Keywords: Hidden hinge, Tilt and Turn, Patent circumvention, Component analysis, Functional analysis

The second support element, where one connecting point is fixed and the other is movable, is located in the middle of the first support element. The difference between the two designs is in the connecting point between the main lever and the support of the main lever, which is located on one end of the first support element, whereas the corresponding articulation of the new design is located in the middle of the first support element. The characteristics of the new design lie in that in the US 7484270, it has an articulating surface between the main lever and the second support element, which is located in the middle of the first support element.

During the design process, European patent EP 1918498 and the hidden hinge of the current China market are referred to trigger the ideas of the second support element. The new design models of hidden hinge are demonstrated in this research. The characteristics of the new design lie in that in the US 7484270, it has an articulating surface between the main lever and the second support element, which is located in the middle of the first support element. The characteristics of the new design lie in that in the US 7484270, it has an articulating surface between the main lever and the second support element, which is located in the middle of the first support element.

This research uses component analysis of the patent US 7484270 and TRIZ inventive principle 13, reverse, to do the patent circumvention for the hidden hinge of aluminum window. The first one analyses the components of the first independent claim US 7484270, followed by the investigation of the animation of hinge operation. Then component analysis of the first claim of US 7484270 is performed. The second one performs component analysis of the second independent claim US 7484270, followed by the investigation of the animation of hinge operation. Then component analysis of the second claim of US 7484270 is performed.


