Jan. 24, 1961

R. I. RAPP

2,969,003

METHOD OF MAKING ENVELOPES

Original Filed Dec. 23, 1954

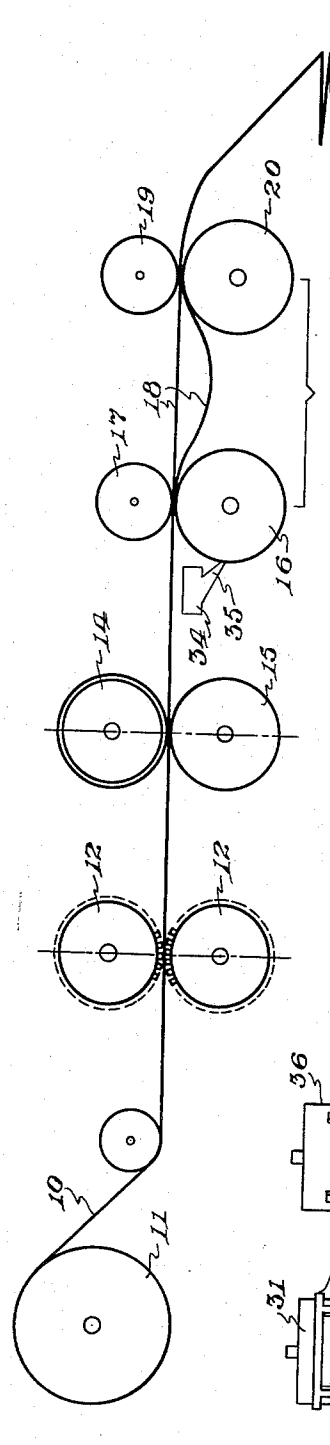


Fig. 1.

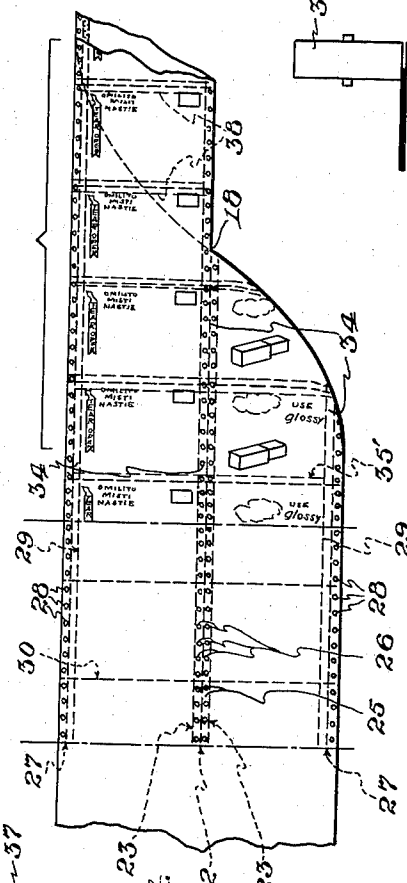


Fig. 2.

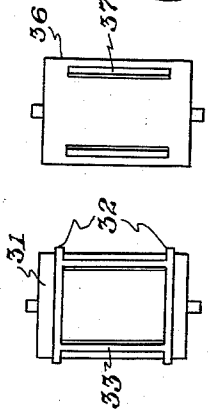


Fig. 3.

Fig. 4.

Fig. 5.

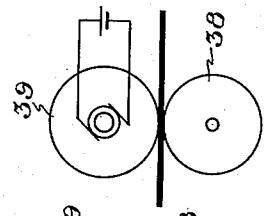


Fig. 6.

INVENTOR,
Raymond I. Rapp,
BY
J. Stuart Freeman,
Attorney.

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METHOD OF MAKING ENVELOPES

Raymond I. Rapp, 1352 Vernon Road, Philadelphia, Pa., assignor of one-half to William R. Peterson, Philadelphia, Pa.

Original application Dec. 23, 1954, Ser. No. 477,317, now Patent No. 2,847,915, dated Aug. 19, 1958. Divided and this application June 3, 1957, Ser. No. 663,249

1 Claim. (Cl. 93—63)

The object of the invention is to provide improvements in the method of producing commercial or industrial envelopes and in the resulting product, it being understood that the term envelopes applies likewise to such base as the invention may be applicable to, this application being a division of Patent No. 2,847,915, issued August 19, 1958.

During recent years, there has developed an increasing number of entities, whether persons, firms, corporations or associations, that mail such large quantities of similar pieces of envelope mail (as distinguished from parcel post, newsprint, periodicals and the like), that the number of pieces for a given entity runs into the millions annually, wherefore a combination of correlated details and steps in the method of production, perforation, printing, filling or stuffing, and sealing can save several dollars per thousand in labor and materials, with commensurate reduction in overhead and increased speed of handling and delivery.

Such envelope mail may comprise periodical bills, advertising matter, samples, notices, statements, reports, etc., and which for a given sender seldom if ever runs the same from day to day over a monthly, quarterly, or other given period, due to its being generally desirable to start and complete a given mailing within a given day or other relatively short period, since it is usually desirable if not actually necessary to have it all carry the same date, and be substantially up-to-date when received.

Another object is to provide a method of envelope manufacture, that comprises an initial single web of double-envelope width, completely perforating and sprocket-punching the same, printing as desired, applying one or more types of adhesive as hereinafter referred to, folding the double width to single envelope width, then securing as by gluing along a certain edge, addressing, bursting, stuffing and sealing for mailing, as hereinafter referred to in detail.

With the objects of the invention thus briefly set forth, the invention comprises further details of construction and arrangement, such as are fully described in the following specification, when read in conjunction with the accompanying drawings, in which Fig. 1 is a side elevational view showing diagrammatically an illustrative arrangement of suitable apparatus for carrying out the improved method in which a single web of twice the transverse width of the finished envelope is perforated, folded transversely upon a central longitudinal fold-line, and then treated as described in said parent application, Serial No. 477,317; Fig. 2 is an enlarged plan view of the double width web before and after being folded. Fig. 3 is a plan view of an ordinary adhesive-applying roll; Fig. 4

is a similar view of the thermosetting adhesive-applying roll; Fig. 5 shows diagrammatically how the unsealed open top of an individual envelope is run between an electrically heated roll and a platten roll to seal the same for mailing; and Fig. 6 is a side elevation of the same.

Referring to the drawings, a web **10** is shown as being unwound from a roll **11**, and then passed between a pair of perforating rolls **12** and **13**, then between a printing roll **14** and a rotary platten **15**, then over a glue-applying roll **16** below a rotary platten **17**, after which said web is folded transversely at **18** about its central longitudinally extending line of fold-defining perforations, and beneath a pair of pressure rolls **19** and **20**, by which the now parallel half-webs are secured together along the strips of glue or other adhesive. This resulting double-thick web **25** is then printed, bursted or separated from its fellows, filled or stuffed, and sealed.

The original web **10** is provided with a central line of fold-defining perforations **22**, and also slightly spaced from the opposite sides thereof with parallel rolls **23** of severance perforations, to provide marginal strips **25**, in each of which is a row of sprocket perforations **26**. The laterally opposite edge portions of said web are provided with rows of severance perforations **27** and two marginal rows of sprocket perforations **28**, while still another row of longitudinal severance perforations **29** are provided, and also longitudinally spaced transverse rows **30**. The adhesive is applied by a roll **31**, from the outer cylindrical surface of which propect a pair of spaced flat-surfaced raised surfaces **32**, connected at intervals by similar raised surfaces **33**. From an adhesive reservoir **34** and through a spreader **35**, ordinary adhesive of any desired kind is applied to the longitudinal and transverse applying surface **32** and **33** of said distributing roll **16–31** by which said adhesive is applied to the strip areas **34** and inwardly of the perforations **28**, and also to transverse strip areas **35** upon the forward side of the lines of perforations **30**, said web being propelled by a suitable sprocket wheel in engagement with the sprocket perforations **28** in well known manner. By means of a second roll **36** having circumferentially spaced transversely extending raised surfaces **37** a preferably different type of adhesive or potential adhesive, such as one of the thermosetting type is applied to the forward edge area **30** of each envelope unit immediately to the rear of each transverse row of perforations **30** by which the envelopes are bursted or separated.

After each separate envelope has been filled or stuffed, it is run between a platten roll **38** and an electrically heated roll **39** (Figs. 5 and 6), so as to thereby seal the envelope for mailing. In this manner is provided an improved method and resulting product, that lends itself nicely to the demands of mass production and the mailing of many different types of mailable matter, as hereinbefore referred to, and which is both economical and fully satisfactory for use with automatic mailing equipment of any suitable type.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States is:

The method of making and sealing an envelope, which consists in perforating an initially double-width web longitudinally to define its opposite side edges and transversely to define the bottom and top edges of the finished envelopes after separation, in symmetrical arrangement

upon the opposite sides of a central fold line of perforations, applying strips of active adhesive to at least one of the webs adjacent to the half web's laterally opposite longitudinal edges and along transverse strips adjacent to and forwardly of said transverse perforations, applying an initially inactive thermosetting potentially adhesive medium along a transverse strip of at least one of said webs adjacent to and rearwardly of each of said first-mentioned transverse perforations, folding said half-webs transversely along said fold line of perforations until they are in parallel relation, so that said half-webs are secured together along rectangular strips forwardly of the now registering transverse perforations and along

strips upon their laterally opposite edges, separating the resulting envelope units along said transverse perforations, and after filling the individual envelopes bringing their open top edges together and applying heat thereto to effect a sealing by the thermosetting medium.

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