

**Sept. 29, 1953**

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**2,653,708**

CARTON AND PACKING CELL

Filed April 26, 1949

2 Sheets-Sheet 1

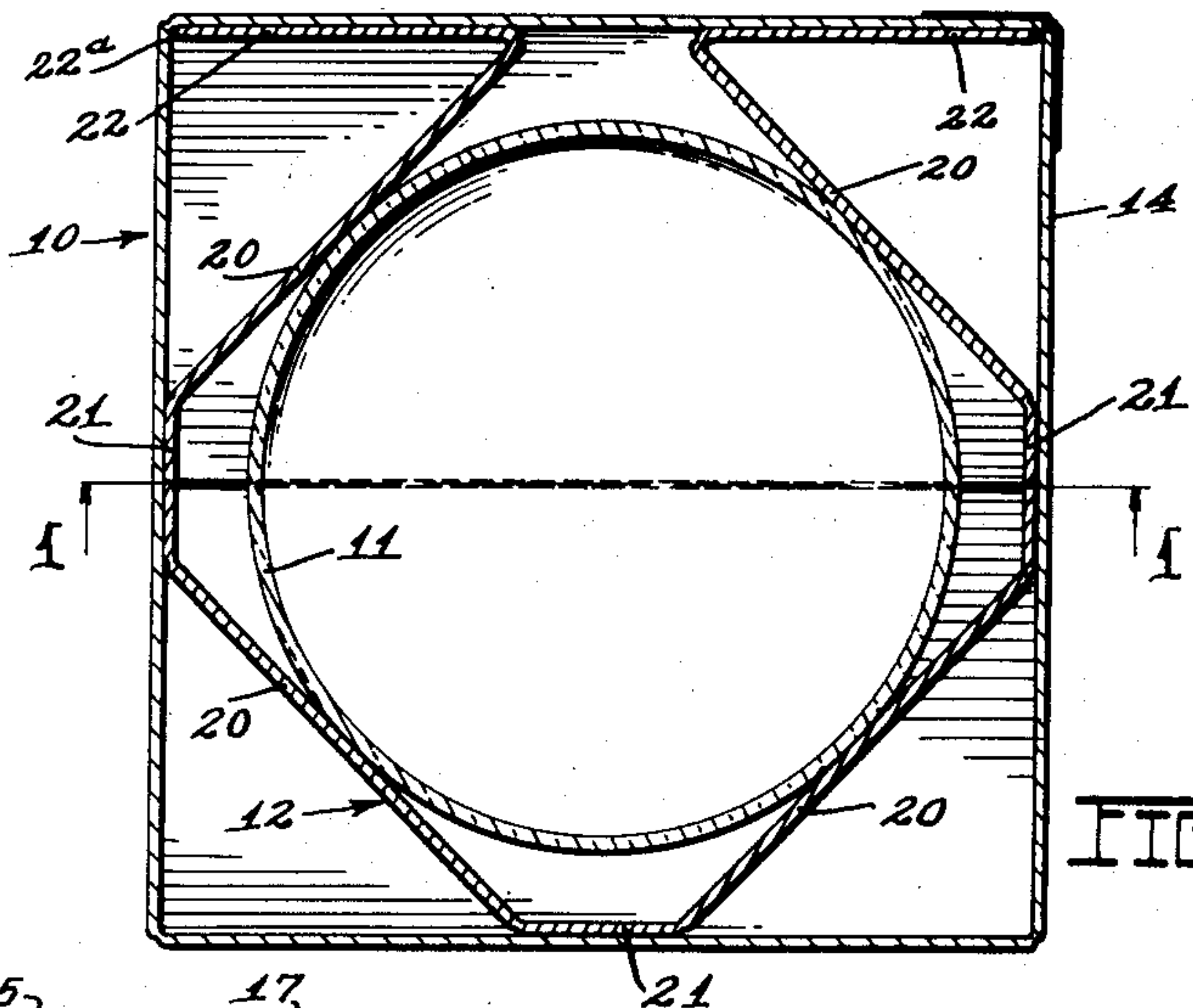


FIG-2-

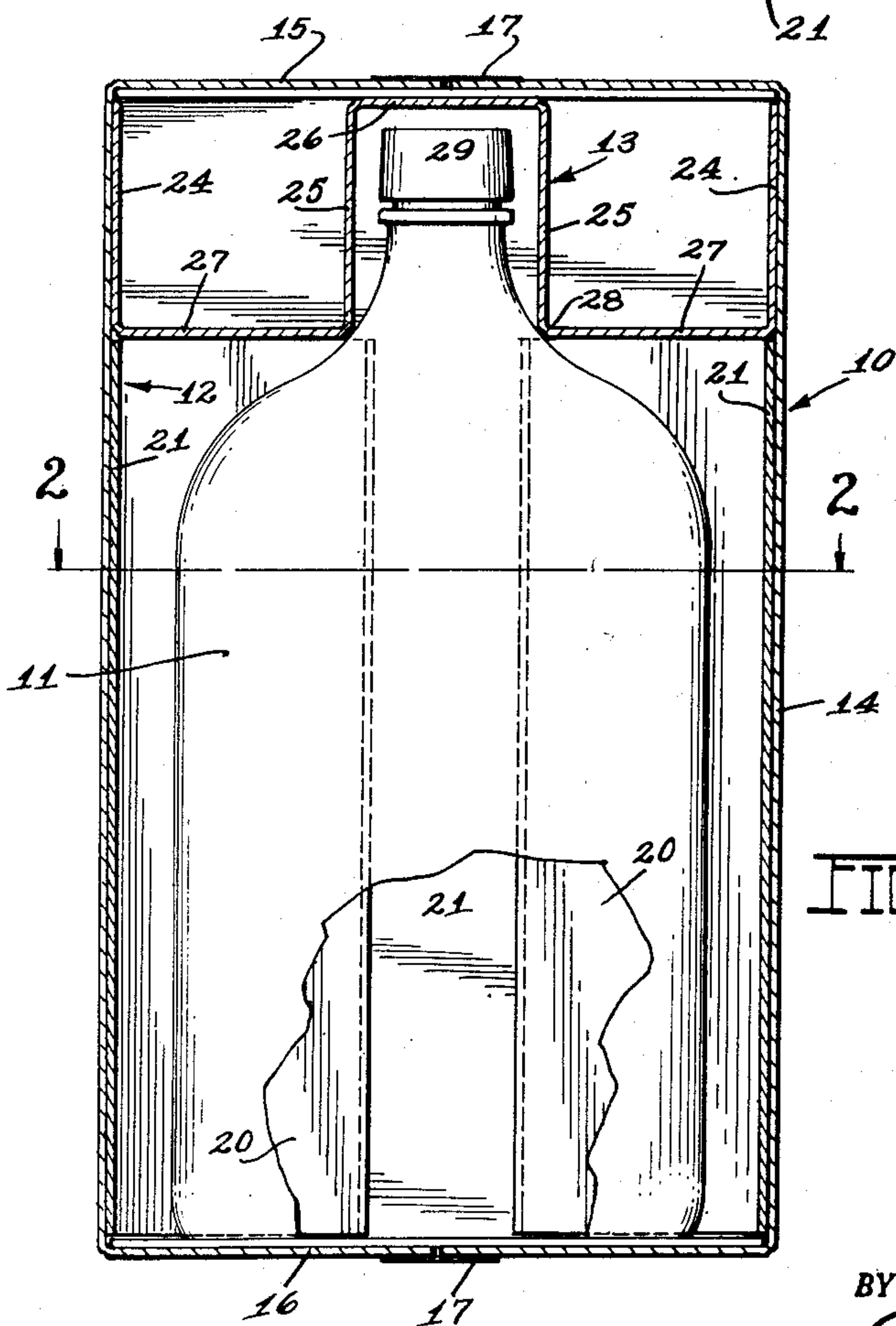


FIG-1-

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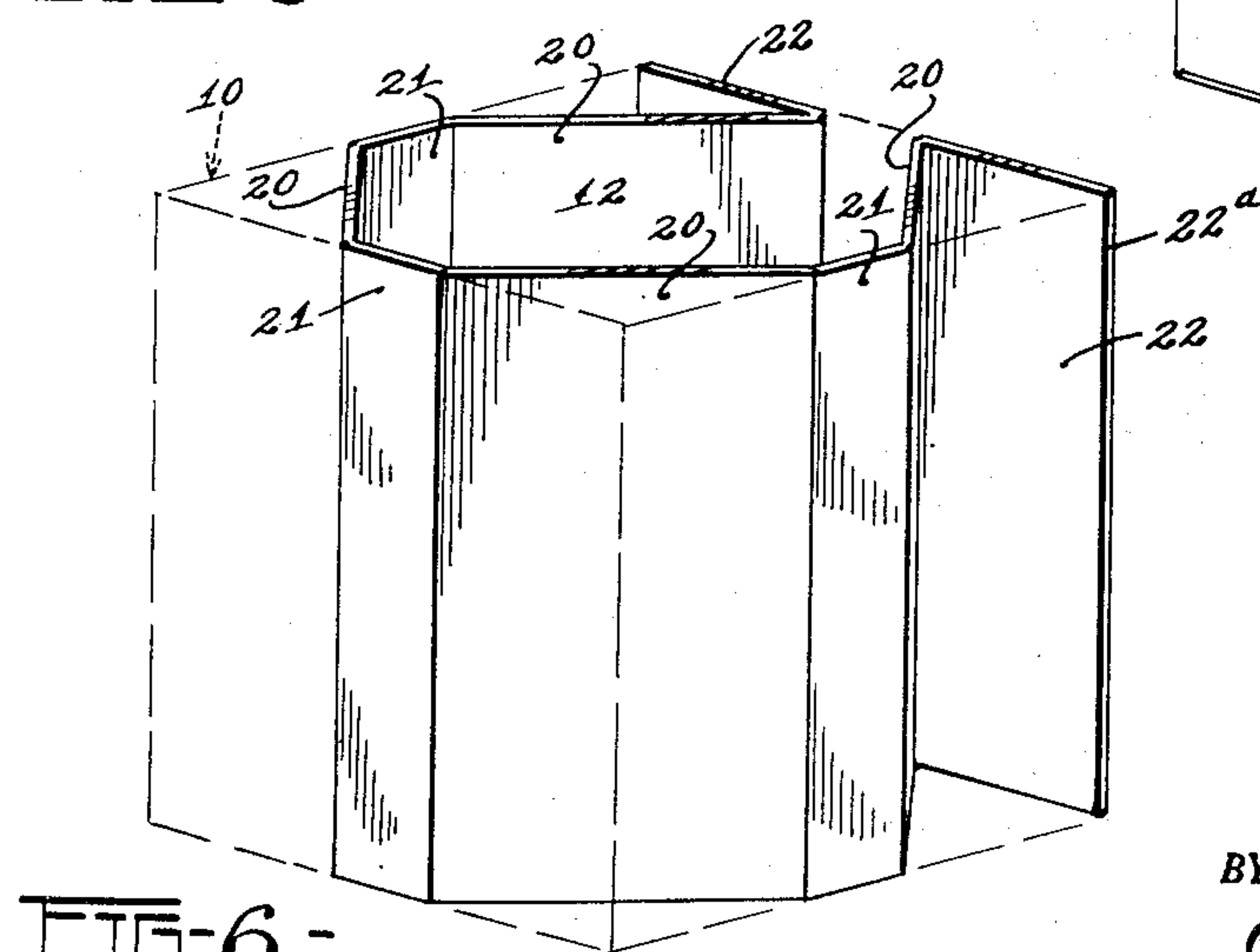
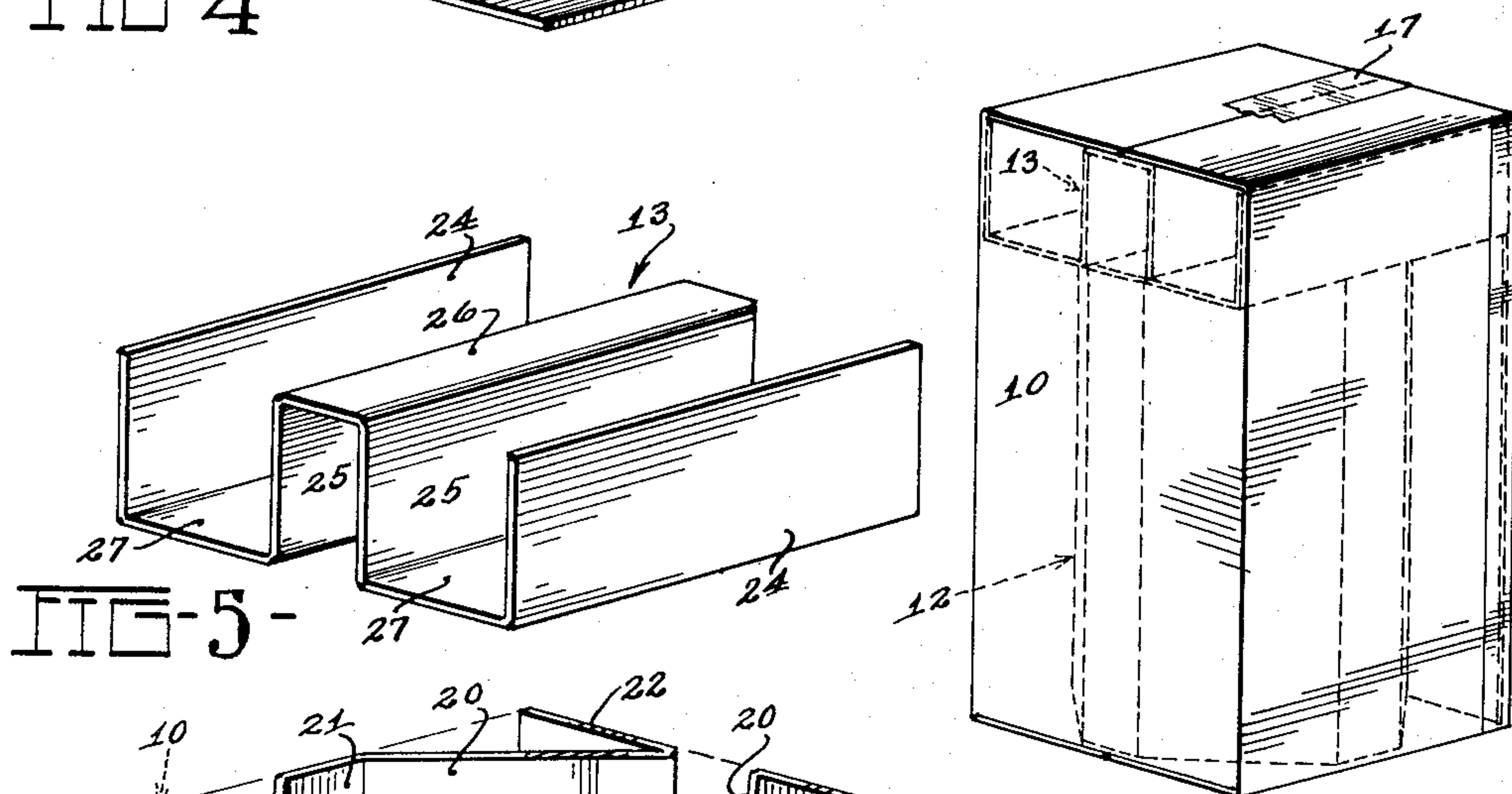
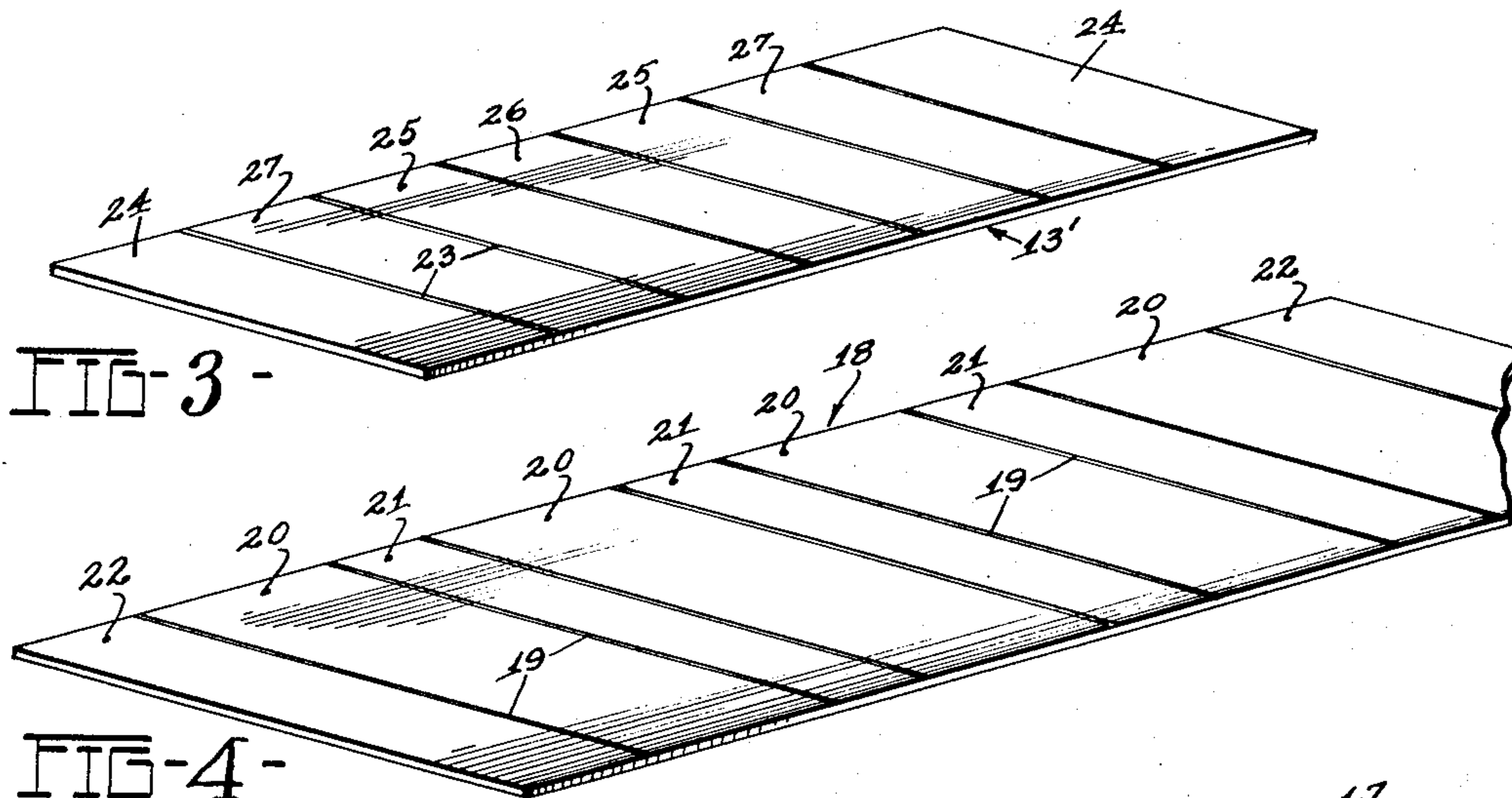
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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,653,708

## CARTON AND PACKING CELL

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Application April 26, 1949, Serial No. 89,719

3 Claims. (Cl. 206—46)

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My invention relates to cartons or containers in which bottles, jars or other articles are packed for shipping or storage, and to packing material in the form of cells within the containers and serving to hold the articles in spaced relation to the surrounding walls of the containers.

The invention provides a package comprising a container which may be in the form of a rectangular carton with a bottle or the like held in place therein by a cell of sheet material interposed between the carton and such article, and spacing the latter from all sides of the enclosing carton whereby said article is protected against damage by falls, knocks, or other rough usage of the package.

The outer case or carton may be made of any suitable material as for example, foldable sheet material. The packing cell preferably consists of a sheet of material such as cardboard, corrugated paper, or the like, formed from a rectangular blank and provided with score lines at which the blank is bent for shaping the cell. A top portion or cap for the cell may be made from a separate blank of sheet material also scored and folded or bent at the score lines to the required shape and adapted to seat on the cell body.

Referring to the accompanying drawings:

Fig. 1 is a part sectional elevation of a package embodying my invention, the section being taken at the line 1—1 of Fig. 2.

Fig. 2 is a section at the line 2—2 on Fig. 1.

Fig. 3 is a perspective view of a blank from which the cell cap is formed.

Fig. 4 is a perspective view of the blank from which the cell body is formed.

Fig. 5 is a perspective view of the cap shaped from the blank of Fig. 3.

Fig. 6 is a perspective view of the cell formed from the blank shown in Fig. 4.

Fig. 7 is a perspective view of the complete package.

Referring to Figs. 1 and 2, the package comprises a carton or outer case 10 in which is packed an article 11, herein shown as a circular bottle, and packing material in the form of a cell 12 and a cap 13 seated on the cell.

The carton 10 may be of conventional construction and in itself forms no part of the present invention. As herein shown, it is made of sheet material folded to form a rectangular or square body including vertical sides 14 and end flaps folded to form a top 15 and bottom 16, the top and bottom being sealed with adhesive strips 17. The cell 12 is formed from a single-piece rectangular blank 18 (Fig. 4) of foldable, resilient,

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flexible sheet material such as cardboard, corrugated paperboard, or the like. The blank is provided with a series of parallel score lines or weakened lines 19 defining rectangular panels and at which the blank is bent to the form shown in Figs. 2 and 6. The cell includes the four major sides or panels 20 connected by intermediate panels 21, the latter lying flat against the side walls of the outer case. The end panels 22 of the cell are bent back to lie flat against one wall of the carton, the space between the adjacent edges of the panels 22 being substantially the same width as the panels 21. The free edges 22<sup>a</sup> of the panels 22 extend to and bear against opposite sides 14 of the case 10, thereby preventing the cell from spreading and also holding the cell walls with a resilient pressure against the walls of the bottle 11. It will be seen that with this construction the body of the cell is substantially or approximately rectangular with the major sides of the cell extending diagonally with respect to the sides of the carton. The packing cell is of a size to receive the bottle 11, the walls of which bear against the resilient sides 20 of the cell so that the bottle is securely held in spaced relation to the side walls of the carton.

The cell cap 13 is formed from the blank 13' (Fig. 3) provided with score lines 23 at which the blank is folded to the zigzag form shown in Fig. 5 which includes the vertical end panels 24, vertical inner panels 25, a horizontal top panel 26 and horizontal bottom panels 27.

The cap 13 seats on the cell 12 while the top panel 26 and the upper edges of the side panels 24 bear against the under surface of the carton top 15 so that said cap is held against any up-and-down movement or play. The cell and cap are so proportioned that the inner corners 28 of the cap, at the junction of the panels 25 and 27, bear against the shoulder of the bottle 11, forming an additional support for the bottle and preventing any endwise movement of the bottle relative to the carton. It will be noted that as shown in Fig. 1, the top of the bottle cap 29 is spaced below the overlying panel 26 of the cell cap. This spacing serves as additional protection to the packaged bottle and particularly against blows or impacts applied to the upper end of the carton. The corners 28 of the packing cap bearing against the shoulder of the bottle in turn provide a brace or support for the top 15 of the carton and materially strengthen said top, preventing it from giving way under excessive weight or blows applied thereto.



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Modifications may be resorted to within the spirit and scope of my invention.

I claim:

1. A package comprising a carton including vertical side walls and horizontal top and bottom walls, a packing cell consisting of a sheet of resilient material with parallel score lines defining rectangular panels including diagonal panels, intermediate panels connecting the diagonal panels and lying flat against inner faces of the vertical carton walls, and end panels bent back from the adjoining diagonal panels and having their free edges bearing against opposite side walls of the carton, a bottle having a circular body, neck and intermediate shoulder portion, said bottle positioned within the cell with the sides of the bottle bearing against the diagonal panels of the cell, and a cap consisting of a sheet of resilient material formed with parallel score lines defining a series of panels including vertical end panels bearing against opposite sides of the carton, inner vertical panels, horizontal panels connecting said vertical inner and end panels, and a top horizontal panel connecting said inner panels, said cap being seated on said cell and bearing against the shoulder of the bottle at the lines of juncture of said inner vertical panels and horizontal connecting panels, the top horizontal panel of the cap bearing against the under surface of the top wall of the carton.

2. The combination of a carton having top and bottom walls and vertical rectangular side walls, the carton being substantially square in horizontal cross section, and a packing cell fitted within the carton and frictionally held in position therein and free for removal therefrom, said cell formed from a single-piece sheet of resilient sheet material, said sheet being formed with parallel weakened lines defining panels, the panels including end panels, side panels lying against the inner faces of three of said side walls, diagonal panels connecting said side panels and end panels, the end panels being bent back from the adjoining diagonal panels and lying flat against the fourth side wall of the carton and spaced apart a distance substantially equal to the width of said side panels, said side and end panels being unattached to said inner faces, said cell thereby being easily inserted in said carton by grasping the end panels of the cell and springing them together and placing the cell in the carton, said cell springing back by its own resiliency into normal position in

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closely fitting relationship with the sides of the carton when the end panels are released, said end panels providing the necessary rigidity to the diagonal panels of the cell, an article within said cell and having its side walls bearing against the diagonal panels of the packing cell, and a cap having vertical panels bearing at their lower edges against the said article and the said cell, the cap including an upper panel bearing against the top wall of the carton.

3. The combination of a carton, a packing cell therein, said cell formed of a piece of sheet material scored to define a series of panels connected by the score lines, said cell including panels extending diagonally of the carton, a cap mounted within the carton and seated on said cell, said cap consisting of a sheet of resilient material formed with parallel score lines defining a series of panels including vertical end panels bearing against opposite sides of the carton, inner vertical panels, horizontal panels connecting the lower edges of said inner and end panels and a top horizontal panel connecting the upper edges of said inner panels, and a bottle within the packing cell, said bottle comprising a circular body and neck and a shoulder portion intermediate the neck and said body, said body of the bottle being in line contact with the diagonal panels of the cell, said cap bearing against the bottle shoulder at the line of juncture of the inner vertical panels and horizontal panels of the cap, said cap bearing against the upper edges of the panels of said cell, the carton having a top overlying and in contact with the top horizontal panel of the cap.

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