June 7, 1966 J. C. RASOR ETAL 3,254,362

GLIDE AND ATTACHMENT MEANS THEREFOR

Filed July 23, 1964

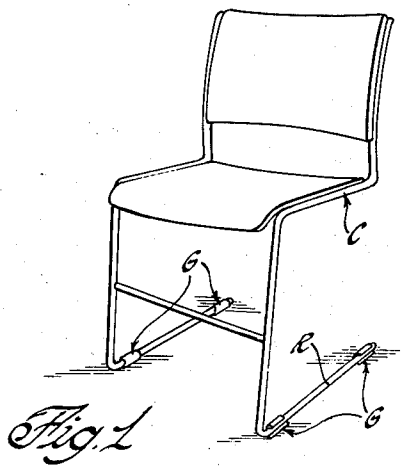


Fig. 1

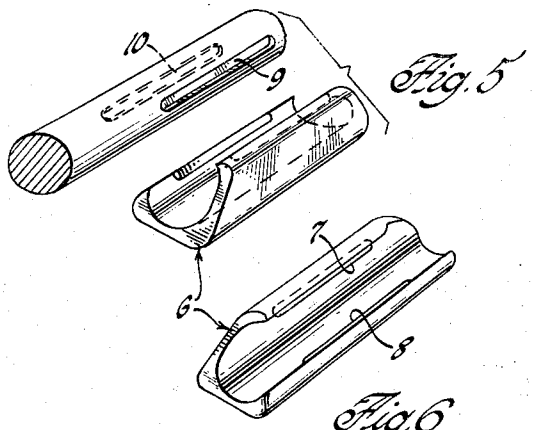


Fig. 5

Fig. 6

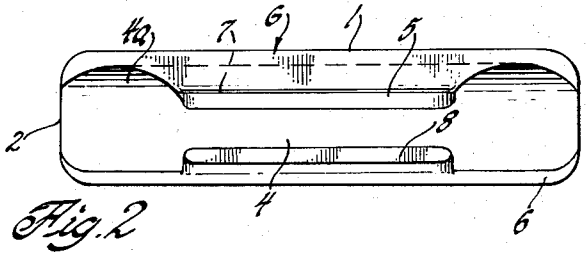


Fig. 2

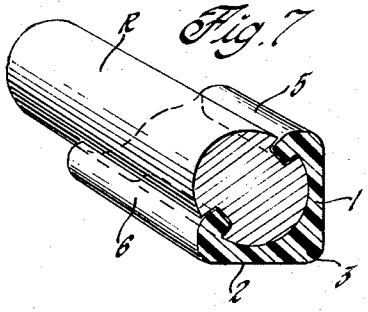


Fig. 7

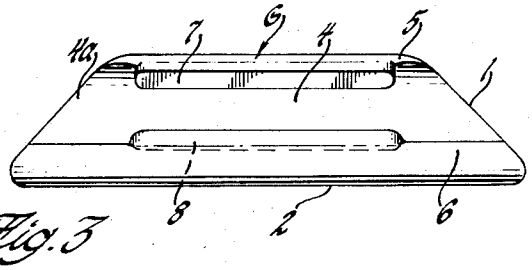


Fig. 3

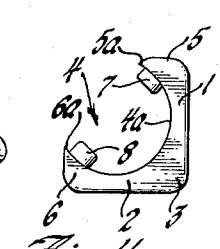


Fig. 4a

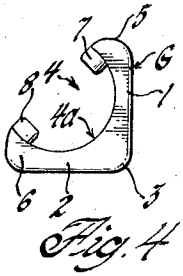


Fig. 4

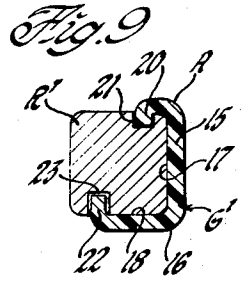


Fig. 9

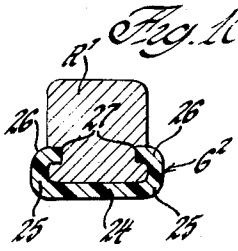


Fig. 10

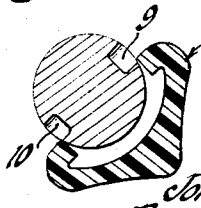


Fig. 8

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GLIDE AND ATTACHMENT MEANS THEREFOR

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6 Claims. (Cl. 16—42)

This invention relates generally to glides and more particularly to a furniture glide having improved means for the removable attachment of the glide to a base member of the furniture article.

In the manufacture of furniture, particularly tables or chairs having a supporting bottom rail disposed horizontally with respect to the floor, it is desirable to provide means upon the bottom rail for squarely supporting the furniture article upon the floor in such manner as to provide for easy movement of the article across the floor while preventing marring or scratching of the floor surface. Although the present invention may be applied to any type of furniture article, it is particularly adapted for use on chairs or tables having horizontal bottom members such as side chairs or tables intended to be used in auditoriums, convention halls, etc., which are moved frequently from place to place by sliding the chain across the floor.

The present chair glide is preferably constructed of a plastic material possessing a high degree of impact strength such as Bakelite or any one of many other types of plastic of the semirigid type. As will be apparent from the following description, the material used in forming the glide must have a high degree of snap in order to permit application of the glide to the bottom rail of the furniture article and to insure retention thereupon. Another desirable feature which is found in most plastics is that of lubricity in order that the chair article will easily glide upon the supporting floor, and when used on a stackable type table or chair, the adjacent bottom rails of a stack of such articles would not be scratched or damaged in any way by one another.

Accordingly, one of the primary objects of the present invention is to provide an integral glide member adapted to be removably attached to the bottom member of an article of furniture.

Another object of the present invention is to provide a furniture glide constructed of resilient material and including means thereon engageable with cooperating means on the bottom member of an article of furniture.

A further object of the present invention is to provide a glide member having a flat base section and including means for anchoring the glide to the bottom rail of an article of furniture which rail is of a circular cross section.

Still another object of the present invention is to provide a furniture glide adapted to be snap-fitted to the bottom member of a furniture article and including means preventing both longitudinal and rotary displacement thereof.

With these and other objects in view which will more readily appear as the nature of this invention is better understood, the invention consists of the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The preferred and practical embodiments of the invention are shown in the accompanying drawing in which:

FIGURE 1 is a perspective view of a chair provided with a glide member according to the present invention.

FIGURE 2 is a top plan view of the glide illustrated in FIGURE 1.

FIGURE 3 is a front elevation view of the glide of FIGURE 2.

FIGURE 4 is an end elevation view of the glide of FIGURE 3.

FIGURE 4*a* is an end elevation view of a modified glide.

FIGURE 5 is an exploded perspective view and shows the glide removed from the bottom rail.

FIGURE 6 is a perspective view of the glide shown in FIGURES 2 and 3.

FIGURE 7 is a top perspective view, partly in section, of the glide as mounted on the bottom rail.

FIGURE 8 is an end sectional view of the glide being applied to the bottom rail.

FIGURES 9 and 10 are end sectional views illustrating modifications of the glide and bottom supporting rail.

Similar reference characters designate corresponding parts throughout the several figures of the drawing.

For purposes of illustration, the invention is disclosed herein as applied to a bottom rail forming a portion of the structure of a chair. It will be understood, however, that the invention may be practiced in conjunction with any of various other articles adapted to bear upon a planar surface which may readily incorporate the structure as set forth herein.

Referring now to the drawing, particularly in FIGURE 1, it will be seen that the glide member generally designated G is adapted to be mounted upon the opposite ends of the bottom rails R of the chair C. In view of the short length of the glides G with respect to the overall length of the rails R, it will be seen that the chair will be supported upon the floor in a stable manner by the base portion of the four glides G even though the two rails R may not be in the same exact horizontal plane or if the floor itself may be somewhat irregular. In addition to the four point suspension, the stability of the chair is further insured due to the fact that the rails R are of substantially thin stock, preferably less than ½ inch diameter so that it will be apparent that the weight of the chair itself permits slight deformation of the bottom rails so that they will lie perfectly parallel with respect to the floor surface.

The present chair glide preferably comprises a plastic member having a sidewall section **1** and a base section **2** connected to one another by means of a medial portion **3** so that the outer planar surfaces of the two endmost sections are normally disposed at right angles to one another as well be most clearly seen in FIGURES 4 and 7. The inner surface of the glide is molded to form a longitudinal cavity **4** which in cross section is semicircular and of a radius approximately congruent with the radius of the bottom rail R with which the glide is to be used. The free longitudinal edges of both sections **1** and **2** are somewhat thicker than the medial portions of the sidewall section **1** and base section **2** to provide a top flange **5** and a bottom flange **6**, respectively. As will be seen from FIGURE 4, the flanges **5** and **6** are substantially diametrically opposed with respect to the circle defined by the inner wall **4***a* of the cavity **4**.

Projecting inwardly from the inner wall **4***a* in the vicinity of the flanges **5** and **6** are a pair of elongated tongues **7** and **8**. As will be most clearly seen from FIGURE 4, the top tongue **7** and bottom tongue **8** are diametrically opposed with respect to the center point of the radius forming the longitudinal rail cavity **4** for reasons which will become apparent hereinafter.

FIGURES 2 and 6 most clearly illustrate that the base section **2** is substantially rectangular along its bottom supporting surface while in FIGURE 3 it will be seen that the sidewall section **1** is basically of trapezoidal configuration with the top flange **5** substantially shorter in length than the bottom flange **6**.

In order to positively retain the chair glide upon the rail R, the rail is provided with a pair of recesses **9** and

10 for each of the glides G. The elongated recesses 9 and 10 are likewise diametrically opposed with respect to one another on the surface of the rail R, and to insure proper placement of the glide when applied thereto, the angular position of the recesses must agree with the angular position of the tongues 7 and 8 on the glide with respect to the flat supporting surface of the base section 2. Accordingly, it is proposed that the sidewall section 1 and base section 2 are of equal length, and since the tongues 7 and 8 are both positioned at the ends of their respective sections, it follows that these tongues will be disposed at a 45 degree angle in relation to both a vertical axis and a horizontal axis passing through the center point of the rail cavity 4. In this manner, by also providing for the opposed recesses 9 and 10 in a similar angular position, it will follow that when the glide is snapped over the rail section with the tongues 7 and 8 properly positioned within their respective recesses 9 and 10, the bottom of the base section 2 will be in a plane parallel to the floor and would appear as in FIGURE 7.

To mount one of the glides G upon the rail R, it is necessary to outwardly displace the flange portions 5 and 6 in order to permit the tongues 7 and 8 to be snapped into their respective recesses since the periphery of the inner wall 4*a* is provided with a radius of the same dimension as the radius of the rail R. FIGURE 8 illustrates a glide being applied to the rail and discloses the outer ends of the sections 1 and 2 being displaced from one another just prior to entry of the tongues into the recesses.

The thickening of the top flange 5 and bottom flange 6 as well as the heavier dimension to the medial portion 3 serves two purposes. Firstly, it provides for the flat or straight line construction of the outer surface of the sections 1 and 2, and secondly, provides necessary strength to the critical portions of the glide during assembly and disassembly of the glide from the bottom rail R. As will be seen in FIGURE 8 a great deal of strain would be placed upon the medial portion 3 during the flexure of the two sections away from one another. The inherent resiliency of a molded thermo-setting plastic insures that when the glide is pushed further onto the rail, as in FIGURE 8, the two tongues 7 and 8 will be forced into the respective recesses 9 and 10 in the rail with a positive snap-action so that the mounted glide will appear as in the sectional view of FIGURE 7.

By providing a mating fit between the tongues and recesses, that is, each recess is only as wide, deep, and long as is necessary to provide a snug fit with the tongues 7 and 8, then it would be apparent that once a glide is mounted upon the rail R the possibility of a glide being either angularly or longitudinally displaced with respect to the rail is precluded.

If for any reason it should be desired to remove one of the glides from a rail, it is only necessary to insert a suitable thin bladed instrument between the periphery of the rail and one of the edges of the glide so as to pry out or remove at least one of the tongues from its recess, against the inherent resiliency of the glide. As shown in FIGURE 4*a*, one or both of the flanges 5 and 6 may be modified to include a lip 5*a*, 6*a*, respectively, extending away from the flanges to serve as a lifting edge during removal of the glide and to also mask the edges of the adjacent recesses 9 and 10.

FIGURES 9 and 10 illustrate adapttions of the basic invention to a rail member of other than circular cross section. In these modifications, the rail R′ is of substantially rectangular or square section and is preferably provided with slightly rounded corners.

In the embodiment illustrated in FIGURE 9, the glide G′ is provided with a vertical sidewall section 15 of sufficient height to completely mask one side of the rail R′ while a base section 16 extending from the lower portion of the sidewall section 15 is of a width in section substantially less than the corresponding underlying dimension of the rail R′. The adjacent inner surfaces 17 and 18 of the sections 15 and 16 are formed as flat surfaces disposed at right angles to one another similar to the outer adjacent surfaces of the rail R′. Extending from the top of the sidewall section 15 is a flange portion 19 having a downwardly turned tongue 20 adapted to engage within a mating recess 21 in the top of the rail. A similar tongue 22 projects upwardly from the free end of the base section 16 to engage a recess 23 disposed in the bottom of the rail.

The manner of applying the glide G′ to the rail R′ is similar to the previously described procedure except that in this form it is necessary to engage the tongue 20 within the recess 21 prior to the pivoting of the glide member about this point to snap the tongue 22 into the recess 23.

The embodiment disclosed in FIGURE 10 shows a glide G^2 adapted for use with a square of rectangular rail R′ and comprising a base section 24 extending across the entire bottom width of the rail. Upstanding from each of the longitudinal side edges of the base section 24 are a pair of sidewall sections 25, 25 which project upwardly only a short distance from the base member 24 and are each provided at their free ends thereof with inwardly projecting tongues 26, 26 oppositely disposed from one another and adapted to enter into a pair of corresponding recesses 27, 27 in the rail R′. In applying this glide G^2 to the rail R′, one of the tongues 26 is inserted into a recess 27 and then the opposite tongue 26 is pushed over the opposite side of the rail R′ until it is snapped into its mating recess 27.

It will be understood that each of the modifications disclosed in FIGURES 9 and 10, the recesses in the rail R′ are of substantially similar dimensions with respect to the cooperating tongues on the glides G′ and G^2 so that when these glides are snapped into position upon the rail, they will be securely anchored thereto and precluded from any longitudinal displacement along the rail during subsequent use of the article of furniture to which they are applied.

It is to be understood that the invention is not limited to the specific features shown but that the means of construction herein disclosed comprise the preferred forms of several modes of putting the invention into effect, and the invention is therefore claimed and any of its forms or modifications within the legitimate and valid scope of the appended claims.

We claim:

1. In an article of furniture having a bottom supporting rail provided with a pair of opposed recesses, a glide removably attached to the rail, said glide including; a base section having a planar floor engaging surface, at least one side wall section attached to an edge of said base section and extending upwardly in a direction normal to said base section, a pair of tongues directed inwardly from the free ends of said sections, an inner wall on said sections extending from one tongue to the other tongue and normally conforming to the contour of said rail, said two sections forming a resilient body whereby said sections may be deflected with respect to one another by force applied to the ends thereof as said pair of tongues are forced about the periphery of said rail, said tongues forming a mating fit with and engageable within said recesses to retain said glide upon said rail with said inner wall juxtaposed the periphery of said rail and with said base section disposed in a horizontal plane.

2. In a article of furniture having a bottom supporting rail provided with a pair of opposed longitudinal recesses, a glide of resilient material including; a base section having a planar floor engaging bottom surface, at least one side wall section attached to an edge of said base section and extending upwardly in a direction normal to said base section, a pair of tongues directed inwardly from the free ends of said sections, an inner wall on said sections extending from one tongue

to the other tongue and normally conforming to the contour of said rail, said two sections forming a body whereby said sections may be deflected with respect to one another by force applied to the ends thereof as said pair of tongues are forced about the periphery of said rail, said tongues forming a mating fit with and engageable within said recesses to retain said glide upon said rail with said inner wall juxtaposed the periphery of said rail and with said base section disposed in a horizontal plane.

3. A glide according to claim 1, wherein, said rail is circular in cross section, said inner wall is semi-circular in cross section, and said tongues are substantially diametrically opposed.

4. A glide according to claim 1, adapted to engage a rail of rectangular cross section and including, a pair of said sidewall sections connected to said base section and parallel to one another.

5. A glide according to claim 1, adapted to engage a rail of rectangular cross section, wherein, said sidewall section is of a height equal to the height of one side of said rail, a horizontal flange portion extending inwardly from the top of said sidewall section, and one of said tongues projecting downwardly from the free end of said flange portion with the other of said tongues directly upwardly from the free end of said base section.

6. A glide according to claim 1, and including, a pair of lips on said sections extending beyond said tongues.

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