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(54) **MOVABLE PACKING BOX**

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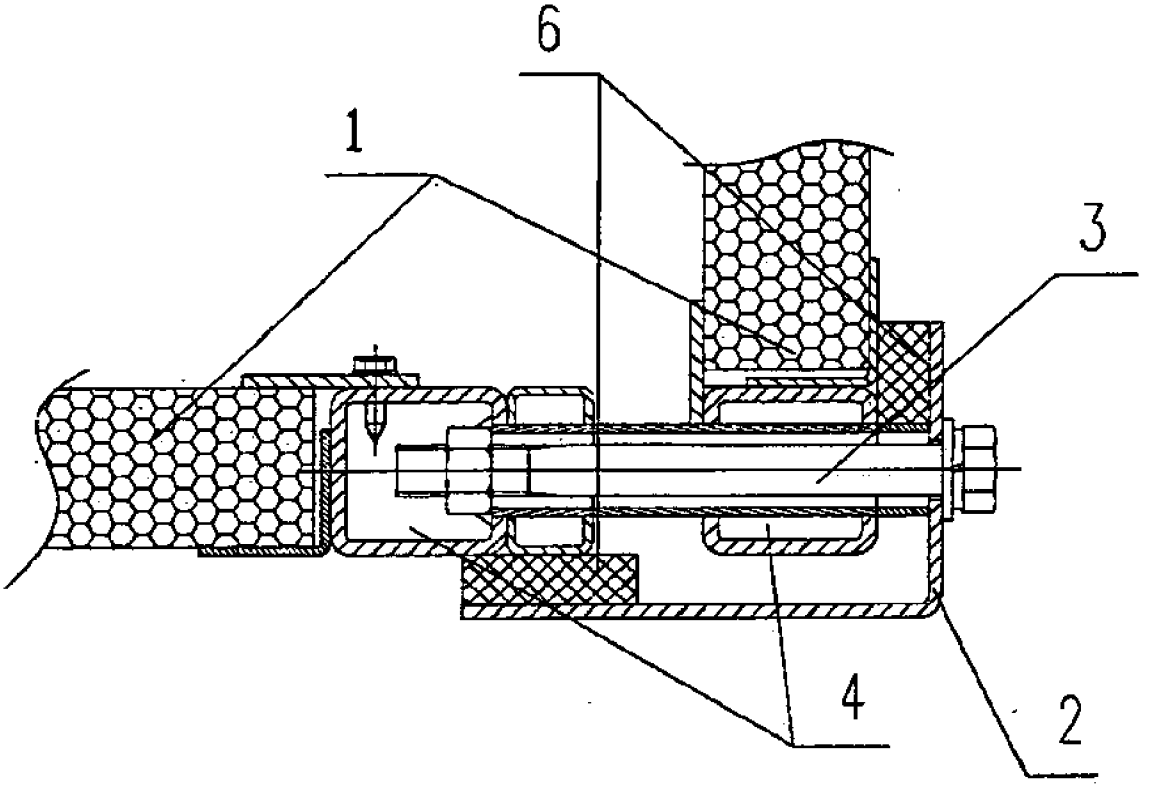
(57) **ABSTRACT**

The invention relates to a movable packing box having a hexahedron comprised of six movable boards such as four vertical boards, a bottom board and a top board. Wherein a door is installed on one of the vertical boards and the structure between the bottom and vertical boards is a pivotal connection. The movable packing box is easy to be moved, disassembled and folded up for packing. Therefore space and transportation expenses can be saved greatly and it is convenient for transportation.



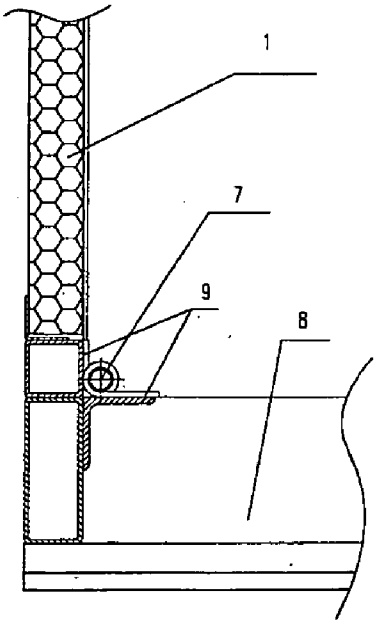



Fig. 1

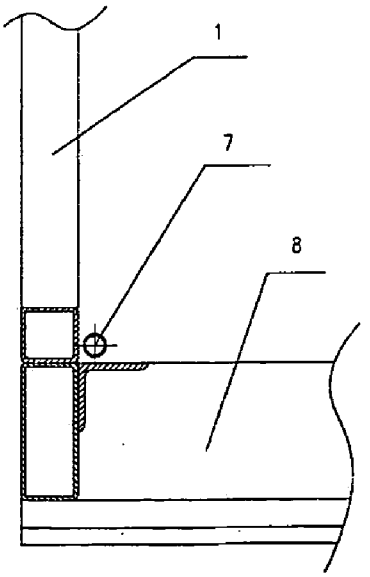



Fig. 2

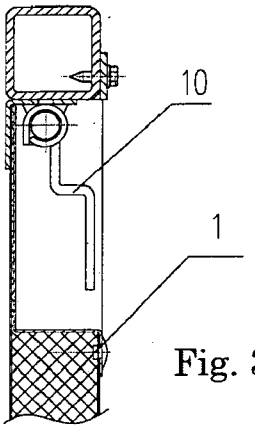



Fig. 3

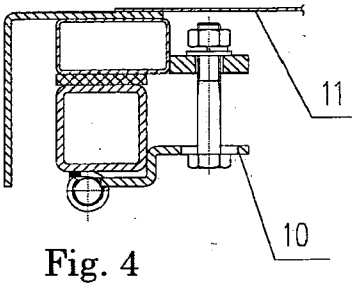



Fig. 4

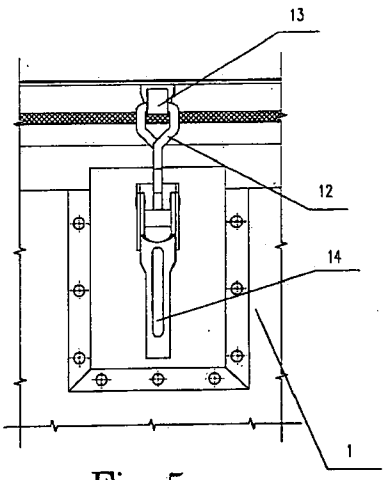



Fig. 5

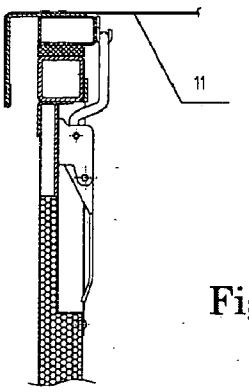



Fig. 6

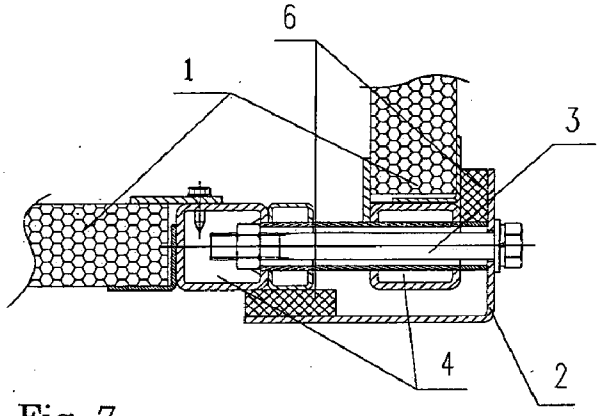



Fig. 7

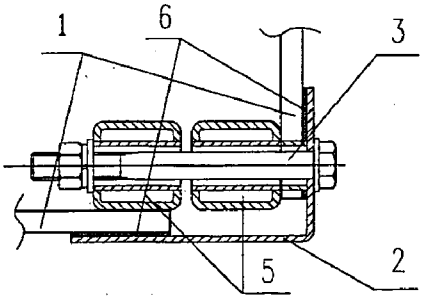



Fig. 8

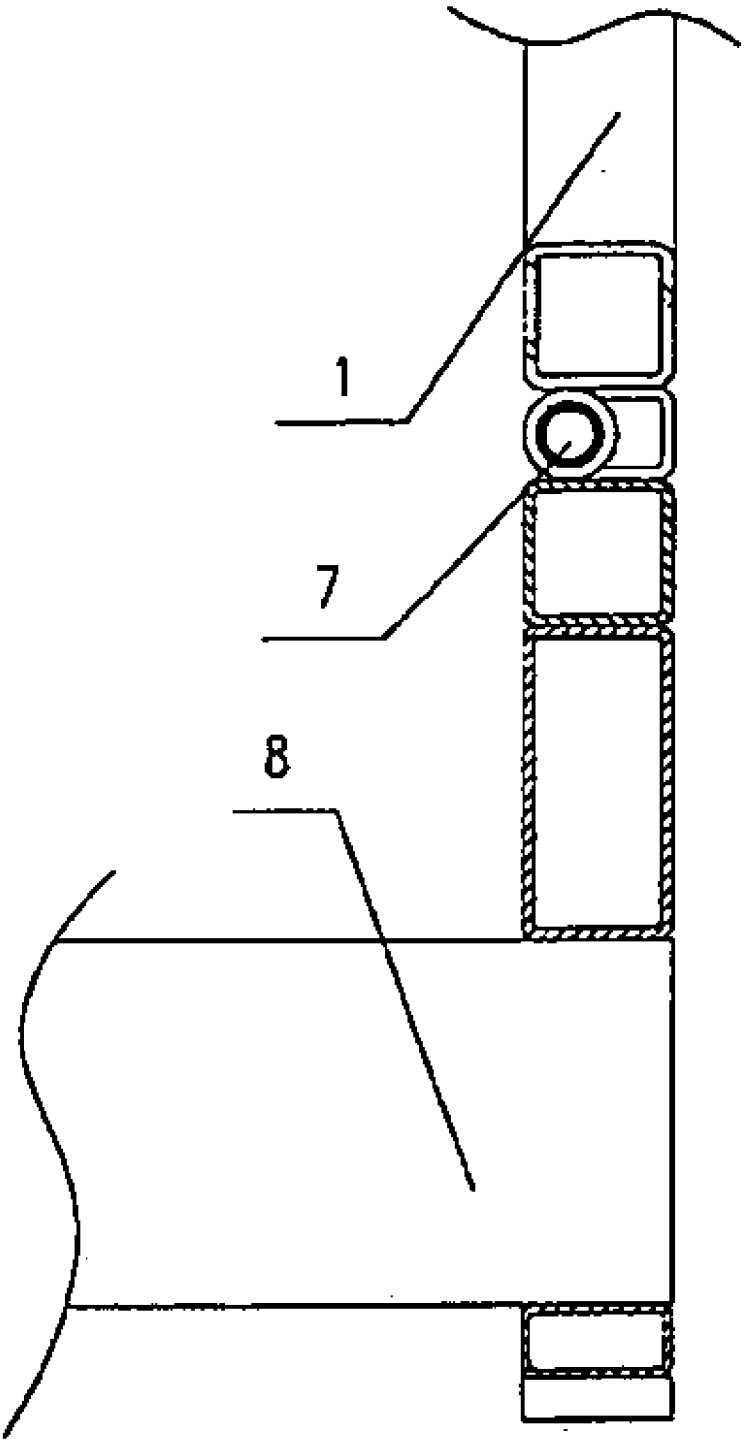



Fig. 9

# MOVABLE PACKING BOX

## FIELD OF TECHNOLOGY

**[0001]** The present invention relates to articles for the circulation of goods, in particular relates to a packing box.

## BACKGROUND OF TECHNOLOGY

**[0002]** Generally, a large number of packing boxes, containers are used in the circulation of goods. The packing boxes and containers commonly used have a permanent shape which are not changeable after it is formed. Moreover the packing boxes and containers commonly have a large volume. The packing boxes and containers having a permanent shape will occupy a large space resulting in inconvenience of transport and wasting of the transportation expenses.

## DISCLOSURE OF INVENTION

**[0003]** The object of the invention is to overcome technically the deficiency mentioned above providing a movable packing box which can save a large number of operation space.

**[0004]** Said movable packing box is a hexahedron comprised of six movable boards such as four vertical boards, a bottom board and a top board. On one of the vertical boards a door is installed and the structure between the bottom and vertical boards is a pivotal connection.

**[0005]** The movable packing box according to the invention has following active effect comparing with that in the prior art: the movable packing box is easy to be moved, disassembled and folded up for packing. Therefore the space and transportation cost can be saved and it is convenient for transportation.

## DESCRIPTION OF DRAWINGS

**[0006]** FIG. **1** shows the schematic diagram of the first pivotal connecting structure of the movable packing box according to the invention;

**[0007]** FIG. **2** shows the schematic diagram of the second pivotal connecting structure of the movable packing box according to the invention;

**[0008]** FIG. **3** shows the open situation of the first movable connecting structure of the movable packing box according to the invention;

**[0009]** FIG. **4** shows the closed situation of the first movable connecting structure of the movable packing box according to the invention;

**[0010]** FIG. **5** shows the front view of the second movable connecting structure of the movable packing box according to the invention;

**[0011]** FIG. **6** shows the side view of the second movable connecting structure of the movable packing box according to the invention;

**[0012]** FIG. **7** shows the schematic diagram of the first corner-shield structure of the movable packing box according to the invention;

**[0013]** FIG. **8** shows the schematic diagram of the second corner-shield structure of the movable packing box according to the invention;

**[0014]** FIG. **9** shows the schematic diagram of the third pivotal connection structure of the movable packing box according to the invention.

## EMBODIMENTS

**[0015]** The details of the embodiments of the invention will be described referring to the drawings.

**[0016]** The invention relates to a movable packing box. The movable packing box mentioned above is a hexahedron comprised of six movable boards such as four vertical boards, a bottom board and a top board. On one of the vertical boards, a door is installed and the structure between the bottom and vertical boards is a pivotal connection, in which the preferable pivotal connecting structure is a hinge **7**, such as the hinge as shown in FIG. **1** wherein the connecting plates on both ends of the axis connected by the hinge are installed on the bottom and vertical boards respectively and the connecting plates **9** on both ends of the axis connected by the hinge are installed on insides of the bottom and vertical boards respectively; the structure of the hinge can also be the structure as shown in FIG. **2**, in which there is not any connecting plate on both ends of the axis connected by the hinge but it acts as a connection unit also; the structure of the hinge can also be the structure as shown in drawing **9**, in which the connecting plates on both ends of the axis connected by the hinge are installed between the bottom and vertical boards.

**[0017]** Furthermore a movable connecting structure is installed between said top and vertical boards in the packing box according to the invention. Wherein the movable connecting structure may be the movable connecting plate **10** installed on one of the top or vertical boards as shown in FIGS. **3** and **4**. Preferably the movable connecting plate is installed on the vertical board and there is not any connection between vertical and top boards when the connecting plate is in an open position as shown in FIG. **3**. When the connecting plate is in a closed position it will be connected with the bolts on the fixed block fixed on the top board after it is pulled up, thus the vertical board will be connected with the top board as shown in FIG. **4**. Wherein the movable connecting structure may be the connecting plate **10** installed on one of the top board or the vertical board as shown in FIGS. **3** and **4**. Preferably the movable connecting plate is installed on the vertical board as shown in FIG. **3**. There is not any connection between the vertical and top boards when the connecting plate is in a open position. When the connecting plate is in a closed position it will be connected with the bolts on the fixed block fixed on the top board after it is pulled up, thus the vertical board will be connected with the top board as shown in FIG. **4**. Wherein the movable connecting structure may be the movable connecting ring **12** installed on one of the top and vertical boards as shown in FIGS. **5** and **6**. Furthermore a hook **13** is installed on another board coordinating with the movable connecting ring in which preferably the connecting ring is installed on the vertical board and the hook is installed on the top board. As shown in FIGS. **5** and **6** when it needs to be locked, the connecting ring is fastened only to the hook fixed on the top board and then fastened down to the handle **14** on the bottom of the connecting ring, thus the connection of the connecting ring with the hook can be fixed so that the vertical board can be fixed with the top board.

**[0018]** Furthermore a corner-shield **2** in shape L is fixed on the outside of the connection position of 4 vertical boards in the packing box according to the present invention. There is a hole on at least one surface of the corner-shield in shape L and

there is a bolt in the hole matching the hole. A connecting unit matching the bolt is fixed on two movable boards in the corner-shield. When two movable boards are connected, the bolt is only threaded through the hold on the corner-shield and then through the connection unit of two connecting boards, thus the connection of two boards on one position can be carried out. Wherein the hole on the corner-shield can be used for the opening matching the bolt and can be used also for the bolt hole matching the bolt, if only the head of the bolt can be blocked outside the corner-shield when it is treaded through the hole.

**[0019]** In the packing box according to the invention, the connection unit is the first relief block **4** on the end of the adjacent side of the movable board **1** in the corner-shield and there is a bolt hole matching the bolt in the hollow relief block. Alternatively the connection unit is the first relief block **4** on the end of the adjacent side of the movable board **1** in the corner-shield and there is an opening matching the bolt in the hollow relief block and there is a nut on the end of the bolt. When it is connected the bolt is only threaded through the hole in the corner-shield and then threaded into the opening or bolt hole in the first relief block. The purpose of threading through the hole is to fix the connection point with the nut on the end of the bolt. If the bolt exceeded the bolt hole, it is unnecessary to fix with the nut, the fixing may be carried out only by the bolt and the matched thread in the first relief block.

**[0020]** As shown in FIG. **8**, in the packing box according to the invention the connection unit is the second relief block **5** on the end of the adjacent side of the movable board **1** in the corner-shield and there is a opening matching the bolt in the hollow relief block and there is a nut on the end of the bolt. When it is connected the bolt is only threaded through the hole in the corner-shield and then threaded into the opening or bolt hole in the first relief block and is fixed only by the nut and the thread respectively.

**[0021]** In the packing box according to the invention, the connection unit may be also the bolt hole matching the bolt on the same direction of the adjacent side of the movable board **1** in the corner-shield. When it is connected the bolt is only threaded through the opening on the corner-shield and then through the bolt hole inside of two movable boards.

**[0022]** Of course the bolt holes in the first and second relief blocks and the movable board may be replaced with each other. It is possible to have the particular structure of the bolt hole inside the two relief blocks and the movable board at the same time on the packing box or container, if only the structure between the adjacent two movable boards can be assured to being matched each other and connected. Furthermore the structure of the two relief blocks may also exist at the same time between the adjacent two movable boards, i.e., one movable board is the structure of the first relief block and another adjacent board is the structure of the second relief block, if only the two structures can be matched each other when they are connected.

**[0023]** Furthermore, in the packing box according to the invention, preferably there is a buffer cushion **6** for protecting the connection point of the movable boards between the movable board and the corner-shield

**[0024]** Besides, in the packing box according to the invention, preferably six movable boards used for the movable packing box are metallic or non-metallic, wherein preferably there is a reinforced bar on the back of the six movable boards. The common boards used for the packing boxes are metallic, resulting in a defect of large weight and it is hard to be operated. The boards used for the packing boxes according to the invention can be made by non-metallic materials and the reinforced bar is applied to increase the strength.

**[0025]** Furthermore in the packing box according the invention preferably the first and the second relief blocks are the hollow because the design of the hollow relief blocks can decrease the weight of the packing box and it is easy to be installed and operated.

**[0026]** Besides, there are at least two connection points on the connection position of the 6 movable boards for the packing boxes. The connection of the two connection points, especially the connection of the two end points on the side of the adjacent boards will make the connection of the adjacent board very firm. Surely, the connection of multiple points can be performed, thus the connection of the adjacent boards will be strengthened.

What is claimed is:

**1**. A movable packing box having a hexahedron characterized in that said movable packing box comprises of six movable boards such as four vertical boards, a bottom board and a top board; a door is installed on one of the vertical boards and the structure between the bottom and vertical boards is a pivotal connection which is a hinge; the connecting plates on both ends of the axis connected by the hinge are installed on the bottom and the vertical boards; a movable connection structure is installed between the top and vertical boards.

**2**. The movable packing box according to claim **1**, characterized in that the movable connection structure is a movable connecting plate installed on one of the top and vertical boards.

**3**. The movable packing box according to claim **1**, characterized in that the movable connection structure is a movable connecting ring installed on one of the top and vertical boards and a hook matching the movable connecting ring is installed on another board.

**4**. The movable packing box according to any one of claims **1-3**, characterized in that a corner-shield in shape L is installed on outside of the connection of four vertical boards, there is a hole on at least one surface of the corner-shield in shape L, a bolt matching the hole is fixed in the hole and a connection units matching the bolt are installed on two movable boards in the corner-shield.

**5**. The movable packing box according to claim **4**, characterized in that there is a buffer cushion between the movable board and the corner-shield.

**6**. The movable packing box according to claim **5**, characterized in that a reinforced bar is applied on the back of six movable boards of the movable packing box.

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