ABSTRACT

A drawer sliding assembly mounted between a drawer and furniture has a plastic rail and at least two guides being plastic. The rail is elongated and has a neck and a head wider than the neck. The guides are shorter than the drawer and are securely mounted separately on a bottom surface of the drawer along a longitudinal axis. Each guide has a guiding groove formed therethrough and slidably holds the head of the rail. Accordingly, with such an arrangement, the drawer sliding assembly in accordance with present invention is quiet and smoothly and is cheaper to manufacture by saving materials.
DRAWER SLIDING ASSEMBLY

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention
[0002] The present invention relates to a drawer sliding assembly, and more particularly to a drawer sliding assembly that allows a drawer to be mounted slidably in furniture and smoothly operated whilst saving material.
[0003] 2. Description of Related Art
[0004] Drawers are mounted in variety of furniture for people putting articles therein. Generally, drawers are able to slide using at least one assembly.
[0005] With reference to FIGS. 9, 10 and 11, a conventional sliding assembly comprises a guide and a rail being substantially wooden. The guide is mounted securely on a bottom surface of a drawer, is elongated and has a guiding groove formed longitudinally therethrough. The guiding groove is a trapezium in cross section and has a longitudinal opening and a longitudinal surface. The longitudinal surface is wider than the opening. The rail is securely mounted on a surface adjacent to the bottom surface of the drawer and has a head corresponding to and engaging the guiding groove of the guide. When the drawer is pulled, the guide allows the drawer to slide along an entirety of the rail and ensure the drawer moves longitudinally due to engagement between the guiding groove and the rail.
[0006] Being made of wood, however, the guide and the rail may generate annoying noise and be awkwardly moved because of a friction incurred therebetween. Moreover, the guide and the rail require skill of manufacture to produce and use much wood, this increases difficulties to manufacture the drawer sliding assembly and increase costs and material wastage.

[0007] To overcome the shortcomings, the present invention provides a drawer sliding assembly for a portable electronic device to obviate or mitigate the aforementioned problems.

SUMMARY OF THE INVENTION

[0008] The main objective of the present invention is to provide a drawer sliding assembly that allows a drawer to be mounted slidably in furniture and smoothly operated whilst saving material.
[0009] To achieve the objective, the drawer sliding assembly in accordance with present invention comprises a rail and at least two guides, which are all made of plastic.
[0010] The rail is longitudinally mounted securely on an inner surface of the furniture.
[0011] The guides are short and securely mounted separately on a bottom surface of a drawer being mounted in the furniture, the guides being mounted along a longitudinal axis to perform the same function of a guide of a conventional sliding assembly. Each guide has a guiding groove formed therethrough and slidably holding the head of the rail. One guiding groove may have a rear end being wider than and communicating with the guiding groove to facilitate the rail mounting therein.
[0012] Accordingly, with such an arrangement, the drawer sliding assembly in accordance with present invention provides following advantages:
[0013] 1. Being plastic and having slippery surfaces, the guides and the rail may be quiet and smooth when used.
[0014] 2. Molding processes may be used to manufacture, thus manufacturing is more convenient and use less material.
[0015] 3. Saving material and reduces cost due to smaller than conventional design.
[0016] Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is an exploded perspective view of a drawer sliding assembly in accordance with the present invention mounted between a drawer and furniture;
[0018] FIG. 2 is a side view in partial section of the drawer sliding assembly in FIG. 1;
[0019] FIG. 3 is an operational side view in partial section of the drawer sliding assembly in FIG. 1;
[0020] FIG. 4 is a front view of the drawer sliding assembly in FIG. 1, partially shown in phantom lines;
[0021] FIGS. 5 to 8 are front views various cross sections of the drawer sliding assembly in accordance with present invention;
[0022] FIG. 9 is a partially exploded perspective view of a drawer sliding assembly in accordance with prior art, shown mounted in a cabinet;
[0023] FIG. 10 is a side view in partial section of the drawer sliding assembly in FIG. 9; and
[0024] FIG. 11 is a front view of the drawer sliding assembly in FIG. 9.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] With reference to FIG. 1, a drawer (40) is mounted in furniture (50) having an inner surface and the drawer has a front end (42), a bottom surface (41) and a rear end (43).
[0026] A sliding assembly in accordance with the present invention is mounted between the drawer (40) and the furniture (50) and comprises a rail (30) and multiple guides (10, 20).
[0027] With further reference to FIGS. 5 to 8, the rail (30) is plastic and elongated, is mounted securely on the inner surface of the furniture (50) adjacent to the bottom surface (41) of the drawer (40) and has two ends, two rail mounts (31), a neck and a head, and may be hollow to save material and have multiple supports (32) separately formed transversely inside the rail (30) to strengthen the rail’s (30) structure.
[0028] The head is wider than the neck and is quadrangular, with reference to FIG. 5, in the first embodiment, the head of the rail (30) is implemented as substantially trapezium shaped.
[0029] With reference to FIG. 6, in the second embodiment, the head of the rail (30a) is substantially trapezium shaped and has two sides and two rounded outer corners.
[0030] With reference to FIG. 7, in the third embodiment, the head of the rail (30b) is substantially rectangular shaped and further has two guide rails (33b). The guide rails (33b) are respectively formed on and protrude transversely from the sides of the head of the rail (30b).
[0031] With reference to FIG. 8, in the fourth embodiment, the head of the rail (30c) is substantially trapezium shaped and has two corners and two guide rails (33c). The guide rails (33c) are respectively formed on and protrude transversely from the sides of the head at the corners.
The rail mounts (31) are formed respectively in the ends of the rail (30) to mount the rail (30) securely onto the inner surface of the furniture (50).

With further reference to FIGS. 2 and 4, the multiple guides comprise a rear guide (20) and at least one front guide (10) are shorter than and securely mounted separately on the bottom surface (41) of the drawer (40) at a position corresponding to the rail (30).

The rear guide (20) has a bottom, a rear guiding groove (21), an optional stop (22), a front end, a rear end (23) and an optional mounting tab (24). The rear guiding groove (21) is formed longitudinally through the rear guide (20), with reference to FIG. 5. In the first embodiment, the rear guiding groove (21) is substantially trapezium shaped in cross section and is larger than and slidable holds head of the rail (30).

With reference to FIG. 6, in the second embodiment, the rear guiding groove (21a) is substantially trapezium shaped in cross section and has two inner corners that are rounded to correspond to the head of the rail (30a).

With reference to FIG. 7, in the third embodiment, the rear guiding groove (21b) is implemented as a rectangle and further has two guide channels (210b) respectively formed centrally in the sides of the rear guiding groove (21b) correspond to and are mounted respectively around the guide rails (33b) of the rail (30b).

With reference to FIG. 8, in the fourth embodiment, the rear guiding groove (21c) is substantially trapezium shaped and further has two corners and two guide channels (210c) formed in the corners of the rear guiding groove (21c) correspond to and are mounted respectively around the guide rails (33c) of the rail (30c).

The stop (22) is mounted securely beside the rear guide (20) and protrudes past the bottom of the rear guide (20) to abut against an edge of the furniture (50) and prevent the drawer (40) from being detached from the furniture (50). The mounting tab (24) has two ends respectively mounted securely in the rear end (23) of the rear guide (20) and the rear end (43) of the drawer (40), thereby to fasten the rear guide (20) to the drawer (40).

Each front guide (10) has a front guiding groove (11). The front guiding groove (11) is formed longitudinally through the front guide (10) aligns with and corresponds to the rear guiding groove (21), may be formed in different shapes in cross section corresponding to the rear guiding groove (21) and slidably holds the head of the rail (30), has two sides and a rear end. The rear end of the front guiding groove (11) is wider than and communicates with the front guiding groove (11) to facilitate mounting of the rail (30) therethrough.

With further reference to FIG. 3, when the drawer (40) is pulled, the guides allow the drawer (40) to slide along the rail (30)/30a/30b/30c and ensure the drawer (40) moves longitudinally due to engagement between the guiding grooves (11)/21 (21a)/(21b)(21c) and the head of the rail (30)/30a/30b/30c.

Even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description together with details of the structure and function of the invention, the disclosure is illustrative only. Changes may be made in detail especially in matters of shape, size and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A drawer sliding assembly comprising a rail being plastic and elongated and having a neck; and a head being wider than the neck in cross section, quadrangular and having two sides, and a front guide being plastic and having a front guiding groove being formed longitudinally through the front guide, being longer than and slidably holding the head of the rail; and a rear guide being plastic, being separate from the front guide and having a rear guiding groove being formed longitudinally through the rear guide, corresponding to and aligning with the front guiding groove of the front guide and slidably holding the rail.

2. The drawer sliding assembly as claimed in claim 1, wherein the rail is hollow and has multiple supports separately formed transversely inside the rail to strengthen the rail's structure.

3. The drawer sliding assembly as claimed in claim 1, wherein the front guiding groove of the front guide further has a rear end being wider than the front guiding groove to facilitate mounting of the rail therethrough.

4. The drawer sliding assembly as claimed in claim 1, wherein the rear guide further has a bottom and a stop being mounted securely beside the rear guide and protruding past the bottom of the rear guide.

5. The drawer sliding assembly as claimed in claim 1, wherein the rail further has two ends and two rail mounts being formed respectively in the ends of the rail.

6. The drawer sliding assembly as claimed in claim 1, wherein the head of the rail is substantially trapezium shaped in cross section and further has two sides and two rounded outer corners; and the front and rear guiding grooves are substantially trapezium shaped and have two inner corners.

7. The drawer sliding assembly as claimed in claim 6, wherein the inner corners of the front and rear guiding grooves are rounded to correspond to the head of the rail.

8. The drawer sliding assembly as claimed in claim 1, wherein the rail is substantially rectangular in cross section and further has two guide rails being respectively formed on and protruding transversely from the sides of the head; and the front and rear guiding grooves are substantially rectangular in cross section and each guiding groove further has two side surfaces and two guide channels being respectively formed centrally in the side surfaces of the guiding grooves, corresponding to and engaging the guide rails of the head of the rail.

9. The drawer sliding assembly as claimed in claim 6, wherein the head further comprises two guide rails respectively formed on and protruding transversely from the sides of the head at the corners; and the front and rear guiding grooves further have two side surfaces and two guide channels being respectively formed at the corners of the sides of the guiding grooves, corresponding to and engaging the guide rails of the head of the rail.

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