

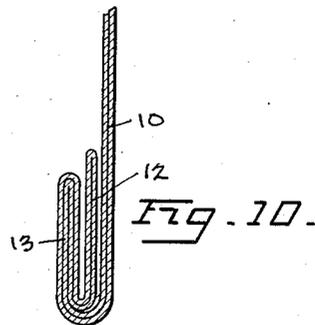
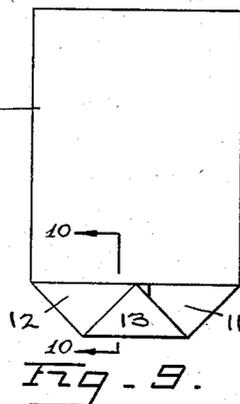
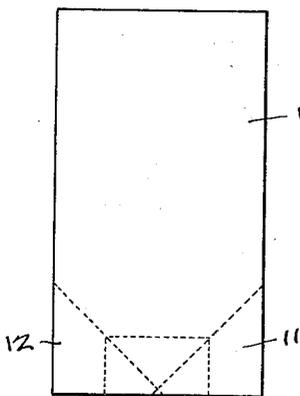
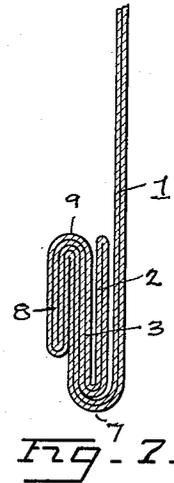
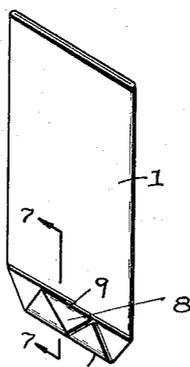
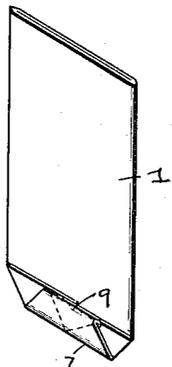
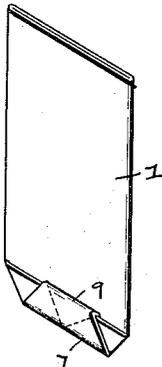
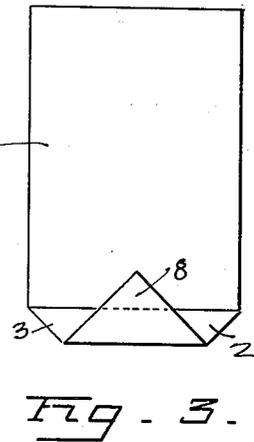
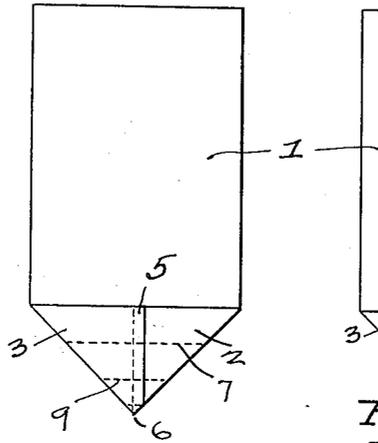
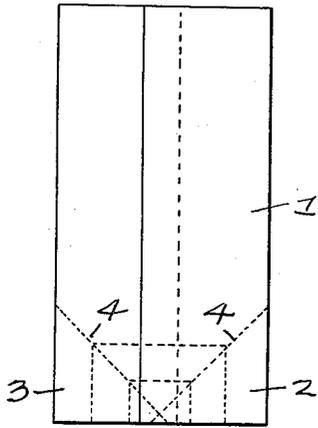
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J. M. DRIVER

2,023,782

BAG CLOSURE AND METHOD OF MAKING THE SAME

Filed March 19, 1934



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# UNITED STATES PATENT OFFICE

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## BAG CLOSURE AND METHOD OF MAKING THE SAME

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5 Claims. (Cl. 229—57)

This invention relates to a closure for the open end of a tubular blank or bag, as well as to the method of producing said closure.

An object of the invention is to provide a closure for the open end of tubular blanks or bags, or envelopes by means of which the merchandise contained within the blank, bag, or envelope, will be prevented from escaping therefrom, as well as prevent the ingress of outside air into the blank bag, or envelope, to deteriorate in whole or in part, the merchandise contained therein.

A further object of the invention is to provide a closure for the open end of a tubular blank bag or envelope, formed out of the material adjacent the open end of the blank bag, or envelope, by a succession of diagonal and lateral folds, all of which are secured to the blank bag, or envelope, and to each other.

A still further object of the invention is to provide a closure for either one or both ends of a tubular blank, out of which a bag or envelope is to be formed, which will be superior in point of simplicity, inexpensiveness of construction, positiveness of operation, and facility and convenience in use and general efficiency.

In this specification and the annexed drawing, the invention is illustrated in the form considered to be the best, but it is to be understood that the invention is not limited to such form, because it may be embodied in other forms; and it is also to be understood that in and by the claims following the description, it is desired to cover the invention in whatsoever form it may be embodied.

In the annexed drawing:

Fig. 1 represents a plan view of a bag blank, or of a length of tube material having the crease lines indicated thereon, indicated to make a closure for an end thereof.

Fig. 2 is a view illustrating the state of the blank shown in Fig. 1, after the completion of the initial folding thereof.

Fig. 3 is a view illustrating the state of the blank shown in Fig. 2, after the completion of the secondary folding operation.

Fig. 4 is a perspective view showing the end of the blank in its finally folded form.

Fig. 5 is a perspective view of a bag blank in which the final step of folding the end closure is modified from that shown in Fig. 4.

Fig. 6 is a perspective view of a bag blank in which the final step of folding the end closure is modified from that shown in Figs. 4 and 5.

Fig. 7 is an enlarged section taken through Fig. 6 on the line 7—7.

Fig. 8 is a plan view of a length of tube material

or of a bag blank, having the crease lines at one end thereof to form a closure in accordance with my invention.

Fig. 9 is a view illustrating the state of the blank shown in Fig. 8 after the completion of the folding operation.

Fig. 10 is a cross section taken through Fig. 9 on the line 10—10.

In detail the construction illustrated in the drawing comprises a length of tubed material, which in the process of manufacture is formed from a single width of material in accordance with conventional practices. The opposite longitudinal side edges of the tube may be of the straight type as shown, or said opposite side edges may be folded inwardly. It is a conventional and well-known practice in the industry, to make the side edges of the blank tubes with either the straight or folded side edges heretofore referred to; likewise, it is a conventional practice in the industry to close one end of the tube blank by a conventional system of folds, thereby to form a bag or envelope. The closed end of the bag thus becomes, in practice, the bottom end of the bag. The standardized method of closing the bottom end of a bag or envelope provides a closure which does not hermetically seal the parts together, and as a result merchandise within the bag may work its way out, or atmospheric air may pass into the bag to deteriorate the freshness of the contents of the bag.

Bags or envelopes which are formed in the usual way out of any of the well-known bag materials, such as pulp stock, rag stock, waxed paper, glassine, transparent regenerated cellulose, or the like, usually have the bottom end thereof sealed or closed by the standardized type of fold. Where the bag or envelope is made of moisture-proof material such as treated paper, or treated regenerated cellulose, to prevent moisture attacking the contents of said bags, said moisture-proof qualities of the bag are rendered impotent by closing the bottom end of said bag with the conventional type of fold, due to the fact that a hermetic seal is not formed thereby.

In my invention I take a predetermined length of tubed material formed in the conventional way of making bags or envelopes. This tubed material may be of any material out of which it is possible to form bags, envelopes, or the like. In Fig. 1, I have shown a length or blank of tubed material indicated by the numeral 1. At either one or the other or both of the open ends of the blank 1, I fold the opposite corners 2 and 3 inward on diagonal crease lines onto the same side

or face of the blank, so that an edge of the folded corner 3 will overlap and lie on top of the folded corner 2. At the point where the folded corners overlap, the same would be preferably secured to each other by an adhesive, either externally applied, or contained within the bag material. Likewise, the folded corners 2 and 3 would be joined to the face of the bag over which they lie, by some conventional securing means or adhesive. It will be noted that when the corners 2 and 3 are folded on the diagonal crease lines 4, and the overlapping ends of said corners are secured together along the line 5, that the only point at which the contents of the bag might work its way out therefrom, would be at the apex of the folded corners indicated by the numeral 6.

In the second step of forming my closure, I fold the end of the bag or blank on a transverse line 7, within the area of the folded corners, and suitably secure the same onto the theretofore folded corners 2 and 3, by means of adhesives or the like. The fold line 7 is arranged laterally or transversely, relative to the longitudinal axis of the bag or blank, and when the said end of the bag is folded on the line 7, as heretofore described, a seal is provided which prevents the ingress of air into the bag. The triangular end portion 8 of the bag, in order to further close off the possibility of the bag contents escaping, may be folded inwardly on the transverse line 9 between the face of the bag and the overlapping folded corners, as shown in Fig. 4, or folded inwardly on the line 9 to lie against the outer face of the folded corners 2 and 3 as shown in Fig. 5, or folded outwardly and downwardly, as shown in Fig. 6. Either of the positions into which the triangular portion 8 may be folded, as shown in Figs. 4, 5, and 6, are optional and each is clearly within the purview of the invention. Irrespective of the position into which the triangular portion 8 is folded, it is suitably secured onto that portion of the bag against which it lies, either by means of adhesive, or the like.

It is to be understood that the first and second steps of forming the end closure as shown in Figs. 2 and 3, as well as the final step shown in Figs. 4, 5, and 6, are effected mechanically and automatically. Where the open end of a bag is folded and closed in the manner heretofore described and illustrated in Figs. 4, 5, and 6, it is impossible for the bag contents to escape, and where the bag is made out of moisture-proof material, such as waxed paper, or treated regenerated cellulose, the end closure itself forms a hermetic seal, which prevents outside air from entering the bag and deteriorating the contents.

It is to be understood that the illustrations shown in Figs. 4, 5, and 6, are not intended to depict solely the idea of forming a closure for what might be indicated as the bottom of a bag, but that the identical closure might be formed on the upper end of the bag.

In Figs. 8, 9, and 10, I have shown a tubular blank or bag 10, which has the opposite corners 11 and 12 of one end thereof folded on diagonal lines into overlapped relationship, the same as illustrated and described in connection with Fig. 2. In the modified form shown in Fig. 9, the triangular apex 13 of the blank is folded on a lateral line, back onto the face of the overlapping folded corners, and secured thereto within the area of

said folded corners by suitable securing means, such as adhesive, or the like.

No matter what the material is out of which the bag may be formed, my particular type of enclosure is one which I have found to be absolutely air tight. I have found that if a bag which is made out of water-proof material, has an open end thereof closed by a closure folded in accordance with my invention, that the said bag will hold water and none of it will leak through the closure, and that the limit of time within which the bag will hold water, is dependent upon its resistance to decomposing attack by the water. Obviously, a closure which is substantially water tight, to hold water within a bag formed of water-proof material, will likewise prevent air from entering such a bag to deteriorate whatever merchandise such a bag may contain.

Having thus described this invention, what I claim and desire to secure by Letters Patent is:

1. In a tubular blank having square ends, a permanent closure for an end of said blank comprising corners at one end of said blank folded inward on one face of the blank, whereby one corner fold overlaps the other so as to position the adjacent edges thereof parallel, and having the end of the blank and the folded corners folded upon the face of the folded corners and secured thereto.

2. In a tubular blank having square ends, a permanent closure for an end of said blank comprising corners at one end of said blank folded inward on one face of the blank, whereby one corner fold overlaps the other so as to position the adjacent edges thereof parallel, and having a portion of the end of the blank and the folded corners folded upon the face of the folded corners and secured thereto, and the remaining portion of the end of the blank and the folded corners refolded over upon itself and secured thereto.

3. In a tubular blank having square ends, a permanent closure for an end of said blank comprising corners at one end of said blank folded inward on one face of the blank so that the adjacent edges overlap and are parallel to each other, and having the end of the blank and the folded corners folded laterally and secured to the blank to keep the folded in corners flat against the side of the blank.

4. In a tubular blank having square ends, a permanent closure for an end of said blank comprising corners at one end of said blank folded inward on one face of the blank, whereby one corner fold overlaps the other and the same are secured together and to the blank, and having a portion of the end of the blank and the folded corners folded upon the face of the folded corners and secured thereto, and the remaining portion of the end of the blank and the folded corners refolded over upon itself and secured thereto.

5. The method of permanently closing the square open end of a bag or blank, comprising, folding the opposite corners adjacent the open end of the bag or blank on a diagonal line into overlapping relationship on the same side of the bag or blank so as to position the meeting edges of said corners parallel, securing the folded corners to the face of the bag or blank, and folding the end of the bag or blank on a transverse line within the area of the folded corners and securing the same thereto.

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