June 29, 1937. A. RAMBOLD 2,085,509

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Fig.1.

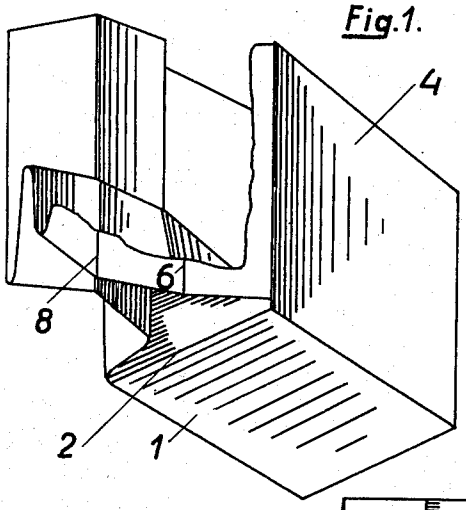


Fig.3.

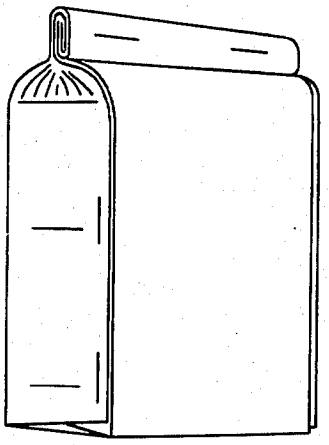


Fig.2.

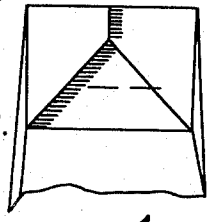


Fig.4.

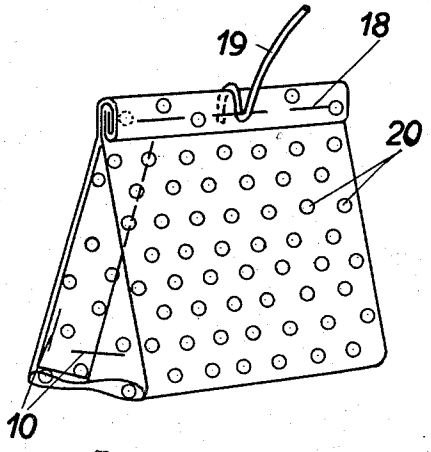


Fig.5.

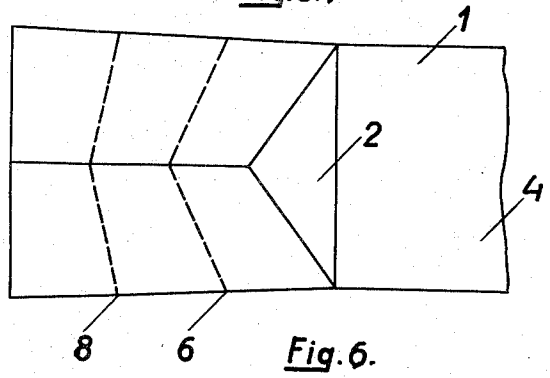


Fig.6.

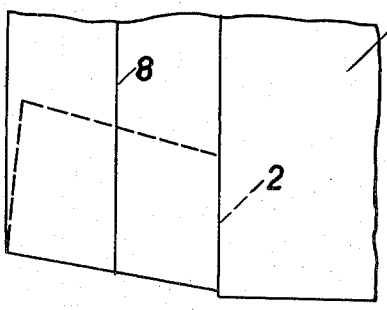
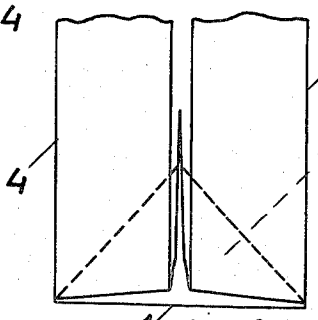


Fig.7.



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Fig.8.

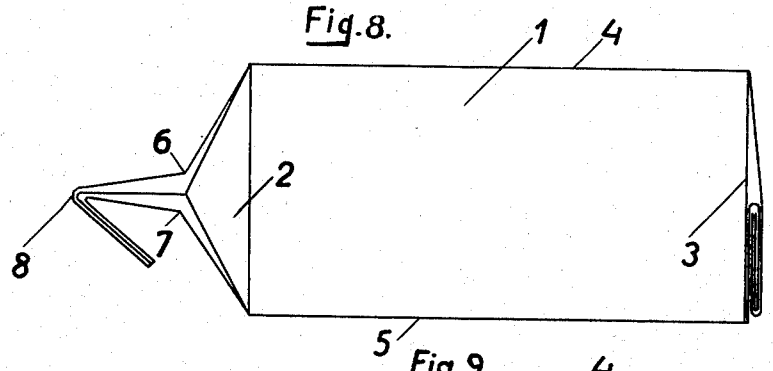


Fig.9.

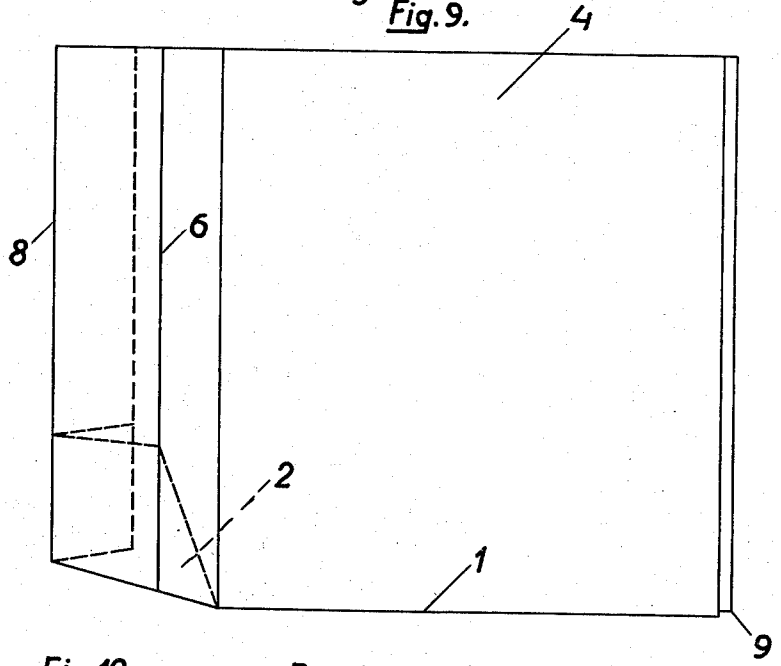


Fig.10.

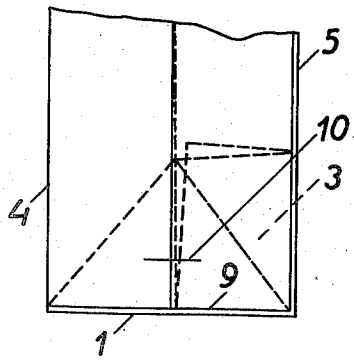


Fig.11.

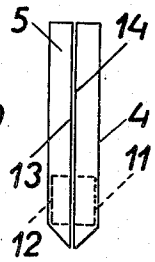


Fig.12.

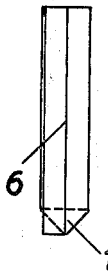


Fig.13.

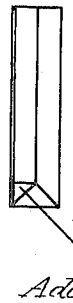
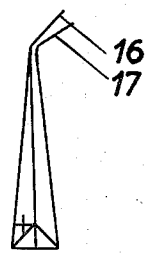


Fig.14.



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Adolf Rambold, Dresden-Laubegast, Germany

Application May 31, 1935, Serial No. 24,416
In Germany June 28, 1934

REISSUED
FEB 11 1941

5 Claims. (Cl. 229—53)

This invention relates to bags, which may be perforated and utilized as infusion packages, or which may be imperforate and utilized as sales packages.

An object of the invention is to provide a new and improved bag in which a tight seal is obtained by stapling alone, without the use of adhesive.

A "glueless" bag in accordance with the invention comprises a rectangular blank of sheet material folded U-fashion and with its two coincident edge portions at either side doubly folded upon themselves to form a tight side seam, and staples securing the folds in position.

In carrying out the invention under one arrangement, the rectangular blank is folded U-fashion about a rectangular core, then each portion of the bottom that extends beyond the base area is thrust up between the two coincident edge portions of the upstanding walls, and then these edge portions of the upstanding walls are doubly folded upon themselves to form tight side seams, said up-thrust bottom portions being also folded twice therewith.

In another embodiment, the rectangular blank is again folded U-fashion, then the two coincident edge portions at either side are doubly folded upon themselves to form a tight seam, and then the bottom tip of each side fold (which projects downwardly below the base of the U) is folded upwards through 180° against the side fold.

The invention further consists in doubly securing a holder string to the bag by the clamping action of a staple, for which purpose the end of the string is placed over the edge of the bag loop fashion and is gripped by the staple at two points. A notch may be provided in the edge of the bag for guiding and securing the holder string.

In order that the bag may be utilized as an infusion package, it is necessary that liquid may pass therethrough, and if it is not inherently pervious, as are for example fabric materials, it is provided with apertures. For example, the bag may be perforated in known manner.

An advantage of the invention is that the adhesives hitherto utilized for forming bags or infusion packages are avoided, thereby making it possible to form a cheap packing harmless for the contents.

Various embodiments of the invention are illustrated in the accompanying drawings.

Fig. 1 shows how that portion of the bag bottom projecting over the ground area is to be thrust between the projecting ends of the side walls to be folded flat on to the core.

Fig. 2 shows part of the completed bag as seen from the inside.

Fig. 3 represents a sales bag in accordance with the invention.

Fig. 4 illustrates an infusion bag.

Fig. 5 shows diagrammatically part of a bag in plan in unfolded condition, but with the folding lines indicated.

Fig. 6 is a front elevation of the bag, after the narrow side walls have been formed.

Fig. 7 is a side elevation corresponding to Fig. 6.

Fig. 8 shows the bag in bottom plan view, the folding being completed at one side.

Fig. 9 is an elevation corresponding to Fig. 8.

Fig. 10 is a side elevation of the finished bag, part being broken away.

Fig. 11 shows in side elevation the edges of a bag blank, which projects above the core, pressed together in the longitudinal direction so that a bottom corner is formed outwardly.

Fig. 12 is a side elevation of this bag after folding in the pressed together edges.

Fig. 13 shows the aforesaid corner, which in Fig. 12 projects downwards from the base of the bag, folded up.

Fig. 14 illustrates the upper ends of the bag being brought together (after filling) prior to folding to close the bag.

In the production of the bag a rectangular blank is utilized, which is folded in known manner, namely U-fashion, upon a rectangular core.

The bottom of the bag to be produced is indicated at 1. Integral parts of the bottom projecting at the two narrow sides are indicated by the reference numerals 2 and 3, while the portions of the blank which are folded up from the bottom are indicated at 4 and 5. From the figures it will be clear that the part 2 of the bottom which extends beyond the base area of the bag is thrust upwards between the laterally projecting edges of the upstanding walls 4 and 5 which are to be folded together on to the core. In this way an inner triangular portion of the projecting base is pressed upwardly against the core while the remainder of said projecting base is doubled upwardly upon itself into parallelism with the laterally projecting edges of the upstanding walls. Consequently when these walls are folded together twice for forming a tight side seam the bottom portion 2 located between them is folded twice therewith. The same applies to the bottom portion 3. The folding lines are indicated at 6, 7 and 8. It is noteworthy that

the lower edge 9 of the folding (Figs. 9 and 10) is nearly level with the bottom 1 of the bag.

The bag so made is stapled, care being taken that the staples are applied at points where as many layers of material as possible may be gripped by them (see for example the staple 10 in Fig. 10).

Adequate tightness or sealing is obtained owing to the fact that the upturned bottom flaps 2 and 3 (as clearly shown in Fig. 6) extend substantially to the outer edge of the sides to be folded together.

In the embodiment shown in Figs. 11 to 14, the edges of the U-folded blank are pressed together at two opposite sides of the core in such manner that from the edges 11 and 12 of said core wings 13 and 14 extend to the medial plane of the core and then run parallel to the upstanding walls 4 and 5. These wings 13 and 14, extending beyond the edge of the core, are folded twice, as shown in Fig. 13.

As will be seen in Fig. 12 the downwardly projecting corner 15 is also folded upwards.

The upper edges 16 and 17 of the bag thus formed are brought together after filling for closing purposes, as shown in Fig. 14, and are also folded twice.

In order to provide an absolutely safe seal at the top closure, staples 18 (Fig. 4) are employed. In this connection care must be taken that the longitudinal fold is engaged by the outermost staples. By the double top fold, which is secured in position by means of staples, a perfectly tight sealing down of the bag is assured. The staples 18 may also be utilized for fixing a label string 19, or for fixing a handle formed of a string and running from one outer staple to the other.

The holder string is preferably fixed by placing one of its ends loop fashion over the edge of the bag and gripping it by a staple at two points, whereby safe connection is assured between the string and the bag.

If it is required to pass the string round the bag, a notch is provided at the top folding, preferably above the stapling of the edge of the bag, in which the other end of the holder string may be detachably fixed. The notch must be so disposed that the seal of the bag is not damaged and the contents thereof cannot escape. This arrangement gives the assurance that the string, particularly if it is provided with a label and if this is pushed under the string loop, retains its position.

If the bag described, which is preferably made of cellulosic material, is utilized as an infusion package, it may be provided in known manner with holes 20 (Fig. 4), which are adapted to permit entry of the water and "drawing" of the contents.

I claim:—

1. A glueless bag comprising a rectangular blank of sheet material folded U-fashion and with its two coincident edge portions at either side doubly folded upon themselves to form a tight side seam, and staples securing the folds in position.

2. A glueless bag comprising a rectangular blank of sheet material folded U-fashion and with its two coincident edge portions at either side doubly folded upon themselves to form a tight side seam, staples securing the folds, a holder string extending loop fashion over the upper edge of the bag and a staple securing the loop.

3. A glueless bag comprising a rectangular blank of sheet material folded U-fashion and with its two coincident edge portions at either side doubly folded upon themselves to form a tight side seam, staples securing the folds, a holder string extending loop fashion over the upper edge of the bag and a staple securing the loop, the upper edge of the bag having a notch for fixing the free end of the holder string.

4. A glueless bag comprising a rectangular blank of sheet material folded U-fashion and with each edge portion of the bottom thrust between the two coincident edge portions at either side and doubly folded with said portions to form a tight side seam, and staples securing the folds in position.

5. A glueless bag comprising a rectangular blank of sheet material folded U-fashion and with its two coincident edge portions at either side doubly folded upon themselves to form a tight seam and with bottom tip of each fold folded up through 180°, and staples securing the folds in position.

ADOLF RAMBOLD.