

- [54] **METHOD OF PRODUCING A STUFFED SEALED ENVELOPE ASSEMBLY** 3,212,412 10/1965 Langan et al. 156/209 X
3,413,899 12/1968 Timms 93/61 R
3,462,909 8/1969 Anderson 53/141 X
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[57]

ABSTRACT

A method of producing a stuffed sealed envelope assembly including at least one insert sheet wherein the envelope back is embossed for substantially immobilizing the insert sheet while affording improved separability.

[56] **References Cited**

UNITED STATES PATENTS

2,847,915 8/1958 Rapp 93/61 R

1 Claim, 4 Drawing Figures

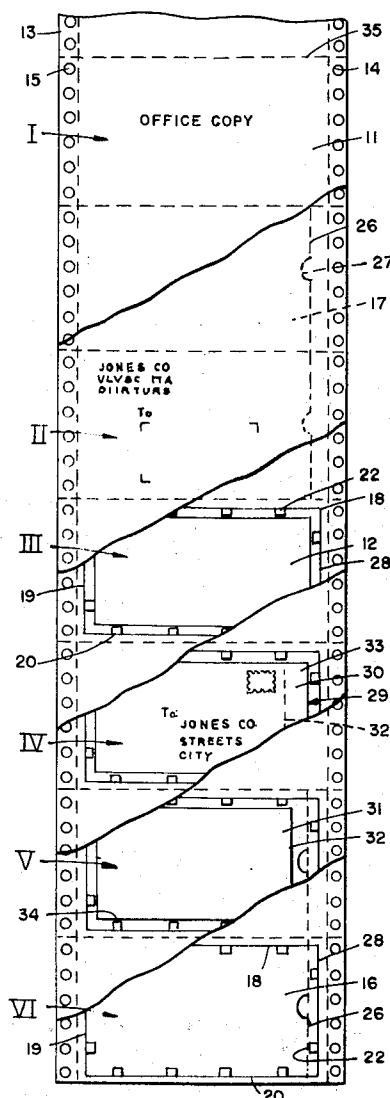
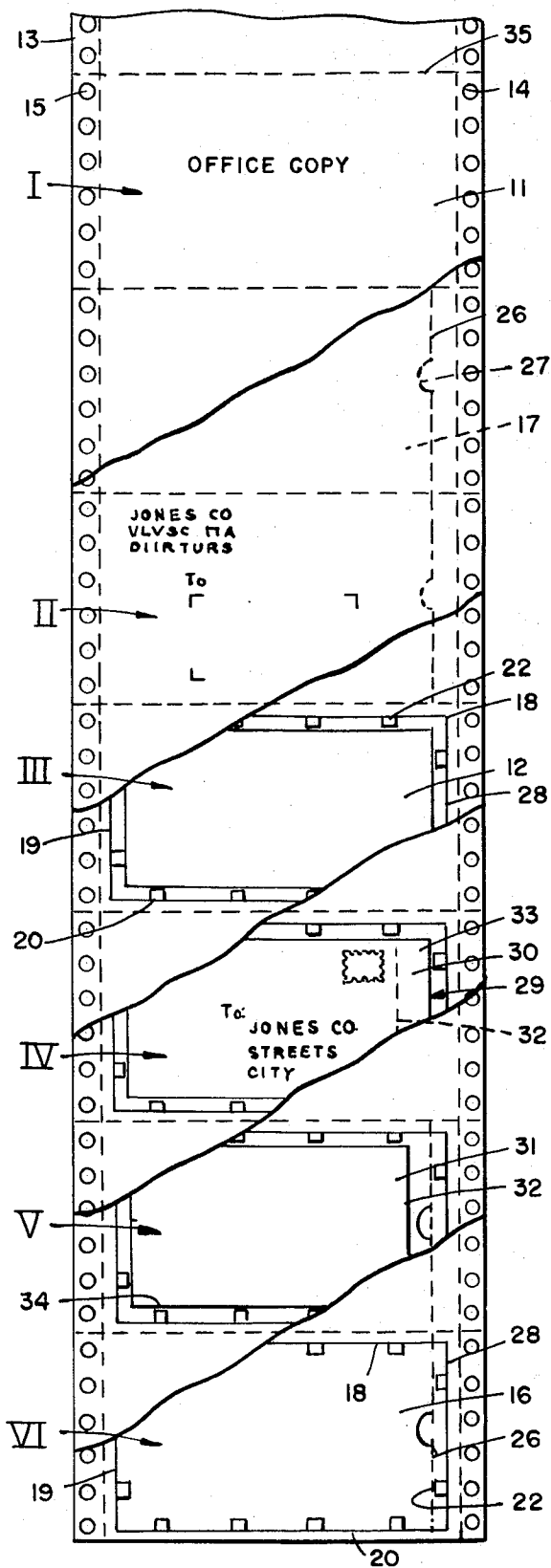


FIG. 4



METHOD OF PRODUCING A STUFFED SEALED ENVELOPE ASSEMBLY

This application is a division of application Ser. No. 180,992, filed Sept. 16, 1971, now U.S. Pat. No. 3,777,971.

BACKGROUND AND SUMMARY OF INVENTION

This invention has to do with stuffed sealed envelope assemblies, and constitutes an improvement in my prior invention set forth in U.S. Pat. Nos. 3,104,799 and 3,339,827.

Two problems have arisen in the prior art relating to stuffed envelope assemblies. One has to do with the immobilization of the insert material within the envelope during manufacture of the assembly and processing thereafter on the computer, particularly when the assemblies are to be processed two wide on the computer, while the other has to do with the ready release of the insert material at the time of envelope opening. A collateral problem relative to the lack of fluffiness of the envelope assembly occurs when the envelope is employed in a "turn around" operation, viz., used for both outgoing and return of information from and back to the original sender.

These two problems and the correlative objectives appeared to be mutually exclusive of attainment, i.e., posing a dilemma. Through the provision of the embossment means of the instant invention I have been able to achieve both objectives. The embossment means of the invention include, in one embodiment, upraised portions or projections relative to the envelope back which are positioned within the perimeter defined by the usual perimetric lines of glue, and which simultaneously serve to substantially immobilize the insert sheet or sheets while at the same time creating a definite spacing or fluffiness of the envelope parts to facilitate removal of the insert material and reinsertion thereof.

DETAILED DESCRIPTION

The invention is described in conjunction with an illustrative embodiment in the accompanying drawing, in which:

FIG. 1 is a perspective view with portions partially detached from fully operational condition of the inventive envelope assemblies;

FIG. 2 is an enlarged fragmentary sectional view such as would be seen along the sight line 2—2 applied to FIG. 1;

FIG. 3 is another fragmentary sectional view taken along the line 3—3 of FIG. 1; and

FIG. 4 is a fragmentary top plan view of a series of envelopes partially broken away in different stages to reveal details of construction, and of the method of production of the same.

In the illustration given, and with particular reference to FIG. 1, the numeral 10 designates generally a stuffed envelope assembly consisting of the parts which are normally sent through the mail from the original sender to an intended recipient. The showing in FIG. 4 illustrates the completed stuffed envelope at the time of its manufacture and prior to mailing.

For example, at the very top of FIG. 4, the uppermost sheet, which is designated 11, is normally the office copy. This is retained by the sender and has imprinted

thereon the various information which is included on the insert sheet 12 (designated in all the views of the drawing). Additionally, to convert the series of envelope assemblies as seen in FIG. 4 to the unit of FIG. 1, it is also necessary to remove the marginal edges 13 and 14. The edge portions 13 and 14 are equipped with line hole punches, as at 15, to feed the paper through the computer normally employed to effect the printing of information.

Referring again specifically to FIG. 1, the envelope assembly 10 includes a bottom sheet or ply 16 and a top sheet or ply 17 — the latter being seen to have been partially folded on itself as at 17' to reveal certain details of interior construction.

The details of interior construction include lines of adhesive as at 18, 19 and 20 which are employed to perimetrically unite the top ply 17 (constituting the face of the envelope) to the bottom ply 16. It will be seen that the perimeter defined by the adhesive lines 18—20 is spaced outwardly (in essentially a circumscribed relation) to the perimeter of the generally rectangular insert sheet 12. This develops a perimetric area of generally hollow-rectangular configuration generally designated 21.

It is within the perimetric area 21 where I provide the embossment means of the invention, and several of these can be seen in FIG. 1, each designated by the numeral 22. In the preferred embodiment of the invention, I limit the number of the embossments to those approximately located near the corners of the insert sheet 12. However, it will be appreciated that a greater or lesser number of embossments means may be employed, depending upon the particulars of the construction, viz., the type and shape of the envelope forming sheets 16 and 17, the character of the insert materials 12, and the character and arrangement of the glue lines 18—20, etc.

The character of the illustrated embossment 22 can be best appreciated by reference to FIGS. 2 and 3. Referring now to FIG. 2, it will be seen that the embossment 22 upstands from the essential plane of the bottom ply 16. Optimally this is achieved by introducing a straight cut, as at 23, in the bottom ply 16 which defines that portion of the embossment nearest the adjacent edge 12' of the insert sheet 12. The remainder of the embossment — which is seen to be essentially rectangular in outline when viewed in plan (see FIG. 1) — is attached to the bottom ply 16 as can be appreciated from FIG. 3 where the sides of the embossment are designated 24. Thus, the most remote portion 25 of the embossment 22 (relative to the adjacent edge 12') is of the least height, i.e., merging into the plane of the bottom ply 16.

It is believed that the invention can be more fully appreciated from a consideration of the steps employed in the development of the construction, and, for that purpose, reference is made to FIG. 4. In FIG. 4 a series of connected envelope assemblies is shown with layers, in effect, peeled away to reveal the details of construction. It was pointed out previously that the uppermost layer or sheet 11 (in the illustration given) is the office copy which is retained by the original sender. The Roman numerals in FIG. 4 designate various stages of "peeling." For example, Roman numeral I generally designates the assembly with all layers — including the office copy 11. As we proceed downwardly in FIG. 4, the next layer is the upper or top ply 17 of the enve-

lope, this being stage II. The envelope is equipped with a line of weakening, as at 26, which is employed for the opening of the envelope by the recipient. It is convenient to provide a thumb notch 27 in the line of weakening 26 to facilitate this opening.

Proceeding further downwardly in FIG. 4, the third layer — achieved by removal of the office copy and the top ply 17 of the envelope — is the insert 12. In the section of the presentation in FIG. 4 I have designated this stage by the Roman numeral III, and it will be seen that in addition to the insert 12, there is also revealed the lines of adhesive 18–20 along with the fourth line of adhesive heretofore unidentified and which is here referred to by the numeral 28. The embossments 22 are seen to be positioned within the perimetric space 21 defined by the connected lines of adhesive 18–20 and 28 and the perimeter of the insert 12.

In the fourth stage of presentation in FIG. 4 — designated by the Roman numeral IV —, it is seen that an additional insert element is provided. In the stage designated IV, I provide a return envelope which is generally designated 29. This is seen to be of the same dimensions as the insert sheet 12, but consists of an upper sheet or ply 30 and a lower sheet or ply 31 (see the stage designated V). The sheet 31 is shorter, terminating in a right hand edge as at 32 which permits the overlapped portion 33 of the upper sheet 30 to be folded on itself to close the insert envelope for return. Also, I find it advantageous to provide a plurality of corresponding embossments, as at 34, in stage V, so that the return envelope is also characterized by relative fluffiness between top and bottom portions 30 and 31, respectively.

The bottommost showing designated VI shows the bottom ply 16 which has a portion of the glue lines 18, 19, 20, and 28 along with the various embossments 22 and a portion of the line of weakening 26.

In the preferred form of producing the stuffed envelope, I advance the web ultimately constituting the bottom ply 16, and subject the same to an embossing step so as to develop the various embossments 22. Thereafter, the insert sheet or materials, as the case may be, are superposed on the first web which provides the envelope bottoms 16. This can be done by sequential deposition of the insert sheets 12. Thereafter a second continuous web is brought into superposed relation, this second web constituting the top 17 of the various envelopes. Advantageously, the glue lines 18–20 and 28 are applied to the underside of the second web so that shortly thereafter the two webs can be brought into adhesive relation. After the series of envelope assemblies have been developed as seen in FIG. 4, lines of cross-weakening, such as are indicated at 35, can be provided, after which a conventional zigzag folding can be introduced. Alternatively, the individual stuffed envelope assemblies can be separated as by cross cutting.

In the usage of the inventive assembly, two operations are readily performable. If the individual stuffed envelope assemblies are detached one from another as just indicated, the individual assemblies are either hand-lettered or typewritten, being individually handled. On the other hand, if the assemblies are interconnected — although separatable along the lines of cross-weakening 35 —, the elongated product can be printed by computer. In the usual computer operation, infor-

mation is applied that includes not only the address of the recipient, but other billing, production, etc. information is provided. All of this will be found on the office copy which is retained by the sender. Through the provision of selective carbon spots, only the addressee information is imprinted on the top ply 17 of the envelope 10. However, through the use of interleaved carbons, selective carbon spots or NCR type papers, the other private information is transferred to one or more of the insert sheets.

After such printing is achieved, the continuous web assembly is subjected to a decollating operation wherein the office copy portion is decollated from the continuous assemblies and retained by the sender. Thereafter the continuous assembly is subjected to a "bursting" operation wherein the individual envelope units are separated from the continuous assembly, and, at the same time, the marginal portions 13 and 14 are trimmed therefrom. Two wide assemblies are trimmed into two halves at this time. Conventional bursting machines make use of sets of rolls wherein the leading edge of the web assembly is advanced faster than the restrained trailing edge so that the individual unit is literally snapped away from the continuous assembly. Through the use of these conventional rolls, a pocket of air can develop along the trailing edge of the individual envelope assembly just prior to the time of detachment. The relief of this air in the past sometimes has been at the expense of the trailing edge glue line, as at 18. Through the use of the inventive embossment arrangement, the lines of severance or cuts 23 afford escape for any air which otherwise might be entrapped during the bursting operation.

After the individual envelope assemblies are provided — as in the condition generally depicted in FIG. 1, viz., the assembly 10 —, they are mailed to the recipient. In order to open the envelope assembly 10, the recipient tears off the portion 36 which is the right hand end of the envelope 10 (as seen in FIG. 1) defined by the line of weakening 26. This line of weakening includes the thumb notch 27 which will reveal a portion of the insert sheet 12. The recipient thereupon is able to remove the insert material, such as the sheet 12 and the envelope 30. Thereafter, the recipient customarily will place a check or some other information within the envelope 30 — including, usually, a portion of the original insert sheet 12 —, the returned portion being separated along previously provided lines of weakening. It is at this stage where the inventive embossment arrangement is also advantageous because the provision of the embossments 34 within the return envelope 30 facilitates the introduction of the return insert material.

I claim:

1. In a method of producing a plurality of connected, stuffed sealed envelope assemblies, the steps of embossing a first continuously advancing web to provide upstanding portions for each assembly, sequentially superposing at least one insert sheet on said first web for each assembly in confining relation to said embossments, and adhesively securing a second continuous web to said first web outwardly of the first web embossments to provide a closed, stuffed sealed envelope for each assembly.

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