METHOD AND SYSTEM FOR CONSTRUCTING THIN WALL ALUMINUM PROFILE DRAWER WITH CONCEALED CORNER CONNECTORS AND TWO-WAYS DRAWER FRONT ADJUSTMENT

FIELD OF THE INVENTION

[0001] The present invention relates to furniture assembly and more particularly, to method and system for constructing thin wall aluminum profile drawer with concealed corner connectors and two-ways drawer front adjustment. In the present invention of aluminum drawer that is easy to fabricate different shapes as per profile. Moreover, the aluminum material is lighter weight; durable and recyclable, and flexibility of the finishes can match in different designs.

BACKGROUND OF THE INVENTION

[0002] Generally, the drawer, mainly be within the desk, hold the thing in furniture such as cupboard, slide and set up inside the cupboard, realize accommodating of article, present drawer, mostly enclose by a bottom plate plus establish at bottom plate front bezel all around, the back plate, right side board and left side board constitute, set up the handle in the outside of front bezel, conveniently stimulate the drawer, be equipped with the gyro wheel on the left side board and the right side board of drawer, the gyro wheel cooperates with the inside slide rail of cupboard, realize the setting of sliding of drawer and cupboard.

[0003] Among the prior art, the bottom plate, the frame and the panel of drawer all come to carry out the built-up connection to it through the screw, and work efficiency is slower, and the drawer when using, need dismantle the drawer when the tiny impurity clearance to its inside, just can pour dust and fines with the opening of drawer down, and is more troublesome, and then the people of not being convenient for use.

[0004] To overcome the above-mentioned problems, various aluminum profile drawer is in the market, such that the existing traditional drawer is made of wood and steel material. The present invention is provided to construct the aluminum drawer that is easy to fabricate different shapes as per profile. In the market, the thinnest drawer is 12mm that is made of steel instead aluminum materials.

[0005] US patent number 8764137 relates to a drawer for furniture, said drawer being dismantled, for assembly using practically no tools. The drawer consists of: two lateral wall elements, a front-and rear-face wall element that consist of a base profile, and a drawer base that consists of several identical base elements. The base element consists of a profile that has a tongue profile edge and a groove profile edge. Thus, any number of base elements can be

mechanically joined together and then dismantled to form a surface. A drawer of equal size without a base surface may be connected to the drawer with a base surface.

[0006] Chinese utility patent number 202659668 relates to a connector assembly for connecting furniture corners, wherein the connector assembly comprises a connector and two suspension support plates respectively fixed on the corners on the two sides of the connector, the connector is mainly composed of a left connecting plate and a right connecting plate, the two connecting plates are of an integral structure, an included angle is formed between the two connecting plates, and the two connecting plates are respectively hooked with the corresponding suspension support plates; the connector assembly for connecting furniture corners comprises the connector and the suspension support plates, the suspension support plates are installed on the side plates of the furniture corners through connecting screws in advance (such as side plates on the bed body corners), and the two connecting plates are directly hooked on the suspension support plates, during the detachment process, the connector is firstly lifted up and the suspension support plates are removed to separate the furniture corners, the suspension support plates are unnecessarily detached after being primarily fixed, only the connector is installed or detached, and the connector is installed or detached without using any auxiliary tool, so that the installation and the detachment are convenient and simple.

[0007] US patent number 4333286 discloses walls and partitions that are constructed by securing of wallboard panels to a substructure, such as common wood or metal framing members, by a series of concealed clips of described construction, affixed to the framing members by nail or screw type fasteners. When the wall or partition is erected the fasteners are hidden from view so that joint treatment of the wallboard panels may be reduced or eliminated, depending on the type of wall structure constructed. The side or edge gripping clips are impaled along each side of abutting panels. When erected, a first series of clip fasteners are impaled on a side of a first wallboard and fastened to a framing member and a second series of such fasteners are impaled on an abutting or nearly abutting side of a second, wallboard panel, offset from the first series of clips so as to fit behind and be held by the first panel in a "tongue and groove" type cooperation. The invented fasteners include strengthening wall portions that reinforce them and create a clearance or spacing between the substructure framing member and the backs of the panels, while also providing for screw or nail head clearance. Also disclosed are such clips and wall and partition structures with features that permit easier disassembly of the structures, or spacing apart of the wallboard ends to allow for filler or filler strip insertion, when such may be desirable.

[0008] Consequently, there is a need to overcome the above mentioned problem, in this thin wall aluminum drawer is easy to fabricate different shapes as per profile. Moreover, the aluminum material is lighter weight; durable and recyclable, and flexibility of the finishes can match in different design.

SUMMARY OF THE INVENTION

[0009] As will be realized in the following description, the invention is capable of other and different embodiments and its several details are capable of modifications in various respects, all without departing from the scope of the present invention.

[0010] In an embodiment, the present invention relates to method and system for constructing thin wall aluminum profile drawer with concealed corner connectors and two-ways drawer front adjustment. In the present invention of aluminum drawer that is easy to fabricate different shapes as per profile. Moreover, the aluminum material is lighter weight; durable and recyclable, and flexibility of the finishes can match in different designs.

[0011] Accordingly, the present invention relates to a system for constructing a thin-wall aluminum profile drawer with plurality of concealed corner connectors and two-ways drawer front adjustment, comprising of: a thin wall aluminum profile drawer including left and right profile, front and back profile, a front base profile, middle and back base profile, and plurality of concealed corner connectors. The plurality of concealed corner connectors are inserted and fastened into a router area of left/right profile. The plurality of concealed corner connectors are inserted and fastened into an empty space of front/back profile.

[0012] Further, the system includes plurality of adjustment screws rotated into round holes of the front base profile such that space of front base profile is jointed into a joining part of the middle and back base profile, and another joining part of the middle and back base profile is jointed into the joining part of the middle and back base profile. In addition, the system includes a slot of front, middle and back base profiles inserted into an open space of left and right profile; and a C-shaped bracket fixed through plurality of screws to the thin wall aluminum profile drawer. The C-shaped bracket provides upper and lower fastening which creates double fasten. When the front base profile, the plurality of adjustment screws, and the C-shaped bracket are fastened, a drawer front is fastened to the thin wall aluminum profile drawer, therefore, the drawer front allows 2-ways (Left & Right, Up & Down) adjustment for alignment. After completing the alignment, the plurality of concealed corner connectors are hidden at four corners of the thin wall aluminum profile drawer.

[0013] In accordance with another embodiment of the present invention relates to a method for constructing a thin-wall aluminum profile drawer with plurality of concealed

corner connectors and two-ways drawer front adjustment, comprising the steps of: inserting and fastening plurality of concealed corner connectors into a router area of left/right profile; inserting and fastening the plurality of concealed corner connectors into an empty space of front/back profile; rotating plurality of adjustment screws into round holes of a front base profile. Space of the front base profile is jointed into a joining part of middle and back base profile, and another joining part of the middle and back base profile is jointed into the joining part of the middle and back base profile.

[0014] Further, the method involves inserting a slot of front, middle and back base profiles into an open space of left and right profile; and fixing a C-shaped bracket through plurality of screws to the thin wall aluminum profile drawer. The C-shaped bracket provides upper and lower fastening which creates double fasten. When the front base profile, the plurality of adjustment screws, and the C-shaped bracket are fastened, a drawer front is fastened to the thin wall aluminum profile drawer, therefore, the drawer front allows 2-ways (Left & Right, Up & Down) adjustment for alignment. After completing the alignment, the plurality of concealed corner connectors are hidden at four corners of the thin wall aluminum profile drawer.

[0015] Hence, the repeating steps of inserting and fastening plurality of concealed corner connectors into left/right profile and front/back profile, and inserting a slot of front, middle and back base profiles, are to fix another side of the left and right profile to complete assembly of thin wall aluminum profile drawer

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] This invention will be described by way of non-limiting embodiments of the present invention, with reference to the accompanying drawings, in which:

[0017] Figure 1 illustrates an exploded view of system for constructing a thin-wall aluminum profile drawer with concealed corner connectors and two-ways drawer front adjustment, according to an embodiment of the present invention.

[0018] Figures 2(a) and (b) illustrate left and right-side views of thin-wall aluminum profile drawer, according to an embodiment of the present invention.

[0019] Figure 3 illustrates front view of thin-wall aluminum profile drawer, according to an embodiment of the present invention.

[0020] Figures 4(a)-(c) illustrate schematic views of front base, middle base and back base of thin-wall aluminum profile drawer, according to an embodiment of the present invention.

[0021] Figure 5 illustrates back side view of jointing of profile 3 to profile 4, and profile 4 to profile 4 for concealed corner connector of thin-wall aluminum profile drawer, according to an embodiment of the present invention.

[0022] Figure 6 illustrates schematic view of concealed corner connector of thin-wall aluminum profile drawer, according to an embodiment of the present invention

[0023] Figure 7(a)-(c) illustrate (a) side view of C-shaped bracket of thin-wall aluminum profile drawer, (b) fasten the C-shaped bracket in front of thin-wall aluminum profile drawer, and (c) adjustment of left/right and up/down for thin-wall aluminum profile drawer, according to an embodiment of the present invention.

[0024] Figure 8 illustrates a flow diagram of method for constructing a thin-wall aluminum profile drawer with concealed corner connectors and two-ways drawer front adjustment, according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0025] In the following description, reference is made to the accompanying drawings where, by way of illustration, specific embodiments of the invention are shown. It is to be understood that other embodiments may be used, and other changes may be made without departing from the scope of the present invention. Accordingly, the drawings and detailed description are to be regarded as illustrative in nature and not as restrictive.

[0026] In accordance with an embodiment of the present invention relates to method and system for constructing thin wall aluminum profile drawer with concealed corner connectors and two-ways drawer front adjustment. In the present invention of aluminum drawer that is easy to fabricate different shapes as per profile. Moreover, the aluminum material is lighter weight; durable and recyclable, and flexibility of the finishes can match in different designs.

[0027] Referring to Figure 1 illustrates an exploded view of system for constructing a thin-wall aluminum profile drawer with concealed corner connectors and two-ways drawer front adjustment. A system 100 for constructing a thin-wall aluminum profile drawer 6 with plurality of concealed corner connectors 5 and two-ways drawer front adjustment, comprising of: a thin wall aluminum profile drawer 6 including left/right profile 1, front/back profile 2, a front base profile 3, a middle and back base profile 4, and plurality of concealed corner connectors 5. The thin wall aluminum profile drawer 6 is at 8mm for left/right profile 1 front/back profile 2.

[0028] Referring to Figures 2(a) and 2(b), and Figure 6, the figures 2(a) and 2(b) illustrate left/right side view of thin-wall aluminum profile drawer, and Figure 6 and illustrates schematic views of middle and back base of thin-wall aluminum profile drawer,

according to an embodiment of the present invention. The plurality of concealed corner connectors 5 are inserted and fastened into a router area 1.1 of left/right profile 1, and open space 5.3 of the plurality of concealed corner connectors 5 are arranged to avoid blocking a central support 1.3 of left/right profile 1.

[0029] Referring to Figure 3, the figure illustrates front view of thin-wall aluminum profile drawer, according to an embodiment of the present invention. The plurality of concealed corner connectors 5 are inserted and fastened into an empty space 2.2 of front/back profile 2, and open space 5.4 of the plurality of concealed corner connectors 5 are arranged to avoid blocking a central support 2.3 of front/back profile 2.

[0030] Referring to Figures 4 (a)-(c), the figures illustrate schematic views of front base, middle base and back base of thin-wall aluminum profile drawer. The system 100 has plurality of adjustment screws 7 rotated into round holes with screw threaded 3.3 of the front base profile 3 such that space 3.2 of front base profile 3 is jointed into a joining part 4.1 of the middle and back base profile 4, and another joining part 4.2 of the middle and back base profile 4 is jointed into the joining part 4.1 of the middle and back base profile 4.

[0031] Figure 5 illustrates back side view of jointing of profile 3 to profile 4, and profile 4 to profile 4 for concealed corner connector of thin-wall aluminum profile drawer, according to an embodiment of the present invention. A slot of front, middle and back base profiles 3, 4 inserted into an open space 1.2 of left/right profile 1. At the same time, an edge 3.1 of front base profile 3 is inserted into a long groove 2.1 of front/back profile 2 to hold firmly. Also, an edge 4.3 of middle and back base profile 4 is inserted into the long groove 2.1 of front/back profile 2 to hold firmly.

[0032] Referring to Figure 6, the figure illustrates schematic view of concealed corner connector of thin-wall aluminum profile drawer, according to an embodiment of the present invention. The plurality of concealed corner connectors 5 are concealed after completion of thin wall aluminum profile drawer 6. The plurality of concealed corner connectors 5 are made of plastics and consisting of 5.1 to 5.4 concealed corner connectors.

[0033] Referring to Figure 7(a)-(c), the figures illustrate (a) side view of C-shaped bracket of thin-wall aluminum profile drawer, (b) fasten the C-shaped bracket in front of thin-wall aluminum profile drawer, and (c) adjustment of left/right and up/down for thin-wall aluminum profile drawer. The system 100 includes a C-shaped bracket 8 fixed through plurality of screws to the drawer 6. Upper and lower fastening parts 8.1, 8.2 of the C-shaped bracket 8 are connected into upper and lower fastening parts 7.1, 7.2 of the plurality of adjustment screws 7, respectively. The plurality of screws is joined through a plurality of holes 8.3 of C-shaped bracket 8 and tightens the drawer front 9.

[0034] Accordingly, when the front base profile 3, the plurality of adjustment screws 7, and the C-shaped bracket 8 are fastened, a drawer front 9 is fastened to the thin wall aluminum profile drawer 6. The plurality of adjustment screws 7 is rotated in a clockwise or anti-clockwise direction to move the C-shaped bracket 8 up and down such that the drawer front 9 is to follow the up and down for alignment. The C-shaped bracket 8 is shifted left and right movement such that the drawer front 9 is to follow the left and right alignment. Therefore, the drawer front 9 allows 2-ways (Left/Right, Up/Down) adjustment for alignment. Followed by, after completing the alignment, the plurality of concealed corner connectors 5 are hidden at four corners of the drawer 6.

[0035] Referring to Figure 8, the figure illustrates a flow diagram of method for constructing a thin-wall aluminum profile drawer with concealed corner connectors and two-ways drawer front adjustment, according to an embodiment of the present invention. The method for constructing a thin-wall aluminum profile drawer 6 with plurality of concealed corner connectors 5 and two-ways drawer front adjustment, comprising the steps of: inserting and fastening plurality of concealed corner connectors 5 into a router area 1.1 of left/right profile 1; inserting and fastening the plurality of concealed corner connectors 5 into an empty space 2,2 of front/back profile 2; rotating plurality of adjustment screws 7 into round holes with screw threaded 3.3 of a front base profile 3. Space 3.2 of the front base profile 3 is jointed into a joining part 4.1 of middle and back base profile 4, and another joining part 4.2 of the middle and back base profile 4 is jointed into the joining part 4.1 of the middle and back base profile 4.

[0036] Further, the method involves inserting a slot of front, middle and back base profiles 3, 4 into open space 1.2 of left/right profile 1; and fixing a C-shaped bracket 8 through plurality of screws to the thin wall aluminum profile drawer 6. The C-shaped bracket 8 provides upper and lower fastening parts 8.1, 8.2 which create double fasten. In addition, the method comprising the steps of fixing a C-shaped bracket 8 through plurality of screws to the thin wall aluminum profile drawer 6; and fastening a drawer front 9 to the thin wall aluminum profile drawer 6 when the front base profile 3, the plurality of adjustment screws 7, and the C-shaped bracket 8 are fastened. The plurality of adjustment screws 7 are rotated in a clockwise or anti-clockwise direction to move the C-shaped bracket 8 up and down such that the drawer front 9 is to follow the up and down for alignment. The C-shaped bracket 8 is shifted left and right movement such that the drawer front 9 is to follow the left and right alignment. Therefore, the drawer front 9 allows two-ways (Left/Right and Up/Down) adjustment for alignment. Followed by, after completing the alignment, the plurality of concealed corner connectors 5 are hidden at four corners of the drawer 6.

[0037] Hence, the repeating steps of inserting and fastening plurality of concealed corner connectors 5 into the left/right and front/back profiles 2 and 3, and inserting a slot of front, middle and back base profiles 1, 2, and 3, are to fix another side of the left/right profile 1 to complete assembly of thin wall aluminum profile drawer 6.

[0038] From the foregoing, it will be appreciated that specific embodiments of the invention have been described herein for purposes of illustration, but that various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

CLAIMS

We Claim:

1. A system (100) for constructing a concealed corner connectors at four corners of (5) thin-wall aluminum profile drawer (6) which are hidden, comprising of:

a thin wall aluminum profile drawer (6) including left/right profile (1), front/back profile (2), a front base profile (3), middle and back base profile (4), and the plurality of concealed corner connectors (5);

wherein the plurality of concealed corner connectors (5) are inserted and fastened into a router area (1.1) of left/ right profile (1);

wherein the plurality of concealed corner connectors (5) are inserted and fastened into an empty space (2.2) of front/back profile (2);

a plurality of adjustment screws (7) rotated into round holes with screw threaded (3.3) of the front base profile (3) such that space (3.2) of front base profile (3) is jointed into a joining part (4.1) of the middle and back base profile (4), and another joining part (4.2) of the middle and back base profile (4) is jointed into the joining part (4.1) of the middle and back base profile (4);

a slot of front, middle and back base profiles (3, 4) inserted into an open space (1.2) of left/right profile (1); and

a C-shaped bracket (8) fixed through plurality of screws to the thin wall aluminum profile drawer (6);

wherein upper and lower fastening parts (8.1, 8.2) of C-shaped bracket (8) are connected into upper and lower fastening parts (7.1, 7.2) of the plurality of adjustment screws (7), respectively;

wherein when the front base profile (3), the plurality of adjustment screws (7), and the C-shaped bracket (8) are fastened, a drawer front (9) is fastened to the thin wall aluminum profile drawer (6);

wherein the plurality of adjustment screws (7) are rotated in a clockwise or anti-clockwise direction to move the C-shaped bracket (8) up and down such that the drawer front (9) is to follow the up and down movement for alignment, and the C-shaped bracket (8) is shifted left and right movement such that the drawer front (9) is to follow the left and right alignment;

wherein after completing the alignment, the plurality of concealed corner connectors (5) at four corners of the thin wall aluminum profile drawer (6) are hidden.

2. The system (100), as claimed in claim 1, wherein the thin wall aluminum profile drawer (6) is at 8mm.

3. The system (100), as claimed in claim 1, wherein the two-ways drawer front adjustment has up/down and left/right movement.
4. The system (100), as claimed in claim 1, wherein the long groove (2.1) is to hold the front, middle and back base profiles (3, 4) firmly.
5. The system (100), as claimed in claim 1, wherein the C-shaped bracket (8) provides upper and lower fastening which creates double fasten.
6. The system (100) as claimed in claim 1, wherein the concealed corner connectors at four corner are hidden.
7. A method for constructing a thin-wall aluminum profile drawer with plurality of concealed corner connectors and two-ways drawer front adjustment, comprising the steps of:

inserting and fastening the plurality of concealed corner connectors (5) into a router area (1.1) of left/right profile (1);

inserting and fastening the plurality of concealed corner connectors (5) into an empty space (2.2) of front/back profile (2);

rotating plurality of adjustment screws (7) into round holes with screw threaded (3.3) of a front base profile (3), wherein space (3.2) of front base profile (3) is jointed into a joining part (4.1) of middle and back base profile (4), and another joining part (4.2) of the middle and back base profile (4) is jointed into the joining part of the middle and back base profile (4);

inserting a slot of front, middle and back base profiles (3, 4) into an open space (1.2) of left/right profile (1); and

fixing a C-shaped bracket (8) through plurality of screws to the thin wall aluminum profile drawer (6);

wherein upper and lower fastening parts (8.1, 8.2) of C-shaped bracket (8) are connected into upper and lower fastening parts (7.1, 7.2) of the plurality of adjustment screws (7), respectively;

wherein when the front base profile (3), the plurality of adjustment screws (7), and the C-shaped bracket (8) are fastened, a drawer front (9) is fastened to the thin wall aluminum profile drawer (6);

wherein the plurality of adjustment screws (7) are rotated in a clockwise or anti-clockwise direction to move the C-shaped bracket (8) up and down such that the drawer front (9) is to follow the up and down for alignment, and the C-shaped bracket (8) is shifted left and right such that the drawer front (9) is to follow the left and right alignment;

wherein after completing the alignment, the plurality of concealed corner connectors (5) are hidden at four corners of the thin wall aluminum profile drawer (6).
8. The method as claimed in claim 6, wherein the thin wall aluminum profile drawer (6) is at 8mm.