An adapter including a central body portion and a mount for connection to each of an HVAC register cover and duct-engaging boot. A surface of the central body portion includes mounting apertures, each configured to accept a fastener so that the central body portion can be mounted to a support structure, such as a ceiling joist. The adapter includes a register cover mounting surface that is adjustable so that it can accommodate different-sized register covers. The adapter also includes a boot-sized mounting surface coupled to the register cover mounting surface such that, upon engagement between the register cover mounting surface and the register cover and upon engagement between the boot mounting surface and the boot, fluid communication between the boot and the register cover is established. Preferably, the adapter is made from a plastic, and more particularly an injection-molded plastic.
FIG. 1C
(PRIOR ART)
H-SHAPED BOOT-TO-REGISTER COVER MOUNTING ADAPTER

BACKGROUND OF THE INVENTION

[0001] The present invention relates generally to a device for securely mounting heating, ventilation and air conditioning (HVAC) components, and in particular to a mounting adapter used to secure ventilation register covers to duct boxes and underlying building support structure, even in configurations requiring unconventional component spacing or dimensions.

[0002] In most HVAC systems, air-supply ducts are routed through a building to move air from its source through ducting to one or more terminal outlets, typically in the form of a register cover. Additional ducts are employed to return the air back to the source. Each supply duct typically terminates in a box (also known as a boot), which itself mounts to a structural member within the building and provides a surface upon which the register cover (also known as a grille) can be attached, usually by threaded fastener. The ducts are often mounted in a relatively unobtrusive location, such as between wall studs, underneath a floor, or from a joist or similar overhead support, using hangers or brackets to secure the duct to the support structure. Once the duct and boot are mounted in place to the support structure, the installer covers them with floor, wall or ceiling panels, taking care to align cut-outs in the panels with the location of the boots. The register cover is inserted into the cut-out such that a flange on the cover rests on the room-side surface of the panel, with the remainder projecting through the cut-out and into engagement with the boot. Most conventional register covers are manufactured with two fastener holes, each spaced at opposing ends of the flange by an amount typically set to industry norms, such as eight, ten or twelve inches. A screw is typically driven through the prefabricated fastener holes in the register cover, the panel, and into the boot or support structure (or both) to secure the register cover in place.

[0003] Two recent trends in the construction industry have shifted the way HVAC systems are installed in buildings. The first trend, toward ceiling-mounted register covers rather than those mounted in floors or walls, is in its ascendancy because of lower installation and material costs. The majority of residential, commercial and professional dwellings incorporate either "drop" ceilings, where a lattice of inverted T-bars are suspended from an overhead support with decorative panels resting within the lattice, or sheets (alternately referred to as panels) of drywall directly fastened to the overhead joists. Unhappily, both situations reduce the capability of the ceiling to provide secure structural installation to the register covers, and both make the installer's task of mounting and connecting the various components more difficult and time-consuming such that the time and cost savings associated with an overhead system are often offset by increased expense in trying to more securely mount the boot in place until final connection between the register cover, boot and air duct can be made. In situations where the interjoist spacing is conventional, the load-bearing capability of the drywall or drop ceiling panel is often insufficient support for the duct, boot and register cover. This problem is exacerbated where the boot and register cover are placed between joists that do not exhibit the traditional sixteen or twenty-four inch spacing, or where an undersized register cover is being mounted into a space designed for a larger unit. In order to ensure a secure mount in such situations, installers will custom form sheet metal adapters on the job site to form a frame that can be used to hold the boot or duct in place. Once this onsite fabricated part is assembled, it is held in place against the joists and fastened into place. This approach leads to excessive time and cost as each of these adapters must be measured, cut, configured, fastened and then applied to the overhead outlet. This also leads to excessive material waste as unusable pieces of sheet metal are discarded. In addition, unless extreme care is taken in the placement of attachment holes and related connection locations within the frame, there is no reliable way to ensure the holes will align with the fastener holes in the register cover. In addition, cutting and fastening pieces of sheet metal is dangerous, as the jagged edge of the sheets can cause cuts, leading to lost job time and increased workers' compensation claims. A more secure, simple, robust installation system is therefore needed.

[0004] The second trend has been to move away from rigid sheet metal ductwork to flexible ducting. While flexible ducts enjoy distinct advantages over rigid ductwork in terms of weight, fabrication expense and ease of installation, their reliance on the boot (or similar structure) to provide solid, secure connection to building structure can often negate these benefits, as their flexible outer wall of the duct, which is typically a thin sheet of polyethylene or similar plastic, lacks the rigid mounting surfaces inherently available in rigid ducts. As such, conventional methods of fastening a boot or register cover to the duct, or to the duct to adjacent building structure, are unavailing, as the flexible duct has insufficient load-bearing capability. Thus, as previously discussed, if any of the components (i.e., duct, boot or register cover) of the ventilation assembly are either to be mounted in an unconventional location or aren't sized for that location, then a structurally sound installation could result. For example, one or both of the prefabricated fastener holes in the register cover might not properly align with the boot or joist, relying for attachment on the relatively non-structural panels. This approach would result in substandard installation, as this type of connection, which may initially hold, will over time (due to loads, vibrations and routine removal and reinstallation of the register cover) cause the hole in the panel to enlarge to the point where the fastener would no longer hold. Ceiling panels (as well as the now largely discontinued plaster) do not demonstrate long-term viability because of the tendency of these materials to weaken, crumble and eventually break apart over time in the presence of threaded fasteners. To alleviate this, the installer can fabricate a suitable mounting platform that can provide a secure attachment point for the boot or the peculiar position or size of the register cover (as previously discussed). This installation approach exacerbates the already increasingly difficult and expensive task of securing the boot, duct and register cover, as the lack of a rigid surface in the duct further reduces the number of viable attachment locations.

[0005] Various attempts at using load-spreading clips have been devised to solve the problem of attaching the ventilation register cover to an unsecured location in a wall or ceiling. See, for example, U.S. Pat. No. 4,576,349 to Dearinger and U.S. Pat. No. 5,494,244 to Walton. These devices allow installation of a register cover to drywall (or similar material) away from an underlying support member (such as...
a joist or wall stud). Nevertheless, these devices also have certain disadvantages. For example, their construction either limits their applicability to a wall or ceiling panel of a predetermined thickness, or requires cumbersome and time-consuming on-site bending of the clips. Thus, in applications involving panels of different thickness, the installer would either have to stock numerous clips of corresponding thickness, or would have to bend the clip to fit at the job site. In addition, the prior art clips do not necessarily free the installer’s hands during the installation, as the clips are liable to shift during duct, boot or register cover insertion, thus necessitating continued oversight by the installer. Lastly, while the clips help reduce the incidence of panel hole crumbling, enlargement or outright disintegration by spreading the load, they do not transfer the load to a more structural member, as the combined weight of the duct, boot and register cover assembly continues to be supported by the relatively non-structural wall or ceiling panel.

[0006] Other approaches have focused on using a combination of rail-like elements independently mounted to the joists. See, for example, U.S. Pat. No. 4,760,981 to Hodges and U.S. Pat. No. 4,406,216 to Hott et al. These configurations permit myriad mounting positions due to the multihole or telescoping nature of the rails. However, the use of multiple parts increases the difficulty of the installer’s task, as precise positioning between the various components is required. In addition, storing and tracking multiple components on a job site requires additional oversight. Furthermore, the installation of telescoping devices can be difficult, as proper interjoint alignment is difficult to ensure, especially when the installer is working in a confined space. Moreover, the installation of multihole rails can be limited by the L-shaped nature of the rail, as such three-dimensional aspects either limit the location on the joist (often above or in between the joists) or the ability to place a ceiling panel over the rail once the rail is in place.

[0007] Accordingly, what is needed is a simple, inexpensive device that can be used in a variety of different mounting dimensions to ensure reliable, secure attachment of the duct, boot and register cover.

BRIEF SUMMARY OF THE INVENTION

[0008] This need is met by the present invention, where a mounting adapter is disclosed. The adapter, which is preferably a generally planar, H-shaped device, reduces the time, cost and complexity associated with mounting the register cover to the boot and duct, as well as securing both to building support structure, such as a wall stud or ceiling joist.

[0009] According to a first aspect of the invention, an adapter assembly for mounting an HVAC boot to a register cover is disclosed. The adapter assembly includes a central body portion defining a support structure mounting surface, a register cover mounting surface, and at least one boot mounting surface coupled to the register cover mounting surface. At least a portion of the register cover mounting surface is adjustable coupled to the central body portion. The central body portion includes mounting apertures disposed in its surface, where each of the mounting apertures can accept a fastener so that the adapter can engage a building support structure (such as a joist). Upon engagement between the register cover mounting surface and the register cover and upon engagement between the boot mounting surface and the boot, fluid communication between the boot and the register cover is established. In the present context, the boot can be any box-like device that fluidly connects the end of flexible HVAC duct to the ventilation register cover. As such, the boot can be separate from or an integral attachment to either the register cover or flexible duct.

[0010] Optionally the surface of the central body portion defines a substantially centrally-disposed HVAC flowpath that is preferably substantially rectangular-shaped. The HVAC flowpath is configured to accept a comparably-sized flowpath defined by the register cover. In addition, the part of the register cover mounting surface that is adjustably coupled to the central body portion is slidably cooperative therewith such that the register cover mounting surface at least partially occupies the area defined by the HVAC flowpath. At least a part of the central body portion may further include a substantially planar surface configured to engage a flange of the register cover or a surface of a ceiling panel. Preferably, the central body portion, the register cover mounting surface and the boot mounting surface form a contiguous structure. This simplifies the task of storing and keeping track of the adapter, as there is little or no risk of the components of the adapter becoming separated. The central body portion can further include elongate tabs extending therefrom such that at least one of the plurality of mounting apertures are situated in each of the elongate tabs. Moreover, the central body portion and the plurality of elongate tabs extending therefrom can define a generally H-shaped construction. The boot mounting surface may comprise a plurality of upstanding tabs that can accept fasteners to help secure the mount to the boot. As an additional option, the adapter is plastic, and more preferably, an injection-molded plastic.

[0011] According to another aspect of the invention, an H-shaped interjoist adapter for mounting an HVAC boot to a register cover is disclosed. The adapter is defined by a central body portion comprising multiple mounting surfaces, including a support structure mounting surface, a register cover mounting surface and a plurality of boot mounting surfaces. The support structure mounting surface defines an HVAC flowpath in the central body portion, and includes a plurality of mounting apertures each configured to accept a fastener to effect mounted connection between the adapter and building support structure, such as a joist or wall stud. The register cover mounting surface at least partially occupies an area in the HVAC flowpath, and includes a first part slidably coupled to the central body portion and a second part integrally formed with the central body portion. At least one of the boot mounting surfaces is coupled to each of the first and second parts of the register cover mounting surface. As with the previous aspect of the invention, upon engagement between the register cover mounting surface and the register cover and upon engagement between the boot mounting surfaces and the boot, fluid communication between the boot and the register cover is established.

[0012] According to another aspect of the invention, a method of mounting an HVAC boot is disclosed. The method comprises the steps of configuring an adapter to include a central body portion, register cover mounting surface and at least one boot mounting surface with features similar to those previously mentioned in conjunction with
the first aspect of the invention. Additional steps include adjusting the register cover mounting surface and the boot mounting surface to engage corresponding parts of the adapter and the HVAC boot. Optionally, the steps of connecting the adapter to the HVAC boot is effected with fasteners, preferably threaded fasteners, such as screws. In the present context, means of joining, including attaching, connecting, securing or the like all encompass ways by which adjacent or contacting components can be brought into mechanical cooperation with one another to form from the disparate components an assembled structure. Additional steps may include attaching the adapter to a building support structure (such as a joist or wall stud), connecting the HVAC boot to an HVAC duct, and connecting the adapter to a register cover. As with the adapter-to-boat connection, the register cover can be secured to the adapter with fasteners. In addition, the step of adjusting the register cover mounting surface and at least one of the boot mounting surfaces is accomplished by the slidably cooperative engagement between the register cover mounting surface and the central body portion.

[0013] According to another aspect of the invention, a method of securing an HVAC register cover is disclosed. The adapter is configured similar to that of the first aspect of the invention. The method includes the steps of connecting the boot to the adapter, mounting the adapter to a building support structure (such as a joist or wall stud), fluidly coupling the HVAC duct to the boot and connecting the register cover to the adapter. Optionally, the method may comprise the additional step of covering the joist prior to the step of connecting the register cover to the adapter. In addition, the step of adjusting the register cover mounting surface and at least one of the boot mounting surfaces is accomplished by the slidably cooperative engagement between the register cover mounting surface and the central body portion.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0014] FIG. 1A is a perspective view of one form of the prior art, showing load-spreading clips;

[0015] FIG. 1B is a perspective view of another form of the prior art, showing joist-spanning ribs;

[0016] FIG. 1C is a bottom view of a custom-built inter-joist mounting bracket of the prior art;

[0017] FIG. 2 is a top view of an adapter according to an aspect of the present invention;

[0018] FIG. 2A is a section view along line A-A of FIG. 2;

[0019] FIG. 3 is an exploded perspective view of the adapter of FIG. 2;

[0020] FIG. 4 is a perspective view of the adapter of FIG. 2 with an HVAC boot mounted to it;

[0021] FIG. 5 is an exploded perspective view of the opposing surface of the adapter of FIG. 2 with an HVAC boot and register cover; and

[0022] FIG. 6 is an exploded view showing the relative mounting positions of the adapter, register cover, HVAC boot and duct.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0023] Referring to FIGS. 1A through 1C, various forms of prior art mounting devices are shown. In FIG. 1A, an HVAC register cover 19, with flowpath walls 12, flange 14 and mounting apertures 16 is inserted into a cut-out 18 in ceiling panel 20 (which could also be a wall). A boot 30 is used to transition the air to the rectangular flowpath 40 at one end from a cylindrical flowpath 50 at the other end to engage flexible HVAC duct 60. Boot 30 may include mounting apertures 32. Load-spreading clips 70 straddle the edges of the cut-out 18 in ceiling panel 20, and include apertures 72 through which fasteners 80 can pass, securing register cover 10 and clip 70 to ceiling panel 20. Such an arrangement can be (and often is) used when a support structure, such as a joist or wall stud (one of which are presently shown) is inaccessible. FIG. 1B shows a mounting bracket made up of a pair of rails 75 that extend between adjacent joists 25. The frequently-spaced apertures 77 in the rails 75 permit the boot 30 to be placed at one of various locations between the joist 25, and can be used between joists with larger or smaller spacing than the sixteen or twenty-four inch industry standards. The rails 75 typically are used in pairs, and are spaced according to the boot 30 dimensions. The two rails 75 are mounted separately, and therefore do not make up a contiguous structure. While the present rails 75 are shown extending between the joists 25, they can also be longer, such that they can be mounted either on top of or below joists 25. FIG. 1C represents an ad hoc approach to mounting a boot 30 and register cover (not presently shown) in the presence of joists 25. Rather than using the clips 70 or rails 75, both of which were created expressly for the purpose of providing a more secure mount between an outlet and the wall or ceiling, an installer may opt to custom-build one or more mounting brackets 90 upon encountering an unconventional joist spacing or register cover size. Typically, the installer cuts sheet metal into the appropriate length, either drills mounting apertures into or drives fastener 80 through the bracket 90 until engagement with a joist 25 is made. As with the rails 75 of FIG. 1B, the mounting brackets 90 are installed individually, and spaced according to the dimension of the register cover and boot 30, which may include a flanged portion 33 at the end of the rectangular flowpath 40 to allow the boot 30 to either rest upon or be secured to the brackets 90. As before, the rectangular flowpath 40 of one end of the boot 30 is facing the register cover, while the cylindrical flowpath 50 at the other end can engage a duct (not presently shown). The installer often will cut strips of sheet metal wider than necessary, then fold them over one or more times along a longitudinal axis to increase the rigidity of the mounting bracket 90.

[0024] Referring now to FIGS. 2, 2A and 5, an adapter 100 according to the present invention is shown. Adapter 100 is in the form of an assembly, and includes a central body portion 110 with a support structure mounting surface 120 and an opposing register cover-facing surface 122. Preferably, all the components in the assembly are made from a rigid, durable plastic, such as polypropylene. In addition to being strong, tough and corrosion-resistant, such plastic can also be inexpensively manufactured, using well-known injection molding techniques, for example. First end mounting apertures 125 are disposed at one end of the support structure mounting surface 120, so that fasteners (such as screws, nails, rivets or the like) can secure the
adapter 100 to a building support structure (such as a joist or wall stud, neither of which are currently shown), while second end mounting apertures 126A, 126B and 126C are placed at the other end of the support structure mounting surface 120 to permit mounting along various predetermined interjoist spacings, such as twenty-four inches between first end mounting apertures 125 and second end mounting apertures 126A, nineteen and two-tenths inches between first end mounting apertures 125 and second end mounting apertures 126B and sixteen inches between first end mounting apertures 125 and second end mounting apertures 126C. While the second end mounting apertures 126A, 126B and 126C are only shown for the three aforementioned spacings near the ends of the legs of the H-shaped adapter 100, it will be appreciated by those skilled in the art that additional apertures could be disposed at other longitudinal locations to accommodate distances other than the industry standards. In addition, since the parts of the adapter 100 can be inexpensively manufactured, it will be appreciated by those skilled in the art that the size of the adapter 100 can be fabricated in numerous sizes, depending on the application. An HVAC flowpath 140 is defined as a substantially rectangular cut-out between first and second parts 132, 134 of register cover mounting surface 130. The central body portion 110 is generally H-shaped, with a plurality of elongate tabs 150 defining the leg portions of the H. A set of upstanding tabs 160A, 160B and 160C together define a boot mounting surface 160.

[0025] The register cover mounting surface 130 is used to connect the adapter 100 to the register cover 10. Lateral edge 132A of first part 132 is designed to be angularly placed in notched region 135A, after which the other lateral edge 132B can be snap-fit into notched region 135B. Thus, first part 132 of the register cover mounting surface 130 is adjustably coupled to the central body portion 110 so that it can slide back and forth along direction S with its lateral motion limited by slots in notched region 135A that are integrally formed in guide rail 135, as shown with particularity in FIG. 2A. The lower surface 132C of first part 132 rests on top of central body portion 110. The thickness of central body portion 110 is relatively thin, so that so that the lower surface 132C of first part 132 is substantially coplanar with register cover-facing surface 122 of central body portion 110. A second part 134 of the register cover mounting surface 130 forms an integral part of central body portion 110. Both the first and second parts 132, 134 include apertures 136 disposed in their respective surfaces, which can be aligned with corresponding apertures in HVAC register cover 10 to effect fastened connection between the adapter 100 and register cover 10.

[0026] Referring with particularity to FIG. 5, a boss 138 is used as a built-up pedestal to extend the apertures 136 away from register cover-facing surface 122 to effect easier engagement with flanges 14 in register cover 10. The boss 138 is self-threading to avoid stripping during repeated fastener insertion and removal. A cutout 111 in central body portion 110 allows the boss 138 to fit into the cutout, thereby enabling full extension of second part 132 of register mounting surface 130 when the largest register cover 10 spacing (typically twelve inches) is required. The presence of upstanding tab 160B along the sliding path of second part 132 of register mounting surface 130 limits travel of the second part to no less than a preset minimum spacing between mounting apertures 136, typically eight inches. A downward-extending ridge is used to define the hole to be cut into the ceiling panel (not presently shown). The ridge is made up of a first part 137A that is integral with register-facing surface 122 of central body portion 110, and a second part 137B that is integral with the lower surface 132C of first part 132, as shown in both FIGS. 2A and 5. The ridge is of sufficient height such that once the hole in the ceiling panel is placed over and aligned with the flowpath 140, the lowermost extension of the first and second parts 137A, 137B of the ridge can be flush with the room-facing surface of the ceiling panel (not presently shown). One preferred height for the ridge is one-half inch, to coincide with a common drywall thickness. Ridge first part 137A preferably surrounds three sides of HVAC flowpath 140, being disposed at the respective edges thereof such that ridge first part 137A can be placed into contact with the flange 14 of the register cover, thus allowing by quick visual inspection a verification that the mounting adapter 100 and the ceiling panel are properly aligned relative to one another. Preferably, the ridge second part 137B projects downwardly in a manner similar to that of the first part 137A, except that it does not extend from an edge of first part 132 of register cover mounting surface 130, instead extending from lower surface 132C to allow engagement between the first part 132 and the notched regions 135A and 135B, as shown in FIGS. 2A and 3. The register cover 10 is inserted through the HVAC flowpath 140 defined by the register cover mounting surface 130 of adapter 100 such that flowpath walls 12 of register cover 10 pass through flowpath 140 and into the rectangular compartment defined by rectangular flowpath 40 of boot 30.

[0027] Referring next to FIG. 3, the placement of the first part 132 of register cover mounting surface 130 relative to the central body portion 110 is shown via exploded view. By virtue of the slidably adjustable arrangement between first and second parts 132 and 134 of register cover mounting surface 130, the HVAC flowpath can be tailored to various register cover sizes, particularly along the lengthwise dimension of the register cover. Moreover, since the first part 132 is held in contact with the rest of adapter 100 by the slots 135A, 135B of guide rail 135 (as previously shown in FIG. 2A), and the entire adapter 100 is a rigid structural assembly, installation is simplified, as an installer can hold the adapter 100 in one hand, while securing it to a joist or similar support structure with the other, leaving the determination of the precise distance between the apertures 136 used to mount the register cover until later. The three upstanding tabs 160A, 160B and 160C that make up boot mounting surface 160 are each coupled to respective parts of the register cover mounting surface 130, preferably such that upstanding tab 160A is integral with the slidably disposed first part 132 of register cover mounting surface 130, and upstanding tabs 160B and 160C are integral with second part 134. Apertures disposed within each of the upstanding tabs 160A, 160B and 160C can accept a fastener that is used to secure the boot (not presently shown) to the adapter 100.

[0028] Referring next to FIG. 4, the adapter 100 is shown with a boot 30 mounted thereto. The apertures disposed within each of the upstanding tabs 160A, 160B and 160C (only the first of which is presently shown) can accept a fastener 80 that is used to secure the boot 30 to the adapter 100 via register cover mounting surface 130 and its first and second parts 132 and 134, respectively. The rectangular flowpath 40 of the boot 30 is inserted through flowpath 140.
Second part 132 of register cover mounting surface 130 is then slid until tab 160A is adjacent the respective sidewall of boot 30 to allow fastening therebetween. Preferably, the boot 30 is secured to the adapter 100 prior to mounting the adapter 100 onto the joists (not presently shown). This simplifies the installer’s task of allowing the fastening of the two to take place in a convenient, safe open space (such as on a floor, table or bench top), thereby avoiding the potential danger of having to secure the boot 30 to the adapter 100 when elevated off the ground in an awkward, often unstable position. Once the boot 30 is secured to the adapter 100, and the adapter 100 is secured to a building support structure (not presently shown), the HVAC duct 60 can be easily connected to the duct-engaging cylindrical end 50 of the boot 30. After that, the register cover 10 can be secured to the adapter 100 either prior to the installation of the ceiling panel 20, or, in situations where no panel is used, in lieu thereof.

[0029] Referring finally to FIG. 6, an exploded view showing the interconnection between the register cover 10, adapter 100, boot 30, joists 25, and duct 60 is shown. The present view is not to be construed as showing the preferred order of installation, but merely the relative placement between the various assembly components; as previously discussed, in a preferred embodiment, the boot 30 and adapter 100 are secured to one another prior to mounting the adapter 100 to the joists 25. The installer preferably then secures the adapter 100 to the joists 25. As previously discussed, adapter 100 can have numerous apertures 125 disposed along the longitudinal dimension of its H-shape to accommodate various interjoist spacings. Thereafter, the boot 30 and the duct 60 can be brought into secure engagement via comparable fasteners. The wall or ceiling panels 20 may then be installed (with appropriate cut-outs around the location of the mounted boot 30) so that the flowpath walls 12 of register cover 10 can pass through the cut-out, the register cover mounting surface 130 to establish fluid communication between the duct 60, boot 30 and register cover 10, while simultaneously establishing a structurally secure mounting for the various HVAC components. It will be appreciated by those of ordinary skill in the art that although the preferred order of assembly is discussed above, other sequences are contemplated as being within the scope of the present invention to satisfy the exigencies of a particular installation situation.

[0030] Having described the invention in detail and by reference to preferred embodiments thereof, it will be apparent that modifications and variations are possible without departing from the scope of the invention defined in the appended claims.

I claim:

1. An adapter assembly for mounting an HVAC boot to a register cover, said adapter assembly comprising:

   a central body portion defining a support structure mounting surface, said support structure mounting surface including a plurality of mounting apertures disposed therein, each of said plurality of mounting apertures configured to accept a fastener therethrough;

   a register cover mounting surface at least a part of which is adjustably coupled to said central body portion; and

   at least one boot mounting surface coupled to said register cover mounting surface such that, upon engagement between said register cover mounting surface and said register cover and upon engagement between said at least one boot mounting surface and said boot, fluid communication between said boot and said register cover is established.

2. An adapter assembly according to claim 1, wherein said support structure mounting surface of said central body portion defines an HVAC flowpath therethrough.

3. An adapter assembly according to claim 2, wherein said HVAC flowpath is substantially rectangular-shaped, and is configured to accept a comparably-sized flowpath defined by said register cover.

4. An adapter assembly according to claim 2, wherein said part of said register cover mounting surface that is adjustably coupled to said central body portion is slidably cooperative therewith said such that said register cover mounting surface at least partially occupies an area projected by said HVAC flowpath.

5. An adapter assembly according to claim 4, wherein at least a part of said central body portion includes a substantially planar surface configured to engage a flange of said register cover or a surface of a ceiling panel.

6. An adapter assembly according to claim 4, wherein said central body portion, said register cover mounting surface and said at least one boot mounting surface form a contiguous structure.

7. An adapter assembly according to claim 6, wherein said central body portion further includes plurality of elongate tabs extending therefrom such that at least one of said plurality of mounting apertures are situated in each of said plurality of elongate tabs.

8. An adapter assembly according to claim 7, wherein said central body portion and said plurality of elongate tabs extending therefrom define a generally H-shaped construction.

9. An adapter assembly according to claim 1, wherein said at least one boot mounting surface comprises a plurality of upstanding tabs with fastener-accepting orifices disposed therein.

10. An adapter assembly according to claim 1, wherein at least a part of each of said register cover mounting surface and said at least one boot mounting surface forms an integral part of said central body portion.

11. An adapter assembly according to claim 1, wherein said adapter is plastic.

12. An adapter assembly according to claim 11, wherein said plastic is an injection-molded plastic.

13. An H-shaped interjoist adapter for mounting an HVAC boot to a register cover, said H-shaped interjoist adapter defined by a central body portion comprising:

   a support structure mounting surface defining an HVAC flowpath in said central body portion, said support structure mounting surface including a plurality of mounting apertures disposed therein, each of said plurality of mounting apertures configured to accept a fastener therethrough;

   a register cover mounting surface that at least partially occupies an area in said HVAC flowpath, said register cover mounting surface comprising:

   a first part slidably coupled to said central body portion; and
a second part integrally formed with said central body portion;
a plurality of boot mounting surfaces, including:
at least one of which is coupled to said first part of said register cover mounting surface; and
at least one coupled to said second part of said register cover mounting surface such that, upon engagement between said register cover mounting surface and said register cover and upon engagement between said plurality of boot mounting surfaces and said boot, fluid communication between said boot and said register cover is established.
14. A method of mounting an HVAC boot comprising:
configuring an adapter to include:
a central body portion defining a support structure mounting surface, said support structure mounting surface including a plurality of mounting apertures disposed therein, each of said plurality of mounting apertures configured to accept a fastener therethrough;
a register cover mounting surface at least a part of which is adjustably coupled to said central body portion; and
at least one boot mounting surface coupled to said register cover mounting surface such that, upon engagement between said register cover mounting surface and said register cover and upon engagement between said at least one boot mounting surface and said boot, fluid communication between said boot and said register cover is established;
adjusting said register cover mounting surface and said at least one boot mounting surface to engage corresponding parts of said adapter and HVAC boot, respectively; and
connecting said adapter to said HVAC boot.
15. A method according to claim 14, wherein said step of connecting said adapter to said HVAC boot is effected with fasteners.
16. A method according to claim 15, wherein said fasteners are threaded.
17. A method according to claim 14, further comprising the additional steps of:
attaching said adapter to a building support structure; and
connecting said HVAC boot to an HVAC duct.
18. A method according to claim 17, further comprising the additional step of connecting said adapter to a register cover.
19. A method according to claim 18, wherein said register cover is secured to said adapter with fasteners.
20. A method according to claim 19, wherein said fasteners are threaded.
21. A method according to claim 14, wherein said adjustably coupled part of said register cover mounting surface is slidably cooperative with said central body portion to effect said step of adjusting said register cover mounting surface and said at least one boot mounting surface;
22. A method of securing an HVAC register cover, said method comprising the steps of:
configuring an adapter to include:
a central body portion defining a support structure mounting surface, said support structure mounting surface including a plurality of mounting apertures disposed therein, each of said plurality of mounting apertures configured to accept a fastener therethrough;
a register cover mounting surface at least a part of which is adjustably coupled to said central body portion; and
at least one boot mounting surface coupled to said register cover mounting surface such that, upon engagement between said register cover mounting surface and said register cover and upon engagement between said at least one boot mounting surface and said boot, fluid communication between said boot and said register cover is established;
connecting said boot to said adapter;
mounting said adapter to a building support structure;
fluidly coupling an HVAC duct to said boot; and
connecting said register cover to said adapter.
23. A method according to claim 20, comprising the additional step of covering said joint prior to said step of connecting said register cover to said adapter.
24. A method according to claim 22, wherein said adjustably coupled part of said register cover mounting surface is slidably cooperative with said central body portion to effect said step of connecting said boot to said adapter.

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