

Feb. 27, 1934.

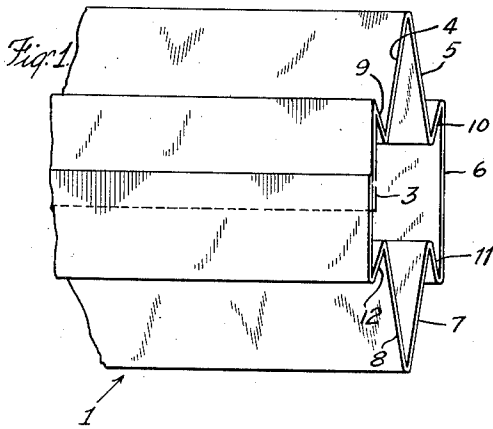
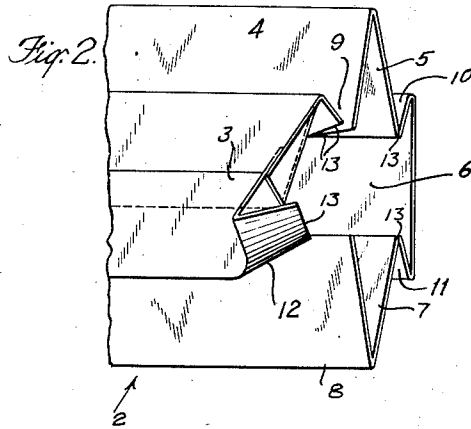
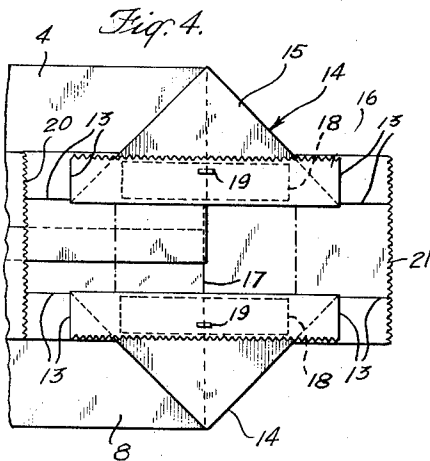
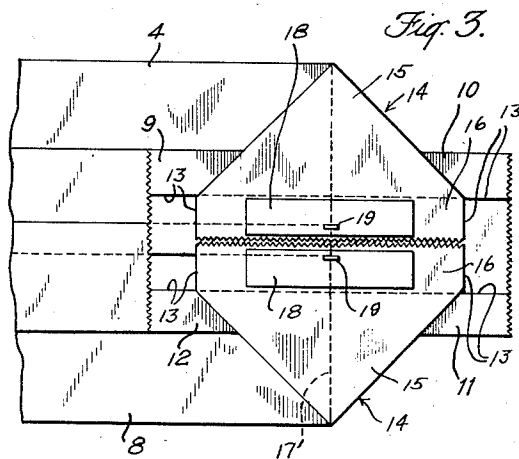
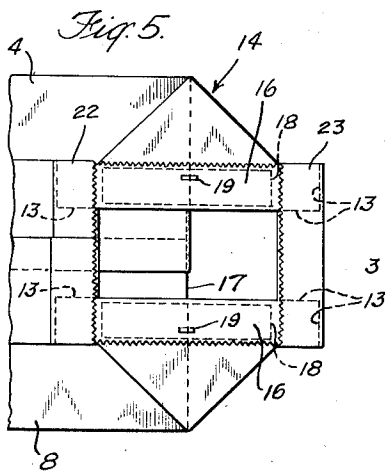
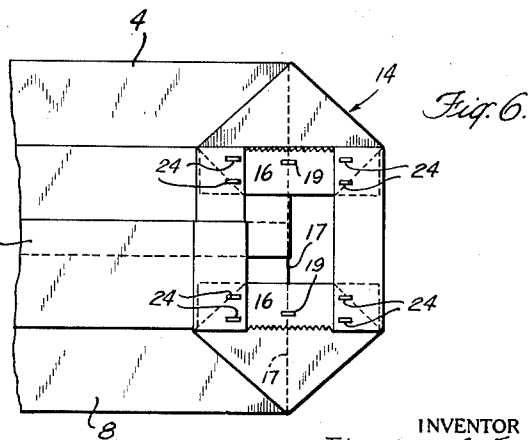
T. S. FALK

1,948,569

PAPER BAG

Filed Oct. 28, 1930

2 Sheets-Sheet 1



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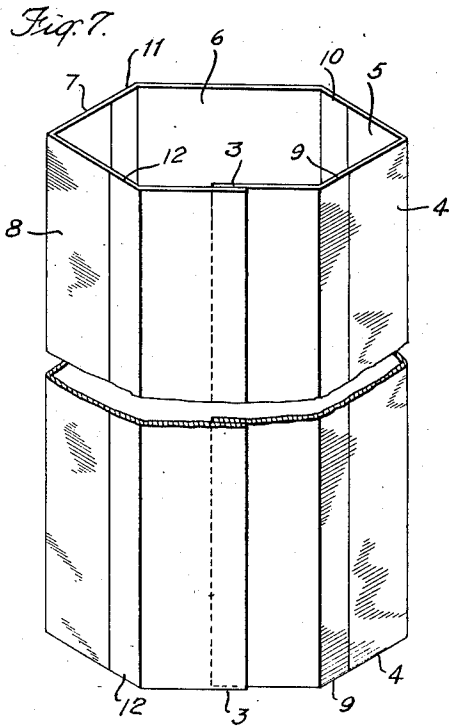
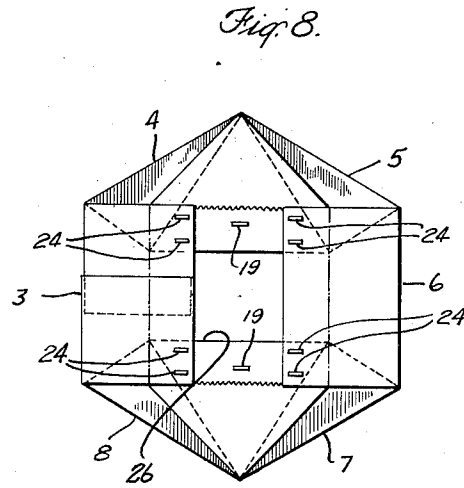
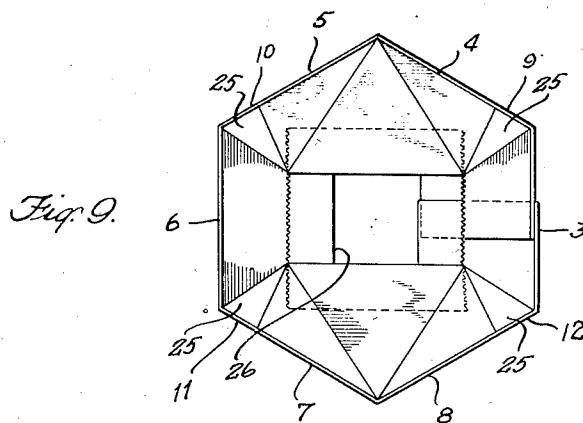
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2 Sheets-Sheet 2



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PAPER BAG

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Application October 28, 1930. Serial No. 491,661

4 Claims. (Cl. 229—57)

This invention relates to shipping containers, and is described herein for the purpose of illustration as embodied in a paper bag for shipping bananas.

It is an object of the invention to provide a bag having an opening in the bottom thereof through which the stem of a bunch of bananas may be passed, so that the bunch may be inserted in the bag stem end first, the stem may be projected through the opening in the bottom of the bag, the mouth of the bag may be closed by string or other suitable means, and the bunch of bananas thus enclosed in the bag may be suspended by the protruding end of the stem.

It is a further object of the invention to provide a bag of the kind referred to in which the opening in the bottom of the bag is reinforced all around so that in handling there will be no liability of tearing the opening larger and thus enabling the bag to slip off the bananas or to slip down along the bunch.

It is a further object of the invention to provide a bag of the kind indicated above which shall be of substantially regular polygonal form and therefore adapted to enclose a bunch of bananas without substantial waste of material.

Other objects and advantages will hereinafter appear.

The present invention is in the nature of an improvement upon the invention disclosed in my pending application Serial No. 393,354, filed September 18, 1929, for Paper bags.

In the drawings forming part of this specification:

Figure 1 is a fragmentary, side view of a paper tube from which the bag blanks are formed;

Figure 2 is a side view of a bag blank with a portion folded back to reveal certain details of structure;

Figure 3 is a view similar to Figure 2, but showing the bag blank at a more advanced stage in the process of manufacture;

Figure 4 shows the same bag blank a step nearer completion;

Figure 5 shows the same bag blank after a still further step in the manufacture of the bag has been accomplished;

Figure 6 is a view similar to Figure 5 showing the bag completed;

Figure 7 is a perspective view of the completed bag after the same has been opened up;

Figure 8 is a bottom, plan view of the completed and opened bag; and

Figure 9 is a top, plan view of the completed and opened bag.

The bags of the type illustrated are made from a continuous paper tube 1, the tube being creased and folded in the manner illustrated in Figure 1, and then severed into individual blanks. A portion of one of these blanks is shown at 2 in Figures 2 to 6. The illustrated bag is designed to be hexagonal in cross-section, and hence the tube is subdivided by creases into six lateral panels comprising front and back panels 3 and 6 and side panels 4, 5, 7 and 8, all of equal width. The side panels 4, 5, 7 and 8 are folded in between the front panel 3 and the back panel 6 to form gussets 9, 10, 11 and 12, the gussets being of about one-fourth the width of a panel. Thus, each of the side panels has about one-half of its width disposed between the front and back panels and the other half protruding beyond the side boundaries of the front and back panels, the total width of the blank when folded as illustrated in Figures 1 to 6, and pressed out flat, being substantially double the width of a single panel. This width relationship is important for the reason that by subsequent folding and attaching operations the width of the blank as seen in Figure 1 is permanently fixed as the distance between opposite vertices of the hexagonal bottom of the bag when the same is finally completed and opened. This distance is, therefore, made equal to the diameter of a circle circumscribed about the bottom of a bag and must be substantially equal to double the length of a side of the bottom, if the bottom is to form a substantially regular hexagon.

When a blank 2 has been severed from the continuous tube 1 the creases along the vertices of the gussets are slit, preferably for a distance about equal to one-fourth of the width of a panel. These slits are designated 13 in Figure 2. After the slitting operation has been performed, the back panel 6 is held down while the front panel 3 is folded back to a position like that shown in Figure 3. This forms bottom panels 14 from the side panel material, each in the form of an isosceles right triangle 15 having a projecting rectangular flap or margin 16 extending toward the middle of the bag. The legs of these triangular panels extend only to the bottoms of the slits 13 and not to the end edges of the front and rear panels. The diagonal of the figure formed by the two triangular panels 14 and the space intervening between them forms a diagonal of the finished bag bottom. As thus far described, the procedure is substantially identical with that disclosed in my pending

ing application Serial No. 393,354 referred to above.

Reinforcing strips 18 of suitable material such as cardboard are next placed upon the flaps or margins 16 and secured to them by suitable means, such as staples 19. The flaps or margins 16 are then folded back to the position illustrated in Figure 4, so that the reinforcing strips are located between the flaps 16 and the triangular portions 15 of the bottom panels.

It will be noted that the edge 20 of the folded-back portion of front panel 3 and the edge 21 of back panel 6 now lie at opposite sides of the diagonal line 17 and each at a distance from said line 17 substantially equal to the width of a panel. The end portions which terminate in edges 20 and 21 are next folded over and creased to bring the edge 20 substantially into coincidence with a line parallel to diagonal 17 and at a distance therefrom substantially equal to half panel width, and to bring the edge 21 substantially into coincidence with a line parallel to the diagonal 17 at the opposite side thereof and located at a distance therefrom substantially equal to half panel width. This brings the parts into the positions illustrated in Figure 5, and forms doubled reinforcement tabs 22 and 23. These reinforcement tabs are next folded inward so that the end portions thereof overlie the end portions of the reinforcing strips 18 attached to the margins or flaps 16. Each end of the reinforcing tab 22 is now attached by staples 24 to the ends of the reinforcing strips 18 and to the portions of the flaps 16 lying between the reinforcing strips and the reinforcing tabs. The ends of the reinforcing tab 23 are similarly secured by staples 24 to the reinforcing strips 18 and to the tabs 16 adjacent thereto.

This completes the manufacture of the bag. A bag constructed in the manner described may be unfolded to the form illustrated in Figures 7, 8 and 9 when it is to be used. A crease formed along the line 17 of Figure 3 will mark the perimeter of the bottom of the unfolded bag along all sides thereof. When opening the bag the gussets spread outward and disappear, serving in part to form the small triangular portions 25 of the bag bottom and in part to form the sides of the bag. This bag, as is obvious from the description of the method by which it is made, will have a substantially square opening 26 at the center of the bottom thereof which is strongly reinforced on all sides. When the bag is made in the exact manner hereinbefore described a side of the opening 26 will be equal to one-half the width of a panel. Obviously, however, many variations might be resorted

to in the manufacture of the bag without departing from the spirit and scope of the invention.

While I have illustrated and described in detail one embodiment of my invention, it is to be understood that changes may be made therein. I do not, therefore, desire to limit myself to the specific construction illustrated but intend to cover my invention broadly in whatever form its principles may be utilized.

I claim:

1. A paper bag including a body portion and a polygonal bottom portion, the bottom portion having an opening therethrough and having reinforcements formed of doubled-over bag material, which are disposed along transversely related bottom margins bordering said opening and in crossing relation adjacent the corners of the opening, and means securing crossing areas of the doubled-over portions to one another.

2. A paper bag including a body portion and a polygonal bottom portion, the bottom portion having an opening therethrough, and having parts of the bottom portion folded over adjacent said opening to form plural ply reinforcements, said reinforcements extending along and beyond edges of the opening and having their extremities disposed in crossing relation, and means permanently securing crossing portions of the reinforcements to one another.

3. A paper bag having a front panel, a back panel, side panels, and a bottom formed from the material of said panels, reinforcing strips secured to marginal portions of the side panels, such marginal portions being folded over to protect and conceal the reinforcing strips, reinforcing tabs formed of the end portions of the front and back panels folded to provide smoothed boundaries for an opening in the bottom, said reinforcing strips and reinforcing tabs having their ends disposed in crossing relation, and means permanently uniting the crossing portions of the reinforcing strips and the reinforcing tabs.

4. A paper bag for shipping bananas, comprising a body portion of regular hexagonal form in cross-section, and a bottom of regular hexagonal form having an opening through a central portion thereof, the marginal portions of the bottom bordering the opening being doubled over to reinforce the borders of the opening and having end portions thereof disposed in crossing relation and means securing said end portions to one another in the crossing areas to maintain the form of the bag bottom.

THEODORE S. FALK.