

[54] DOOR LATCHING STRUCTURE

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312/215, 333, 348; 16/86 R, 86 B

[57] **ABSTRACT**

A door latching structure including plastic keeper and latch members for mounting on a furniture case or the like and a door, respectively, the keeper member having a wedge-shaped projection for engagement with a wedge-shaped projection on the latch member, the latch member being resilient and having ribbing for stabilizing the latch member incident to engagement of the projections.

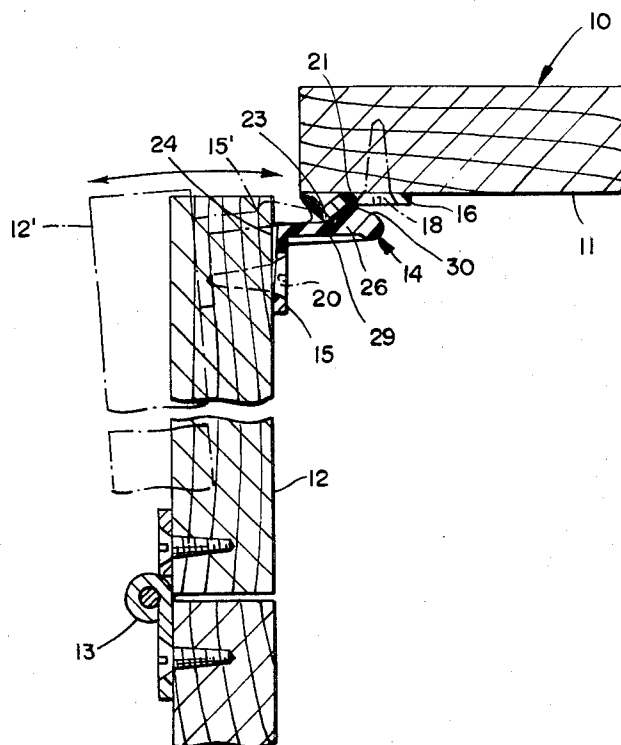
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8 Claims, 2 Drawing Figures



DOOR LATCHING STRUCTURE

BACKGROUND AND SUMMARY OF INVENTION

Over the years, a wide variety of latching means have been used for furniture pieces equipped with swinging doors. These have taken a variety of forms, but none have met the twin objectives of reliable latching at low cost. Through the provision of plastic members to serve as a keeper and a latch, and providing in these members means for stabilization and for adjustment, I am able to attain these dual and heretofore irreconcilable objectives.

More particularly, the keeper member includes a unitary plastic piece of generally rectangular configuration. One of the faces is substantially flat, and is attached to the furniture case, the other of the faces having an integral ridge or wedge-shaped projection. The latch member also includes a unitary plastic piece of generally rectangular configuration, with a flat face secured to a door of the furniture case. The other face is equipped with an integral arm terminating in a ridge or wedge-shaped projection for engagement with the projection on the keeper member. The latch member is equipped with rib means for stabilizing the arm thereof, and both members are equipped with elongated slots to achieve ready adjustability of the members relative to each other and to their respective mountings.

Other objects and advantages of the invention may be seen in the details of this specification.

DETAILED DESCRIPTION

The invention is explained in conjunction with an illustrative embodiment in the accompanying drawing, in which

FIG. 1 is a fragmentary sectional view through a portion of a furniture case showing the inventive latching structure; and

FIG. 2 is an exploded perspective view of the two elements of the latching structure.

In the illustration given, and with particular reference to FIG. 1, the numeral 10 designates generally a furniture case which is shown only in fragmentary form. For example, the numeral 11 is employed to designate a sidewall of the case 10, while the numeral 12 designates a swingable door. The door 12 is attached to a stationary or non-moving part of the case 10 by means of a hinge 13. It will be appreciated that the latching structure generally designated 14, can be installed either along a vertical edge of the door and case as illustrated, or, alternatively, along a horizontal edge, viz., the top or bottom of the door and associated door opening.

The latching mechanism 14 includes a latch member 15 secured to the door 12, and a keeper member 16 secured to the stationary wall 11. For this purpose, the keeper member 16 is equipped with a pair of elongated slots 17 (see FIG. 2) which accommodate the receipt of wood screws 18 (as illustrated in FIG. 1). In similar fashion, the latch member 15 is equipped with elongated slots 19 (again see FIG. 2) which accommodate the receipt of other wood screws 20.

Each of the members 15 and 16 can be considered to include a unitary plastic piece of generally rectangular configuration, i.e., being generally plate-like. Thus, for example, there is a face 21 (see FIG. 1) provided on the keeper member 16 which is essentially flat or flush with

the confronting face of the wall 11. Extending from the opposite face 22 is an integral ridge or wedge-shaped projection 23 and which performs a keeping function when installed in conjunction with the latch member 15.

The latch member 15 also has a relatively flat face portion 24 which is in abutting relation with the inner surface of the door 13. Extending from the opposite face 25 (see FIG. 2) is an integral arm 26. The arm 26, at its outward extremity, is equipped with a ridge or wedge-shaped projection which has a ridge extending parallel with the ridge 28 on the projection 23.

The latching operation is illustrated in FIG. 1 wherein the door in the open position is shown in phantom line and is designated by the numeral 12', and the latch member by the numeral 15'. As the door 12' is moved to the solid line position (by virtue of swinging about the hinge 13), the arm 26 flexes away from the projection 23, permitting the projection 27 to pass by the projection 23 and thereafter snap into the position illustrated in FIG. 1. Assisting in this operation and contributing to the stabilization, ruggedness, and longevity of the latch member 15 is the ribbing provided on the side of the arm 26 opposite that equipped with the projection 27. The ribbing illustrated includes a pair of tapered ribs 29 which taper in height as they proceed toward the end of the arm 26.

In the embodiment of the invention illustrated, the projection 27 has a lesser slope to the face 30 than does the face 31. This facilitates the gradual flexing of the arm 26, and, after the ridge of the projection 27 has passed the ridge 28, the quick and secure latching of the members together.

By virtue of providing elongated slots, as at 17 and 19, the adjustability of the members is achieved so as not only to keep the same in alignment, but also to regulate the degree of hardness or ease with which the latching operation is achieved.

I have found it advantageous to notch the members as at 32 relative to the member 16, and 33 relative to the member 15, so as to define two discrete portions in each member for the purpose of defining the screw slot.

I have also found it advantageous to construct the members of different plastic material, choosing a plastic material of relatively greater resiliency or flexibility such as polyethylene for constituting the latch member 15, thereby yielding superior latching action while preserving longevity. However, in some instances the materials may be reversed, viz., making the latch member 15 of more rigid material such as the acetal plastic marketed under the trade designation Delrin by E. I. du Pont de Nemours & Co.

With the arrangement illustrated, it will be noted that the width of the arm (and hence the projection 27) is considerably less than the corresponding dimension of the projection 23, i.e., the length of the ridge 28. Advantageously, I construct the projection 23 with a length of at least two and preferably three times the width of the arm 26. This insures good engagement irrespective of minor errors in the alignment of the members.

While in the foregoing specification a detailed description of an embodiment of the invention is set down for the purpose of illustration, many variations in the details hereingiven may be made by those skilled in the

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art without departing from the spirit and scope of the invention.

I claim:

1. A door latching structure for a furniture case or the like having a door movable to a closed position comprising a keeper member mounted on said case and a latch member mounted on said door for engagement with said keeper member when said door is in closed position, said keeper member including a unitary plastic piece of generally plate-like, rectangular configuration providing four sides and a pair of faces, one of said faces being substantially flat and positioned in confronting relation with said case, the other of said faces being equipped with an integral ridge-shaped projection extending parallel to and adjacent to one of said sides to provide means for engagement with said latch member, a pair of elongated slots in said keeper member extending from one face to the other with the slot length extending generally perpendicularly to said one side, screw means extending through said slots for securing said keeper member to said case, said latch member also including a unitary plastic piece of generally plate-like rectangular configuration providing thereby four sides and a pair of faces, one of said faces being substantially flat and positioned in confronting relation with said door, the other of said faces being equipped with an integral arm adjacent one of the sides of said piece to provide means for engagement with said keeper member, a pair of elongated slots in said latch member extending from one face to the other with the slot length extending generally perpendicular

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to the said one side of said latch member, and screw means extending through said slots for securing said latch member to said door, said arm adjacent the extremity thereof having an integral ridge-shaped projection outstanding therefrom on the arm side adjacent said latch member one side, said arm being relatively resilient to permit flexing thereof and past said arm projection past said keeper member projection, said arm being equipped with rib means on the side thereof opposite the first mentioned arm side.

2. The structure of claim 1 in which said rib means are tapered in proceeding outwardly of said arm.

3. The structure of claim 2 in which a pair of spaced-apart ribs are provided on said arm.

4. The structure of claim 1 in which said members are constructed of different plastics.

5. The structure of claim 1 in which said arm projection is defined by a pair of intersecting surfaces, the surface first engaged by said keeper member incident to closing of said door having a lesser slope than the other surface.

6. The structure of claim 1 in which each of said pieces is notched to provide integral tabs in said pieces, and openings extending through said tabs constituting said slots.

7. The structure of claim 1 in which the length of said keeper member projection is at least twice the width of said arm.

8. The structure of claim 7 in which the ridge length is approximately three times the arm width.

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