mechanism 20. The detail structure of the lock catch mechanism 20 disposed on the cases 10a, 10b will be described as below through the exploded view of the lock catch mechanism 20 c in Fig. 4 and Fig. 3, Fig. 5.

[0049] The lock catch mechanism 20 comprises a lock catch member 21, two elastic members and a slider 24.

[0050] As shown in Fig. 3, the lock catch member 21 is capable of rotating relative to the cases 10a, 10b around a horizontally extending rotating shaft A, and is capable of rotatably connected to the sidewall 12n of the lid 12 of the cases 10a, 10b.

[0051] In a preferable solution, the lock catch member 21 is U-shaped, and comprises two opposite vertical bar portions 212 each having a free end and a cross bar portion 211 having two ends, each end of the cross bar portion 211 is connected to the free end of one of the two vertical bar portions 212. The free end of each vertical bar portion 212 of the lock catch member 21 is bent to form a pin portion 213, and the two pin portions 213 extending toward each other (or away from each other) are located in the same axis, the lock catch member 21 is rotatably hinged to the sidewall 12n of the lid 12 of the cases 10a, 10b through the two pin portions 213. The two pin portions 213 of the lock catch member 21 is regarded as a pivot shaft 210 of the lock catch member 21 in this embodiment, and the rotating shaft A in Fig. 3 is the pin portions 213 of the lock catch member 21.

[0052] As shown in Fig. 5, the lid 12 has two bumps 110 protruding outward from the sidewall 12n of the lid 12, each bump 110 is defined as a connecting seat 110 for being connected to the pivot shaft 210 of the lock catch member 21. Each bump 110 has a vertically extending opening 1101 facing outside at a surface of the bump 110, and a cover plate 122 capable of detachably covering the opening 1101 is connected to the corresponding bump 110 through screws. A vertically extending limiting groove 111 is defined by the opening 1101 of each bump 110 and the corresponding cover plate 122. Each bump 110 of the lid 12 further comprises an opening 112 laterally communicating with the corresponding limiting groove 111 for the pivot shaft 210 of the lock catch member 21 to pass through to connect to the slider 24 disposed inside the limiting groove 111.

[0053] The slider 24 slidable along the corresponding limiting groove 111 is constrained in each limiting groove 111. Each slider 24 has a horizontally extending positioning hole 241 facing the opening 112 on the bump 110. Each pin portion 213 of the lock catch member 21 passes through the opening 112 on the corresponding bump 110 to be held in the positioning hole 241 of the corresponding slider 24. When each pin portion 213 of the lock catch member 21

is appropriately assembled in the positioning hole 241 of the corresponding slider 24, the lock catch member 21 can freely rotate relative to the slider 24 around its pin portions 213.

[0054] As shown in Fig. 4 and Fig. 5, in this embodiment, the slider 24 has a positioning post 242 protruding from a top of the slider 24, each elastic member disposed inside the limiting groove 111 of the bump 110 is a compression spring 23a having two ends, one end of each compression spring 23a is sleeved on the positioning post 242 and the other end resists against an inner wall of the limiting groove 111.

[0055] In another embodiment, as shown in Fig. 8 and Fig. 9, each elastic member is a spring leaf 23b. The slider 24 has a positioning slot 240 on a top of the slider 24. Each spring leaf 23b is an arched strip with an arch-up portion 230 in a middle of the spring leaf 23b. Two ends of each spring leaf 23b are limited in the positioning slot 240 of the corresponding slider 24. The limiting groove 111 has a limiting recess 1110 on an inner sidewall of the limiting groove 111 corresponding to the arch-up portion 230 of each spring leaf 23b for receiving the arch-up portion 230, so that the spring leaf 23b is positioned, avoiding its shaking, as shown in Fig. 8 and Fig. 9.

[0056] During the assembly of the lock catch mechanism 20, first, the slider 24 and the elastic member may be put in the opening 1101 of the bump 110, then the pivot shaft 210 of the lock catch member 21 passes through the opening 112 to be inserted into the positioning hole 241 of the slider 24, and finally the cover plate 122 is connected to the bump 110 through screws. The slider 24 and the elastic member will not get off from the limiting slide groove 111 due to an arrangement of the cover plate 122.

[0057] As shown in Fig. 4, there are two connecting seats (bumps 110) on the sidewall 12n of the lid 12 of the cases 10a, 10b. The two connecting seats are horizontally arranged one by one on the sidewall 12n of the lid 12. The two pin portions 213 of the lock catch member 21 are connected, in a rotary way, to the two connecting seats, respectively.

[0058] The lock catch member 21, which is U-shaped, can be used as a handle, convenient for the user to hold it to transport cases.

[0059] Since the rotation of the lock catch member 21 relative to the slider 24 is not interfered with the up-down movement of the slider 24 in the limiting groove 111, the locking and unlocking flexibility of the lock catch member 21 is ensured, without getting stuck.

[0060] Next, the working process of the lock catch mechanism 20 will be described by taking, as an example, the combined container with two stacked cases 10a, 10b which are locked by the lock catch mechanism 20.