

Design Strategy of Packaging Box Based on Shockproof Concept

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Abstract

The top of the second box and the top of the two corners of the diagonally set structure, the top of the second box and the bottom of the two top of the corner of the diagonal plane projection each other. The four objects used to buffer the second box inside the first box, and the objects used to buffer the second box inside the first box.

Keywords

Spring; Connecting piece; Buffer; Shock-proof.

1. Reference Basis

According to the first requirement, it has the advantage that all the objects described for buffering include the parts of the first stuck object, the parts of the second stuck object, the connecting rod and the spring. The connecting rod is connected with the parts of the first stuck object, and the other side can slide on the parts of the second stuck object. The spring sleeve is placed in the connecting rod and located in the parts of the first stuck object and the parts of the second stuck object, the parts of the first stuck object are placed in the card slot of the top corner of the second box, and the parts of the second stuck object depend on the top corner of the first box.

According to the second requirement, it has the advantage that the parts of the second stuck object mentioned include the first face of the parts placed towards the first stuck object mentioned, the second face of a box board attached to the first box, the third face of another box board attached to the first box, and the fourth face of the bottom plate or cover plate attached to the first box mentioned. The first, second, third, and fourth faces respectively present a triangular setup and are connected to each other.

According to the third requirement for shockproof packaging box, its advantage is that the through hole across the first surface and the second surface, the third surface and the fourth surface of the connection of the top corner.

According to the fourth requirement for shockproof packing box, its advantage is that the connecting rod contains the first rod object, the second rod object and the raised table, the first rod object and the second rod object connection, the raised table is set in the first rod object and the second rod object connection place, The two ends of the spring are respectively on the raised table and the first surface.

According to the first requirements for shockproof packing box, its advantage is that the cover plate is placed connected with the shaft body, the box is placed with the shaft seat, the two sides of the connected shaft body and the shaft seat are connected with each other.

2. Design Instructions for Shockproof Packaging Box

The invention of the packing box relates to the field of packaging, in general, it relates to the packing box used for shock protection.

2.1. Technical research and analysis

According to the present, the market now exists in the use of packaging boxes, in order to prevent the products inside the box will be damaged, often in the middle of the product and packaging box plus protection, such as adding air bags, origami board and other objects, and sometimes even use multi-layer packaging boxes, so as to cause extravagance and waste of resources. At present, the packaging box that exists in the market now has no shockproof function, the structure of the existing packaging box damping function is complex, the cost of packaging objects is very high, the loading and unloading is very troublesome, there is a reference here, put forward the research direction of the packaging box.

2.2. Specific Analysis

The packaging invention proposes a shockproof packaging box, which uses four cushioning objects to fasten the second box inside the first box, and uses each cushioning object to increase the cushioning of the second box inside the first box.

The shockproof packing box contains: the first box, the second box and four cushioning objects. The first box contains the main box and the cover plate placed in the main box; The second box is set inside the main box; Four buffering objects, two buffering objects and the bottom two topmost corners of the second box are connected to the bottom two topmost corners of the first box, and the bottom two topmost corners of the second box are positioned diagonally, The other two objects used for buffering are respectively connected with the top two topmost angles of the second box and the top two topmost angles of the first box. The top two topmost angles of the second box are set diagonally. The diagonals of the two top faces of the second box are interleft with the projections of the two top faces of the bottom faces of the second box.

In an excellent practical example of this box invention, the cushioned object consists of a part of the first stuck object, a part of the second stuck object, a connecting rod and a spring, one side of the connecting rod is connected to the part of the first stuck object, the other side is slideable to a part of the second stuck object, The spring sleeve is arranged on the connecting rod and positioned between the parts of the first stuck object and the parts of the second stuck object. The parts of the first stuck object are arranged on the slot of the top corner of the second box, and the parts of the second stuck object are arranged on the top corner of the first box.

In the better practical example of the box invention, the second stuck object part mentioned above consists of the first face of the part placed towards the first stuck object, the second face of a box board attached to the first box, the third face of another box board attached to the first box, and the fourth face of the bottom plate or cover plate attached to the first box, The first and the second and the third and the fourth sides are arranged in a triangular manner and connected to each other.

Figure 1 is a first-view structural diagram of a shock-proof packaging box provided in an implementation example of the packaging box invention.

FIG. 2 is a schematic of the structure of the second box of the shockproof box provided in an example of the implementation of the box invention.

Figure 3 is a second view structure diagram of a shock-proof packaging box provided in an implementation example of the packaging box invention.

Icon: Shockproof packaging box; The first box and the main box and the first box board and the second box board and the third box board and the fourth box board; The first bottom plate; Cover plate; The first cavity; A connected shaft body; Shaft seat; The second box; The second box cavity; The topmost corner of the first; The third most apical Angle; The sixth most apical corner; The eighth topmost corner; The fifth box plate; The sixth box board; The seventh box board; The eighth box board; The second bottom plate; Something used for buffering; The parts of the first stuck object; Card slot; The parts of the second stuck object; Through hole; The first

side; The second side and the third side and the fourth side; Connecting rod; The first rod; A second rod; A raised countertop; The spring.

3. Specific Implementation Methods

The purpose and technical scheme in the implementation example of the packaging box invention are clearly shown. Then, the additional diagram is added to the implementation example of the packaging box invention. The technical scheme in the implementation example of the packaging box invention is clearly described and complete. The assemblies in the embodiments of the packing-box invention described and shown in the attached drawings can be arranged in a variety of configurations.

Examples of embodiments of this box invention provided in the additional figure below represent selected embodiments of this box invention. On the basis of the embodiments of the packaging box invention, all other embodiments acquired by ordinary technical personnel in the field of the packaging box invention without creative labor fall within the scope of the protection of the invention of the packaging box product.

When the second box is set inside the first box, the opening direction of the first box is the same as the opening direction of the second box.

The second box has eight topmost corners. The first topmost corner, the second topmost corner (not marked in the figure), the third topmost corner and the fourth topmost corner (not marked in the figure) are located at the opening of the second box cavity. Located in the second floor of the second box are the fifth most top corner (not marked), the sixth most top corner, the seventh most top corner (not marked) and the eighth most top corner. Among them, the first topmost corner is collinear with the fifth topmost corner, the second topmost corner is collinear with the sixth topmost corner, the third topmost corner is collinear with the seventh topmost corner, and the fourth topmost corner is collinear with the eighth topmost corner.

In addition, the second box can also be set with a cover plate (not shown in the figure), can be set according to the actual use, here is not unnecessary to talk about.

Refer to Figures 2, 1, and 2. The objects used for buffering include parts of the first stuck object, parts of the second stuck object, connecting rods, and springs. Wherein, one side of the connecting rod is connected with the part of the first stuck object, and the other side can slide and set in the part of the second stuck object. The spring sleeve is placed in the connecting rod and positioned between the part of the first stuck object and the part of the second stuck object. The part setting of the first stuck object has the top corner of the second box. The part of the second stuck object is leaning against the top corner of the first box.

The parts of the first stuck object are set to clamp the slot at the top corner of the second box. Understandably, the shape of the slot matches the shape of either of the topmost corners of the second box.

The part of the second stuck object consists of a first face of the part arranged towards the first stuck object, a second face of a box board leaning against the first box, a third face of another box board fitting against the first box and a fourth face leaning against the first bottom plate or cover plate of the first box, The first face and the second face and the third face and the fourth face show triangular connections respectively. The through-hole traverses the corner of the topmost face where the first face joins the second face, the third face, and the fourth face.

The connecting rod contains the first rod object, the second rod object and the raised table, the first rod object and the second rod object connection, the raised table is set in the first rod object and the second rod object connection, the second rod object sliding set in the through hole, the spring on both sides of the raised table and the first surface.

4. Legend Description

The e objects in the figure, even if placed in the home does not affect the beauty, the structure analysis of the shock-proof packaging box is shown in Figure 1.

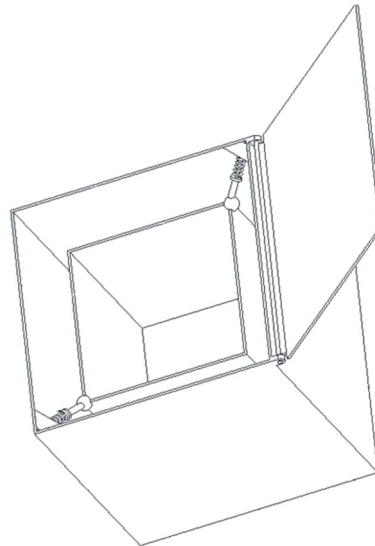


Figure 1. Schematic diagram of the top structure of the shockproof packing box

The four ends of the box are placed with springs, demonstrating the unique way that the four ends of the spring and the connector are connected. These springs are made of new materials, so that they have better elasticity themselves. The springs work together to give the whole box a stronger cushion. The object can be protected to the maximum extent even if it falls high. The structure diagram of the top corner of the shockproof packing box is shown in Figure 2.

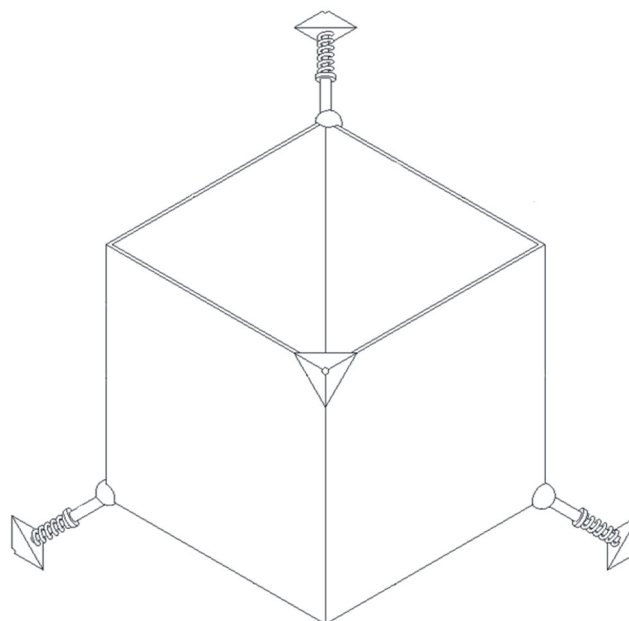


Figure 2. Structure diagram of the top corner of the shockproof packing box

The four ends of the shockproof box are placed in the spring, showing the shockproof packaging box each spring and connecting parts of the connection method, even if part of the damage, does not affect the function of other structures, can make the object accidentally landing can also get

as much as possible buffer force, the maximum degree of good protection of the object, the internal structure of the shockproof packaging box is shown in Figure 3.

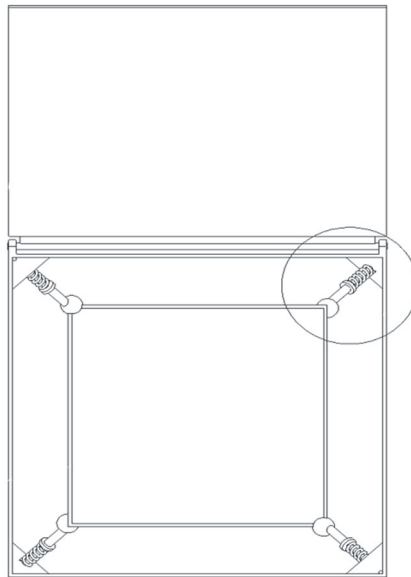
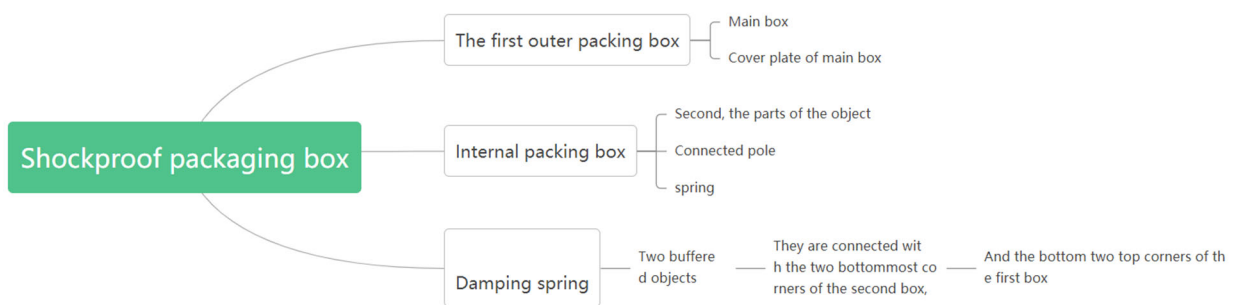


Figure 3. Internal structure of shockproof packing box

This table is the structural analysis of the shockproof packaging box, showing the structure of the box and the working principle of the box, the specific execution of this design case is the spring used to protect the object of the box body, including the first box body, the second box body, cover plate, spring, the first box body on the top part of the box plate has the first box body opening, A plurality of uppermost sections have an opening for a second box body, and each suspended shaft arm is separately connected to two opposite end points of each box body, allowing the opening of each second box body to vary in direction to the opening of the first box body. It is characterized by convenient use and simple structure. The structure analysis diagram of shockproof packaging box is shown in Table 1.

Table 1. Structure analysis diagram of shockproof packing box



5. Conclusion

The packing box is made of rubber and plastic combination, color matching for white and gray, when the cover cover is covered by the four end spring and connecting parts against each other, so that the box body is completely sealed, then the whole box body belongs to the working state, can maximize the protection of the box.

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