

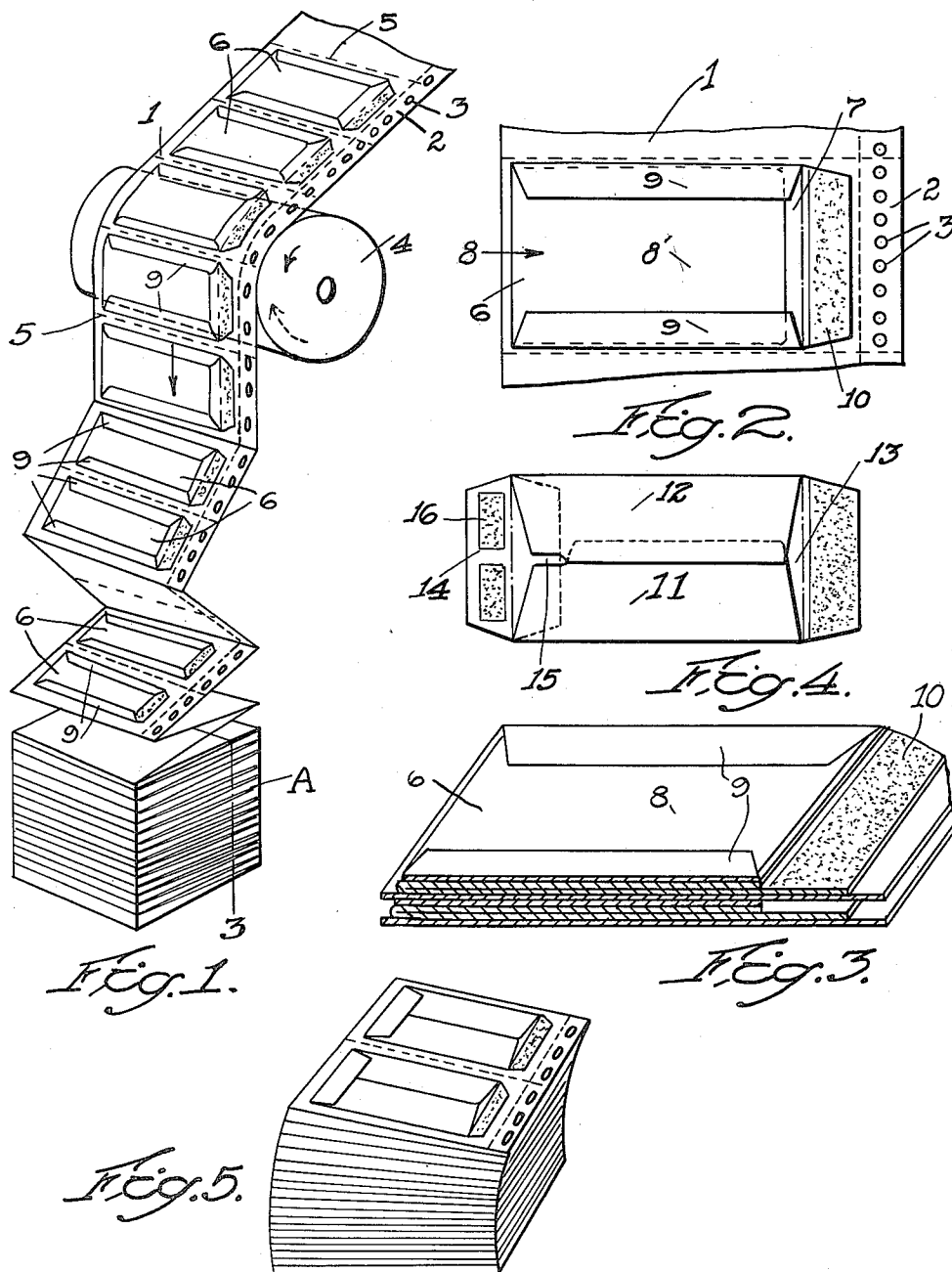
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ASSEMBLY OF SERIES-CONNECTED ENVELOPES

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ASSEMBLY OF SERIES-CONNECTED
ENVELOPES

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2 Claims. (Cl. 229-69)

The present invention relates to envelopes, or other closures, of the type that are adapted to be fed continuously as a connected series on a carry strip into various types of business or writing machines for the entry of data thereon in association with various forms of printed matter already on the strip. Such envelopes must be capable of ready separation from the series into individual units for subsequent loading and sealing after entry of the data, to which end the strip provides weakened severance lines between the units, along which the strip is foldable in a zig-zag or fan-folded assembly for convenience of packing, prior to its entry into a business machine.

In my copending application, Serial No. 402,524, filed even date herewith, there is shown and described a machine for making chains or assemblies of series-connected envelopes, characterized by the continuous lengthwise feed of a cross-scored paper strip or web accompanied by the timed delivery of individual envelopes to the strip for attachment thereto by a suitable adhesive. In this machine, the advancement of the strip for attachment of the envelopes is carried out between fixed stations, at each of which the strip has the customary zig-zag or fan-folded form that meets the requirements of the business machine in which it is to be used. While such a paper strip or web alone will readily fan-fold to form an assembly of uniform height, this is not ordinarily the case after the envelopes have been attached thereto, since any variation in the thickness of overlying portions of individual envelopes, as along seams, results in building up a fan-folded assembly which will become progressively higher on one side than the other as the number of such envelopes increases. The net result is that any fan-folded assembly of continuous envelopes of non-uniform thickness tends to side slip and later fall over, with consequent difficulties in packing and handling the envelopes, as well as feeding them into a business machine.

According to the present invention, there is provided an improved assembly of series-connected envelopes characterized by the fact that all overlying portions of the envelopes have the same number of thicknesses of envelope material wherever the envelope units are in overlying relation in a fan-folded assembly. Therefore, as the fan-folded assembly builds up, the uppermost unit of the assembly always will lie in a substantially horizontal plane, and the assembly, being rectangular throughout, will not fall over, due to one side being higher than the other.

The above and other advantageous features of the invention will hereinafter more fully appear from the following description with reference to the accompanying drawing, in which:

Fig. 1 is a view in perspective, illustrating the formation of a continuous series of envelopes embodying the invention into a fan-folded assembly.

Fig. 2 is a plan view, showing one of the envelopes of Fig. 1 on an enlarged scale.

Fig. 3 is a transverse sectional view, on an enlarged scale, along the line 3-3 of Fig. 1.

Fig. 4 is a plan view, illustrating a modified form of envelope.

Fig. 5 illustrates the formation of a non-rectangular assembly from envelopes of non-uniform thickness.

Referring first to Fig. 1, the invention is shown for purposes of illustration, in connection with a continuous carry strip 1, one edge of which provides a longitudinally extending band 2 having perforations 3 at regular intervals, by means of which the band may be fed in either direction through cooperation of the perforations with pins (not shown) provided by a rotating feed element 4. The strip 1 is subdivided transversely of its length by weakened severance lines 5, so that the strip is readily foldable along these lines 5 in zig-zag or fan-fold arrangement, with a considerable length of folded strip occupying a relatively small space, owing to the tendency of the folded portions to pack tightly into an assembly designated by a reference character A.

The strip 1 carries a series of envelopes 6 uniformly positioned within the panels between the severance lines 5, and the envelopes can be attached to the strip in any suitable manner, as for example, by means of the mechanism shown and described in my aforesaid copending application, Serial No. 402,524. It is sufficient for the purposes of the present application, to state that after the attachment of the envelopes 6 to the strip 1, the completed envelope series is fed downwardly by rotation of the feeding element 4 in the direction of the solid arrow in Fig. 1. As previously pointed out, the strip 1 carrying the envelopes 6, folds readily along the severance lines 5, so that as travel of the strip continues, an assembly of combined strip and envelope units is built up, as shown.

In order that the strip and envelope units will lie flat in substantially parallel relation, as the building up of the assembly A proceeds, each envelope 6 is of the form illustrated in Fig. 2. As shown, each envelope 6 consists of a front wall

7 and a rear wall 8, the latter being constituted in the main by a flap extension 8' from the bottom edge of said front wall, which is folded over on said edge to overlie the front wall 7. The rear wall 8 is completed by narrow edge flaps 9, 9 on the front wall 7, which are folded over and adhesively secured to the flap extension 8'; at the open end of each envelope is the usual seal flap 10, extending from the front wall 7.

As previously pointed out, the envelopes 6 are attached to the strip 1 in the panels between the severance lines 5, with their seal flaps 10 extended. It is evident from a consideration of Fig. 1, that the edge flaps 9 of each envelope 6 extend transversely of the strip 1 in parallel relation, for a major portion of the width of the strip. Therefore, as the combined strip and envelope units are fan-folded in pairs to form the assembly A, the seams provided by the edge flaps 9 provide four parallel bands of uniform thickness extending across the strip, each band having three layers of envelope material. Moreover, the envelopes 6 tend to lie flat in exact parallelism, as the assembly A is built up, and the units become compacted together, due to the increasing weight of the envelopes. A cross-section of the assembly A is shown on an enlarged scale in Fig. 3, from which it is evident that the uniform thickness of the envelopes along their seam edges, as represented by the flaps 9, results in fan-fold packing of the completed series of units, with the edges of the assembly of uniform height, irrespective of the number of envelopes and length of the strip. Therefore, the assembly A may be readily unfolded for feeding of the envelopes into a business machine by rotation of the feeding element 4 in the direction of the dotted arrow in Fig. 1.

Referring now to Fig. 4, there is shown a modified form of envelope that is adapted for application to a carry strip for producing a fan-folded assembly of uniform height. This envelope is of conventional center seam construction, in that the rear wall is constituted by side flaps 11 and 12, folded into overlapping relation with reference to the front wall 13. A bottom flap 14 is adapted to be folded over to provide a closure for one end of the envelope body by its adhesion to the side flaps 11 and 12.

One side flap 11 is cut away at 15, for a distance equal to the width of the bottom flap 14. Consequently, when the bottom flap 14 is folded over into the dotted line position and secured by spaced applications of adhesive 16, there will be only three thicknesses of envelope material over the area where the flap 14 overlies the side flaps 11 and 12. Thus, the envelope is of the same thickness across the bottom seam as along the longitudinal center seam, a condition which would not exist were the side flap 15 not cut away, as in a conventional envelope of this type.

Obviously, such conventional center seam en-

velopes provide an area of four thicknesses, where the three flaps overlie the front wall. It is this non-uniformity of thickness that renders such conventional envelopes unsuitable for attachment to a carry strip that is subsequently fan-folded, due to the cumulative effect of the four thickness areas in building up an assembly that is higher on one side than on the other, i. e., a non-level assembly such as is shown in Fig. 5.

From the foregoing, it is apparent that by the present invention there is provided an improved assembly of series-connected envelopes which maintains itself substantially level throughout, by reason of the fact that all overlying portions of the envelopes, as along the seams thereof, have the same number of thicknesses of envelope material.

I claim:

1. As a new article of manufacture, an assembly or chain of series-connected envelopes, adapted for zig-zag or fan-folded use in business or like machines, and comprising a paper web or strip cross-scored at regular intervals to provide detachable areas, and a complete one-piece open-mouth envelope registered with and adhesively attached by its front wall to each said area, the rear wall of each said envelope and its bottom closure being constituted by folded-over flap portions integral with the front wall which are overlapped and adhesively connected to provide seams, said seams from the bottom closure to the open mouth of said envelope having the same number of thicknesses of envelope material throughout, whereby upon zig-zag or fan-folding of said assembly on said cross-scores, the resulting stack will be kept level and of substantially uniform thickness throughout.

2. As a new article of manufacture, an assembly or chain of series-connected envelopes, adapted for zig-zag or fan-folded use in business or like machines, and comprising a paper web or strip cross-scored at regular intervals to provide detachable areas, and a complete one-piece open-mouth envelope registered with and adhesively attached by its front wall to each said area, the rear wall of each said envelope being constituted by an integral flap portion substantially co-extensive with the front wall and folded thereon to provide the envelope's bottom closure, and by integral folded-over edge flaps which are overlapped and adhesively connected with said flap portion to provide a pair of side seams running from the bottom closure to the open mouth of said envelope, said seams having the same number of thicknesses of envelope material throughout, whereby upon zig-zag or fan-folding of said assembly on said cross-scores, the resulting stack will be kept level and of substantially uniform thickness throughout.

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