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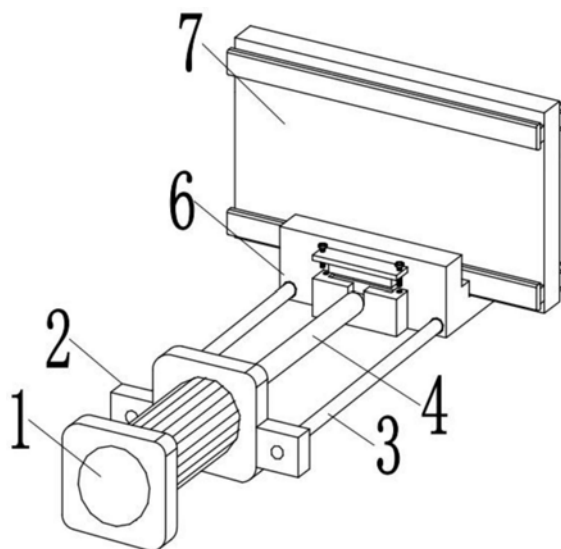
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(54)发明名称

一种带有塑封导向结构的冰箱玻璃隔板

(57)摘要

本发明涉及冰箱玻璃隔板技术领域,具体是一种带有塑封导向结构的冰箱玻璃隔板,包括电动缸、导向座和隔板本体,隔板本体包括保温层,且保温层的顶部和底部外壁上焊接有呈等距离结构分布的T型块,保温层的顶部和底部均设置有钢化玻璃层,且钢化玻璃层靠近保温层的一侧外壁上开设有呈等距离结构分布的T型槽,T型块滑动连接在T型槽的内部,且钢化玻璃层与保温层相邻的一侧外壁上均铺设PVB胶纸。本发明的有益效果导向块使得隔板本体在限位槽的内部更加的稳定牢靠,使得隔板本体更易于从导向座的内部滑出,导向块对隔板本体起到了很好的导向作用,采用双层钢化玻璃层,使得冰箱隔板抗压能力强。



1. 一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:包括电动缸(1)、导向座(6)和隔板本体(7),所述隔板本体(7)包括保温层(30),且保温层(30)的顶部和底部外壁上焊接有呈等距离结构分布的T型块(31),所述保温层(30)的顶部和底部均设置有钢化玻璃层(28),且钢化玻璃层(28)靠近保温层(30)的一侧外壁上开设有呈等距离结构分布的T型槽(29),所述T型块(31)滑动连接在T型槽(29)的内部,且钢化玻璃层(28)与保温层(30)相邻的一侧外壁上均铺设PVB胶纸(32),所述钢化玻璃层(28)远离保温层(30)的另一侧外壁上铺设丝印油墨层(27),且丝印油墨层(27)远离钢化玻璃层(28)的另一侧外壁上铺设耐磨层(26)。

2. 根据权利要求1所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述隔板本体(7)顶部和底部外壁的两侧均焊接有导向块(22),且隔板本体(7)靠近导向块(22)的外壁上套接有边框(21)。

3. 根据权利要求2所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述边框(21)靠近隔板本体(7)一侧外壁的中心处开设有滑槽(23),且滑槽(23)两侧内壁的中心处开设有定位槽(24),且定位槽(24)与滑槽(23)的内壁上均设置有防护垫(25),所述隔板本体(7)和导向块(22)分别滑动连接在滑槽(23)和定位槽(24)的内部。

4. 根据权利要求1所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述电动缸(1)的输出端活动连接有推杆(4),且推杆(4)远离电动缸(1)另一端的外壁上焊接有卡板(5)。

5. 根据权利要求1所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述电动缸(1)靠近推杆(4)的两侧外壁上均焊接有耳板(2),且耳板(2)靠近推杆(4)一侧外壁的轴心处焊接有光杆(3)。

6. 根据权利要求1所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述导向座(6)正面外壁底部的中心处焊接有卡座(9),且卡座(9)顶部外壁的中心处开设有卡槽(10),所述卡座(9)靠近卡槽(10)的两侧均开设有定位螺孔(13),且卡板(5)卡接在卡槽(10)的内部。

7. 根据权利要求6所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述定位螺孔(13)的内部螺纹连接有定位螺栓(12),且卡座(9)的顶部外壁上通过定位螺栓(12)安装有压板(11)。

8. 根据权利要求1所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述导向座(6)靠近卡座(9)两侧外壁的底部均开设有滑动连接在光杆(3)外部的通孔(8)。

9. 根据权利要求1所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述导向座(6)顶部外壁的中心处开设有限位槽(14),且限位槽(14)呈T型结构,所述隔板本体(7)放置在限位槽(14)的内部。

10. 根据权利要求9所述的一种带有塑封导向结构的冰箱玻璃隔板,其特征在于:所述限位槽(14)两侧内壁的顶部均开设有矩形槽(15),且矩形槽(15)的内部插接有推块(18),所述推块(18)位于矩形槽(15)内部的一端焊接有限位板(17),且限位板(17)远离推块(18)的另一侧外壁上焊接有弹簧(16),所述推块(18)通过弹簧(16)和限位板(17)滑动连接在矩形槽(15)的内部,且推块(18)远离矩形槽(15)的另一侧外壁上焊接有夹板(19),所述夹板(19)远离推块(18)的另一侧外壁上粘接有橡胶垫(20),且橡胶垫(20)与隔板本体(7)外壁

相贴合。

一种带有塑封导向结构的冰箱玻璃隔板

技术领域

[0001] 本发明涉及冰箱玻璃隔板技术领域,具体是一种带有塑封导向结构的冰箱玻璃隔板。

背景技术

[0002] 冰箱是一种保持恒定低温的制冷设备,也是一种使食物或其他物品保持恒定低温冷态的民用产品,随着人们现有生活水平的不断提高,冰箱已经进入了每家每户,为充分利用有限的冰箱空间、同时便于取放食物,目前冰箱均设计为多层性冰箱,而各层之间均由玻璃隔层板隔开。

[0003] 中国专利号CN203011065U提供一种冰箱隔板的玻璃塑封导向装置,所述的冰箱隔板的玻璃塑封导向装置包含一驱动套筒,所述的驱动套筒的头部设有一驱动长杆,所述的驱动长杆的头部设有一可横向移动的导向凸块,所述的导向凸块上设有一“T”字形的导向凹槽。

[0004] 但是一种冰箱隔板的玻璃塑封导向装置当玻璃板进行上料时,需要将玻璃板送至模板中,现有的方法是手动操作,容易夹到工人的手,而且玻璃板移动时容易晃动,影响组装品质,玻璃隔层的主体为普通玻璃层,安全性能差,且装饰性较差,不利于广泛的推广和普及。

发明内容

[0005] 本发明的目的在于提供一种带有塑封导向结构的冰箱玻璃隔板,以解决上述背景技术中提出的当玻璃板进行上料时,需要将玻璃板送至模板中,现有的方法是手动操作,容易夹到工人的手,而且玻璃板移动时容易晃动,影响组装品质,玻璃隔层的主体为普通玻璃层,安全性能差,且装饰性较差问题。

[0006] 本发明的技术方案是:一种带有塑封导向结构的冰箱玻璃隔板,包括电动缸、导向座和隔板本体,所述隔板本体包括保温层,且保温层的顶部和底部外壁上焊接有呈等距离结构分布的T型块,所述保温层的顶部和底部均设置有钢化玻璃层,且钢化玻璃层靠近保温层的一侧外壁上开设有呈等距离结构分布的T型槽,所述T型块滑动连接在T型槽的内部,且钢化玻璃层与保温层相邻的一侧外壁上均铺设PVB胶纸,所述钢化玻璃层远离保温层的另一侧外壁上铺设丝印油墨层,且丝印油墨层远离钢化玻璃层的另一侧外壁上铺设耐磨层。

[0007] 进一步地,所述隔板本体顶部和底部外壁的两侧均焊接有导向块,且隔板本体靠近导向块的外壁上套接有边框。

[0008] 进一步地,所述边框靠近隔板本体一侧外壁的中心处开设有滑槽,且滑槽两侧内壁的中心处开设有定位槽,且定位槽与滑槽的内壁上均设置有防护垫,所述隔板本体和导向块分别滑动连接在滑槽和定位槽的内部。

[0009] 进一步地,所述电动缸的输出端活动连接有推杆,且推杆远离电动缸另一端的外

壁上焊接有卡板。

[0010] 进一步地,所述电动缸靠近推杆的两侧外壁上均焊接有耳板,且耳板靠近推杆一侧外壁的轴心处焊接有光杆。

[0011] 进一步地,所述导向座正面外壁底部的中心处焊接有卡座,且卡座顶部外壁的中心处开设有卡槽,所述卡座靠近卡槽的两侧均开设有定位螺孔,且卡板卡接在卡槽的内部。

[0012] 进一步地,所述定位螺孔的内部螺纹连接有定位螺栓,且卡座的顶部外壁上通过定位螺栓安装有压板。

[0013] 进一步地,所述导向座靠近卡座两侧外壁的底部均开设有滑动连接在光杆外部的通孔。

[0014] 进一步地,所述导向座顶部外壁的中心处开设有限位槽,且限位槽呈T型结构,所述隔板本体放置在限位槽的内部。

[0015] 进一步地,所述限位槽两侧内壁的顶部均开设有矩形槽,且矩形槽的内部插接有推块,所述推块位于矩形槽内部的一端焊接有限位板,且限位板远离推块的另一侧外壁上焊接有弹簧,所述推块通过弹簧和限位板滑动连接在矩形槽的内部,且推块远离矩形槽的另一侧外壁上焊接有夹板,所述夹板远离推块的另一侧外壁上粘接有橡胶垫,且橡胶垫与隔板本体外壁相贴合。

[0016] 本发明通过改进在此提供一种带有塑封导向结构的冰箱玻璃隔板,与现有技术相比,具有如下改进及优点:

(1) 本发明采用PVB胶纸,PVB胶纸将两块钢化玻璃层黏贴在一起,在钢化玻璃层破碎时,玻璃碎块则会在PVB胶纸的作用下粘附在胶纸上,从而不会掉落。

[0017] (2) 本发明冰箱隔板采用双层钢化玻璃层,使得冰箱隔板抗压能力强,安全性能高,而丝印油墨层提升了冰箱隔板的美观性,使得冰箱隔板更加具有市场竞争力。

[0018] (3) 本发明冰箱隔板设置有保温层,保温层使得冰箱隔板具有了很好的隔热保温作用,阻止相邻两层内的食物热传导,有利于提高冰箱内食物的保鲜性能。

[0019] (4) 本发明在冰箱隔板的顶部和底部均铺设耐磨层,防止在取放食物的过程中对隔板造成磨损,增加了冰箱隔板的耐磨性,有利于延长冰箱隔板的使用寿命。

[0020] (5) 通过设置的电动缸,电动缸通过推杆推动导向座带动隔板本体进行移动,而隔板本体的顶部和底部两侧的外壁上焊接的导向块使得隔板本体在限位槽的内部更加的稳定牢靠,使得隔板本体更易于从导向座的内部滑出,导向块对隔板本体起到了很好的导向作用。

[0021] (6) 通过设置的夹板,推块通过弹簧的作用推动夹板向隔板本体靠拢时,能够对隔板本体起到很好的定位作用,大大提升了隔板本体在移动过程中的稳定性,同时橡胶垫可对隔板本体起到很好的防护作用。

[0022] (7) 通过设置的边框,边框可对完成塑封后的隔板本体进行很好的防护作用,而隔板本体上的导向块插接至定位槽的内部提升了边框与隔板本体之间连接的稳定性,防护垫可对隔板本体的边沿处进行很好的防护作用。

附图说明

[0023] 下面结合附图和实施例对本发明作进一步解释:

图1是本发明的结构示意图；
图2是本发明的导向座结构示意图；
图3是本发明的夹板结构示意图；
图4是本发明的隔板本体结构示意图；
图5是本发明的隔板内部结构示意图；
图6是本发明的边框结构示意图。

[0024] 附图标记说明：

1电动缸、2耳板、3光杆、4推杆、5卡板、6导向座、7隔板本体、8通孔、9卡座、10卡槽、11压板、12定位螺栓、13定位螺孔、14限位槽、15矩形槽、16弹簧、17限位板、18推块、19夹板、20橡胶垫、21边框、22导向块、23滑槽、24定位槽、25防护垫、26耐磨层、27丝印油墨层、28钢化玻璃层、29 T型槽、30保温层、31 T型块、32 PVB胶纸。

具体实施方式

[0025] 下面将结合附图1至图6对本发明进行详细说明,对本发明实施例中的技术方案进行清楚、完整地描述,显然,所描述的实施例仅仅是本发明一部分实施例,而不是全部的实施例。基于本发明中的实施例,本领域普通技术人员在没有做出创造性劳动前提下所获得的所有其他实施例,都属于本发明保护的范围。

[0026] 需要说明的是,当组件被称为“固定于”另一个组件,它可以直接在另一个组件上或者也可以存在居中的组件。当一个组件被认为是“连接”另一个组件,它可以是直接连接到另一个组件或者可能同时存在居中组件。当一个组件被认为是“设置于”另一个组件,它可以是直接设置在另一个组件上或者可能同时存在居中组件。本文所使用的术语“垂直的”、“水平的”、“左”、“右”以及类似的表述只是为了说明的目的。

[0027] 除非另有定义,本文所使用的所有的技术和科学术语与属于本发明的技术领域的技术人员通常理解的含义相同。本文中在本发明的说明书中所使用的术语只是为了描述具体的实施例的目的,不是旨在限制本发明。本文所使用的术语“及/或”包括一个或多个相关的所列项目的任意的和所有的组合。

[0028] 本发明通过改进在此提供一种带有塑封导向结构的冰箱玻璃隔板,如图1-图6所示,包括电动缸1、导向座6和隔板本体7,隔板本体7包括保温层30,且保温层30的顶部和底部外壁上焊接有呈等距离结构分布的T型块31,保温层30的顶部和底部均设置有钢化玻璃层28,且钢化玻璃层28靠近保温层30的一侧外壁上开设有呈等距离结构分布的T型槽29,T型块31滑动连接在T型槽29的内部,且钢化玻璃层28与保温层30相邻的一侧外壁上均铺设PVB胶纸32,钢化玻璃层28远离保温层30的另一侧外壁上铺设丝印油墨层27,且丝印油墨层27远离钢化玻璃层28的另一侧外壁上铺设耐磨层26,采用PVB胶纸32将两块钢化玻璃层28黏贴在一起,在钢化玻璃层28破碎时,玻璃碎块则会在PVB胶纸32的作用下粘附在胶纸上,从而不会掉落,采用双层钢化玻璃层28,使得冰箱隔板抗压能力强,安全性能高,而丝印油墨层27提升了冰箱隔板的美观性,使得冰箱隔板更加具有市场竞争力,保温层30使得冰箱隔板具有了很好的隔热保温作用,阻止相邻两层内的食物热传导,有利于提高冰箱内食物的保鲜性能,耐磨层26防止在取放食物的过程中对隔板造成磨损,增加了冰箱隔板的耐磨性,有利于延长冰箱隔板的使用寿命。

[0029] 进一步地,隔板本体7顶部和底部外壁的两侧均焊接有导向块22,且隔板本体7靠近导向块22的外壁上套接有边框21,隔板本体7的顶部和底部两侧的外壁上焊接的导向块22使得隔板本体7在限位槽14的内部更加的稳定牢靠,使得隔板本体7更易于从导向座6的内部滑出,导向块22对隔板本体7起到了很好的导向作用。

[0030] 进一步地,边框21靠近隔板本体7一侧外壁的中心处开设有滑槽23,且滑槽23两侧内壁的中心处开设有定位槽24,且定位槽24与滑槽23的内壁上均设置有防护垫25,隔板本体7和导向块22分别滑动连接在滑槽23和定位槽24的内部,边框21可对完成塑封后的隔板本体7进行很好的防护作用,而隔板本体7上的导向块22插接至定位槽24的内部提升了边框21与隔板本体7之间连接的稳定性,防护垫25可对隔板本体7的边沿处进行很好的防护作用。

[0031] 进一步地,电动缸1的输出端活动连接有推杆4,且推杆4远离电动缸1另一端的外壁上焊接有卡板5,电动缸1的型号为TJC-C1-T3-P-P,电动缸1通过推杆4推动卡板5,卡板5固定在卡座9的内部能够推动导向座6带动隔板本体7移动。

[0032] 进一步地,电动缸1靠近推杆4的两侧外壁上均焊接有耳板2,且耳板2靠近推杆4一侧外壁的轴心处焊接有光杆3,耳板2可对光杆3起到很好的定位效果,使得光杆3更加稳定。

[0033] 进一步地,导向座6正面外壁底部的中心处焊接有卡座9,且卡座9顶部外壁的中心处开设有卡槽10,卡座9靠近卡槽10的两侧均开设有定位螺孔13,且卡板5卡接在卡槽10的内部,卡板5卡接在卡槽10的内部,使得导向座6检修和维护更加的方便快捷。

[0034] 进一步地,定位螺孔13的内部螺纹连接有定位螺栓12,且卡座9的顶部外壁上通过定位螺栓12安装有压板11,压板11通过定位螺栓12安装在卡座9的顶部外壁上可对卡槽10内部的卡板5进行有效的定位,提升了推杆4推动导向座6时的稳定性。

[0035] 进一步地,导向座6靠近卡座9两侧外壁的底部均开设有滑动连接在光杆3外部的通孔8,导向座6在通孔8和光杆3之间搭配的作用下移动时更加的稳定。

[0036] 进一步地,导向座6顶部外壁的中心处开设有限位槽14,且限位槽14呈T型结构,隔板本体7放置在限位槽14的内部,T型结构的限位槽14使得隔板本体7在限位槽14的内部更加稳定。

[0037] 进一步地,限位槽14两侧内壁的顶部均开设有矩形槽15,且矩形槽15的内部插接有推块18,推块18位于矩形槽15内部的一端焊接有限位板17,且限位板17远离推块18的另一侧外壁上焊接有弹簧16,推块18通过弹簧16和限位板17滑动连接在矩形槽15的内部,且推块18远离矩形槽15的另一侧外壁上焊接有夹板19,夹板19远离推块18的另一侧外壁上粘接有橡胶垫20,且橡胶垫20与隔板本体7外壁相贴合,推块18通过弹簧16的作用推动夹板19向隔板本体7靠拢,能够对隔板本体7起到很好的定位作用,大大提升了隔板本体7在移动过程中的稳定性,同时橡胶垫20可对隔板本体7起到很好的防护作用。

[0038] 本发明的工作原理为:该带有塑封导向结构的冰箱玻璃隔板使用时,操作者首先将需要进行塑封处理的冰箱玻璃隔板放置在导向座6上的限位槽14内,而隔板本体7的顶部和底部两侧的外壁上焊接的导向块22使得隔板本体7在限位槽14的内部更加的稳定牢靠,使得隔板本体7更易于从导向座6的内部滑出,导向块22对隔板本体7起到了很好的导向作用,推块18通过弹簧16的作用推动夹板19向隔板本体7靠拢,能够对隔板本体7起到很好的定位作用,大大提升了隔板本体7在移动过程中的稳定性,同时橡胶垫20可对隔板本体7起

到很好的防护作用,然后电动缸1通过推杆4推动导向座6带动隔板本体7移动至塑封装置处进行塑封处理,采用PVB胶纸32将两块钢化玻璃层28黏贴在一起,在钢化玻璃层28破碎时,玻璃碎块则会在PVB胶纸32的作用下粘附在胶纸上,从而不会掉落,采用双层钢化玻璃层28,使得冰箱隔板抗压能力强,安全性能高,而丝印油墨层27提升了冰箱隔板的美观性,使得冰箱隔板更加具有市场竞争力,保温层30使得冰箱隔板具有了很好的隔热保温作用,阻止相邻两层内的食物热传导,有利于提高冰箱内食物的保鲜性能,耐磨层26防止在取放食物的过程中对隔板造成磨损,增加了冰箱隔板的耐磨性,有利于延长冰箱隔板的使用寿命。

[0039] 对所公开的实施例的上述说明,使本领域专业技术人员能够实现或使用本发明。对这些实施例的多种修改对本领域的专业技术人员来说将是显而易见的,本文中所定义的一般原理可以在不脱离本发明的精神或范围的情况下,在其它实施例中实现。因此,本发明将不会被限制于本文所示的这些实施例,而是要符合与本文所公开的原理和新颖特点相一致的最宽的范围。

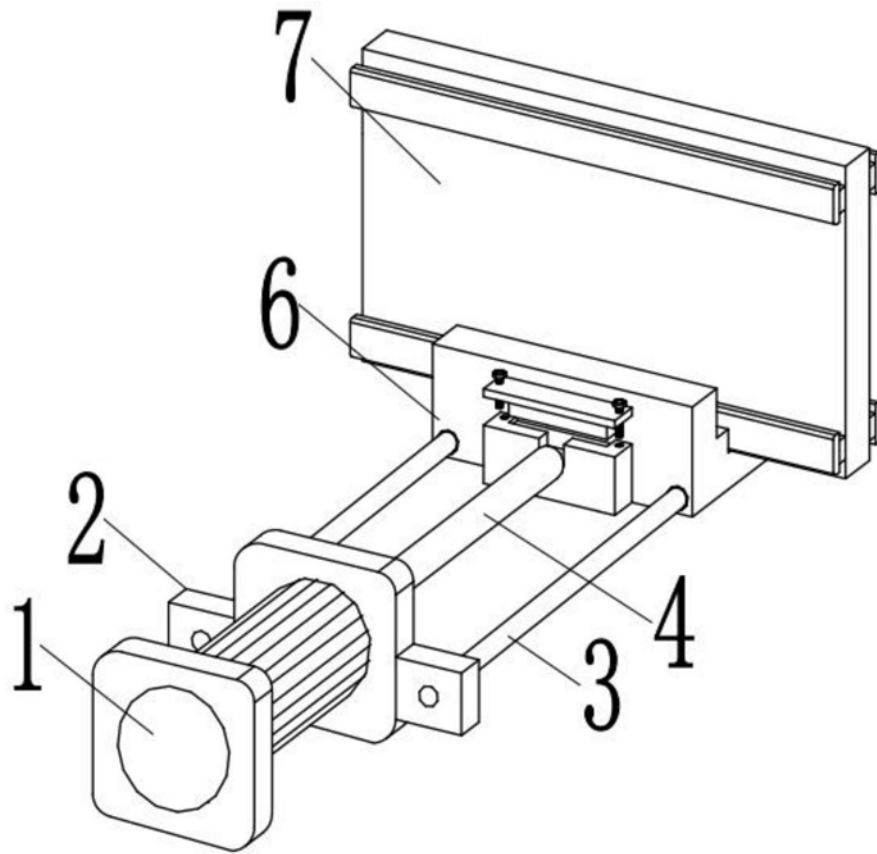


图1

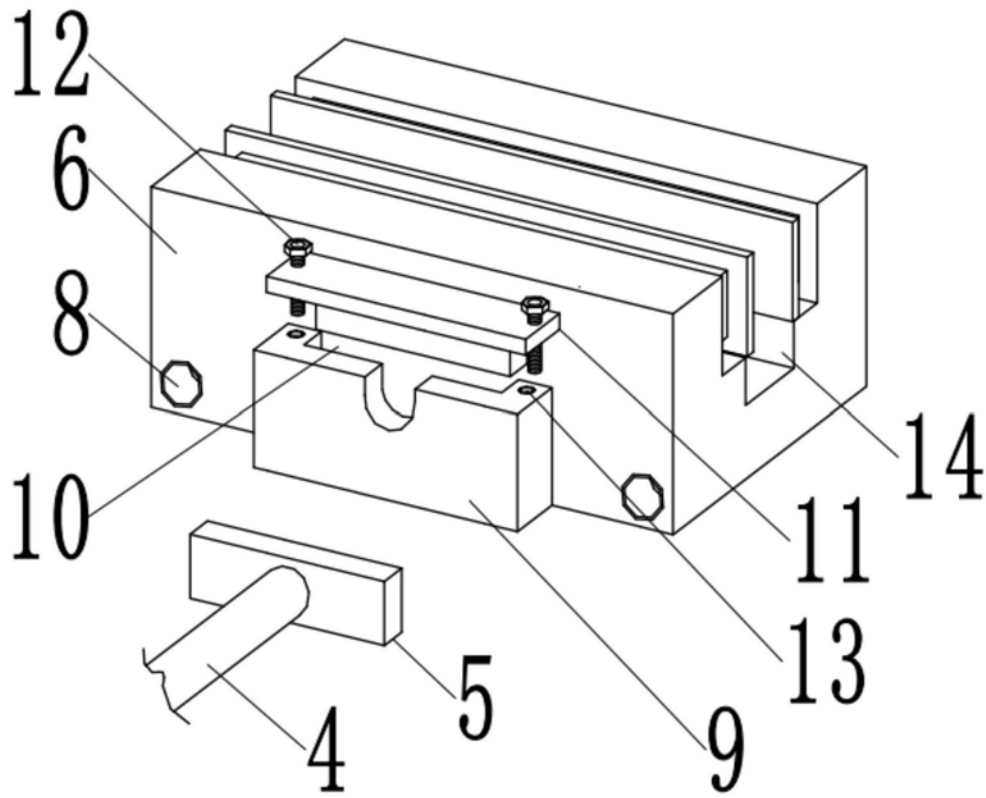


图2

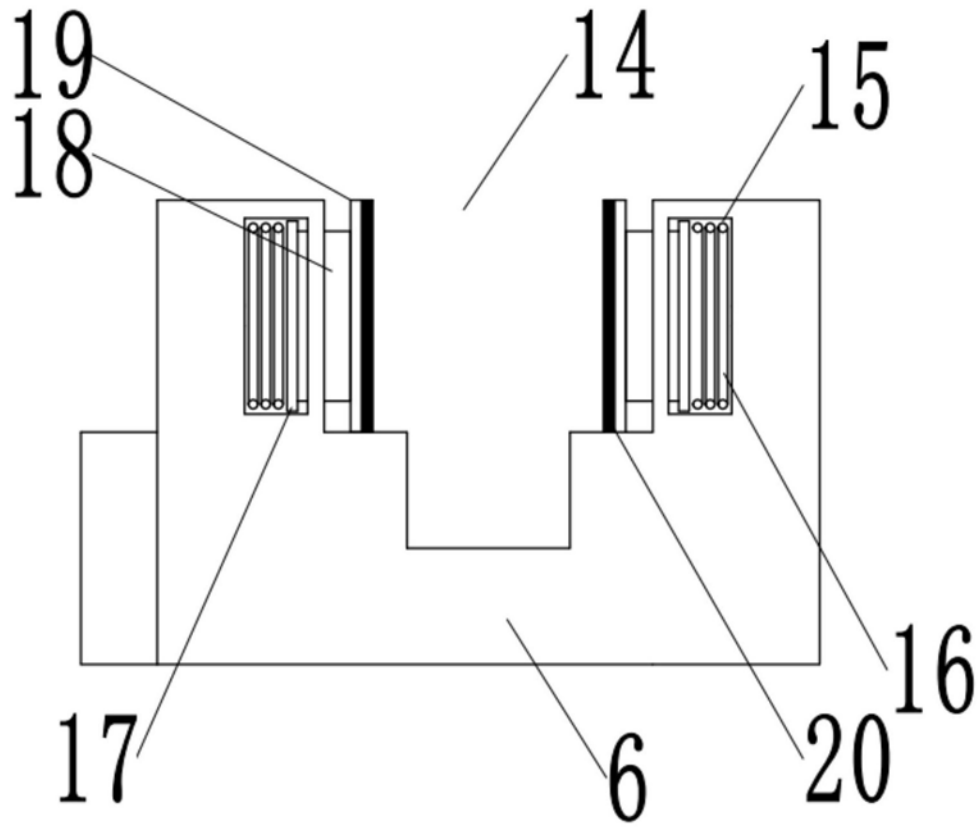


图3

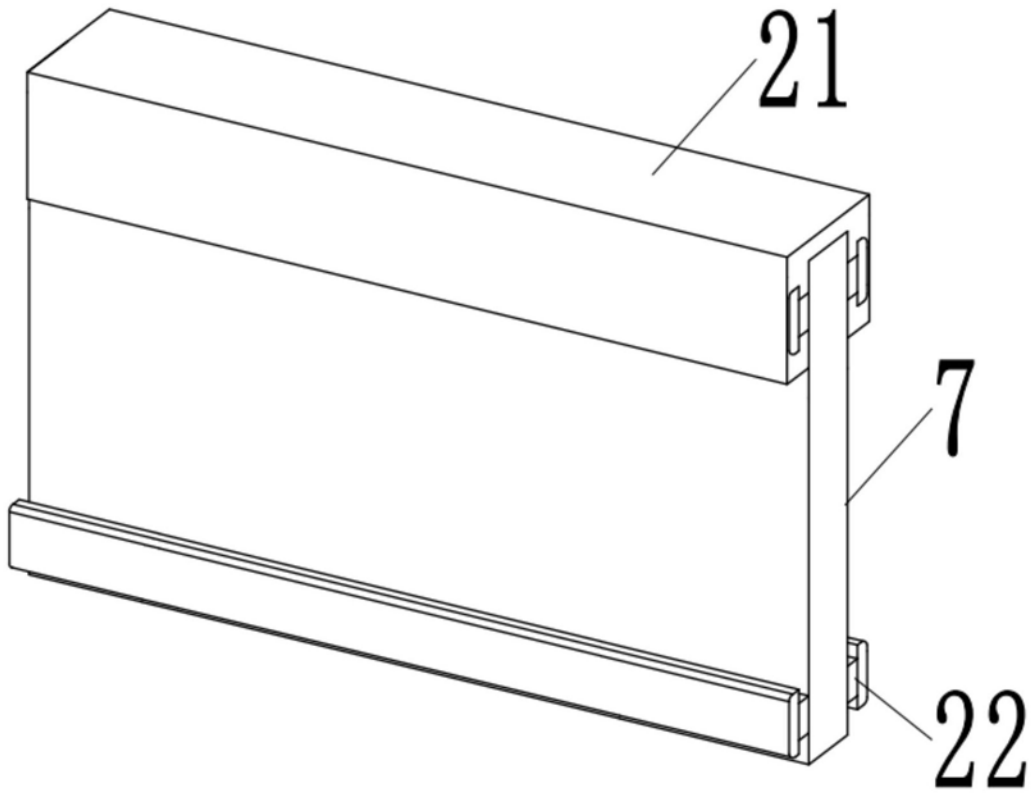


图4

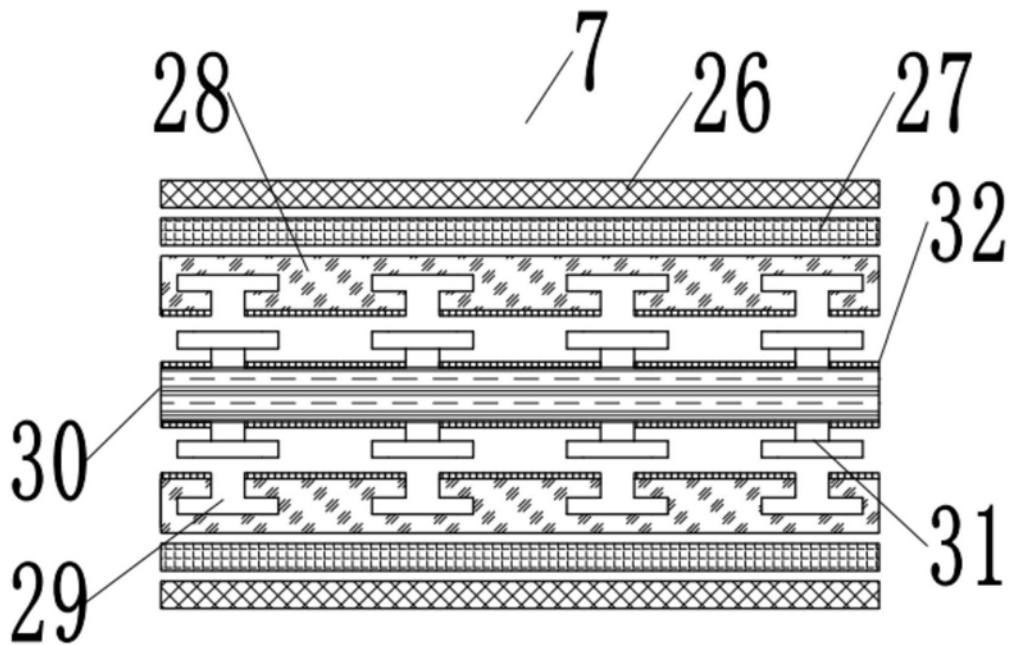


图5

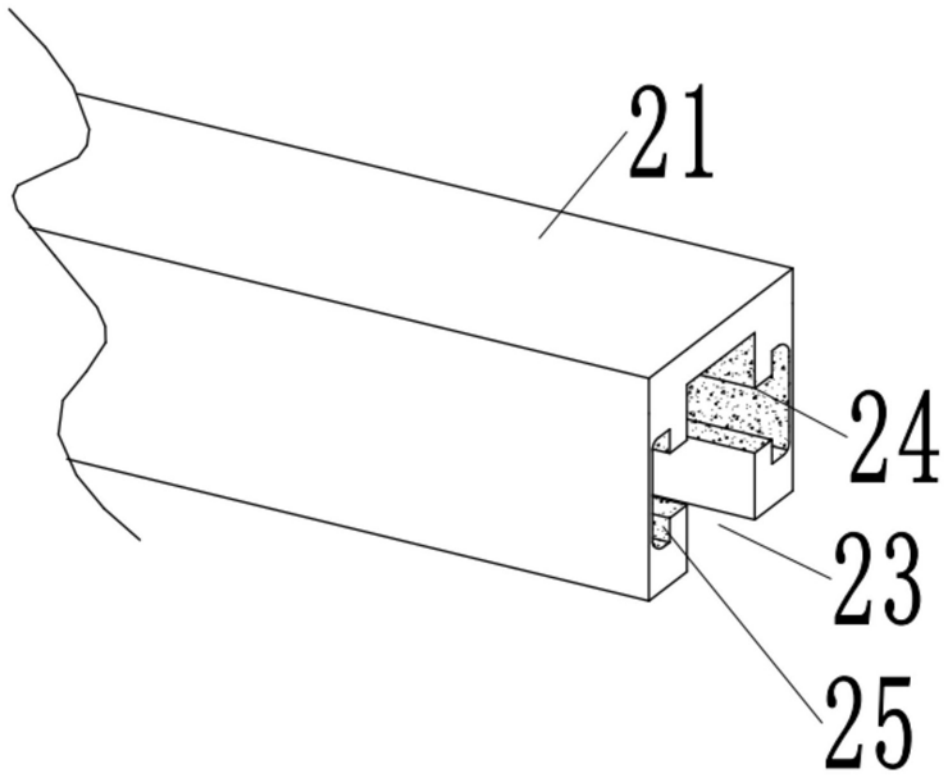


图6

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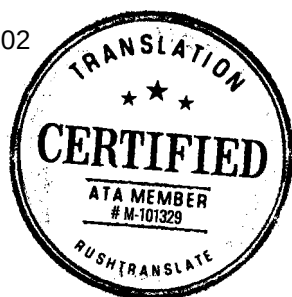
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Claims Description 2 Pages
Instruction Manuals 5 Pages
Attached Drawings 5 Pages

(54) Title of the Invention

A refrigerator glass partition with a molding guide structure

(57) Summary

The present invention relates to the technical field of refrigerator glass partitions, specifically to a refrigerator glass partition with a molding guide structure, comprising an electric cylinder, guide seat, and partition body. The partition body includes an insulation layer, and T-shaped blocks with equidistant structural distribution are welded to the top and bottom outer walls of the insulation layer. Both the top and bottom of the insulation layer are equipped with tempered glass layers and featured with T-shaped grooves with equal distance distribution on the outer wall side of the tempered glass layer near the insulation layer. The T-shaped blocks are slidably connected inside the T-shaped grooves. Additionally, PVB adhesive tape is laid on the outer wall side of the tempered glass layer adjacent to the insulation layer. Benefit-driven block of the invention enables the partition body to be more stable inside the limiting groove, making it easier for the partition body to slide out from inside of the guide seat. The guide block provides excellent guidance for the partition body, using a double-layer tempered glass layer, which gives the refrigerator partition strong compressive resistance.

[Scheme]

CN 111412720 A

1. A refrigerator glass partition with a molding guide structure, characterized by that it includes an electric cylinder (1), a guide seat (6), and a partition body (7). The partition body (7) includes an insulation layer (30), and T-shaped blocks (31) with equal spatial distribution are welded to the top and bottom outer walls of the insulation layer (30). Both the top and bottom of the insulation layer (30) are provided with tempered glass layers (28); featured with T-shaped grooves (30) arranged at equal intervals on the outer wall side of the tempered glass layer (28) near the insulation layer; T-shaped block (31) is slidably connected inside the T-shaped groove (29), and PVB adhesive tape (32) is laid on the outer wall side of the tempered glass layer (28) adjacent to the insulation layer (30). The outer wall of the tempered glass layer (28) away from the insulation layer (30) is covered with a silk-screen ink layer (27), and a wear-resistant layer (26) is laid on the outer wall of the screen-printed ink layer (27) on the other side away from the tempered glass layer (28).
2. The refrigerator glass partition with a molding guide structure according to claim 1, characterized in that: guide blocks (22) are welded to both sides of the top and bottom outer walls of the partition body (7), and a frame (21) is sleeved on the outer wall of the partition body (7) near the guide block (22).
3. The refrigerator glass partition with a molding guide structure according to claim 2, characterized in that: a sliding groove (23) is provided at the center of the outer wall on the side of the frame (21) near the partition body (7), and positioning grooves (24) are provided at the centers of the inner outer walls on both sides of the sliding groove (23), and protective pads (25) are provided on both the inner outer walls of the positioning grooves (24) and the sliding grooves (23). The partition body (7) and guide block (22) are slidably connected inside the sliding grooves (23) and positioning grooves (24), respectively.
4. The refrigerator glass partition with a molding guide structure according to claim 1, characterized in that: the output end of the electric cylinder (1) is movably connected to a push rod (4), and a clamping plate (5) is welded to the outer wall of the push rod (4) at the end away from the electric cylinder (1).
5. The refrigerator glass partition with a molding guide structure according to claim 1, characterized in that: ear plates (2) are welded to both outer walls of the electric cylinder (1) near the push rod (4), and a bare rod (3) is welded at the axis of the outer wall on one side of the ear plate (2) near the push rod (4).
6. The refrigerator glass partition with a molded guide structure according to claim 1, characterized in that: a clamping base (9) welded at the center of the bottom of the front outer wall of the guide seat (6), featured with a clamping slot (10) at the center of the top outer wall of the clamping base (9), positioning screw holes (13) are provided on both sides of the clamping base (9) near the clamping slot (10), and the clamping plate (5) is snapped inside the clamping slot (10).
7. The refrigerator glass partition with a molding guide structure according to claim 6, characterized in that: the positioning screw hole (13) is internally connected to a positioning bolt (12), and a pressure plate (11) is installed on the top outer wall of the clamping base (9) via positioning bolt (12).
8. The refrigerator glass partition with a molding guide structure according to claim 1, characterized in that: the bottom of both outer walls of the guide seat (6) near the clamping base (9) is provided with through holes (8) slidably connected to the outside of the bare rod (3).
9. The refrigerator glass partition with a molding guide structure according to claim 1, characterized in that: a limiting groove (14) is formed at the center of the top outer wall of the guide seat (6), which has a T-shaped structure, and the partition body (7) is placed inside the limiting groove (14).
10. The refrigerator glass partition with a molding guide structure according to claim 9, characterized in that: rectangular grooves (15) are formed at the top of both inner outer walls on both sides of the limiting groove (14), and a push block (18) is inserted inside the rectangular groove (15). One end of the push block (18) located inside the rectangular groove (15) is welded with a limiting plate (17), and a spring (16) is welded to the outer wall on the side of the limit plate (17) away from the push block (18). The push block (18) is slidably connected inside the rectangular groove (15) by a spring (16) and a limiting plate (17), and a clamping plate (19) is welded to the outer wall on the side of the push block (18) away from the rectangular groove (15). A rubber pad (20) is bonded to the outer wall on the side far from the push block (18), and the rubber pad (20) is attached to the outer wall of the partition body (7).

and fit together.

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A Refrigerator Glass Partition with a Molding Guide Structure

Technical Field

[0001] The present invention relates to the technical field of refrigerator glass partitions, specifically to a refrigerator glass partition with a molding guide structure.

Background Technology

[0002] A refrigerator is a refrigeration device that maintains a constant low temperature and is also a civilian product that keeps food or other items cold at a constant low-temperature state. As people's living standards continue to improve, refrigerators have become common in every household. To make full use of limited refrigerator space and facilitate food access, refrigerators are now designed as multi-layer refrigerators, with each layer separated by glass partitions.

[0003] Chinese Patent No. CN203011065U provides a glass molding guide device for refrigerator partitions. The glass molding guide device for refrigerator partitions includes a drive sleeve, the head of the drive sleeve is provided with a long drive rod, and the head of the long drive rod is equipped with a laterally movable guide bump, on which a T-shaped guiding grooves are provided.

[0004] However, when feeding the glass panels into the refrigerator partition with a glass plastic guide device, the glass panel needs to be fed into the mold. The existing method is manual operation, which easily pinches workers' hands, and the glass panel tends to shake during movement, affecting assembly quality. The main body of the glass compartment is ordinary glass, with poor safety performance and limited decorative appeal, which is not conducive to widespread promotion and popularization.

Invention Summary

[0005] The purpose of this invention is to provide a refrigerator glass partition with a molding guide structure, to solve the problem proposed in the background technology above, which requires feeding the glass panel into the mold during feeding. The existing method is manual operation, which easily pinches the worker's hand, and the glass plate tends to shake during movement, affecting assembly quality. The main body of the glass partition is ordinary glass, with poor safety performance and limited decorative appeal.

[0006] The technical solution of the present invention is a refrigerator glass partition with a molding guide structure, comprising an electric cylinder, a guide seat, and a partition body. The partition body includes an insulation layer, and T-shaped blocks with equal distance distribution welded to the top and bottom outer walls of the insulation layer. Both the top and bottom of the insulation layer are provided with tempered glass layers, and the outer wall on the side of the tempered glass layer near the insulation layer is provided with T-shaped grooves arranged at equal intervals. The T-shaped block is slidably connected inside the T-shaped groove, and PVB adhesive tape is laid on the outer wall of the tempered glass layer adjacent to the insulation layer. A silk-screen ink layer is laid on the outer wall of the tempered glass layer away from the insulation layer, and a wear-resistant layer is laid on the outer wall of the screen-printed ink layer on the side away from the tempered glass layer.

[0007] Furthermore, guide blocks are welded on both sides of the top and bottom outer walls of the partition body, and a frame is sleeved on the outer wall of the partition body near the guide block.

[0008] Furthermore, a sliding groove is provided at the center of the outer wall on the side of the frame near the partition body, and positioning grooves are provided at the centers of the inner outer walls on both sides of the sliding grooves. Protective pads are provided on both the positioning grooves and the inner outer walls of the sliding grooves. The partition body and guide blocks are slidably connected inside the sliding grooves and positioning grooves.

[0009] Furthermore, the output end of the electric cylinder is movably connected to a push rod, and clamping plates are welded on the outer wall of the end opposite to the electric cylinder of the push rod.

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[0010] Furthermore, ear plates are welded to both outer walls of the electric cylinder near the push rod, and a bare rod is welded at the axis of the ear plate near the outer wall of the push rod.

[0011] Furthermore, a clamping seat is welded at the center of the bottom of the front outer wall of the guide seat, and a clamping slot is provided at the center of the outer wall at the top of the clamping seat. Both sides of the clamping seat near the clamping slot are provided with positioning screw holes, and the clamping plate is snapped inside the clamping slot.

[0012] Furthermore, positioning bolts are threaded inside the positioning screw holes, and a pressure plate is installed on the top outer wall of the clamping seat via positioning bolts.

[0013] Furthermore, the bottom of the clamping seat near the outer walls on both sides of the bracket is provided with through holes slidably connected to the outside of the bare rod.

[0014] Furthermore, a limiting groove is formed at the center of the outer wall of the top of the guide seat, with a T-shaped structure. The partition body is placed inside the limiting groove.

[0015] Furthermore, rectangular grooves are formed at the tops of the inner outer walls on both sides of the limiting groove, and push blocks are inserted inside the rectangular grooves. One end of the push block inside the rectangular groove is welded with a limit plate, and a spring is welded to the outer wall on the side of the limit plate away from the push block. The push block is slidably connected to the interior of the rectangular groove by the spring, and a clamping plate is welded to the outer wall on the side of the push block away from the rectangular groove. A rubber pad is bonded to the outer wall of the clamping plate on the side far from the push block. The rubber pad fits closely against the outer wall of the partition body.

[0016] The present invention hereby provides a refrigerator glass partition with a molding guide structure by improving, and compared with the existing technology, it has the following improvements and advantages:

(1) The present invention uses PVB adhesive tape. PVB adhesive paper bonds two tempered glass layers together. When the tempered glass layer breaks, the glass fragments adhere to the tape under the action of the PVB adhesive tape, preventing them from falling off.

[0017] (2) The refrigerator partition of this invention uses a double-layer tempered glass layer, which gives the partition strong compressive resistance and high safety performance. The silk-screen ink layer enhances the partition aesthetics, making it more competitive in the market.

[0018] (3) The refrigerator partition of the present invention is equipped with an insulation layer, which provides excellent thermal insulation, blocking heat transfer from food in adjacent layers and improving the food freshness inside the refrigerator.

[0019] (4) The invention provides wear-resistant layers on both the top and bottom of the refrigerator partition to prevent wear during food pick-up and placing and to increase the wear resistance of the refrigerator partition, which helps extend its service life.

[0020] (5) Through an electric cylinder installed, the electric cylinder pushes the guide seat through a push rod to move the partition body. The guide blocks welded on the outer walls of the top and bottom sides of the partition body make the partition body more stable and secure inside the limiting groove and slide out from inside the guide seat easier. The guide block provides excellent guidance for the partition body.

[0021] (6) By providing a clamping plate, the push block pushes the clamp closer to the partition body by spring, providing excellent positioning for the partition body, greatly enhancing its stability during movement, while the rubber pad can provide excellent protection for the partition body.

[0022] (7) It provides excellent protection for the partition body after molding by setting a frame. The guide block on the partition body is inserted into the positioning groove, enhancing the stability of the connection between the frame and the partition body. The protective pad provides good protection for the edges of the partition body.

Description of the Drawings

[0023] The following further explains the present invention in conjunction with the drawings and embodiments:

Figure 1 is a schematic structural diagram of the present invention;
Figure 2 is a schematic structural diagram of the guide seat of the present invention;
Figure 3 is a schematic structural diagram of the clamping plate of the present invention;
Figure 4 is a schematic structural diagram of the partition body of the present invention;
Figure 5 is a schematic structural diagram of the internal partition of the present invention;
Figure 6 is a schematic structural diagram of the frame of the present invention.

[0024] Description of the drawing's numeral markings:

1 Electric cylinder, 2 ear plate, 3 bare rod, 4 push rod, 5 clamping plate, 6 guide seat, 7 partition body, 8 through hole, 9 clamping seat, 10 slot, 11 pressure plate, 12 positioning bolt, 13 positioning screw hole, 14 limiting groove, 15 rectangular groove, 16 spring, 17 limit plate, 18 push block, 19 clamping plate, 20 rubber pad, 21 frame, 22 guide block, 23 sliding groove, 24 positioning groove, 25 protective pad, 26 wear-resistant layer, 27 silk-screen ink layer, 28 tempered glass layer, 29 T-shaped groove, 30 insulation layer, 31 T blocks, 32 PVB adhesive tape.

Specific Embodiments

[0025] The following will provide a detailed description of the present invention in conjunction with Figures 1 to 6, clearly and completely describing the technical solutions in the embodiments of the present invention. Obviously, the embodiments described are only part of the embodiments of the present invention, rather than all of them. Based on the embodiments of the present invention, all other embodiments obtained by those having ordinary skill in the art without creative effort fall within the scope of protection of the present invention.

[0026] It should be noted that when a component is called "fixed to" another component, it can be directly on another component or exist with centered components. When one component is considered to be "connected" with another, it can be directly connected with another component or co-exist with centered components. When a component is considered "set on" another component, it can be directly set on another component or co-exist with centered component. The terms used in this article include "vertical," "horizontal," and "left", "right" and similar expressions are for illustrative purposes only.

[0027] Unless otherwise defined, all technical and scientific terms used herein have the same meanings as typically understood by those skilled in the art of the present invention. The terms used in the specification of the present invention are intended solely to describe specific embodiments and are not intended to limit the invention. The terms "and/or" used herein include any and all combinations of one or more related listed items.

[0028] The present invention provides a refrigerator glass partition with a molding guide structure through improvements, as shown in Figure 1-6, it includes an electric cylinder 1, a guide seat 6, and a partition body 7. The partition body 7 includes an insulation layer 30, and T-shaped blocks 31 with equal distance are welded to the top and bottom outer walls of the insulation layer 30. Tempered glass layers 28 are arranged at both the top and bottom of the insulation layer 30. T-shaped grooves 29 with equal distance distribution are equipped on the outer wall of the tempered glass layer 28 near the insulation layer 30, and the T-shaped blocks 31 are slidably connected inside the T-shaped grooves 29. The outer wall of the tempered glass layer 28 adjacent to the insulation layer 30 is lined with PVB adhesive tape 32. The outer wall of the tempered glass layer 28 is farther from the insulation layer 30 is laid with a screen-printed ink layer 27. The other side of the screen-printed ink layer 27 is also covered with a wear-resistant layer 26. PVB adhesive paper 32 is used to bond the two tempered glass layers 28 together. When the tempered glass layer 28 breaks, the glass fragments adhere to the adhesive paper under the action of the PVB adhesive paper 32. This prevents them from falling off. The double-layer tempered glass layer 28 is used, giving the refrigerator partition strong compression resistance and high safety performance; while the silk-screen ink layer 27 enhances the partition aesthetics, making it more competitive in the market. The insulation layer 30 provides excellent heat retention, preventing heat transfer from food between adjacent layers, which helps improve the freshness of food inside the refrigerator. The wear-resistant layer 26 prevents wear on the partition during food picking up and placing, increasing its wear resistance. This helps extend the service life of refrigerator partitions.

[0029] Furthermore, guide blocks 22 are welded on both sides of the top and bottom outer walls of the partition body 7, and frame 21 is sleeved on the outer wall of the partition body 7 near the guide block 22. Guide blocks 22 welded on the outer walls of the top and bottom sides of the partition body 7 make the partition body 7 more stable and secure inside the limiting grooves 14 and slide out from inside the guide seat 6 easier, providing excellent guidance for the partition body 7.

[0030] Furthermore, a sliding groove 23 is provided at the center of the outer wall on the side of the partition body 7 of the frame 21, and positioning groove 24 is formed at the centers of the inner outer walls on both sides of the sliding groove 23. Protective pads 25 are provided on both the positioning grooves 24 and the inner outer walls of the sliding grooves 23. The partition body 7 and guide block 22 are slidably connected inside the sliding grooves 23 and positioning grooves 24, respectively. Frame 21 provides good protection for the partition body 7 after molding. The guide block 22 on the partition body 7 is inserted into the interior of the positioning groove 24, improving the stability of the connection between the frame 21 and the partition body 7. The protective pad 25 provides good protection for the edges of the partition body 7.

[0031] Furthermore, the output end of electric cylinder 1 is movably connected to a push rod 4, and a clamping plate 5 is welded to the outer wall of the push rod 4 at the other end away from the electric cylinder 1. The model of the electric cylinder 1 is TJC-C1-T3-P-P. The electric cylinder 1 pushes clamping plate 5 via the push rod 4, which is fixed inside the clamping seat 9 and can push the guide seat 6 to drive the partition body 7 to move.

[0032] Furthermore, ear plates 2 are welded on both outer walls of the electric cylinder 1 near the push rod 4, and a bare rod 3 is welded at the axis of the outer wall on the side of the ear plate 2 near the push rod 4. The ear plate 2 provides excellent positioning for the bare rod 3, making it more stable.

[0033] Furthermore, a clamping seat 9 is welded at the center of the bottom of the front outer wall of the guide seat 6, and a slot 10 is provided at the center of the outer wall at the top of the clamping seat 9. Both sides of the clamping seat 9 near the slot 10 are provided with positioning screw holes 13, and the clamping plate 5 is snapped inside the slot 10, making inspection and maintenance of the guide seat 6 more convenient and efficient.

[0034] Furthermore, positioning bolts 12 are threaded inside the positioning screw holes 13, and pressure plates 11 are installed on the top outer wall of the clamping seat 9 via positioning bolts 12. The pressure plates 11 are installed on the top outer wall of clamping seat 9 through positioning bolts 12, effectively positioning the clamping plate 5 inside the slot 10, improving stability when push rods 4 push the guide seat 6.

[0035] Furthermore, the bottom of the guide seat 6 near the outer walls on both sides of the clamping seat 9 is slidably connected to the through hole 8 outside of the bare rod 3, making the guide seat 6 more stable when moving under the combined action of the through hole 8 and the bare rod 3.

[0036] Furthermore, a limiting groove 14 is formed at the center of the top outer wall of the guide seat 6, and the limiting groove 14 has a T-shaped structure. The partition body 7 is placed inside the limiting groove 14, and the T-shaped structure makes the partition body 7 more stable inside the limiting groove 14.

[0037] Furthermore, rectangular grooves 15 are formed at the tops of the inner outer walls on both sides of the limiting groove 14, and push blocks 18 are inserted inside the rectangular grooves 15. One end of the push block 18 inside the rectangular groove 15 is welded with limit plates 17, and springs 16 are welded to the outer wall on the side of the limit plate 17 away from push block 18. The push block 18 is slidably connected to the interior of the rectangular groove 15 via the spring 16 and limit plate 17. Moreover, clamping plate 19 is welded to the outer wall of the push block 18 away from the rectangular groove 15. A rubber pad 20 is bonded to the outer wall of the clamping plate 19 away from push block 18, which fits closely with the outer wall of the partition body 7. The push block 18 pushes the clamping plate 19 toward the partition body 7 by the action of the spring 16, providing excellent positioning for the partition body 7, greatly improving its stability during movement, while rubber pad 20 can provide excellent protection for the partition body 7.

[0038] The working principle of the present invention: when using the refrigerator glass partition with a molding guide structure, the operator first places the refrigerator glass partition to be plasticized into the limiting groove 14 on the guide seat 6. Guide blocks 22 welded on the outer walls of the top and bottom sides of the partition body 7 make the partition body 7 more stable and secure inside the limiting groove 14 and slide out easier from inside the guide seat 6. Guide block 22 provides excellent guidance for the partition body 7. Push block 18 pushes the clamping plate 19 toward the partition body 7 by the action of the spring 16, providing excellent positioning for the partition body 7 and greatly improving its stability during movement. Meanwhile, the rubber pad 20 can provide excellent protection to the partition body 7;

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Then the electric cylinder 1 uses push rod 4 to drive the guide seat 6 to move the partition body 7 to the molding device for sealing. PVB adhesive paper 32 is used to bond the two tempered glass layers 28 together. When the tempered glass layer 28 breaks, the glass fragments adhere to the tape under the action of PVB adhesive paper 32, preventing them from falling off. The double-layer tempered glass layer 28 gives the refrigerator partition strong compressive resistance and high safety performance, while the silk-screen ink layer 27 enhances the aesthetics of the refrigerator partition. This makes the refrigerator partition more competitive in the market. The insulation layer 30 provides excellent heat retention, preventing heat transfer from food between adjacent layers, which helps improve the freshness of food inside the refrigerator. The wear-resistant layer 26 prevents wear on the partition during food pick-up and placing, increasing its wear resistance and extending its service life.

[0039] The above description of the disclosed embodiments enables those skilled in the art to implement or use the present invention. Various modifications to these embodiments will be obvious to those skilled in the art, and the general principles defined herein can be implemented in other embodiments without departing from the spirit or scope of the invention. Therefore, the invention will not be limited to the embodiments shown herein but will instead conform to the broadest scope consistent with the principles and novelty disclosed herein.



[Figure 1]

-9-



[Figure 2]

-10-

[Figure 3]

-11-

[Figure 6]

[Figure 5]

-12-

[Figure 6]

-13-