DEVICE FOR UNLATCHING FOLDABLE SIDE WALLS OF BOXES OR CONTAINERS

The invention relates to a device for unlatching foldable side walls of boxes or containers, wherein the side walls are hinged to the base whose two opposite end walls can be latched to the adjacent side walls and the unlatching is carried out by lifting ~~A~~arcuate actuating handles mounted and guided, resiliently prestressed, on outer faces of the end walls, motion-redirecting means on two outer ends of the actuating handle having handle ends projecting upward in the lifting direction, the motion-redirecting means converting vertical movement of lifting of the actuating handle into a horizontal movement unlatching the side walls in that unlatching arms acting on spring-tongue latches of the side walls snapped into the end walls press them out of their engaged seat surrounding the end walls.

Collapsible containers with closeable removable openings on the end side are known generally for example EP1970315 and EP1935792. Nevertheless, through ~~Through~~ the generic-device known from an earlier application, the disadvantages of the containers known from, for example DE 91 13 549.4 or DE 101 37 328 [7,011,225] can be avoided, in that a system separation is rendered possible because the latching is always ensured by the latching means provided in the side walls adjacent the end walls and not dependent on a resilient biasing of the ~~A~~arcuate actuating handle. Due to the upstream motion redirection, the actuating handle only unlatches, but does not latch.

In any case the functionality of the container with foldable or collapsible walls can thus be ensured because even in the case of breakage or damage to the one-hand unlatching

Claims

1. A device for unlatching foldable side walls (2 through 5) of boxes or containers (1), wherein the side walls are hinged to the base (6) whose two opposite end walls (4, 5) can be latched to the adjacent side walls (2, 3) and the unlatching is carried out by lifting Arcuate actuating handles (13) mounted and guided, resiliently prestressed, on outer faces of the end walls (4, 5), motion-redirecting means (16, 17) on two outer ends of the actuating handle (13) having handle ends (15) projecting upward in the lifting direction (14), the motion-redirecting means converting vertical movement of lifting of the actuating handle (13) into a horizontal movement unlatching the side walls in that unlatching arms (19) acting on spring-tongue latches (10) of the side walls (4, 5) snapped into the end walls (2, 3) press them out of their engaged seat surrounding the end walls (2, 3), characterized in that the actuating handle (13) is mounted on a sliding wall panel (26) that can be displaced in an upwardly open cutout (24) of the end wall (4, 5) in lateral guides (25a, 25b) of the wall cutout (24) that extend vertically on the end wall (4, 5) into positions closing or exposing the wall cutout (24), and wherein the motion-redirecting means (17, 18, 19) interacting with the handle ends (15) of the actuating handle (13) during displacement of the sliding wall panel (26) in their assembly position in the end wall (4, 5) remain laterally adjacent the wall cutout (24).

2. The device according to claim 1, characterized in that the handle ends (15) are formed with respective actuating formations (16) extending at an angle to the vertical and engageable with complementarily angled U-shaped guides (17) of unlatching elements (18) mounted on the left and right next to the wall cutout (24).

3. The device according to claim 2, characterized in that the unlatching elements (18), starting from their U-shaped guides (17) accommodating the actuating formations (16), are provided with unlatching arms (19) projecting horizontally and acting on spring tongues (10) that are formed in respective corners of the adjoining side walls (2, 3) and lock into the end walls (4, 5).

4. The device according to claim 3, characterized in that the horizontal unlatching arm (19) is formed with spring arms (22) on its upper and lower faces, the spring arms (22) bearing on reinforcement ribs (11, 12) inside the end wall (4, 5).

5. The device according to one of claims 1 through 4, characterized in that the sliding wall panel (26) are unitarily formed at their lower edges with respective flexible handle recesses (28) each formed with an overhang (29) directed inwardly into the container and, in a position closing the wall cutout (24), sitting on a horizontal end edge (31) of the wall cutout (24).

6. The device according to claim 5, characterized in that the overhang (29) is angled upward and outward in a wedge-shaped manner.

7. The device according to claim 5 or 6, characterized in that the handle recess (28) is above outer horizontally spaced vertical slots (27) formed in the sliding wall panel (26).

8. The device according to one of claims 5 through 7, characterized by a stop (44) mounted above the handle recess (28) approximately in the center between the vertical slots (27), establishing the maximum freedom of movement of the handle recess (28) with tensile impingement.

9. The device according to one of claims 5 through 8, characterized in that a recess (34) in the end wall (4, 5) can receive the overhang (29) in the lower end position of the sliding wall panel (26).

10. The device according to one of claims 5 through 9, characterized by straight ridges (43) on the inside of the sliding wall panel (26) orthogonally to the vertical slots (27) provided at the height of the surface of the overhang (29) bearing on the end edge (31) of the wall cutout (24).

11. The device according to one of claims 1 through 10, characterized in that the sliding wall panel (26) over its entire

height has guide grooves (32) opening inward and spaced apart from one another aligned with vertical ribs (33) formed on the outside of the end wall (4, 5) extending up to the lower edge thereof and engaging into the guide grooves (32).

12. The device according to one of claims 1 through 11, characterized in that the lateral guides (25a, 25b) of the end wall (4, 5) at the upper end of the wall cutout (24) are formed with respective offset support shoulders (36) facing toward one another and have downwardly open cavities into which sliding wall lugs (35) molded projecting upward from the upper corners of the sliding wall panel (26) can engage in the raised end position.

13. The device according to one of claims 1 through 12, characterized in that one lateral guide (25a) is formed over part of its height below the wall cutout (24) with an inset (42).

14. The device according to one of claims 1 through 13, characterized in that the lateral guides (25a, 25b) and the sliding wall panel (26) are provided with holes (39, 41) that in the raised end position of the side wall panel (26) are aligned for attachment of an antitamper seal (40).

15. The device according to one of claims 1 through 14, characterized by throughgoing slots (37) of the sliding wall panel (26) that accommodate mounting heads (38) of the actuating handle (13).

Claims

1. A device for unlatching foldable side walls (2 through 5) of boxes or containers (1), wherein the side walls are hinged to the base (6) whose two opposite end walls (4, 5) can be latched to the adjacent side walls (2, 3) and the unlatching is carried out by lifting arcuate actuating handles (13) mounted and guided, resiliently prestressed, on outer faces of the end walls (4, 5), motion-redirecting means (16, 17) on two outer ends of the actuating handle (13) having handle ends (15) projecting upward in the lifting direction (14), characterised in that the motion-redirecting means converting vertical movement of lifting of the actuating handle (13) into a horizontal movement unlatching the side walls in that unlatching arms (19) acting on spring-tongue latches (10) of the side walls (4, 5) snapped into the end walls (2, 3) press them out of their engaged seat surrounding the end walls (2, 3), the actuating handle (13) is mounted on a sliding wall panel (26) that can be displaced in an upwardly open cutout (24) of the end wall (4, 5) in lateral guides (25a, 25b) of the wall cutout (24) that extend vertically on the end wall (4, 5) into positions closing or exposing the wall cutout (24), and wherein the motion-redirecting means (17, 18, 19) interacting with the handle ends (15) of the actuating handle (13) during displacement of the sliding wall panel (26) in their assembly position in the end wall (4, 5) remain laterally adjacent the wall cutout (24).

2. The device according to claim 1, characterized in that the handle ends (15) are formed with respective actuating formations (16) extending at an angle to the vertical and engageable with complementarily angled U-shaped guides (17) of unlatching elements (18) mounted on the left and right next to the wall cutout (24).

3. The device according to claim 2, characterized in that the unlatching elements (18), starting from their U-shaped guides (17) accommodating the actuating formations (16), are provided with unlatching arms (19) projecting horizontally and acting on spring tongues (10) that are formed in respective corners of the adjoining side walls (2, 3) and lock into the end walls (4, 5).

4. The device according to claim 3, characterized in that the horizontal unlatching arm (19) is formed with spring arms (22) on its upper and lower faces, the spring arms (22) bearing on reinforcement ribs (11, 12) inside the end wall (4, 5).

5. The device according to one of claims 1 through 4, characterized in that the sliding wall panel (26) are unitarily formed at their lower edges with respective flexible handle recesses (28) each formed with an overhang (29) directed inwardly into the container and, in a position closing the wall cutout (24), sitting on a horizontal end edge (31) of the wall cutout (24).

6. The device according to claim 5, characterized in that the overhang (29) is angled upward and outward in a wedge-shaped manner.

7. The device according to claim 5 or 6, characterized in that the handle recess (28) is above outer horizontally spaced vertical slots (27) formed in the sliding wall panel (26).

8. The device according to one of claims 5 through 7, characterized by a stop (44) mounted above the handle recess (28) approximately in the center between the vertical slots (27), establishing the maximum freedom of movement of the handle recess (28) with tensile impingement.

9. The device according to one of claims 5 through 8, characterized in that a recess (34) in the end wall (4, 5) can receive the overhang (29) in the lower end position of the sliding wall panel (26).

10. The device according to one of claims 5 through 9, characterized by straight ridges (43) on the inside of the sliding wall panel (26) orthogonally to the vertical slots (27) provided at the height of the surface of the overhang (29) bearing on the end edge (31) of the wall cutout (24).

11. The device according to one of claims 1 through 10, characterized in that the sliding wall panel (26) over its entire height has guide grooves (32) opening inward and spaced apart from one another aligned with vertical ribs (33) formed on the outside of the end wall (4, 5) extending up to the lower edge thereof and engaging into the guide grooves (32).

12. The device according to one of claims 1 through 11, characterized in that the lateral guides (25a, 25b) of the end wall (4, 5) at the upper end of the wall cutout (24) are formed

with respective offset support shoulders (36) facing toward one another and have downwardly open cavities into which sliding wall lugs (35) molded projecting upward from the upper corners of the sliding wall panel (26) can engage in the raised end position.

13. The device according to one of claims 1 through 12, characterized in that one lateral guide (25a) is formed over part of its height below the wall cutout (24) with an inset (42).

14. The device according to one of claims 1 through 13, characterized in that the lateral guides (25a, 25b) and the sliding wall panel (26) are provided with holes (39, 41) that in the raised end position of the side wall panel (26) are aligned for attachment of an antitamper seal (40).

15. The device according to one of claims 1 through 14, characterized by throughgoing slots (37) of the sliding wall panel (26) that accommodate mounting heads (38) of the actuating handle (13).