Sept. 5, 1967 W. L. HIERSTEINER 3,339,828

INDIVIDUAL ENVELOPE UNIT FOR USE IN TABULATING AND SIMILAR MACHINES

Filed Jan. 19, 1966 3 Sheets-Sheet 1

Fig. 1.

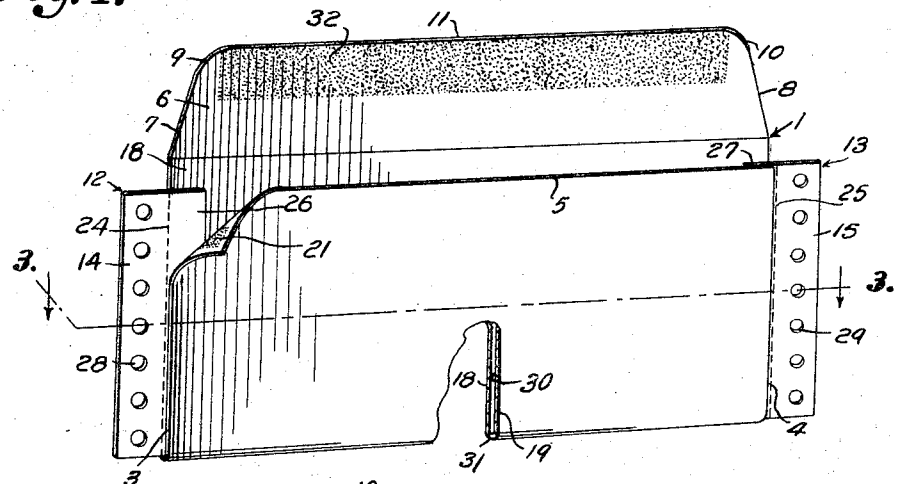


Fig. 2.

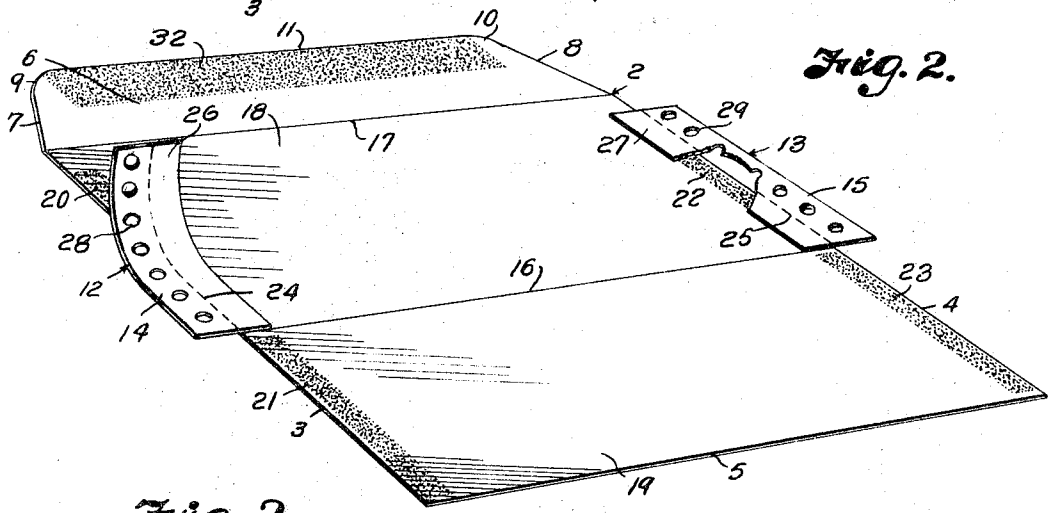


Fig. 3.

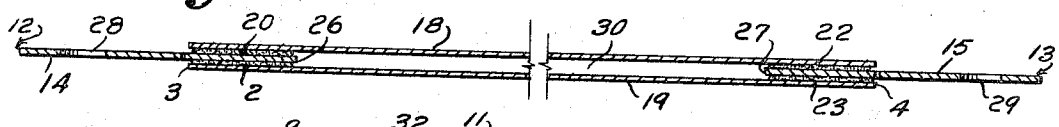
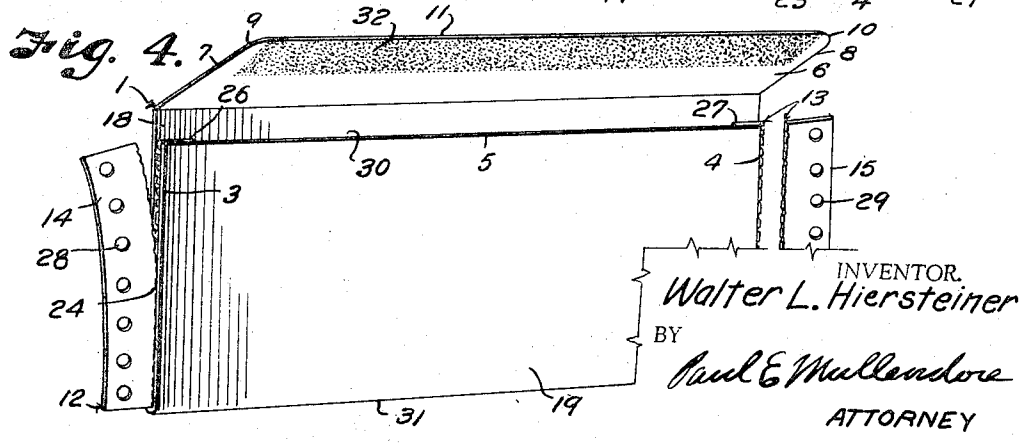


Fig. 4.



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Fig. 5.

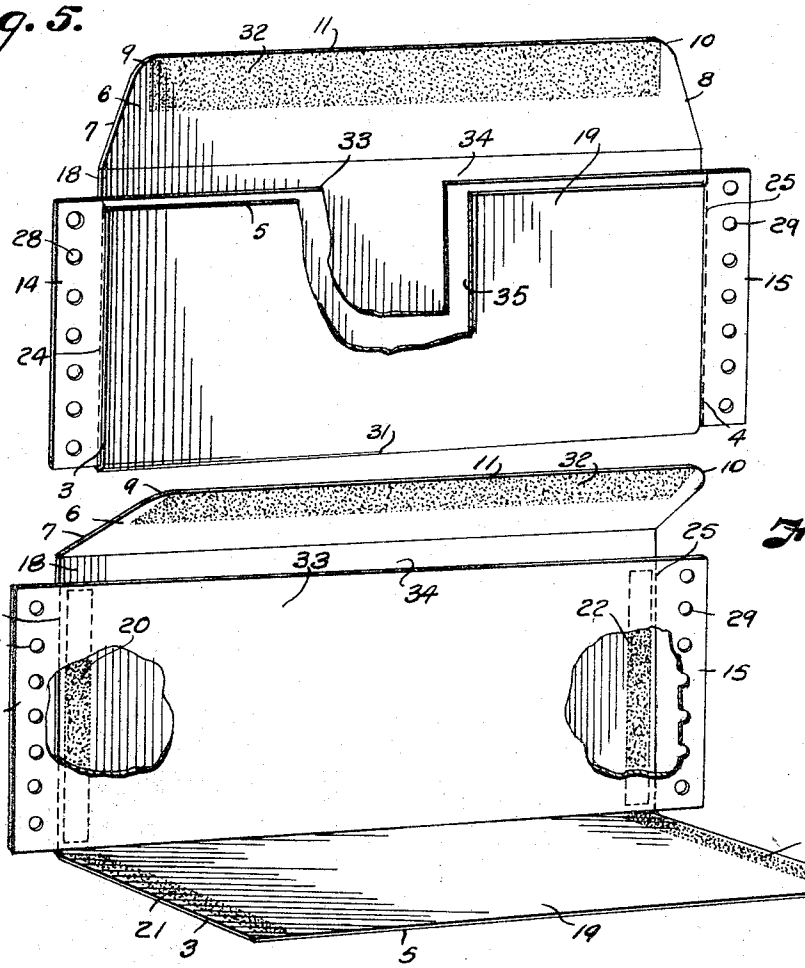


Fig. 6.

Fig. 7.

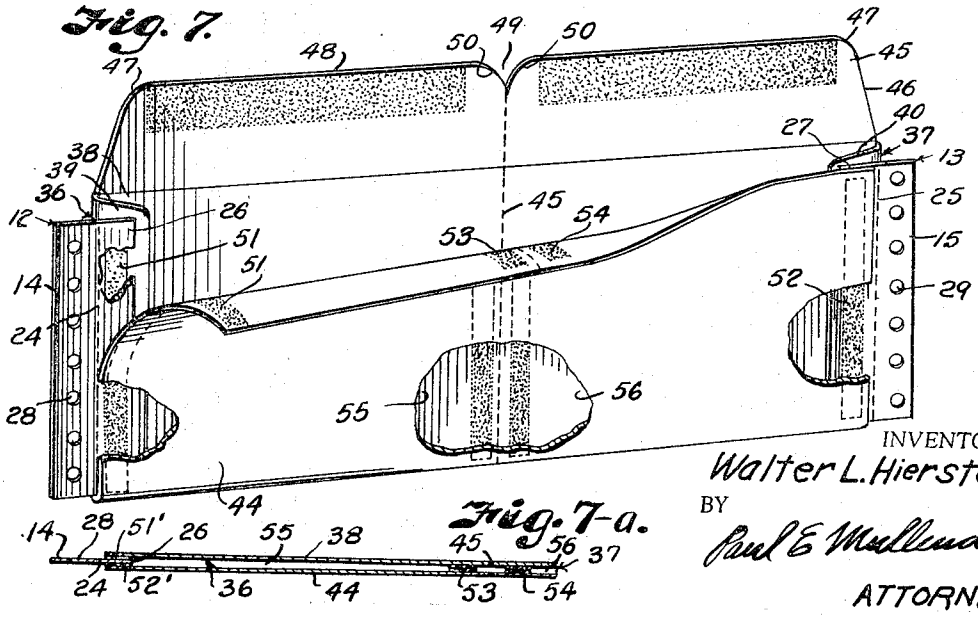


Fig. 7-a.

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Fig. 8.

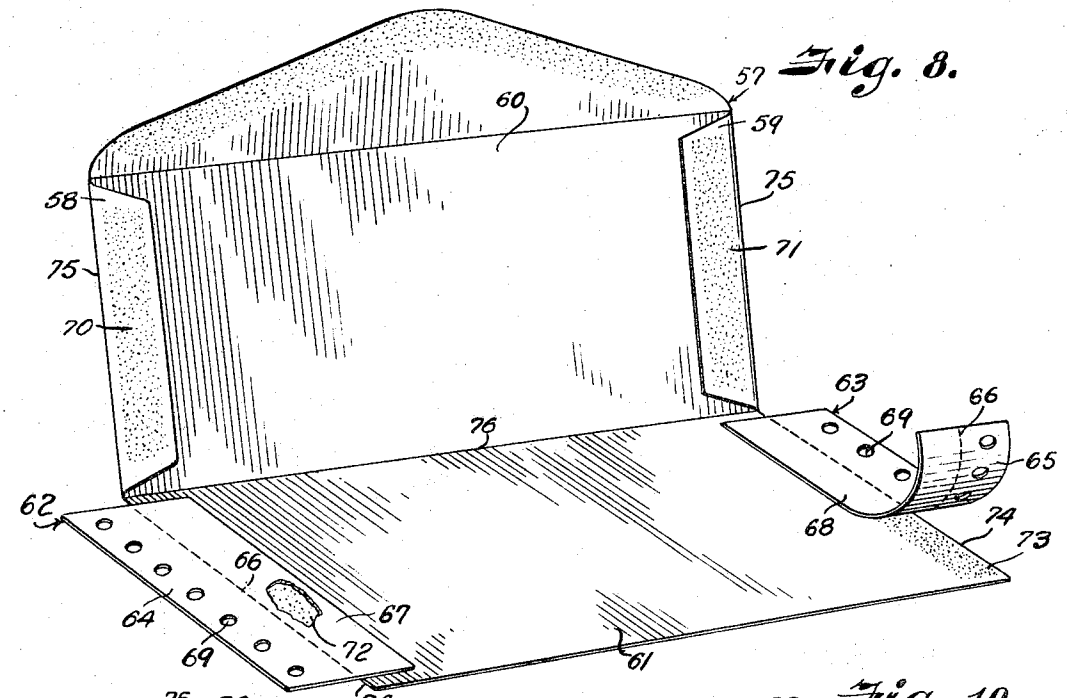


Fig. 10.

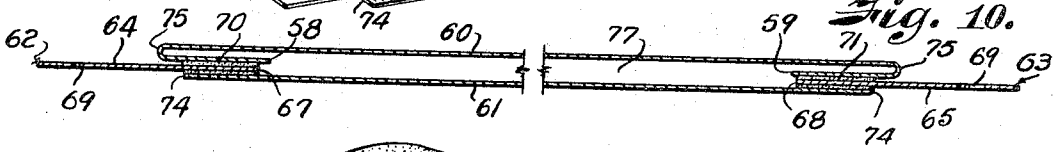
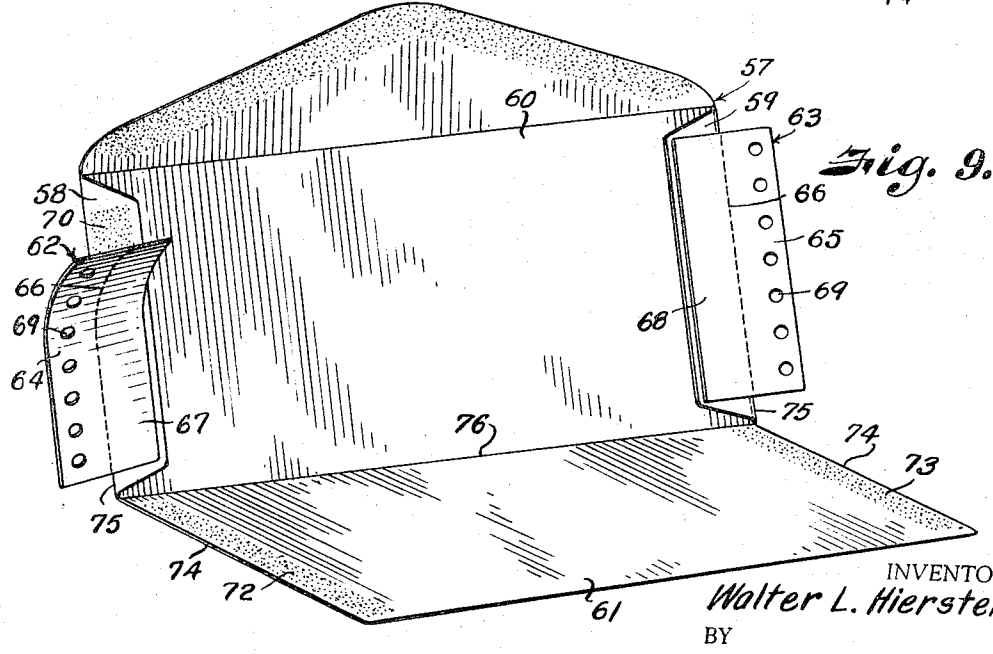


Fig. 9.



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3,339,828

INDIVIDUAL ENVELOPE UNIT FOR USE IN TABULATING AND SIMILAR MACHINES

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8 Claims. (Cl. 229—72)

ABSTRACT OF THE DISCLOSURE

Tabulating machine envelopes are formed from a generally rectangular front and back panel having two layers of adhesive between inner marginal faces of the side ends of the panels and a strip having a portion inset between the layers of adhesive securing the strip to each of the panels and securing the panels with respect to each other for closing the side end; the strip having a projecting portion provided with a series of holes extending along the side end for accommodating pin assemblages of the tabulating machine. The strip arrangement is applied to various types of envelopes including those with and without inturned side flaps, partition panels and dividing perforations to produce multiple envelopes.

This invention relates to envelope units which are adapted to be fed individually into computers, tabulating, or other high speed business machines in which the envelope units are moved at high speeds through a printing mechanism to be addressed and/or provided with printed matter.

By way of explanation, it is to be understood that the present invention is not to be confused with the connection of envelopes in a continuous series by a carrying strip or web having a series of apertures for use with the holding and timing assemblages of the machine. Such continuous strips or webs are difficult to handle and special envelope making machinery is required for the manufacture thereof. Consequently, the costs are high.

There have been some attempts to eliminate the carrying strips or webs by punching holes directly in the margins of individual envelopes and feeding the envelopes thus punched one at a time into the tabulating machine, but such envelopes are not desirable because they obviously have been adapted to automation and do not give the addressee a sense of personal attention in the use thereof.

A more conventional and personalized envelope can be supplied from more or less conventional envelopes having folded over side flaps and integral extensions or projections that carry the series of holes. When the projections are detached, the envelopes are of conventional appearance. However, such envelopes with both integral projections and side flaps are also expensive to manufacture in large quantities, due to the extra material required in dieing out the blanks. Also, the series of holes are best provided in the envelope making machine, consequently, the side flaps on the blanks interfere with forming the holes unless the projections are considerably wider than the side flaps, so that the holes may be punched without also punching the side flaps. Also, the apertured projections which are integral with the blanks interfere with folding of the side flaps in a rotary envelope making machine.

It is, therefore, a principal object of the present invention to provide individual envelope units for use in such tabulating machines that are easily produced at less cost on conventional rotary envelope making machines by providing the projections with the series of holes in the form of separate parts or strips that are attached to the envelope blanks by the adhesive that also seals the side ends of the

front and back panels of the envelopes together when the blanks have been folded.

It is also an object of the invention to produce envelope units with stronger and stiffer projections, since they are reinforced and stiffened by the adhesive used in sealing the side ends of the units.

Other objects of the invention are to provide an envelope unit of this character having dual pockets incorporated therein as a result of the provision of apertured projections, and to provide envelope units that may include multiple envelopes and which have apertured projections on side ends of the outermost envelopes.

In carrying out the preferred forms of the present invention, the part or parts that provide the projections constitute separate strips having outer margins provided with a series of holes and a line of perforations extending alongside the holes to provide an inner attaching portion. The bodies of the envelope units are folded from die cut blanks having portions to provide generally rectangular front and back panels and a closure flap. The blanks may or may not have side flaps.

If the blanks are devoid of side flaps, the part or parts having the series of holes are placed with the attaching portions thereof onto adhesive which has been applied to marginal faces at the side ends of one of the panels, with the lines of perforations substantially registering with side edges of the panel and the outer portions having the holes projecting therefrom. Upon folding of one panel over the other, an adhesive which has been applied to the marginal faces at the ends of the other panel, seals with the attaching portions to close the ends thereof and secure the parts therebetween.

When the blanks have side flaps on one of the panels, the side flaps are first turned inwardly, and the part or parts may be first secured to marginal faces at the side ends of the other panel, after which adhesive is applied to the faces of the inturned flaps. Then when the panels are folded one over the other, the part or parts are sealed therebetween. Also, the parts providing the projections may be secured to the inturned flaps with an adhesive and adhesive is applied to the side marginal faces of the other panel, to likewise seal the parts therebetween.

The invention will be understood best from the following description of exemplary embodiments, reference being made to the accompanying drawings, wherein:

FIG. 1 is an envelope unit consisting of a single envelope having projecting parts or strips inserted and secured between the front and back panels, a corner of one side of the back panel being pulled loose from the insert at that end of the envelope, and parts of the panels being broken away, to better illustrate the construction.

FIG. 2 is a perspective view of the envelope of FIG. 1, opened up to better illustrate the adhesive.

FIG. 3 is an enlarged, horizontal section on the line 3—3 of FIG. 1.

FIG. 4 is a perspective view of the envelope shown in FIG. 1 and illustrating detachment of the projecting portions after printing.

FIG. 5 is a perspective view of a modified form of the invention, wherein the parts having the projections constitute the ends of a partition strip positioned between the panels, portions of the envelope and strip being broken away to better illustrate the dual compartments formed thereby.

FIG. 6 is a perspective view of the envelope of FIG. 5, opened up to better illustrate the adhesive which seals the partition strip to the front and back panels.

FIG. 7 is a perspective view of a further modified form of the invention, showing an envelope unit consisting of multiple envelopes, portions of which are broken away to better illustrate the construction.

FIG. 7–*a* is a fragmentary section of the multiple envelope unit of FIG. 7 having the projections in the form of strips secured by adhesive between the front and back panels.

FIG. 8 is a perspective view of a partly folded blank having side flaps on one of the panels, with the parts providing the projections being applied to the inner marginal faces of the side portions of the other panel.

FIG. 9 is a perspective view of a similar blank showing the parts which provide the projections as first attached to the inturned side flaps.

FIG. 10 is a longitudinal section of the finished envelope units of FIGS. 8 or 9.

Referring more in detail to the drawings, and first to the form of invention illustrated in FIGS. 1 to 4, inclusive:

1 designates an envelope unit constructed in accordance with one form of the present invention, and which initially consists of a blank **2**, as best shown in FIG. 2. The blank **2** has a generally overall rectangular shape in that it has substantially parallel side edges **3** and **4**, free of any projections, a transverse edge **5**, and a closure flap forming portion **6** extending substantially parallel with the transverse edge **5** at the opposite side of the blank. At the portion **6** the side edges **3** and **4** converge inwardly, as at **7** and **8**, and join in rounding curves **9** and **10** with a transverse edge **11** to give shape to the closure flap.

It is apparent that such blanks may be die cut from a stack of sheets, leaving a minimum waste of material because all edges of the blanks are substantially straight and free of conventional side flaps, as no side flaps are necessary or desired in the present invention.

The blank **2** is easily scored, folded and sealed in any high speed rotary envelope making machine having a patch applying section for applying separate parts or strips **12** and **13** that provide projections **14** and **15** at the side ends of the envelope, necessary in handling the envelopes in a tabulating or similar machine.

The blanks are provided with transverse scores **16** and **17** defining generally rectangular front and back panels **18** and **19**. Stripes or layers of adhesive **20–21** and **22–23** are applied along the inner face of the side marginal portions of the panels, to seal the strips **12** and **13** when the back flap is folded thereover on the score **16**. The strips **12** and **13** may have preformed lines of perforations **24** and **25** extending at substantially the longitudinal median lines of the parts, to provide inner attaching portions **26** and **27** to lap the adhesive when the parts are applied with the perforations **24** and **25** substantially registering with the side edges **3** and **4** of the blank, and to provide the outward projections **14** and **15** that may be provided with a series of holes **28** and **29**. If the parts have not been provided with holes or perforations, they may be provided during the folding of the envelope.

The fold **31** of the back panel on the score **16** connects the bottoms of the front and back panels and closes the bottom of the pocket **30**, and the panels are connected together through the portions **26** and **27** of the strips **12** and **13**, to close the ends of the pocket, as best shown in FIG. 3. An adhesive **32** is applied to the closure flap **6** along the edge **11** thereof.

When the envelope unit thus described is used in a tabulating or similar machine, and has received the printing thereon, the projecting parts **14** and **15** of the strips are detached along the lines of perforations **24** and **25**, leaving an evelope having substantially the appearance of a conventional envelope.

In making the envelope units on a high speed rotary envelope making machine, the blanks are fed from a stack in successive order with the closure flaps trailing. The adhesive stripes **20** and **22** are applied to the inner face of the side end margins of the front panel **18**, after which the strips **12** and **13** are applied in the patch section of the machine. In this section of the machine, the strips are cut from rolls and applied over the adhesive stripes **20** and **22**. The blanks, with the strips thereon, are collated to apply the adhesive **32** on the closure flaps. The adhesive **32** is dried while the blanks are conveyed to the folding section. In the folding section, the scores **16** and **17** are formed in the blanks, after which the adhesive stripes **21** and **23** are applied on the margins of the back panel **19**. The back panel is then folded over and sealed to the portions **26** and **27** of the strips **12** and **13**, to complete the envelope. If desired, the adhesive stripes **21** and **23** may be the first applied, and the strips **12** and **13** would then be applied to the adhesive. The adhesive stripes **20** and **21** would then be applied in the folding section of the machine.

In the form of the invention shown in FIG. 5, the blank is formed into panels in the same manner as above described, and the adhesive is applied thereto. However, a partition panel **33** is applied to the adhesive, for example, the adhesive **20–22** on the front panel **18**, and the back panel **19** is folded by the fold **31** to seal the adhesive **21** and **23** into contact with the partition panel **33**. The partition panel **33** may also be provided as a patch, and has a length to provide the projecting parts **14** and **15** of the finished envelope integral with the partition panel. In this form of envelope of the invention, the partition panel cooperates with the front and back panels **18** and **19** to provide dual pockets **34** and **35**.

FIGS. 7 and 7*a* illustrate envelope units also constructed in accordance with the present invention, and which consist of multiple envelopes **36–37**. In the instance of FIG. 7, the front panels **38** have inturned side flaps **39** and **40**. The projecting parts **14** and **15** constitute strips **12** and **13**, like the strips previously described and shown in FIGS. 1 to 4. In these forms of the invention, the blank is provided with a median line of perforations **45** that extends across the front panel, the folded over back panel **44**, and across the closure flap **46**. The side ends of the closure flap **46** also preferably converge and join in rounded curves **47** with the transverse edge **48**. The edge **48** also has a notch portion **49** having its edges **50** rounding from the median line of perforations **45**. In FIG. 7, stripes of adhesive **51** and **52** are applied to the inturned side flaps and side ends of the back panel **44** to fix the strips **12** and **13**, and in FIG. 7*a* the strips **12** and **13** are like the strips in FIG. 7, but the attaching portions are set between the adhesive **51'** and a similar stripe **52'** of adhesive which has been applied to the back panel **44**. Similar stripes of adhesive **53** and **54** are applied at the sides of the median line of perforations, so that when the back panel **44** is folded over the inner face of the front panel **38**, the stripes of adhesive close the ends of pockets **55** and **56** of the envelopes **36** and **37**. After the multiple envelopes of FIGS. 7 and 7*a* have been printed, the envelopes may be separated along the median line of perforations **45** at the time the projecting parts of the strips **12** and **13** are detached along the lines of perforation **24** and **25**. It is to be understood that any number of envelopes may be joined together as shown in FIG. 7, with lines of perforations **45** to separate the intermediate envelopes from the sidemost enevelopes and from each other.

In FIGS. 8 to 10 is illustrated a modification of the invention wherein the blanks **57** have side flaps **58** and **59** which are shown at the ends of the front panel **60**, although they may be on the back panel **61**. The parts **62** and **63** which provide the projections **64** and **65** are separate from the blank and may be applied before the blank is folded or after the side flaps **58** and **59** are folded inwardly. The parts **62** and **63** are strips of tape having a median line of perforations **66** to provide attaching portions **67–68** on one side and projecting portions **64–65** on the other equipped with the series of holes or apertures **69**. The strips are, thereafter, preformed when cut from rolls, not shown. The side flaps **58** and **59** are each pro-

vided with adhesive **70–71** and the inner face of the back panel **61** is provided on the marginal side ends with adhesive **72–73**. The strips **62** and **63** may be applied to the adhesives **72–73** with the lines of perforations **66** near side edges **74** of the back panel, as shown in FIG. 8, or the strips **62** and **63** may be applied to the adhesives **70–71** on the inturned side flaps **58** and **59**, with the lines of perforations **66** substantially registering with the folds **75** of the side flaps **58–59**, as shown in FIG. 9. In either case, when the back panel **61** is folded over the front panel **60** on the fold **76**, the strips **62–63** will be sealed between marginal faces of the back panel **61** and the faces of the side flaps **58–59**, as shown in FIG. 10.

In this form of the invention, the pocket **77** (FIG. 10) has the full width of the envelope. Also, the folds **75** of the side flaps hold the panels slightly apart to make the envelope easier to stuff. Otherwise, this form of envelope functions in the same manner as the envelope illustrated in FIG. 1.

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

1. An envelope unit consisting of an envelope for use in tabulating and similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, said envelope unit including:

generally rectangular front and back panels connected along bottom edges, means closing at least one side end of said envelope,

said closing means comprising two layers of adhesive between inner marginal faces of said one side end of said panels and a projecting part,

said projecting part comprising a strip having a portion inset between said layers of adhesive, said layers of adhesive securing said strip to each of said panels and thereby, securing said panels with respect to each other for closing said one side end.

said strip having a projecting portion provided with a series of holes extending along said one side end for accommodating therein the pins of said assemblages.

2. An envelope unit consisting of an envelope for use in tabulating and similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, as described in claim **1**,

in which both side ends of the envelope have projecting parts.

3. An envelope unit consisting of an envelope for use in tabulating or similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, as described in claim **1**,

in which one of said panels includes an inturned side flap, with one of said layers of adhesive being between the in-turned side flap and the other of said panels.

4. An envelope unit consisting of an envelope for use in tabulating or similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, as described in claim **1**,

in which said projecting part includes an integral partition panel between said front and back panels.

5. An envelope unit consisting of an envelope for use in tabulating or similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, as described in claim **3**,

in which both side ends of the envelope include an inturned side flap and a projecting part.

6. An envelope unit consisting of an envelope for use in tabulating or similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, as described in claim **1**,

and said strip having an easy line of tear extending along said one side end between said projecting portion and said inset portion.

7. An envelope unit consisting of an envelope for use in tabulating or similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, as described in claim **1**,

in which perforations extend along the panels between side ends of said envelope, and

adhesive layers are on opposite sides of the perforations closing inner ends of said panels forming adjacent separable pockets in said envelope unit.

8. An envelope unit consisting of an envelope for use in tabulating or similar machines having pin assemblages for conveying and holding the envelope unit while the envelope thereof is being printed upon, said envelope unit including:

generally rectangular front and back panels connected along bottom edges,

means closing side ends of the envelope of said unit, and

a projecting part forming a part of the closing means of said side ends of the envelope and having a series of holes for accommodating therein the pins of said assemblages,

said side end closing means including an adhesive between inner marginal faces of said side ends of the panels,

said projecting parts being ends of a partition panel between the front and back panels, and

said partition panel is secured by adhesive that connects the side margins of the front and back panels to said partition panel.

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