United States Patent

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[72] Inventor **Fred C. Bremer**
4740 Rica Road, Saginaw, Mich. 48603

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[54] **DOCUMENT CARRIER CONSTRUCTION**
10 Claims, 4 Drawing Figs.

[52] **U.S. Cl.** ..... **229/72,** 229/68 R, 235/61.12
[51] **Int. Cl.** **B65d 27/00,** B65d 27/08
[50] **Field of Search** ..... 229/72, 68 R; 235/61.12; 229/83; 156/272

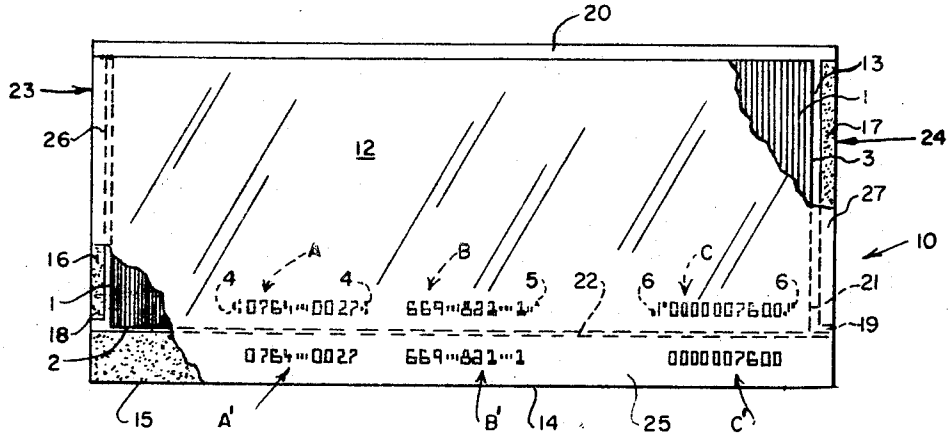
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Primary Examiner—David M. Bockenek
Attorney—Learman & McCulloch

ABSTRACT: A carrier adapted to contain a document provided adjacent its bottom edge with magnetic ink characters capable of use with automatic sorting machinery, the carrier having a compartment in which such a document may be accommodated and having an extension below the compartment which supports the document at such level as to render the magnetic ink characters thereon ineffective and on which may be provided magnetic ink characters corresponding to those on the document. The compartment has at least one open side through which the document may be inserted and air passages in communication with the interior of the compartment to prevent the accumulation of air within the receptacle. The walls of the receptacle preferably are relatively transparent, but the extension at the bottom of the compartment is relatively opaque.



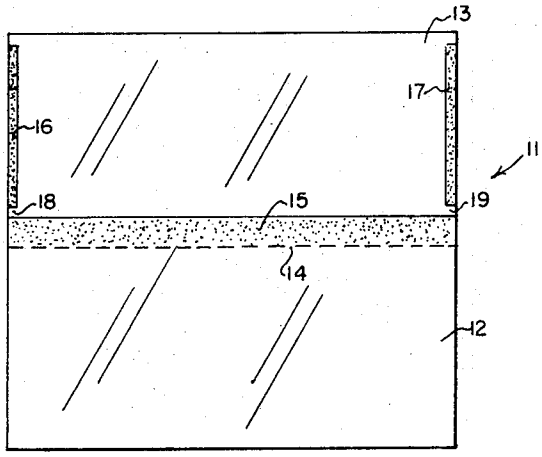


FIG. 1

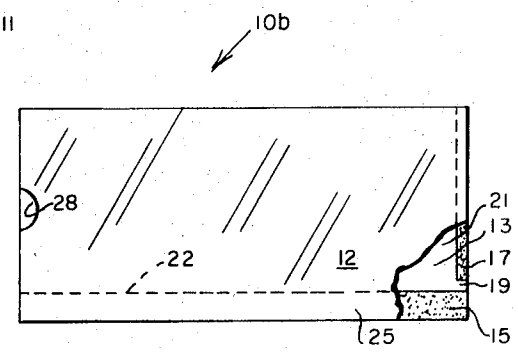


FIG. 4

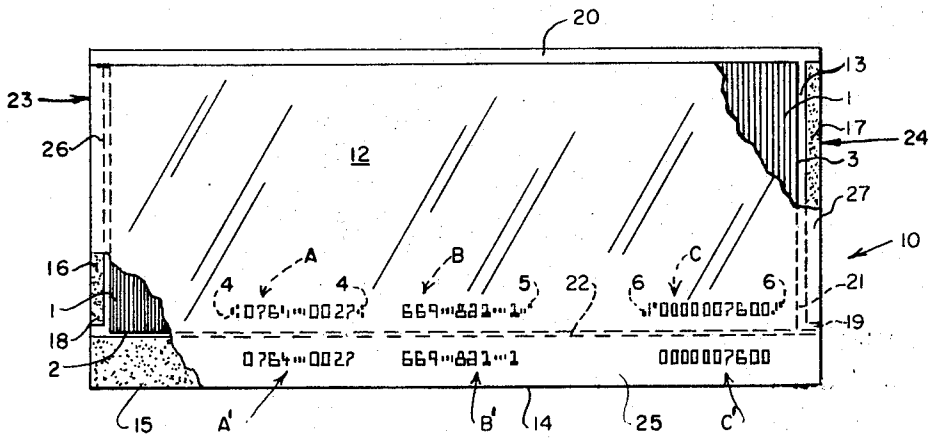


FIG. 2

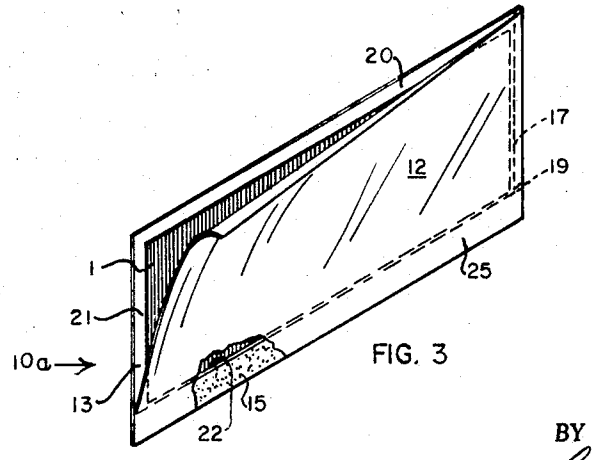


FIG. 3

INVENTOR.
FRED C. BREMER
BY
Learman & McCulloch

DOCUMENT CARRIER CONSTRUCTION

The invention disclosed herein relates to an envelope or document carrier construction which is particularly adapted for use with automatic check-sorting machinery of the kind presently in use in most of the financial institutions throughout the country.

Documents with which carriers constructed in accordance with the invention are adapted for use comprise checks, memoranda, and other papers imprinted with special magnetic ink characters. Checks, for example, are provided with a ⅝-inch-wide area, known as a clear band, along their bottom edges for the reception of the magnetic ink characters. When checks imprinted with the magnetic ink characters are introduced to automatic reader-sorter machinery, magnetically responsive scanning apparatus of the machinery will react to the magnetic ink characters and actuate various components of the machinery to effect various accounting operations and to sort the documents in accordance with a predetermined plan.

The conventional check is provided with three groups of magnetic ink characters in the clear band. One group of characters corresponds to an individual bank's identification number, another group of characters corresponds to the account number of an individual depositor, and the third group of characters corresponds to the amount for which the check is written.

The bank's identification number and the depositor's account number may be preprinted on the checks prior to their being distributed to the bank's customers, but the characters representing the amount for which an individual check is written must be applied to the check when the latter is presented to a bank for payment. Such characters conventionally are applied to the check by special, magnetic ink encoding machines which are operated by a bank's clerical staff. Despite the best efforts of those persons responsible for encoding a check, there inevitably will be some checks or other documents which will be incapable of being processed automatically by the reader-sorter machinery.

The inability of some documents to be processed automatically may be due to many factors. For example, one or more of the groups of magnetic ink characters may be placed improperly on the check's clear band, the amount for which the check is drawn may be encoded incorrectly, the check may be defaced, torn, or otherwise mutilated, or the check or other document may be either too large or too small to be handled properly by machinery.

Documents which are incapable of being processed automatically by the reader-sorter machinery must be handled in some other way. The most successful manner of handling such documents is to place them in specially constructed document carriers each of which includes a compartment or pocket for the accommodation of a document so as to support the latter at such level that the magnetic ink characters on the document will be above the level of the scanning apparatus of the reader-sorter machinery. The carrier, however, has an extension below the bottom of the compartment and on which magnetic ink characters may be imprinted to correspond to the characters on the document. When a carrier of this kind is presented to the reader-sorter machinery, it acts exactly like the document itself. That is, the carrier functions like the document and, in addition, carries the document with it. A document carrier of this kind is disclosed in U.S. Pat. No. 3,043,506, granted July 10, 1962.

Document carriers of the kind generally in use comprise front and rear sheets adhesively secured to one another along their bottom edges to provide the bottom of the document-accommodating compartment and to form the extension for the reception of magnetic ink characters. The sheets also are adhesively secured along at least one of their side edges so as to provide a closed end for the compartment. In some cases the sheets are secured adhesively at both of their ends, thereby providing a compartment having two closed ends and an open top, whereas in other instances the sheets are secured at their top and bottom edges and along one side edge so as to provide a compartment having a bottom, a closed top, one open end and one closed end. Regardless of the construction utilized in the manufacture of carriers, it has been found that air sometimes is trapped in the compartment, thereby forming a bulge which may present difficulty in processing of the carrier by the machinery. It also has been found, particularly in the case of those carriers wherein the front and rear sheets are secured to one another by adhesive means, that portions of the adhesive at the bottom and ends of the compartment overlap, thereby constituting a double-thickness layer of adhesive. In such cases small amounts of the adhesive may be squeezed from between the front and rear sheets, causing many of the carriers to stick together.

To facilitate the encoding of a carrier containing a document, it is preferred that the front wall of the carrier be transparent, and to enable both sides of a check to be photographed without the necessity of its being removed from a carrier it is preferred that the rear wall also of the carrier be transparent. The encoding strip or extension below the compartment should not be transparent, however, because transparency of the extension may result in inaccurate operation of the encoding or other machinery, particularly that which employs light-sensitive photoelectric apparatus to trigger the imprinting of MICR characters on the extension.

An object of this invention is to provide a document carrier which possesses all of the advantageous characteristics of known document carriers, but which overcomes the disadvantages thereof.

Another object of the invention is to provide a document carrier construction provided with air passages to preclude the entrapment of air in the document-accommodating compartment.

A further object of the invention is to provide a document carrier construction utilizing adhesive means to form the carrier, but avoiding any possibility of multiple thickness layers of adhesive.

Another object of the invention is to provide a document carrier construction having walls of sufficient transparency to enable data on a document accommodated in the carrier to be seen and photographed through the carrier walls, and wherein the magnetic ink character encoding extension has sufficient opacity to assure proper operation of the processing machinery.

Other objects and advantages of the invention will be pointed out specifically or will become apparent from the following description when it is considered in conjunction with the appended claims and the accompanying drawings, in which:

FIG. 1 is a plan view of a blank from which a document carrier may be formed;

FIG 2 is a plan view of a carrier formed from the blank shown in FIG. 1 and containing a check or other document therein, certain parts being broken away for clarity of illustration;

FIG. 3 is a perspective view of a modified form of carrier which also may be made from the blank illustrated in FIG. 1; and

FIG. 4 is a plan view of another embodiment which also can be made from the blank illustrated in FIG. 1.

A document of the kind with which a carrier constructed in accordance with the invention is adapted for use is indicated in FIG. 2 as comprising a paper check 1 having adjacent its lower edge a plurality of groups of magnetic ink characters such as are used in the mechanized check sorting system. One of these groups of numbers is identified by the reference character A, and group A consists of numbers identifying a particular bank. Group B consists of numbers identifying a particular account of the bank on which the check is drawn, and Group C includes numbers which indicate the amount for which the check is drawn. The groups of numbers are so located on the check 1 as to lie substantially at the center of a

band extending five-eighths inch from the bottom edge 2 of the check toward its opposite edge. All of the characters of group A must be located between two symbols 4 which define a field known as the "transit number" field; all of the characters of group B are located in a field referred to as the "on us" field and which is defined at the right-hand boundary by a symbol 5; and all of the characters of group C are located within what is referred to as the "amount" field which is bracketed by two symbols 6. The field boundaries are precisely located from the right-hand edge 3 of the check. For example, the left and right boundaries, respectively, of the amount field are located 1⅞ inches and one-fourth inch from the right-hand edge 3. A tolerance of ±1/16 inch is allowed for the fields from the right-hand edge 3 of the check.

All of the characters of groups A, B and C are required to have a nominal height 0.117 inch and should be located on the ⅝-inch-wide strip in a band one-fourth inch high with its lower edge no less than three-sixteenths inch from the bottom edge 2 of the check 1. These dimensions are important because if the characters of the groups extend above the top edge or below the bottom edge of the ¼-inch band, the magnetic scanning mechanism of the reader-sorter machinery may not be capable of handling the checks accurately, even though the scanning mechanism is designed to scan a ⅝-inch-wide band. Consequently all check printers standardize their work so that the checks will conform to the dimensions above mentioned.

Should the groups of symbols placed on the check 1 be free of imperfections and should the check itself be unmutilated and of such size as to be accommodated by a reader-sorter machine, it ordinarily should be processed completely automatically and no difficulty in its handling will be encountered. Should the check for some reason be rejected by the machine, however, it may pass to a clerk who will place it in a carrier constructed in accordance with the invention and then encode the carrier in a manner which subsequently will be described.

A carrier constructed in accordance with the embodiment of the invention disclosed in FIG. 2 is designated generally by the reference character **10** and is formed from a blank 11 of paper or the like which preferably is transparent for a purpose to be explained.

The blank **11** comprises a front wall or panel **12** and a rear wall or panel **13**, the front panel being adapted to overlie the rear panel **13** when the blank 11 is folded along a line 14. Along one side of the line 14, either or both of the panels may be provided with a strip of adhesive 15 which is applied to the full length of the blank 11. Along one side of either of the panels is a strip of adhesive **16**, and a similar strip of adhesive **17** is applied to the opposite end of the panel. The adhesive strips **16** and **17** terminate short of the adhesive strip 15, however, so as to provide two zones 18 and 19 which are free of any adhesive.

The adhesive may be any one of a number of suitable kinds, but it preferably includes a quantity of titanium oxide and a blue or other dark dye so as to be relatively opaque as compared to the panels **12** and **13** for a purpose presently to be explained.

The blank **11** may be folded along the line 14 so as to cause the front wall **12** to overlie the rear wall 13, whereupon the walls will be secured to one another by the adhesive strips 15, **16** and **17** to form the rectangular carrier 10. Preferably, the line **14** is so located that the width of the front wall 12 is less than that of the rear wall **13** so as to provide a tongue 20 that projects beyond the free edge of the front wall 12 to facilitate insertion of the document **1** in the carrier.

The carrier **10**, in its finished form, is rectangular and has its front and rear walls overlying one another and joined together along their lower, longer sides by means of the adhesive 15. The overlying walls **12** and **13** also are joined together along both of their shorter sides by means of the adhesive 16 and 17. Thus, there is formed a compartment **21** having a bottom **22** constituted by the adhesive strip **15**, two closed ends 23 and **24** constituted by the adhesive strips **16** and 17, respectively, and one open side. Those portions of the walls 12 and 13 which project below the compartment bottom **22** constitute an extension **25** extending the full length of the carrier, and those portions of the walls which project beyond the closed ends of the compartment constitute extensions **26** and **27** which extend the full width of the carrier.

It is preferred that the adhesive strip 15 be coextensive in length and width with the extension **25**. This will avoid any possibility of wrinkling of the extension as the carrier negotiates turns during passage through encoding or reader-sorter machinery.

The width of the extension **25** or, stated differently, the location of the compartment bottom **22** above the fold line **14**, is of considerable importance. The magnetic scanning mechanism of the processing machinery scans a field measuring five-eighths inch in a vertical direction. Accordingly, the compartment bottom **22** must be so located that a document accommodated in the carrier is supported at a height such that the groups of characters A, B and C are raised out of the field scanned by the scanning mechanism during passage of the carrier and document through the machine. If it could be depended upon, without question, that the groups of characters **A, B and C** on a document always would be centered properly with respect to the ¼-inch band and that the band itself would be located properly, the minimum width of the extension **25** safely could be three-eighths inch. However, because it is not possible to assure proper centering of the groups of characters **A, B and C**, the compartment bottom **22** preferably should be located a minimum of seven-sixteenths inch above the bottom edge **14** of the carrier.

When a clerk is given a check or other document which has been rejected by the scanning machine or which cannot be accommodated in the machine, he will place the document in the carrier **10** so that its face is visible through the front wall **13** and then place the carrier in a special, typewriterlike machine and encode the extension **25** with magnetic ink characters identical to those present in one or more of the groups A, B and C. These characters are indicated in FIG. 2 by the reference characters A′, B′ and C′. Since the carrier containing the document will be presented to the document processing machinery, it is important that the groups of characters encoded on the extension **25** be located in a manner corresponding to the location of the groups of numbers on the document. Thus, the locations of the fields of the groups of numbers A′, B′ and C′ should correspond to the prescribed location of the fields of the characters A, B and C, as aforesaid. Such location of the fields for the character groups **A′, B′** and C′ will be assured by automatic stops forming part of the encoding machine.

The insertion of the document 1 in the carrier **10** will permit air to enter the compartment. As the carrier, together with the document 1, is fed through an encoding or reader-sorter machine by means of belts, rollers, or the like, air can be trapped in the compartment and create a bulge, particularly if the feeding mechanism grips the carrier above the bottom **22** of the compartment. This likelihood of an air bulge being created is increased in those instances in which a reader-sorter machine utilizes air jets to effect separation of documents for feeding to the machine. In some cases the bulge caused by trapped air is sufficient to prevent proper feeding of the carrier with the result that the carrier may be destroyed, or the document may be destroyed, or the operation of the machinery adversely affected. In the disclosed embodiment, however, the nonadhesive zones **18** and **19** provide air passages in communication with the interior of the compartment adjacent the bottom thereof, thereby permitting air to be exhausted from the compartment to avoid the creation of bulges.

It is important that the extension **25** be of uniform thickness so as to avoid uneven encoding of magnetic ink characters on the extension. In the carrier **10**, the extension **25** consists of two thicknesses of sheet material and one thickness of adhesive. The provision of the nonadhesive zones **18** and **19** precludes any possibility of multiple thickness layers of adhesive adjacent the ends of the carrier. The nonadhesive zones

18 and 19 thus not only provide the air passages, but also avoid multiple thicknesses of adhesive which could be squeezed beyond the confines of the carrier during its manufacture with resultant adhering of one carrier to another.

The carrier 10*a* shown in FIG. 3 is the same as the carrier 10, with the exception that the adhesive strip 16 is omitted from the carrier 10*a*. The carrier 10*a*, therefore, has a compartment 21 which is open at both its top and at one end.

The document carrier 10*b* illustrated in FIG. 4 is similar to document carrier 10*a*, but differs from the latter in that the front and rear walls 12 and 13 are the same width and are secured to one another along the upper edge of the carrier. The carrier 10*b*, therefore, has a closed bottom, a closed top, one closed end and one open end. The front wall 13 of the carrier 10*b* preferably is provided with a thumb cut 28 to facilitate inserting a document in the compartment.

The degree of transparency of the front and rear walls 12 and 13 should be sufficient to permit the written and printed material on the face and on the back of the document to be seen clearly and photographed, if desired. Such transparency of the extension 25, however, would interfere with reliable operation of the processing machinery. Accordingly, the adhesive constituting the strip 15 preferably includes a sufficient quantity of titanium oxide or other suitable material and a dye of a blue or other dark color sufficient to render the extension 25 more opaque than the wall portions of the compartment.

The disclosed embodiments are representative of presently preferred forms of the invention, but are intended to be illustrative rather than definitive thereof. The invention is defined in the claims.

I claim:

1. A rectangular document carrier comprising front and rear walls formed of sheet material overlying one another, said walls having portions joined together by adhesive along one of their longer sides and along at least one of their shorter sides to form a compartment having at least one closed end and a bottom constituted by the adhesively joined wall portions, at least one of said walls projecting beyond the bottom of said compartment for form an imperforate bottom extension of not more than two thicknesses of said sheet material extending the full length of said carrier, at least one of said walls projecting beyond the closed end of said compartment to form an imperforate end extension, the adhesive between said bottom extension and said end extension being interrupted to provide an air passage through said end extension in communication with the interior of said compartment.

2. A carrier according to claim 1 wherein said adhesive is opaque.

3. A carrier according to claim 1 wherein both of said walls project beyond the bottom of said compartment to form said bottom extension.

4. A carrier according to claim 3 wherein the projecting walls forming said bottom extension are adhesively joined together the full length and width of said extension.

5. A carrier according to claim 1 wherein said bottom extension is relatively opaque and the walls of said compartment are relatively transparent.

6. A carrier according to claim 5 wherein said adhesive contains a dye.

7. A carrier according to claim 1 wherein said walls are secured together adhesively at both of their shorter sides whereby said compartment is closed at both of its ends.

8. A carrier according to claim 23 including an air passage communicating with said compartment at each end thereof.

9. A rectangular document carrier comprising front and rear walls formed of sheet material overlying one another, said walls having portions joined together by adhesive along one of their longer sides and along at least one of their shorter sides to form a compartment having at least one closed end and a bottom constituted by the adhesively joined wall portions, said walls projecting beyond the bottom of said compartment to form an imperforate bottom extension not less than three-eighths inch wide and of not more than two thicknesses of said sheet material from end to end, said walls projecting beyond the closed end of said compartment to form an imperforate end extension, the adhesive between said bottom extension and said end extension being interrupted to provide an air passage through said end extension in communication with the interior of said compartment.

10. A carrier according to claim 9 wherein said front and rear walls are secured together along both of their shorter sides to form an imperforate end extension at both ends of said compartment, and wherein the adhesive between said bottom extension and each of said side extensions is interrupted to form an air passage through each end extension communicating with the interior of said compartment at each end of said compartment.