

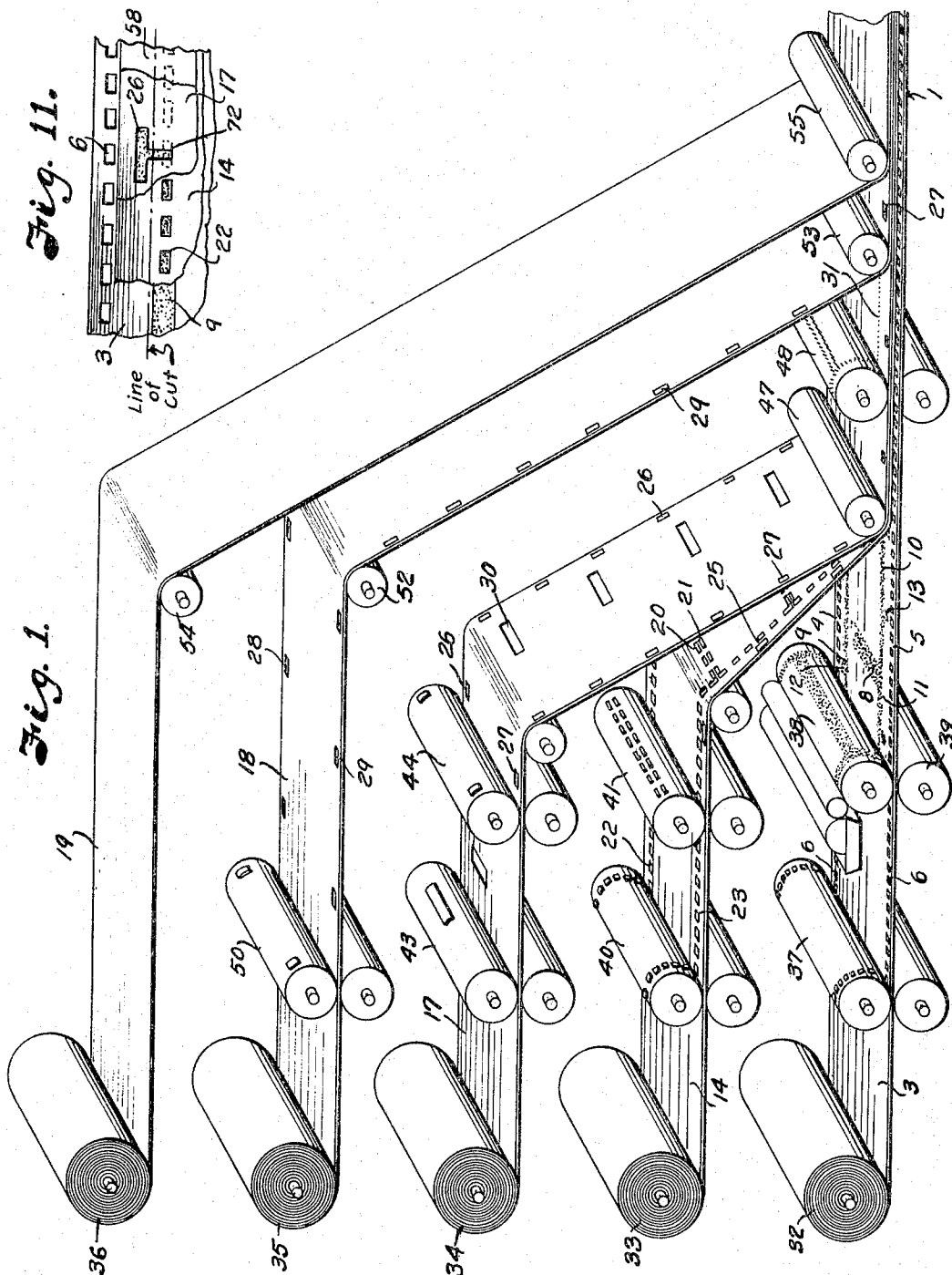
June 13, 1967

W. L. HIERSTEINER
ENVELOPES FOR USE IN COMPUTERS AND
SIMILAR TABULATING MACHINES

3,325,188

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4 Sheets-Sheet 1



INVENTOR.

Walter L. Hiersteiner

BY

Paul E. Mullendore

ATTORNEY

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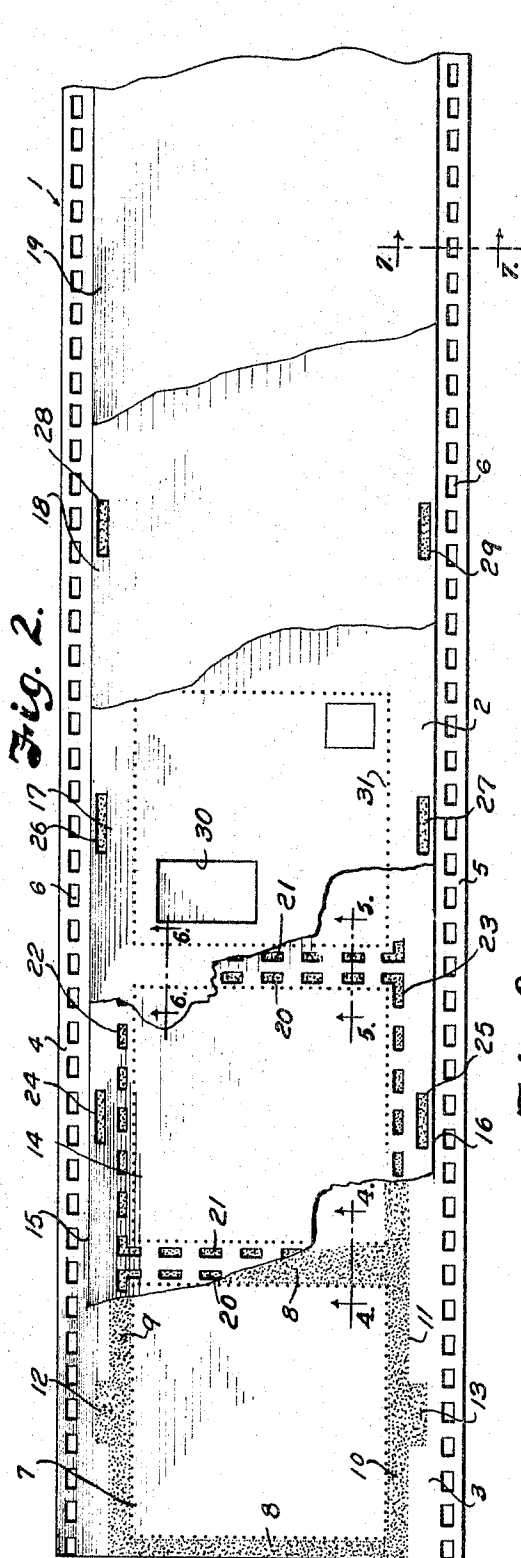


Fig. 7.

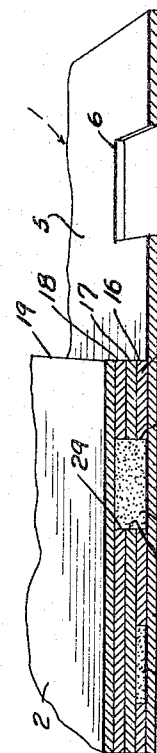


Fig. 6.



Fig. 5.

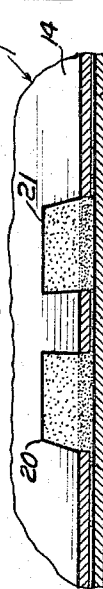


Fig. 4.

INVENTOR

Walter L. Hiersteiner

BY

Paul E. Mullendore

ATTORNEY

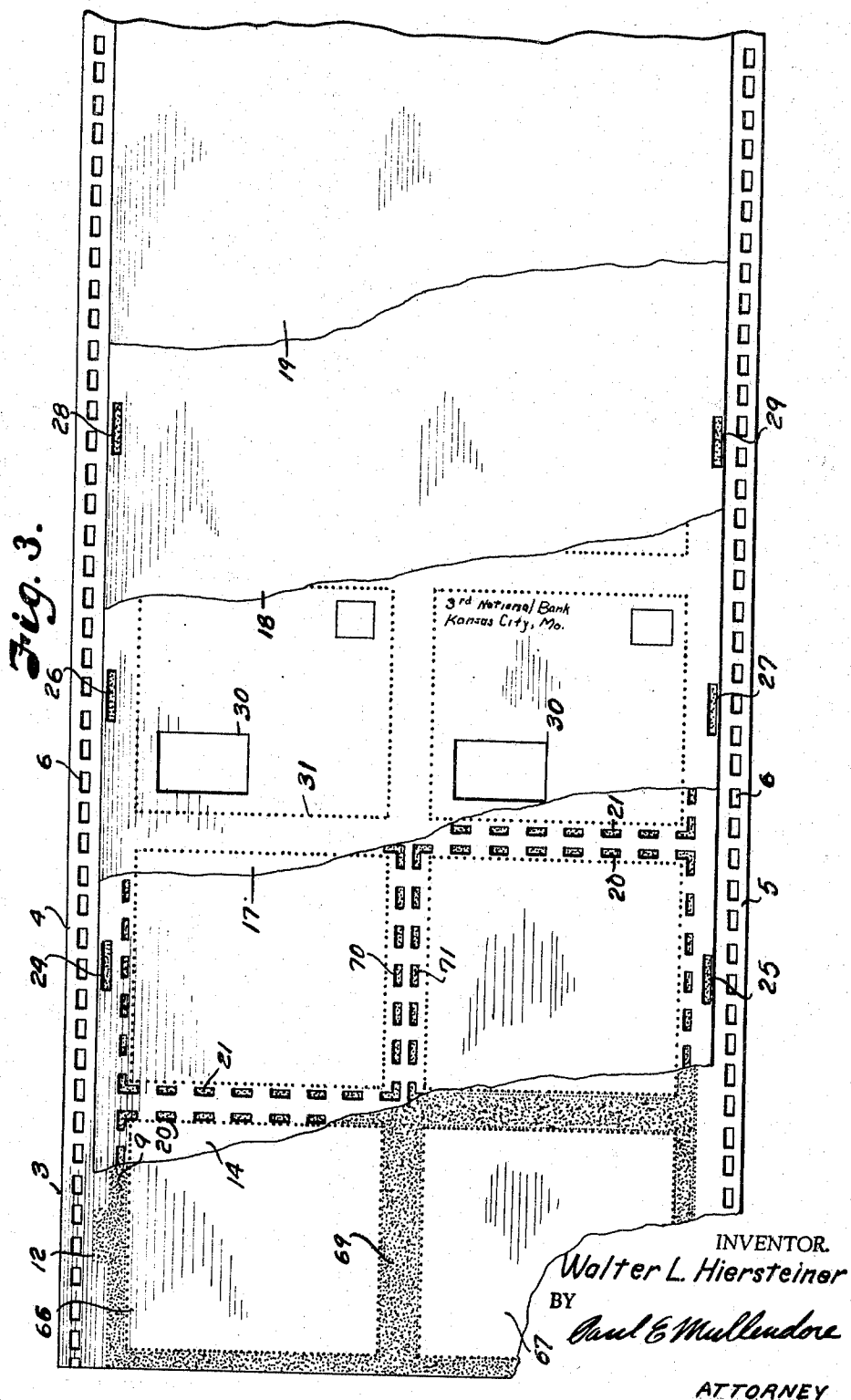
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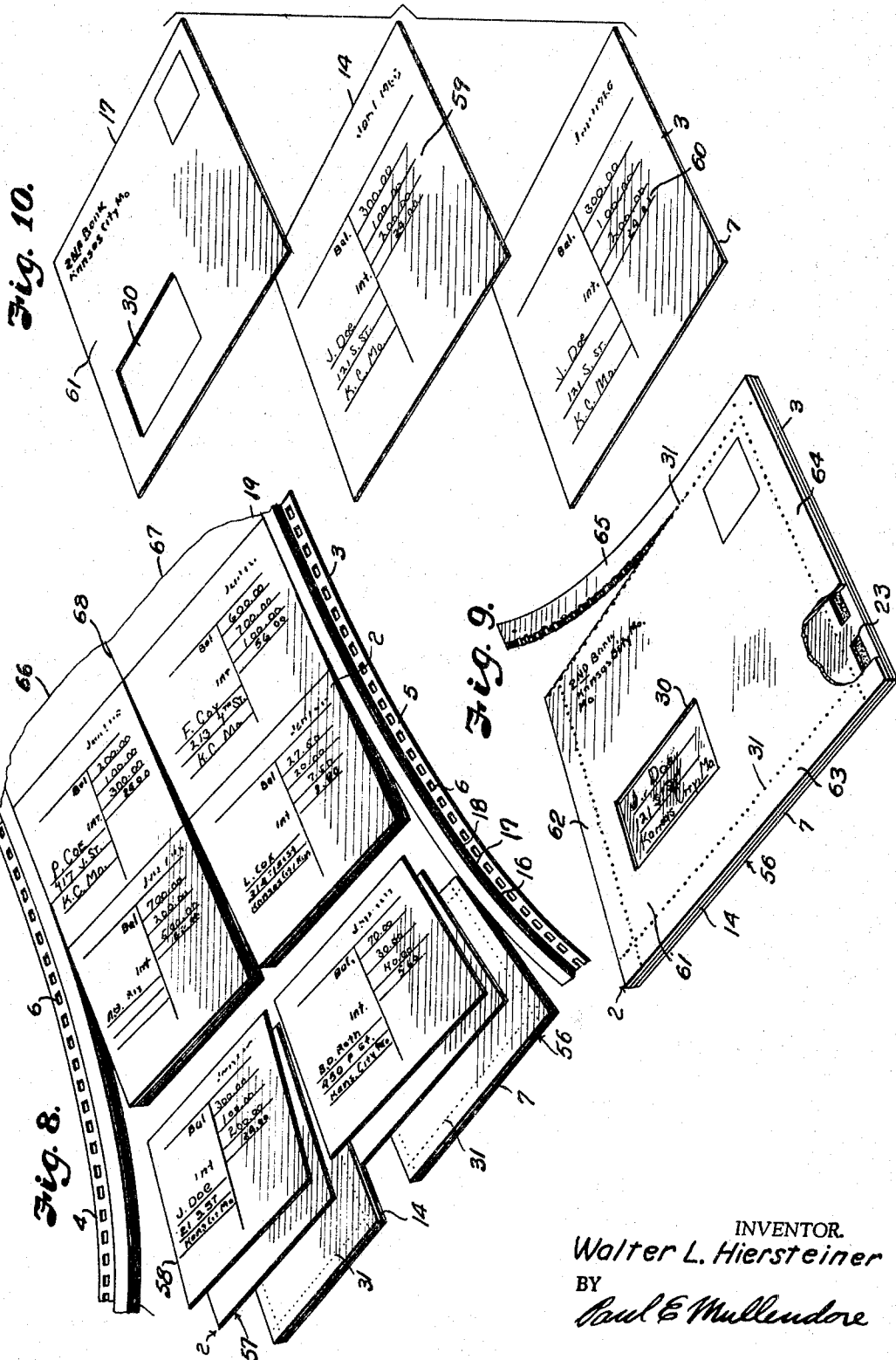
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INVENTOR
Walter L. Hiersteiner
BY
Paul E. Mullendore
ATTORNEY

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ENVELOPES FOR USE IN COMPUTERS AND SIMILAR TABULATING MACHINES

Walter L. Hiersteiner, Mission, Kans., assignor to Tension
Envelope Corporation, Kansas City, Mo., a corporation
of Delaware

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2 Claims. (Cl. 282-11.5)

This invention relates to a composite web to be printed upon in a tabulating or computing machine when making up customers' accounts.

Such webs incorporate a continuous series of envelopes, made up of superimposed strips constituting the front and back panels, an intermediate strip constituting an enclosure, and a carrier strip for record copies of the enclosure, all secured together as a continuous unit. When the strip constituting the front of the envelopes has window openings therein and certain of the other strips are composed of encapsulated ink paper or all but the strip forming the back panels are carbonized on the backs thereof, the envelopes with the enclosures therein are ready for mailing when they are cut apart. Such composite webs are, therefore, particularly useful by banks in sending out statements of their customers' accounts, because of the saving in time and labor over machine stuffing of printed statements into window envelopes. However, when the user requires more than one copy of a transaction inside each envelope and more than one copy of the record, manufacture of the webs becomes a problem because of the extra operations and costs involved. Also, the additional strips needed and the greater amount of adhesive required add to the extra cost and make the webs more bulky and difficult to handle; consequently, the user finds it more economical and convenient to print all of the copies and stuff them into envelopes after printing, than to use the continuous web assemblies now on the market.

Therefore, the present invention is to provide an improved composite web construction that gives the required number of copies enclosed in each envelope and also the number of copies to be used for records, at a cost the user is willing to pay.

Other objects of the invention are to provide for utilizing the strip that forms the back panels of the envelopes as an extra copy inside the envelopes; to provide for connection of all of the strips together with a single application of adhesive; and to provide a composite web involving all of the features of the present invention that is of less bulk and easier to handle.

In accomplishing these and other objects of the invention as hereinafter described, improved construction is provided as shown in the accompanying drawings, wherein:

FIG. 1 is a diagrammatic perspective view showing manufacture of the composite web of the present invention.

FIG. 2 is a plan view of the web in a single series of assemblies, with a portion of each succeeding strip broken away from its underlying strip to better illustrate the construction.

FIG. 3 is a similar view to FIG. 2, but showing a double series of assemblies, also with a portion of each succeeding strip broken away from its underlying strip.

FIG. 4 is a fragmentary perspective view of a portion of the carrier strip that forms the back panels of the envelope after adhesive has been applied thereto, the section being taken on the line 4-4 of FIG. 2 and the thickness exaggerated for clarity.

FIG. 5 is a similar view showing the carrier strip

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after the enclosure strip has been applied thereon, the section being taken on the line 5-5 of FIG. 2.

FIG. 6 is a similar view after application of the strip that forms the front panels, the section being taken on the line 6-6 of FIG. 2.

FIG. 7 is a fragmentary section of the completed composite web, with the section being taken on the line 7-7 of FIG. 2.

FIG. 8 is a perspective view showing separation of the units after printing, to better illustrate the envelopes having the enclosed copies sealed therein, and the two copies to be retained by the user.

FIG. 9 is a perspective view of the margins of the envelope being removed to open the envelope and free the portions that provide copies.

FIG. 10 is a perspective view of the separated parts of the envelopes which are the customer's copies.

FIG. 11 is a fragmentary portion of a modification wherein the strips which produce the exterior copies are to remain temporarily attached to the envelope units after the web has passed the burster.

Referring more in detail to the drawings:

Referring first to the composite web 1 having the single series of units 2, each composed of an envelope, containing the copies to be sent to the customer, and the separate copies to be retained by the user for record purposes:

The web 1 is composed of a continuous carrier strip 3 having a width to provide the desired width of the units 2 and leave projecting marginal edges 4 and 5 each having a longitudinal series of spaced apart holes 6 extending the full length of the strip for cooperation with the feed mechanism of a computer (not shown).

The carrier strip 3 constitutes the back panel portions 7 of the units, which later become the rear panels of the envelopes, later to be described. The panel portions 7 are defined along the length of the strip 3 by a series of transverse stripes of adhesive 8 having a center spacing according to the desired depth of the envelopes. The adhesive applications also include longitudinal stripes 9 and 10 which are placed so that the outer edges 11 of the adhesive stripes register with the desired width of the envelopes. The outer edges 11 of the adhesive stripes are spaced inwardly from the rows of holes 6 to leave room for lateral spots 12 and 13 of the adhesive on the margins 4 and 5.

14 designates the next strip of the composite web to constitute an enclosure for each assembly. The strip 14 has a width so that the side edges 15 and 16 overlap the adhesive spots 12 and 13, but terminate short of the holes 6, when the strip 14 is applied to the carrier strip 3, where it is secured by the stripes of adhesive 8, 9 and 10 (see FIGS. 2 and 4).

As above stated, it is the purpose of the present invention to provide a single application of adhesive to seal all of the subsequent strips, namely, a strip 17 constituting the front panels of the envelopes and at least one strip 18 constituting the record copy for each assembly. In the illustrated instance, a second strip 19 is shown to constitute an additional record copy for each assembly. The strips 17, 18 and 19 may all be the same width as the strip 14. It is also possible that all of the strips 3, 14, 17, 18 and 19 may have the same width, in which case all of them will be provided with the holes 6.

In carrying out the invention for utilization of a single application of adhesive to secure all the strips together, the strip 14 has pairs of rows of transverse holes 20 and 21 registering upon each of the transverse stripes of adhesive 8 along opposite sides of their median lines, and longitudinal rows of holes 22 and 23 registering upon the longitudinal stripes of adhesive 9 and 10. Portions of the

adhesive ooze through the holes 20, 21, 22 and 23 to seal with the strip 17 (as shown in FIG. 6), and thereby complete the envelope portions of each unit 2. The strips 14, 17 and 18 also have holes 24-25, 26-27 and 28-29, all registering with the adhesive spots 12 and 13 for the adhesive of the spots to ooze therethrough into sealing contact with the under face of the strip 19 and thereby seal the record strips 18 and 19 to the envelope portions.

The strips, prior to assembly, may be suitably printed for the use of the customer, or they may be blank, with all of the printing to be applied in the printing section of the computer.

The strip 17 which makes up the front panels of the envelopes may have windows 30 located in each of the front panels.

Application of the strip 17 completes assembly of the interconnected envelopes, and to provide for easy opening of the envelopes when received by the customer, the assembled strips 3, 14 and 17 are provided with lines of perforations 31 that extend therethrough in near registry with the inner edges of the adhesive stripes 8, 9 and 10.

The composite web just described may be produced as follows, illustrated diagrammatically in FIG. 1:

The paper strips, as above mentioned, may be suitably preprinted, for example, the strips 3, 14, 18 and 19 may have forms and instructions thereon, and the strip 17 may have the return address of the user. The strips, with the exception of the carrier strip and the strip 18, may have carboned rear surfaces in the proper places to transfer pressure of the computer printing onto the upper surface of the strips 3, 14 and 18 to provide carbon copies of the copy printed upon the upper strip 19. In cases where the strip does not have windows, the strip 18 will have carbon areas in the proper place to print the addresses on the strip 17. However, the strips 3, 14, 18 and 19 are preferably papers having encapsulated inks.

The paper strips are unwound from rolls 32, 33, 34, 35 and 36. The strip 3 as it is unwound from the roll 32 is passed between a set of perforating rollers 37 to provide the perforations or holes 6 in the marginal edges 4 and 5 thereof, after which it is passed between an upper adhesive applicator roller 38 and a lower counter roller 39 to apply the stripes of adhesive 8, 9 and 10 and the spots 12 and 13, the applicator roller 38 having a diameter to properly space the transverse stripes 8 of adhesive.

The strip 14 is withdrawn from the roll 33 between sets of cutting rollers 40 and 41 to form the rows of longitudinal holes 22 and 23 and the transverse holes 20 and 21. One of the cutting rollers, preferably the roller 41, has cutters to make the holes 24 and 25 in the margins thereof.

The strip 17 is pulled off the roll 34 and passed between a set of rollers 43 to make the windows 30, and through a second set of rollers 44 to make the holes 26 and 27. The strips 14 and 17 are then brought into contact by passing them under a guide roller 47, which also brings them into sealing contact with the adhesive stripes 8, 9 and 10 on the carrier strip 3, to complete the continuous series of envelopes.

Before attachment of the strips 18 and 19, the gathered strips 3, 14 and 17 are passed between a set of perforating rollers 48 to make the perforations 31.

The strip 18 is drawn from the roll 35 and passed through a pair of cutter rollers 50 to make the holes 28 and 29 therein, after which the strip 18 is guided over rollers 52 and 53 into contact with the strip 17. The strip 19 is drawn from the roll 36 and guided over rollers 54 and 55 into contact with the strip 18, so that it seals with the assembly by the adhesive that oozes through the registering holes 24-25, 26-27 and 28-29 from the spots of adhesive 12 and 13.

In using the web constructed as described, wherein the strips 3, 14 and 18 consist of paper having encapsulated ink, and the strip 19 and the strip 17 that has the window openings 30 are of ordinary paper, the web is fed through

the printing section of a computer, with the web being moved in time with the printing sequences, since the teeth of the advancing mechanism are engaged within the holes 6 in the marginal edge of the carrier strip 3.

The printing characters for the name and address of a customer, as well as the statement of the account, is by direct application onto the unit areas on the strip 19 to disperse the encapsulated ink therein and produce a printed copy thereon. The pressure is carried through all of the strips 18, 17, 14 and 3, to correspondingly disperse the encapsulated ink in the strips 18, 14 and 3 and provide identical copies thereon. The strips 17 having the window openings and which forms the front of the envelope portion in a unit is not effected, since it is made of ordinary paper. The windows 30 are located so that the name and address on the strip 14 is in registry therewith. The web is then advanced to the next unit and another customer's account is printed in like manner, and so on.

After the unit has left the computer, it enters a burster (not shown), which cuts the composite strips along the outer side edges of the locations of the longitudinal stripes of adhesive 9 and 10 and also across the strips on median lines of the transverse adhesive stripes 8, thereby removing the margins of the carrier strip and marginal portions of the other strips which are connected together by the adhesive stops 12 and 13. Thus each assembled unit 2 provides a separate and individual envelope 56 and separate copies 57 and 58 (see FIG. 8).

The envelope thus produced has sealed therein a printed copy on the enclosed portion 59 and a second copy on the inner face of the back panel 60. The name and address on the first copy appears through the window 30 of the front panel 61 so that the envelope is ready for mailing without any further operations thereon, the strip having been previously printed with the return address and postage indicia.

When the customer receives the envelope, he will open the envelope by tearing off the marginal edges 62, 63, 64 and 65 along the lines of perforations 31, as shown in FIG. 9. This removes all of the portions of the envelope that have the adhesive 8, 9 and 10, thereby freeing the front panel from the back panel and releasing the intermediate copy 59, as shown in FIG. 10. The front panel is discarded, but the intermediate copy 59 and the copy printed on the back panel 60 are retained by the customer, one for his record and the other for use in reporting the transaction to tax authorities. The bank will retain one of the record copies, for example, 57, and send the other copy 58 to the tax authority to show interest paid to the customer.

If more enclosures are needed, one or more strips will be inserted into the web identical to the strip 14. Likewise, if more than two record copies are required, additional strips like the strip 18 may be inserted in the web between the strips 18 and 19.

The form of the invention shown in FIGS. 3 and 8 is substantially the same as the form just described, but includes a double series of units 66 and 67, connected together along a line of severance 68 (FIG. 8). In this form of the invention, adhesive is also applied to the carrier strip 3 in a longitudinal stripe 69 (FIG. 3) having its median line arranged along the point of severance. Also, a double row of holes 70 and 71 will be provided in the enclosure strip 14 to pass the adhesive from the stripe 69 into contact with the strip 17 that provides the front panels of the envelopes. The marginal features of the strips follow the construction of the form of the invention illustrated in FIG. 2. The web of FIG. 3 will be used in the same manner as the single series, but when run through the burster the additional cut 68 will be made along the median lines thereof to separate the double units.

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Webs having carbon on the under side of the strips will be printed thereon in the same manner, and the copies made by transfer of carbon from the under side of an upper strip to the upper face of the next underlying strip, and so on through to the carrier strip.

When no windows are provided in the strip 17 which forms the front panels of the envelopes, that portion of the underface of the strip 18 which registers with the names and addresses of the copies of the statements will have carbon thereon to print the names and addresses on the strip 17. If papers having encapsulated ink are to be used without windows in the strip 17, the strip may have encapsulated ink applied only to the address areas thereon.

In some instances, it may be desirable to have the copies 57 and 58 remain temporarily attached to the envelope units after passing through the burster. In this case, the holes 24-25, 26-27 and 28-29 may have small notches 72 extending across the longitudinal cuts made by the burster, as shown in FIG. 11, which leaves a small temporary seal of the copies 57 and 58 to the envelope units that can be easily broken apart when the copies are to be detached, without damaging the envelope units.

What I claim and desire to secure by Letters Patent is:

1. A continuous series of envelopes for use in computers and similar tabulating machines having a printing section to print tabulations, said series of envelopes including

superimposed strips constituting rectangular front, back and intermediate panel portions of the envelopes, said intermediate strip having linear series of holes extending along but spaced inwardly from the side of all four edges of the panel portions, which edges are subsequently provided by longitudinal and transverse cuts through said strips outwardly spaced from said holes when the envelopes are to be separated from each other,

adhesive on all four margins of the panel portions of one strip facing the other strip and located in registering alignment with the holes in the intermediate panel to seal the front and back panel portions of each envelope together through said holes to provide a seal of the envelope along all four edges thereof,

lines of perforations extending along the margins of the panel portions at the inner side of the series of holes,

means on said panels for producing like copies of tabulations on the portions of said intermediate and back panel portions within the lines of perforations by printing pressure on the front panel portions, and an additional strip superimposed on one of said outer strips,

said intermediate strip and the outer strip superimposed

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by said additional strip each having notches in connection with one hole in one of the series of holes to pass adhesive to provide temporary seals of corresponding panel portions of said additional strip with the envelopes when said cuts are made.

2. A continuous series of envelopes for use in computers and similar tabulating machines having a printing section to print tabulations, said series of envelopes including

superimposed strips constituting rectangular front, back and intermediate panel portions of the envelopes, said intermediate strip having linear series of holes extending along but spaced inwardly from the side of all four edges of the panel portions, which edges are subsequently provided by longitudinal and transverse cuts through said strips outwardly spaced from said holes when the envelopes are to be separated from each other,

adhesive on all four margins of the panel portions of one strip facing the other strip and located in registering alignment with the holes in the intermediate panel to seal the front and back panel portions of each envelope together through said holes to provide a seal of the envelope along all four edges thereof,

lines of perforations extending along the margins of the panel portions at the inner side of the series of holes,

means on said panels for producing like copies of tabulations on the portions of said intermediate and back panel portions within the lines of perforations by printing pressure on the front panel portions, an additional strip superimposed on one of said outer strips,

said intermediate strip and the outer strip superimposed by said additional strip each having registering holes at the outer sides of one of the longitudinal cuts,

adhesive spots in registry with the last named holes for sealing the additional strip to the first named strips through said last named holes,

and notches connecting the last named holes with one hole of the linear series of holes to provide temporary attachment of panel portions of said additional strip when said cuts are made.

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LAWRENCE CHARLES, Primary Examiner.