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DISPENSING CONTAINER

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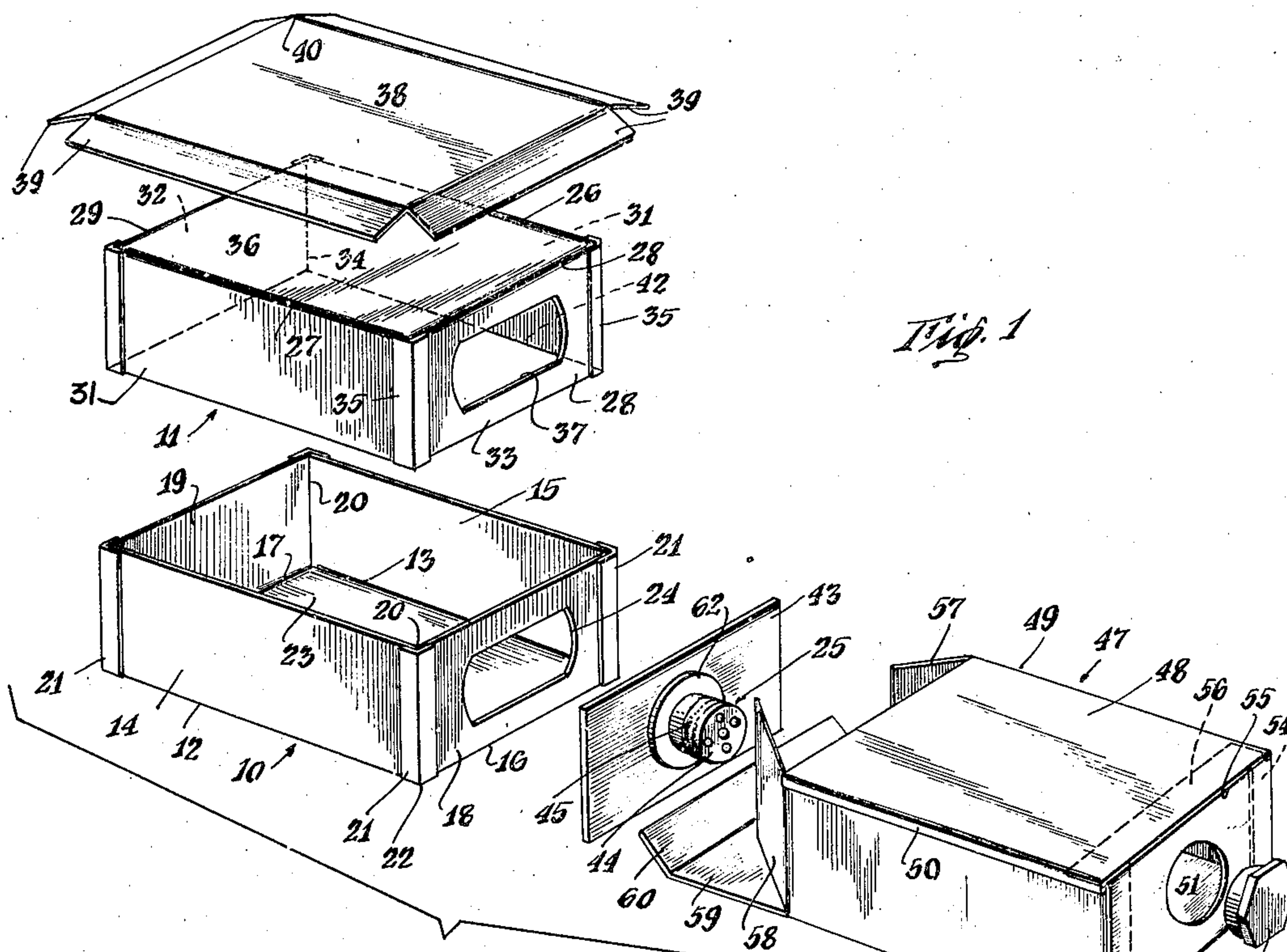


Fig. 1

Fig. 2

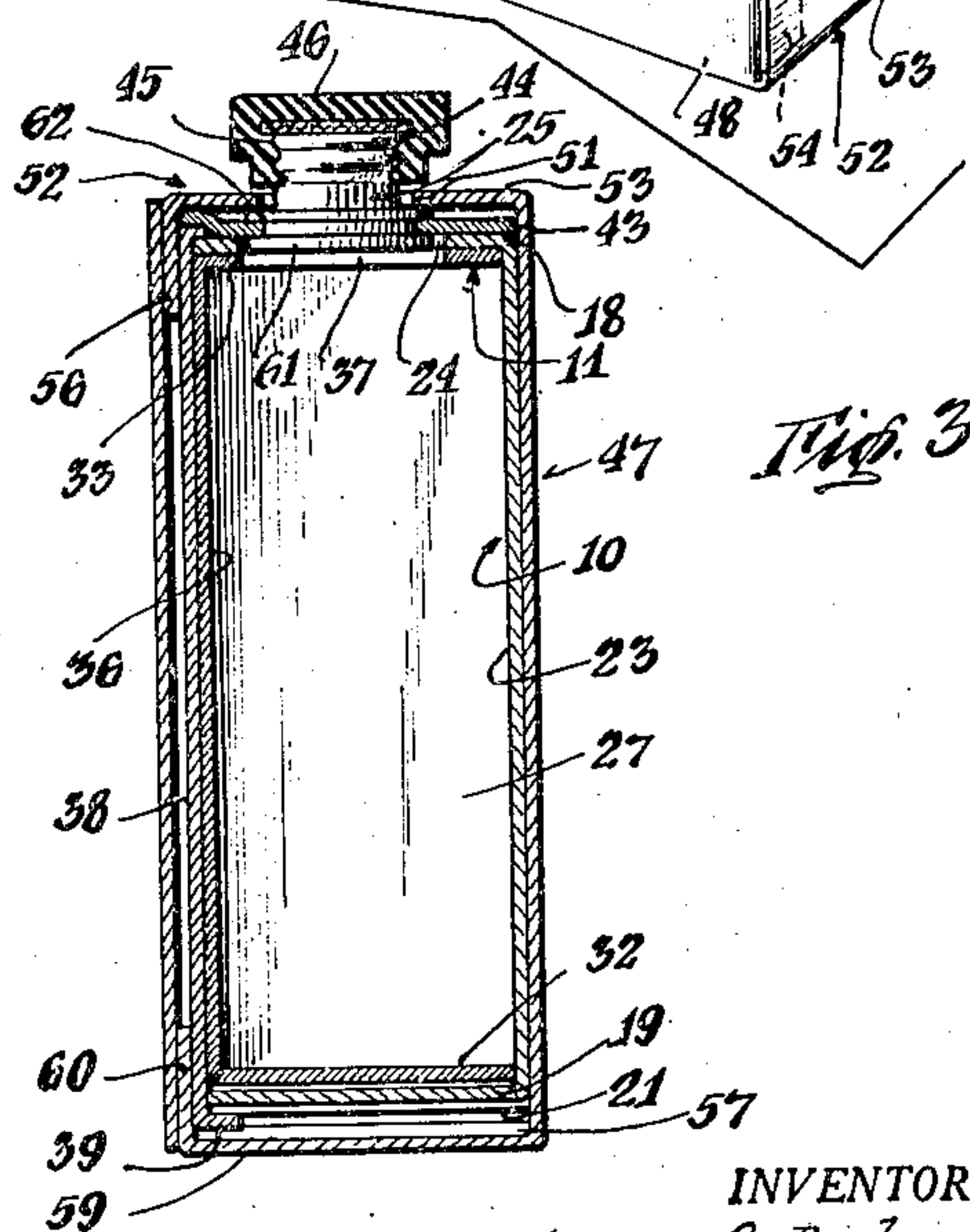
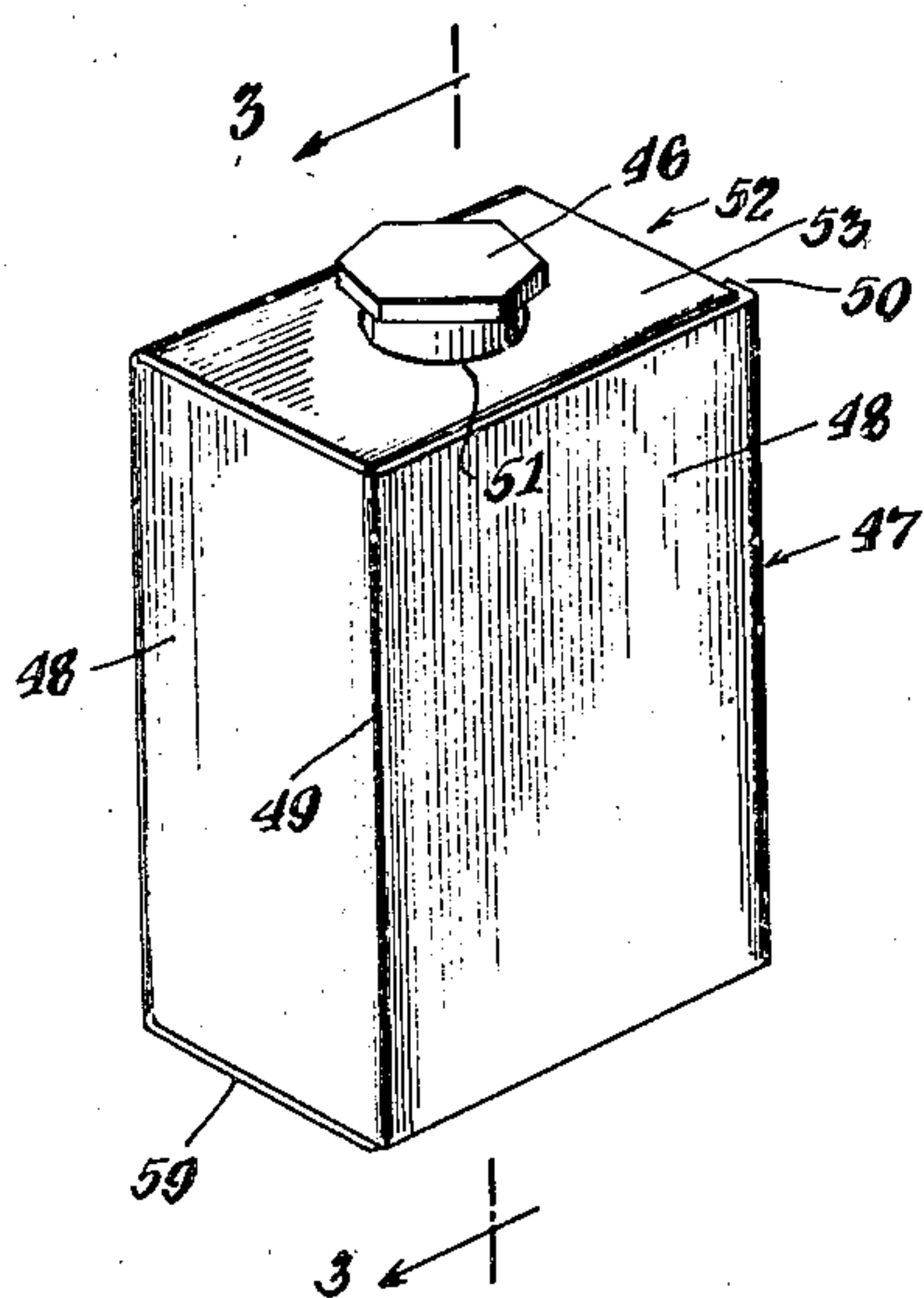


Fig. 3

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## UNITED STATES PATENT OFFICE

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## DISPENSING CONTAINER

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10 Claims. Cl. 222—566)

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This invention relates to containers suitable for powders and is herein illustrated in some detail as embodied in a paper and cardboard container suitable for holding and delivering tooth powder.

Containers for tooth powder and many analogous powders have presented many problems. Often they have been made of glass or metal with an attached metal delivery head or spout, but these involved expensive materials which were either fragile or difficult to produce except by special machinery, were expensive to ship empty both because of space occupied and because they had to be packed in cartons or boxes strong enough to protect them, had to be handled repeatedly, occupied expensive storage space, and were either difficult to fill or could only be filled by the aid of expensive machinery.

Containers made of other materials were open to many of the same objections, and in time of war, were limited by the same kind of priority orders.

Packages of paper or cardboard or of combinations of these materials were limp or were likely to leak or were difficult to handle without danger of damaging them. Leakage often took the form of "dusting" because a trivial leak would often slowly sift through it small amounts of dust which annoyed housekeepers and storekeepers and seriously militated against the salability of the package because the adhering dust made the package look like a careless and wasteful job.

According to the present invention, the foregoing and other objections and disadvantages are overcome and a container is provided suitable for holding tooth powder in a form satisfactory to the retail trade, cheap to produce, sturdy enough to meet the exigencies of handling in that trade, easily manufactured either by hand or by automatic machinery, and well adapted to be filled by automatic machinery of a standard type.

In the form disclosed, an integral box or unit is built up of two trays, like open top boxes, one fitting into the other. A separately mounted top or dispensing sifter is adapted to be laid on an opening provided at one end of the trays, usually being glued to the tray ends to make a dust-proof joint and units. An outside wrapping or cover box is adapted to be slipped down over the top mounting to enclose the nested trays and to be held in place by flaps folded down to enclose the unit, thus cooperating with the adhesive to hold the top in place so that it closes the tray openings and serves for dispensing powder.

Other and further objects of the invention will

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be obvious upon an understanding of the illustrative embodiment about to be described or will be indicated in the appended claims and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawings, forming a part of the specification, wherein

Fig. 1 is an exploded perspective showing diagrammatically the construction of the parts and their relationship to each other;

Fig. 2 is a perspective view of the finished package; and

Fig. 3 is a section along the line 3—3 of Fig. 2 to show the relationship of parts thereof.

In the form shown, an inner dust-proof unit is built up from open top tray-like boxes 10 and 11. In the form shown, the box 10 is made of a single piece of cardboard which was scored along the lines 12 and 13 to provide the sides 14 and 15 made by turning up the edges of the cardboard along the scored lines 12 and 13 and also scored along end lines 16 and 17 to provide ends 18 and 19 made by turning up the edges of the cardboard after the corners (not shown) had been cut out so that the ends and sides meet along the vertical corner lines 20.

The bent up ends and sides along the lines 20 were sealed together by thin strips of paper 21 which proved adequate when covering the length of the corner and extending over a small area of the sides and end, and did not need to overlap the bottom to close the solid angles 22, if the scoring was accurately done, although the strips may extend on to the bottom 23 of the tray and thus seal the solid angles 22.

Before the tray was made, an opening 24 was cut for delivering the contents to a sifter or dispensing outlet 25 in the finished container.

The tray-like box 11 to fit fairly closely within the tray 10 is shown as similarly constructed from a sheet of cardboard which was scored along sides at 26, 27 and along ends at 28, 29 to provide sides 31 and ends 32, 33 which are closed at the corners 34 by strips 35 to hold the tray together and make dust-proof corners. The sides 31 and ends 32, 33 are shown as bent down from a bottom (shown at the top) 36, and as having an opening 37 in the end 33 adapted to register with the opening 24 of the tray 10 when the tray 11 rests inside of the tray 10.

The tray-like box 11 is preferably adapted to slip easily but not loosely into the tray 10, and



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may be retained within the latter by a cover sheet 38. The cover sheet 38 is shown with edge flaps 39, cut out adjacent the corners 40, adapted to be bent downwardly so that these edge flaps slightly overlap the sides and ends of the nested tray-like boxes 10 and 11; these overlapping portions 39 may then be glued to the sides 14, 15 and ends 18, 19 of the outermost tray-like box 10 to securely hold the nested tray-like boxes 10 and 11 together so as to form what may be termed a receptacle unit. The cover sheet 38 may thus hold the lower or free tray edges 42 of the sides 31 and of the ends 32, 33 abutting against the inner bottom 23 of the tray 10; the cover sheet 38 thus minimizes the possibility of a powdered material accidentally leaking out of the resulting receptacle unit.

While it is feasible to utilize the nested tray-like boxes 10 and 11 as a unit it is preferable to retain them in assembled relationship with the cover sheet 38, as the latter type of unit provides a more sturdy construction.

Ordinarily, the unit formed by the united trays 10 and 11 is filled at this time with the tooth powder or other material through the now aligned openings 24 and 37.

Thereafter, the opening 24, 37 is closed by gluing to the end 33 a cardboard sheet 43 forming a mount carrying a suitable nozzle or dispensing top 44, usually made of metal. The top 44 is usually provided with an outer screw thread 45 adapted, when the container is complete, to be closed by an internally threaded cap 46 which may be either plastic or metal.

The receptacle unit formed by the nested tray-like boxes 10 and 11 and the cover sheet 38 is adapted to be inserted into an outermost cover 47, which preferably fits around the receptacle unit and may take many forms varying from an ornamental paper wrapping to a reinforcing cardboard box. After the receptacle unit and the cover 47 are in assembled relationship (Figs. 2 and 3) a closure cap 46 may be applied to the screw thread 45.

In the form shown, the cover 47 is illustrated as a cardboard box having sides 48 formed from a sheet which is suitably folded (and scored if need be) at the four corners 49, and overlapping a little at 50 where the edges are glued together to form the tubular part.

In the form shown, the metal sifting top 44 projects through an opening 51 in the end 52 made by folding over an edge flap 53 having the opening 51 so as to overlie folded over side flaps 54 which also, at least partly enclose the opening 51, and then tucking in, by turning on a scored line 55, an extension 56 of the flap 53 so as to lie inside the side of the cover 47. After the flaps are tucked in and glued, if desired, the unit 10, 11 or a unit 10, 11, 38 may be slipped into the cover 47 and the flaps 57 and 58 turned down, in the form shown, and then the flap 59 turned down, and either glued or else its flap 60 is tucked in to lie against the inner wall of the cover.

The cap 46 is then screwed on, and the container is ready for shipment. As pointed out hereinabove, the containers will ordinarily be filled with material prior to completion of manufacture thereof, but it is feasible to ship them empty for subsequent filling. The outlet member is conveniently formed with a threaded portion 45 and a base 61, and inserted with the end 25 first through the sheet 43 and then the threaded end is shaped on a suitable anvil (not shown) to form an annular web 62 above the sheet 43, thus

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firmly holding the end 25 in place and providing a dust-proof joint in a smooth sheet 43.

It will be noted that the steps of manufacture and fitting are simple and well adapted to be carried out either by hand or by automatic machinery.

As various changes may be made in the form, construction and arrangement of the parts herein without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described one embodiment of the invention in some detail, what is claimed is:

1. A cardboard container including an open-topped tray-like box provided with an end opening and adapted to hold a powder, a second open-topped tray forming a cover for said tray-like box, a cardboard mount adapted to fit over and partially close said end opening, a delivery outlet member carried by said mount, and a cover member adapted to enclose said covered tray-like box and mount and having an opening through which the delivery outlet member projects and enclosing the covered tray-like box and mount.

2. A cardboard container including an open-topped tray-like box provided with an end opening and adapted to hold a powder, a second open-topped tray forming a cover for said tray-like box, a cardboard mount adapted to fit over said end provided, a delivery outlet member mounted on said mount, and a cardboard box substantially in the form of a tube having ends adapted to be folded inwardly forming an outer cover member adapted to enclose said covered tray-like box and mount and having an opening through which the outlet member projects and enclosing the tray-like box and mount.

3. A cardboard container including an open-topped tray provided with an end opening, a second open-topped tray provided with an end opening and normally forming a cover for said first-mentioned tray and uniting them as a unit, a cover sheet for sealing the trays together, a projecting delivery outlet member for delivering powder from said unit, a cover member substantially in the form of a tube into which said unit slides and fits, flaps closing one end of said cover member around said projecting delivery member, and flaps closing the other end of the cover member.

4. A cardboard container including an open-topped box having upstanding sides and provided with an opening at one end side, a second open-topped box having upstanding sides and provided with an opening at one end side adapted to fit closely within the first sides so that its bottom forms a top for the first box, a cover sheet adapted to extend across the top and be glued to the outer walls of the first box so that the boxes form a unit, a projecting dispensing outlet adapted to convey powder from said end openings, and a cover member for said unit having an opening through which said outlet projects.

5. A cardboard container including an open-topped box having upstanding sides and having an opening at one end side, a second open-topped box having upstanding sides and having an opening at one end side adapted to fit closely within the first sides so that its bottom forms a top for the first box, a cover sheet adapted to extend across the top and be glued to the outer walls of the first box so that the boxes form a unit, a



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projecting dispensing outlet adapted to convey powder from said end openings, a cardboard mount adapted to lie across the ends and carry said outlet, and a cover member for said unit having an opening through which said outlet projects.

6. A cardboard container including an open-topped box having upstanding sides and provided with an opening at one end side, a second open-topped box having upstanding sides adapted to fit closely within the first sides so that its bottom forms a top for the first box and embodying an end opening communicating with said first-mentioned opening, a cover sheet adapted to be stretched across the top and be glued to the outer walls of the first box so that the boxes form a unit, a projecting dispensing outlet adapted to convey powder from said end openings, a cardboard mount adapted to extend across the ends and carry said outlet, a cover member for said unit substantially in the form of a cardboard tube, and end flaps for said tube overlying said mount having an opening through which said dispensing outlet projects.

7. A cardboard container including an open-topped box having upstanding sides and including an opening at one end side, a second open-topped box having upstanding sides adapted to fit closely within the first sides so that its bottom forms a top for the first box, a cover sheet adapted to extend across the top and be glued to the outer walls of the first box so that the boxes form a unit, a projecting dispensing outlet adapted to convey powder from the interior of said unit, a cardboard mount adapted to extend across the ends and carry said outlet and secured to said end around the dispensing outlet, a cover member for said unit in the form substantially of a cardboard tube, and end flaps for said tube overlying said mount having an opening through which said dispensing outlet projects.

8. A powder-holding unit including an open-topped tray having an opening in one end wall, a second tray fitting within the first tray with the bottom of the second tray serving as a cover for the first tray and having an opening in an end wall registering with the other opening, a paper sheet covering the cover and having extensions extending over and cemented to the walls of the first tray and a flat mount carrying a projecting outlet member and adapted to be cemented to an outer wall of one tray to cover the openings through the walls into the interior after that unit is filled with powder, and a tube into which the filled unit is adapted to be inserted and having ends adapted to be closed so as to leave the outlet member projecting.

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9. A powder-holding unit including an open-topped tray having an opening in one end wall, a second tray fitting within the first tray with the bottom of the second tray serving as a cover for the first tray and having an opening in an end wall registering with the other opening, a paper sheet covering the cover and having extensions extending over and cemented to the walls of the first tray and a flat mount carrying a projecting outlet member and adapted to be cemented to an outer wall of one tray to cover the openings through the walls into the interior after that unit is filled with powder and a cardboard tube having flaps into which the filled unit is adapted to be inserted and the flaps folded down so that the flaps close one end of the tube and fold down around the projecting outlet member at the other end of the tube.

10. A cardboard container including an open-topped tray-like box provided with an end opening and adapted to hold a powder, a cover for said tray-like box having portions normally positioned against side and end walls of the tray-like box to retain the cover in assembled relationship therewith, an apertured cardboard sheet adapted to fit against the tray-like box adjacent said end opening, a delivery outlet member mounted on said cardboard sheet and communicating with the aperture therein, and a cardboard box substantially in the form of a tube having ends adapted to be folded inwardly forming an outermost cover member normally enclosing said covered tray and cardboard sheet and having an opening through which the outlet member projects.

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