Jan. 29, 1957 W. P. NAIL 2,779,144

METHOD OF MAKING POUCHES

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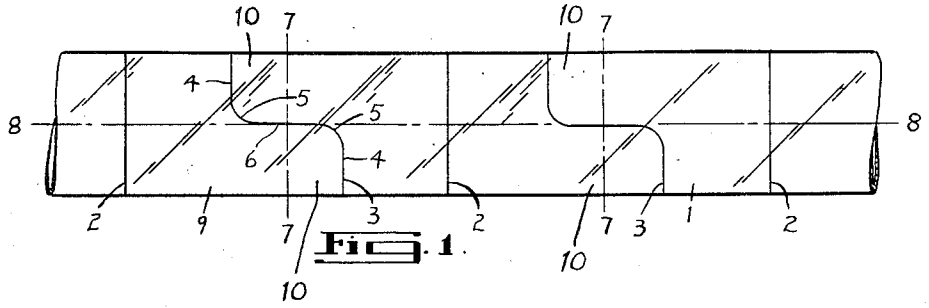


Fig. 1.

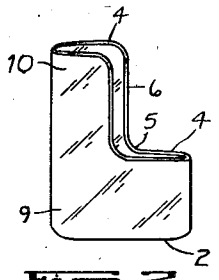


Fig. 2.

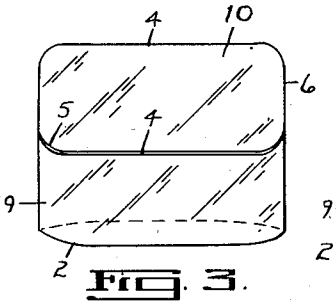


Fig. 3.

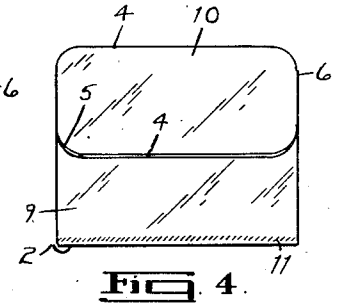


Fig. 4.

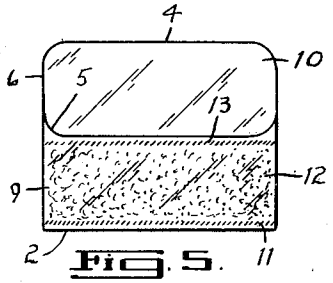


Fig. 5.

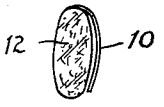


Fig. 6.

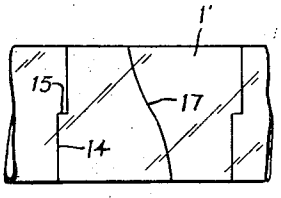


Fig. 7.

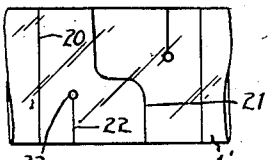


Fig. 9.

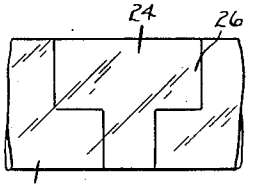


Fig. 11.

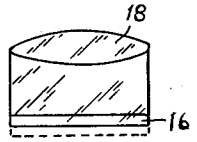


Fig. 8.

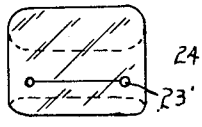


Fig. 10.

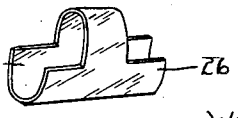


Fig. 12.

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METHOD OF MAKING POUCHES

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Application December 10, 1952, Serial No. 325,075

4 Claims. (Cl. 53—29)

This invention relates to improvements in the manufacture of pouches and like containers. The principal object of the invention is to reduce the number of seams required to produce the pouch to a single seam of simplicity and economy of manufacture and strength in the finished pouch.

Another important object is to eliminate all wastage of material in the blanking out of the pouch form.

Still another object is to provide a pouch which will eliminate tearing at the join between the flap and the body portions.

The principal feature of the invention resides in blanking out the pouch forms or the like by severing a tube along transverse sever lines each of which defines a pouch end-forming formation on each side thereof, the body of the pouch form or blank being constituted by the tube between the end formations whereby blanks are formed from said tube without wastage of the material thereof.

More particularly it is contemplated to sever the tube in a manner to provide pairs of oppositely disposed pouch blanks having bottom and flap-forming formations with the bottom-forming formations of the blank pairs being spaced apart and the flap-forming formations of the blank pairs being contiguous, interfitting and oppositely disposed.

A further important feature resides therefore in shaping the line of severance defining the flap portions as a line of opposite symmetry on opposite sides of the axis of the tube whereby the axially extending excess material on one side of the axis forms the flap on one piece of severed tubing and the excess on the opposite side of the axis forms the flap on another piece of tubing cut by the severing line.

Still a further feature resides in shaping the flap-forming line of severance to provide a rounded edge joining the flap to the front of the pouch body formed by the tube length between lines of sever to provide a resistance to tear.

Referring to the accompanying drawings,

Figure 1 is a plan view of a length of tubing showing the manner in which it is severed to produce blanks in the formation of a pouch in accordance with the invention.

Figure 2 is a perspective view of one of the blanks cut from the tube of Figure 1 in an opened-out state.

Figure 3 is a front elevational view of the blank showing the bottom edge ready to be sealed.

Figure 4 is a view similar to Figure 3 but showing the bottom edge sealed.

Figure 5 is a view of the completed pouch packed with material to be dispensed therein and with a temporary seal across the mouth of the pouch.

Figure 6 is an end view of the pouch of Figure 5 with the flap folded down over the body.

Figure 7 is a plan view of a length of tubing showing an alternative form of blank.

Figure 8 is an elevational view of a pouch formed from the blanks of Figure 7.

Figure 9 is a view similar to Figure 7 but showing still a further modified form of blanking.

Figure 10 is a rear elevational view of a pouch formed from the blank of Figure 9.

Figure 11 shows still a further tube blanking, and Figure 12 illustrates the open "pouch" afforded by the blanking.

Referring to Figure 1, **1** represents a tube of material, preferably a thin pliable heat-sealable plastic, e. g., polyethylene or the like, which may be transparent or coloured.

The tube **1** is then cut at spaced intervals along the transverse sever lines **2** and between the lines of sever **2** along sever lines **3** which comprise symmetrically disposed transverse portions **4** connected by rounded knees **5** to an axially extending portion **6**. Thus the sever lines **3** have opposite symmetry on either sides of a line **7—7** mid-way between the sever lines **2** and have opposite symmetry on opposite sides of the tube axis **8—8**.

These sever lines divide the tube into individual blanks **9** with each blank having an excess of material **10** adapted to constitute a flap on one side of the axis **8—8** extending axially beyond the body of the blank **9** on the opposite side of the axis.

The symmetry of the sever lines **3** provides the flap-forming portions **10** on the tube lengths **9** between adjacent sever lines **2** without wastage of any of the material of the tube.

Figure 2 illustrates the blank **9** in a somewhat open form and Figure 3 illustrates the blank fully opened up to pouch formation with the sever line **2** defining the bottom edge of the pouch.

Figure 4 shows the bottom edge **2** sealed as at **11**, preferably by means of a heat seal to complete the pouch formation. The pouch may then be filled with material, such as tobacco **12** Figure 5, and a relatively weak seal **13** applied across the mouth of the pouch to seal the contents from the atmosphere. The flap **10** may then be folded over as illustrated in Figure 6.

It will be seen that with the pouch blanked from a tubular form the single seam **11** only is required to complete the pouch formation, greatly simplifying the handling and decreasing the cost of manufacture.

Additionally the entire material of the tube is utilized to form the blank without wastage, and the knees **5** of the sever lines **3** provide a curving tear-resistant juncture between the flap **10** and body portion **9**. With this curve formation pull on the front of the pouch body **9** is transferred over an extended length of the juncture of the flap with the pouch body and is not concentrated at the corner to the same extent that occurs in conventional pouch constructions which normally split at this point.

In the modified form of the invention shown in Figure 7, the tube **1'** is severed along transverse lines **14** at spaced points, with the lines **14** having an offset **15** at the axis of the tube to provide a bottom forming flap **16** as shown in Figure 8. The sever line **17** between the lines **14** has a different shape than the line **3** and again is of opposite symmetry on opposite sides of the tube axis to provide the flap portion **18**, Figure 8. The bottom flap **16** may be sealed or secured in any known way but the preferable method is to effect a heat seal along this edge.

In Figure 9 the tube **1'** is shown provided with spaced transverse sever lines **20** corresponding to lines **2** of Figure 1 to define the bottom edge of the pouch, and between these sever lines the sever lines **21** corresponding to the lines of severance **3** of Figure 1. In addition, extending in from the edge of the tube are cuts **22** which terminate in enlarged orifices **23**.

With this arrangement a blank corresponding to the blank of Figure 2 is formed from which the pouch may be made and in the back of this pouch the cuts **22** and

orifices **23** define a dispensing slot for tissues and the like where the rounded ends **23'** of the slot cause an overturning of the tissue being dispensed.

Figure 11 illustrates a further modification of the invention wherein a blank **24** is provided by cutting tube **25** without wastage of the material of the tube, and this blank in its state of Figure 12 may be considered as an open "pouch" and it will be appreciated that the end extensions **26** can be folded over, the one to define a bottom to the pouch and the other to form a flap.

It will be understood that other various forms of blanks may be provided by altering the configuration of the severance lines without departing from the invention.

What I claim as my invention is:

1. A method of forming pouches which comprises transversely cutting a tube of heat-sealable material while in a flat state with linear cuts extending perpendicular to the tube axis and between each pair of linear cuts, compoundly cutting said tube along a compound line having opposite symmetry on opposite sides of both the axis of the tube and a line transverse the tube axis and forming a median line between said pair of linear cuts, opening out each tube length defined between a linear and a compound cut and refolding same to bring the original fold edges centrally of the width of the refolded tube length, heat-sealing each refolded tube length along the end defined by the linear cut to form such tube length into an open pouch, the end defined by the compound cut defining a flap for closing said open pouch.

2. A method of forming pouches which comprises transversely cutting a tube of heat-sealable material while in a flat state with linear cuts extending perpendicular to the tube axis, and between each pair of linear cuts cutting said tube with a compound cut along a line having opposite symmetry on opposite sides of both the axis of the tube and a line transverse the tube axis and forming a median line between said pair of linear cuts to form pouch flap forming formation having an axial extent at one side of the tube axis substantially as great as the length of the

tube between said compound cut and the adjacent linear cut at the other side of the tube axis, opening out each tube length defined between a linear and a compound cut and refolding same to bring the original fold edges centrally of the width of the refolded tube length, heat-sealing each refolded tube length along the end defined by the linear cut to form such tube length into an open pouch, the flap formation defined by said compound cut being adapted to close said open pouch.

3. A method as claimed in claim 2 in which said open pouch is filled with a material to be protected and said flap formation is moved to close said open pouch and is heat-sealed in pouch-closing relation with a seal relatively weaker than the seal along the end defined by the linear cut.

4. A method of forming pouches which comprises transversely cutting a tube of material while in a flattened state with linear cuts extending perpendicularly to the tube axis and between each pair of linear cuts compoundly cutting said tube along a compound line having substantially opposite symmetry on opposite sides of the axis of the tube and a line transversely of the tube, opening out each tube length defined between a linear and a compound cut and refolding same to bring the original fold edges centrally of the width of the refolded tube length, closing each refolded tube length along the end defined by the linear cut to form said tube length into an open pouch, the end defined by the compound cut providing a flap for closing said open pouch.

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