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(54) **GARBAGE BIN LID**

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(76) Inventor: **Chin-Fu Chiou**, Tainan City (TW)

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Correspondence Address:  
**Chin-Fu CHIOU**  
**P.O. Box 6-9**  
**Tainan (717) (TW)**

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(57) **ABSTRACT**

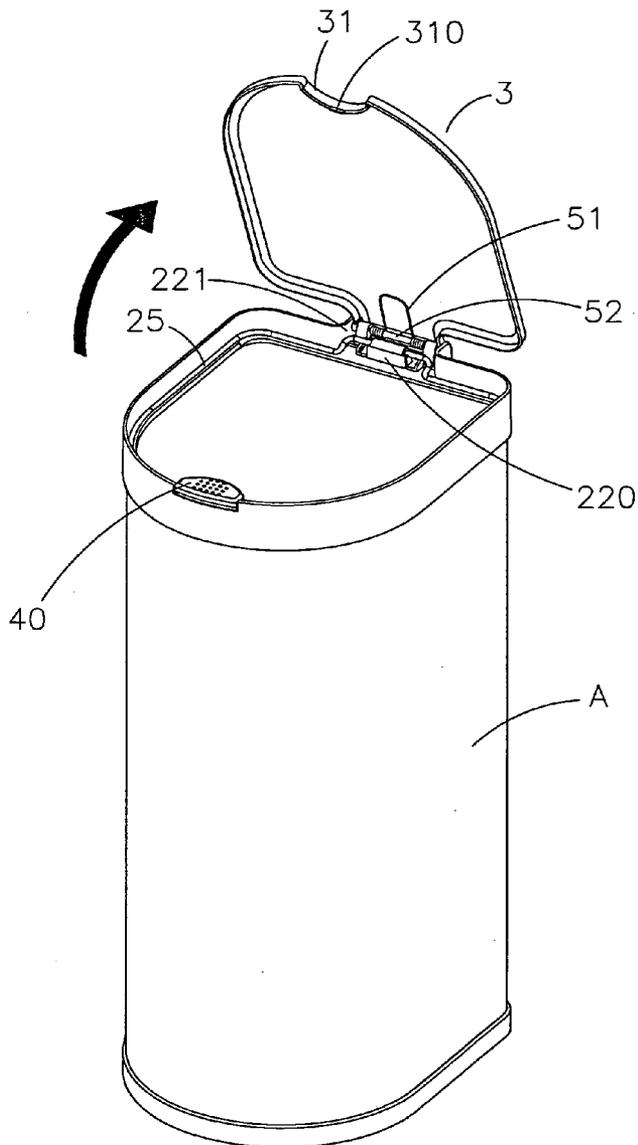
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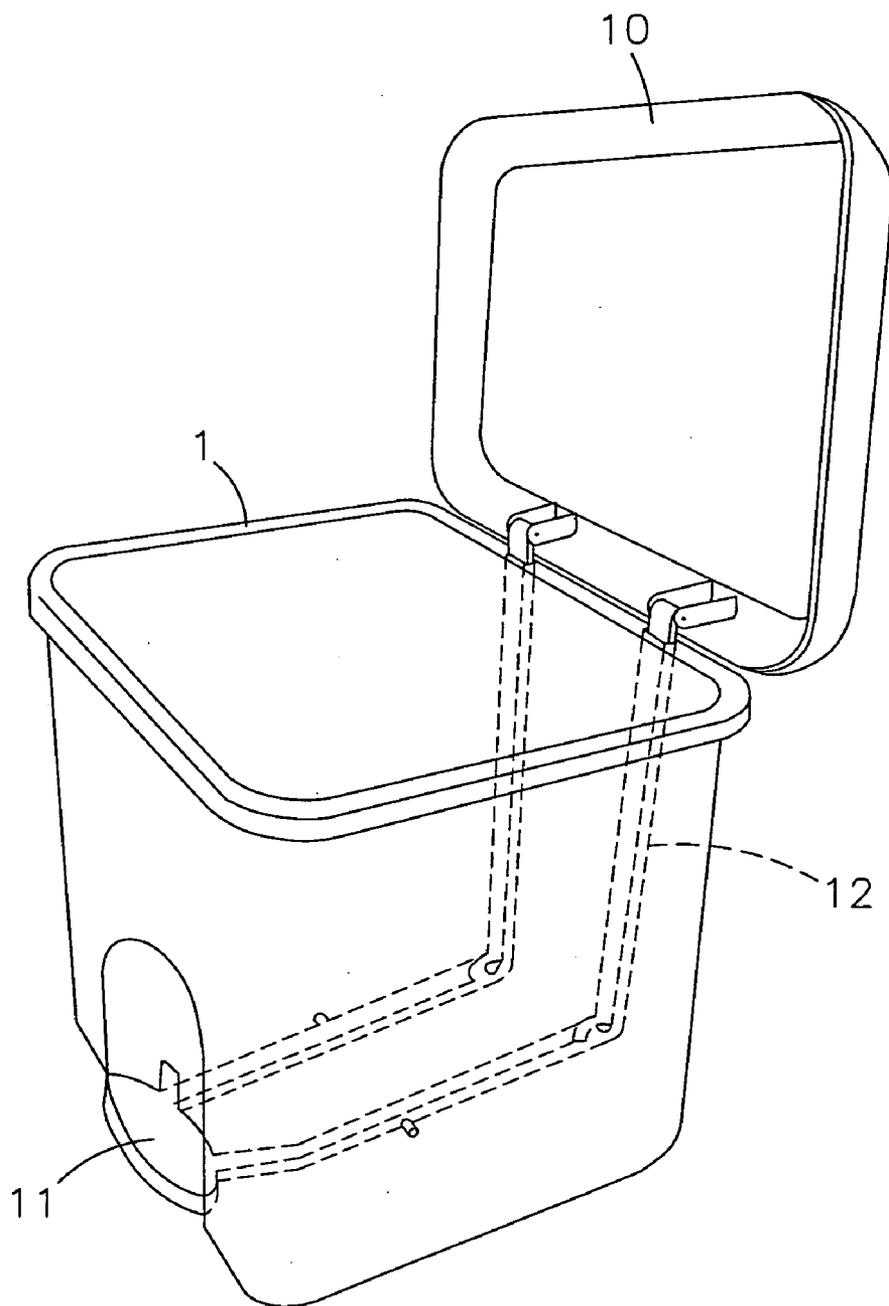
This invention is a garbage bin lid, comprising of a lid frame, a lid, a lid open-and-close units and a joining unit. One end of the lid and the lid frame are joined and positioned by a lid open-and-close unit that controls the opening and closing of the lid. The other end of the lid and lid frame has a joining unit in which there is a spring that can push the lid up. By pressing the lid open-and-close unit, the lid will unclip and spring up. When closing the lid, it is necessary to push the lid down to the lid open-and-close unit on the lid frame then it will clip into place and close.

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**FIG. 1**

(PRIOR ART)

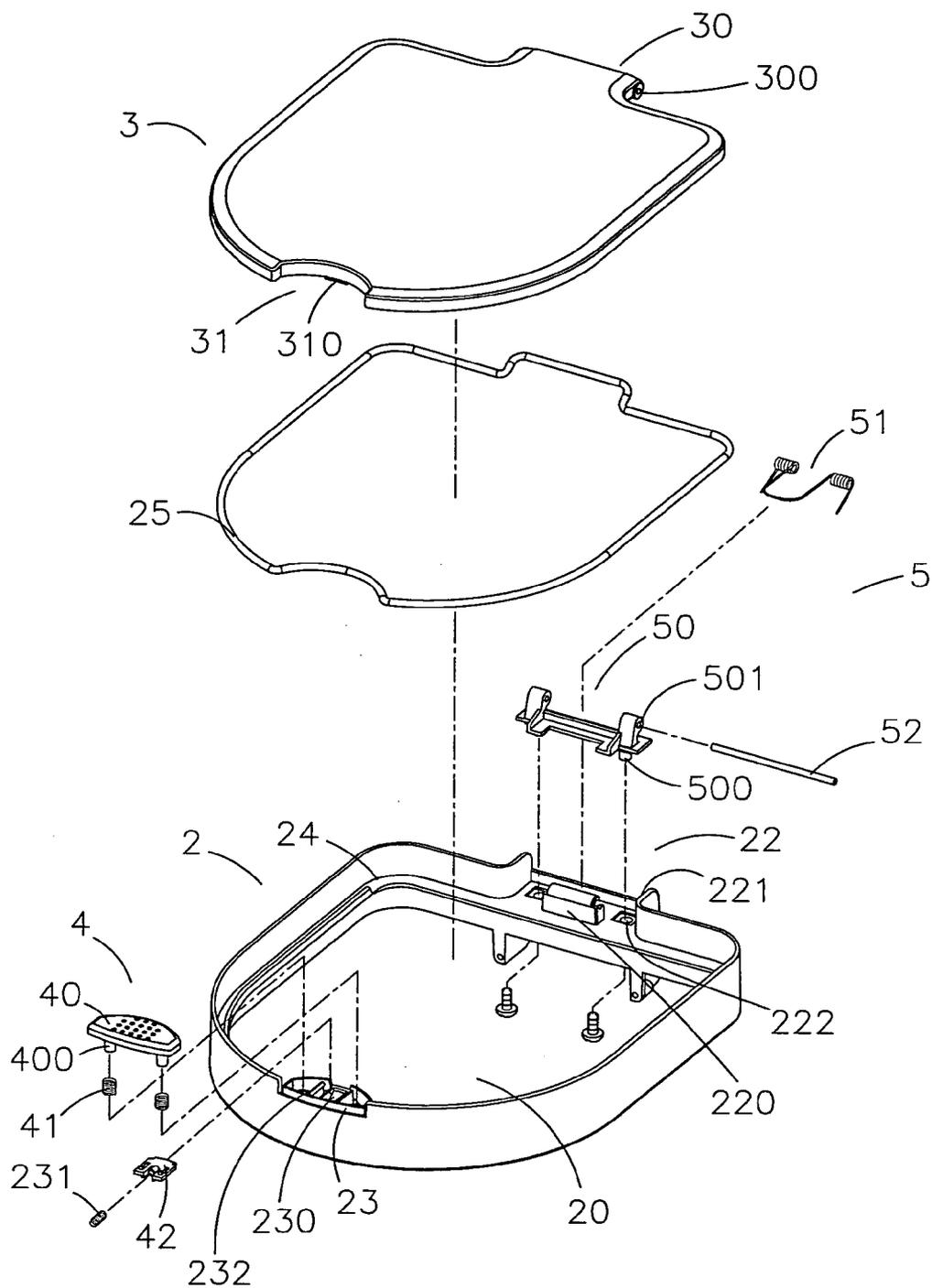


FIG. 2

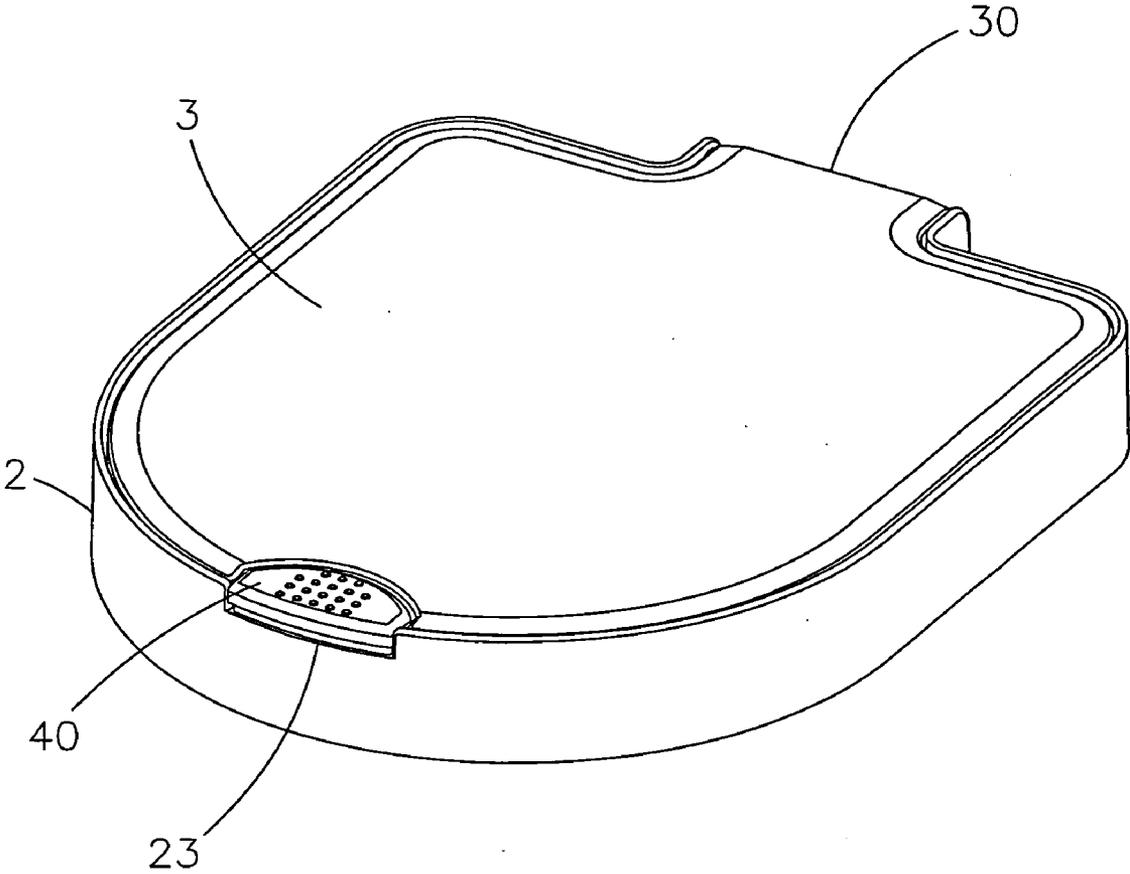


FIG. 3

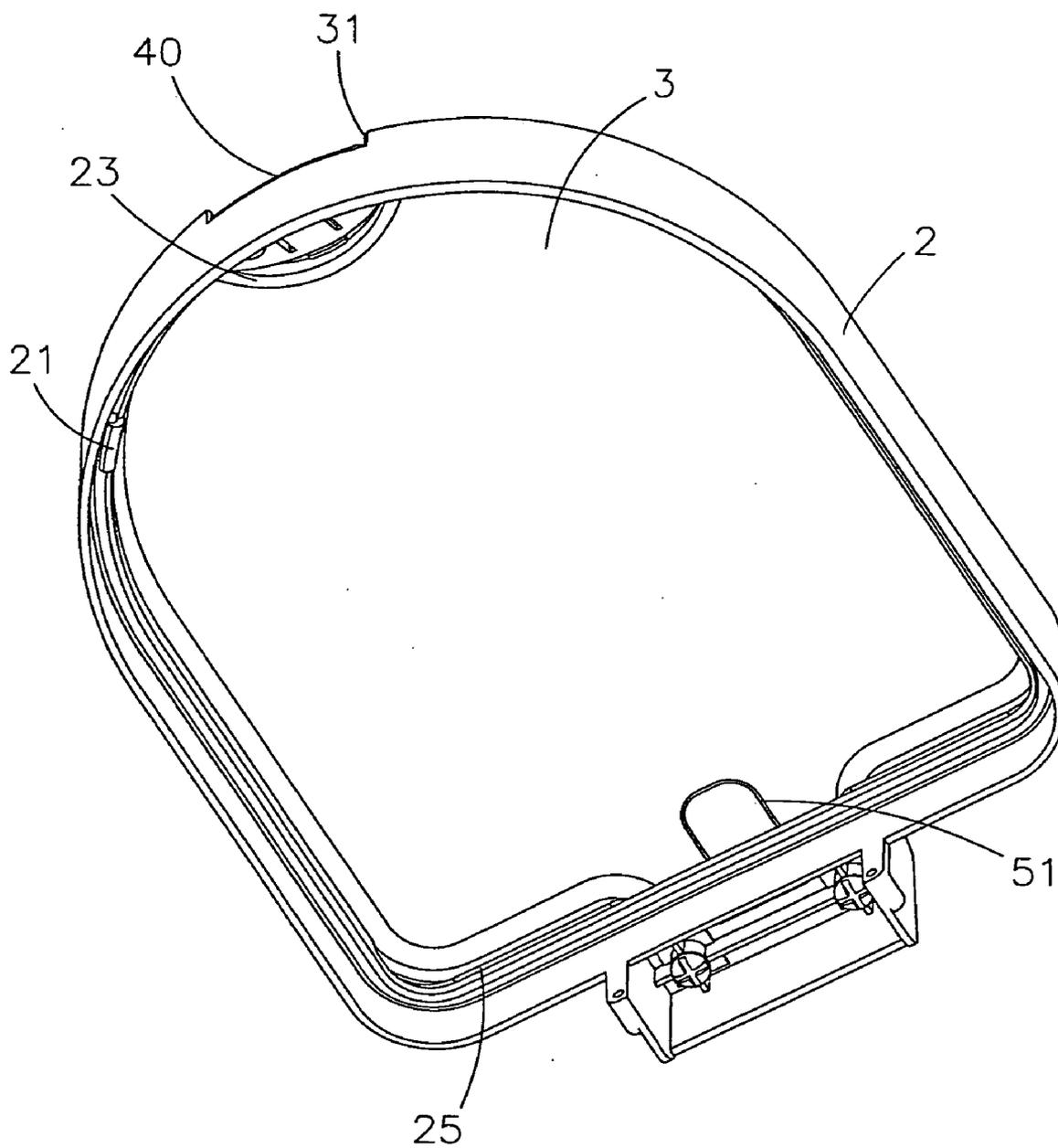


FIG. 4

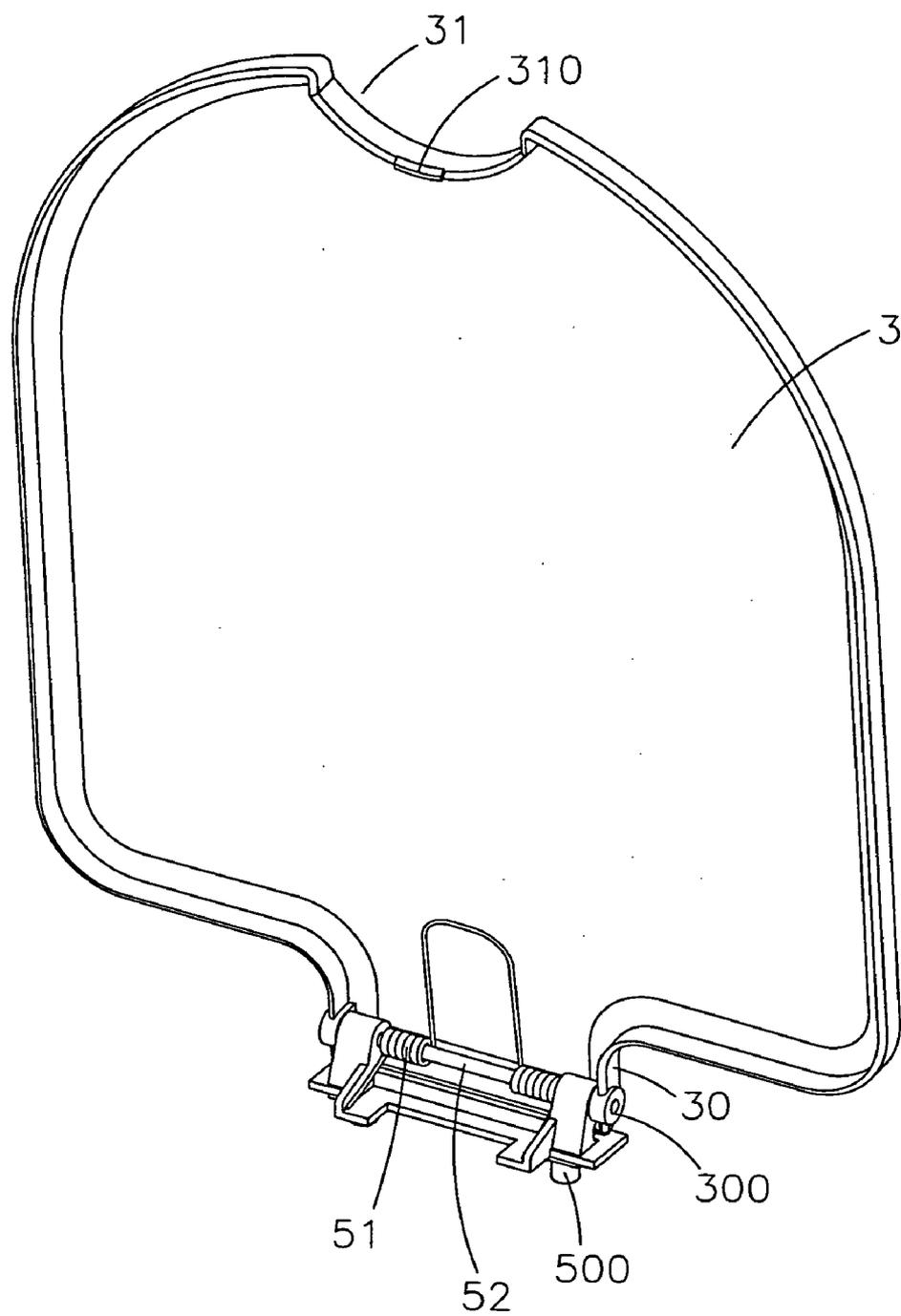


FIG. 5

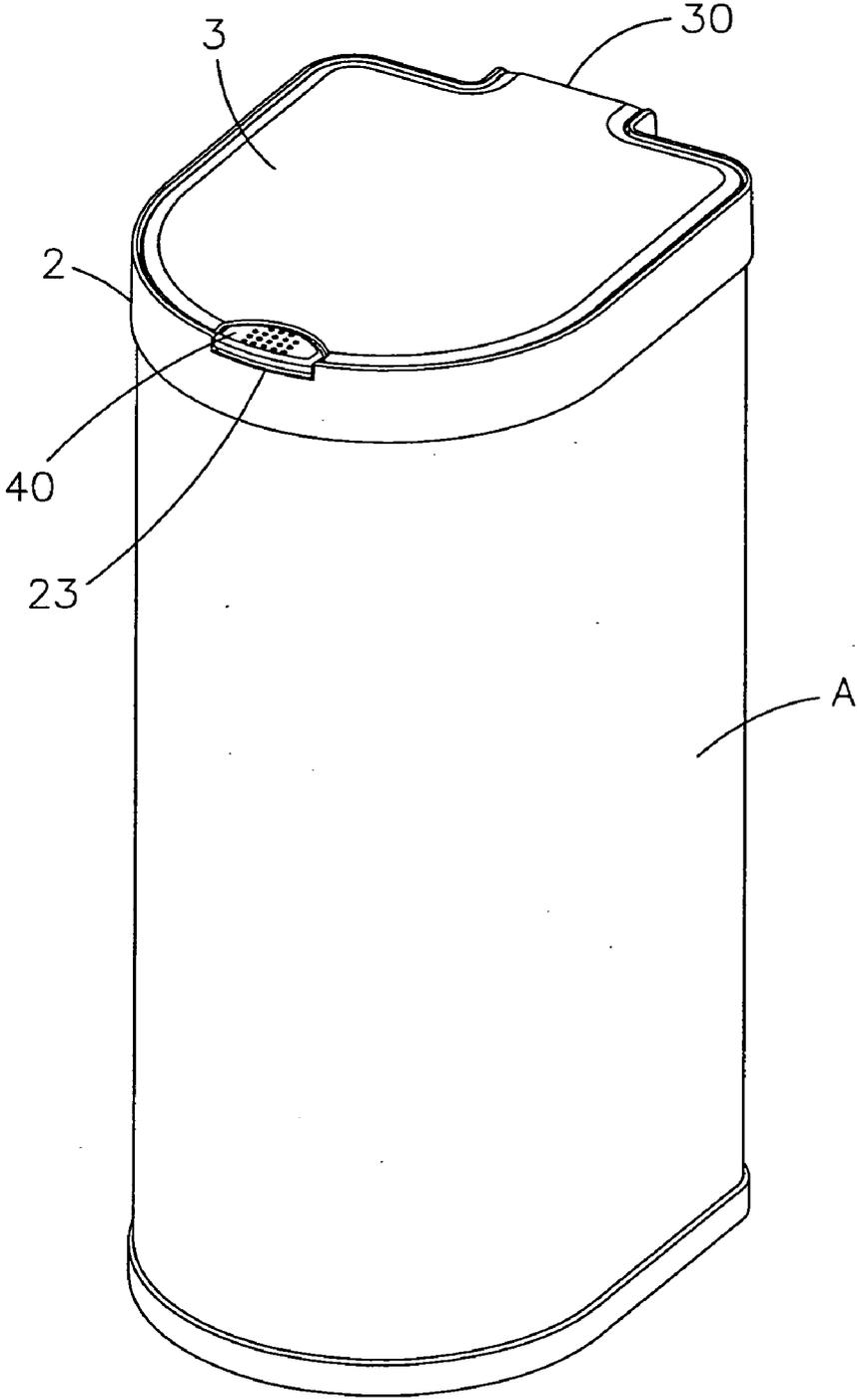


FIG. 6

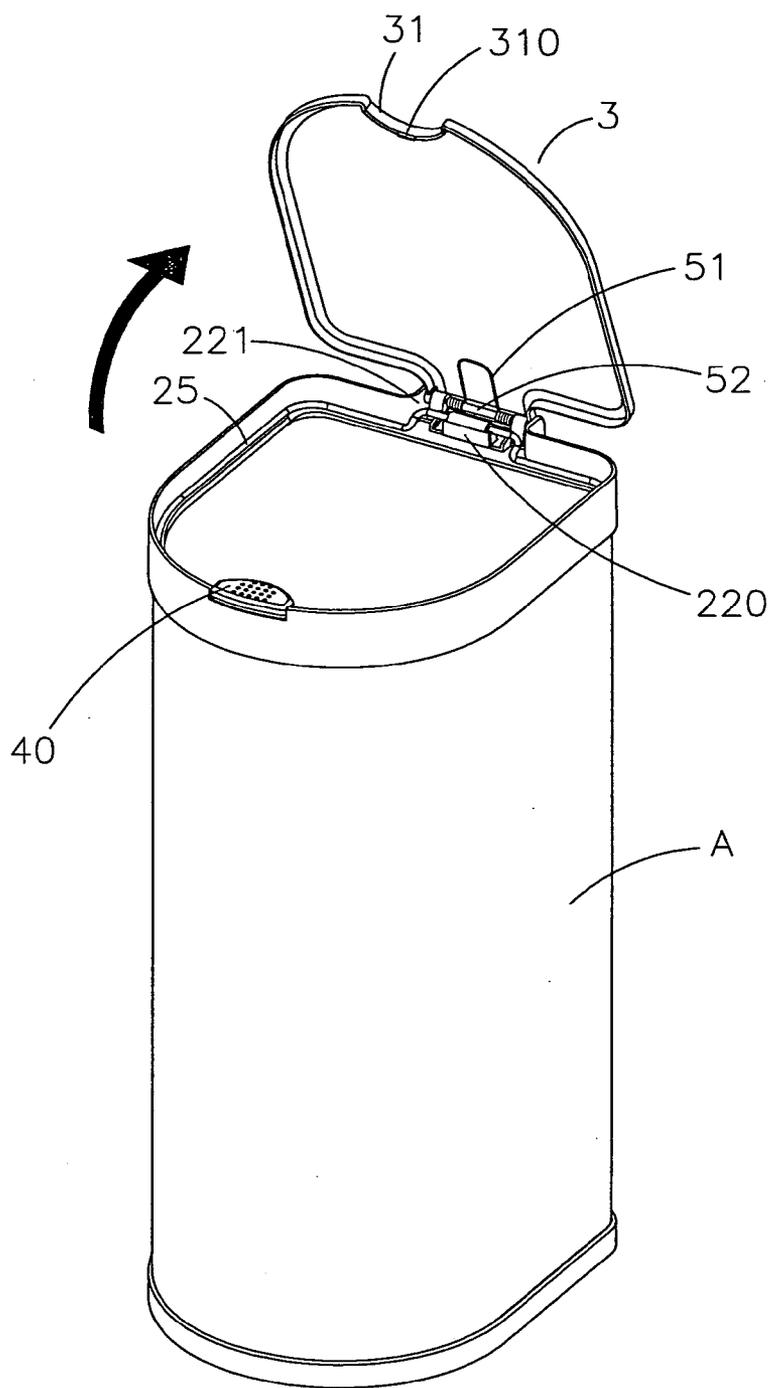


FIG. 7

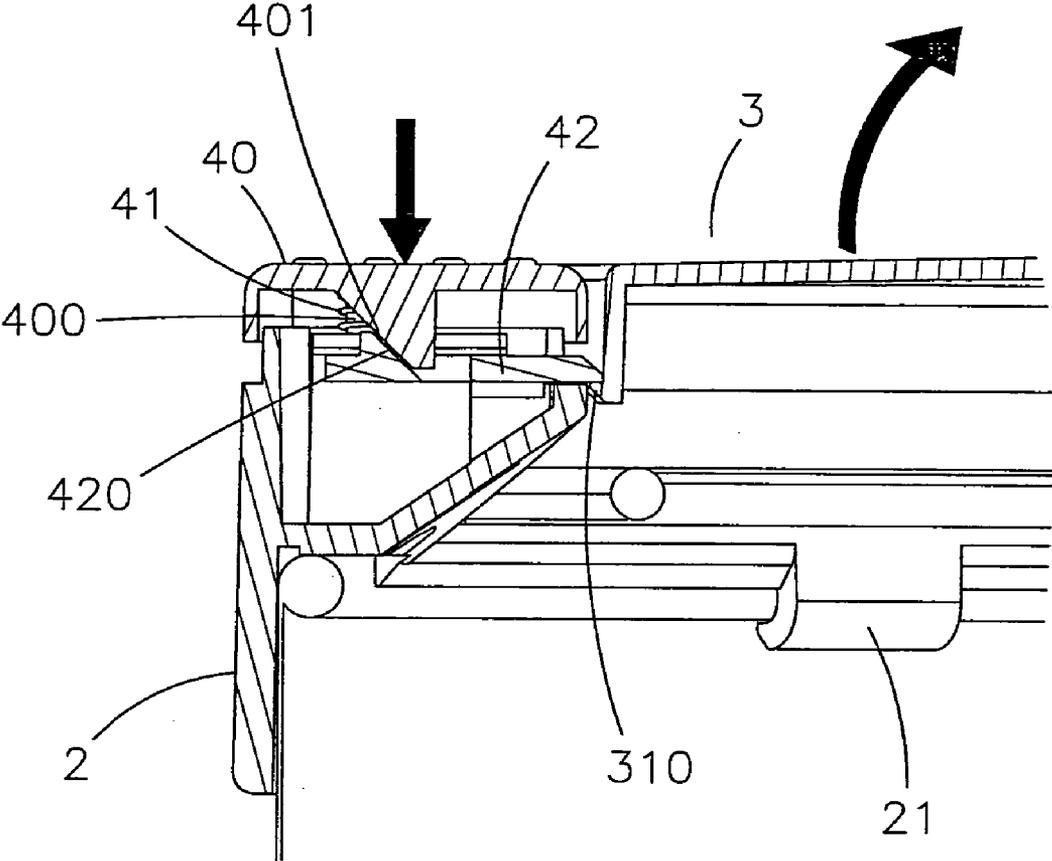


FIG. 8

**GARBAGE BIN LID**

**BACKGROUND OF THE INVENTION**

**[0001]** 1. Field of the Invention

**[0002]** The invention is a kind of garbage bin lid, namely one that has a joining unit on the lid frame that positions the lid. The lid and the lid frame have a compression spring between them, allowing them to easily lift up the lid. The movement of a lid open-and-close unit controls the opening or closing of the lid, making opening the lid and lid frame more stable and convenient.

**[0003]** 2. Description of the Prior Art

**[0004]** Garbage bins that are usually today seen either have a lid or are without a lid. A bin with a lid is more hygienic and environmentally friendly. To improve this kind of bin the kind of stepping board garbage bin shown in FIG. 1 was developed. However, this kind of lid 10 has to be joined to the garbage bin 1 by screws and the structure is complex and assembly very difficult. Stepping board 11 and the interacting mechanism 12 with which it interacts have many parts and are complex and the impact when opening also makes noise and causes the bin to shake, meaning that manufacture and use is very inconvenient.

**SUMMARY OF THE INVENTION**

**[0005]** The objective of this invention is to provide a lid that is very convenient to open and close, the lid frame and lid structure of which is firmer and more stable, providing a garbage bin lid that is more convenient to attach and use.

**BRIEF DESCRIPTION OF DRAWINGS**

**[0006]** This invention is better understood by referring to the accompanying drawings, wherein:

**[0007]** FIG. 1 is a perspective view of a conventional garbage bin;

**[0008]** FIG. 2 is an exploded view of the lid of the garbage bin in the present invention;

**[0009]** FIG. 3 is a perspective view of the lid of the garbage bin in the present invention;

**[0010]** FIG. 4 is a perspective upper view of FIG. 3;

**[0011]** FIG. 5 is a perspective view of the lid and joining unit of the garbage bin lid in the present invention;

**[0012]** FIG. 6 is a perspective view of the assembly of the lid and a garbage bin;

**[0013]** FIG. 7 is a perspective view of the lid open and a garbage bin; and

**[0014]** FIG. 8 is a cross-sectional view of the clipping action of the lid open-and-close unit and lid of garbage bin in the present invention.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

**[0015]** As shown in FIGS. 2-8, a preferred embodiment of a garbage bin lid the in the present invention includes a lid frame 2, a lid 3, a lid open-and-close unit 4 and a joining unit 5.

**[0016]** The lid frame 2 has an opening 20 and a fixing member 21 on the edge. On one end of lid frame 2 is a pivotal aperture 22. Opposite pivotal aperture 22 is a lid open-and-close unit base 23. Pivotal aperture 22 has a pivot base 220, pivotal aperture wall 221 and two sliding grooves 222. On lid open-and-close unit base 23 there are a sliding groove 230, a spring 231 and positioning hole 232 and there is an inlay

groove 24 on the inside of the lid frame 2. Sealing strip 25 is inlaid in inlay groove 24 allowing the lid 3 and lid frame 2 to close tightly.

**[0017]** The lid 3 is attached to the opening 20 of the lid frame 2. One end of lid 3 has a pivot-connecting base 30 protruding. The other end has a fitting curve 31. On the front of fitting curve 31 there is an engaging member 310. Pivot-connecting base 30 also has two pivot holes 300.

**[0018]** The lid open-and-close unit 4 is attached between lid frame 2 and the lid 3. It includes a pressing plate 40, spring 41 and slidable plate 42. Pressing plate 40 has a pivotal pin 400 and sliding face 401. The spring 41 can be placed on the pivotal pin 400. Sliding face 401 and the sloping face 420 of slidable plate 42 work in coordination. Slidable plate 42 is inlaid inside sliding groove 230. Sloping face 420 on slidable plate 42 touches the sliding face 401 on pressing plate 40 and moves back and forward by pressing plate 40 and spring 231.

**[0019]** The joining unit 5 is attached to pivotal aperture 22 on lid frame 2. Joining unit 5 includes a pivot support 50, compressor spring 51 and rod 52. Pivot support 50 has a positioning pin 500 and pivot hole 501.

**[0020]** When assembling, line up pivot hole 501 of the pivot support 50 of the joining unit 5, compression spring 51 and the pivot hole 300 on lid 3, then pass a pin 52 through, joining them together as one. Then inlay sealing strip 25 in the inlay groove 24 of the lid frame 2, then inlay the slidable plate 42 of the lid open-and-close unit 4 in the sliding groove 230. There is a spring 231 on the end of slidable plate 42. Using a screw, attach pressing plate 40 to the positioning hole 232 of lid open-and-close unit base 23. On the pivotal pin 400 of pressing plate 40 there is a spring 41. Press sliding face 401 on pressing plate 40 against the sloping face 420 of slidable plate 42. Then, pass positioning pin 500 on the joining unit 5 on lid 3 through the pivot-connecting base 222 on the lid frame 2 and positioned by screw. At this time pivot-connecting base 30 of the lid 3 is tightly attached to the lid frame 2 and pin 52 that is positioned on pivot-connecting base 30 of the lid 3 and pivot support 50 of the joining unit 5 will be supported by the pivotal aperture wall 221 of the lid frame 2, allowing easy assembly.

**[0021]** When used, the already-assembled lid 3 and lid frame 2 are attached to garbage bin (A). At this time, the fixing member 21 on lid frame 2 will clip together with the garbage bin (A) and be positioned, thus being attached to garbage bin (A).

**[0022]** When the pressing plate 40 is pressed down, the sliding face 401 under it will be pressed down making the sloping face 420 on the slidable plate 42 slide outwards and compress the spring 231. At this time, the engaging member 310 on the fitting curve 31 on the front of the lid 3 will unclip and lid 3 will be pushed up by spring 51 on joining unit 5 and will spring up and open. When pressing plate 40 is released, spring 41 will push pressing plate 40 up and, at the same time, push slidable plate 42 back into its original clipped-in position.

**[0023]** When lid 3 is pressed down as shown in FIG. 8, it only needs pressing down to the lid frame 2 under the lid 3. Then the engaging member 310 and the slidable plate 42 on the fitting curve 31 on the front of the lid 3 will clip together and the lid 3 can be easily closed.

**[0024]** While the preferred embodiment of the invention has been described above, it will be recognized and understood that various modifications may be made therein and the

appended claims are intended to cover all such modifications that may fall within the spirit and scope of the invention.

What is claimed is:

1. A garbage bin lid comprising:

a lid frame which has an opening in the center and has a fixing member on the edge, which has a pivotal aperture on one end and a lid open-and-close unit base on the other.

a lid that is attached to the opening on the lid frame, and lid has a pivot-connecting base on one end and, on the other, a fitting curve.

a lid open-and-close unit which is on the lid frame and includes: a pressing plate, a spring and a slidable plate, that slidable plate slides on the lid open-and-close unit base under the effect of the pressing plate.

a joining unit that is attached to the pivotal aperture of the lid frame and includes a pivot support, a spring and a rod, in which the pivot support has a pivot hole to allow it to be joined to the pivot-connecting base on the lid.

through assembling the aforementioned parts and the bin, the lid can be opened easily and without making noise.

2. The garbage bin lid as claimed in claim 1, wherein the pivotal aperture on the lid frame has a pivot base and a pivotal aperture wall to join the lid and the joining unit as one.

3. The garbage bin lid as claimed in claim 1, wherein the lid open-and-close unit base of the lid frame has a sliding groove and spring to position the lid open-and-close unit.

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