

1,377,113.

J. D. BOYLE.
POWDER CONTAINER.
APPLICATION FILED DEC. 13, 1920.

Patented May 3, 1921.
2 SHEETS—SHEET 1.

Fig. 1.

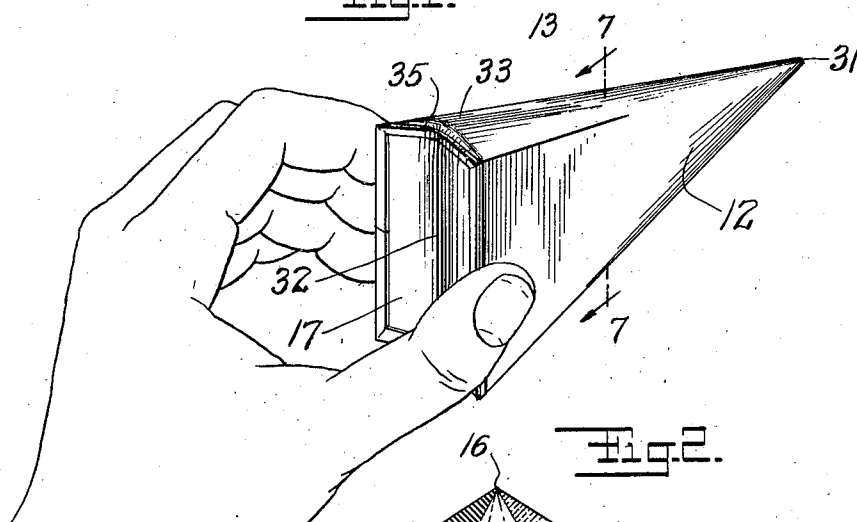


Fig. 2.

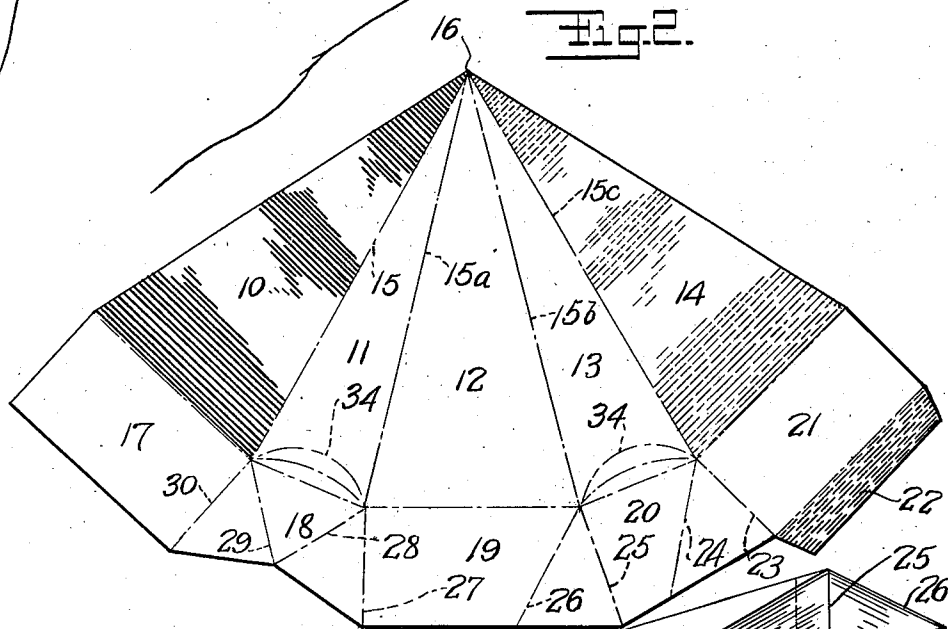


Fig. 3.

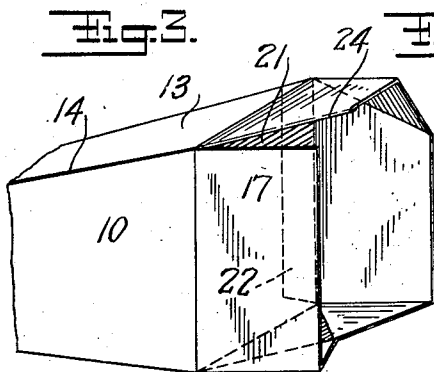
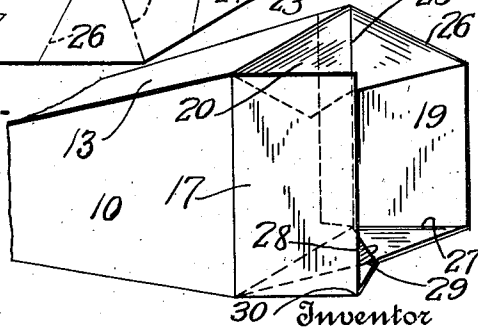


Fig. 4.

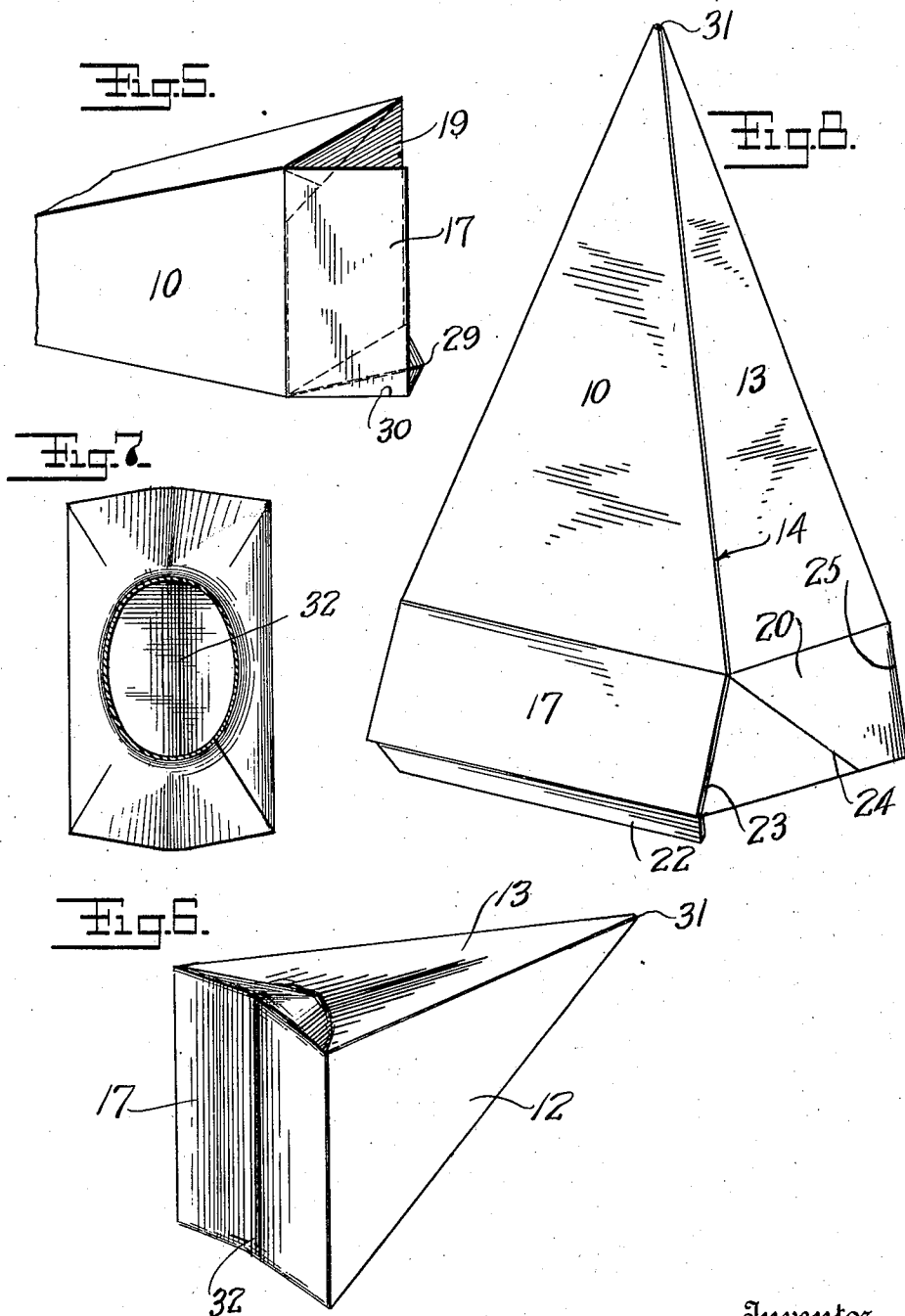


Inventor
John D. Boyle
By his Attorney
Philip S. McLean

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UNITED STATES PATENT OFFICE.

JOHN D. BOYLE, OF NEW ROCHELLE, NEW YORK.

POWDER-CONTAINER.

1,377,113.

Specification of Letters Patent.

Patented May 3, 1921.

Application filed December 13, 1920. Serial No. 430,139.

To all whom it may concern:

Be it known that I, JOHN D. BOYLE, a subject of the King of Great Britain, a resident of New Rochelle, county of Westchester, and State of New York, have invented certain new and useful Improvements in Powder-Containers, of which the following is a specification.

This invention relates to packages for dispensing powder or other material, and the objects of the invention are to provide a practical but inexpensive container which can be simply manufactured and which can be effectively used to distribute the powder or other material.

Briefly the invention consists of a package of substantially pyramidal form having a discharge outlet at the apex thereof and having a bottom or base which is buckled or sprung so as to enable the contents to be discharged by a squeezing pressure exerted on the base of the package.

The various novel features of the invention will be apparent from the following specification which is to be read in conjunction with the accompanying drawings forming a part of the same and wherein I have disclosed the invention embodied in practical commercial forms.

In the drawings referred to:

Figure 1 is a perspective view illustrating the package and the method of using the same.

Fig. 2 is a plan view of a blank from which the package may be constructed.

Figs. 3, 4 and 5 are broken perspective views illustrating successive steps in the folding in of the wings which form the bottom of the package.

Fig. 6 is a view similar to Fig. 1 but showing a slightly modified form of construction.

Fig. 7 is a cross sectional view of the first form taken on substantially the plane of line 7—7 of Fig. 1.

Fig. 8 is a detail view illustrating the first step in the shaping up of the box.

To produce the packages shown in Figs. 1 and 6 I may use a blank such as I have illustrated in Fig. 2 of substantially segmental form and having side wall portions 10, 11, 12, 13 and 14 defined in a general way by the lines 15, 15^a, 15^b and 15^c, all convergent to a common center 16 which forms the apex of the completed package. The side wall portions are shown as having inte-

gral wings or flap extensions 17, 18, 19, 20 and 21 which are folded together and secured to form the bottom of the package.

In the particular form here shown the face of the tapered side wall portion 10 is coated with adhesive and the back of the side wall member 14 is similarly supplied with adhesive, as I have endeavored to indicate by the heavy and light shade lines on these two parts. In shaping up the box, the side wall 14 is folded on the line 15^c to bring the adhesive to the front and the blank is then hinged on substantially the line 15 to bring the adhesive face of the side wall 10 over the first adhesive surface, as indicated in Fig. 8.

The walls 10 and 14 are thus secured together to constitute one of the sides of the box. After this the blank with the opposite edges thus secured together is opened out as in Fig. 3, and the bottom flap 21 is turned inward and secured by an adhesive flap 22 to the base portion of the opposite side wall 12. In this folding in of the first bottom flap the blank hinges along the lines 23, 24, which lines may be determined by suitable scoring. The end flap 20 is next turned down as shown in Fig. 4, score lines 25, 26 enabling this action.

Side flap 19 is then turned in as I have shown in Fig. 5, the score lines 27, 28 permitting of this folding action. After this the final flap 17 is folded inward, the scoring 29, 30 permitting this motion.

These several flaps are all secured by adhesive or other suitable means and serve when fastened as I have indicated, to provide a closure and also a bottom on which the box will normally stand. The preferred practice usually is to fill the box before the bottom flaps are turned in and when the box is to be used for dispensing purposes, the tip of the package may be clipped off or punctured as I have indicated at 31 in Figs. 1 and 6 to provide the discharge outlet.

The expulsion of the powder or other material is effected by buckling the bottom of the container upwardly or inwardly substantially along its central plane as I have indicated at 32. When the box is made of cardboard or of similar material, this is easily accomplished by simply "breaking in" the bottom of the box along the medial plane. When this is done the sides 11 and 13, adjacent their juncture with the inwardly buckled end por-

tions of the bottom, are caused to buckle, producing a fold like that indicated at 33 and these folds may either stand out or project inwardly, depending in the first instance on whether they are permitted to bulge outwardly or inwardly. I have indicated these two possibilities in Figs. 1 and 6, the first indicating a so-called "outside" fold and the latter showing an inside fold. These folds may be initiated more readily by providing indentations or scorings 34 at the base of the walls 11 and 13 (Fig. 2) and similarly if desired, the bottom flaps may be initially scored to facilitate the formation of the buckle or inward bend in the bottom.

In both constructions the box provides a neat ornamental package having a broad supporting base. When the opposite edges of the base of the package are gripped as indicated in Fig. 1, and a pinching pressure is exerted thereon, the bottom is buckled further into the body of the box and the opposite side walls of the box are approached, said parts thereupon operating in the nature of a pump to expel the contents of the package. When pressure is released the natural spring of the material will tend to flatten out the buckle in the bottom of the box and the folds in the end walls, thus in effect restoring said parts to a certain normal condition, after each squeezing operation. I have found the package particularly effective for dispensing insect powder since the pointed construction of the box and the relatively powerful expulsion of the powder makes it possible to reach remote and otherwise inaccessible corners and the like. The sealing of the box in the manner illustrated is usually sufficient to make

it completely air-tight but as a further precaution I may apply a special seal, such as a strip of adhesive tape applied around the edges at the bottom of the box. This element I have illustrated at 35 in Fig. 1.

The scored marks 34 which may be of arched or convergent design as shown in Fig. 2, operate in effect to form hinges for the folding of the portions of the side walls adjacent the buckle in the bottom. While the box preferably is of pyramidal form, the corner angles need not extend fully to the apex of the box and the side walls may "merge" from a true pyramidal form at the bottom to a more or less conical form at the top of the box. This feature is illustrated in Fig. 1 and is shown more particularly in the sectional view, Fig. 7.

What I claim is:

A container for pulverulent material comprising a pyramidal box having a rectangular base and substantially triangular side and end walls, said side and end walls converging to an apex, a discharge outlet in said apex, said base being weakened from end wall to end wall to provide an inwardly breaking joint, each of said end walls adjacent their connection with the base being transversely weakened to provide a movable portion, said movable portion adapted as a whole to fold with respect to the weakened line of the base and thereby flex the remaining portion of the end walls beyond their normal plane when radial pressure is applied to the side walls and said base is inwardly bulged.

In witness whereof, I have hereunto set my hand this 8th day of December, 1920.

JOHN D. BOYLE.