

June 7, 1955

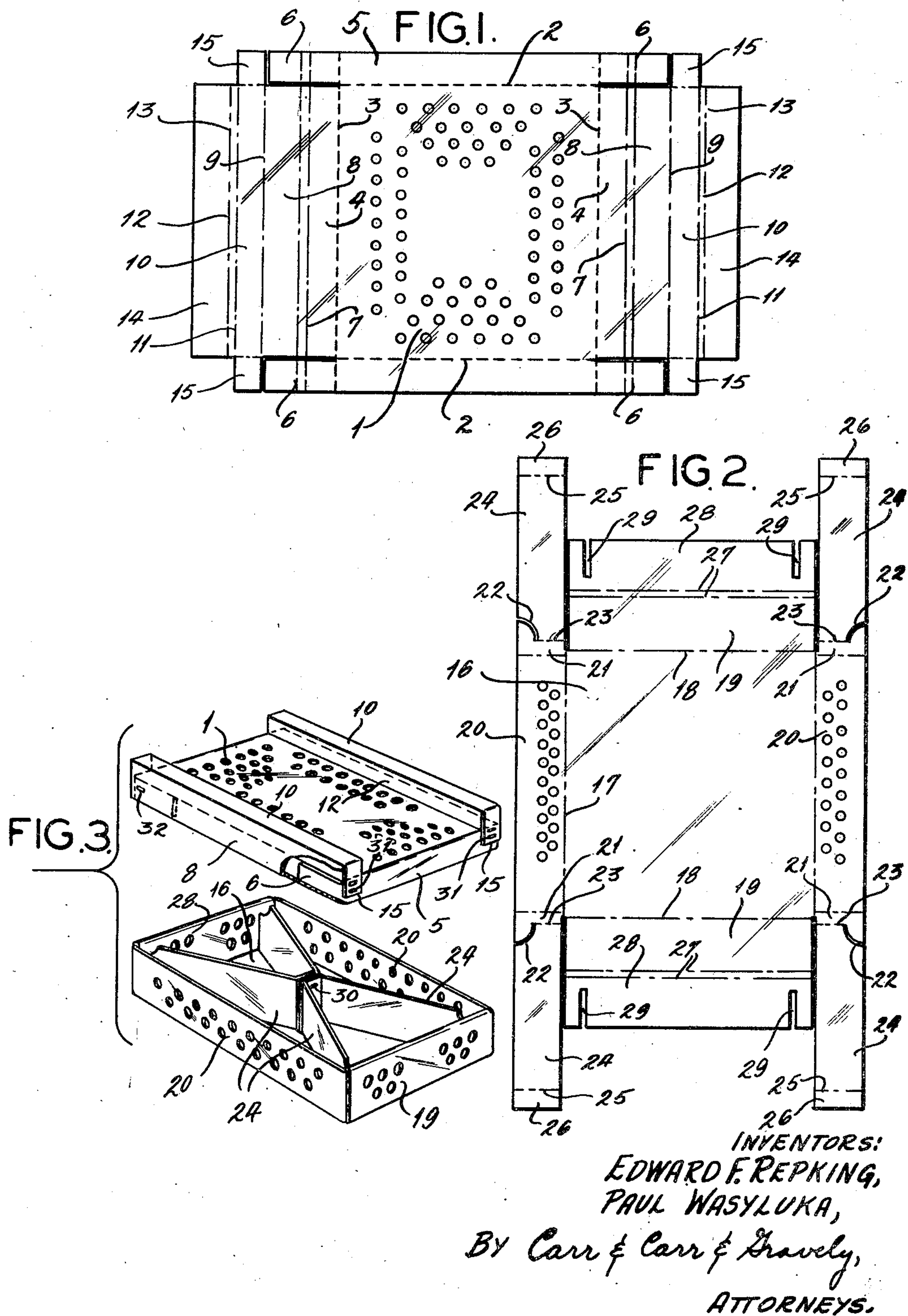
E. F. REPKING ET AL

2,710,133

SHIPPING CONTAINER

Filed March 30, 1951

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FIG 4

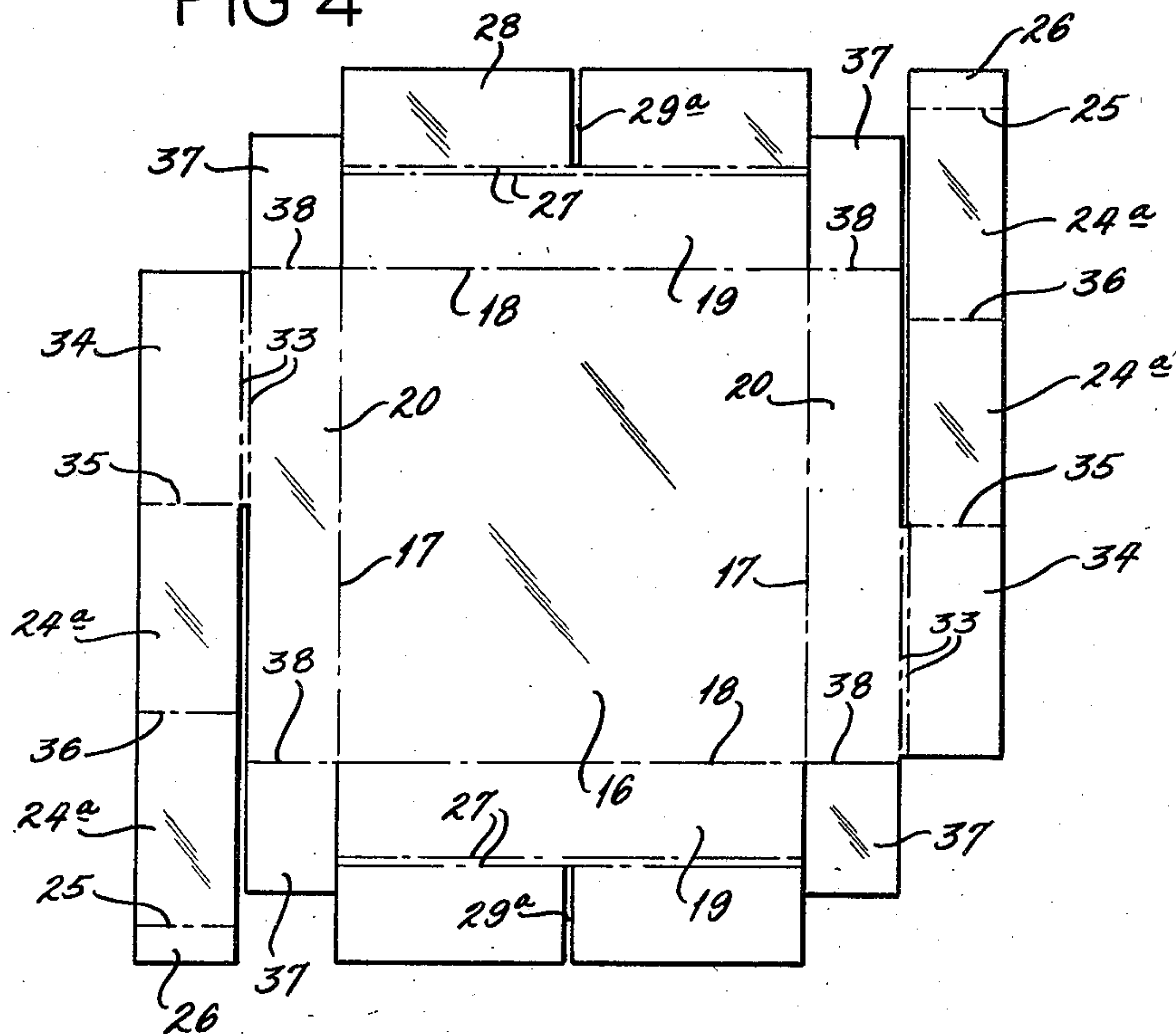
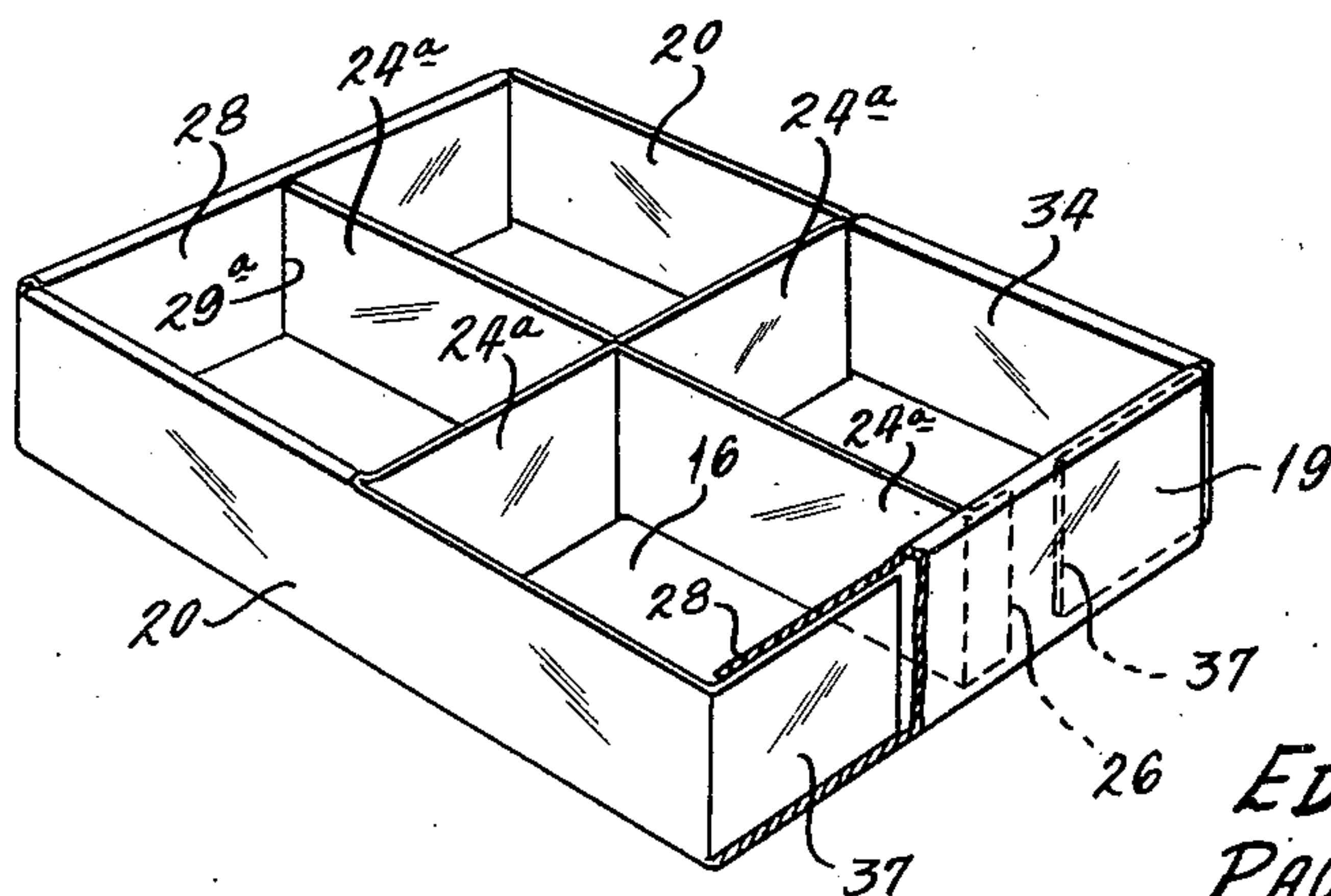


FIG.5



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SHIPPING CONTAINER

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1 Claim. (Cl. 229—27)

This invention relates to shipping containers and more particularly to an improvement in a container to ship live baby chicks or live animals requiring ventilation.

Solid fibreboard, corrugated fibreboard or any other similar material may be used in the construction of this receptacle.

Proper ventilation is of special importance in the design of shipping containers for live baby chicks. Many different schemes have been devised in an effort to provide a box for baby chicks which would allow adequate, uniform air circulation when the containers are stacked one on another. Some of these schemes include placing wooden strips on the top of the container lid or slitting the container lid to provide for extensions of the partitions and walls to protrude there-through to act as a spacer in stacking. Still others suggest built up end walls with a smaller lower lid portion therebetween. All of the above methods have definite limitations which are quite objectionable in many instances. For example, the wooden strip method is costly and requires the use of materials not found in the container itself. The method wherein extensions of the walls and partitions protrude through the container lid has the objection of being weak, and non-resistant to high stacking loads and furthermore the edges of the walls and partitions are exposed. The type wherein the end walls of the container body are built up to a height greater than the lid portion, has the disadvantage of providing a substantially smaller opening to load and unload the chicks or other items carried. This last style has the added disadvantage of not having a full size lid with reinforcing skirt to strengthen the container body.

There is a need for a container for shipping live fowl such as baby chicks which provides adequate ventilation whether stacked or not, and which is equal or superior to the strength of a box employing wooden stacking spacers. Shippers also need containers which are easy to set up and wherein each component part consists of only one piece. It is also important to provide a full size lid having integral stacking spacers which in the closed position of the container act to reinforce the lower body portion without requiring excessive material; that is, a lid which fits snugly over the upper portion of the container body to reinforce the body section. A container having a lid of the above described integral spacer type, transmits any stacking load directly to the walls of the body section. This provides greater strength and subjects the contents to less possibility of injury. A further advantage of this style of construction is that the overlapping skirt type lid provides a spacer thickness which separates the side and end walls from adjacent containers. This skirt acts both as a cushion and a spacer, allowing air circulation along the sides and ends of the body section.

One of the principal objects of this invention is to provide a chick box with integral cover spacing devices to separate the containers when stacked one on another.

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Another object of this invention is to provide a shipping container with a one-piece combination body section and partitions.

A further object of this invention is to provide a container with a reinforced lid which will span the width and length of the body section and provide spacers for the side and end sections.

Another object of this invention is to provide a vertical spacing device folded from the blank of the container lid.

A still further object of this invention is to provide a carrying device for chicks, which is simple, light and inexpensive to manufacture and easy to fabricate.

Another object of this invention is to provide a container with integral stacking spacers having broad areas of contact.

Another object of this invention is to provide a container having diagonal partitions which also act as stiffening members due to the rigid triangular compartments formed as distinguished from the rectangular partitions found in most chick boxes.

Other objects and advantages of this invention will be apparent to those skilled in the art upon a full and complete understanding of the construction and operation of this device.

This invention provides a receptacle comprising the combination of a one-piece body section with integral partitions, and a one-piece lid with integral stacking devices.

The invention also consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed. In the accompanying drawings which form part of this specification and wherein like numerals refer to like parts wherever they occur:

Fig. 1 is a plan view of a blank embodying a preferred form of the lid of this invention; the broken lines composed of uniform dashes indicate reverse scored portions of the blanks and the broken lines composed of intermittent long and short dashes indicate regularly scored portions,

Fig. 2 is a plan view of a blank embodying a preferred form of the body of this invention,

Fig. 3 is an exploded perspective view of the fabricated lid and body sections,

Fig. 4 is a plan view of another embodiment of this invention wherein the partition members are disposed at right angles to the container walls, and

Fig. 5 is a perspective view of the fabricated body section shown in Fig. 4.

Referring to the blank in Figure 1, a top panel 1 is defined by two pairs of opposing reverse scores 2 and 3. Side cover flanges 4 are defined by the reverse scores 3. End cover flanges 5 are defined by the reverse scores 2. Continuations of the reverse scores 3 define end tabs 6. Double scores 7 define side cover flange strips 8. On the outer edges of the side cover flange strips 8 are scores 9 defining the top panels 10 of the stack spacing strips. Scores 11 define inner walls 12 of the stacking spacing strips, while scores 13 define bottom panels 14 of the stack spacing strips. A continuation of the reverse scores 2 defines end tabs 15 of the stack spacing strips.

The blank illustrated in Fig. 2 provides a bottom panel 16 defined by pairs of opposing scores 17 and 18. Scores 18 define end walls 19 and scores 17 define side walls 20. Continuations of scores 18 traverse the ends of side walls 20 thereby defining partition offsets 21. The partition offsets 21 are provided on one edge with slits 22. The purpose of the slits 22 will be explained hereinafter. Extending from the inner edge of the slit 22 and defining the outer edge of the partition offset 21 is a score 23. The score 23 also defines the inner

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edge of partition member 24. The outer edge of each partition member 24 is provided with a score 25 defining a partition connecting flap 26. Each end wall 19 is provided with an end wall flap 28 defined by a double score 27. The end wall flaps 28 are provided with partition receiving slots 29. The partition receiving slots 29 are adapted to lock the side walls 20, the end walls 19, and the partition members 24 in assembled position without the use of stitches or other fastening means.

Referring to Fig. 3, the partition connecting flaps 26 are connected together by a stitch 30 or any other suitable means. Also, referring to the lid in Fig. 3, the end tabs 15 of the spacing strip are fastened to the end cover flange 5 of the lid by stitches 31 or other suitable means and the end tabs 6, the side cover flanges 4, and the side cover flange strips 8 are interconnected by stitches 32 or other suitable means.

A preferred method of assembling the embodiment illustrated is to first assemble the lid shown in Fig. 1 by folding the end cover flanges 5 downwardly along the reverse scores 2. The side cover flanges 4 are folded downwardly along the reverse scores 3. The end tabs 6 are folded inwardly along extensions of the reverse scores 3 to a position flatwise against the side cover flange 4. The side cover flange strips 8 are folded upwardly about the double scores 7. In order to prevent crushing of the material in positioning the spacing strips, the inner side walls 12 of the spacers are bent inwardly on the scores 11 and the bottom panels 14 of the spacers are bent inwardly along the scores 13 to a position at right angles to the inner side walls 12. With the members 14 and 12 in this position, the top panels 10 of the spacers are folded inwardly along the scores 9 to a substantially horizontal position. The bottom panels 14 are thus tucked under to a position in flatwise relation with the upper face of the top panel 1. The end tabs 15 of the stacking strips are bent along the extension of the reverse scores 2 to a position flatwise against the outer face of the end cover flanges 5 and secured to the end cover flanges 5 by a stitch 31 or other suitable means. The side cover flanges 4 and the side cover flange strips 8 with the end tabs 6 positioned therebetween are interconnected by the stitches 32 or other means. The end tabs 6 are traversed by continuations of the double scores 7. These continuations serve no useful purpose but are shown on the embodiment illustrated because it is not practical to provide discontinuous scores using a standard rotary scoring machine. The continuations of the double scores 7 are optional and may be omitted if desired.

In a reinforced modification of the above stacking spacers, the bottom panels 14 of the stacking strips are provided with another flap defined by a score and adapted to fit vertically against the upper portion of the inner face of the side cover flange strips 8 and about against the inner face of the top panels 10 of the stacking strips.

The body blank illustrated in Fig. 2 may be erected by folding the side walls 20 upwardly along the scores 17 and folding the partition offsets 21 inwardly along the continuations of the scores 18 to a position at right angles to the side walls 20. The partition members 24 are folded inwardly along the scores 23 to a position parallel to the side walls 20. The end walls 19 are bent upwardly along the scores 18 to a position flatwise against the partition offsets 21. The end wall flaps 28 are then bent inwardly and downwardly along the double scores 27 to a position flatwise against the inner surface of the end walls 19. In this position, the slots 29 engage the ends of the partition members 24 adjacent the partition offsets 21. While the inner wall flaps 28 are being brought into flatwise relation against the end wall 19, the base of the notch 29 describes an arc adjacent and parallel to the arc of the slit 22. The partition connecting flaps 26 are bent along the scores 25 and then brought together and secured in flatwise relation to each

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other, preferably in a position parallel to the end walls 19. The partition connecting tabs are oriented preferably in this fashion to obviate any narrow vertex angle in the compartments defined by an acute central angle.

The assembled lid portion is then placed on the body section and the container is ready for use.

One modification of the embodiment described is to make an auxiliary spacer from the waste material of the body blank cut from areas bounded by the partition members 24 and the end wall flaps 28. This auxiliary spacer or spacers is secured to the center of the lid portion 1 to properly space the container above, regardless of how the upper container is oriented.

A modification of the body section is shown in Figures 4 and 5. The side edges of the bottom panel 16 are defined by the side scores 17. The end edges of the bottom panel 16 are defined by scores 18 which also define the lower edges of end walls 19. The side scores 17 define the lower edges of the side walls 20. Double scores 33 define in part the upper edge of the side walls 20. Each double score 33 also defines the connecting edge of an inner marginal side wall flap 34. A score 35 defines an end edge of the marginal side wall flap 34 and the adjoining end edge of a partition member 24a. The score 36 defines the inner adjacent edge of an outer adjoining partition member 24a. The outer end edge of the outer partition member 24a is defined by the score 25 which in turn defines the inner end edge of a partition connecting flap 26. The end walls 19 are provided at their upper edges with double scores 27 which also define the inner edge of end wall flaps 28. The end wall flaps 28 are provided with vertical slots 29a substantially midway their length. The side walls 20 are provided at their ends with side wall tabs defined by scores 38.

The body blank illustrated in Fig. 4 may be erected by folding the side walls 20 upwardly along the scores 17 and folding the side wall tabs 37 inwardly along the scores 38. The end walls 19 are folded upwardly along the scores 18 and the end wall flaps 28 are folded downwardly along the double scores 27 and over the side wall tabs 37, thereby positioning the side wall tabs 37 between the end walls 19 and the end wall flaps 28. The side wall flaps 34 are folded downwardly along the double scores 33 to lie flatwise against the inner face of said side walls 20. The partition members 24a are then folded along the scores 36 and then along the scores 35 into partition forming positions. The connecting flaps 26 are inserted into the slots 29a thereby holding the partition members 24a in fixed position. This embodiment does not require staples or other separate securing means, although separate securing means may be used if so desired.

It is to be understood that the embodiments herein described are illustrative and not restrictive, and it is also to be understood that the invention may be susceptible of embodiment in other modified forms, and that all such modifications which are similar or equivalent hereto come equally within the scope of the claim next appearing.

What we claim is:

A relatively shallow, one-piece chick box comprising a bottom panel, a pair of opposing upstanding side walls, and a pair of opposing upstanding end walls, said side walls each having side wall tabs at the ends thereof and a side wall flap hingedly connected to the top margin of said side wall adjacent to an end thereof, said side wall flap extending substantially one half the length of said side wall along the inner surface thereof and having a partition member hingedly connected thereto, said partition member extending inwardly substantially one-half of the width of said box, a second partition member hingedly connected to said first partition member and positioned substantially at right angles thereto and extending substantially parallel to said side wall approximately one-

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half of the length of said box to an end wall, said end wall having an end wall flap with a vertical slot therein, said second partition having a connecting flap which extends into said vertical slot and is positioned between said end wall and said end wall flap, said side wall tabs being positioned between said end wall and said end wall flap, the hinged connections between each of said first and second partitions contacting each other adjacent to the center of said box.

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