

March 23, 1943.

A. C. EWER

2,314,819

CLOSURE

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FIG. 1

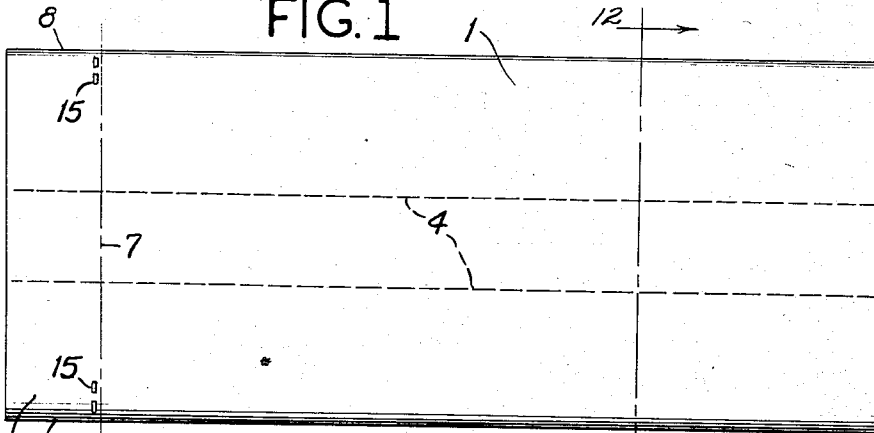


FIG. 2.

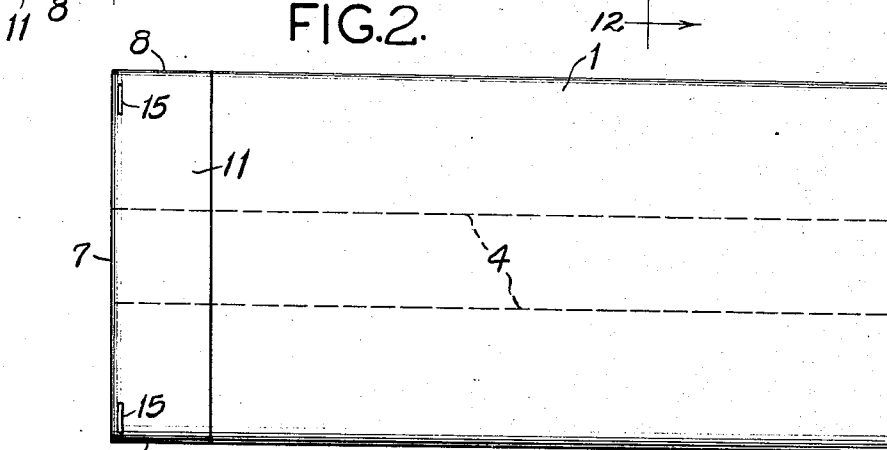


FIG. 3.

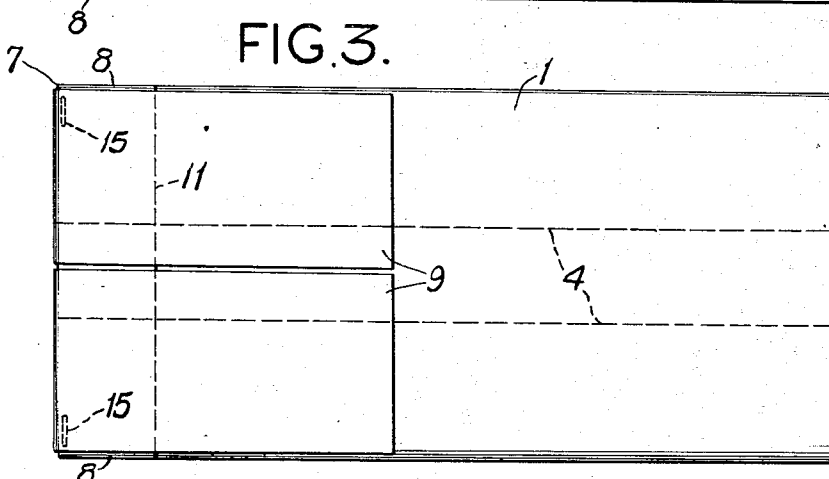


FIG. 4.

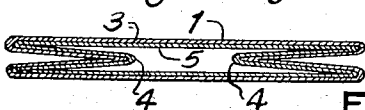
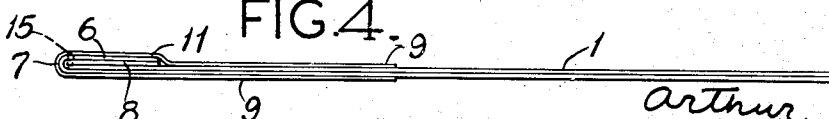


FIG. 12.

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FIG. 5.

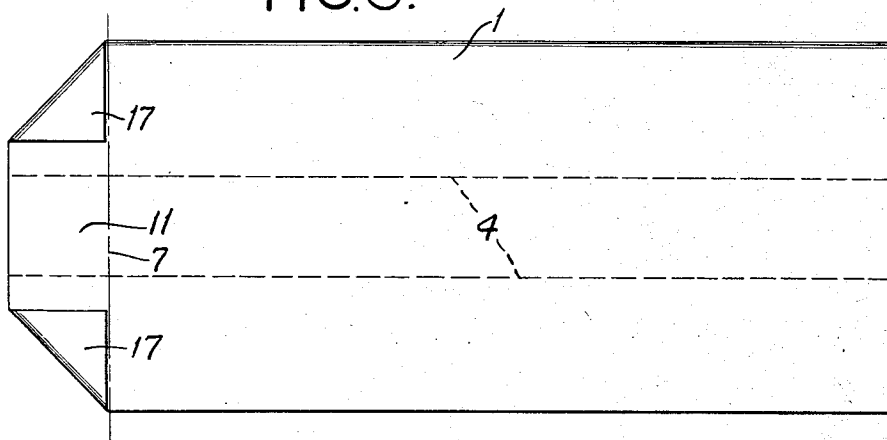


FIG. 6.

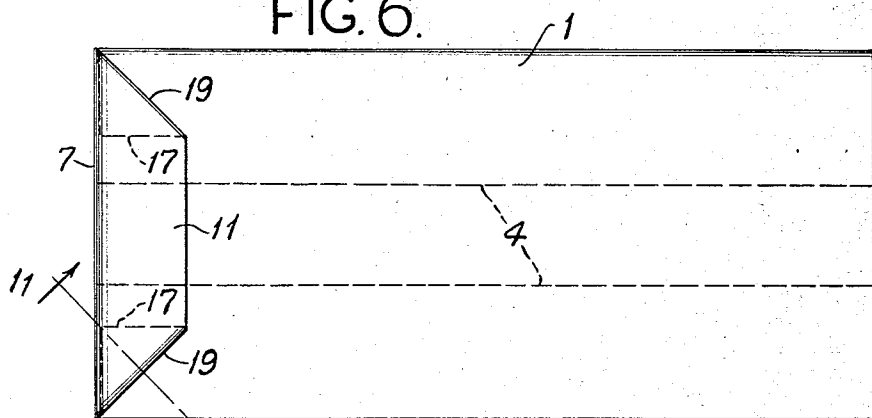


FIG. 7.

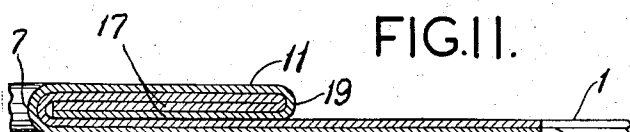
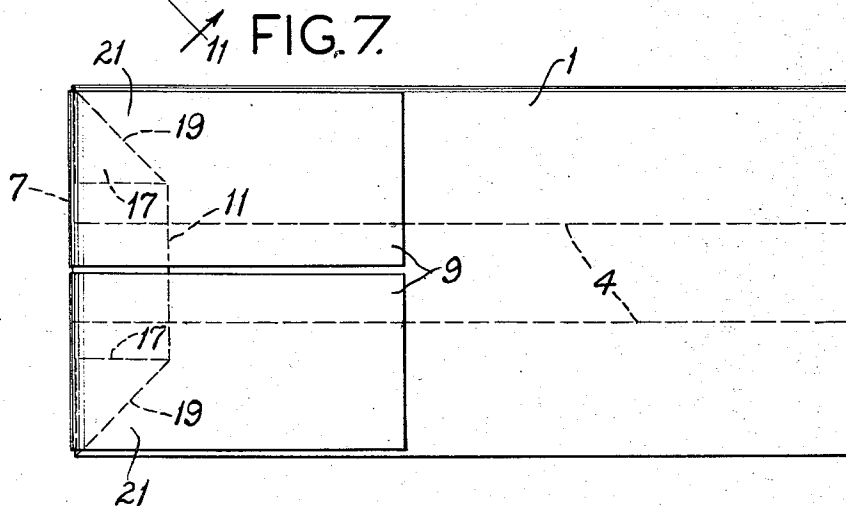


FIG. 11.

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FIG. 8.

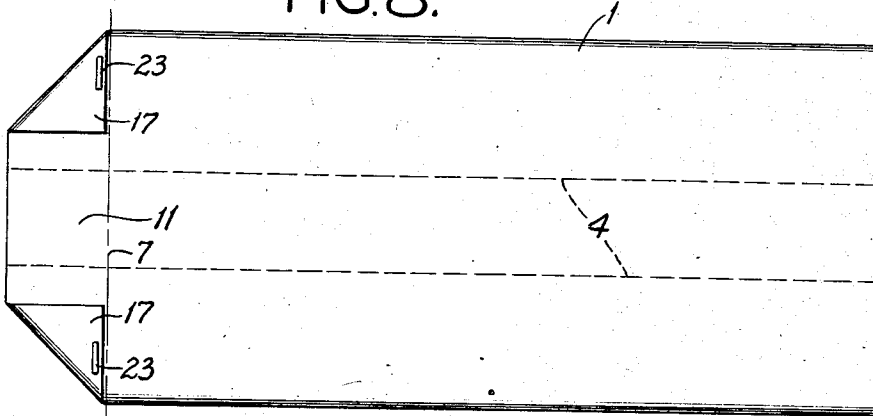


FIG. 9.

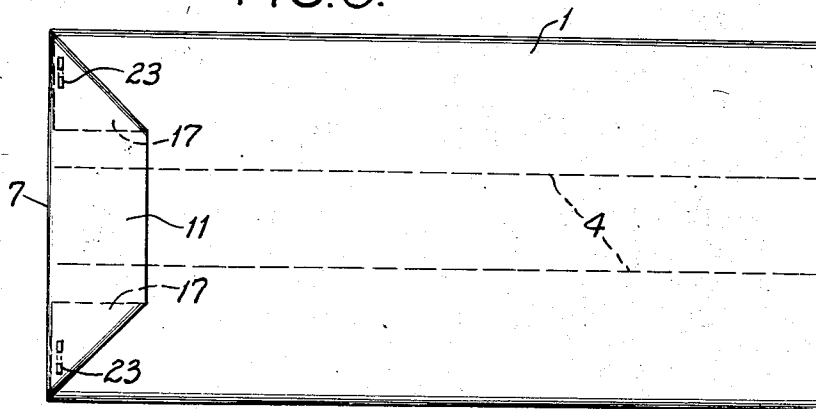


FIG. 10

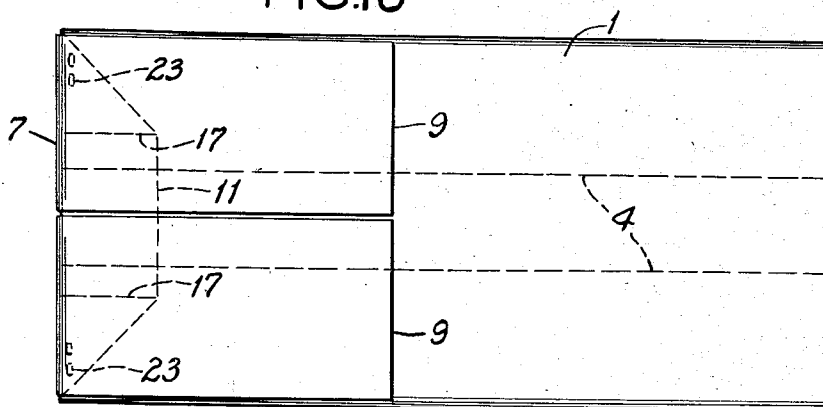
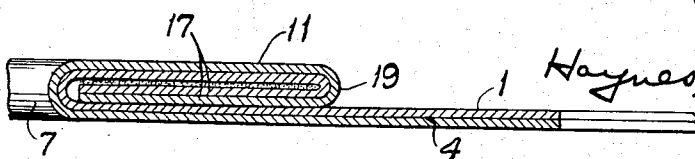


FIG. 20.



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UNITED STATES PATENT OFFICE

2,314,819

CLOSURE

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Application October 14, 1939, Serial No. 299,428

2 Claims. (Cl. 229—62)

This invention relates to closures, and with regard to certain more specific features, to closures for gusseted tubes and the like.

Among the several objects of the invention may be noted the provision of means for pre-closing (at one end) a gusseted tube or the like prior to filling of said tube (from the other end), in which is avoided the formation of certain deleterious exterior pockets; the provision of a closure of the class described, which provides a stronger construction and one which presents a neater exterior appearance; and the provision of such a closure which is simple and economical to form. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which are illustrated several of various possible embodiments of the invention,

Fig. 1 shows a plan view of one form of the invention partially completed;

Fig. 2 is a view similar to Fig. 1 showing a further step;

Fig. 3 is a view similar to Fig. 2 showing a container completed;

Fig. 4 is a side elevation of Fig. 3;

Fig. 5 is a plan view showing a first step in making a second form of the invention;

Fig. 6 is a view similar to Fig. 5 showing a second step in making said second form;

Fig. 7 is a view similar to Fig. 5 showing a third and last step in making said second form;

Fig. 8 is a plan view showing a first step in making a third form;

Fig. 9 is a view similar to Fig. 8 but showing a second step in making said third form;

Fig. 10 is a view similar to Fig. 9 but showing a third and last step in making said third form;

Fig. 11 is a section taken on line 11—11 of Fig. 6; and,

Fig. 12 is a cross section taken on line 12—12 of Fig. 1.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

That which forms the raw material for the present invention is a continuous gusseted (preferably multi-ply paper) tube, which it is intended shall be cut into lengths to form the proper size for the containers which are to be made. It has

been the practice to fold over one end of a cut length of this material to preform an enclosure and to hold down that end with adhesive tape. The container was then packed from the other end, and closed as the user saw fit. The first-named closure was made at the factory, and the second-named one was made in the field of use after filling.

The drawings herein are necessarily diagrammatic, in view of the small thicknesses of material under consideration.

Referring now more particularly to Figs. 1 and 2, there is shown at numeral 1 a predetermined length of said multi-ply gusseted tubing formed of paper. The gussets appear at 4 and are between the side walls of the tube in the usual way. It is to be understood that any number of plies, or single ply, may be used, and that the invention is not limited to a paper tube. The plies are preferably free of one another, one being inside of the other.

Said tube is, in its flat condition (gussets collapsed), folded along a line normal to the axis of the tube. Adhesive tapes of suitable width are applied over the folded portion to hold it against the main body of the material. Two lengths of adhesive tape are usually used side by side, but it is to be understood that more lengths of less width, or a single length of greater width may be used. The adhesive tapes are U-shaped and have as great a length underneath the body 1 as is applied over the portion, thus forming a U-shaped holding or enfolding means to hold down the flap. The difficulty with this form of closure is that there is a tendency for the outer edge portions of the flap to separate from the inner edge portions, (or vice versa), thus forming an incipient pocket in which exterior things may be caught, such as fingers and the like. This is undesirable, both from the viewpoint of the undesirable catching, and the tendency that it has to permit working open of the closure. While the space may not appear substantial when the container is flat, it becomes larger when the container is filled.

Referring to Figs. 1-4, there is shown a first form for avoiding the difficulties stated. This consists first in applying staples 15 through opposite sides of the tubing 1 within the areas of the gussets, and preferably quite closely located with respect to the longitudinal edges 6 and 8 of the tubing 1, and close and parallel to the fold line 7, as shown. Each staple 15 passes through a gusset and has the effect of holding together the gusset in the portion of the flap 11 which is

near the fold 7, so that said pocket does not occur.

After the fold of flap 11, as shown in Fig. 2, is made, the gummed tapes 9 are applied as holding covers as shown in Figs. 3 and 4. More tapes of narrower width may be used or a single wide one to attain the proper width and coverage. The tape 9 may be paper, cotton, or other tape, plain or reinforced with suitable strands.

Figs. 5-7 and 11 show another form of the invention in which separation of gusset sides within the flap 11 is prevented by turning in the corners 17 of the tube 1 beyond the fold line 7, so that when the flap 11 is folded over as indicated in Fig. 6, the gusset portions in the flap 11 will not only be prevented from springing apart, but there will also be provided an inwardly directed edge 19 which permits the tapes 9 to seal down closer. Thus when the gummed tapes 9 are applied, as shown in Fig. 7, they form an adhering protection at the regions 21. This ensures the absence of any gusset opening within the flap 11. In order to give further protection, the corners 17 may have adhesive placed under them at the time that they are turned down, thereby positively holding them against the face of flap 11.

Another and herein preferred method of holding the triangular flaps 17 against flap 11 is shown in Figs. 8-10, wherein staples 23 are shown as piercing the flaps 17 and 11 at regions within the limits of the gussets 4. After folding along the line 7 as indicated in Fig. 9, the staples 23 appear as shown in the flap 11, passing through the additional turned-in corner flaps, as well as through the side walls of the tube and the gussets. Thereafter, as shown in Fig. 10, the gummed tape 9 is applied to cover the flap 11 and its staples 23.

It will be seen that a common feature of all forms of the invention consists in means for preventing the portions 6 and 8 of those portions of the gussets 4 which are in the flap 11 from separating to form the disadvantageous pocket therebetween.

Another feature of the invention is that the gussets 4 are held from flexing only within the folded-over flap portion 11, thereby permitting the parts of the gussets 4 of a filled container,

which are outside of the flap 11, to flex freely. This permits complete expansion of the tube in the parts above the flap, so that it may be readily opened and easily filled.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A closure for flat gusseted tubing having side walls and lateral gussets therebetween, comprising a flap formed by folding an end portion of the tubing upon itself along a transverse fold line, means overlying the flap for holding the flap against the side of the resulting bag, and means for holding together opposite parts of the side walls and of the gusset in said flap comprising a staple passing through each gusset and its adjacent side walls on each side of the bag closely adjacent and parallel to said fold line and within the flap only, said staples also being respectively closely adjacent to the respective outer longitudinal edges of the tubing.

2. A closure for flat gusseted tubing having side walls and lateral gussets therebetween, comprising a rectangular flap formed by folding an end portion of the tubing upon itself along a transverse fold line, in-turned triangular flaps formed from the corners of the rectangular flap and located between the folded rectangular flap and one wall of the tubing after the rectangular flap has been folded, means overlying the rectangular flap for holding it and the triangular flaps against the side of the resulting bag, and means for holding together opposite parts of the side walls and of the gusset and of the triangular flaps all in the region of said rectangular flap, comprising a staple passing through each gusset and its adjacent side walls and the adjacent triangular flaps on each side of the bag adjacent to said fold line and near the longitudinal edges of the tubing.

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