A lid opening and closing device includes a first lock mechanism for retaining a fully-closed position of lids 3a, 3b, a torsion coil spring 6 for accumulating an urging force in a direction so as to open the lids, and a release button 4 for unlocking the first lock mechanism. When the release button is pressed, the lids automatically open. The lid opening and closing device further includes a compression coil spring 9 for accumulating an urging force which allows the lids to move to a halfway position in a closing direction from a fully-open position, and a second lock mechanism 11 for retaining the compression coil spring in a compression position. When the release button is pressed at the fully-open position of the lids, the second lock mechanism is unlocked and the lids move to the halfway position in the closing direction. The urging force is accumulated in the torsion coil spring and the compression coil spring by manually moving the lids to the fully-closed position.
Fig. 3
Fig. 4
Fig. 10
Fig. 12

Fig. 13
LID OPENING AND CLOSING DEVICE

FIELD OF THE INVENTION

This invention relates to a lid opening and closing device, especially, the lid opening and closing device suitable for a type of accessory box whose lids are stored in a storage portion when the lids are fully open.

BACKGROUND OF THE ART

For example, for an accessory box provided in a center console of an automobile and the like, one with a lid with a lateral opening whose one end is interconnected with an open surface of a goods storage portion by using a hinge, is well-known. If this lid projects when the lid is open, it becomes an obstacle. Thus, the lid is preferably constituted so as to be stored on the outside of a side wall of the goods storage portion. If the lid is constituted so as to be completely stored, the appearance becomes good. On the other hand, a loose end of the lid can be easily submerged from the open surface. As a result, the closing operation is interfered. Accordingly, one using a reversal spring in which urging forces to both opening and closing directions reverse at the central point of the displacement so that opening and closing movements of the lid can be automatically performed by pressing a button, has been proposed (See Japanese Patent Document 1).


DISCLOSURE OF THE INVENTION

Problems to be Solved by the Invention

However, in this conventional structure, a retaining force in both opening and closing positions of a lid depends on a recoil force of a reversal spring, so that if a spring force increases due to the emphasis on the retaining force in order for the lid not to move at both fully-opened and fully-closed positions, the operational force required at the time of opening and closing operations increases. Also, if the operational force decreases, the retaining force becomes insufficient, and so on. As a result, obtaining sufficient operational force and retaining force was troublesome. Moreover, a stroke for displacing the reversal spring to a position beyond a neutral point depends on an operational quantity for pressing a button, so that the stroke for allowing the reversal spring to go beyond the neutral point is required for pressing the button, and it was also difficult to decrease the operational quantity for pressing the button.

This invention has been made in order to solve such inconveniences of such conventional art, and a main object of the present invention is to provide a lid opening and closing device constituted so as to secure sufficient retaining force of lids in both fully-opened and fully-closed positions; and also substantially reduce an operational force and an operational quantity at a high level.

Means for Solving the Problems

In order to solve such problems, a lid opening and closing device according to the present invention comprises a lock mechanism (first lock mechanism 5) retaining a fully-closed position of lids (lids 3a, 3b); an urging-force accumulation member (torsion coil spring 6) accumulating an urging force in a direction opening said lids; and an operating portion (release button 4) unlocking said lock mechanism, so that said lids are automatically opened when said operating portion is unlocked, wherein the lid opening and closing device includes a second urging-force accumulation member (compression coil spring 9) accumulating an urging force which allows said lids to move to a halfway position in a closing direction from a fully-opened position; and a second lock mechanism (second lock mechanism 11) retaining the second urging-force accumulation member in an urging-force accumulation position. When said operating portion is operated at the fully-open position of said lids, said second lock mechanism is unlocked and said lids move to the halfway position in the closing direction. By moving the lids to the fully-closed position, it is constituted such that an urging force is accumulated in both of the urging-force accumulation members (claim 1). Also, in addition to the above-mentioned structure, it is preferred to include first unlock mechanisms (an upper release slider 19, a side release slider 23) for releasing an urging force of said urging-force accumulation member when said operating portion is operated at the fully-closed position of said lids; a second lock mechanism (lower release slider 34) for releasing an urging force of said second urging-force accumulation member when said operating portion is operated at the fully-open position of said lids; and an unlock-operation switching mechanism (41) for selecting the connection and disconnection between said first unlock mechanism and said second unlock mechanism (claim 2).

Especially, it is preferred that said lids are double opening lids which are interconnected through a synchronous mechanism (sector gears 14, spur gears 15) and perform synchronous movements (claim 3). Moreover, it is preferred to include covers (flaps 8) which move with the movement of the opening direction of said lids and cover said lids (claim 4).

Also, in this invention, in the lid opening and closing device wherein the fully-closed position of the lids is retained by the lock mechanisms, and when the lock mechanisms are unlocked, the lids open, the covers covering the lids in the fully-open position are provided (claim 5), and the covers move with the movement of the opening direction of the lids (claim 6).

Effects of the Invention

According to the present invention, urging force accumulated in a spring device and the like is utilized as a driving force for opening lids, and a retaining force in a fully-closed position of the lids depends on a separate lock mechanism, so that sufficient retaining forces of the lids in fully-open and fully-closed positions can be easily secured. Since an operating force and an operating quantity only for unlocking the lock mechanism are required, the operating force and the operating quantity can decrease. Also, since the lids stored in the fully-open position are automatically moving to a halfway position in a closing direction when a closing operation is performed, a manually-closing lid operation becomes easy. In addition to this, since a user manually performs the operation to the fully-closed position from the halfway position in the closing direction, there is no concern for trouble of catching a thing or a hand due to an operational error. Also, since a shared operating portion can perform the opening operation and the closing operation moving to the halfway position in the closing direction, a complicated structure of the operating portion can be avoided.

Especially, if the lids are double opening lids interconnected through the synchronous mechanism and perform-
ing synchronous movements, an open portion can be widened so that usability can be enhanced. If the lids in the fully-open position are covered by covers, an open surface can be flat at the time of the fully-open position, so that appearance can improve and also when goods are put in, there is no concern that the goods might be caught. Moreover, since there is no gap, there is no concern that a small coin or the like could be dropped in and could not be taken out.

BEST MODE FOR CARRYING OUT THE INVENTION

[0011] Hereinafter, the present invention will be explained in detail with reference to attached drawings.

[0012] FIGS. 1, 2 are overall perspective views of an accessory box wherein the present invention is applied. This accessory box 1 is used by being embedded, for example, in a center console of an automobile, and provided with a box body 2 constituting a goods storage portion and a pair of right and left lids 3a, 3b constituted so as to be double opening doors which close an upper open surface of the box body 2. Incidentally, movement directions in the following explanation will represent a direction toward paper surfaces of FIGS. 1, 2, and a near side will represent a “front”.

[0013] In this accessory box 1, both lids 3a, 3b symmetrically rotate in synchronization, and when a release button 4 provided in a front wall upper portion of the box body 2 is pressed in a fully-closed position (FIG. 1), a first lock mechanism 5 retaining the fully-closed position of the right lid 3b is unlocked, and due to a recoil force of a torsion coil spring 6 (see FIG. 4) built into the left lid 3a, firstly, both lids 3a, 3b automatically open to a vertical position along right and left side walls of the box body 2 shown in FIG. 3. When both lids 3a, 3b open to this position, due to their own weights, both lids 3a, 3b descend together with a slide base 7 supporting both lids 3a, 3b to be freely rotatable, and eventually, loose ends of both lids 3a, 3b descend to a stored position which is lower than the open surface of the box body 2. Also, the loose ends of both lids 3a, 3b in the stored position are covered by a pair of right and left flaps 8 rotatably attached at upper border sides of the right and left side walls of the box body 2 (see FIGS. 2, 4).

[0014] Here, both flaps 8 are provided with the torsion coil spring (not shown) on fulcrum axes, so that the flaps 8 are urged by a recoil force in a direction turning the loose ends outward, i.e., in a direction covering the loose ends of both lids 3a, 3b which are in the stored position. When both lids 3a, 3b move to a closed direction, the flaps 8 are pressed by the loose ends of each lid 3a, 3b, and turn the respective loose ends inward.

[0015] When the release button 4 is pressed in a state wherein both lids 3a, 3b are fully open and descended as shown in FIGS. 2, 4, a second lock mechanism 11, retaining a lifter 10 urged upward by a recoil force of a compression coil spring 9 which is compressed when both lids 3a, 3b are fully closed, is unlocked so that the lifter 10 ascends. An ascending force of this lifter 10 joins a rack slider 12 abutted against an upper surface of the lifter 10, so that both lids 3a, 3b and the slide base 7 ascend with the rack slider 12, and both lids 3a, 3b move to an intermediate position (see FIG. 5) wherein the loose ends of both lids 3a, 3b project in some degree from the open surface of the box body 2.

[0016] In this state, when the loose end of any one of both lids 3a, 3b is manually rotated in a closing direction, the right and left lids 3a, 3b perform a closing movement in synchro-

nization against a recoil force of the torsion coil spring 6 urging the left lid 3a so as to open. When the right lid 3b reaches the fully-closed position, the first lock mechanism 5 is activated, so that the fully-closed position of both lids 3a, 3b is retained. At the same time, when the rack slider 12 descends in conjunction with a closing movement of this right lid 3b; presses down the lifter 10; compresses the compression coil spring 9 urging the lifter 10 upward by a recoil force so that the lifter 10 reaches a descending limit, the second lock mechanism 11 is activated and retains a descending position of the lifter 10. Specifically, the lids 3a, 3b are returned to the fully-closed position shown in FIG. 1.

[0017] Next, urging mechanisms for providing a driving force of the above-mentioned lid opening movement and a driving force of an ascending movement to the intermediate position for both lids 3a, 3b, will be further explained in detail. Incidentally, although these urging mechanisms are provided in both front and back of the box body 2 with the substantially same structure, hereinafter, one provided in a front side will be explained.

[0018] On external surfaces of the front and back walls of the box body 2, the slider base 7 is provided so as to be freely slidable up and down. On an external surface of this slider base 7, loose ends of L-shaped arms 13a, 13b symmetrically extending from both front and back ends of an external end portion of both lids 3a, 3b which are in the fully-closed position, are rotatably attached.

[0019] On the right arm 13b, a sector gear 14b with an appropriate angle centered at a fulcrum point is provided. In this sector gear 14b, a right spur gear 15b engages serially in an axial direction with a rack gear 16 formed in the rack slider 12 to be freely slidable up and down. The left arm 13a is also provided with a sector gear 14a with the appropriate angle centered at the fulcrum point, and this engages with a left spur gear 15a engaging with the right spur gear 15b. Due to this pair of spur gears 15a, 15b and both sector gears 14a, 14b, by providing opening-and-closing driving force to one side of the lids, a synchronous mechanism in which opening and closing movements of the right and left lids 3a, 3b are synchronous, are constituted. Incidentally, on one side of the spur gears 15b (15a), a heretofore known damper device (not shown) for providing an appropriate rotational resistance which is set so as to have an appropriate opening speed of both lids 3a, 3b by a recoil force of the torsion coil spring 6 which is wound around a fulcrum axis of the left arm 13a, is connected.

[0020] As shown in FIG. 6 in detail, at the center of the only front wall of the box body 2, a vertical guide tube 17 is provided in a vertical direction. An upper release slider 19 integrated with the release button 4 and urged upward by a recoil force of a compression coil spring 18, slidable engages with the upper part of this vertical guide tube 17. On a right side of this upper release slider 19, the first lock mechanism 5 is provided and retains the fully-closed position of both lids 3a, 3b by engaging with a notch 20 formed in an outer circumferential portion of the sector gear 14b integrally provided in the right front arm 13b.

[0021] The first lock mechanism 5 comprises a slide release slider 23 which slidably engages with a side guide tube 21 extending in a horizontal direction on the upper part of the front wall of the box body 2, and is urged to the left by a recoil force of a compression coil spring 22; and a first latch bolt 24 which slidably engages with a right end portion of the side guide tube 21 to be movable up and down.
The left end of the side release slider 23 is synchronized and interconnected with the upper release slider 19 via, for example, an inclined cam 25 at an angle of 45 degrees. In an engagement portion with the first latch bolt 24 of the side guide tube 21, a vertical cam slit 26 is provided in a vertical direction. In an engagement portion with the first latch bolt 24 of the side release slider 23, an inclined cam slit 27 extending in a top-left direction is provided. Also, in the first latch bolt 24, a pin 28 engaging with both cam slits 26, 27 are projected.

On the other hand, as shown in FIG. 4, on external surfaces of the front and back walls of the box body 2, guide projecting pieces 29 are symmetrically provided, and comprise circular portions 29a covering almost the entire circumference of those guide projecting pieces 29. Thereby, at the time of the opening movement of both lids 3a, 3b, the slide base 7 is held in the highest position while the pins 30 are engaging with the circular portions 29a of the guide projecting pieces 29 (FIGS. 1, 3). When both lids 3a, 3b become a vertical condition and the pins 30 reach the vertical portions 29b of the guide projecting pieces 29, nothing can hold the slide base 7 in the highest position, so that the slide base 7 descends to the lowest position by its own weight with both lids 3a, 3b in the fully-open position, i.e., the vertical condition (FIGS. 2, 4). At this time, on the way for both lids 3a, 3b which became the vertical condition to descend, as mentioned above, the flaps 8 which were pressed against inner surfaces of both lids 3a, 3b, open outward due to an operation of the torsion coil spring.

The lifter 10 engages a guide portion 31 provided on the outer surfaces of the front and back walls of a portion provided further beneath a bottom wall of the box body 2 to be freely movable up and down. Also, as mentioned above, the lifter 10 is urged upward by a recoil force of the compression coil spring 9 compressed between the lifter 10 and a bottom surface of the guide portion 31. As shown in FIG. 7, the second lock mechanism 11 for retaining a descending position of the lifter 10, comprises the lower release slider 34 slidable engaging a lower portion of the vertical guide tube 17 to be freely movable up and down and urged upward by a recoil force of a compression coil spring 33 compressed in a bottom portion of the vertical guide tube 17; and a second latch bolt 35 engaging the lower release slider 34.

The second latch bolt 35 engaging an upper end surface of the lifter 10, slides the lower portion of the vertical guide tube 17 to be freely movable back and forth. Also, the second latch bolt 35 engages an inclined cam slit 36 provided in the lower release slider 34 and whose front drops, via a pin 37. When the lower release slider 34 moves downward, the second latch bolt 35 backs away with the pin 37 due to the operation of the inclined cam slit 36. Also, since the lower release slider 34 is urged upward by a recoil force, the second latch bolt 35 is urged forward. Incidentally, a member 40 connected to an inclined cam slit 38 provided in the lower part of the second latch bolt 35 and whose front rises via a pin 39, is a release-force transmission member for unlocking the backward lifter by transmitting a pressing-down movement of the release button 4 provided on the front wall of the box body 2 to the latch bolt provided on the back wall.

Between the upper release slider 19 and the lower release slider 34, a switching mechanism 41 is provided and selects a synchronous motion and a non-synchronous motion of both sides. The switching mechanism 41 comprises an intermediate-portion release slider 42 interconnected to the upper release slider 19; and a connector 43 rotatably attached at the lower end of the intermediate-portion release slider 42 so that loose ends of the connector 43 can freely rotate back and forth, and urged by a recoil force in a direction wherein the loose ends are pushed forward. This connector 43 lifts the loose ends backward when the connector 43 is pushed by a slide cam 44 comprising an inclined surface and a projecting surface provided in an internal surface of the slide base 7.

As shown in FIG. 8, the connector 43 is rotatably attached to the intermediate-portion release slider 42, and provided with right and left side walls 46 urged by a turning force of a torsion coil spring 45 which is wound around the rotation axis. At the loose end of the internal surface of each side wall 46, inward-projecting projections 47 are respectively formed. Both projections 47 project such that end borders of the projections 47 face each other, and an appropriate space is provided between facing end surfaces.

On the other hand, at the upper end of the lower release slider 34, a T-shaped projected portion 48 is formed and abuts the top surface against lower surfaces of both projections 47 of the connector 43. A leg portion 49 of this T-shaped projected portion 48 has such a size as to enable to slip through the space between both projections 47 of the connector 43.

Next, the movement opening the lids 3a, 3b from the fully-closed position by pushing the release button 4 will be explained in detail.

When both lids 3a, 3b are in the fully-closed position, i.e., when the slide base 7 is located in the highest position, the inclined cam 44 provided on a back surface of the slide base 7 does not contact with the connector 43 (see FIG. 7). In this state, since the loose end of the connector 43 is pushed forward, even if the release button 4 is pressed and the connector 43 descends with the upper release slider 19 and the intermediate-portion release slider 42, the projections 47 which are the loose ends of the connector 43 do not contact with the T-shaped projected portion 48 of the lower release slider 34, so that the descending movement of the intermediate-portion release slider 42 does not affect the lower release slider 34 (see FIG. 9). At this time, as shown in FIG. 12, both lids 3a, 3b are constituted so as to become continuous surfaces with makeup panels provided on upper surfaces of center consoles CS, and as mentioned above, the flaps 8 tilt inward by being pushed by the internal surfaces of both lids 3a, 3b.

In this state, when the release button 4 is pressed, due to the operation of the inclined cam 25 at an angle of 45 degrees, the downward movement of the upper release slider 19 which is integrated with the release button 4, switches to a right-direction movement of the side release slider 23, so that the side release slider 23 moves to the right. Then, due to the right-direction movement of the inclined cam slit 27 provided on the side release slider 23, the first latch bolt 24 engaging the cam slit 27 by the pin 28 moves upward along the vertical cam slit 26 of the side guide tube 21. Thereby, a projecting end of the first latch bolt 24 comes free from the notch 20 of the sector gear 146 of the right front arm 136 integrated with the right lid 3b which is in the fully-closed position. Due to a recoil force of the torsion coil spring 6 acting on the arm 13a of the left lid 3a, both lids 3a, 3b automatically open. In this state, when the release button 4 is released, the upper release slider 19 returns to an original position due to a recoil force of...
the compression coil spring 18, and the first latch bolt 24 maintains a state wherein the projecting end thereof is pressed against the outer circumferential surface of the sector gear 146 of the right arm 13b by a recoil force to the left due to the compression coil spring 22 acting on the side release slider 23. [0032] Thus, as mentioned above, the front right arm 13b is unlocked and both lids 3a, 3b open in synchronization. After that, both lids 3a, 3b descend with the slide base 7 and reach the fully-open position. In this fully-open position, as shown in FIG. 13, both lids 3a, 3b are stored in lid storage spaces H created outside the box body 2 in the center console CS, and upper surfaces of the storage spaces H are closed by the flaps 8. Thereby, at the time when the lids are fully open, gaps of the lid storage spaces H vanish from sight so that the appearance can improve. Moreover, when goods are put in, the goods will never be caught, and also since there is no gap, there is no concern that a small coin or the like could be dropped in the lid storage spaces H and could not be taken out. [0033] Incidentally, at the time of the opening operation, even if the release button 4 is being pushed down until the slide base 7 descends, the gap between both projections 47 of the connector 43 can pass through the leg portion 49 of the T-shaped projected portion 48, so that when the connector 43 is pushed by the slide cam 44, the projections 47 of the connector 43 cannot be interrupted by the T-shaped projected portion 48. [0034] Next, when the release button 4 is pressed from the fully-open position wherein the slide base 7 descends to the lowest position with both lids 3a, 3b, the operation of the lifter 10 which pushes up both lids 3a, 3b to a halfway-closing position with the slide base 7 will be explained in detail. [0035] In the fully-open position in which the slide base 7 descended, the slide cam 44 of the back surface of the slide base pushes the connector 43, and the loose ends thereof move backward (see FIG. 10). In this state, i.e., when the release button 4 is pressed at the fully-open position of both lids 3a, 3b, the upper release slider 19 and the intermediate-port slider 41 integrated with the upper release slider 19 move downwardly, and the lower surface of the inward-projecting projections 47 of the connector 44 abuts against a top surface of the T-shaped projected portion 48 of the lower release slider 34, so that the lower release slider 34 is pushed down. Then, the second latch bolt 35 engaging the inclined cam slit 36 of the lower release slider 34 via the pin 37, moves backward and unlocks the lifter 10 (see FIG. 11). Thereby, the lifter 10 ascends due to a recoil force of the compression coil spring 9, and pushes up the rack slider 12 abutting against the upper surface of the lifter 10. In this state, when the release button 4 is released, the upper release slider 19 returns to the original position due to a recoil force of the compression coil spring 18. Also, the lower release slider 34 returns to the original position due to a recoil force of the compression coil spring 33. Thereby, the second latch bolt 24 also returns to a forward movement position. Here, a portion except for an upper end portion of the back surface of the lifter 10 is cut out in order not to interfere with the end of the second latch bolt 24, so that the return to the forward movement position of the second latch bolt 24 cannot be interfered. [0036] On the other hand, since the pins 30 engage the vertical portions 29 of the guide projecting pieces 29, both arms 13a, 13b cannot rotate, so that the sector gear 146 of the right arm 13b maintains an engagement relationship with the rack gear 16. Therefore, when the rack slider 12 ascends, together with that, both lids 3a, 3b and the slider base 7 ascend as well. Thereby, inner end borders of both lids 3a, 3b push back the flaps 8, and project upward from the open surface of the box body 2. Incidentally, in the rack slider 12, a well-known damper device is additionally provided, and the ascent speed thereof is appropriately set up. [0037] Thus, in the state wherein both lids 3a, 3b project from the open surface of the box body 2, the pins 30 engage the circular portions 29a of the guide projecting pieces 29, so that both arms 13a, 13b are rotatable. In this state, when the loose end of any one of both lids 3a, 3b is manually rotated inward, and both lids 3a, 3b reach the fully-closed position, the end of the first latch bolt 24 engages the notch 20, so that the fully-closed position of both lids 3a, 3b is retained. [0038] At the same time, due to the sector gear 146 which is rotated by a closing-direction movement of the right lid 3b, the rack slider 12 moves downwardly, and pushes down the lifter 10. When the lifter 10 reaches the lowest bottom position, the end of the second latch bolt 35 engages the upper surface of the lifter 10, so that the lowest bottom position of the lifter 10 is retained. [0039] In the above-mentioned closing operation of the lids 3a, 3b, a force against both reaction forces of the torsion coil spring 6 urging the opening of the left lid 3a; and the compression coil spring 9 urging to ascend the rack slider 12, has to be provided on the lids 3a, 3b. However, according to the above-mentioned structure, a distance from the loose ends of the lids 3a, 3b to a fulcrum end; and a radius of the sector gear 146 engaging the rack gear 16 of the rack slider 12, can be sufficiently increased, so that a transmission efficiency of a force can be enhanced, and the closing operation can be performed by a small operational force.

INDUSTRIAL APPLICABILITY

[0040] The lid opening and closing device according to the present invention can be broadly applied to conveyances in general such as trains, ships, aircrafts and the like as well as uses for furniture in which a lid is required for a goods storage portion, business equipment, kitchens, washstands and the like.

BRIEF DESCRIPTION OF THE DRAWINGS

[0041] FIG. 1 is an overall perspective view of a closed-lid state of an accessory box wherein the present invention is applied.
[0042] FIG. 2 is an overall perspective view of an opened-lid state of the accessory box wherein the present invention is applied.
[0043] FIG. 3 is a front view of an intermediate position of an opening direction.
[0044] FIG. 4 is a front view of a fully-open position.
[0045] FIG. 5 is a front view of an intermediate position of a closing direction.
[0046] FIG. 6 is a front view, wherein one part of a first lock mechanism is cut out.
[0047] FIG. 7 is a side sectional view of a lock state of a second lock mechanism.
[0048] FIG. 8 is a perspective view of a switching mechanism.
[0049] FIG. 9 is a side sectional view showing a state of the switching mechanism when the first lock mechanism is unlocked.
FIG. 10 is a side sectional view of a lock state of the second lock mechanism in the fully-open position.  
FIG. 11 is a side sectional view of an unlock state of the second lock mechanism.  
FIG. 12 is a vertical sectional view showing a relationship between lids and flaps in the fully-closed position.  
FIG. 13 is a vertical sectional view showing a relationship between the lids and the flaps in the fully-open position.

EXPLANATION OF SYMBOLS

1 accessory box  
3a, 3b lids  
4 release button  
5 first lock mechanism  
6 torsion coil spring  
8 flaps  
9 compression coil spring  
11 second lock mechanism  
14 sector gears  
15 spur gears  
19 upper release slider  
23 side release slider  
34 lower release slider  
41 switching mechanism

What is claimed is:

1. A lid opening and closing device, comprising:
   - a lock mechanism for retaining a fully-closed position of lids;
   - an urging-force accumulation member for accumulating an urging force in a direction so as to open the lid; and
   - an operating portion for unlocking said lock mechanism, said lid opening and closing device automatically opening said lids when the operating portion is unlocked,

wherein the lid opening and closing device further comprises a second urging-force accumulation member for accumulating an urging force for moving said lids to a halfway position in a closing direction from a fully-open position, and a second lock mechanism for retaining the second urging-force accumulation member in an urging-force accumulation position, and

when said operating portion is operated at the fully-open position of said lids, said second lock mechanism is unlocked and said lids move to the halfway position in the closing direction, and an urging force is accumulated in both of the urging-force accumulation members by moving the lids to the fully-closed position.

2. A lid opening and closing device according to claim 1, further comprising:
   - a first unlock mechanism for releasing the urging force of said urging-force accumulation member when said operating portion is operated at the fully-closed position of said lids;
   - a second unlock mechanism for releasing the urging force of said second urging-force accumulation member when said operating portion is operated at the fully-open position of said lids; and
   - an unlock-operation switching mechanism for selecting connection or disconnection between said first unlock mechanism and said second unlock mechanism.

3. A lid opening and closing device according to claim 1, wherein said lids are double opening lids interconnected through a synchronous mechanism for performing synchronous movements.

4. A lid opening and closing device according to claim 1, further comprising covers synchronizing with a movement of said lids in an opening direction and covering said lids in the fully-open position.

5. A lid opening and closing device, comprising:
   - a lock mechanism for retaining a fully-closed position of lid; and
   - an operating portion for unlocking the lock mechanism, said lid being opened when said operating portion is unlocked,

wherein the lid opening and closing device further comprises a cover for covering said lid in a fully-open position.

6. A lid opening and closing device according to claim 5, wherein said cover synchronizes a movement of the lid in an opening direction.

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