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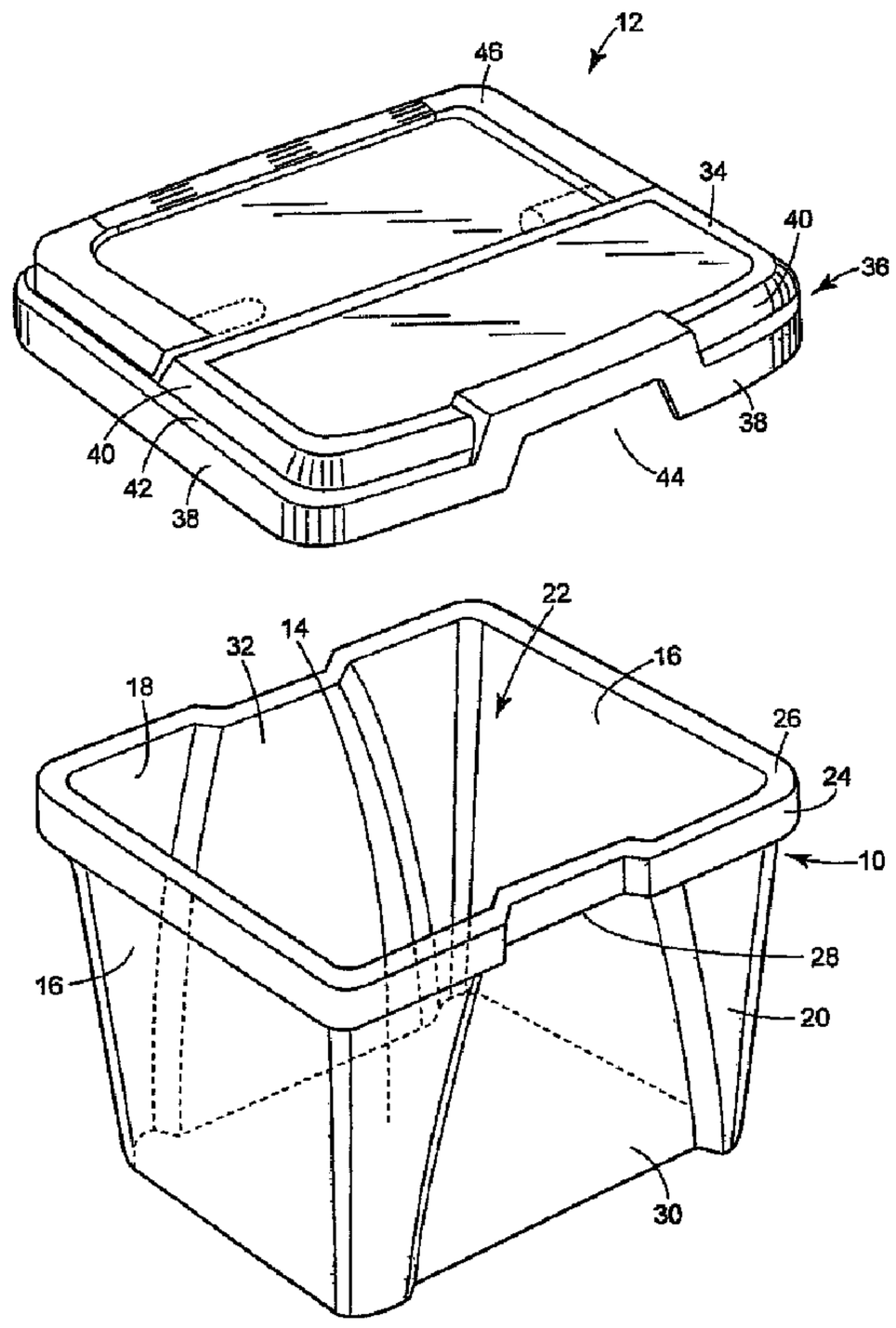


(57) Abrégé/Abstract:
A secure latch having a lid that includes a panel and a plurality of walls extending from the edges of the panel forming a skirt, the skirt having a cut out portion. A latch handle is pivotably mounted to an underside of the lid proximate the cut out portion. The latch handle is partially shielded from accidental contact by the skirt.

SECURE LATCH

ABSTRACT

[0027] A secure latch having a lid that includes a panel and a plurality of walls extending from the edges of the panel forming a skirt, the skirt having a cut out portion. A latch handle is pivotably mounted to an underside of the lid proximate the cut out portion. The latch handle is partially shielded from accidental contact by the skirt.

SECURE LATCH

BACKGROUND OF THE DISCLOSURE

Field of the Disclosure

[0001] The disclosure generally relates to a latch for a storage container and, more specifically, relates to a latch which is resistant to accidental dislodgement.

Related Technology

[0002] Storage containers often include a lid that is attached to the storage container via a hinge along one side. This traditional arrangement allows the lid to be opened exposing a storage space of the container. Often, latches or other securing devices are placed on the lid to secure the lid to the storage device when the lid is closed. By their nature, these securing devices are attached to the outside of the lid and storage container so that a user may manipulate the securing device as required. These securing devices are exposed to the environment and, because they are attached to the outside of the lid and storage container, may be easily bumped or jarred loose.

[0003] Attempts have been made to design a securing device that is not susceptible to being inadvertently dislodged. Often, these securing devices require extensive manipulation by a user, in the form of multiple movements, in order to unlock. For example, a traditional latch may include a lever and a loop of wire attached to the lever disposed on the storage container. Additionally, a pedestal may be disposed on the lid for engagement with the wire loop. After the wire loop is engaged with the pedestal, the lever is used to provide tension on the loop and eventually locks the loop in an over-center locking arrangement. Thus, this type of latch is complicated and relatively expensive to manufacture. Additionally, because this type of latch projects from the surface of the storage container it is easily damaged and is usually the first point of impact when the storage container is being moved.

[0004] Other types of improved securing devices include living hinges and locking pins. The living hinge-type securing devices are also generally disposed on the outer surfaces of the storage container, and are thus often damaged by impacts. Locking pin-type securing devices are also disposed on the outside surfaces of the storage container and can be damaged by impacts. Further, the locking pins are separate pieces that must be precisely aligned to secure the lid to the storage container, and because they are not attached to the storage container, such locking pins are easily lost.

SUMMARY OF THE DISCLOSURE

[0005] A secure latch is disclosed, including a lid having a panel and a plurality of walls extending from the edges of the panel forming a skirt, the skirt having a cut out portion. A latch handle is pivotably mounted to an underside of the lid proximate the cut out portion. The latch handle is at least partially shielded from accidental contact by the skirt. The latch handle is accessible through the cut out portion and the skirt partially surrounds the latch handle, the latch handle being recessed from a plane of the skirt.

[0006] Further details of the file holder of the present disclosure may be appreciated with reference to the several views of the drawings, as well as the following detailed description of the preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a perspective view of a storage container and a lid.

[0008] FIG. 2 is an exploded perspective view of the storage container and the lid of FIG. 1, including a secure latch.

[0009] FIG. 3 is a bottom perspective view of the lid and latch of FIG. 2.

[0010] FIG. 4 is a perspective view of the storage container and lid of FIG. 2 with the lid in a closed and secured position.

[0011] FIG. 5 is a side plan view of the storage container and lid of FIG. 2 in a closed and secured position.

[0012] FIG. 6 is a side plan view of the storage container and lid of FIG. 2 in a closed, but unsecured position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0013] The lid and latch described herein minimize accidental dislodgement when the lid is in a closed and secured position on a storage container. Pivot points of the latch are attached to an inner surface of the lid, thus protecting the pivot points from unwanted impacts which may disengage the latch, causing the lid to open. Furthermore, the latch is recessed from a plane of a skirt projecting from the lid, thus protecting the latch from side impacts as well. This feature is especially useful for storage containers that are frequently transported and/or often exposed to impacts, for example storage containers for hunting or fishing supplies, home organization, tools and art supplies, among others.

[0014] FIG. 1 illustrates a storage container 10 and a lid 12 constructed in accordance with the teachings of the disclosure. The container 10 is box-like in shape having a base panel 14, and a pair of opposed side walls 16 that extend from side edges of the base panel 14. Further, a rear wall 18 extends from a rear edge of the base panel 12 and a front wall 20 extends from a front edge of the base panel 12. The front wall 20, rear wall 18, side walls 16 and base panel 14 define a storage space 22.

[0015] The storage container 10 may include a lip 24 that extends outward from the exposed edges of the front, back and side walls 20, 18, 16. The lip 24 provides a contact surface for the lid 12 along an upper edge 26 of the lip 24. The lip 24 further serves to strengthen the exposed edges of the front, back and side walls 20, 18, 16. Additionally, a lower edge 28 of the lip 24 provides a latch grasping surface, which will be discussed further hereinafter. The front wall 20 may include an optional recessed portion 30. Similarly, the rear wall 18 may include an optional recessed portion 32.

[0016] Additionally, the front and rear walls 20, 18 may optionally diverge slightly away from one another as the front and rear walls 20, 18 extend from the base panel 14. Likewise, the side walls 16 may optionally diverge slightly away from one another as the side walls 16 extend from the base panel 14. The divergence between the front and rear walls 20, 18, and the divergence between the side walls 16, may provide a nesting capability for the storage containers 10. Nesting storage containers 10 may be particularly useful in shipping, stocking, and display of the storage containers 10.

[0017] The lid 12 includes a lid panel 34 optionally having one or more openings therein. A skirt 36 extends from a perimeter of the lid panel 34. The skirt 36 may include a first tier 38 and a second tier 40 separated by a buttress 42. The buttress 42 abuts the upper lip edge 26 of the storage container 10 when the lid 12 is mounted on the storage container 10 and in a closed position. The first tier 38 includes an arch 44 along one side that is sized and shaped to partially receive a latch, which will be further discussed hereinafter. The lid 12 also includes a handle 46 hingedly connected to the lid 12. The handle 46 in FIG. 1 is shown in a stored position in which the handle 46 registers with a rear portion of the buttress 42.

[0018] FIG. 2 shows an exploded perspective view of the storage container 10, lid 12 and secure latch 48. The handle 46 generally includes three members. Two generally "C" shaped attachment members 50 and a tubular connecting member 52. The tubular

connecting member 52 may be constructed of different lengths to create different sized handles 46 for use with different sized lids 12. The "C" shaped attachment members 50 may be common to many different sized lids 12, thus saving manufacturing costs.

[0019] The lid 12 includes a tray 54 and an aperture 56. The tray 54 and aperture 56 are secured by a dual action two panel cover 58. The cover 58 includes first and second panels 60, 62 that are hingedly connected to a center support 64 of the lid 12. The first and second panels 60, 62 may be moved independently of one another. The first panel 62 covers the aperture 56, and the second panel 62 covers the tray 54. Furthermore, both the first and second panels 60, 62 may be opened while the lid 12 is in a closed and secured position, thus allowing a user to access the storage space 22 of the tray 54 while the lid 12 and storage container 10 are supported by the handle 46.

[0020] The latch 48 includes a handle portion 66 and an attachment portion 68. The attachment portion includes two posts 70 extending laterally therefrom for attaching the latch 48 to the underside of the lid 12. The handle portion 66 may terminate in a generally curved edge 72. The curved edge 72 engages the lower lip edge 28 when the lid 12 is in the closed and secured position. Further, the latch 48 pivots outward, away from the lower lip edge 28 when the latch 28 is released, so that the lid 12 can be opened.

[0021] FIG. 3 shows an underside of the lid 12. The latch 48 is hingedly attached to the underside of the lid 12 at two receivers 74. The underside connection of the latch 48 to the lid 12 protects the connection from environmental factors, such as impacts, that could jar or otherwise dislodge the latch 48 as in conventional securing devices. The latch 48 is attached to the lid 12 in the vicinity of the arch 44. Thus, the handle portion 66 of the latch 48 is accessible through the arch 44, while the first tier 38 of the skirt 36 overlaps the attachment portion 68 of the latch 48. This configuration further protects the latch 48 from accidental dislodgement or damage due to impacts while still allowing a user access to the handle portion 66 of the latch 48 for manipulating the latch 48 between a secured position and an unsecured position.

[0022] FIG. 4 illustrates the lid 12 and latch 48 in a closed and secured position on the storage container 10. The attachment portion 68 of the latch 48 is shown in phantom. The attachment portion 68 of the latch 48 is shielded by the first tier 38 of the skirt 36 in the vicinity of the arch 44. Thus, the receivers 74 and the posts 70 are protected by the skirt 36. The handle portion 66 of the latch is accessible through the arch 44, thereby reducing

the probability that the latch 48 will be dislodged through accidental contact. Additionally, the front recess 30 of the bin 10 provides additional clearance for manipulating the latch 48. The front recess 30 is optional, and the latch 48 could be configured to secure a bin 10 that lacks the front recess 30.

[0023] FIG. 5 is a side plan view of the lid 12 and latch 48 in a closed and secured position on the storage container 10. The attachment portion 68 and posts 70 of the latch 48 are shown in phantom. The skirt 36 extends outward, beyond the handle portion 66 of the latch, to protect the latch 48 from side impacts. This side shielding further reduces the probability that the latch 48 will be accidentally dislodged. Furthermore, the curved edge 72 of the latch 48 engages a lower edge 28 of the lip 24, thereby securing the lid 12 in the closed position.

[0024] FIG. 6 is a side plan view of the lid 12 and latch 48 in a closed and unsecured position on the storage container 10. Again, the attachment portion 68 and the posts 70 are shown in phantom. In this figure, the latch 48 is shown released and the lid 12 is in a closed, but unsecured position. The curved edge 72 of the latch is disengaged from the lower bin lip 76 allowing the lid 12 to be capable of being rotated about the opposing hinge to an open position. The latch 48 may be pivoted about the receivers 74 and posts 70 so that the handle portion 66 protrudes outward, beyond the skirt 36.

[0025] While the disclosed embodiments are generally manufactured from molded plastic, the storage container can alternately be constructed from virtually any suitable material. For example, the storage container may be constructed from polystyrene, polypropylene, polycarbonate, engineering grade plastic, ABS, TPE, thermoplastics, metal, wood, organic materials, leather, glass, and/or any combination thereof.

[0026] Although certain securable storage containers have been described herein in accordance with the teachings of the present disclosure, the scope of the appended claims is not limited thereto. On the contrary, the claims cover all embodiments of the teachings of this disclosure that fairly fall within the scope of permissible equivalents.

What Is Claimed Is:

1. A secure latch comprising:

a lid having a panel and a plurality of walls extending from the edges of the panel forming a skirt, the skirt having a cut out portion;

a latch handle pivotably mounted to an underside of the lid proximate the cut out portion;

wherein the latch handle is accessible through the cut out portion and wherein the skirt at least partially surrounds the latch handle, the latch handle being recessed from a plane of the skirt.

2. The secure latch of claim 1, wherein the latch handle comprises an attachment portion and a grasping portion.

3. The secure latch of claim 2, wherein the grasping portion terminates in a ledge.

4. The secure latch of claim 2, wherein the attachment portion includes two posts extending laterally outward therefrom and lying in substantially the same plane with the attachment portion.

5. The secure latch of claim 4, wherein the posts are mounted in receivers formed in the underside of the lid.

6. The secure latch of claim 1, wherein the latch engages a shelf disposed on a storage bin when the lid is in a closed position.

7. The secure latch of claim 1, wherein the latch handle is protected on at least three sides by the skirt.

8. The secure latch of claim 1, wherein the skirt extends outwardly, beyond the handle portion of the latch, when the latch is in a closed and secured position.

9. The secure latch of claim 1, wherein the attachment portion is shielded by the skirt.

10. A secure storage bin comprising:

a lid having a panel and a plurality of walls extending from the edges of the panel forming a skirt, the skirt having a cut out portion;

a latch handle pivotably mounted to an underside of the lid proximate the cut out portion; and

a bin having a base panel, a plurality of walls extending from the edges of the base panel, and a lip extending from the distal edges of the four walls,

wherein the latch handle is accessible through the cut out portion and wherein the skirt at least partially surrounds the latch handle, the latch handle being recessed from a plane of the skirt, and

wherein one of the walls of the bin includes a recessed portion generally aligned with the cut out portion of the lid when the lid is in a closed position.

11. The secure latch of claim 10, wherein the latch engages a shelf disposed on the storage bin when the lid is in a closed position.

12. The secure latch of claim 10, wherein the latch handle is protected on at least three sides by the skirt.

13. The secure latch of claim 10, wherein the skirt extends outwardly, beyond the handle portion of the latch, when the latch is in a closed and secured position.

14. The secure latch of claim 10, wherein the attachment portion is shielded by the skirt.

FIG. 1

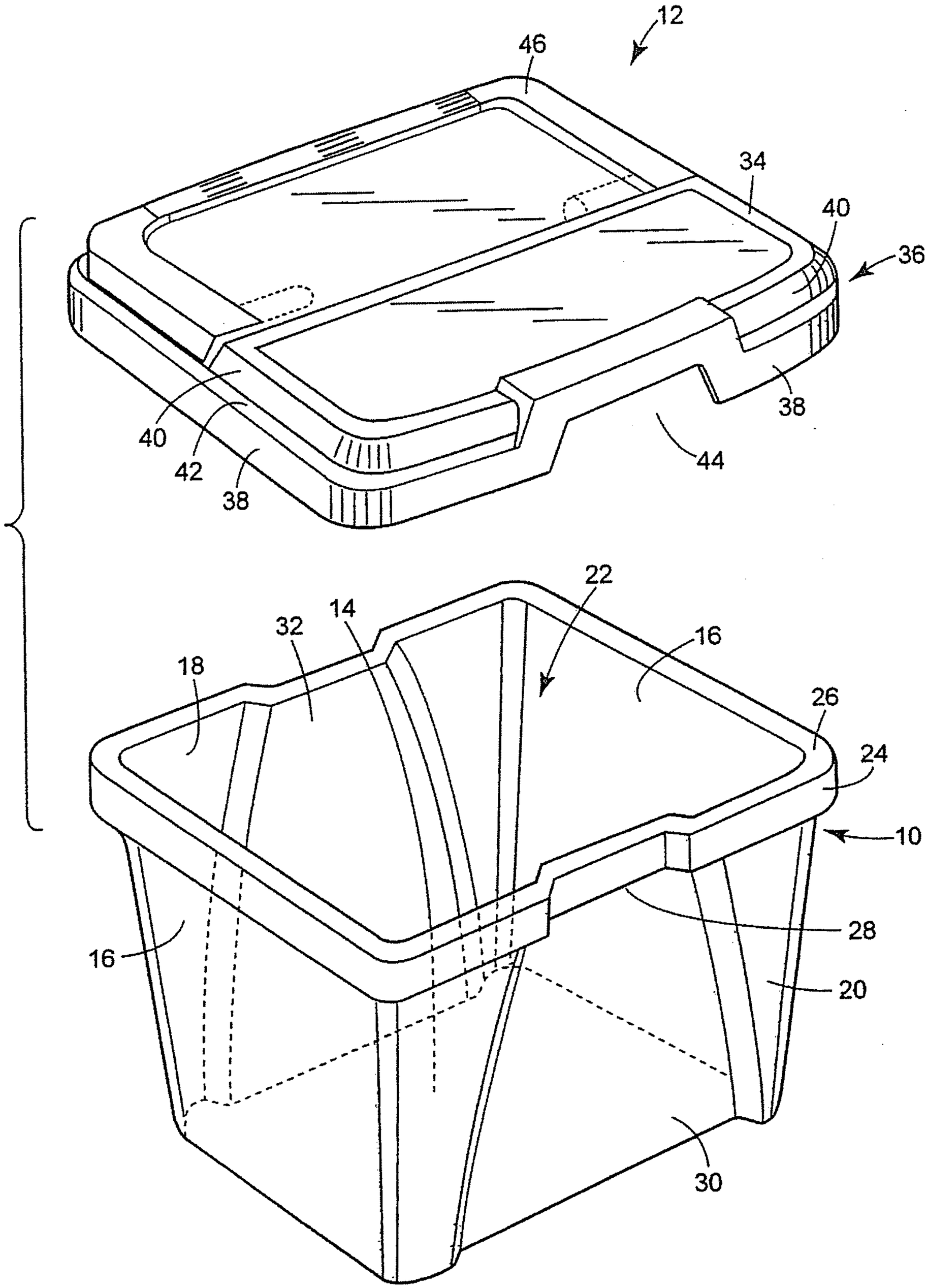


FIG. 2

FIG. 3

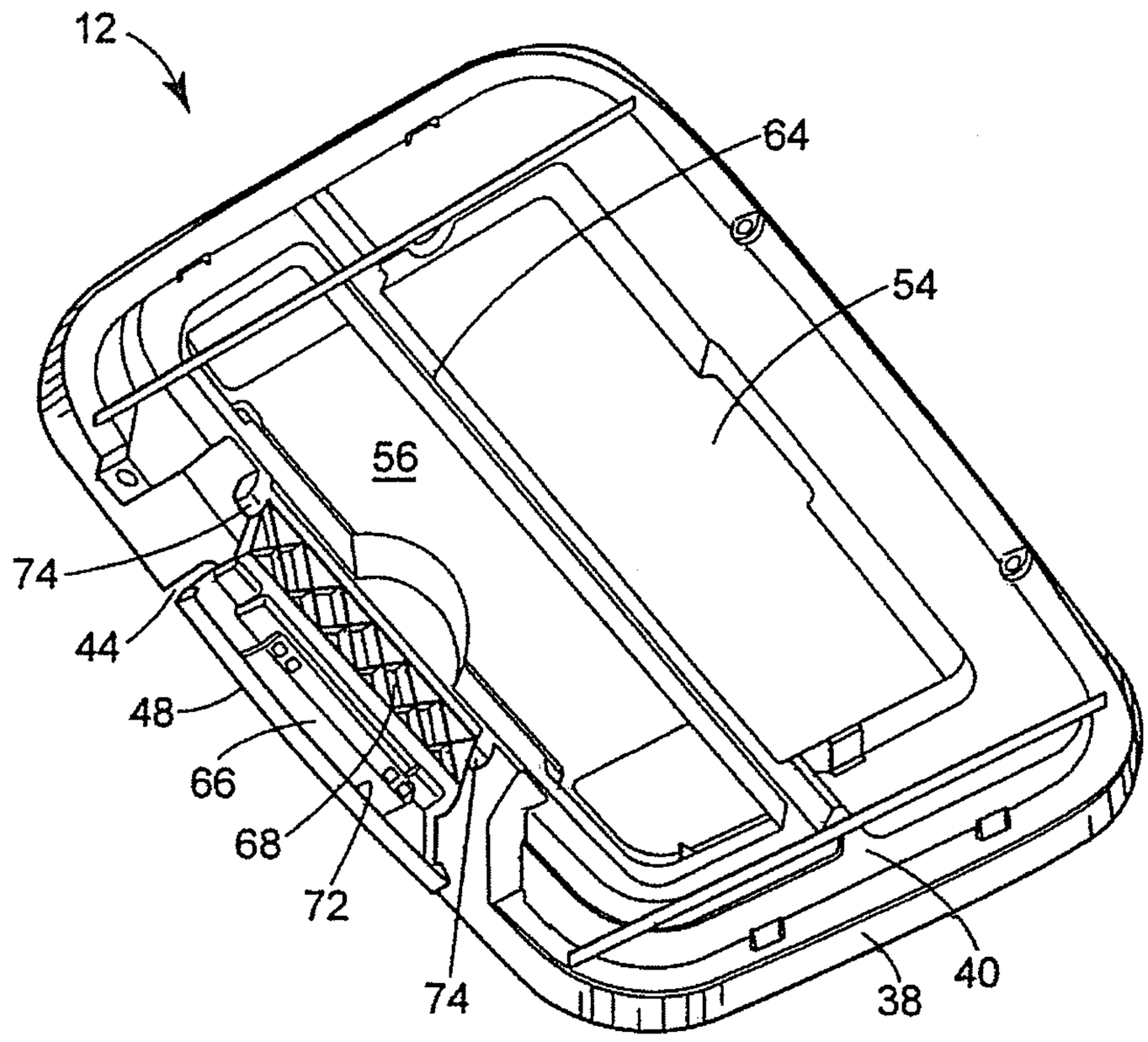


FIG. 4

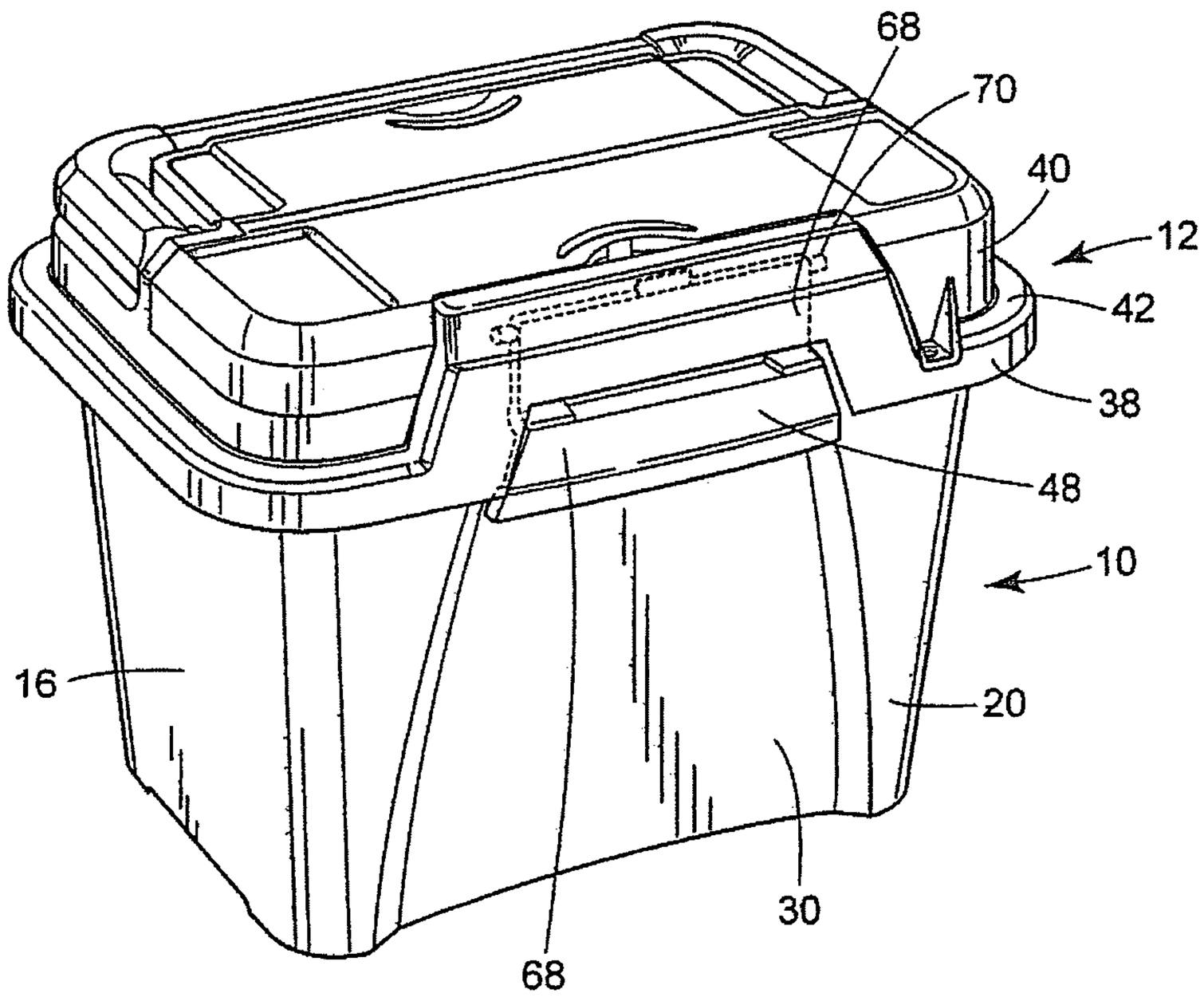


FIG. 5

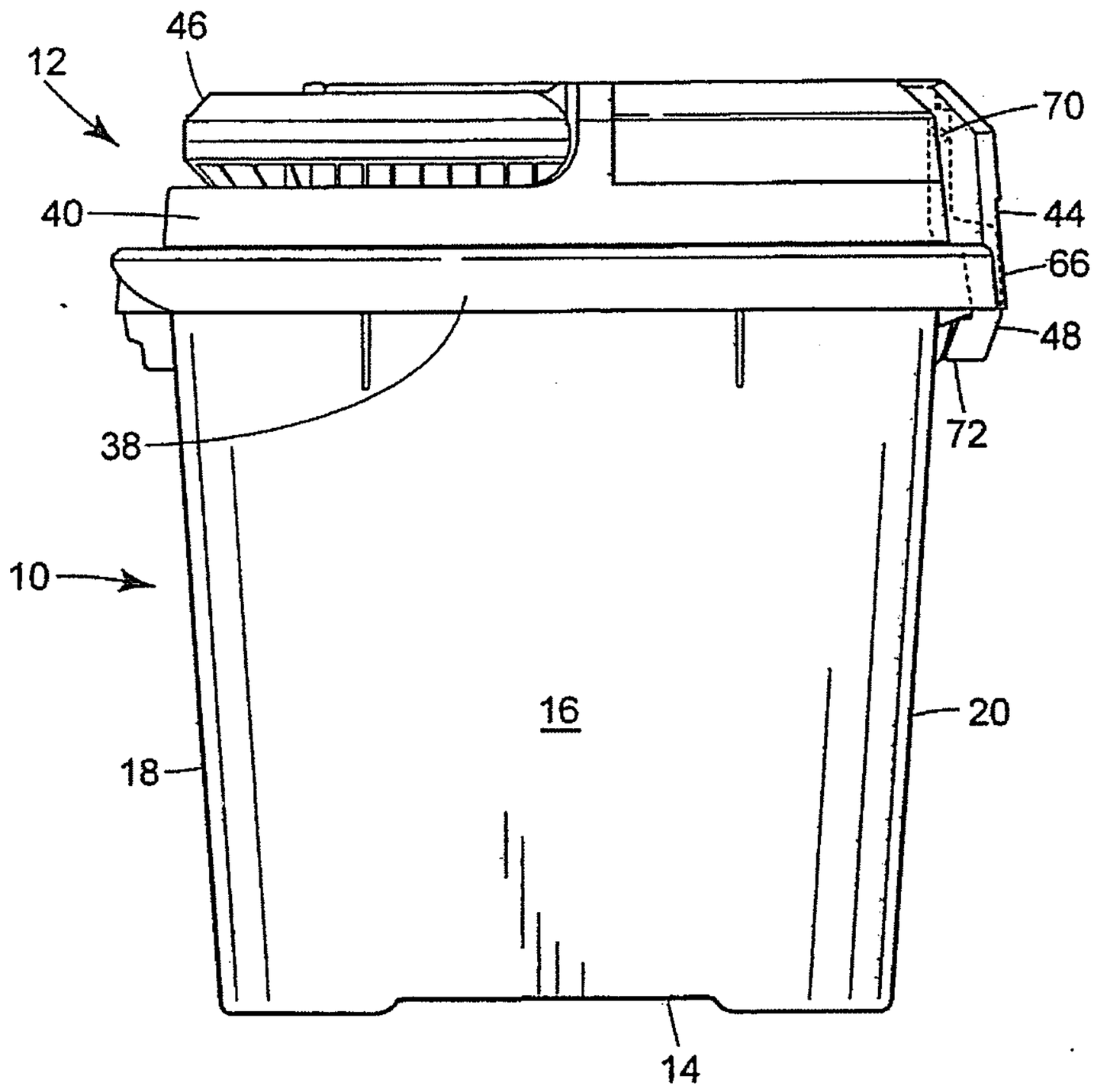
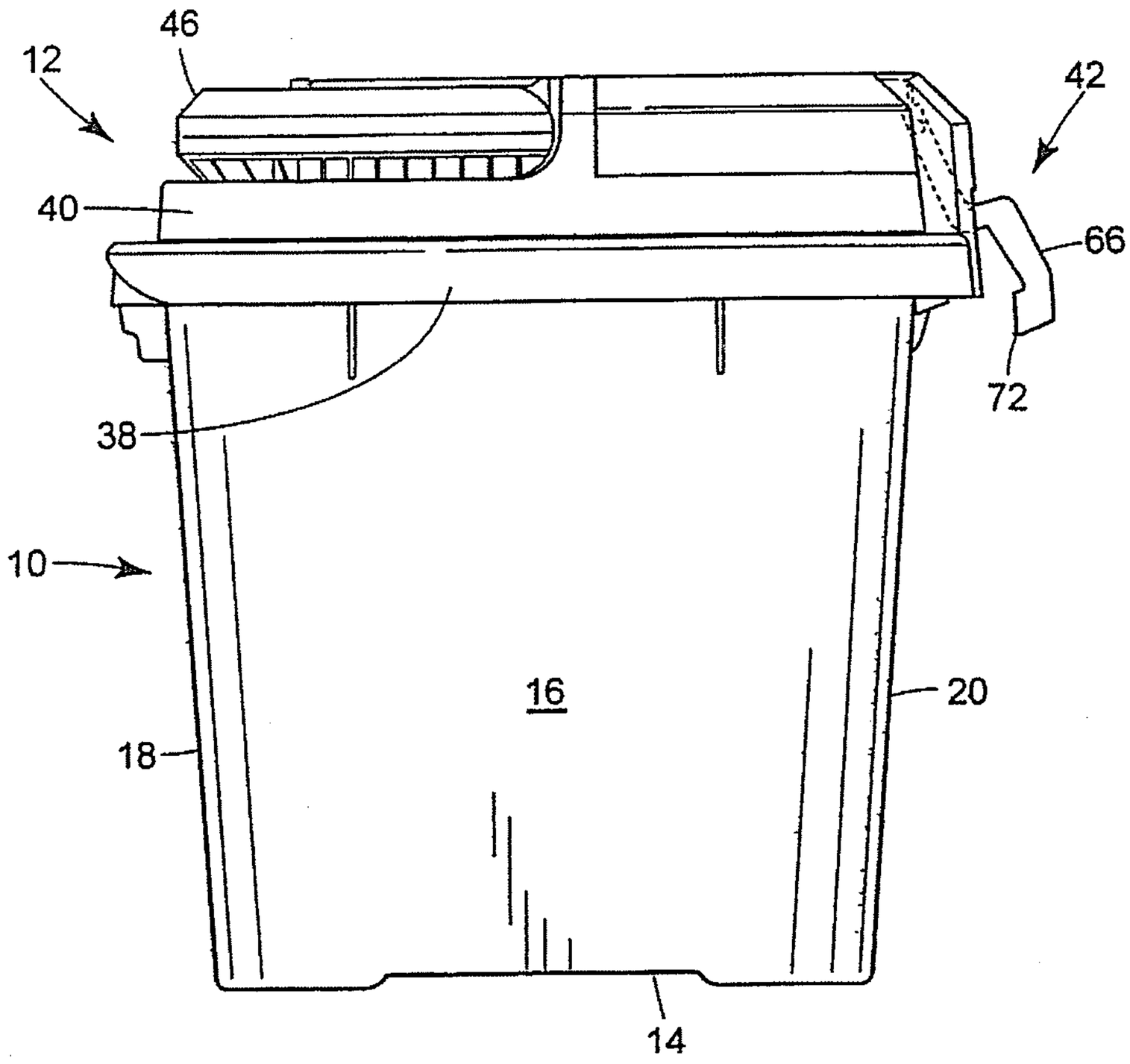
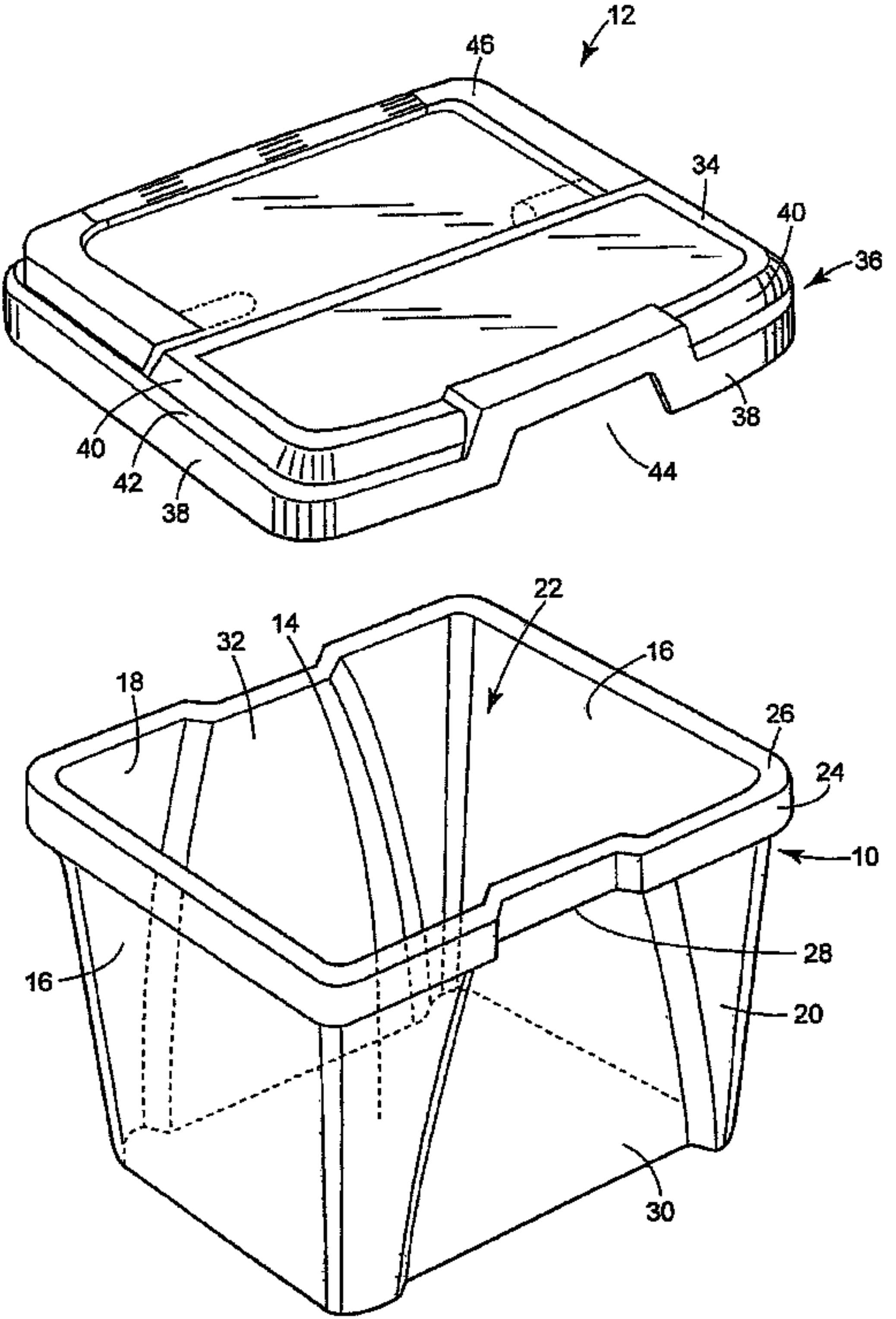


FIG. 6

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