Dec. 9, 1969 R. J. CARRIGAN 3,482,763

CONTINUOUS FORM ENVELOPES WITH INSERTS

Filed March 29, 1968 3 Sheets-Sheet 1

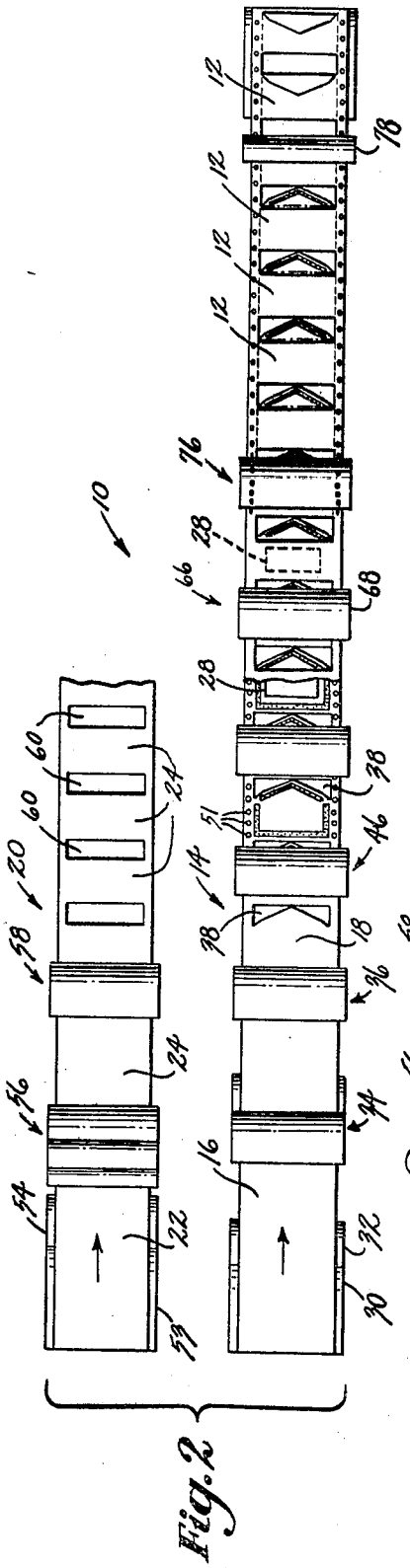


Fig. 2

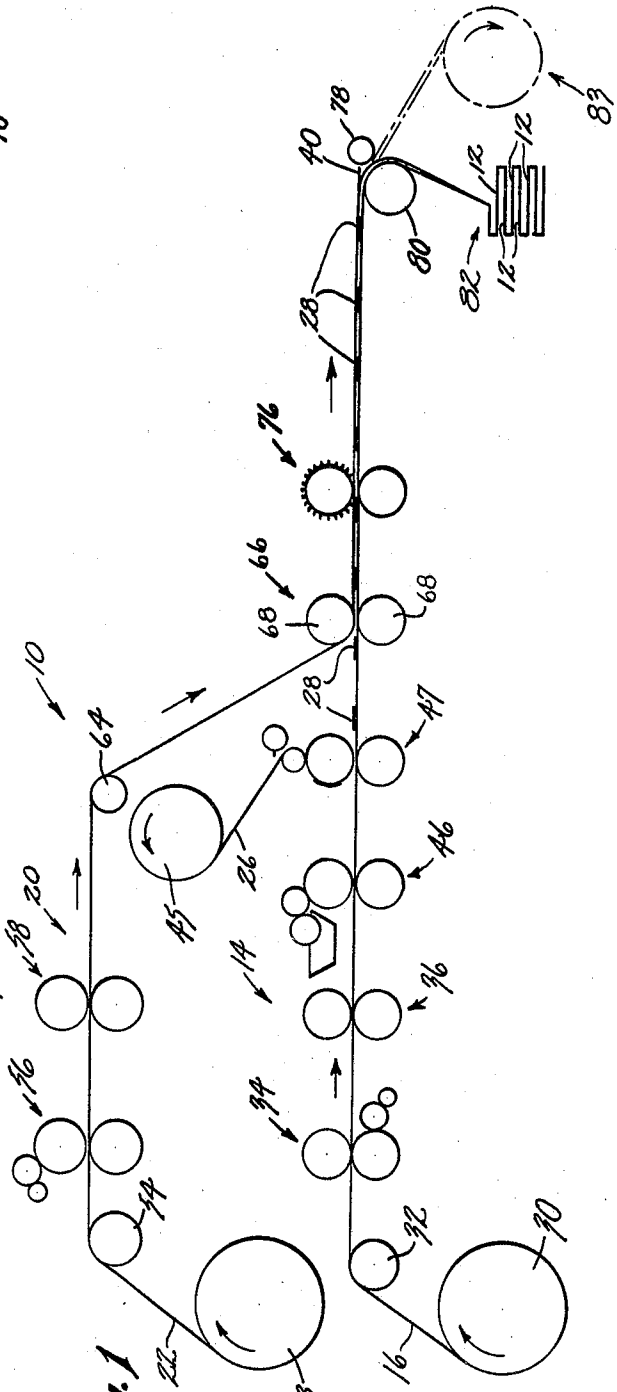


Fig. 1

INVENTOR.
ROBERT J. CARRIGAN
BY
McCormick, Paulding & Huber
ATTORNEYS

Dec. 9, 1969 R. J. CARRIGAN 3,482,763

CONTINUOUS FORM ENVELOPES WITH INSERTS

Filed March 29, 1968

3 Sheets-Sheet 2

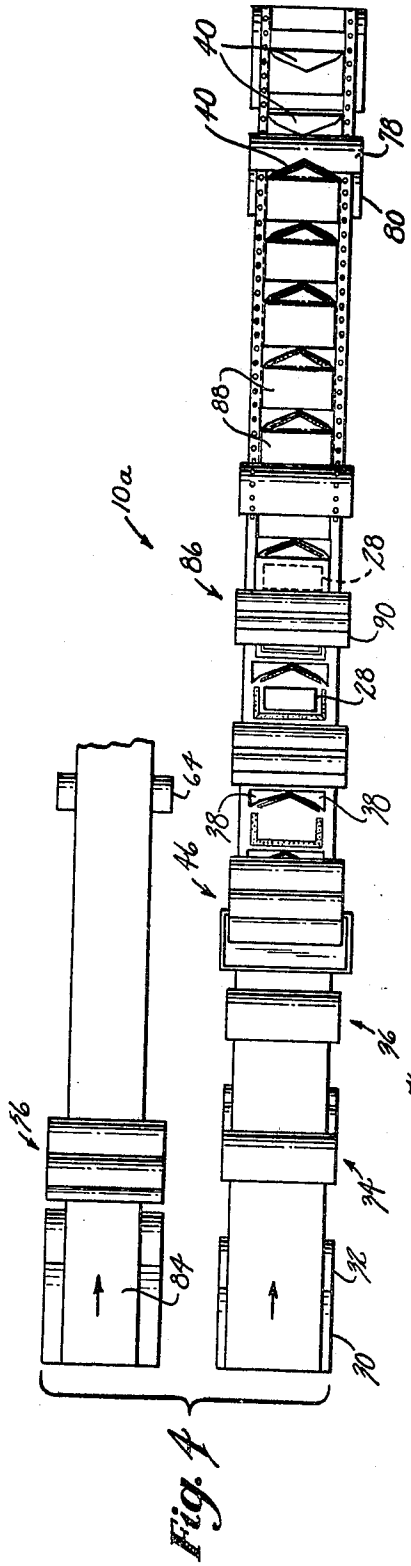


Fig. 4

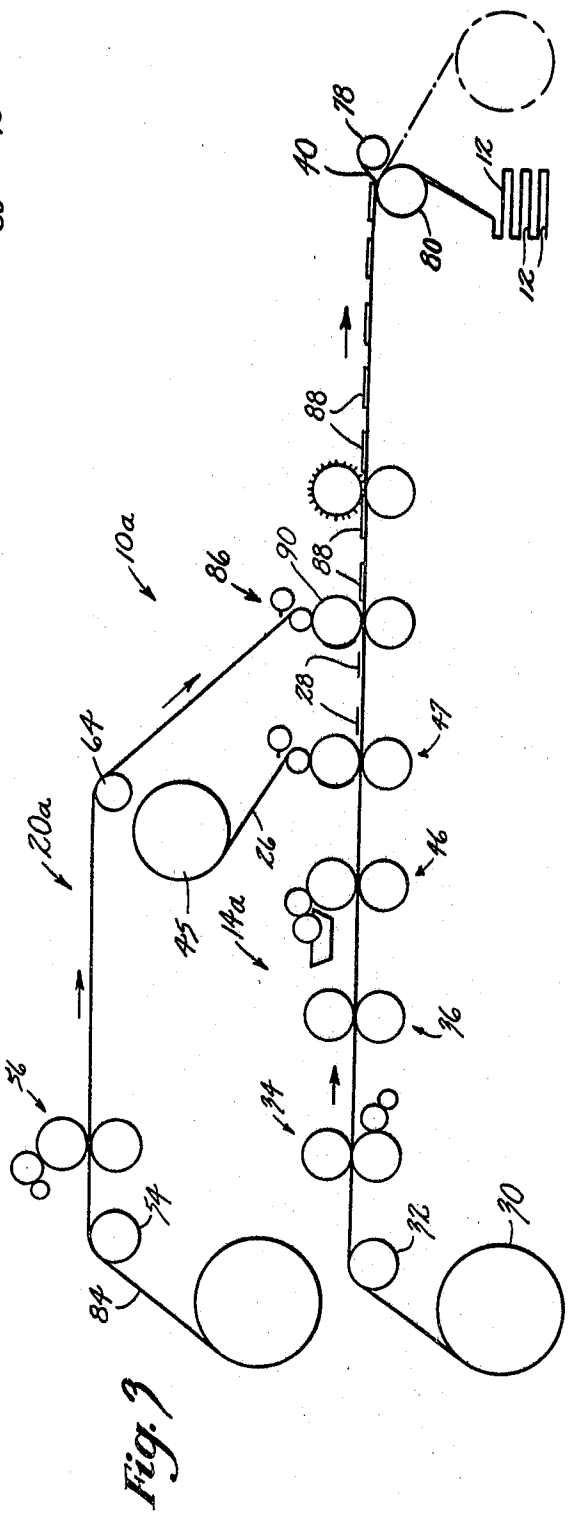


Fig. 3

Dec. 9, 1969 R. J. CARRIGAN 3,482,763

CONTINUOUS FORM ENVELOPES WITH INSERTS

Filed March 29, 1968 3 Sheets-Sheet 3

Fig. 5

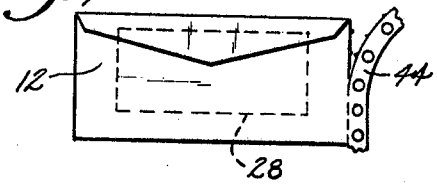


Fig. 6

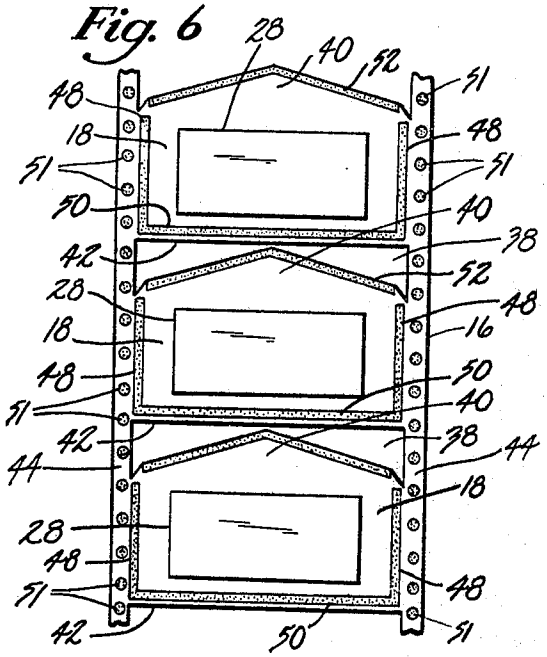


Fig. 7

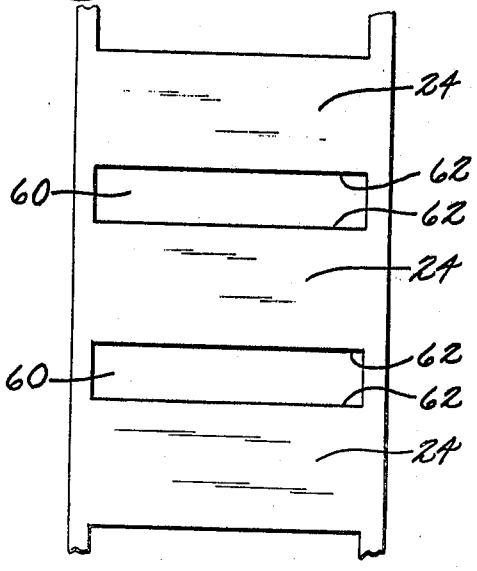


Fig. 8

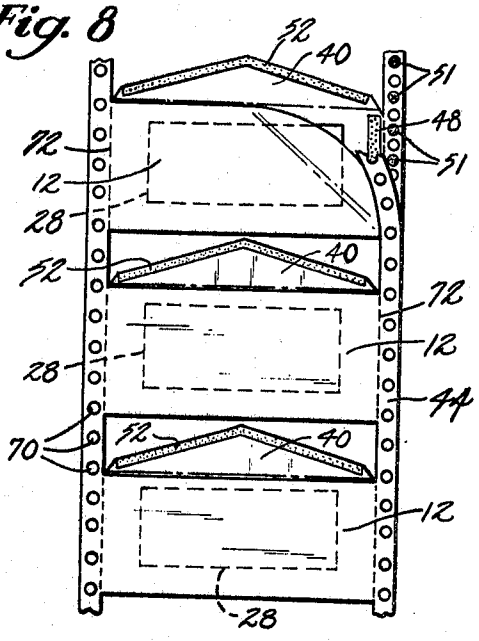


Fig. 9

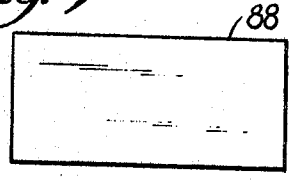
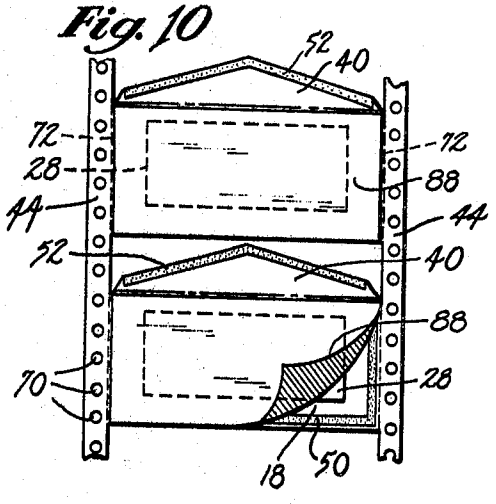


Fig. 10



United States Patent Office 3,482,763 Patented Dec. 9, 1969

3,482,763

CONTINUOUS FORM ENVELOPES WITH INSERTS

Robert J. Carrigan, Thompsonville, Conn., assignor to United States Envelope Company, Springfield, Mass., a corporation of Massachusetts

Filed Mar. 29, 1968, Ser. No. 717,188
Int. Cl. B65d 27/10, 27/04
U.S. Cl. 229—69 8 Claims

ABSTRACT OF THE DISCLOSURE

Continuous form or series connected envelopes are made by continuously advancing a first web of sheet material and cutting it at longitudinally spaced points inwardly of its marginal edge portions as it advances. The cut out portions of the first web at least partially define a succession of envelope front panels which include closing flap portions. Envelope back panels formed from a second web, continuously advanced in timed relation to the first web, are each successively joined to an associated front panel to form a succession of envelopes having pockets including transversely extending mouth openings and joined each to the other by marginal connecting portions. One method of practicing the invention utilizes individual back panels cut from the second web. In accordance with another method series-connected back panels are made by forming cut out portions in the second web at longitudinally spaced points and inwardly of its marginal edges as it advances. The envelopes may, if desired, be formed with inserts therein and with flaps in open or extended condition or folded to a closed position.

BACKGROUND OF INVENTION

This invention relates in general to continuous form stationery and deals more particularly with improved continuous form or series-connected envelopes and methods for making the same. Envelopes of this general type are particularly adapted to be successively automatically or semi-automatically fed through a typewriter, printing machine or the like and readily separated each from the other after addresses or other messages have been imprinted thereon.

The general aim of this invention is to provide improved continuous form envelopes and methods for making same on high-speed envelope making machinery. A more particular object of the invention is to provide a method for making series-connected envelopes which may, if desired, be formed in closed flap condition with inserts therein.

SUMMARY OF INVENTION

In accordance with one method of the invention a connected series of envelope front panels are formed from one advancing web of sheet material and a connected series of back panel are similarly formed from another advancing web. The two webs are joined together as they advance to form series-connected envelopes in closed flap condition joined each to the other solely by marginal connecting portions. In accordance with another method, continuous form envelopes are made by cutting an advancing web of sheet material to form series-connected envelope front panels and joining thereto a succession of unconnected envelope back panels as the web advances. If desired, the envelopes may be made with inserts placed therein by positioning an inset on each of the front panels before an associated back panel is joined thereto.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a somewhat schematic side elevational view of a machine with webs of material therein for making

envelopes embodying the invention, and illustrates one method of practicing the invention.

FIG. 2 is a somewhat schematic plan view of the machine of FIG. 1, the upper portion of the machine being show transversely offset from the lower portion and the intermediate or insert forming portion being omitted for clarity of illustration.

FIG. 3 is a somewhat schematic side elevational view similar to FIG. 1, but shows another machine and illustrates another method for making envelopes embodying the invention.

FIG. 4 is a somewhat schematic plan view of the machine of FIG. 3, the upper portion of the machine being shown in a transversely offset position as in FIG. 2.

FIG. 5 is a plan view of an envelope made in accordance with and embodying the present invention, the envelope being shown partially detached from its marginal connecting portions.

FIG. 6 is a plan view of a lower web of envelope material after it has been formed by the machine of FIG. 1 and an insert has been placed thereon.

FIG. 7 is a fragmentary plan view of an upper web of envelope material after it has been formed by the machine of FIG. 1.

FIG. 8 is a fragmentary plan view of a strip of series-connected envelopes formed by the machine of FIG. 1 and having inserts therein.

FIG. 9 is a plan view of an envelope back panel formed by the machine of FIG. 3.

FIG. 10 is a fragmentary plan view of a strip of series-connected envelopes having inserts therein and formed by the machine of FIG. 3.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Turning now to the drawings and referring first particularly to FIG. 1, a machine for making continuous form envelopes embodying the invention and in accordance with a method of the invention is shown somewhat schematically and indicated generally by the numeral **10**. The machine **10** simultaneously and continuously feeds or advances a plurality of webs of sheet material and imprints, cuts, joins, perforates and punches the webs to make series-connected envelopes **12, 12**. A lower portion of the machine indicated generally at **14** advances a first or lower web **16** from which envelope front panels **18, 18** are formed as an upper portion, indicated generally at **20**, simultaneously advances a second or upper web **22** from which the envelope back panels **24, 24** are formed. The machine is also adapted to accommodate a third web **26** from which inserts **28, 28** are formed when envelopes are made with inserts therein as shown.

Considering first the machine lower portion **14** and the sequence of operations performed thereby, the lower web **16** is paid off from a roll **30** and engages a machine roll **32** which estabishes the horizontal path of the web through machine **10**. As the web **16** advances or moves in the direction of the arrows in FIG. 1 it passes through a printing station **34** where the lower surface of the web is or may be imprinted with a suitable message. Thereafter, the web **16** passes through a cutting station **36** where a rotary cutter engages it as it advances to form longitudinally spaced cut-out portions **38, 38** therein. Referring now to FIG. 6, each cut-out portion **38** at least partially defines a closing flap portion **40** of one envelope front panel **18**, a generally transversely extending edge portion **42** of an adjacent envelope front-panel **18** and longitudinally extending connecting portions **44, 44** which join each front panel **18** to an adjacent one. In the illustrated embodiment the cut-out portions **38, 38** serve to separate each envelope front panel **18** from an adjacent one so that the

latter two panels are joined each to the other solely by the marginal connecting portions **44, 44**.

Various means may be employed for joining the upper web **18** and the lower web **14**, and the webs may, for example, be bonded together by a suitable adhesive or by heat sealing when appropriate sheet materials are used. However, the envelopes of the illustrated embodiment are preferably made from paper or like material joined together by a suitable adhesive. For this purpose, the machine **10** has a gumming or gluing station **46** where adhesive is applied to the lower web **16**. Preferably the station **46** is positioned to receive the web **16** after it has been cut and apply lines of adhesive to the marginal portions of each envelope front panel **18** and to the marginal connecting portions **44, 44**. Referring again to FIG. 6 lines of adhesive **48, 48** and **50** are applied along the marginal edges of each front panel **18** and adhesive areas or spots **51, 51** are applied to the connecting portions **44, 44** at longitudinally spaced points therealong. Preferably, and as shown, an additional line of ahesive **52** is also applied near the free edge of each flap portion **40** for sealing each envelope and for this reason remoistenable adhesive is preferably used when the envelopes **12, 12** are formed in an unsealed condition.

When the envelopes **12, 12** are made with inserts therein the inserts are formed and preferably positioned on the lower web before the upper web is joined thereto. The web **26** from which inserts **28, 28** are formed is paid off a roll **45** located intermediate the upper and lower machine portions **14** and **20**. The web **26** passes through a cutting and joining station **47**, located forwardly of the gumming station **46** where each insert **28** is successively cut from the web **26** and positioned on the lower web **16** in registry with associated front panels **18**. Provision is or may be made to temporarily secure each insert in a pre-selected position on an associated front panel **18** as by adhesive having a suitable releasing property.

After each front panel **18** has been formed, adhesive lines have been applied thereto, and an insert **28** positioned thereon, as required, the lower web **16** is ready to be joined to the upper web **22**. However, before considering the joining operation the steps employed to form a succession of rear panels **24, 24** from the upper web **22** will be discussed.

The upper web **22** is fed from a roll **53** and engages an upper machine roll **54** which directs it along a generally horizontal path. An upper printing station **56** similar to the lower station **34** is provided for imprinting designs and/or messages on the upper surface of the upper web **18**, as may be required. An upper cutting station **58** is also provided which preferably receives the advancing web **22** after it passes through the printing station to form a longitudinally spaced cut-out portions **60, 60** inwardly of the marginal edge portions of the web. Referring to FIG. 7, each cut-out portion **60** is generally rectangular and extends transversely of the web **22** to define transversely extending edges **62, 62** of one and adjacent envelope back panel **24**. Each cut-out portion **60** is positioned to expose an associated flap portion **40** when each back panel **24** is joined in registry to an associated front panel **18**.

After the back panels **24, 24** are formed the web **22** passes over a machine roll **64** and is directed downwardly and through a joining station **66** comprising pressure rolls **68, 68** where it is joined or married to the lower web **16**, the bond therebetween being effected by the adhesive strips on the lower web.

The continuous form envelopes of the present invention are preferably adapted to accommodate a positive feed device such as a pin-wheel feed mechanism for advancing the envelopes through a printing machine or the like. For this purpose a longitudinally spaced and longitudinally extending series of feed apertures **70, 70** is punched through the marginal connecting portions of both webs interspersed between the adhesive spots **51, 51** as shown in FIG. 8. Longitudinally extending lines of weaking or perforation **72, 72** are preferably provided spaced inwardly from the marginal edge portions of the webs to facilitate ready separation of each envelope **12** from its marginal connecting portions **44, 44**. A fold or score line **74** is also preferably provided between the flap portion **40** of each envelope and the front panel thereof so that the flap may be readily folded to its closed position. In the illustrated machine **10**, the punching, perforating and scoring operations aforedescribed are simultaneously performed at a machine station **76** located forwardly of the joining station **68**.

When remoistenable adhesive is used to join the webs and to provide means for sealing the flap portion **40** the machine **10** has provision for an adhesive drying cycle and may, if desired include a drying unit (not shown) to accelerate this cycle.

In some instances it may be desirable to form each envelope with the flap portion thereof in a closed and unsealed condition, or in a sealed condition as when envelopes are formed with inserts therein. The machine **10** includes an upper roll **78** and a lower roll **80** which cooperate to fold each flap portion **40** to its closed position and to seal each envelope, if such is desired, as each envelope passes therebetween. As each successive envelope **12** passes over the roll **80** it is directed downwardly or toward a collection point. Since the flap portion **40** is not joined to the marginal connecting portions **44, 44** it tends to follow a generally horizontal path as it travels over the lower roll **80**. The upper roll **78** which is positioned in the path of the flap portion engages the flap portion of the envelope and urges it upwardly and rearwardly and folds it to a closed position as the envelope passes between the rolls **78** and **80** as best shown in FIGS. 1 and 3. The cooperating rolls **78** and **80** may, if desired, be arranged to apply sealing pressure to each envelope as it passes therebetween.

At the collection point the finished envelopes may be folded transversely of the connection portions and stacked in accordion fashion as shown at **82** or may be otherwise collected as by being wound in a roll as indicated at **83**.

In accordance with another method of producing the envelopes of the present invention a lower web is cut to form series-connected envelope front panels in the manner generally aforedescribed. However, the body of each envelope is formed by cutting a generally rectangular patch from an upper web and placing it on and joining it to an associated one of the front panels. This method provides continuous form envelopes having marginal connecting portions of a single web thickness whereas, in accordance with the previously described method series connected envelopes are provided which have marginal connecting portions of double thickness the connecting poritons being formed by both the upper and lower webs. However, it will be noted that the individual envelopes formed by either method are substantially identical.

Referring now to FIGS. 3, 4, 8, 9 and 10 and first to FIGS. 3 and 4 a machine for making continuous form envelopes in accordance with the latter method is indicated generally at **10*a*** Parts of the machine **10*a*** are substantially identical to corresponding parts of the machine **10** previously described, bear the same reference numerals and will not be hereinafter further discussed. Like the machine **10**, the machine **10*a*** has a lower portion **14*a*** and an upper portion **20*a***. The lower portion operates on a web **22** to form series-connected envelope front panels **18, 18** substantially identical to those previously described with reference to FIG. 6. However, an upper web **84** which is fed through the machine upper part **20*a*** is of somewhat narrower width than the lower web **22**, the width of the upper web being substantially equal to the width of a finished envelope **12**. The machine upper portion **20*a*** includes a printing station **56** but it will be noted that it does not have a cutting station corresponding to the cutting station **58** of the previously described

machine **10**. After being imprinted with a message or design, as required, the upper web **84** passes over a machine roll **64** and is directed downwardly to a machine station **86** on the lower portion **14***a* where generally rectangular patches or back panels **88**, **88** are cut from the web, a typical patch or back panel **88** being shown in FIG. 8. Each back panel **88** is carried to and positioned on an associated front panel **18** in registry therewith by a machine roll **90** at the station **86**. As the front and back panels pass through the machine station **86** they are joined together or married under pressure in the manner previously discussed. Thereafter, the sequence of operation of the machine **10***a* is substantially identical to that of the machine **10** in finishing and collecting the envelopes.

I claim:

1. An assembly of series-connected separable envelopes comprising an elongated first web having a longitudinally spaced series of cut out portions inwardly of the marginal edge portions thereof, each of said cut out portions partially defining a closing flap portion of one envelope front panel, a generally transversely extending free edge portion of an adjacent envelope front panel and longitudinally extending marginal connecting portions joining said one front panel to said adjacent front panel, means defining a plurality of envelope back panels, each of said back panels being joined to an associated one of said front panels forming a succession of envelopes including pockets having transversely extending mouth openings, said envelopes being joined each to the other solely by said marginal connecting portion, each said closing flap being foldable to a closed position overlying a portion of an associated one of said back panels to provide a closure for an associated one of said mouth openings while said envelopes are joined together by said connecting portions.

2 An assembly of series connected separable envelopes as set forth in claim **1** wherein said means defining a plurality of envelope back panels comprises a plurality of patches.

3. An assembly of series-connected envelopes as set forth in claim **1** wherein said means defining a plurality of envelope back panels comprises an elongated second web having a longitudinally spaced series of transversely extending cut out portions inwardly of the marginal edge portions thereof, each of said cut out portions in said second web defining transversely extending edges of one and an adjacent envelope back panel and longitudinally extending marginal connecting portions joining said one back panel to said adjacent back panel, each of said cut out portions in said second web being positioned to expose an associated said flap portion.

4. An assembly of series-connected envelopes as set fotrh in claim **3** wherein each of said marginal connecting portions of said first web is joined to an associated marginal connecting portion of said second web by a longitudinally spaced series of adhesive areas and each of said marginal connecting portions in said first web has a longitudinally spaced series of feed apertures therethrough interspersed between said adhesive areas and in registry with a longitudinally spaced series of feed apertures of said associated marginal connecting portion of said second web.

5. An assembly of series-connected separable envelopes as set forth in claim **1** including longitudinally extending lines of weakening spaced inwardly of the marginal edge portions of said first web to enable said envelopes to be readily separated therealong from said marginal connecting portions.

6. An assembly of series-connected envelopes as set forth in claim **1** wherein each of said marginal connecting portions has a longitudinally spaced and longitudinally extending series of feed apertures therethrough.

7. An assembly of series-connected separable envelopes comprising an elongated web having longitudinally spaced series of cut out portions inwardly of the marginal edge portions thereof each of said cut out portions at least partially defining a closing flap of one envelope front panel, at least a part of a generally transversely extending edge portion of an adjacent envelope front panel and longitudinally extending marginal connecting portions joining said one envelope front panel to said adjacent envelope front panel, a plurality of rear panel defining patches having a transverse width of substantially lesser extent than the transverse width of said web, each of said patches being joined to an associated one of said front panels forming a succession of envelopes including pockets having transversely extending mouth openings, said envelopes being joined each to the other at least by said marginal connecting portions.

8. An assembly of series-connected envelopes as set forth in claim **1** wherein each of said envelopes has an insert received in the pocket thereof, each of said closing flaps being sealed in its closed position.

References Cited

UNITED STATES PATENTS

2,824,685	2/1958	Patton	229—69
3,026,018	3/1962	Stratton et al.	229—69
3,339,827	9/1967	Steidinger	229—69

DAVID M. BOCKENEK, Primary Examiner

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,482,763 Dated December 9, 1969

Inventor(s) ROBERT J. CARRIGAN

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

Col. 2, line 5, "show" should be -shown-

Col. 3, line 20, "ahesive" should be -adhesive-

Col. 4, line 54, "poritons" should be -portions-

Col. 5, line 30, CLAIM 1
"portion" should be -portions-

Col. 6, line 32 CLAIM 7
after "patches" insert -,each of said patches-

SIGNED AND
SEALED
JUN 16 1970

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents