ELECTRICAL HUB FOR FURNITURE ASSEMBLIES

Priority Claim

This application claims priority to and the benefit of United States Patent Application Serial Number 15/270,339, filed on September 20, 2016, entitled ELECTRICAL HUB FOR FURNITURE ASSEMBLIES, which claims priority to and the benefit of Provisional Patent Application Serial Number 62/257,623, filed on November 19, 2015, entitled FURNITURE WITH ELECTRONIC ASSEMBLIES, each of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. The Field of the Invention

This invention is in the field of electronic furniture assemblies.

2. The Relevant Technology

Electronics are widely used for business, social activities, entertainment and for practical, commercial, and household uses. When sitting on furniture, it is often desirable to employ one or more electronic assemblies. What are needed are improved electronic assemblies that can be used in association with modern furniture assemblies.

BRIEF SUMMARY

The present disclosure relates to electronic furniture assemblies and electrical components associated with furniture.

According to an aspect, there is an electrical hub configured to selectively reside within a furniture assembly, the electrical hub comprising:

an electrical outlet assembly having a housing and at least one electrical outlet at a rear portion of the housing;

a securement panel extending from a front portion of the housing, the securement panel being spaced away from the at least one electrical outlet of the electrical outlet assembly, such that the at least one outlet of the electrical outlet assembly is offset from the securement panel;

the housing comprising a linkage housing portion that defines a convenient, recessed area located between the front and rear portions of the housing within which to receive portions of cords of one or more electrical devices,

the hub being configured to be selectively mounted within a furniture assembly in order to provide a source of electrical power for the one or more electrical devices, the electrical hub further comprising:

an installation clip, mounted to the electrical outlet assembly, a free end of the installation clip being moveable with respect to the electrical outlet assembly, the installation clip having a compressed position and an extended position,

the installation clip being configured to be selectively moved by a user from the extended position to the compressed position in order to selectively mount the electrical hub within the furniture assembly, wherein the housing is open at a front and bottom thereof for accessing the recessed area, such that the recessed area is configured to enable the user to move the installation clip between the extended position and the compressed position.

According to an aspect, there is provided an electrical hub configured to selectively reside within a furniture assembly, the electrical hub comprising:

an electrical outlet assembly having at least one electrical outlet in a first plane, the electrical outlet assembly having a covering housing;

a securement panel in a second plane, the second plane being parallel to the first plane, the securement panel having a front face and a rear face;

a linkage housing that links the covering housing of the electrical outlet assembly to the securement panel, the linkage housing defining a convenient, recessed area located behind the second plane, such that the second plane is spaced away from the first plane and such that the at least one electrical outlet of the electrical outlet assembly is recessed relative to the securement panel; and

an installation clip mounted in a cantilevered relationship to the electrical outlet assembly, the installation clip having a spring-loaded, compressed position and an extended position, wherein the installation clip is moveable from the extended position to the spring-loaded compressed position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position a free end of the installation clip configured to be selectively moved by a user from the extended position to the spring-loaded, compressed position in order to enable the electrical hub to be mounted within the furniture assembly,

wherein the linkage housing is open at a front thereof for accessing the recessed area, such that the recessed area is configured to enable the user to move the

installation clip between the extended position and the spring-loaded, compressed position.According to an embodiment, there is an electrical hub configured to selectively reside within a furniture assembly, the hub being configured to be selectively mounted within a furniture assembly in order to provide a source of electrical power for one or more electrical devices, the electrical hub comprising:

an electrical outlet assembly having a housing and one or more electrical outlets at a rear portion of the housing, the housing comprising a covering housing portion which houses the one or more electrical outlets and a linkage housing portion that defines a cavity located between the one or more electrical outlets and a plane that is parallel to and spaced away from the one or more electrical outlets, the cavity configured to receive portions of one or more electrical devices therein; and

an installation clip cantilevered from the electrical outlet assembly, a free end of the installation clip being moveable with respect to the electrical outlet assembly, the installation clip being configured to be selectively moved by a user from an extended position to a compressed, spring-loaded position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position, the cavity configured to enable the user to access the installation clip in order to move the installation clip between the extended position and the compressed spring-loaded position.

According to an embodiment, there is an electrical hub configured to selectively reside within a furniture assembly, the hub being configured to be selectively mounted within a furniture assembly in order to provide a source of electrical power for one or more electrical devices, the electrical hub comprising:

an electrical outlet assembly having a housing and having one or more electrical outlets in a first plane at a rear portion of the housing, the housing comprising a covering housing portion which houses the one or more electrical outlets and a linkage housing portion that defines a cavity located between the first plane and a second plane that is parallel to and spaced away from the first plane, the cavity configured to receive portions of one or more electrical devices therein; and

an installation clip cantilevered from the electrical outlet assembly, a free end of the installation clip being moveable with respect to the electrical outlet assembly, the installation clip being configured to be selectively moved by a user from an

extended position to a compressed, spring-loaded position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position, the cavity configured to enable the user to access the installation clip in order to move the installation clip between the extended position and the compressed spring-loaded position.

According to an aspect, there is provided an electronic furniture assembly configured to be coupled to one or more electrical devices, comprising:

a furniture assembly comprising:

(A) a base having a seating surface; and

(B) a transverse member providing at least one of:

(i) an armrest surface or

(ii) a backrest surface; and

(iii) an electrical hub configured to be selectively positioned within the furniture assembly, the electrical hub comprising:

an electrical outlet assembly having a housing and at least one electrical outlet at a rear portion of the housing; and

a securement panel at a front portion of the housing, extending from the housing, the securement panel being spaced away from the at least one electrical outlet such that a recessed area is located between the securement panel and the at least one electrical outlet,

wherein the housing is open at a front and bottom thereof for accessing the recessed area, and

wherein at least a portion of the electrical hub is selectively mounted within a cavity of the furniture assembly,

the electrical hub further comprising an installation clip mounted to the electrical outlet assembly, such that the clip is accessible through the recessed area.

According to an aspect, there is provided an electrical hub configured to selectively reside within a furniture assembly, the hub being configured to be selectively mounted within a furniture assembly in order to provide a source of electrical power for one or more electrical devices, the electrical hub comprising:

an electrical outlet assembly having a housing and having one or more electrical outlets in a first plane at a rear portion of the housing, the housing comprising a covering housing portion which houses the one or more electrical outlets

and a linkage housing portion that defines a cavity located between the first plane and a second plane that is parallel to and spaced away from the first plane, the cavity configured to receive portions of one or more electrical devices therein; and

an installation clip cantilevered from the electrical outlet assembly, a free end of the installation clip being moveable with respect to the electrical outlet assembly, the installation clip being configured to be selectively moved by a user from an extended position to a compressed, spring-loaded position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position, the cavity configured to enable the user to access the installation clip in order to move the installation clip between the extended position and the compressed spring-loaded position.

One electronic furniture assembly of an embodiment comprises: (i) a furniture assembly comprising: (A) a base (e.g., a seat portion), (B) at least one transverse member (e.g., a side, armrest or backrest), and (C) a coupler for coupling the base to the transverse member; and (ii) an electrical hub configured to selectively reside within the furniture assembly. The electrical hub may be selectively positioned, for example, within a cavity in a transverse member of the furniture assembly.

In one embodiment, the electrical hub comprises: (a) an electrical outlet assembly, the electrical outlet assembly having a housing; (b) a securement panel having a front face and a rear face, wherein the rear face of the securement panel is linked to and offset from the electrical outlet assembly such that at least one outlet of the electrical outlet assembly is spaced away from the securement panel; and (c) an

installation clip mounted to the electrical outlet assembly, the installation clip having a compressed position and an extended position. The offset securement panel forms a protective area within which to connect or more electrical cords to the outlet assembly.

The installation clip is configured to be selectively moved with respect to the electrical outlet assembly, the clip being moveable from the extended position to the compressed position in order to mount the electrical hub within the furniture assembly and is further configured to be selectively moved by a user from the extended position to the compressed position in order to remove the electrical hub from the furniture assembly.

In one embodiment, an electrical hub of the present disclosure may have one or more tabs extending from the securement panel and includes an electrical cord for plugging into a wall outlet, for example. The one or more tabs may extend from and are generally coplanar with the panel.

The electrical hub is configured to be secured at least partially within the cavity of a transverse member of a furniture assembly such that the electrical outlet assembly of the electrical hub is configured to selectively reside substantially within the cavity of the transverse member while the securement panel abuts the surface of transverse member.

The one or more electrical outlets of the electrical outlet assembly may include standard 110-Volt or 220-Volt outlets, for example, and/or USB ports and/or audio jacks and the like. The electrical cord of the hub may include one or more cord outlets, such as internal outlets, floor resting outlets, and/or tether outlets. Electronic devices may be plugged into the cord outlets. Other electrical cords may also be plugged in to the cord outlets of other hub electrical cords. In this way, a system of two or more electrical hubs may be connected in series, each residing in different transverse members of a furniture assembly and connected to a single external power source, such as a wall outlet.

These and other objects and features of the present disclosure will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth hereinafter.

CLAIMS

What is claimed is:

1. An electrical hub configured to selectively reside within a furniture assembly, the electrical hub comprising:
an electrical outlet assembly having a housing and at least one electrical outlet at a rear portion of the housing;
a securement panel extending from a front portion of the housing, the securement panel being spaced away from the at least one electrical outlet of the electrical outlet assembly, such that the at least one outlet of the electrical outlet assembly is offset from the securement panel;
the housing comprising a linkage housing portion that defines a convenient, recessed area located between the front and rear portions of the housing within which to receive portions of cords of one or more electrical devices,
the hub being configured to be selectively mounted within a furniture assembly in order to provide a source of electrical power for the one or more electrical devices,
the electrical hub further comprising:
an installation clip, mounted to the electrical outlet assembly, a free end of the installation clip being moveable with respect to the electrical outlet assembly, the installation clip having a compressed position and an extended position,
the installation clip being configured to be selectively moved by a user from the extended position to the compressed position in order to selectively mount the electrical hub within the furniture assembly, wherein the housing is open at a front and bottom thereof for accessing the recessed area, such that the recessed area is configured to enable the user to move the installation clip between the extended position and the compressed position.

2. An electrical hub as recited in claim 1, wherein the installation clip is cantilevered from the electrical outlet assembly such that the installation clip is spring-loaded in the compressed position, wherein the installation clip is moveable from the extended position to the spring-loaded, compressed position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position.

3. An electrical hub as recited in claim 1, wherein the housing of the electrical outlet assembly comprises a covering housing portion, and comprises one or more electrical outlets, and an electrical cord extending away from the housing so as to be connectable to a source of electrical power.

4. An electrical hub as recited in claim 3, wherein the linkage housing has a central panel, a left side panel, and a right side panel, each panel of the housing being substantially perpendicular to the securement panel, wherein the installation clip is mounted on the covering housing portion of the electrical outlet assembly.
5. An electrical hub configured to selectively reside within a furniture assembly, the electrical hub comprising:

an electrical outlet assembly having at least one electrical outlet in a first plane, the electrical outlet assembly having a covering housing;

a securement panel in a second plane, the second plane being parallel to the first plane, the securement panel having a front face and a rear face;
a linkage housing that links the covering housing of the electrical outlet assembly to the securement panel, the linkage housing defining a convenient, recessed area located behind the second plane, such that the second plane is spaced away from the first plane and such that the at least one electrical outlet of the electrical outlet assembly is recessed relative to the securement panel; and
an installation clip mounted in a cantilevered relationship to the electrical outlet assembly, the installation clip having a spring-loaded, compressed position and an extended position, wherein the installation clip is moveable from the extended position to the spring-loaded compressed position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position a free end of the installation clip configured to be selectively moved by a user from the extended position to the spring-loaded, compressed position in order to enable the electrical hub to be mounted within the furniture assembly,
wherein the linkage housing is open at a front thereof for accessing the recessed area, such that the recessed area is configured to enable the user to move the installation clip between the extended position and the spring-loaded, compressed position.

6. An electrical hub as recited in claim 1, wherein the installation clip is a resiliently mounted clip that has a finger opening therein, at least a portion of the installation clip being movable towards the recessed area by inserting a finger within the finger opening and pulling the free end of the installation clip towards the recessed area into a spring-loaded, compressed position, such that
the user can pull the free end of the installation clip towards the recessed area into the spring-loaded compressed position and then insert the hub into the furniture assembly, then allow the clip to return to the extended position by releasing the clip, thereby engaging the furniture assembly with the clip, and such that the user can thereafter pull the free end of the installation clip towards the recessed area, into the spring-loaded compressed position, thereby disengaging the clip from the furniture assembly.

7. An electrical hub as recited in claim 1 wherein the securement panel has one or more tabs extending from a lower portion thereof, the tabs being configured to be sandwiched between two different portions of a furniture assembly when the electrical hub is mounted within the furniture assembly.

8. An electrical hub as recited in claim 1 wherein the electrical outlet assembly comprises an electrical cord and at least one protective cord elbow mounted on the electrical cord.

9. The electrical hub of claim 1, wherein the securement panel is a U-shaped, generally planar panel, and wherein the securement panel includes a central panel member extending upwardly from the housing that forms a center portion of the U, a left panel member extending outwardly from the housing that forms a left side of the U, and a right panel member extending outwardly from the housing that forms a right side of the U, the central panel member, left panel member, and right panel member

all being in a same plane at the front portion of the housing, so that the U-shape of the securement panel is oriented with the open end of the U oriented downwards.
10. The electrical hub of claim 1, wherein the housing comprises a covering housing portion housing the at least one electrical outlet and wherein the linkage housing portion has a central panel, a left side panel, and a right side panel that extend between the covering housing portion and the securement panel, each panel of the linkage housing portion being substantially perpendicular to at least one of the securement panel or the at least one electrical outlet.

11. The electrical hub of claim 1, wherein the at least one electrical outlet of the electrical outlet assembly is fixed in position relative to the housing.

12. An electronic furniture assembly configured to be coupled to one or more electrical devices, comprising:
a furniture assembly comprising:
(A) a base having a seating surface; and
(B) a transverse member providing at least one of: (i) an armrest surface or (ii) a backrest surface; and
(ii) an electrical hub configured to be selectively positioned within the furniture assembly, the electrical hub comprising:
an electrical outlet assembly having a housing and at least one electrical outlet at a rear portion of the housing; and
a securement panel at a front portion of the housing, extending from the housing, the securement panel being spaced away from the at least one electrical outlet such that a recessed area is located between the securement panel and the at least one electrical outlet,
wherein the housing is open at a front and bottom thereof for accessing the recessed area, and
wherein at least a portion of the electrical hub is selectively mounted within a cavity of the furniture assembly,
the electrical hub further comprising an installation clip mounted to the electrical outlet assembly, such that the clip is accessible through the recessed area.

13. An electronic furniture assembly as recited in claim 12,
wherein the installation clip is mounted in a cantilevered relationship to the electrical outlet assembly, the installation clip having a spring-loaded, compressed position and an extended position, wherein the installation clip is moveable from the extended position to the spring-loaded, compressed position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position,
a free end of the installation clip configured to be selectively moved by a user from the extended position to the spring-loaded, compressed position in order to enable a user to mount the electrical hub within the furniture assembly,
the installation clip being configured to be selectively moved by a user from the extended position to the spring-loaded, compressed position in order to enable a user to remove the electrical hub from the furniture assembly.

14. An electronic furniture assembly as recited in claim 12, further comprising a coupler for selectively coupling the base to the transverse member, wherein the hub is selectively mounted adjacent the coupler within the furniture assembly.

15. An electronic furniture assembly as recited in claim 14 wherein at least a portion of the hub and at least a portion of the coupler are selectively mounted within a cavity of the transverse member.

16. An electronic furniture assembly as recited in claim 14, wherein the electrical outlet assembly of the hub is mounted adjacent the coupler within the cavity of the transverse member and wherein an electrical cord of the hub extends out of a bottom portion of the transverse member.

17. An electronic furniture assembly as recited in claim 12, wherein the electrical hub is a generally cube-shaped member configured to be selectively inserted within a generally rectangular cavity of the furniture assembly.

18. An electronic furniture assembly as recited in claim 12, further comprising an induction charger mounted within the furniture assembly, the induction charger being configured to be electrically coupled to the electrical hub.

19. The electronic furniture assembly of claim 12, further comprising an installation clip cantilevered from the electrical outlet assembly such that the installation clip is spring-loaded in a compressed position, wherein the installation clip is moveable from the extended position to the spring-loaded, compressed position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position.

20. The electrical hub of claim 5, wherein the linkage housing is open at a bottom thereof for accessing the recessed area, such that the recessed area is configured to enable the user to move the installation clip between the extended position and the spring-loaded, compressed position.

21. The electrical hub of claim 5, wherein the electrical hub further comprises one or more tabs extending downwardly from the securement panel, the tabs configured to be sandwiched between two different portions of a furniture assembly when the electrical hub is mounted within the furniture assembly.

22. The electrical hub of claim 5, wherein the rear face of the securement panel of the electrical hub is configured to be placed adjacent and generally flush with a surface of the furniture assembly.

23. The electrical hub of claim 5, wherein the electrical outlet assembly comprises an electrical cord with one or more cord outlets disposed along the length of the electrical cord, wherein the one or more cord outlets disposed along the length of the electrical cord comprise one or more of interior outlets, floor resting outlets, or tether outlets.

24. The electrical hub of claim 5, wherein the at least one electrical outlet of the electrical outlet assembly is fixed in position relative to the linkage housing.

25. An electrical hub configured to selectively reside within a furniture assembly, the hub being configured to be selectively mounted within a furniture assembly in order

to provide a source of electrical power for one or more electrical devices, the electrical hub comprising:
an electrical outlet assembly having a housing and one or more electrical outlets at a rear portion of the housing, the housing comprising a covering housing portion which houses the one or more electrical outlets and a linkage housing portion that defines a cavity located between the one or more electrical outlets and a plane that is parallel to and spaced away from the one or more electrical outlets, the cavity configured to receive portions of one or more electrical devices therein; and
an installation clip cantilevered from the electrical outlet assembly, a free end of the installation clip being moveable with respect to the electrical outlet assembly, the installation clip being configured to be selectively moved by a user from an extended position to a compressed, spring-loaded position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position, the cavity configured to enable the user to access the installation clip in order to move the installation clip between the extended position and the compressed spring-loaded position.

26. The electrical hub of claim 25, wherein the housing is open at a front thereof for accessing the cavity, such that the cavity is configured to enable the user to move the installation clip between the extended position and the spring-loaded compressed position.

27. The electrical hub of claim 26, wherein the housing is open at a bottom thereof for accessing the cavity, such that the cavity is configured to enable the user to move the installation clip between the extended position and the spring-loaded compressed position.

28. An electrical hub configured to selectively reside within a furniture assembly, the hub being configured to be selectively mounted within a furniture assembly in order to provide a source of electrical power for one or more electrical devices, the electrical hub comprising:
an electrical outlet assembly having a housing and having one or more electrical outlets in a first plane at a rear portion of the housing, the housing comprising a covering housing portion which houses the one or more electrical outlets and a linkage housing portion that defines a cavity located between the first plane and a second plane that is parallel to and spaced away from the first plane, the cavity configured to receive portions of one or more electrical devices therein; and
an installation clip cantilevered from the electrical outlet assembly, a free end of the installation clip being moveable with respect to the electrical outlet assembly, the installation clip being configured to be selectively moved by a user from an extended position to a compressed, spring-loaded position by applying a force against the clip, such that when the force is removed from the clip, the clip resiliently returns to the extended position, the cavity configured to enable the user to access the installation clip in order to move the installation clip between the extended position and the compressed spring-loaded position.

29. The electrical hub of claim 28, wherein the housing is open at a front thereof for accessing the cavity, such that the cavity is configured to enable the user to move the installation clip between the extended position and the spring-loaded compressed position.

30. The electrical hub of claim 29, wherein the housing is open at a bottom thereof for accessing the cavity, such that the cavity is configured to enable the user to move the installation clip between the extended position and the spring-loaded compressed position.

31. The electrical hub of claim 28, further comprising a securement panel extending in the second plane from the linkage housing portion.