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(54) **BAG HOLDER FOR HOLDING CAT LITTER BAGS AND METHOD OF MANUFACTURING THE BAG HOLDER**

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B23P 11/00 (2006.01)

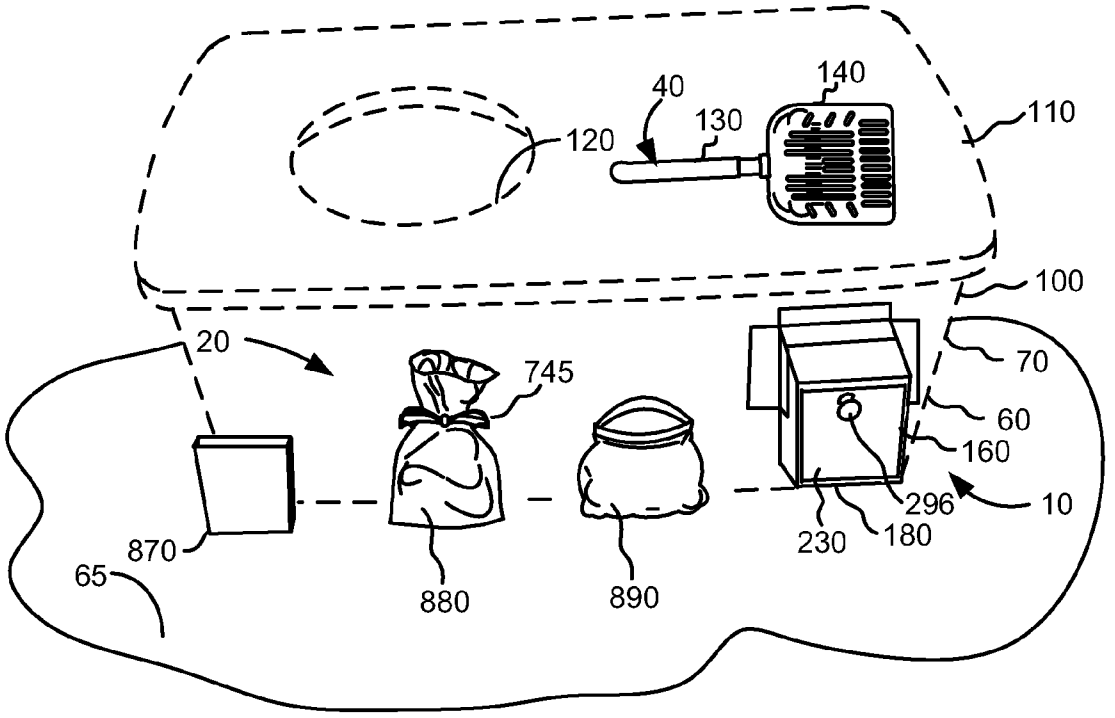
(52) **U.S. Cl.**

CPC ***A47B 81/00*** (2013.01); ***B23P 11/00*** (2013.01)

USPC **312/330.1**; 29/428

(57) **ABSTRACT**

A bag holder is disclosed for holding cat litter bags for containing cat litter waste from a cat litter box, along with a method of manufacturing the bag holder. The bag holder includes a housing coupled to a support structure, such as a side panel of the litter box, or a wall near the cat litter box. An attachment arrangement connects the housing to the support structure. Alternatively, the housing may be integrally formed with the litter box. A drawer is slidably disposed within the housing, and defines a storage space for stowing the litter bags. The drawer can be rigid and outwardly movable from the housing. Alternatively, the drawer can have walls that are fluted for expanding the drawer in an accordion-like fashion outwardly from the housing. Location and configuration of the bag holder encourages the user to use the litter bags for sanitary disposal of cat litter waste.



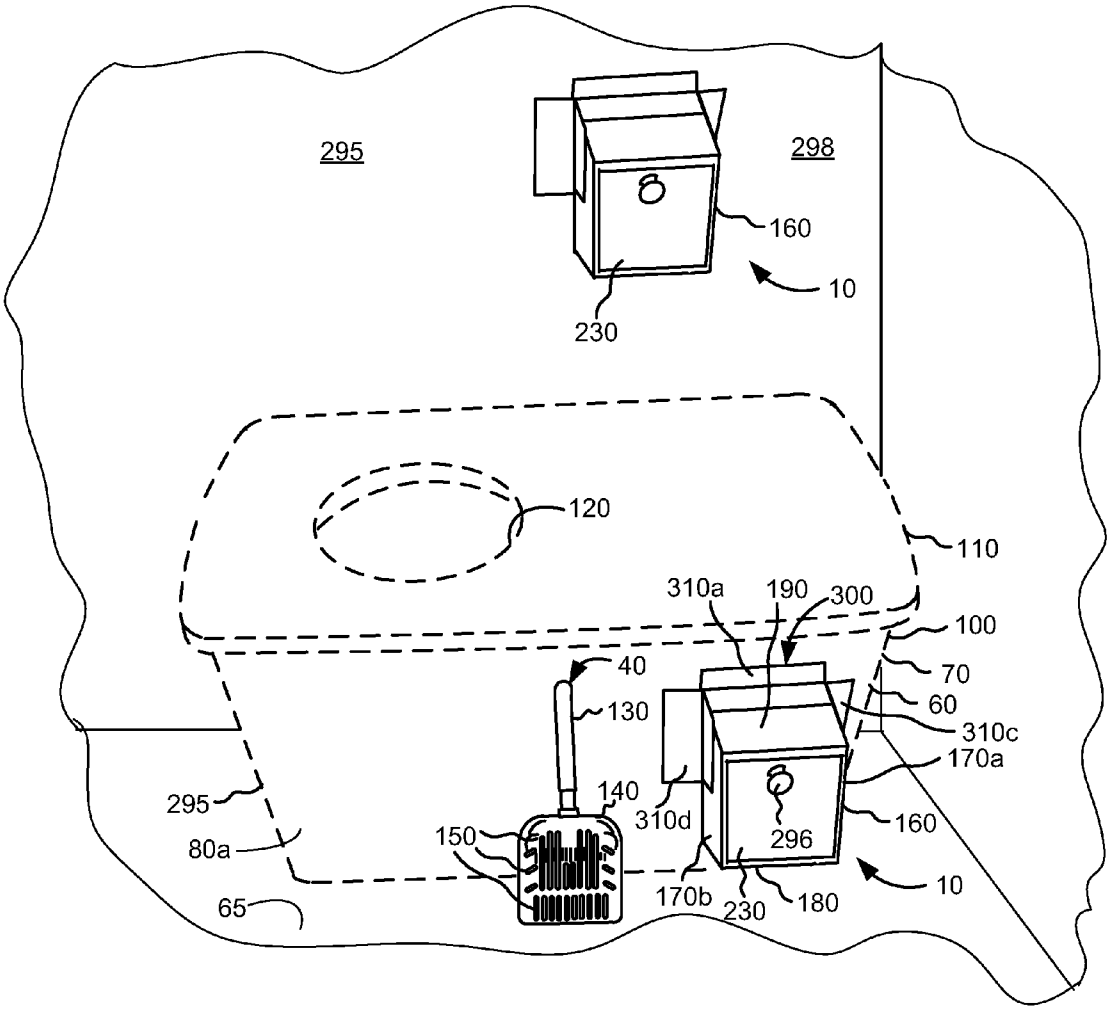

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FIG. 1

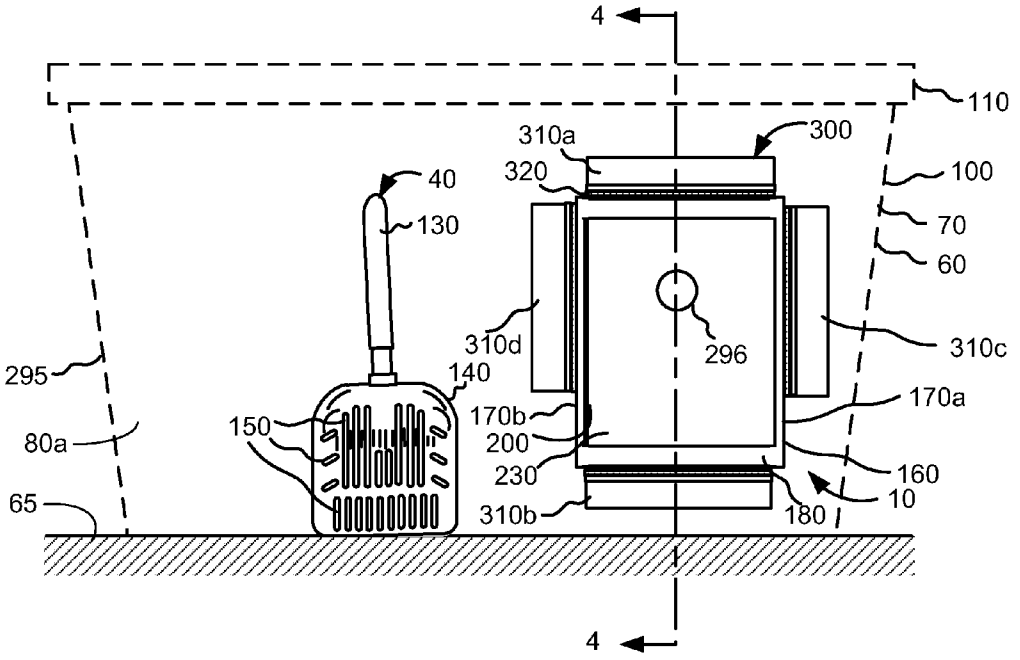
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FIG. 2

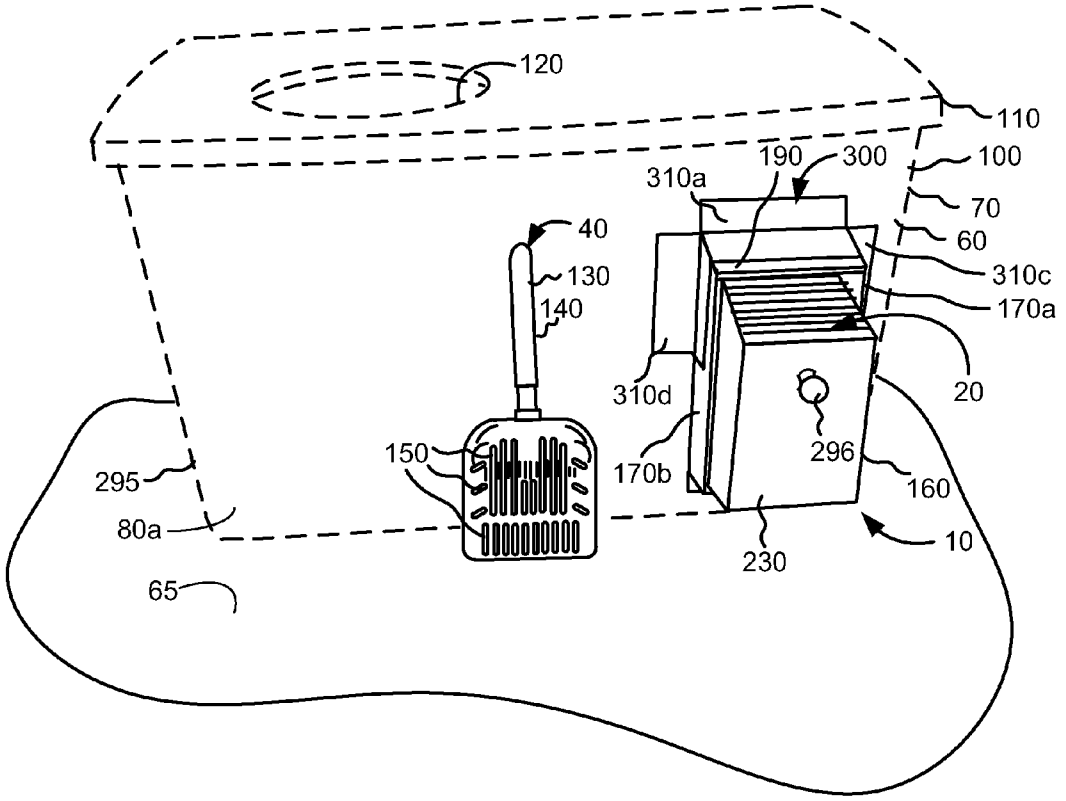
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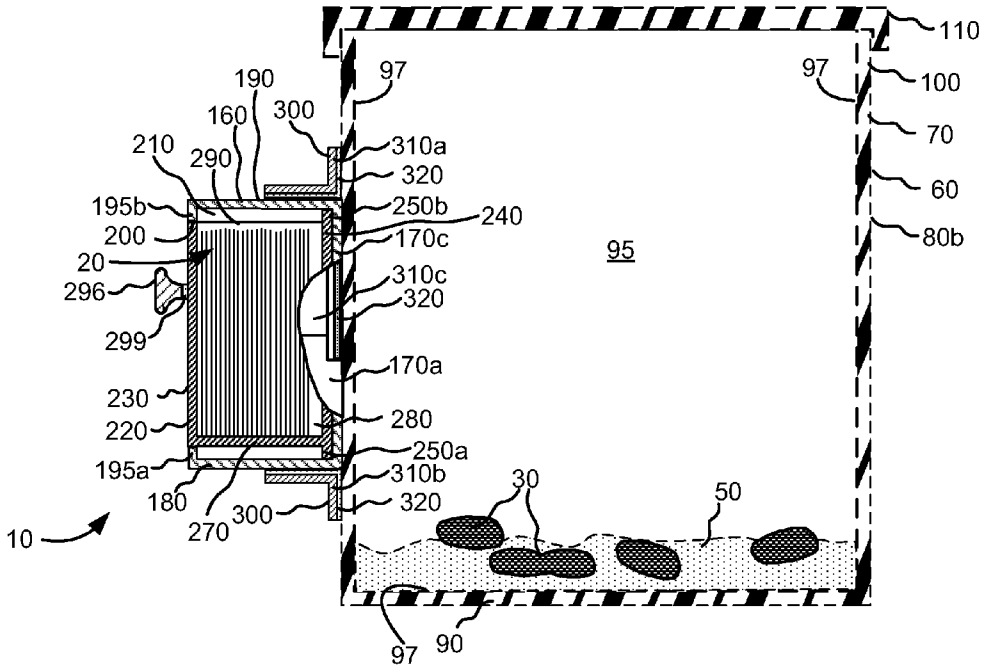
FIG. 3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95
296
310c
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97
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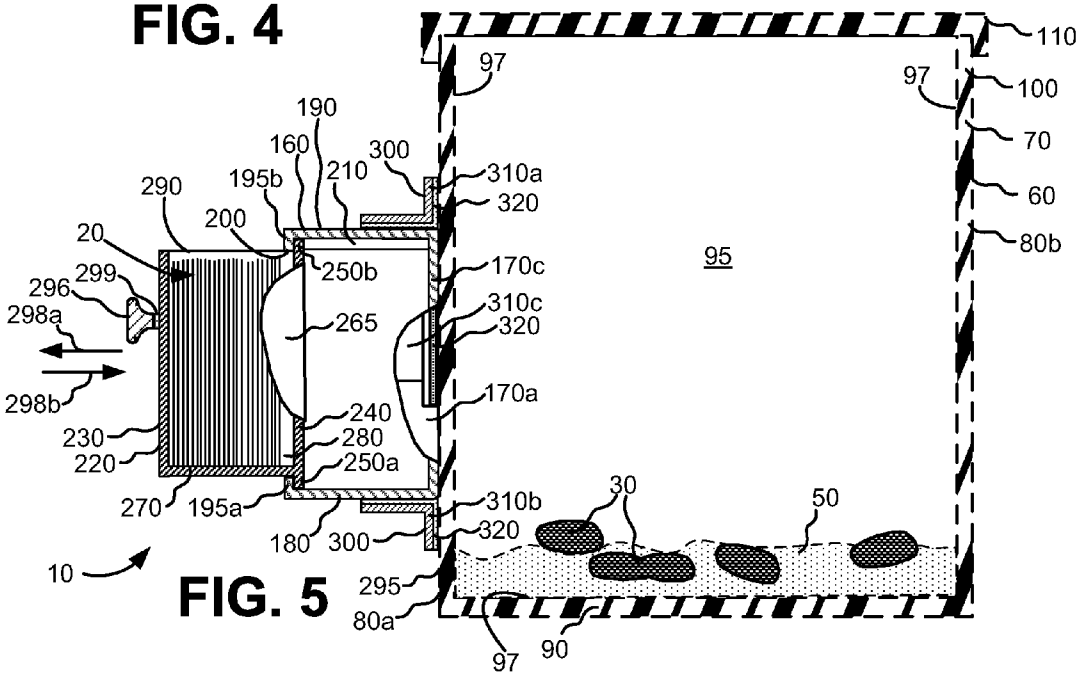
FIG. 4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298a
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170a
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FIG. 5

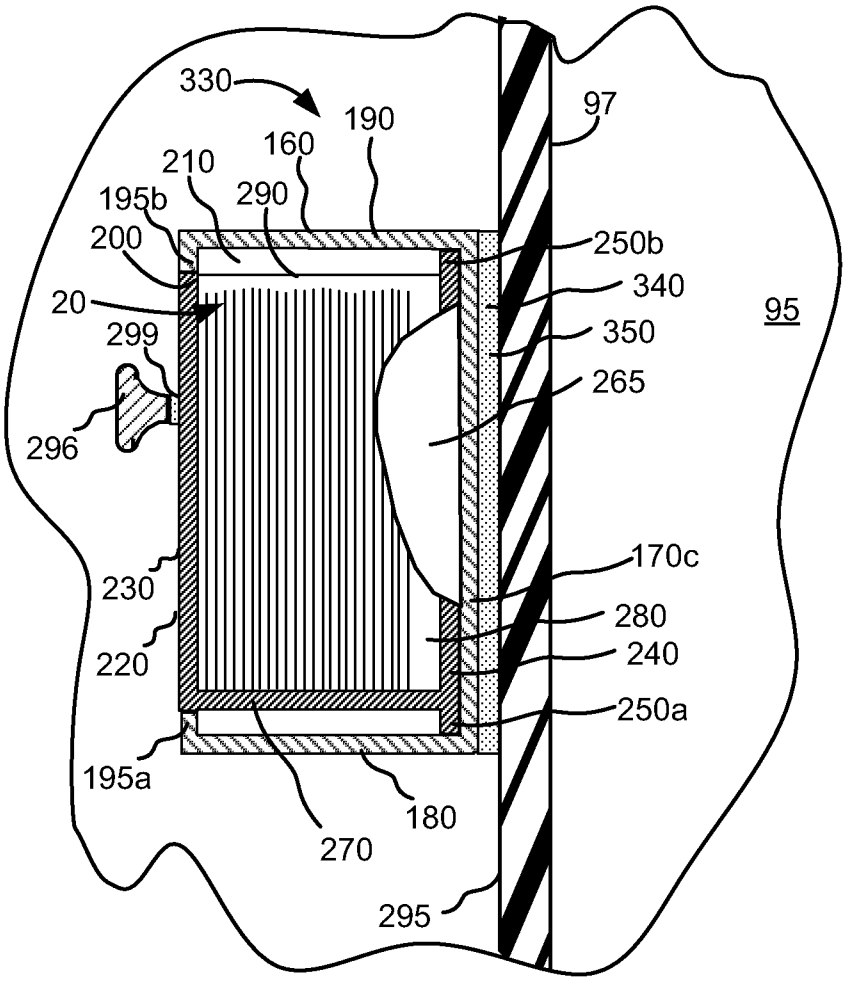
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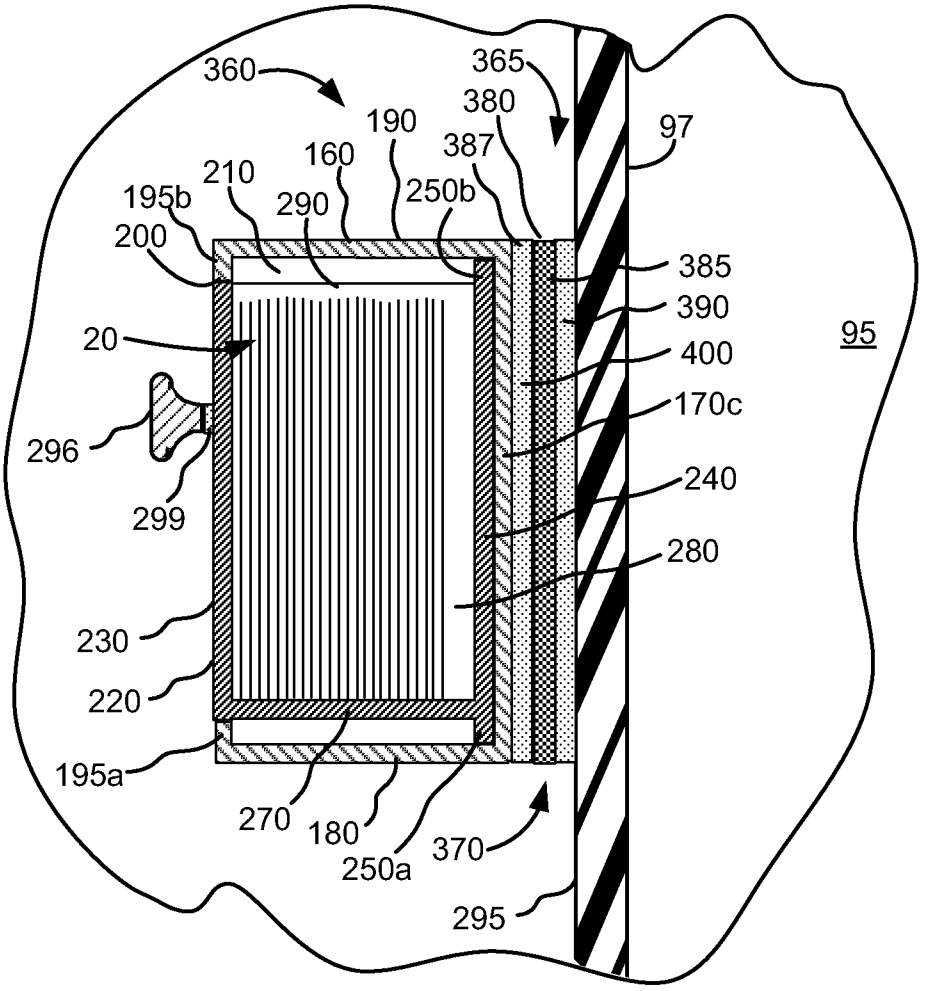
FIG. 6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250a
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FIG. 7

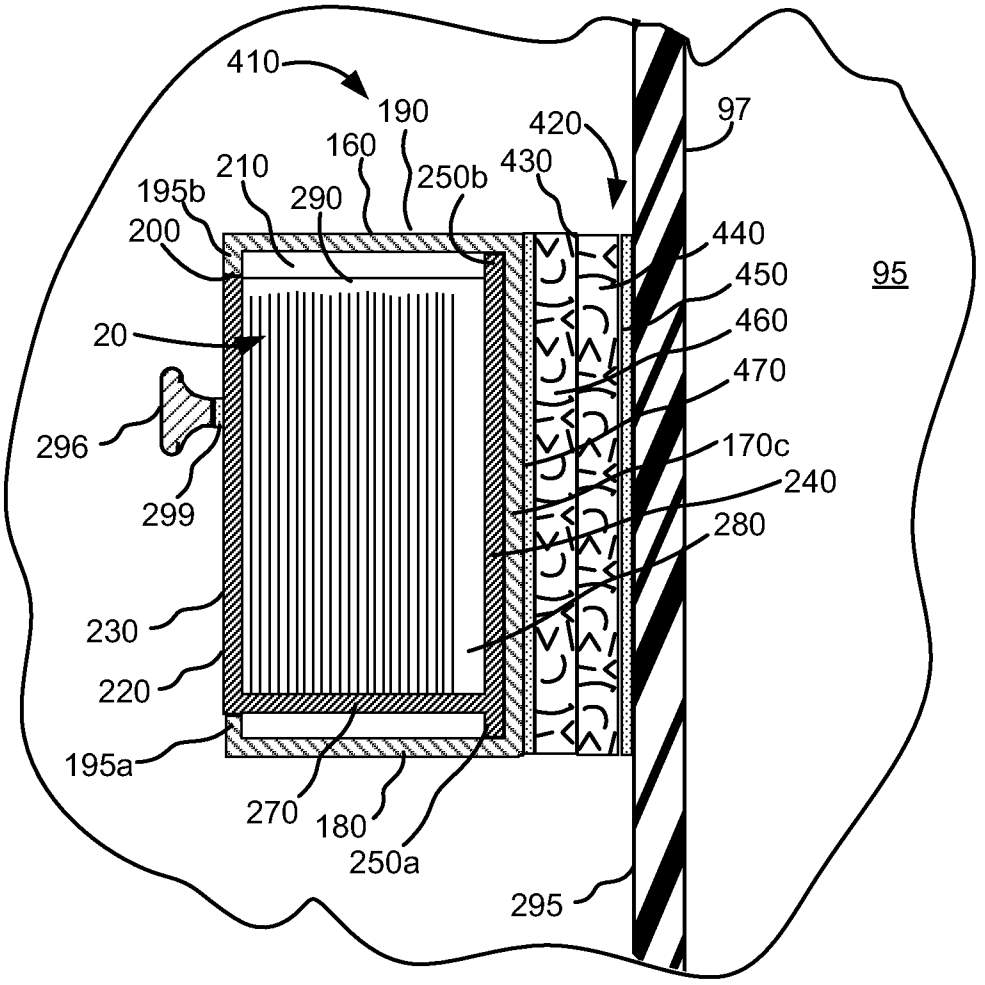
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FIG. 8

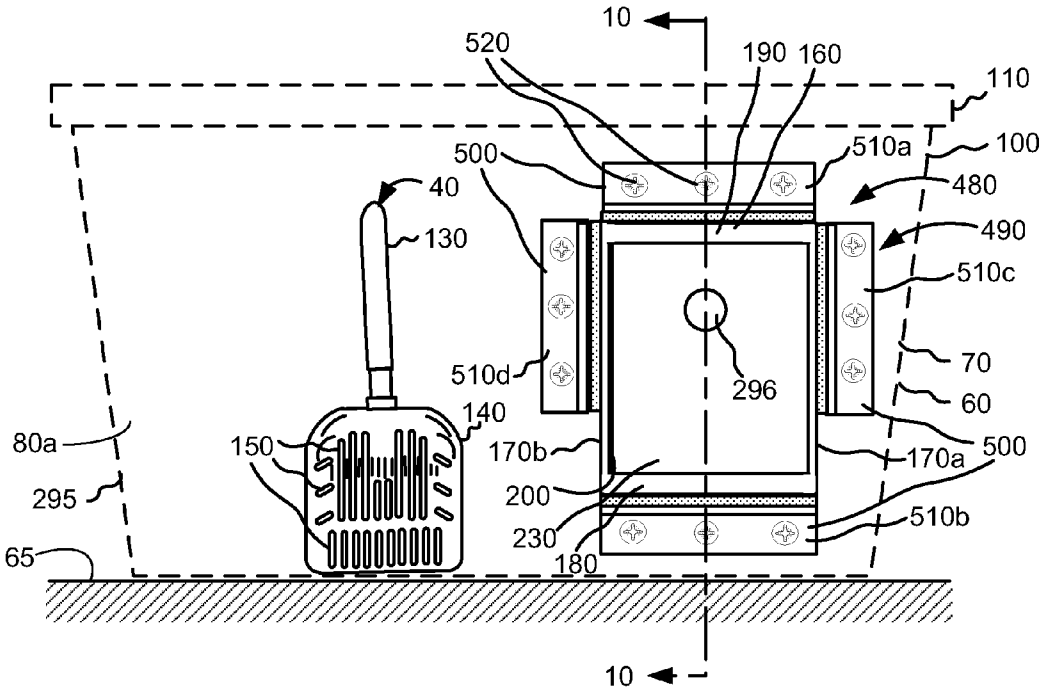
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FIG. 9

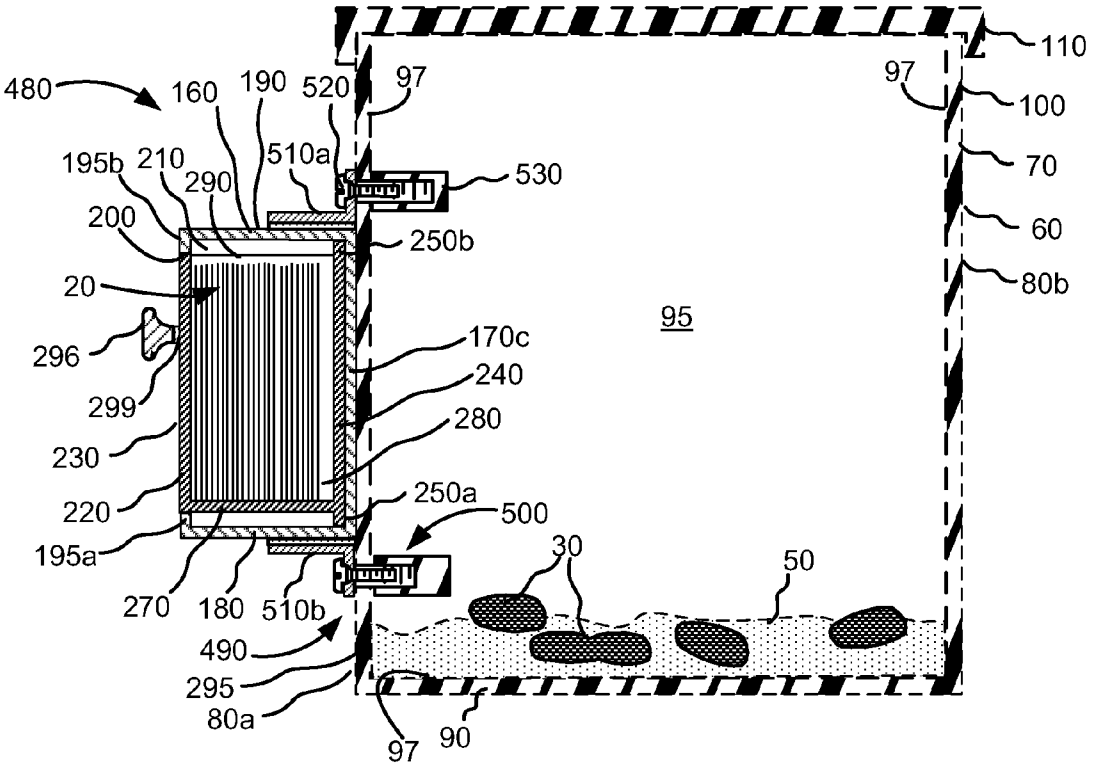
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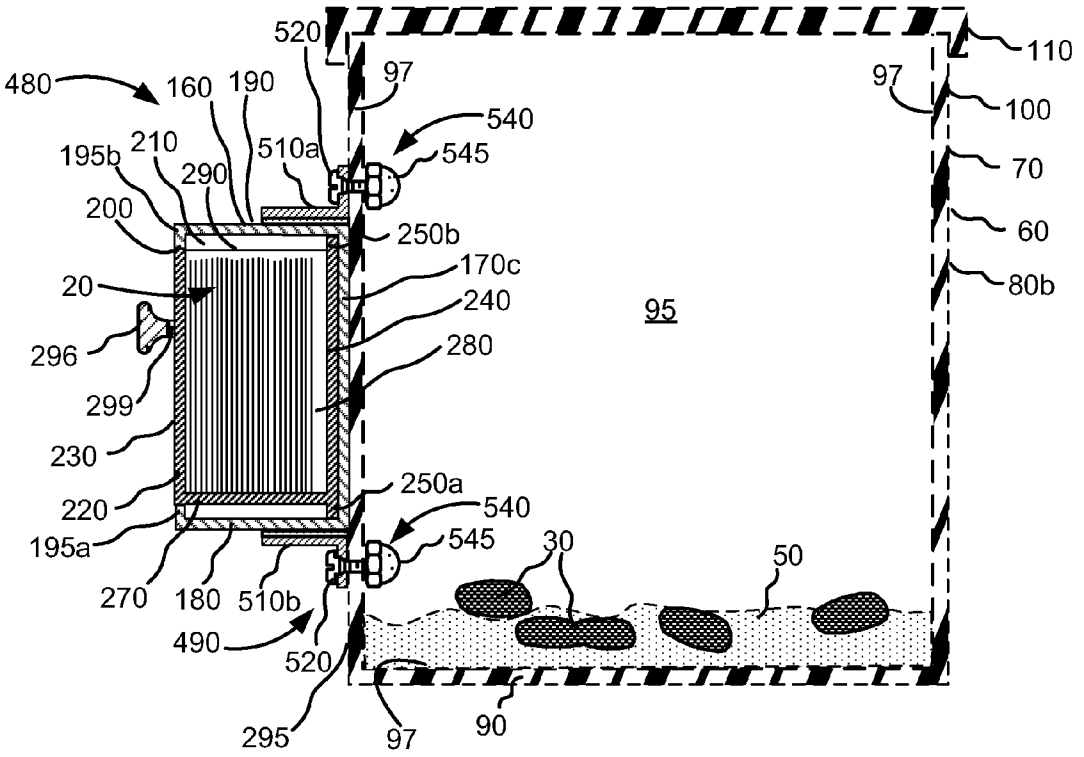
FIG. 10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80b

FIG. 10A

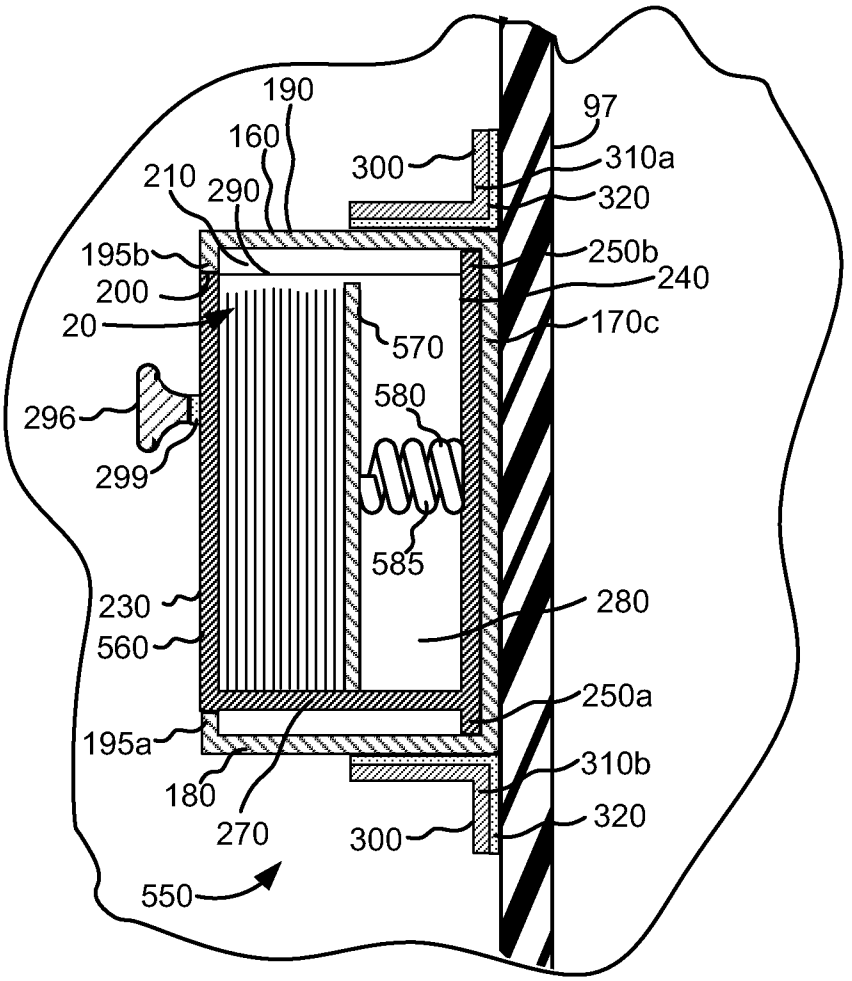
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FIG. 11

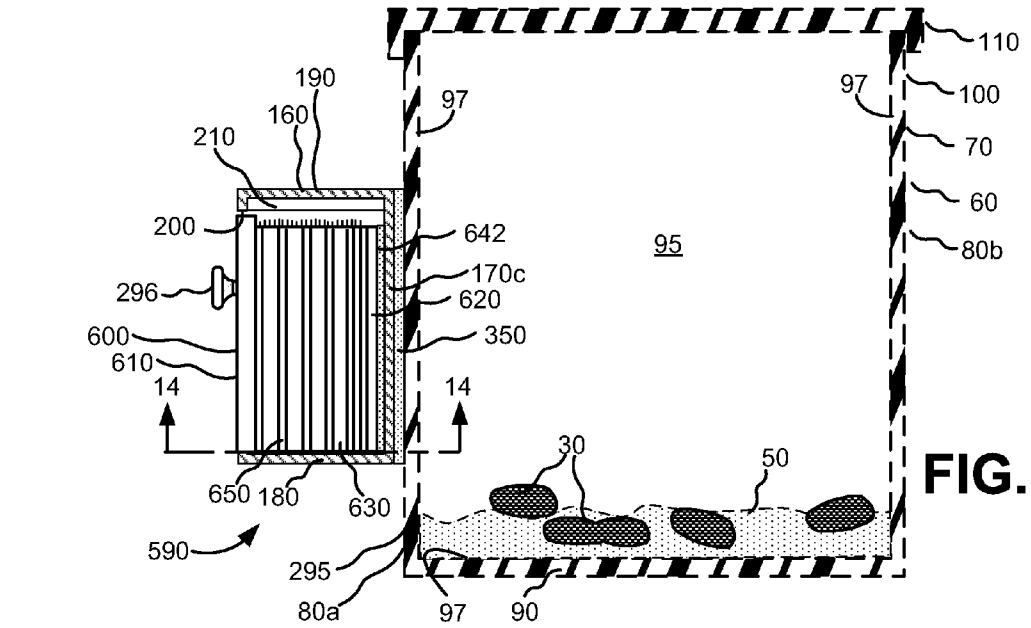
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FIG. 12

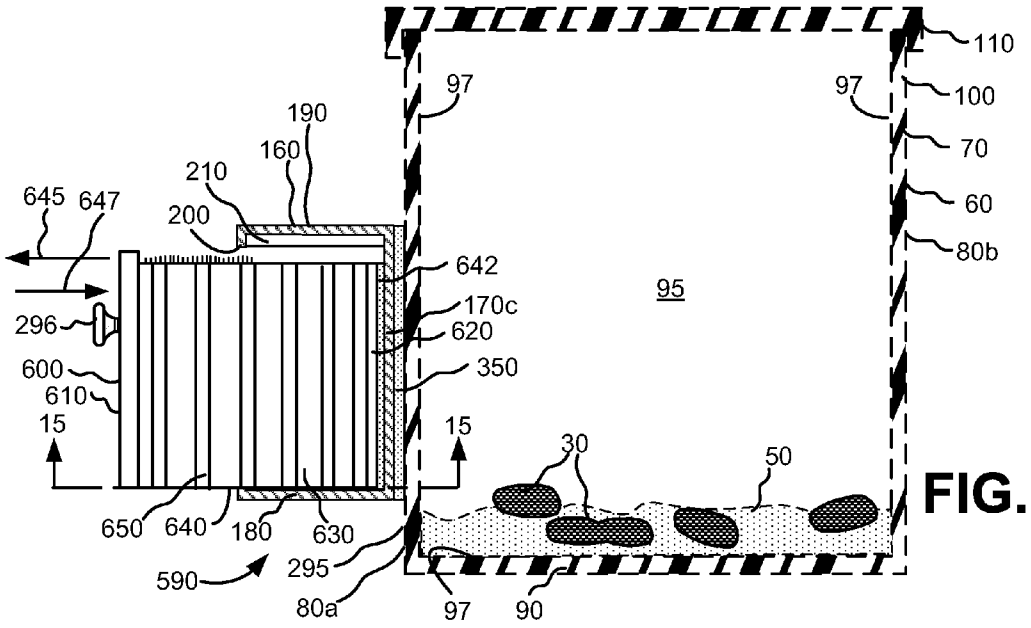
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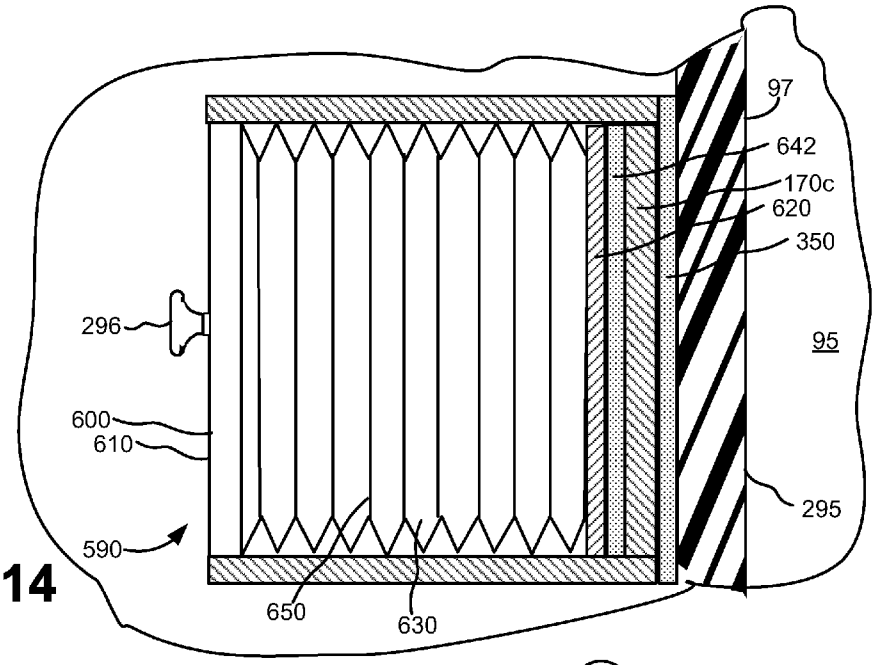
FIG. 13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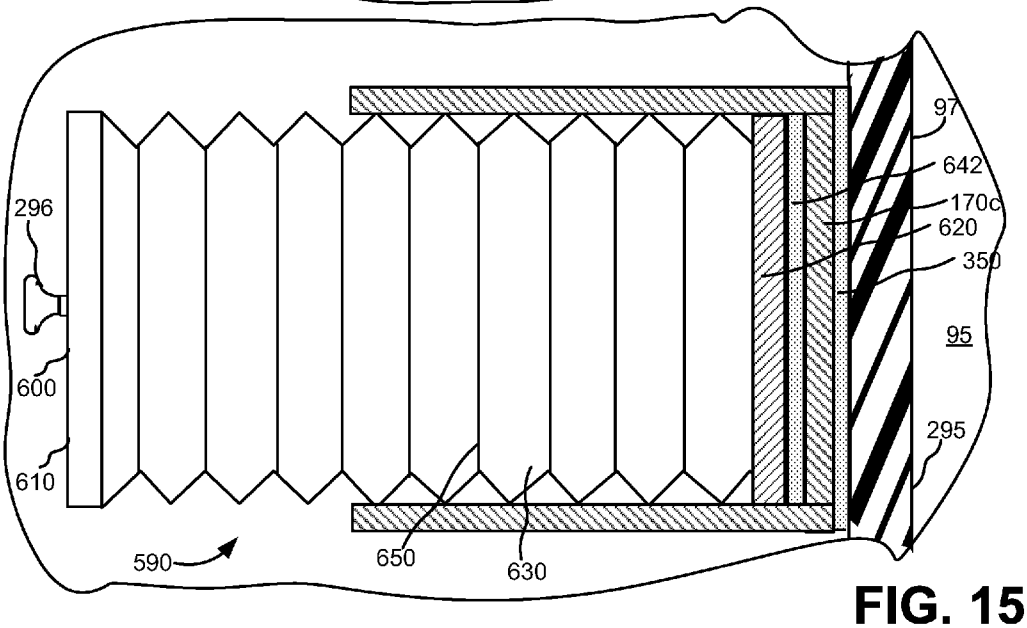
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FIG. 15

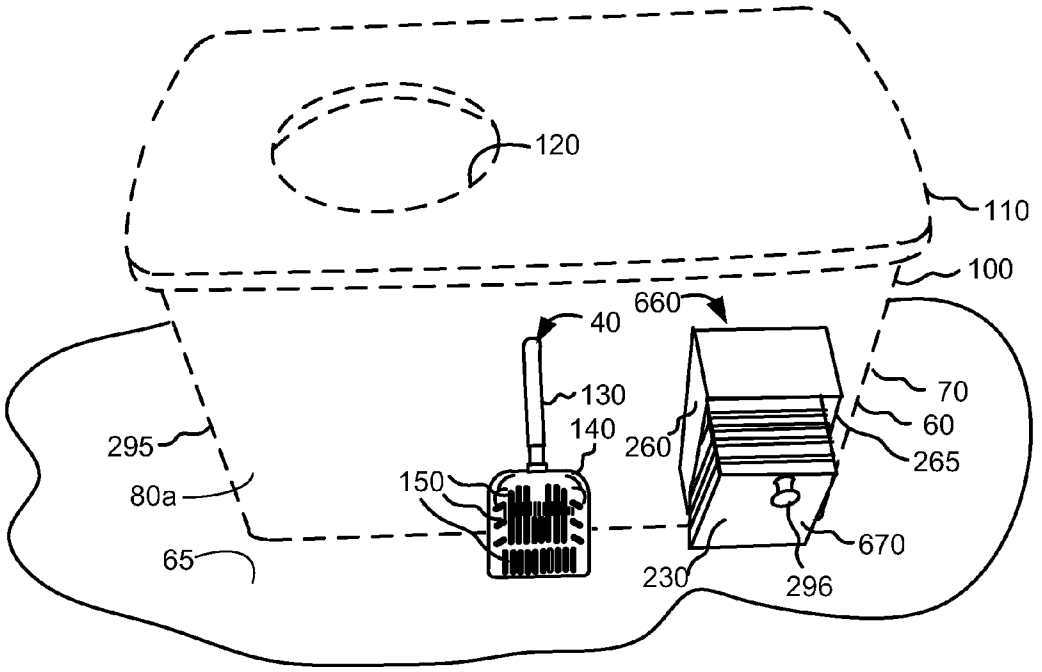
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FIG. 16

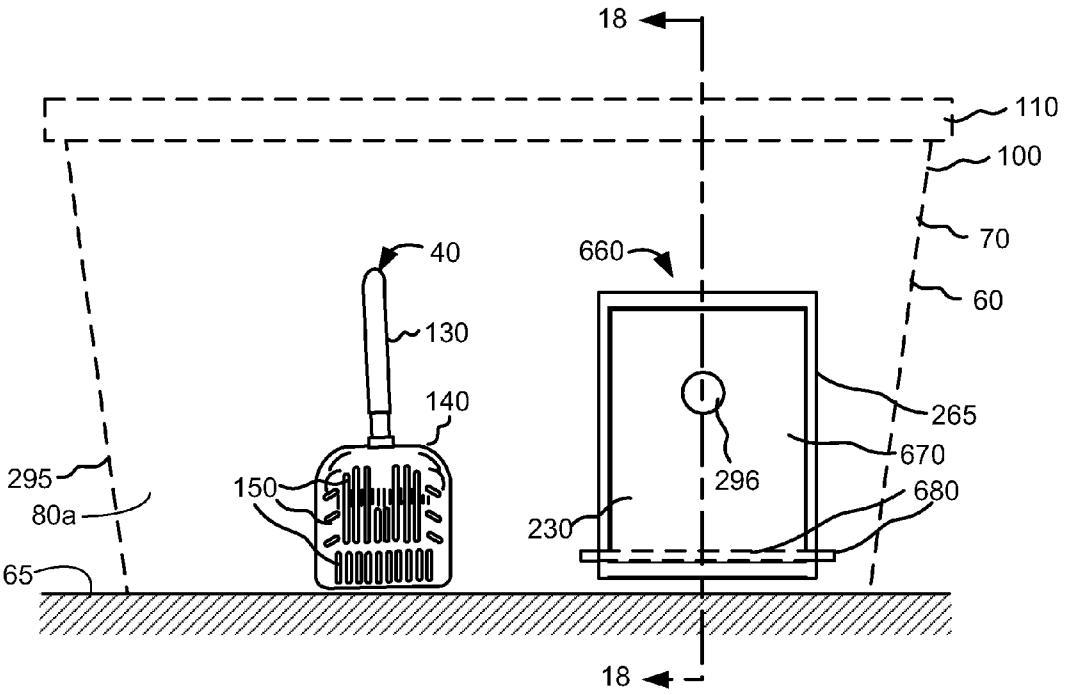
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FIG. 17

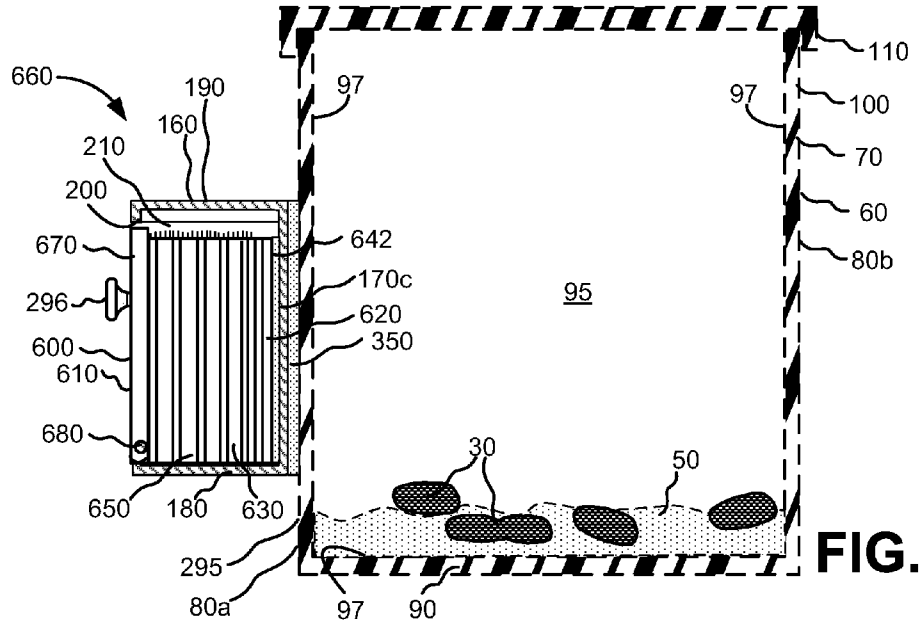
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FIG. 18

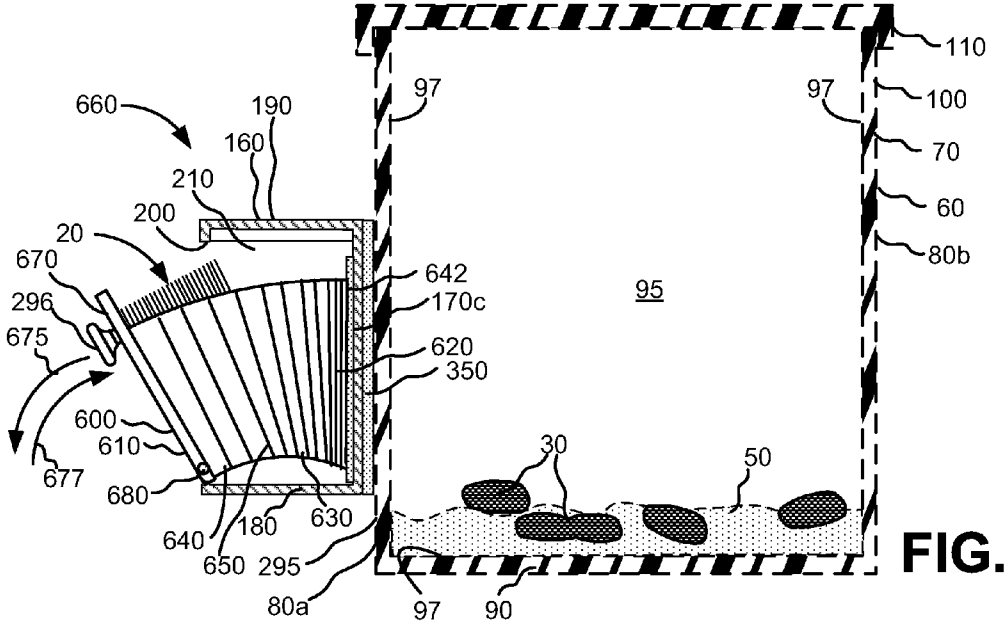
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FIG. 19

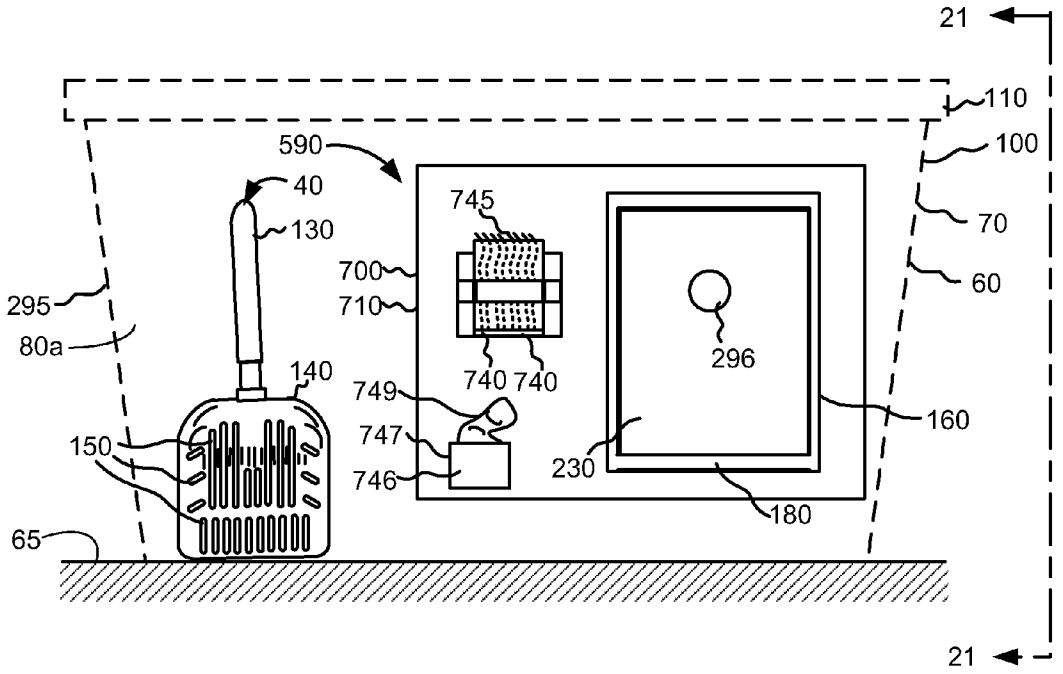
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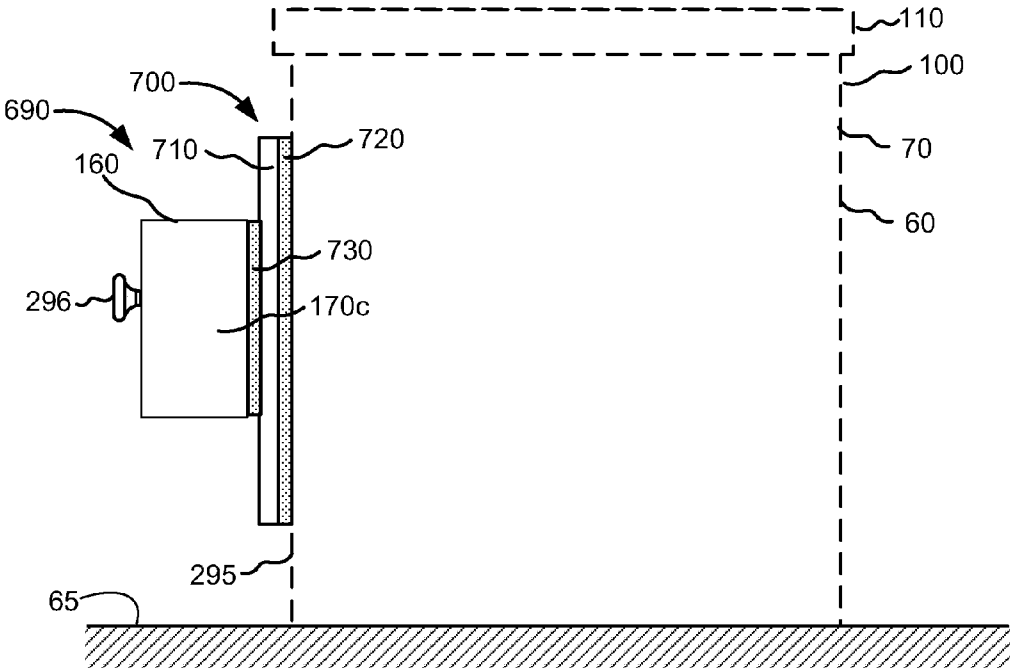
FIG. 20



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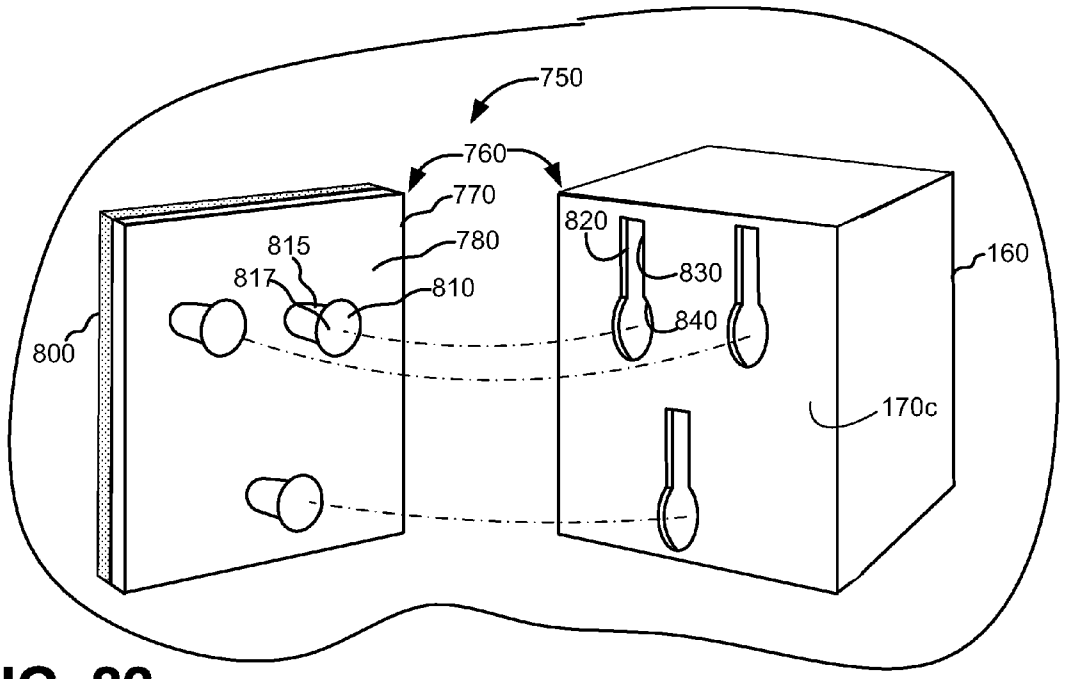
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FIG. 22

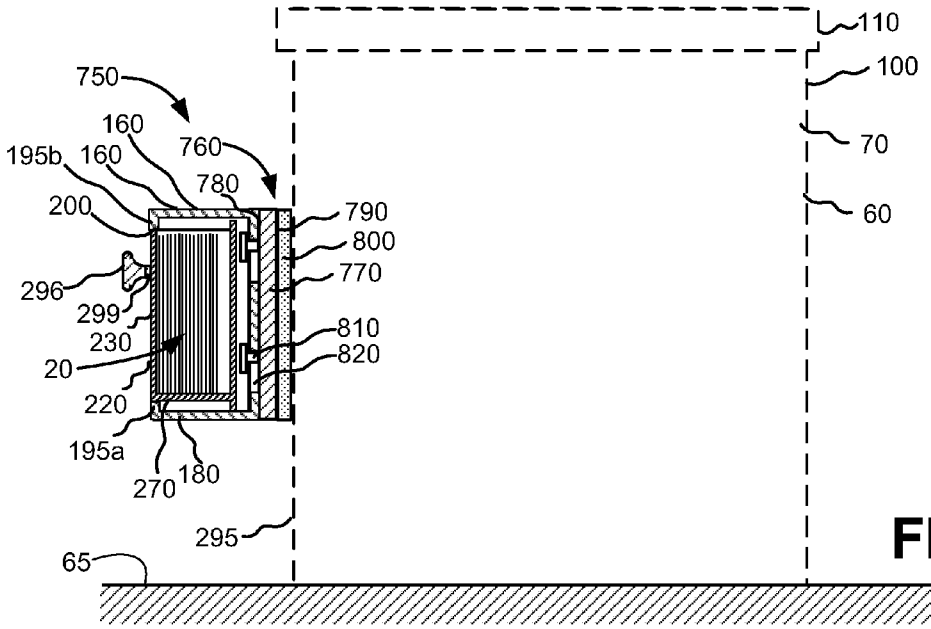
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FIG. 23

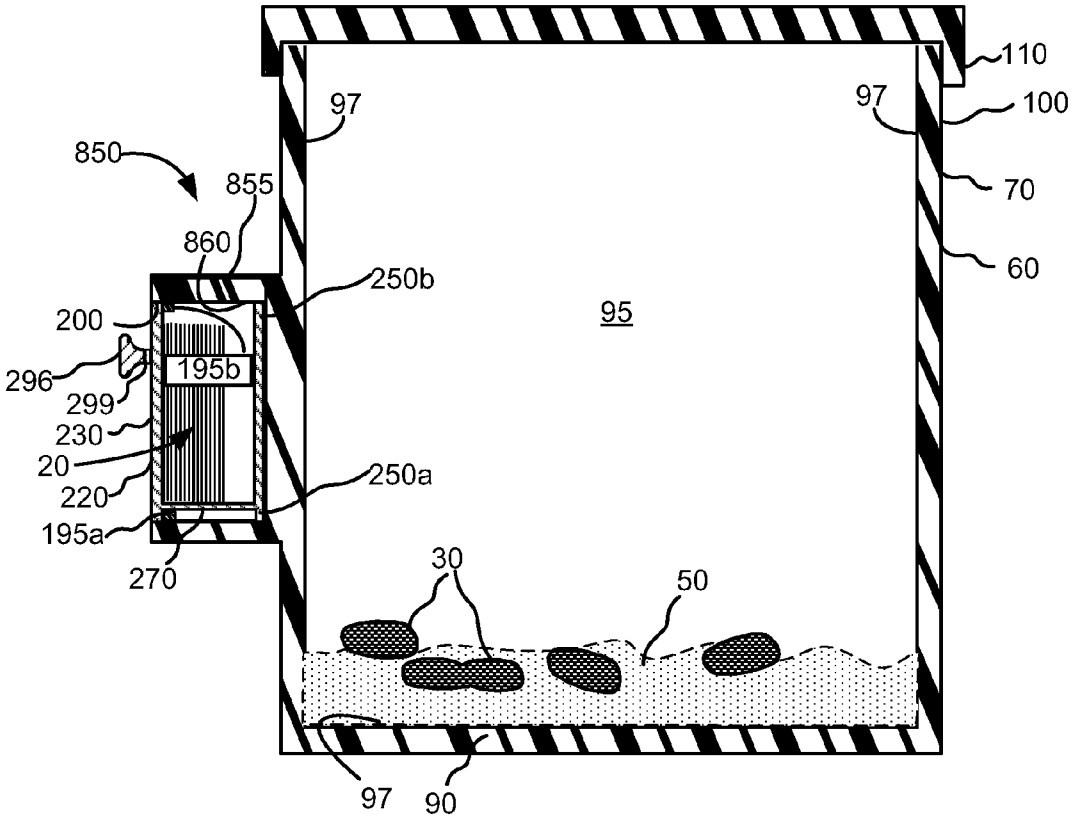
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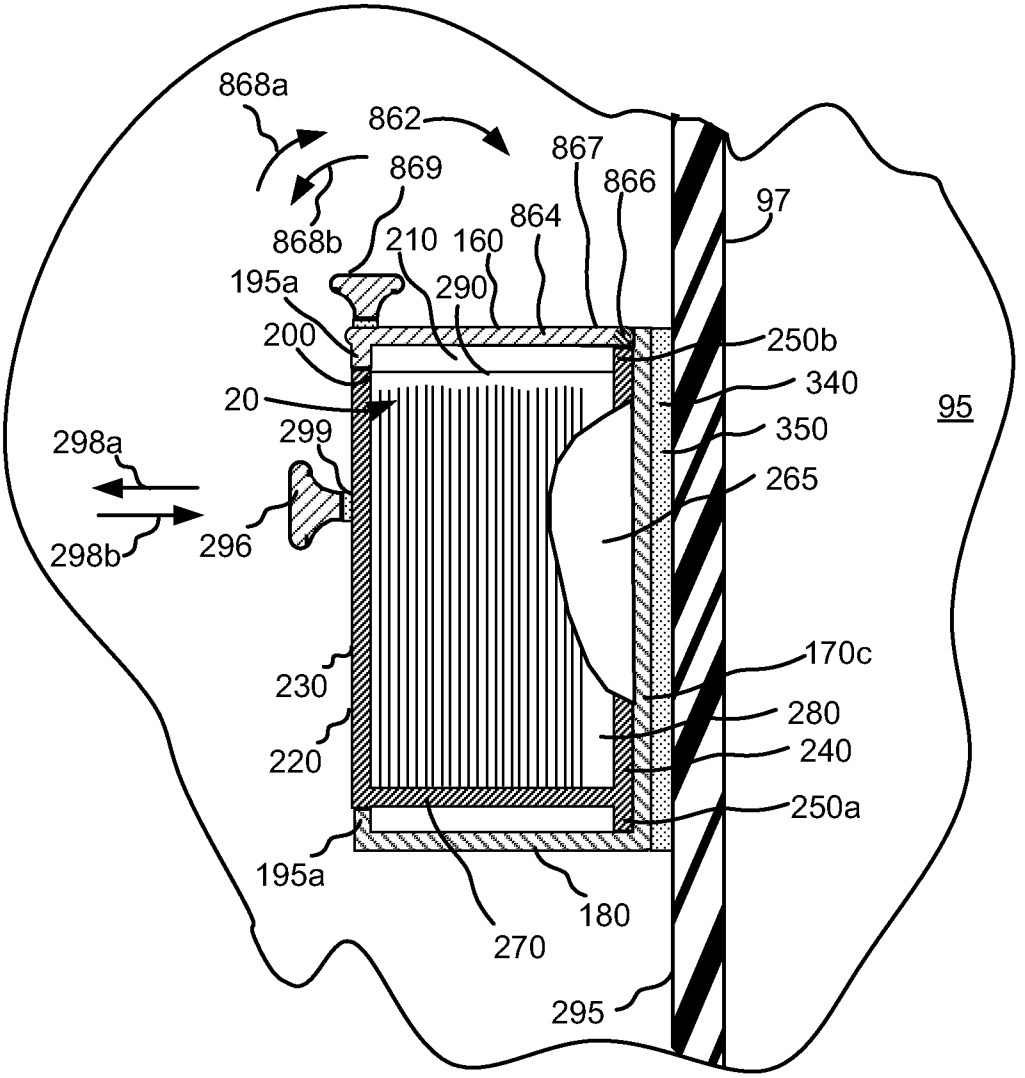
FIG. 24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864
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FIG. 24A

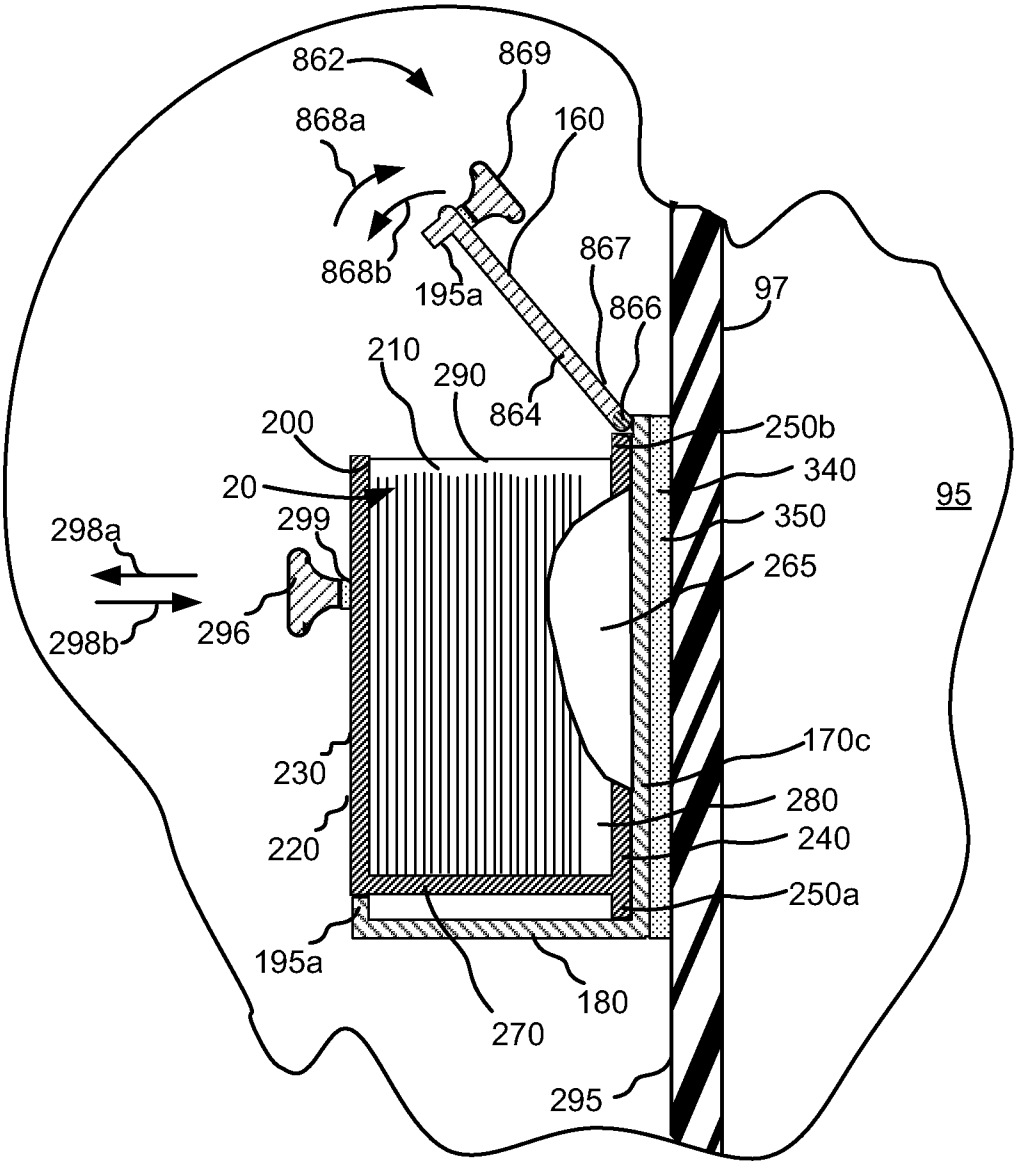
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FIG. 24B

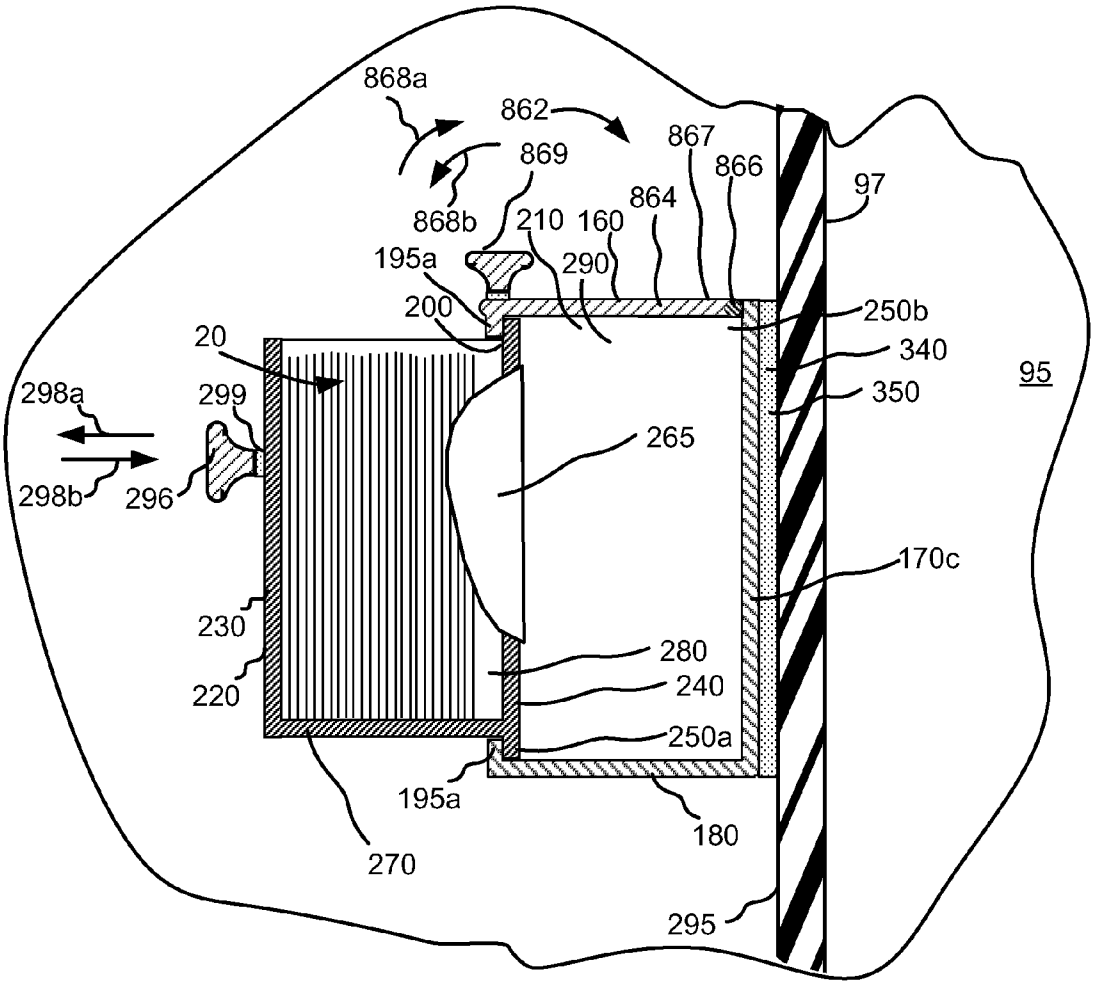
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FIG. 24C

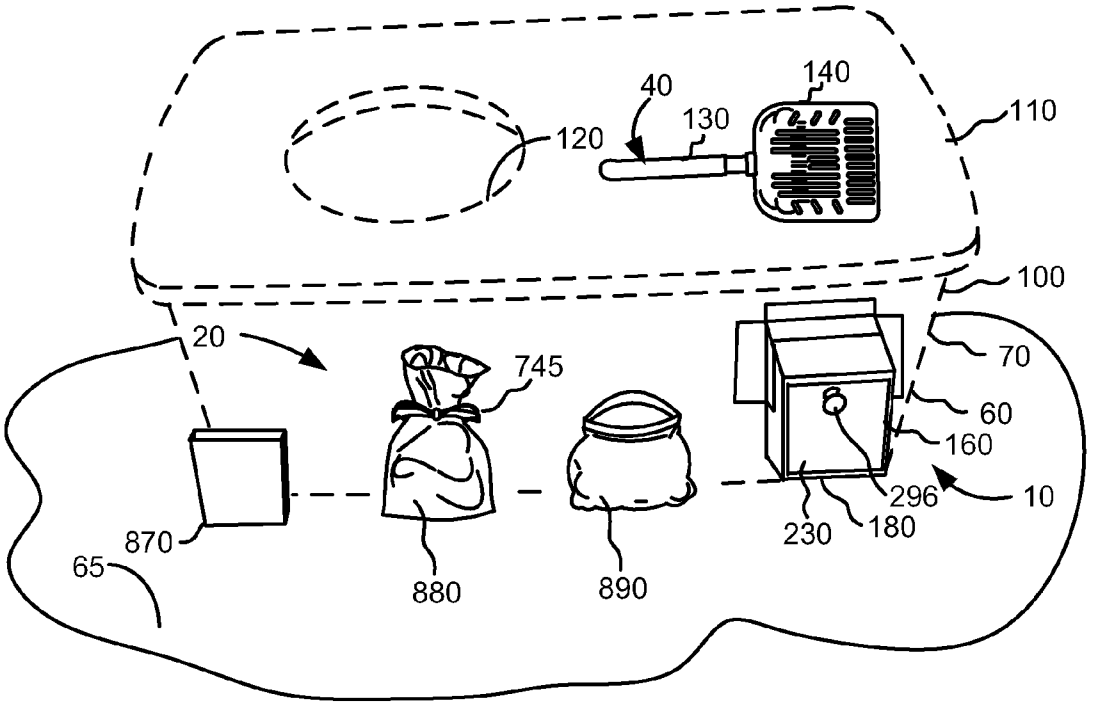
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FIG. 25

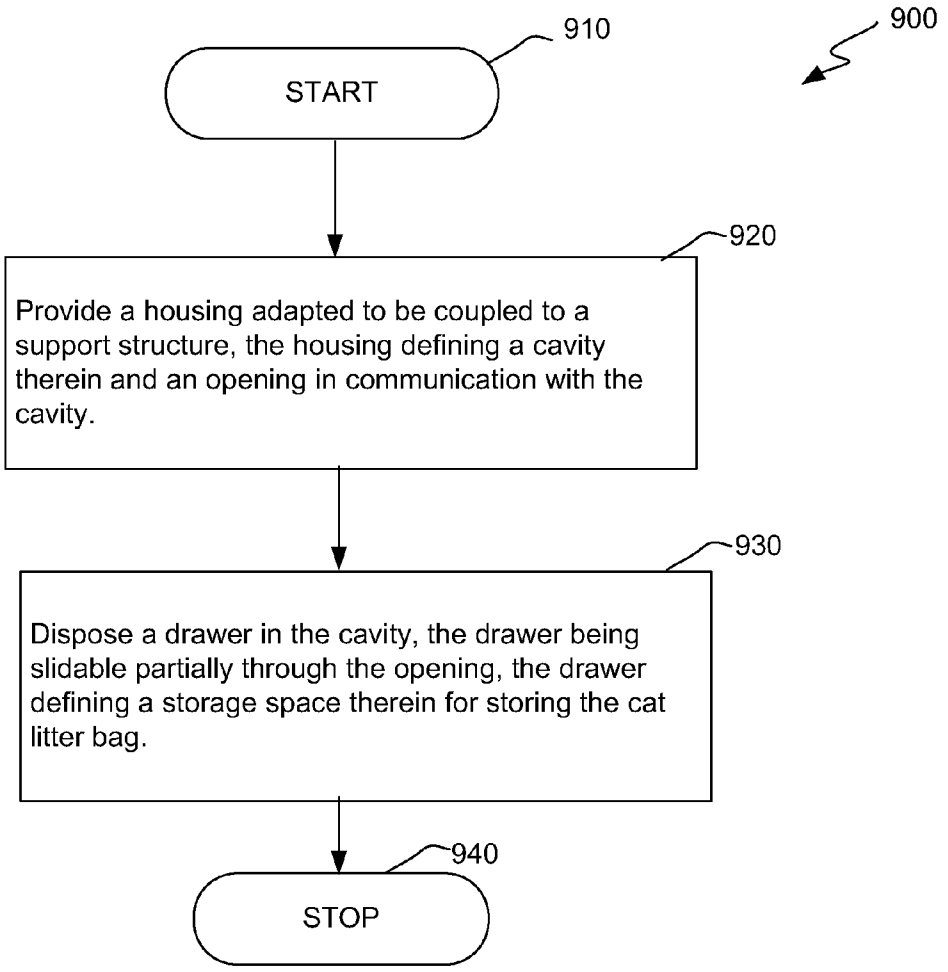
900
910
START
920
Provide a housing adapted to be coupled to a support structure, the housing defining a cavity therein and an opening in communication with the cavity.
930
Dispose a drawer in the cavity, the drawer being slidable partially through the opening, the drawer defining a storage space therein for storing the cat litter bag.
940
STOP

FIG. 26

BAG HOLDER FOR HOLDING CAT LITTER BAGS AND METHOD OF MANUFACTURING THE BAG HOLDER

FIELD OF THE INVENTION

[0001] This invention generally relates to bag holders, and more specifically to bag holders for holding cat litter bags.

BACKGROUND OF THE INVENTION

[0002] Cat litter boxes are used by cats for deposit of cat biological waste that includes urine and fecal matter. Contained in the litter box is cat litter that absorbs the cat's waste. The waste, after being absorbed by the cat litter, forms compact clumps over time, and the clumps are typically sifted from the litter box by a user, such as the cat's owner, using a litter scoop with walls that act like a sieve or strainer. The walls allow unclumped litter material to pass through the sieve while simultaneously retaining the waste clumps on the litter scoop. The waste clumps are typically placed in a disposal bag that is subsequently discarded. Clumping cat litter is typically a chemical composition comprising diatomaceous earth that is 80% to 90% silica (SiO_2) with the remaining constituents being alumina (AlO_3) and iron oxide (Fe_2O_3). Granular size of the cat litter is usually about 0.5 millimeters (0.0197 inch) to about 2 millimeters (0.0787 inch) and density is typically about 0.9 grams per cubic centimeter (56.19 pounds per cubic foot) to about 0.95 grams per cubic centimeter (59.31 pounds per cubic foot). This chemical composition and density for the cat litter allows the cat litter to be absorbent and facilitates formation of the compact clumps for easier collection and disposal.

[0003] However, the cat's waste contained in the litter clumps scooped from the litter box may contain organisms harmful to human health, such as escherichia coli bacteria and texoplasma gondii protozoa. For example, in the case of cat fecal matter, the harmful organisms may include texoplasma gondii, which is a parasite acquired by the cat eating infected rodents, birds or other small animals. Texoplasma gondii can survive in soil for more that a year and can also contaminate drinking water. However, most municipal water treatment systems are not designed to filter texoplasma gondii. Therefore, drinking water may be at risk of being contaminated with texoplasma gondii, unless precautions are taken to prevent contamination, such as disposal of the cat's waste in a manner avoiding contact with drinking water.

[0004] More specifically, it is important that cat waste not enter the biosphere. For example, the previously mentioned texoplasma gondii poses a health risk to humans, especially those having compromised immune systems caused by disease, such as Acquired Immune Deficiency Syndrome (AIDS). As another example of potential health risk, texoplasma gondii contamination has been found in blood used for blood transfusions and organs donated for transplantation, as well as in other medical treatment environments. In addition, Toxoplasmosis, which is caused by the texoplasma gondii parasite, has been linked to birth defects, blindness and brain damage in children born to infected mothers. Therefore, as a precaution, some state environmental agencies require cat litter packages to bear a warning label instructing cat owners not to flush used cat litter or otherwise dispose of used cat litter in storm drains. For example, in the state of California, U.S.A., cat litter sold in the state must carry a warning label stating the dangers of toxoplasmosis to humans, and cat owners caught flushing used cat litter are subject to fines of up to $25,000. To protect the environment and to comply with state law, used cat litter is preferably placed in disposal bags and put in household trash that is subsequently collected and deposited in a landfill. Consequently, it is important that used cat litter be discarded in an environmentally safe, sanitary and lawful manner.

[0005] As previously mentioned, cat litter waste clumps scooped from the cat litter box are preferably placed in a disposal bag that is subsequently discarded in a landfill. However, keeping track of the location of the disposal bags and organizing the disposal bags for ready access when needed is inconvenient for the user. This inconvenience discourages the user from removing the waste clumps from the cat litter box on a regular and frequent basis. This inconvenience also discourages the user from using disposal bags rather than simply flushing the cat litter waste clumps. Delayed removal of the waste clumps from the cat litter box allows the waste clumps to accumulate in the cat litter box. However, allowing the waste clumps to accumulate in the cat litter box poses a health risk to the user. This is so because the user may inadvertently inhale fine particles of contaminated litter dust emanating from the contaminated litter in the cat litter box or otherwise inadvertently come into contact with the contaminated litter in the cat litter box. Moreover, as previously mentioned, simply flushing the cat litter waste clumps to avoid the inconvenience of locating and using cat litter bags when needed increases the risk of contaminating municipal water systems and violates some state laws.

[0006] Attempts have been made to address the considerations mentioned hereinabove with respect to storage and use of cat litter bags for disposal of cat litter waste. For example, U.S. Pat. No. 5,181,480 titled "Litter-Box And Litter Dispensing Hopper" issued Jan. 26, 1993, in the name of Sheila Dabolt relates to a combination including a litter box and dispensing hopper for the litter.

[0007] According to the Dabolt patent, a litter box includes four side walls. The side walls have an opening to allow insertion and removal of a wire-frame bag holder adapted to receive a refuse bag and hold it in an open position. A floor of the litter box includes floor sections having upper surfaces that are automatically cleaned of soiled litter by a scraping action of scrapers which remove the soiled litter from the floor sections and direct it into the bag. The holder can then be removed to allow removal of the bag with soiled litter and to allow insertion of a new bag.

[0008] However, the Dabolt device does not appear designed to accommodate storage of multiple litter bags in the device. Rather, it appears one litter bag at a time is stored and accommodated in the device. Therefore, it appears that a user of the Dabolt device must locate a fresh litter bag externally of the device for insertion into the device each time a fresh litter bag is needed. Keeping track of litter bags located somewhere externally of the device is an inconvenience for the user. For this reason, the user may be discouraged from emptying soiled litter from the litter box on a regular and frequent basis. As previously mentioned, unnecessary delay in emptying the cat litter box of soiled litter poses a health risk to the user and others. In addition, due to this inconvenience, the user may be motivated to simply flush the soiled cat litter and thereby risk contamination of municipal water supplies and violation of state law.

[0009] Another attempt to address the considerations mentioned hereinabove with respect to storage and use of cat litter

bags for disposal of cat litter waste is disclosed in U.S. Pat. No. 5,855,186 titled "Sanitation System For Cat Litter Boxes" issued Jan. 5, 1999, in the name of Knut H. Larsen. This patent relates to a sanitization system for cat litter boxes which provides for the removal of cat fecal matter, continuous deodorization, and ready-waste disposal.

[0010] More specifically, the Larsen disclosure is directed to a sanitation system for cat litter boxes where the system disinfects a litter scoop, provides deodorization of the litter box environment and supplies disposal bags for ready containment of the cat fecal matter which is thereafter deposited in a waste removal or garbage removal system of a household. In this regard, the system includes a bag holder which has a frame. The frame is removably mounted to the cat litter box for holding plastic bags into which the cat fecal matter is deposited. To provide for sanitization of the litter box scoop, a removably mounted litter box disinfection fluid reservoir is utilized into which the litter box scoop is placed. This patent states that, in one embodiment, a first storage region is carried by a sidewall of the fluid reservoir and a second storage region is also carried by the sidewall of the fluid reservoir. The first storage region is so dimensioned and proportioned to permit the storage of plastic bags and the second storage region is so dimensioned and proportioned to permit the storage of ties for the plastic bags. However, this patent does not present drawings or express description disclosing the specific structure of the first storage region and second storage region. In this regard, the description that is provided appears to indicate that the first storage region, the second storage region and the reservoir are separate components, the first and second storage regions being carried by the side walls of the fluid reservoir. In other words, the Larsen device appears to require at least three separate components, the three separate components being the first storage region, the second storage region, and the fluid reservoir. This apparent level of structural complexity may discourage some users from utilizing the fluid reservoir, the storage bags located in the first storage region and the ties located in the second storage region. This may be so because handling three separate components, rather than only one or two components, may be too inconvenient for some users.

SUMMARY OF THE INVENTION

[0011] One general aspect of the invention is a bag holder for holding a plurality of cat litter bags adapted to contain cat litter waste from a cat litter box. The bag holder includes: a housing adapted to be coupled to a support structure, the housing defining a cavity therein, and defining an opening in communication with the cavity; and a drawer adapted to be disposed in the cavity, the drawer being slidable partially through the opening, the drawer defining a storage space therein for storing the plurality of cat litter bags.

[0012] In some embodiments, the bag holder includes an attachment arrangement adapted to couple the housing to the support structure. In further embodiments, the attachment arrangement includes a brace and/or a screw fastener. In other further embodiments, the attachment arrangement includes at least one of: an adhesive layer and adhesive tape. In other further embodiments, the attachment arrangement includes hook-and-loop fastener material. In other further embodiments, the attachment arrangement includes: a mounting bracket; and at least one stud attached to the mounting bracket, and wherein housing defines at least one slot therein sized to slidably engage the at least one stud for slidably coupling the housing to the mounting bracket. In other further embodiments, the attachment arrangement includes: a mounting plate; and a bag closure dispenser coupled to the mounting plate for dispensing a bag closure therefrom.

[0013] In some embodiments, the support structure is a side panel of the cat litter box, and wherein the housing is integrally formed with the side panel so as to define a cavity having an opening.

[0014] In some embodiments, the drawer includes: a bag support disposed in the storage space and adapted to support cat litter bags; and a biasing member coupled to the bag support for biasing the bag support.

[0015] In some embodiments, drawer includes opposing side walls, each side wall defining a plurality of expandable flutes therein for expandably moving the drawer through the opening.

[0016] In some embodiments, the drawer includes: a pivot pin connected to the housing; and opposing side walls rotatably mounted on the pivot pin, the side walls defining a plurality of expandable and bendable flutes therein for expanding and bending the drawer about the pivot pin in a downward arc through the opening.

[0017] In some embodiments, at least one of the drawer and the housing includes a pathogen resistant, anti-microbial, antifungal composition for decreasing health risk to humans.

[0018] In some embodiments, the drawer includes a pivotable top wall coupled to the housing.

[0019] Another general aspect of the invention is a bag holder for holding cat litter bags adapted to contain cat litter waste from a cat litter box, such that the bag holder includes: a housing that is integrally formed with a side panel of the cat litter box so as to define a cavity having an opening; and a drawer disposed within the cavity, and slidable partially through the opening, the drawer defining a storage space therein for storing the cat litter bags.

[0020] In some embodiments, the drawer includes: an upright bag support slidably disposed within the storage space, and adapted to support and compress the cat litter bags; and a spring attached to the bag support for biasing the bag support, whereby the cat litter bags are supported and compressed in the storage space as the bag support is biased.

[0021] In some embodiments, the drawer includes opposing side walls, each side wall defining a plurality of expandable flutes therein for expandably moving the drawer through the opening.

[0022] In some embodiments, the drawer includes: a pivot pin connected to the housing; and opposing side walls rotatably mounted on the pivot pin, the side walls defining a plurality of expandable and bendable flutes therein for expanding and bending the drawer about the pivot pin in a downward arc through the opening.

[0023] In some embodiments, at least one of the drawer and the housing includes a pathogen resistant, anti-microbial, antifungal composition for decreasing health risk to humans.

[0024] In some embodiments, the drawer comprises a top wall adapted to pivot about a pivot pin coupled to the housing.

[0025] Another general aspect of the invention is a method of manufacturing a bag holder for holding cat litter bags adapted to contain cat litter waste retrieved from a cat litter box. The method includes providing a housing adapted to be coupled to a support structure, the housing defining a cavity therein and an opening in communication with the cavity; and disposing a drawer in the cavity, the drawer being slidable

partially through the opening, the drawer defining a storage space therein for storing the cat litter bags.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] The invention will be more fully understood by reference to the detailed description in conjunction with the following figures, wherein:

[0027] FIG. **1** is a fragmentary view in perspective of a first embodiment litter bag holder coupled to a cat litter box or, alternatively, to a wall near the cat litter box, the first embodiment litter bag holder having a box-shaped housing and a first configuration drawer slidably disposed in the housing;

[0028] FIG. **2** is a view in elevation of the first embodiment litter bag holder coupled to the cat litter box;

[0029] FIG. **3** is a view in perspective of the first embodiment litter bag holder having the first configuration drawer slidably extended from the housing, this view also showing the first configuration drawer holding a plurality of litter bags;

[0030] FIG. **4** is a view taken along section line **4-4** of FIG. **2**, this view showing the housing of the first embodiment litter bag holder coupled to the cat litter box by means of a first embodiment attachment arrangement including a brace having an adhesive backing, this view also showing the first configuration drawer slidably disposed within the housing;

[0031] FIG. **5** is a view in vertical section of the housing belonging to the first embodiment litter bag holder, the housing being coupled to the cat litter box by means of the brace having the adhesive backing, this view also showing the first configuration drawer slidably extended its fullest extent from the housing;

[0032] FIG. **6** is a fragmentary view in partial vertical section of the housing and first configuration drawer belonging to a second embodiment litter bag holder, the housing of the second embodiment litter bag holder being coupled to the cat litter box by means of a second embodiment attachment arrangement including an adhesive layer;

[0033] FIG. **7** is a fragmentary view in vertical section of the housing and first configuration drawer belonging to a third embodiment litter bag holder, the housing of the third embodiment litter bag holder being coupled to the cat litter box by means of a third embodiment attachment arrangement including a double-sided adhesive tape;

[0034] FIG. **8** is a fragmentary view in vertical section of the housing and first configuration drawer belonging to a fourth embodiment litter bag holder, the housing of the fourth embodiment litter bag holder being coupled to the cat litter box by means of a fourth embodiment attachment arrangement including a hook-and-loop fastener, a male member thereof adhesively coupled to the housing and a female member thereof adhesively coupled to the cat litter box;

[0035] FIG. **9** is a view in elevation of the housing and first configuration drawer belonging to a fifth embodiment litter bag holder, the housing of the fifth embodiment litter bag holder being coupled to the cat litter box by means of a fifth embodiment attachment arrangement including a first screw fastener configuration;

[0036] FIG. **10** is a view taken along section line **10-10** of FIG. **9**, this view also showing the first screw fastener configuration including an externally threaded screw threadably engaging an internally threaded anchor integrally formed with the cat litter box;

[0037] FIG. **10**A is a view in vertical section of the fifth embodiment litter bag holder, the housing being coupled to the cat litter box by means of the fifth embodiment attachment arrangement including an alternative second screw fastener configuration, the second screw fastener configuration including an the externally threaded screw threadably engaging an internally threaded hex-nut;

[0038] FIG. **11** is a fragmentary view in vertical section of a sixth embodiment litter bag holder, the sixth embodiment litter bag holder including a second configuration drawer having a bag support disposed therein and a biasing member coupled to the bag support;

[0039] FIG. **12** is a view in vertical section of a seventh embodiment litter bag holder, the seventh embodiment litter bag holder including a third configuration drawer having walls defining a plurality of laterally expandable and contractable flutes for expandably extending the drawer partially through an opening defined by the housing and for retracting the drawer through the opening;

[0040] FIG. **13** is a view in vertical section of the seventh embodiment litter bag holder, the seventh embodiment litter bag holder including the third configuration drawer having walls defining the plurality of laterally expandable and contractable flutes, the third configuration drawer having been expandably extended partially through the opening defined by the housing;

[0041] FIG. **14** is a fragmentary view taken along section line **14-14** of FIG. **12**;

[0042] FIG. **15** is a fragmentary view taken along section line **15-15** of FIG. **13**;

[0043] FIG. **16** is a view in perspective of an eighth embodiment litter bag holder, the eighth embodiment litter bag holder including a fourth configuration drawer having walls defining a plurality of laterally and downwardly expandable flutes for expandably extending the fourth configuration drawer in a downward arc from the opening defined by the housing;

[0044] FIG. **17** is a view in elevation of the eighth embodiment litter bag holder, the eighth embodiment litter bag holder including the fourth configuration drawer;

[0045] FIG. **18** is a view taken along section line **18-18** of FIG. **17**;

[0046] FIG. **19** is a view in vertical section of the eighth embodiment litter bag holder, the eighth embodiment litter bag holder including the fourth configuration drawer having walls defining the plurality of laterally and downwardly expandable flutes, the drawer being shown as having been expandably extended in a downwardly-directed arc through the opening defined by the housing;

[0047] FIG. **20** is a front view in elevation of a ninth embodiment litter bag holder, the ninth embodiment litter bag holder comprising a sixth embodiment attachment arrangement that includes a mounting plate adhesively coupled to the litter box and a first bag closure dispenser containing a plurality of bag ties therein, a second bag closure dispenser containing a supply of adhesive tape, and a bag holder housing adhesively coupled to the mounting plate;

[0048] FIG. **21** is a view taken along section line **21-21** of FIG. **20**;

[0049] FIG. **22** is a fragmentary view in perspective of a tenth embodiment litter bag holder, the tenth embodiment litter bag holder including a slotted housing and a mounting bracket adapted to couple the housing to the cat litter box;

[0050] FIG. **23** is a view in vertical section of the mounting bracket and housing adhesively coupled to the cat litter box;

[0051] FIG. **24** is a view in vertical section of an eleventh embodiment litter bag holder, the eleventh embodiment litter

bag holder being integrally formed with the cat litter box, such that the eleventh embodiment litter bag holder and cat litter box form a single unit;

[0052] FIG. **24**A is a view in vertical section of a twelfth embodiment litter bag holder, the twelfth embodiment litter bag holder comprising the first configuration drawer including a pivotable top wall;

[0053] FIG. **24**B a view in vertical section of the twelfth embodiment litter bag holder, the twelfth embodiment litter bag holder having the first configuration drawer that includes the pivotable top wall, the pivotable top wall being shown in an open position while the first configuration drawer remains in the housing;

[0054] FIG. **24**C a view in vertical section of the twelfth embodiment litter bag holder, the twelfth embodiment litter bag holder comprising the first configuration drawer that includes the pivotable top wall, the pivotable top wall being shown in a closed position while the first configuration drawer is extended from the housing;

[0055] FIG. **25** is a view in perspective of the first embodiment litter bag holder coupled to the cat litter box and also showing exemplary types of litter bags receivable in the litter bag holder; and

[0056] FIG. **26** is a flowchart showing an illustrative method of manufacturing the litter bag holder.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0057] In the following detailed description, reference is made to the accompanying drawings, which form a part hereof. In the drawings, similar symbols typically identify similar components, unless context dictates otherwise. The illustrative embodiments described in the detailed description, drawings, and claims are not meant to be limiting. Other embodiments may be utilized, and other changes may be made, without departing from either the spirit or scope of the invention.

[0058] In addition, the present patent specification uses formal outline headings for clarity of presentation. However, it is to be understood that the outline headings are for presentation purposes, and that different types of subject matter may be discussed throughout the application (e.g., device(s)/structure(s) may be described under process(es)/operations heading(s) and/or process(es)/operations may be discussed under structure(s)/process(es) headings; and/or descriptions of single topics may span two or more topic headings). Hence, the use of the formal outline headings is not intended to be in any way limiting.

[0059] Therefore, with reference to FIGS. **1**, **2**, **3** and **4**, there is shown a first embodiment litter bag holder, generally referred to as **10**, for holding one or more litter bags, generally referred as **20**. Each of the litter bags **20** is adapted to contain a plurality of cat litter waste clumps **30**. In this regard, a litter scoop, generally referred to as **40**, is used by a user (not shown) to sift, rake or scoop a plurality of the cat litter waste clumps **30** from cat litter **50** that is disposed in a cat litter box **60**. Cat litter box **60** may be located at any suitable location, such as on a floor **65**, on a counter top (not shown) or similar horizontal surface. A conventional, commercially available cat litter box **60** suitable for this purpose may be of a type, such as a "CLEVERCAT® TOP ENTRY CAT LITTER BOX", that may be available from Clevercat Innovations, Incorporated located in Sarasota, Fla., U.S.A. The "CLEVERCAT® TOP ENTRY CAT LITTER BOX", or similar litter box construction, comprises a base portion **70** having four substantially vertical, perpendicularly arranged, integrally connected side panels **80***a* and **80***b* (only two of the four side panels are shown). Litter box **60** also includes a horizontal bottom panel **90** integrally formed with all four side panels, including side panels **80***a* and **80***b*, so as to define an interior volume **95** of litter box **60**. Bottom panel **90** supports waste litter clumps **30** and cat litter **50** thereon while waste litter clumps **30** and cat litter **50** are disposed in litter box **60**. Each of the side panels and bottom panel **90** has an interior surface **97**, as shown.

[0060] Referring again to FIGS. **1**, **2**, **3** and **4**, litter box **60** has an open top end **100** for placement of cat litter **50** into litter box **60** and for removal of waste litter clumps **30** from litter box **50**, the waste litter clumps **30** containing cat biological waste matter (i.e., urine soaked litter and feces). Mounted atop open top end **100** is a removable lid or cover **110**. Cover **110** allows access to litter clumps **30** and cat litter **50** that is disposed in interior volume **95** of litter box **60** when cover **110** is removed and encloses litter clumps **30** and cat litter **50** in interior volume **95** when cover **110** is mounted atop open top end **100**. Cover **110** defines an opening **120** therethrough for a cat (not shown) to enter and leave litter box **60**.

[0061] Referring yet again to FIGS. **1**, **2**, **3** and **4**, such conventional, commercially available cat litter boxes **60** may be made of any suitable material, such as polypropylene, acrylonitrile butadiene styrene (ABS), nylon, acetone or resin. However, according to the teachings herein, the material composition constituting such a conventional, commercially available litter box **60** can be enhanced. In this regard, the material comprising cat litter box **60** may include a pathogen resistant, antimicrobial, antifungal composition, such as the "VINYZENE™ IT 3025 DOTP ANTIMICROBIAL" composition that may be available from The Dow Chemical Company located in Midland, Mich., U.S.A. The "VINYZENE™ IT 3025 DOTP ANTIMICROBIAL" composition comprises 2-n-octyl-4-isothiazolin-3-one in a non-volatile phthalate-free carrier that can be added to the plastic composition comprising litter box **60** during manufacture of litter box **60**. Alternatively, litter box **60** may be made of metal, such as steel or aluminum. In this case, the metal may be coated, layered or otherwise painted during manufacture with a pathogen resistant, antimicrobial, antifungal composition, such as a composition having silver (Ag) as an active ingredient. Such a commercially available coating containing silver and that is suitable for this purpose may be of a type, such as the "AGION" compound, that may be available from AgION® Technologies, Incorporated located in Wakefield, Mass., U.S.A. The "AGION" compound combines silver with an inorganic ceramic that permits a continuous, controlled release of ionic silver over an extended time period in such a manner that inhibits growth of microbes. Inhibiting growth of microbes, whether litter box **60** is formed of plastic or metal, is important in order to help maintain litter box **60** in a sanitary condition, so that risk to human health is reduced.

[0062] Cat litter **50** is selected from any of the known cat litter compositions. However, a type of cat litter **50** that is preferred by many cat owners is "clumping litter." Clumping litter may comprise bentonite clay (absorbent aluminum phyllosilicate) or diatomaceous earth, which forms a relatively solid mass or clump **30** when wet. Any clumps **30** can then be scooped, raked or otherwise sifted from cat litter **50** without emptying the entire contents of litter box **60**.

[0063] Previously mentioned litter scoop device **40**, which forms no part of the present invention, is used to sift, rake or scoop clumps **30** from cat litter **50** that are disposed in litter box **60**. In this regard, litter scoop device **40** comprises an elongate handle **130** attached to a perforate blade member **140**. More specifically, blade member **140** defines a plurality of perforations **150** therethrough sized to allow unclumped litter material to pass through perforations **150** while simultaneously retaining waste litter clumps **30** on blade member **140**. Clumps **30** are subsequently discarded, such as in the manner described hereinbelow.

[0064] Still referring to FIGS. **1**, **2**, **3** and **4**, first embodiment litter bag holder **10** comprises a box-shaped housing **160** that includes a vertical right sidewall **170***a* (shown in broken section in FIGS. **4** and **5**) and a vertical left sidewall **170***b* oppositely disposed with respect to right sidewall **170***a* and spaced-apart therefrom. Right sidewall **170***a* and left sidewall **170***b* are parallel to each other. In addition, right sidewall **170***a* and left sidewall **170***b* are each perpendicular to a vertical rear sidewall **170***c* and integrally attached thereto. Also, a horizontal floor or bottom wall **180** is integrally attached to bottom end portions of sidewalls **170***a*, **170***b*, and **170***c*. In addition, a stationary, horizontal ceiling or top wall **190** is integrally attached to top end portions of sidewalls **170***a*, **170***b*, and **170***c*. Integrally attached to a front end portion of bottom wall **180** is an upwardly-directed lip portion, step or first abutment **195***a* for reasons disclosed hereinbelow. Also, integrally attached to a front end portion of top wall **190** is a downwardly-directed lip portion, step or second abutment **195***b* for reasons disclosed hereinbelow. There is no front wall to housing **160**. Rather, sidewalls **170***a*/**170***b*/**170***c*, bottom wall **180** and top wall **190** define an opening **200** at the front of housing **160** and also define a cavity **210** within housing **160**, the opening **200** being in communication with cavity **210** for reasons provided hereinbelow.

[0065] Referring to FIGS. **1**, **2**, **3**, **4** and **5**, a first configuration drawer **220** is slidably disposed in cavity **210** that is defined by housing **160**. First configuration drawer **220** has a substantially rigid or inflexible construction and comprises a vertical front plate **230** and a vertical rear plate **240** parallel to front plate **230** and spaced-apart therefrom. Rear plate **240** includes a lower leg end portion **250***a* for abutting previously mentioned first abutment **195***a* and an upper leg end portion **250***b* for abutting previously mentioned second abutment **195***b*. Lower leg end portion **250***a* and upper leg end portion **250***b* will abut first abutment **195***a* and second abutment **195***b*, respectively, when first configuration drawer **200** is caused to slide a sufficient distance in cavity **210**, generally in the direction of directional arrow **298***a*. Thus, it may be appreciated that the abutting engagement of lower leg end portion **250***a* and first abutment **195***a* and the simultaneous abutting engagement of upper leg end portion **250***b* with second abutment **195***b* limits travel of first configuration drawer **220** in cavity **210**, so that first configuration drawer **220** will not completely exit out opening **200**. In this manner, first configuration drawer **220** remains slidably coupled to housing **160**.

[0066] Referring again to FIGS. **1**, **2**, **3**, **4** and **5**, first configuration drawer **220** further comprises a vertical left side plate **260** and a vertical right side plate **265** (shown in broken section in FIG. **5**) parallel to left side plate **260** and spaced-apart therefrom. As shown in FIGS. **1**, **2**, **3**, **4**, and **5**, left side plate **260** and right side plate **265** are each perpendicular to front plate **230** and rear plate **240** and integrally attached thereto. Integrally attached to lower ends of front plate **230**, left side plate **260**, right side plate **265**, and to a lower portion of rear plate **240** is a horizontally-oriented bottom plate **270**. Therefore, front plate **230**, rear plate **240**, left side plate **260**, right side plate **265**, and bottom plate **270** define a storage space **280** in first configuration drawer **220** for stowing previously mentioned cat litter bags **20**. In addition, it should be appreciated that front plate **230**, rear plate **240**, left side plate **260**, right side plate **265**, and bottom plate **270** further define an upper opening **290** for placing cat litter bags **20** into storage space **280** and for retrieving cat litter bags **20** from storage space **280**. A knob **296** is affixed to front plate **230**, such as by a screw (not shown) or adhesive joint **299**, for moving first configuration drawer **220** in direction of horizontal directional arrow **298***a* and in direction of a horizontal directional arrow **298***b*, as shown.

[0067] Referring again to FIGS. **1**, **2**, **3**, **4** and **5**, housing **160** and first configuration drawer **220** may be made of any suitable material, such as polypropylene, acrylonitrile butadiene styrene (ABS), nylon, acetone or resin. In addition, the material comprising housing **160** and first configuration drawer **220** may include a pathogen resistant, antimicrobial, antifungal composition, such as the previously mentioned "VINYZENE™ IT 3025 DOTP ANTIMICROBIAL" composition that can be added to the plastic composition comprising housing **160** and first configuration drawer **220** during manufacture of housing **160** and first configuration drawer **220**. Alternatively, housing **160** and first configuration drawer **220** may be made of metal, such as steel or aluminum. In this case, the metal may be coated, layered or otherwise painted during manufacture with a pathogen resistant, antimicrobial, antifungal composition having silver (Ag) as an active ingredient. A commercially available coating containing silver and that is suitable for this purpose may be the previously mentioned "AGION" compound that inhibits growth of microbes. Inhibiting growth of microbes, whether housing **160** and first configuration drawer **220** are formed of plastic or metal, is important in order to help maintain first embodiment bag holder **10** in a sanitary condition given its proximity to contaminated litter **50** in litter box **60**, so that risk to human health is reduced.

[0068] As best seen in FIG. **1**, first embodiment bag holder **10** is adapted to be connected to any of the side panels belonging to cat litter box **60**, such as side panels **80***a* or **80***b*, so that first embodiment bag holder **10** is conveniently accessible by the user. Alternatively, first embodiment bag holder **10** may be connected to a nearby wall **293**. Thus, the side panels belonging to cat litter box **60**, such as to side panels **80***a* or **80***b*, or wall **293** provide support structure for supporting first embodiment bag bolder **10** thereon.

[0069] As seen in FIGS. **1**, **4** and **5**, first embodiment bag holder **10** is coupled to cat litter box **60**, such as to side panels **80***a* or **80**, wall **293** or similar structure (hereinafter collectively referred to as "support structure **295**") by a first embodiment attachment arrangement, generally referred to as **300**. First embodiment attachment arrangement **300** includes a plurality of right-angle adhesive braces. The plurality of right-angle braces includes an uppermost brace **310***a*, a lowermost brace **310***b*, a right side brace **310***c* and a left side brace **310***d*. Each brace **310***a/b/c/d* has an adhesive backing **320** adapted to adhesively connect braces **310***a/b/c/d* to support structure **295** and to housing **160**. More specifically, uppermost brace **310***a* in combination with its adhesive backing **320** adhesively connects top wall **190** of housing **160** to

support structure **295**. Lowermost brace **310***b* in combination with its adhesive backing **320** adhesively connects bottom wall **190** of housing **160** to support structure **295**. Right side brace **310***c* in combination with its adhesive backing **320** adhesively connects right side wall **170***a* of housing **160** to support structure **295**. Left side brace **310***d* in combination with its adhesive backing **320** adhesively connects left side wall **170***b* of housing **160** to support structure **295**. In this manner, braces **310***a/b/c/d* in combination with their adhesive backings **320** support housing **160** while adhesively connecting housing **160**, and thus first embodiment bag holder **10**, to support structure **295**. Adhesive backing **320** may comprise a permanent adhesive, such as an acrylic adhesive that provides high bond strength and that can be used to permanently affix housing **160** to support structure **295** during manufacture of litter box **10**. Alternatively, if desired, adhesive backing **320** may comprise a peelable, non-permanent adhesive, so that first embodiment bag holder **10** may be peeled away or easily separated from support structure **295** when desired. It may be desirable to have first embodiment bag holder **10** peeled away or separated from support structure **295** should first embodiment bag holder **10** need replacement due to damage or deterioration caused by extensive use. Such a peel-away adhesive suitable for this purpose can be an epoxy adhesive. It should be appreciated that braces **310***a/b/c/d* in combination with the peelable, non-permanent adhesive backing allow first embodiment bag holder **10** to be marketed and sold separately from cat litter box **40**. In other words, first embodiment bag holder **10** can be separately marketed and sold as an accessory for semi-permanent attachment to cat litter box **60** in order to allow convenient replacement of first embodiment bag holder **10** when required.

[0070] Turning now to FIG. **6**, a second embodiment litter bag holder, generally referred to as **330**, is provided for holding one or more litter bags **20**. Second embodiment litter bag holder **330** is substantially similar to first embodiment litter bag holder **10**, except first embodiment attachment arrangement **300** comprising braces **310***a/b/c/d* in combination with adhesive backing **320** is omitted. Rather, a second embodiment attachment arrangement **340** is provided that includes an adhesive layer **350** interposed between rear plate **240** of housing **160** and support structure **295**. Size of adhesive layer **350** may be coextensive with the size (i.e., height and width) of rear plate **240** for a more aesthetic or visually appealing appearance because the edges of adhesive layer **350** will not extend beyond the edges of rear plate **240**. Adhesive layer **350** bonds housing **160** to support structure **295**, and therefore bonds second embodiment litter bag holder **330** to support structure **295**. Adhesive layer **350** may comprise a permanent adhesive, such as an acrylic adhesive, permanently affixing housing **160** to support structure **295**. Alternatively, if desired, adhesive layer **350** may comprise a peelable, non-permanent adhesive, such as an epoxy adhesive. Use of a peelable, non-permanent adhesive, allows second embodiment bag holder **330** to be peeled away or easily separated from support structure **295** when desired. It may be desirable to have second embodiment bag holder **330** peeled away or easily separated from support structure **295** should second embodiment bag holder **330** need replacement due to damage, deterioration or other reason.

[0071] Referring to FIG. **7**, a third embodiment litter bag holder, generally referred to as **360**, is there shown. Third embodiment litter bag holder **360** is substantially similar to second embodiment litter bag holder **330**, except second embodiment attachment arrangement **340** comprising adhesive layer **350** is omitted and replaced with a third embodiment attachment arrangement, generally referred to as **365**. The third embodiment attachment arrangement **365** comprises a self-adhesive, double-sided tape, generally referred to as **370**. Double-sided tape **370** comprises a central sheet **380**, which may be polyester, having a rear surface **385** and a front surface **387**. Interposed between rear surface **385** of double-sided tape **370** and support structure **295** is a first adhesive film **390** for adhesively connecting double-sided tape **370** to support structure **295**. In addition, interposed between front surface **387** of double-sided tape **370** and rear sidewall **170***c* of housing **160** is a second adhesive film **400** for adhesively connecting double-sided tape **370** to housing **160**. Either or both of first adhesive film **390** and second adhesive film **400** may be a permanent adhesive, such as an acrylic adhesive, permanently affixing double-sided tape **370**, and thus housing **160**, to support structure **295**. Alternatively, if desired, either or both of first adhesive film **390** and second adhesive film **400** may be a peelable, non-permanent adhesive, such as an epoxy adhesive for reasons recited hereinabove.

[0072] With reference to FIG. **8**, there is shown a fourth embodiment litter bag holder, generally referred to as **410**. Fourth embodiment litter bag holder **410** is substantially similar to third embodiment litter bag holder **360**, except third embodiment attachment arrangement **365** comprising double-sided tape **370** is omitted and replaced with a fourth embodiment attachment arrangement, generally referred to as **420**. The fourth embodiment attachment arrangement **420** comprises a hook-and-loop fastener **430** including a female member **440**. A first adhesive laminate **450** is interposed between female member **440** and support structure **295** for adhesively coupling female member **440** to support structure **295**. Hook-and-loop fastener **430** also includes a male member **460**. A second adhesive laminate **470** is interposed between male member **460** and rear sidewall **170***c* of housing **160** for adhesively coupling male member **460** to housing **160**. Male member **460** is adapted to intimately engage female member **440**, such that housing **160** is coupled to support structure **295**. Hook-and-loop fastener **430** may be a "VELCRO® brand fastener" that is available from Velcro Industries B.V. located in Amsterdam, The Netherlands.

[0073] Still referring to FIG. **8**, either or both of first adhesive laminate **450** and second adhesive laminate **470** may be a permanent adhesive, such as an acrylic adhesive, permanently affixing female member **440** to support structure **295** and permanently affixing male member **460** to rear sidewall **170***c* of housing **160**. Alternatively, if desired, either or both of first adhesive laminate **450** and second adhesive laminate **470** may be a peelable, non-permanent adhesive, such as an epoxy adhesive. It should be appreciated by a person of ordinary skill in the art that use of hook-and-loop fastener **430** allows fourth embodiment litter bag holder **410** to be releasably secured to support structure **295** regardless of whether a permanent or a peelable adhesive is used.

[0074] In FIGS. **9** and **10**, a fifth embodiment litter bag holder, generally referred to as **480**, is shown coupled to support structure **295** by means of a fifth embodiment attachment arrangement, generally referred to as **490**. The fifth embodiment attachment arrangement **490** includes a first screw fastener configuration **500**. First screw fastener configuration **500** includes a plurality of right-angle screw braces **510***a/b/c/d* of shape similar to previously mentioned right-

angle adhesive braces **310***a/b/c/d*. As previously mentioned, adhesive braces **310***a/b/c/d* are connected to support structure **295** by means of adhesive backing **320**. However, screw braces **510***a/b/c/d*, on the other hand, are connected to support structure **295** by means of a plurality of externally threaded screws **520** penetrating through any one of screw braces **510***a/b/c/d* and a selected one of side panels (e.g., side panel **80***a* or side panel **80***b*) belonging to support structure **295** (e.g., cat litter box **60**). As screws **520** penetrate through braces **510***a/b/c/d* and the selected one of the side panels, the externally threaded screws **520** engage respective ones of a plurality of internally threaded anchors **530** disposed in interior volume **95** and integrally formed with support structure **295**. Each anchor **530** is disposed so as to be aligned with its respective screw **520** and is integrally formed with previously mentioned interior surface **97** of support structure **295**, as shown. Thus, fifth embodiment bag holder **480** is secured to support structure **295** as each externally threaded screw **520** penetrates through its respective brace **510***a/b/c/d* and the support structure **295** and is threadably received in internally threaded anchor **530**.

[0075] In FIG. **10**A, fifth embodiment litter bag holder **480** is shown coupled to support structure **295** by means of fifth embodiment attachment arrangement **490**. However, fifth embodiment attachment arrangement **490** includes a second screw fastener configuration **540**. Second screw fastener configuration **540** includes previously mentioned plurality of right-angle screw braces **510***a/b/c/d*. As stated hereinabove, screw braces **510***a/b/c/d* are connected to support structure **295** by means of the plurality of externally threaded screws **520** penetrating through any one of screw braces **510***a/b/c/d* and a selected one of the side panels (e.g., side panel **80***a* or side panel **80***b*) belonging to support structure **295** (e.g., cat litter box **60**). However, according to this fifth embodiment litter bag holder **460**, as screws **520** penetrate through braces **510***a/b/c/d* and the selected one of the side panels, the externally threaded screws **520** engage respective ones of a plurality of internally threaded hex-nuts **545** disposed in interior volume **95** that is defined by support structure **295**. Each hex-nut **545** is disposed so as to be aligned with its respective screw **520**, as shown. Thus, fifth embodiment bag holder **480** is secured to support structure **295** as each externally threaded screw **520** penetrates through its respective brace **510***a/b/c/d* and the support structure **295** and is threadably received in internally threaded hex-nut **545**. Thus, second screw fastener configuration **540** provides an alternative means for connecting fifth embodiment bag holder **480** to support structure **295**.

[0076] As shown in FIG. **11**, a sixth embodiment litter bag holder, generally referred to as **550**, comprises a second configuration drawer **560**. The second configuration drawer **560** has an upright bag support **570** movably disposed in storage space **280** that is defined by second configuration drawer **560**. Interposed between and connected to rear plate **240** and bag support **570** is a biasing member **580**, such as a coiled spring, for biasing the plurality of cat litter bags **20** toward a front portion of second configuration drawer **560** and for maintaining cat litter bags **20** in a tightly-packed organized grouping. The spring constant for biasing member **580** is selected so that biasing member **580** will apply the necessary compressive force against bag support **570** to maintain litter bags **20** in the tightly-packed organized grouping regardless of the number of litter bags **20** present. Biasing cat litter bags **20** toward the front portion of second configuration drawer **560** and maintaining cat litter bags **20** in a tightly-packed, organized grouping provide the user with convenient access to cat litter bags **20** because cat litter bags **20** remain organized and grouped together at the front portion of the drawer rather than being scattered, randomly disposed or even entangled within storage space **280** defined by second configuration drawer **560**. In addition, biasing cat litter bags **20** toward the front portion of second configuration drawer **560** avoids the user having to reach to the rear of the drawer to retrieve one or more cat litter bags **20** that may be located at the rear of the drawer. Requiring the user to reach to the rear of the drawer to retrieve cat litter bags **20** may be an inconvenience for some users and a disincentive for those users to utilize cat litter bags **20**.

[0077] Referring to FIGS. **12**, **13**, **14** and **15**, a seventh embodiment litter bag holder, generally referred to as **590**, comprises a third configuration drawer **600**. The third configuration drawer **600** comprises a vertical front wall **610** and a vertical rear wall **620** parallel to front wall **610** and spaced-apart therefrom. Third configuration drawer **600** further comprises a vertical left side wall **625** and a vertical right side wall **630** parallel to left side wall **625** and spaced-apart therefrom. Left side wall **625** and right side wall **630** are each perpendicular to front wall **610** and rear wall **620** and integrally attached thereto. Integrally attached to lower ends of front wall **610**, left side wall **625**, right side wall **630**, and rear wall **620** is a horizontally-oriented floor **640**. Rear wall **620** of third configuration drawer **300** is affixed to rear side wall **170***c* of housing **160** by an adhesive layer **642**, such as an acrylic permanent adhesive or an epoxy nonpermanent (i.e., peelable) adhesive. Rear side wall **170***c*, in turn, is connected to support structure **295** by previously mentioned adhesive layer **350**. Therefore, front wall **610**, rear wall **620**, left side wall **625**, right side wall **630**, and floor **640** define previously mentioned storage space **280** (see FIG. **11**) in third configuration drawer **300** for stowing cat litter bags **20**. In addition, with reference to FIGS. **12**, **13**, **14** and **15**, it should be appreciated that front wall **610**, rear wall **620**, left side wall **625**, right side wall **630**, and floor **640** further define previously mentioned upper opening **290** for placing cat litter bags **20** into storage space **280** and for retrieving cat litter bags **20** from storage space **280**. Previously mentioned knob **297** is affixed to front wall **610** for manually moving third configuration drawer **300** in direction of a horizontal directional arrow **645** and a horizontal directional arrow **647**, as shown. Left side wall **625**, right side wall **630** and floor **640** have a plurality of grooves, ribs, ruffles, pleats or flutes **650** formed therein for reasons disclosed hereinbelow.

[0078] Referring again to FIGS. **12**, **13**, **14** and **15**, flutes **650** that are formed in left side wall **625** and right side wall **630** extend vertically and flutes **650** that are formed in floor **640** extend horizontally and are oriented perpendicularly with respect to flutes **650** formed in side walls **625**/**630**. Flutes **650** formed in walls **625**/**630** and floor **640** are laterally expandable and contractable along directional arrow **645** and directional arrow **647**. Thus, flutes **650** allow third configuration drawer **600** to laterally extend partially through opening **200** defined by housing **160** and laterally retract through opening **200**. In other words, third configuration drawer **600** expands in the direction of directional arrow **645** in an accordion-like fashion when knob **297** is pulled by the user and retracts in the direction of directional arrow **647** in an accordion-like fashion when knob **297** is pushed by the user. Expansion and contraction of third configuration drawer **600** allows the volume of storage space **280**, which is defined by third configuration drawer **600**, to vary from a predetermined

minimum volume to a predetermined maximum volume in order to accommodate varying numbers of litter bags **20**. Thus, in this sense, third configuration drawer **600** is adjustable in size to accommodate more or fewer litter bags **20**. Stowage of more litter bags **20** in third configuration drawer **600** may be more convenient for some users because the user will not need to find and refill third configuration drawer **600** with litter bags **20** as often. Reducing the frequency of finding and refilling third configuration drawer **600** with litter bags **20** encourages the user to utilize litter bags **20**.

[0079] Referring yet again to FIGS. **12**, **13**, **14** and **15**, left side wall **625**, right side wall **630** and floor **640** may be made of any suitable material, such as any of the known elastomeric polymers capable of expanding and contracting. In addition, the material comprising housing **160** and third configuration drawer **600** may include a pathogen resistant, antimicrobial, antifungal composition, such as the previously mentioned "VINYZENE™ IT 3025 DOTP ANTIMICROBIAL" composition for the reasons recited hereinabove. Alternatively, housing **160** and third configuration drawer **600** may be coated, layered or otherwise painted with a pathogen resistant, antimicrobial, antifungal composition having silver (Ag) as an active ingredient for the reasons recited hereinabove. Use of the pathogen resistant, antimicrobial, antifungal composition inhibits growth of microbes. Inhibiting growth of microbes is important in order to help maintain seventh embodiment bag holder **590** in a sanitary condition given its proximity to contaminated litter **50** in litter box **60**, so that risk to human health is reduced.

[0080] With reference to FIGS. **16**, **17**, **18** and **19**, there is shown an eighth embodiment litter bag holder, generally referred to as **660**, for holding one or more litter bags **20**. Eighth embodiment litter bag holder **660** includes a fourth configuration drawer **670**. Fourth configuration drawer **670** is substantially similar to third configuration drawer **600**, except fourth configuration drawer **670** is downwardly extendable from opening **200** in a downwardly-directed arc in direction of a directional arrow **675** and upwardly contractible in an upwardly-directed arc in direction of a directional arrow **677**. To achieve this result, an elongate pivot pin **680** extends from a bottom portion of right side wall **265**, through a bottom portion of front plate **230**, and to a bottom portion of left side wall **260**. Thus, front plate **230** freely rotates about pivot pin **680** to allow front plate **230**, and therefore fourth configuration drawer **670**, to expand in the direction of directional arrow **675** and to contract in the direction of directional arrow **677**. This fourth configuration drawer **670** can allow more litter bags **20** to be more quickly visible to and accessible by the user compared to third configuration drawer **600**. Allowing litter bags **20** to be more quickly visible to and accessible by the user encourages the user to utilize litter bags **20**. Also, fourth configuration drawer **670** uses less space to open compared to third configuration drawer **600** due to the arched or bending motion of fourth configuration drawer **670** when fourth configuration drawer **670** is opened. Using less space to open fourth configuration drawer **670** is desirable in cramped environments having reduced available space.

[0081] Referring to FIGS. **20** and **21**, a ninth embodiment litter bag holder, generally referred to as **690**, is there shown. Ninth embodiment litter bag holder **690** comprises a sixth embodiment attachment arrangement **700**. The sixth embodiment attachment arrangement **700** includes a mounting plate **710** adhesively coupled to support structure **295** by means of a first adhesive layer **720**, which may be a permanent adhesive (e.g., acrylic adhesive) or a peelable, nonpermanent adhesive (e.g., epoxy adhesive) or hook-and-loop fasteners (not shown). Moreover, if desired, mounting plate **710** may be coupled to support structure **295** by alternative means, such as screws (also not shown). Housing **160** is adhesively coupled to mounting plate **710** by means of a second adhesive layer **730**, which may be a permanent adhesive (e.g., acrylic adhesive) or a peelable, nonpermanent adhesive (e.g., epoxy adhesive). However, if desired, housing **160** may be coupled to mounting plate **710** by alternative means, such as screws (not shown) or hook-and-loop fasteners (also not shown). In addition, a first closure dispenser **740**, such as a tie dispenser **743**, may be coupled to mounting plate **710** for providing a source of bag ties **745** adapted to tie-off open ends of litter bags **20** after cat litter waste clumps **30** are placed therein. A second bag closure dispenser **746**, such as a tape dispenser **747**, may be adhesively coupled to mounting plate **710** for dispensing adhesive tape **749**. Tape dispenser **747** rather than, or in addition to, bag tie dispenser **743**, can be used for closing litter bags **20** after cat litter waste clumps **30** are placed therein depending on the type of litter bag **20** being used. For example, bag ties **745** may be more convenient for closing plastic bags while tape **749** may be more convenient for closing paper bags.

[0082] FIGS. **22** and **23** illustrate a tenth embodiment litter bag holder, generally referred to as **750**. Tenth embodiment litter bag holder **750** comprises a seventh embodiment attachment arrangement, generally referred to as **760**, for coupling housing **160** to support structure **295**. Seventh embodiment attachment arrangement **760** comprises a mounting bracket **770** having a front surface **780** and a rear surface **790**. Rear surface **790** is adapted to accommodate an adhesive layer **800**. The adhesive layer **800** may be an epoxy adhesive for allowing seventh embodiment attachment arrangement **760** to be easily peeled away from support structure **295**, which may be desirable if a worn or damaged seventh embodiment litter bag holder **750** needs replacement. Alternatively, adhesive layer **800** may be an acrylic adhesive for allowing permanent attachment of mounting bracket **770** to support structure **295**. In either case of a peel-away adhesive layer or a permanent adhesive layer, use of mounting bracket **770** obviates the need for double-sided adhesive tape, hook-and-loop fasteners, and screw fasteners and therefore obtains a less complex construction requiring fewer components. Obtaining a less complex construction requiring fewer components encourages the user to utilize litter bags **20** and may reduce manufacturing costs for tenth embodiment litter bag holder **750**.

[0083] Referring again to FIGS. **22** and **23**, outwardly projecting from front surface **780** and integrally attached thereto is at least one stud **810** having a shaft portion **815** integrally connected to a bulbous end portion **817** for engaging a corresponding slot **820** defined by rear sidewall **170***c* of housing **160**. Slot **820** is sized to engage stud **810**. Preferably, slot **820** is shaped such that slot **820** has a rectangularly-shaped keyway portion **830** in communication with a circular-shaped hole **840**. In use, hole **840** is aligned with bulbous end portion **817** so that bulbous end portion **817** engages hole **840**. Housing **160** is then moved downwardly so that shaft portion **815** slidably engages keyway portion **830**. In this manner, housing **160** is releasably secured to mounting bracket **770**, and thus releasably secured to support structure **295**. Housing **160** is released from mounting bracket **770** by reversing the procedure described immediately hereinabove.

[0084] Turning now to FIG. **24**, an eleventh embodiment litter bag holder, generally referred to as **850**, is there shown. Eleventh embodiment litter bag holder **850** is integrally formed with base portion **70** of cat litter box **60**, such as being integrally formed with side panel **80***a* of cat litter box **60**, so that integrally formed housing **855** and cat litter box **60** form a single unit. Thus, integrally formed housing **855** is necessarily made of the same material as base portion **70** of cat litter box **60**. Integrally formed housing **855** defines a chamber **860** therein for receiving previously mentioned first configuration drawer **220** (see, e.g., FIG. **4**). As shown in FIG. **24**, this configuration of integrally formed housing **855** and base portion **70** of cat litter box **60** allows base portion **70** and integrally formed housing **855** to be cast from a mold as a single unit, thereby eliminating need for adhesives, hook-and-loop fasteners, and screws in order to couple the housing to support structure **295**. Eliminating need for adhesives, hook-and-loop fasteners, and screws may reduce manufacturing costs associated with cat litter box **60** and the accompanying litter bag holder.

[0085] Referring to FIGS. **24**A, **24**B and **24**C, there is shown a twelfth embodiment litter bag holder, generally referred to as **862**. Twelfth embodiment litter bag holder **862** is substantially similar to second embodiment litter bag holder **330**, except stationary top wall **190** is replaced by a pivotable top wall **864** capable of pivoting about an elongate, horizontal pivot pin **866**. Pivot pin **866** extends from right sidewall **170***b*, through an end portion **867** of top wall **864** and to left sidewall **170***a*. Top wall **864** can be pivoted upwardly to an open position along directional arrow **868***a* to access litter bags **20** and pivoted downwardly to a closed position along directional arrow **868***b* to cover litter bags **20**. In addition, a top wall knob **869** is connected to top wall **864** for pivoting top wall **864** about pivot pin **866**. Thus, it should be appreciated that this embodiment of the invention allows two convenient alternative means for accessing litter bags **20**. The first convenient means for accessing litter bags **20** is to outwardly translate drawer **220** from housing **160** along previously mentioned directional arrow **298***a* by pulling knob **296**. After the user retrieves litter bag **20**, drawer **220** is then inwardly translated into housing **160** along previously mentioned directional arrow **298***b* by pushing knob **286**. The second convenient means for accessing litter bags **20** is to upwardly rotate top wall **864** about pivot pin **866** in the direction of directional arrow **868***a* by upwardly pulling top wall knob **869**. After the user retrieves litter bag **20**, the user downwardly rotates top wall **864** about pivot pin **866** in the direction of directional arrow **868***b* by downwardly pushing top wall knob **869**. According to this second convenient means for accessing litter bags **20**, top wall **864** may be considered as having a "flip top" configuration. Having these two alternative and convenient means for accessing litter bags **20** encourages the user to utilize litter bags **20**.

[0086] As best seen in FIG. **25**, exemplary types of litter bags **20** are displayed that are receivable in any of the previously mentioned embodiments of the litter bag holder. First embodiment litter bag holder **10** is shown in association with the exemplary types of litter bags **20** for purpose of illustration only and not for purpose of limitation. By way of example only, and not by way of limitation, any of litter bags **20** may be a paper litter bag **870** closable by being folded, stapled or taped; a plastic or cloth litter bag **880** closable preferably by means of previously mentioned bag tie **745**; or a plastic litter bag **890** closable by means of a press-fit. Such a plastic litter bag **890** that is closable by means of a press-fit may be of a type that is a commercially available plastic bag marketed under the mark "ZIPLOC®" by S.C. Johnson & Son, Incorporated located in Racine, Wis. U.S.A.

Illustrative Methods:

[0087] An illustrative method associated with an exemplary embodiment for manufacturing the litter bag holder according to the invention will now be described.

[0088] Referring to FIG. **26**, an illustrative method, generally referred to as **900**, is provided for manufacturing a bag holder for holding a cat litter bag adapted to contain cat litter waste retrieved from a cat litter box. The method starts at a step **910**. At a step **920**, a housing adapted to be coupled to a support structure is provided, the housing defining a cavity therein and an opening in communication with the cavity. At a step **930**, a drawer is disposed in the cavity, the drawer being slidable partially through the opening, the drawer defining a storage space therein for storing the cat litter bag. The method stops at a step **940**.

[0089] Other modifications and implementations will occur to those skilled in the art without departing from the spirit and the scope of the invention as claimed. For example, housings **160**/**855** and drawers **220**/**560**/**600**/**670** may be made of a transparent material, such as a transparent polymer, for conveniently viewing storage space **280** to visually ascertain whether storage space **280** needs to be refilled with litter bags **20**. As another example, housings **160**/**855** and drawers **220**/**560**/**600**/**670** contained therein may be oriented horizontally rather than vertically. As a further example, cat litter bags **20** may be stacked horizontally rather than vertically within drawers **220**/**560**/**600**/**670**, if desired. Accordingly, the description hereinabove is not intended to limit the invention, except as indicated in the following claims.

[0090] The claims will be interpreted according to law. However, and notwithstanding the alleged or perceived ease or difficulty of interpreting any claim or portion thereof, under no circumstances may any adjustment or amendment of a claim or any portion thereof during prosecution of the application or applications leading to this patent be interpreted as having forfeited any right to any and all equivalents thereof that do not form a part of the prior art.

[0091] All of the features disclosed in this specification may be combined in any combination. Thus, unless expressly stated otherwise, each feature disclosed is only an example of a generic series of equivalent or similar features.

[0092] It is to be understood that while the invention has been described in conjunction with the detailed description thereof, the foregoing description is intended to illustrate and not limit the scope of the invention, which is defined by the scope of the appended claims. Thus, from the foregoing, it will be appreciated that, although specific embodiments of the invention have been described herein for the purpose of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Other aspects, advantages, and modifications are within the scope of the following claims and the present invention is not limited except as by the appended claims.

[0093] The specific methods and compositions described herein are representative of preferred embodiments and are exemplary and not intended as limitations on the scope of the invention. Other objects, aspects, and embodiments will occur to those skilled in the art upon consideration of this specification, and are encompassed within the spirit of the

invention as defined by the scope of the claims. The invention illustratively described herein suitably may be practiced in the absence of any element or elements, or limitation or limitations, which is not specifically disclosed herein as essential. Thus, for example, in each instance herein, in embodiments or examples of the present invention, the terms "comprising", "including", "containing", etc. are to be read expansively and without limitation. The methods and processes illustratively described herein suitably may be practiced in differing orders of steps, and that they are not necessarily restricted to the orders of steps indicated herein or in the claims.

[0094] The terms and expressions that have been employed are used as terms of description and not of limitation, and there is no intent in the use of such terms and expressions to exclude any equivalent of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention as claimed. Thus, it will be understood that although the present invention has been specifically disclosed by various embodiments and/or preferred embodiments and optional features, any and all modifications and variations of the concepts herein disclosed that may be resorted to by those skilled in the art are considered to be within the scope of this invention as defined by the appended claims.

[0095] The invention has been described broadly and generically herein. Each of the narrower species and subgeneric groupings falling within the generic disclosure also form part of the invention. This includes the generic description of the invention with a proviso or negative limitation removing any subject matter from the genus, regardless of whether or not the excised material is specifically recited herein.

[0096] Other embodiments are within the following claims. The patent may not be interpreted to be limited to the specific examples or embodiments or methods specifically and/or expressly disclosed herein. Under no circumstances may the patent be interpreted to be limited by any statement made by any Examiner or any other official or employee of the Patent and Trademark Office unless such statement is specifically and without qualification or reservation expressly adopted in a responsive writing by Applicant(s).

[0097] Although the invention has been described in terms of exemplary embodiments, it is not limited thereto. Rather, the appended claims should be construed broadly, to include other variants and embodiments of the invention, which may be made by those skilled in the art without departing from the scope and range of equivalents of the invention.

What is claimed is:

1. A bag holder for holding a plurality of cat litter bags adapted to contain cat litter waste from a cat litter box, the bag holder comprising:

a housing adapted to be coupled to a support structure, the housing defining a cavity therein, and defining an opening in communication with the cavity; and

a drawer adapted to be disposed in the cavity, the drawer being slidable partially through the opening, the drawer defining a storage space therein for storing the plurality of cat litter bags.

2. The bag holder of claim **1**, further comprising an attachment arrangement adapted to couple the housing to the support structure.

3. The bag holder of claim **2**, wherein the attachment arrangement includes at least one of: a brace and a screw fastener.

4. The bag holder of claim **2**, wherein the attachment arrangement includes at least one of: an adhesive layer and adhesive tape.

5. The bag holder of claim **2**, wherein the attachment arrangement includes hook-and-loop fastener material.

6. The bag holder of claim **2**, wherein the attachment arrangement comprises:

a mounting bracket; and

at least one stud attached to the mounting bracket, and

wherein housing defines at least one slot therein sized to slidably engage the at least one stud for slidably coupling the housing to the mounting bracket.

7. The bag holder of claim **2**, wherein the attachment arrangement comprises:

a mounting plate; and

a bag closure dispenser coupled to the mounting plate for dispensing a bag closure therefrom.

8. The bag holder of claim **1**, wherein the support structure is a side panel of the cat litter box, and wherein the housing is integrally formed with the side panel so as to define a cavity having an opening.

9. The bag holder of claim **1**, wherein the drawer comprises:

a bag support disposed in the storage space and adapted to support cat litter bags; and

a biasing member coupled to the bag support for biasing the bag support.

10. The bag holder of claim **1**, wherein the drawer includes opposing side walls, each side wall defining a plurality of expandable flutes therein for expandably moving the drawer through the opening.

11. The bag holder of claim **1**, wherein the drawer comprises:

a pivot pin connected to the housing; and

opposing side walls rotatably mounted on the pivot pin, the side walls defining a plurality of expandable and bendable flutes therein for expanding and bending the drawer about the pivot pin in a downward arc through the opening.

12. The bag holder of claim **1**, wherein at least one of the drawer and the housing includes a pathogen resistant, antimicrobial, antifungal composition for decreasing health risk to humans.

13. The bag holder of claim **1**, wherein the drawer includes a pivotable top wall coupled to the housing.

14. A bag holder for holding cat litter bags adapted to contain cat litter waste from a cat litter box, the bag holder comprising:

a housing that is integrally formed with a side panel of the cat litter box so as to define a cavity having an opening; and

a drawer disposed within the cavity, and slidable partially through the opening, the drawer defining a storage space therein for storing the cat litter bags.

15. The bag holder of claim **14**, wherein the drawer comprises:

an upright bag support slidably disposed within the storage space, and adapted to support and compress the cat litter bags; and

a spring attached to the bag support for biasing the bag support, whereby the cat litter bags are supported and compressed in the storage space as the bag support is biased.

16. The bag holder of claim **14**, wherein the drawer includes opposing side walls, each side wall defining a plurality of expandable flutes therein for expandably moving the drawer through the opening.

17. The bag holder of claim **14**, wherein the drawer comprises:

a pivot pin connected to the housing; and

opposing side walls rotatably mounted on the pivot pin, the side walls defining a plurality of expandable and bendable flutes therein for expanding and bending the drawer about the pivot pin in a downward arc through the opening.

18. The bag holder of claim **14**, wherein at least one of the drawer and the housing comprises a pathogen resistant, antimicrobial, antifungal composition for decreasing health risk to humans.

19. The bag holder of claim **14**, wherein the drawer comprises a top wall adapted to pivot about a pivot pin coupled to the housing.

20. A method of manufacturing a bag holder for holding cat litter bags adapted to contain cat litter waste retrieved from a cat litter box, the method comprising:

providing a housing adapted to be coupled to a support structure, the housing defining a cavity therein and an opening in communication with the cavity; and

disposing a drawer in the cavity, the drawer being slidable partially through the opening, the drawer defining a storage space therein for storing the cat litter bags.

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