of the respective individual business communications. Correspondingly, the fields 168 shown at the right in Figure 3 are on the reverse face 166 of the left portion 146 and will become the outside rear of the respective individual business communications, and the fields 170 shown at the left in Figure 3 are on the reverse face 166 of the right portion 154 and will become the inside front of the respective individual business communications.)

In practice, relatively non-varying information such as a return address, postal class, franking information and instructions (for opening by severing respective marginal strips along respective perforation lines) is printed on the face 114 of the right portion of each potential form 112, shown in Figure 2. Similar instructions may be printed on the outer face 112 of the other portion 146, of each potential form 112, shown at the right in Figure 3.

Typically there are four types of information printed on the inner face of the left portion 146 of the form: first, relatively non-varying information such as instructions and the outlines and headings for various spaces, on check-stock or the like the name of the issuer, maker, and the like; second, document serial number information, e.g. a unique one-up number applied to each potential form so that regardless of whether the form is ever filled-in or used, it can be distinguished from others; third, an addressee/payee block, typically containing the name of the intended recipient of an individual form 112; and fourth, various unique information relating to a particular account for a particular period of time.

Typically, the first and second types of information are preprinted on the form stock, by the form stock manufacturer, at which time spaces are printed for receipt of information of the third and fourth types, but these spaces are left blank by the forms manufacturer. The novel form stock product of Figures 2 and 3 is then shipped to the business or other institutional customer which has a need to provide its clientele with individualized written communications based on the potential individual forms 112.

At the business or other institution, by a process of variable printing, which may use an impact printer such as a simple typewriter all the way up to a computerized daisy wheel or pin dot matrix printer, or a non-impact printer such as a computerized laser printer, other xerographic printer or the like, variable information of the third and fourth types is applied to the respective spaces on the left portions 146 of the potential forms in succession, typically while the form stock remains spread open and in web form as shown in Figure 1.

Typically at this same time, and by use of the same or a coordinated variable printing means, the name and address of the intended recipient of each potentially individual business communication is printed in the customary location on the face 114 of the right portion of each form 112.

It should be noted that whereas both faces 114 and 166 of the form stock 110 typically are preprinted with relatively non-varying information, all of the necessary variable printing may be done in a single pass on both portions 146 and 154 on one face, the face 114 of the form stock 110.

There is another reason why it is believed that the utilitarian design of the form stock of Figure 1 will be attractive to business users, and the attractivness of that feature comes into play at a stage of use subsequent to the one that is depicted in Figures 2 and 3: after the variable information of types three and four has been printed on each potential form, the left portion of the face 114 and the recipient's name and postal address has been printed on the corresponding right portion, the web 110 of form stock is severed, e.g. by slitting about the medial longitudinal line 124 and one or both of the portions 146, 154 are shifted laterally, without rotation, so that the former right portion 154 is superimposed facewise on the former left portion 146 with the longitudinal perforation lines 28 and 192 superimposed, and the longitudinal perforation lines 32 and 190 superimposed. Preferably, the marginal strips 30 and 34 are wider than the marginal strips 194 and 196 so that the respective rows of sprocket holes 20 and 22 remain exposed for use right up through this stage. This causes the band of heat actuatable adhesive 144 to be juxtaposed facewise against the comparable region of the marginal strips of the former right portion of the form. Heat and moderate pressure are applied to activate the adhesive 144 and thus seal the series of individualized business forms. Finally, each individualized business form is separated from the series by severance along the respective transverse perforation lines 126. Because the two portions 146 and 154 which will constitute each form have had their transverse perforation lines 126 formed by the same perforator means, at the same time, the chances are very excellent that when the lateral shift is made after severing on the medial line 124, at the top of each potential form, the superimposed former left and right halves of the respective perforation line 126 now lie substantially perfectly superimposed. And the same at the bottom of each potential form. After the adhesive 144 has been activated, this excellence of superimposition makes severing the web into individual thus-enveloped business communications a task that is especially easy to accomplish whether by use of conventional severing equipment or by manual means.

Although it may not be possible to print variable information on the one portion of the web 110 which carries the squared O-shaped band of adhesive 144 using a laser printer of a type that may prematurely activate that adhesive, the product should be well received by businesses which can print on that portion using a variable printer which will not heat the adhesive. A basic attraction is that the individual forms 112 can be mailed, at favorable rates, in postal systems which prohibit or discourage through economic penalties the mailing of business communications having intended recipient postal addresses showing through glazed apertured window envelopes.

(It should be noted that the band of adhesive 144 could be applied on the face 166 of the marginal strips 30, 34, 38, 42, rather than on the face 114 depicted. In such a case, the left portion of the web 110 could be provided with a one or more second webs (not shown) applied thereon, as has been described above in relation to the provision on the right portion 54 of the web 10 of the second web 56 of the conventional product.)

A typical pattern of use by the business of the form stock 110 is illustrated in Figure 4.

The stock 110 is shown being withdrawn in its two-wide form from a roll, or, more typically, a carton. The stock is longitudinally severed along the medial longitudinal line 124 (Figures 2 and 3) typically by a slitter, but alternatively by a perforation-breaker if the line 124 has been preperforated by the forms manufacturer. In either case, the slitter or perforation breaker may be provided as part of an interstacker, e.g., a Model 319A interstacker 182 which is at present commercially available from Moore Business Forms, Inc. The interstacker 182 may also be used as a printer, e.g. of non-varying information, or of serially-varying information, e.g. by impact means, on a portion of any face of the stock 110. After the stock has been shown split along the medial longitudinal line 124 into single-wide webs 146 and 154, even without any transversal severing, it can be routed along two termporarily divergent, then reconvergent paths, e.g. in order to permit routing of at least one of the single-wide webs, typically the right portion 154, which contains no heat-activatable adhesive, through a computer-controlled printing station 180, where variable printing is shown being applied to the faces 114 and 166. As the separated portions 146 and 154 are reconverged downstream of the printing station 180, they are laterally shifted into superposition, preferably by guide means of a detacher 184 which may be Model 385 or Model

3600 detacher which is at present commercially available from Moore Business Forms, Inc. The detacher 184 may have sprockets 186 (pin wheels) which are arranged to guide the web portions 146 and 154 accurately into registered superposition by running in the respective lines of sprocket holes 120, 122 (Figures 2 and 3). The superimposed forms, severed along accurately registerd perforation lines 126 (Figures 2 and 3) by the detacher 184 are maintained in registry as they are fed by the detacher 184 into a sealer 188 where heated platens 190 apply heat and pressure to activate the adhesive, thus closing and sealing each separate individual communication 192, which is thereby made ready for mailing to the respective intended recipients.

In manufacturing the form stock, the manufacturer may provide two additional longitudinal rows of sprocket holes adjacent and respectively to the left and to the right of the medial longitudinal line 124, more medial of the double-wide form stock than the longitudinal perforation lines 190 and 192. The distance between the two longitudinal rows of sprocket holes (120 and the respective additional row) on the left portion is equal to the distance between the two longitudinal rows of sprocket holes (the respective additional row and 122) on the right portion, so that the sprockets 186 on the detacher may run in two now opposite marginal rows of sprocket holes on each of the portions 146 and 154 for more accurately guiding the single-wide webs into registry, severing the registered webs into potential individual communications, and feeding these to the sealer. Likewise the sealer and any other downstream equipment can run in superimposed sets of sprocket holes at both margins, rather than in exposed single sets of sprocket holes in opposite margins of the superimposed webs.

Figure 4 shows a typical sequence of form processing where the double-wide stock has heat sealable adhesive on one portion and only the other portion which bears no heat sealable adhesive is to be non-impact printed, e.g. with a laser printer. Some laser printers cannot be web fed. In such a case, it would be necessary to sever at least one portion of the web along the respective transverse perforation lines prior to printing. For non-impact printers not having such a limitation, and for impact printers not having such a limitation, the printing step may precede the severing step. A hybrid is possible, where after longitudinal slitting, one portion is run through a non-impact printer to receive variable printing and the other portion is sidelined for impact printing with variable information, whereafter the two resultingly printed single-wide webs are fed into superimposed registry, severed and sealed. Clearly in such a case added care must be taken to ensure that corresponding increments of the printed single-wide webs are brought into superposition and made into respective individual communications.

It should now be apparent that the improvement in thickness-wise transverse perforation line registration in web of printed multiple-ply business forms as described hereinabove, possesses each of the attributes set forth in the specification under the heading "Summary of the Invention" hereinbefore. Because it can be modified to some extent without departing from the principles thereof as they have been outlined and explained in this specification, the present invention should be understood as encompassing all such modifications as are within the spirit and scope of the following claims.

Claims

1. A process for providing multiple ply business forms with improved registration of thickness-wise transverse perforation lines for defining two respective opposite edges 116, 118 of individual forms, this process comprising:
providing a two-wide web 110 of longitudinally adjoining potentially separate business forms 112 on opposite sides of respective transverse perforation lines 126 which extends between two opposite longitudinal edges 116, 118 of said web;
variably printing at least one field 64 of information on one face of said web, on each potentially separate business form 112, on at least one side of a medial imaginary line 124 which divides said web 110 into a left portion 146 and a right portion 154;
progressively severing said web 110 along said medial imaginary line 124 in order to separate said left and right portions;
shifting said left 146 and right 154 portions laterally into facewise superposition without rotation to create a composite web of multiple plies; and
attaching said plies to one another marginally of both of said opposite longitudinal edges.

2. The process according to claim 1, wherein:
the two-wide web 110 as provided in said step of providing, is provided with at least one respective row of sprocket holes 120, 122 running longitudinally thereof marginally of each said longitudinal edge 116, 118 thereof; and
in conducting said step of shifting, guide means 184 are engaged in said rows of sprocket holes 120, 122 for accurately achieving said facewise superposition.

3. The process according to claim 1 or 2 wherein:
the two-wide web 110 as provided in said step of providing, is provided with a pattern of deactivated,

activatable adhesive 144 on one face of one said portion of said web; and
said step of attaching comprises activating said adhesive 144.

4. The process according to claim 1, 2 or 3 wherein:
in conducting said step of variably printing, at least one field of information is applied on said one face of said web on each side of said medial imaginary line 124, so that in conducting said shifting step, one of said fields becomes positioned on an outside face of said composite web, on each said potentially separate business form 112, and another of said fields becomes positioned on an inside face of said composite web, on each said potentially separate business form.

5. The process according to any one of the preceding claims wherein:
on each said potentially separate business form 112 said one of said fields contains an intended recipient name and a corresponding postal address.

6. The process according to any one of the preceding claims further comprising:
separating said composite web along said transverse perforation lines, into a respective plurality of individual business forms.

7. The process according to claim 4 wherein:
at least one field of information is applied on a respective other face 114 of said web on at least one side of said medial imaginary line; and
said shifting step is so conducted as to ensure that one of said fields becomes positioned on an outside face of each said potentially separate business form and another of said fields becomes positioned on an inside face of each said potentially separate business form.

8. The process according to any one of the preceding claims wherein:
said step of variably printing is so conducted as to apply said at least one field on said one face and said at least one field on said other face both on a same side of said medial imaginary line.

9. The process according to any one of the preceding claims wherein:
when said step of variably printing is conducted, said web is free of heat-activatable adhesive on said same side of said medial imaginary line; and
said step of variably printing is conducted by non-impact printing.

10. The process according to claim 9 wherein:
said step of progressively severing said web along said medial amaginary line 124 is conducted upstream on said composite web from where said variably printing step is conducted thereon.

11. The process according to any one of the preceding claims further comprising:
separating said composite web along transverse perforation lines, into a respective plurality of individual business forms.

12. The process according to any one of the preceding claims, wherein:
including said step of providing a two wide web, said two-wide web is provided with a longitudinal line of perforations superimposed on said imaginary longitudinal line.

13. The process according to claim 12 wherein:
said two-wide web is provided with at least one respective row of sprocket holes running longitudinally thereof marginally of each said longitudinal edge thereof; and said two-wide web is also provided with at least two additional longitudinal rows of sprocket holes, including at least one respective row thereof marginally of and on opposite sides of said imaginary longitudinally line; and guide means are engaged in at least two opposite marginally provided said rows of sprocket holes on each side of said imaginary line for accurately achieving said facewise superposition.

14. A web of business form stock, for making a series of individual multiple ply business forms with improved registration of thickness-wise transverse perforation lines for defining two repsective opposite edges of individual forms,
said web comprising:
a two-wide web 110 of sheet material of indeterminate length having two opposite longitudinal edges 116, 118 and an imaginary medial line 124 dividing said web into a left portion 146 and a right portion 154 having a first face 114 and a second face 166;
a series of longitudinally spaced transverse perforation lines 126 in said web 110 of sheet material, these transverse perforation lines 126 extending between said two opposite longitudinal edges 116, 118 and dividing said web into a series of potentially separate business forms;
said web 110 on said first face 114 having a surface portion on each said potentially separate business form, located to one side of said imaginary longitudinal line 124 adapted to be variably printed with at least one field of individualized information;
longitudinally extending guide means 120, 122 provided on said web on both sides of said imaginary longitudinal line 124, these guide means 120, 122 being adapted to permit said left and right portions to be accurately guided in lateral movement, into superposition without rotation, after said web has been severed along said imaginary longitudinal line 124 in order to provide a composite web of multiple plies; and
means 144 for attaching said plies to one another marginally of both said opposite longitudinal edges.

15. The web according to claim 14 wherein:
said guide means comprises at least one respective row of sprocket holes 120, 122 running longitudinally of said web marginally of each said longitudinal edge thereof.

16. The web according to claim 14 or 15 wherein:
said attaching means 144 comprises a pattern of deactivated, activatable adhesive applied to a face of said web.

17. The web according to any of the preceding claims 14 to 16, wherein:
said web 110 in said first face 146 is also provided with a surface portion on each said potentially separate business form, located to the opposite side of said imaginary longitudinal line 124 from said one side 112, which is adapted to be variably printed with at least another field of individualized information.

18. The web according to any one of claims 14 to 17 wherein each said one field is adapted to be variably printed with a respective intended recipient and corresponding postal address so as to appear on the outside of each respective individual business form, and each said other field is adapted to be variably printed with information relating to an account of such intended recipient so as to appear on the inside of each respective individual business form.

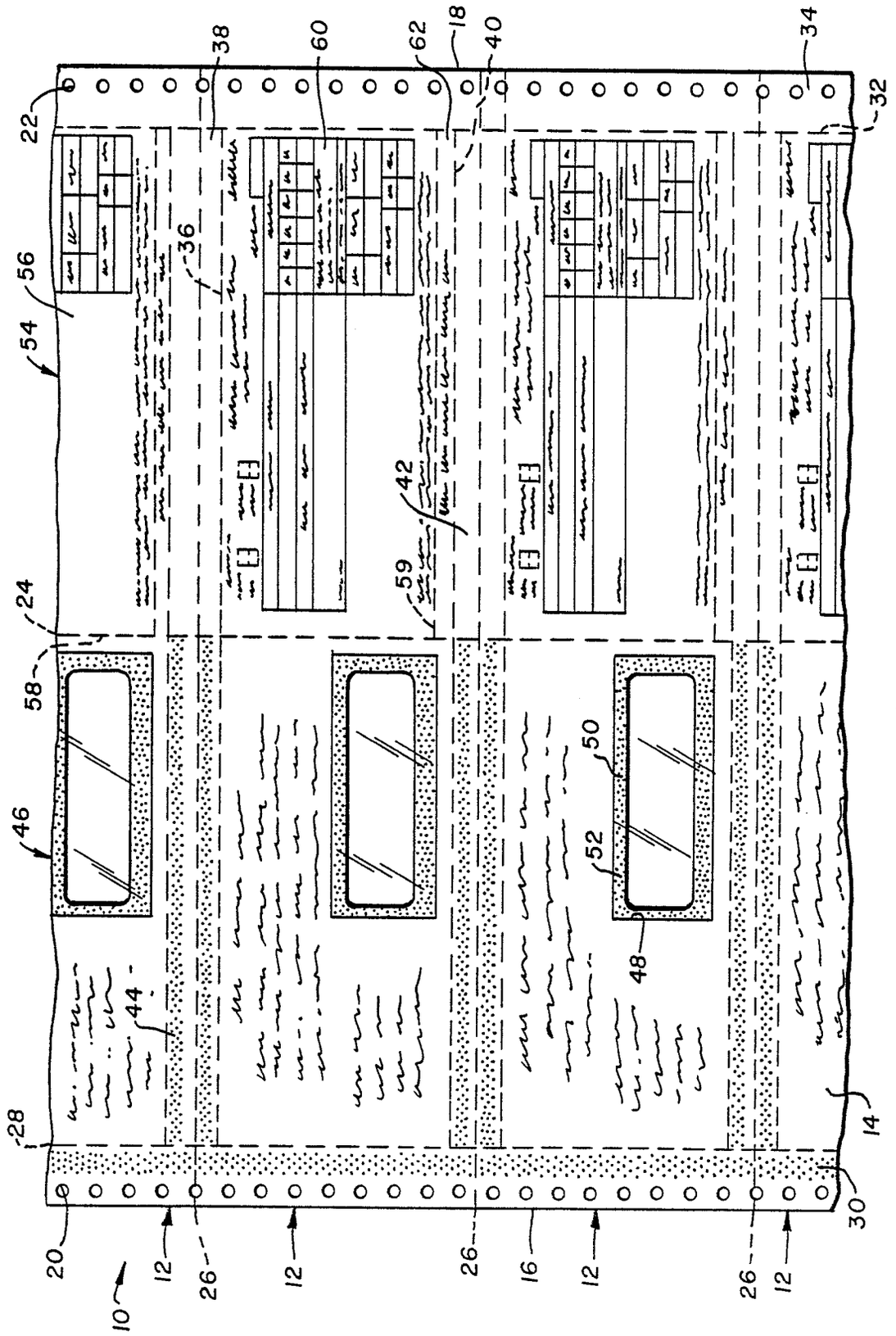
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Fig.1

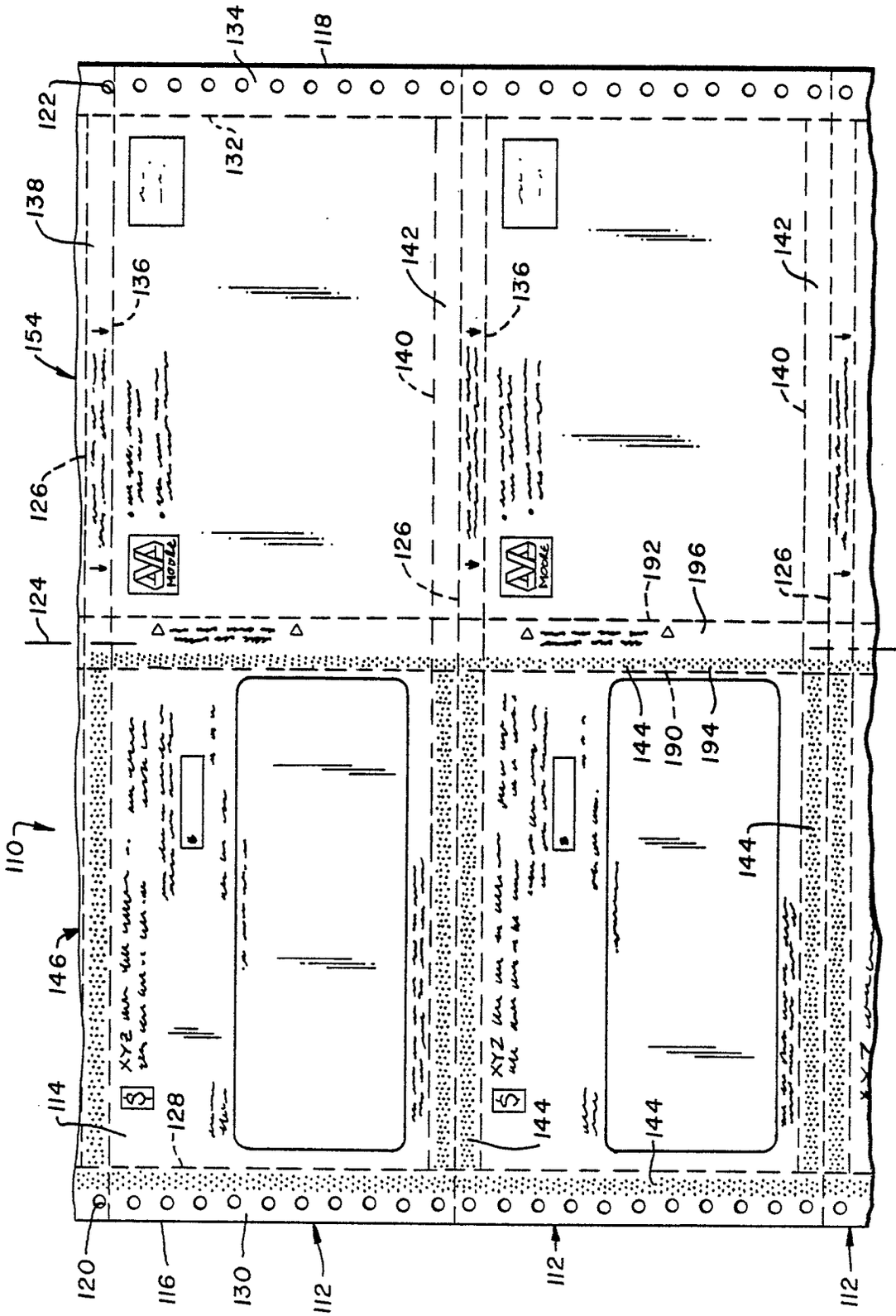
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Fig.2

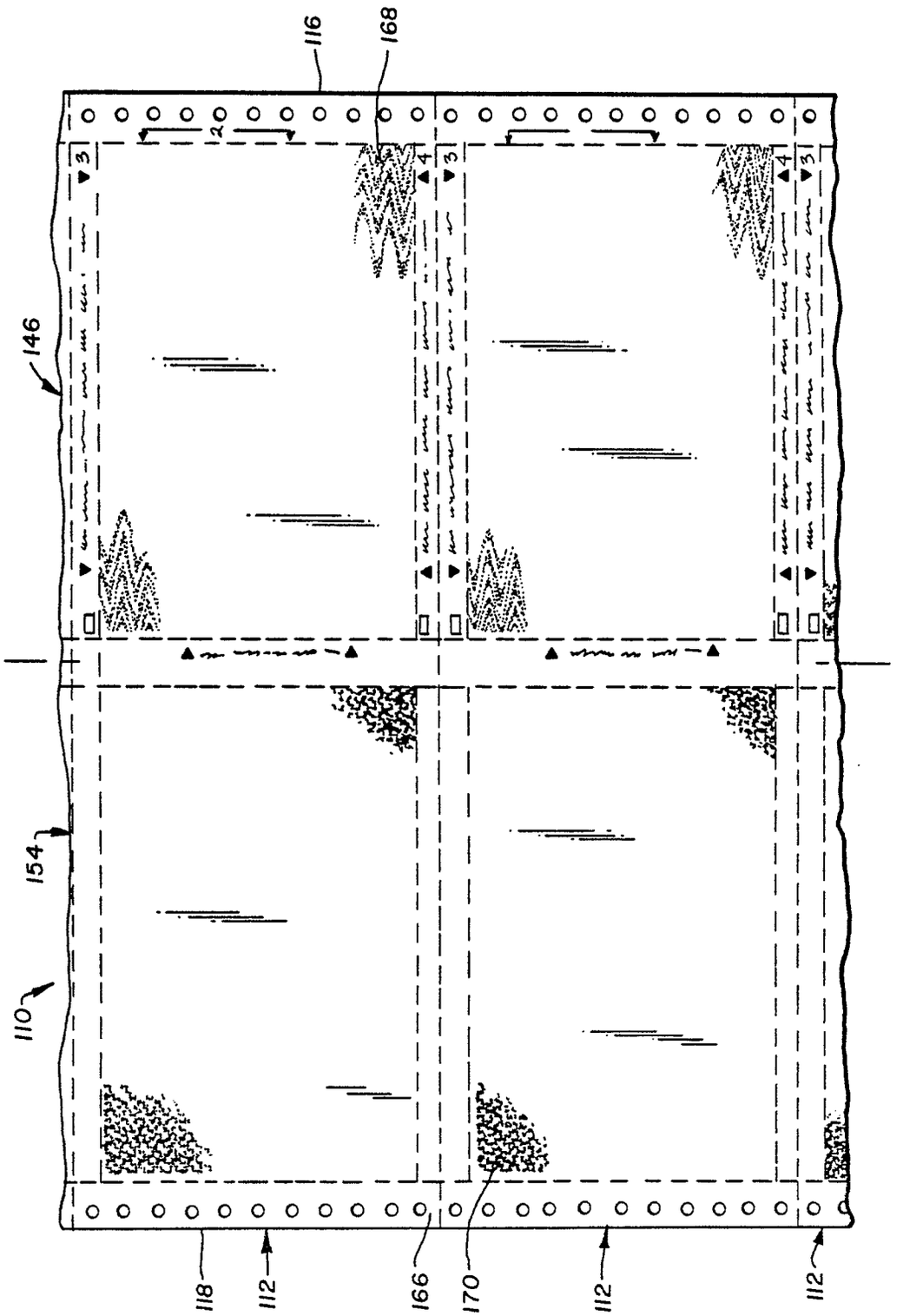
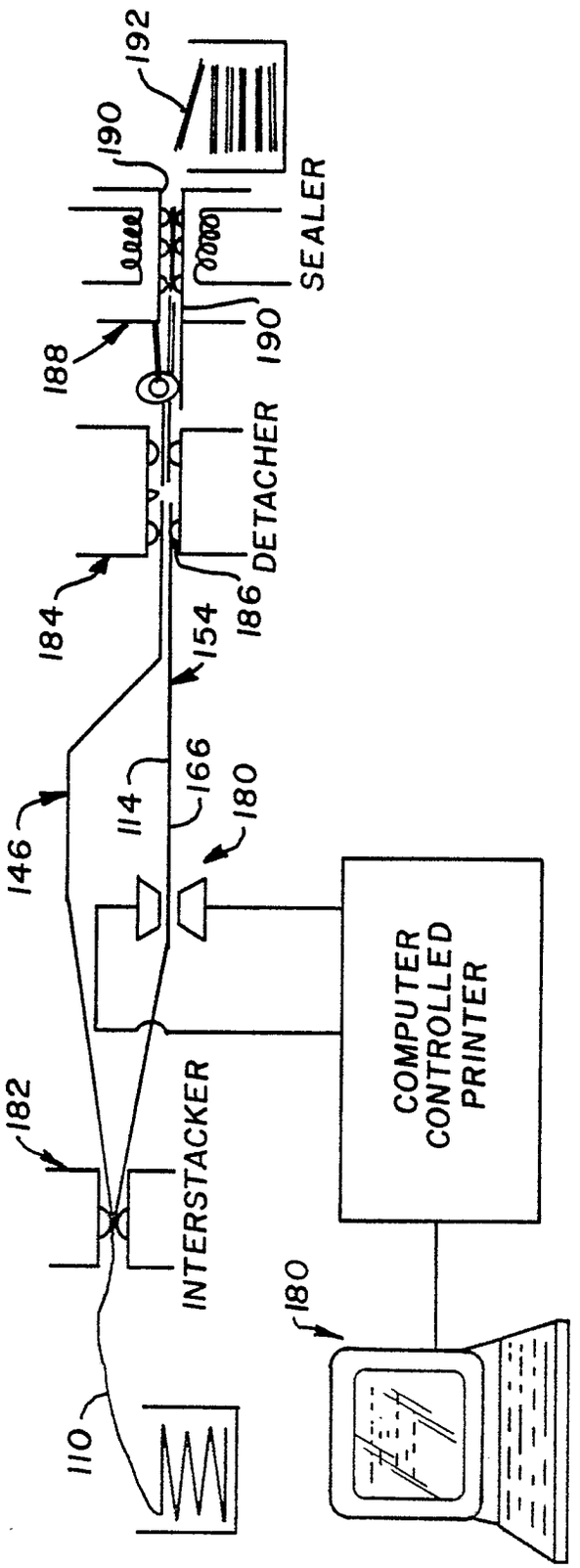


Fig.3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190
SEALER
188
190
DETACHER
184
154
186
114
166
180
146
182
INTERSTACKER
COMPUTER CONTROLLED PRINTER
180
110

Fig. 4