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SHOWER DOOR HARDWARE ASSEMBLY

Abstract

A shower door hardware assembly is provided with a mount to be mounted to an upright support surface. A bracket is attachable to the mount. A clamp is oriented on the bracket to receive, clamp, and support a shower door panel. A shim is sized to be received between the mount and the upright support surface to adjust a position of the bracket. A hinge subassembly is provided with a plurality of apertures to be fastened to another upright support surface and to pivotally support a shower door panel. A shim is sized to be received between the hinge subassembly and the upright support surface to adjust a position of the hinge subassembly relative to the upright support surface, wherein the shim includes a slot aligned with at least one of the plurality of apertures for installation while the hinge subassembly is fastened to the upright support surface.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] This application claims the benefit of U.S. provisional application Ser. No. 63/554,296 filed Feb. 16, 2024, the disclosure of which is hereby incorporated in its entirety by reference herein.

TECHNICAL FIELD
[0002] Various embodiments relate to shower door hardware assemblies and shower door assemblies.
BACKGROUND
[0003] A shower door hinge is disclosed in Austin, III, U.S. Pat. No. 9,080,357 B1, which issued Jul. 14, 2015, to Liberty Hardware Mfg. Corp.
SUMMARY
[0004] According to one embodiment, a shower door hardware assembly is provided with a mount adapted to be mounted to an upright support surface. A bracket is attachable to the mount. A clamp is oriented on the bracket to receive, clamp, and support a shower door panel. A shim is sized to be received between the mount and the upright support surface to adjust a position of the bracket relative to the upright support surface.
[0005] According to a further embodiment, the bracket is not adjustable relative to the mount.
[0006] According to another further embodiment, an aperture is formed through the clamp and sized to receive a distal end of the bracket.
[0007] According to an even further embodiment, a plug is sized to be received in the aperture of the clamp.
[0008] According to another even further embodiment, the clamp is further provided with a surface finish or a coating. The plug is provided with a surface finish or a coating to match that of the clamp.
[0009] According to another even further embodiment, a fastener is in cooperation with the clamp and the plug to retain the plug within the aperture of the clamp.
[0010] According to another further embodiment, the shim is provided with an angled thickness.
[0011] According to an even further embodiment, an angle of the angled thickness of the shim is five degrees or less.
[0012] According to another further embodiment, the shim is provided with a length and a height sized to match the mount.
[0013] According to another further embodiment, the shim is provided from a polymeric material.
[0014] According to another further embodiment, the shim is provided from a silicone material.
[0015] According to another even further embodiment, the shim is provided from a nylon material.
[0016] According to another embodiment, a shower door assembly is provided with a panel sized to be installed in a shower stall opening. A shower door hardware assembly is provided with a mount adapted to be mounted to an upright support surface to install and support the panel in the shower stall opening. A bracket is attachable to the mount at a proximal end of the bracket. A clamp is oriented at a distal end of the bracket to receive, clamp, and support a shower door panel. A shim is sized to be received between the mount and the upright support surface to adjust a position of the bracket relative to the upright support surface.
[0017] According to a further embodiment, a channel is sized to be installed to a sill of the shower

stall opening and sized to receive the panel in the channel. A support is sized to be received within the channel to receive and support the panel.
[0018] According to another embodiment, a shower door hardware assembly is provided with a mount adapted to be mounted to an upright support surface. A bracket is attachable to the mount, wherein the bracket is not adjustable relative to the mount. A clamp is oriented on the bracket to receive, clamp, and support a shower door panel.
[0019] According to another embodiment, a shower door hardware assembly is provided with a mount adapted to be mounted to an upright support surface. A bracket is attachable to the mount at a proximal end of the bracket. A clamp has an aperture formed therethrough and sized to receive a distal end of the bracket, the clamp is operable to receive, clamp, and support a shower door panel. A plug is sized to be received in the aperture of the clamp.
[0020] According to another embodiment, a shower door hardware assembly is provided with a hinge subassembly with a plurality of apertures to be fastened to an upright support surface and to pivotally support a shower door panel relative to the upright support surface. A shim is sized to be received between the hinge subassembly and the upright support surface to adjust a position of the hinge subassembly relative to the upright support surface, wherein the shim includes a slot aligned with at least one of the plurality of apertures for installation while the hinge subassembly is fastened to the upright support surface.
[0021] According to a further embodiment, the shim is formed from a flexible polymeric material.
[0022] According to another embodiment, a shower door assembly is provided with a panel sized to be installed in a shower stall opening. A shower door hardware assembly is provided with a hinge subassembly with a plurality of apertures to be fastened to an upright support surface and to pivotally support a shower door panel relative to the upright support surface to install and pivotally support the panel in the shower stall opening. A shim is sized to be received between the hinge subassembly and the upright support surface to adjust a position of the hinge subassembly relative to the upright support surface, wherein the shim includes a slot aligned with at least one of the plurality of apertures for installation while the hinge subassembly is fastened to the upright support surface.
[0023] According to a further embodiment, a support is sized to support the panel in the shower stall opening during installation of the panel to the hinge.
[0024] According to another embodiment, a shower door hardware assembly is provided with a mount adapted to be mounted to a first upright support surface. A bracket is attachable to the mount at a proximal end of the bracket, wherein the bracket is not adjustable relative to the mount. A clamp is oriented at a distal end of the bracket to receive, clamp, and support a shower door panel. A hinge subassembly is provided with a plurality of apertures to be fastened to a second upright support surface and to pivotally support a shower door panel relative to the second upright support surface. A shim is sized to be received between the hinge subassembly and the second upright support surface to adjust a position of the hinge subassembly relative to the second upright support surface, wherein the shim includes a slot aligned with at least one of the plurality of apertures for installation while the hinge subassembly is fastened to the second upright support surface.
[0025] According to another embodiment, a method is provided by installing a hinged shower door to a first upright support surface. A fixed shower door panel is installed to a second upright support surface that is spaced apart and opposed to the first upright support surface. A shim is installed between the fixed shower door panel and the second upright support surface to align the fixed shower door with the hinged shower door.
[0026] According to a further embodiment, a bracket is cut to length. The bracket is installed to the fixed shower door panel and the second upright support surface.
[0027] According to an even further embodiment a trim member is installed to conceal a cut end of the bracket.
[0028] According to another even further embodiment, a clamp is installed on the bracket. The

clamp is clamped upon the fixed shower door panel. The trim member is installed on the clamp.
[0029] According to another even further embodiment, a clamp is installed on the bracket. The clamp is slid onto the fixed shower door panel. The bracket is slid into engagement with the first upright support surface. The bracket is installed to the first upright support surface. The fixed shower door panel is clamped to the clamp.
[0030] According to another even further embodiment, the fixed shower door panel is leveled.
[0031] According to another further embodiment, the hinged shower door is fastened to the first upright support surface. Fasteners are loosened from the hinged shower door to the first upright support surface. A slotted shim is installed upon the fasteners between the hinged shower door and the first upright support surface.
[0032] According to another embodiment, a method is provided by fastening a hinged shower door to an upright support surface. Fasteners are loosened from the hinged shower door to the upright support surface. A slotted shim is installed upon the fasteners between the hinged shower door and the upright support surface.
[0033] One general embodiment includes a shower door hardware assembly that also includes a mount adapted to be mounted to an upright support surface. The assembly also includes a bracket attachable to the mount. The assembly also includes a clamp on the bracket to receive, clamp, and support a shower door panel. The assembly also includes a shim sized to be received between the mount and the upright support surface to adjust a position of the bracket relative to the upright support surface.
[0034] Implementations may include one or more of the following features. The shower door hardware assembly where the bracket is not adjustable relative to the mount. An aperture is formed through the clamp and sized to receive the distal end of the bracket. The shower door hardware assembly may include a plug sized to be received in the aperture of the clamp. The clamp may include a surface finish or a coating; and where the plug may include a surface finish or a coating to match that of the clamp. The shower door hardware assembly may include a fastener in cooperation with the clamp and the plug to retain the plug within the aperture of the clamp. The shim may include an angled thickness. An angle of the angled thickness of the shim is five degrees or less. The shim may include a length and a height sized to match the mount. The shim may include a polymeric material. The shim may include a silicone material. The shim may include a nylon material. A shower door assembly may include: a panel sized to be installed in a shower stall opening, and the shower door hardware assembly to install and support the panel in the shower stall opening. The shower door assembly may include: a channel sized to be installed to a sill of the shower stall opening and sized to receive the panel in the channel; and a support sized to be received within the channel to receive and support the panel. Implementations of the described techniques may include hardware, a method or process.
[0035] Another general embodiment includes a shower door hardware assembly that also includes a mount adapted to be mounted to an upright support surface. The assembly also includes a bracket attachable to the mount, where the bracket is not adjustable relative to the mount. The assembly also includes a clamp oriented on the bracket to receive, clamp, and support a shower door panel.
[0036] Another general embodiment includes a shower door hardware assembly that also includes a mount adapted to be mounted to an upright support surface. The assembly also includes a bracket attachable to the mount at a proximal end of the bracket. The assembly also includes a clamp with an aperture formed therethrough and sized to receive a distal end of the bracket, the clamp operable to receive, clamp, and support a shower door panel. The assembly also includes a plug sized to be received in the aperture of the clamp.
[0037] Another general aspect includes a shower door hardware assembly that also includes a hinge subassembly with a plurality of apertures to be fastened to an upright support surface and to pivotally support a shower door panel relative to the upright support surface. The assembly also includes a shim sized to be received between the hinge subassembly and the upright support

surface to adjust a position of the hinge subassembly relative to the upright support surface, where the shim includes a slot aligned with at least one of the plurality of apertures for installation while the hinge subassembly is fastened to the upright support surface.

[0038] Implementations may include one or more of the following features. The shower door hardware assembly where the shim is formed from a flexible polymeric material. A shower door assembly may include: a panel sized to be installed in a shower stall opening, and the shower door hardware assembly to install and pivotally support the panel in the shower stall opening. The shower door assembly may include a support sized to support the panel in the shower stall opening during installation of the panel to the hinge. Implementations of the described techniques may include hardware, a method or process, or computer software on a computer-accessible medium.

[0039] Another general embodiment includes a shower door hardware assembly that also includes a mount adapted to be mounted to a first upright support surface. The assembly also includes a bracket attachable to the mount at a proximal end of the bracket, where the bracket is not adjustable relative to the mount. The assembly also includes a clamp oriented at a distal end of the bracket to receive, clamp, and support a shower door panel. The assembly also includes a hinge subassembly with a plurality of apertures to be fastened to a second upright support surface and to pivotally support a shower door panel relative to the second upright support surface. The assembly also includes a shim sized to be received between the hinge subassembly and the second upright support surface to adjust a position of the hinge subassembly relative to the second upright support surface, where the shim includes a slot aligned with at least one of the plurality of apertures for installation while the hinge subassembly is fastened to the second upright support surface.

[0040] Another general embodiment includes a method that also includes installing a hinged shower door to a first upright support surface. The method also includes installing a fixed shower door panel to a second upright support surface that is spaced apart and opposed to the first upright support surface. The method also includes installing a shim between the fixed shower door panel and the second upright support surface to align the fixed shower door with the hinged shower door.

[0041] Implementations may include one or more of the following features. The method may include: cutting a bracket to length; and installing the bracket to the fixed shower door panel and the second upright support surface. The method may include: installing a trim member to conceal a cut end of the bracket. The method may include: installing a clamp on the bracket; clamping the clamp upon the fixed shower door panel; and installing the trim member on the clamp. The method may include: installing a clamp on the bracket; sliding the clamp onto the fixed shower door panel; sliding the bracket into engagement with the first upright support surface; installing the bracket to the first upright support surface; and clamping the fixed shower door panel to the clamp. The method may include: leveling the fixed shower door panel. The method may include: fastening the hinged shower door to the first upright support surface; loosening fasteners from the hinged shower door to the first upright support surface; and installing a slotted shim upon the fasteners between the hinged shower door and the first upright support surface.

[0042] Another general embodiment includes a method that also includes fastening a hinged shower door to an upright support surface. The method also includes loosening fasteners from the hinged shower door to the upright support surface. The method also includes installing a slotted shim upon the fasteners between the hinged shower door and the upright support surface. Other embodiments of this aspect include corresponding computer systems, apparatus, and computer programs recorded on one or more computer storage devices, each configured to perform the actions of the methods.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0043] FIG. **1** is a front perspective view of a shower door assembly installed in a shower stall according to an embodiment;

[0044] FIG. **2** is an exploded front perspective view of the shower door assembly of FIG. **1**;

[0045] FIG. **3** is a side view of a rail of the shower door assembly of FIG. **1**;

[0046] FIG. **4** is a side view of a gasket of the shower door assembly of FIG. **1**;

[0047] FIG. **5** is a side view of a seal of the shower door assembly of FIG. **1**;

[0048] FIG. **6** is a side view of an insert of the shower door assembly of FIG. **1**;

[0049] FIG. **7** is a side view of a diverter of the shower door assembly of FIG. **1**;

[0050] FIG. **8** is a side view of a seal of the shower door assembly of FIG. **1**;

[0051] FIG. **9** is an exploded front perspective view of a hardware assembly of the shower door assembly of FIG. **1**;

[0052] FIG. **10** is an exploded front perspective view of the shower door assembly of FIG. **1** illustrating an installation step according to an embodiment;

[0053] FIG. **11** is an exploded front perspective view of the shower door assembly of FIG. **1** illustrating another installation step according to an embodiment;

[0054] FIG. **12** is an enlarged partial rear perspective view of the shower door assembly of FIG. **1**;

[0055] FIG. **13** is a front perspective view of a shim for the hardware assembly of FIG. **9**;

[0056] FIG. **14** is an enlarged partial front perspective view of the shower door assembly of FIG. **1** illustrating an installation step according to an embodiment;

[0057] FIG. **15** is an enlarged partial front perspective view of the shower door assembly of FIG. **1** illustrating another installation step according to an embodiment;

[0058] FIG. **16** is an enlarged partial front perspective view of the shower door assembly of FIG. **1** illustrating another installation step according to an embodiment; and

[0059] FIG. **17** is an enlarged partial front perspective view of the shower door assembly of FIG. **1** illustrating another installation step according to an embodiment.

DETAILED DESCRIPTION

[0060] As required, detailed embodiments of the present invention are disclosed herein; however, it is to be understood that the disclosed embodiments are merely exemplary of the invention that may be embodied in various and alternative forms. The figures are not necessarily to scale; some features may be exaggerated or minimized to show details of particular components. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a representative basis for teaching one skilled in the art to variously employ the present invention.

[0061] It will also be understood that, although the terms first, second, etc., are, in some instances, used herein to describe various elements, these elements should not be limited by these terms. These terms are only used to distinguish one element from another and are presented in order of introduction for a particular embodiment, and may vary in the introduction of various embodiments. For example, a first surface could be termed a second surface, and, similarly, a second surface could be termed a first surface, without departing from the scope of the various described embodiments. The first surface and the second surface are both surfaces, but they are not the same surface in the context of a particular embodiment.

[0062] Shower door assemblies are utilized with shower enclosures, and are designed to contain water within the enclosure and prevent it from spilling out onto a bathroom floor. Shower doors are typically made from glass, though some might employ acrylic, plastic, or any suitable pane or panel. Glass doors can be clear, frosted, or patterned to offer varying degrees of privacy and style.

[0063] Shower door assemblies offer various options and styles. For example, sliding shower door assemblies consist of two or more panels that slide along a track. Sliding shower door assemblies are compact and conserve space by not requiring extra room to swing open. Hinged or swing

shower door assemblies open outward on hinges. Swing shower door assemblies require adequate space to swing open but can provide a traditional look and ease in ingress and egress. Bi-fold shower door assemblies fold in on themselves and are optimal for very tight spaces. Frameless shower door assemblies are made of tempered glass with minimal metal framing, to offer a sleek, modern look that are easier to clean. Framed shower door assemblies include a metal frame that surrounds the glass, offering extra support and sometimes additional features like built-in hardware.
[0064] Shower door assemblies offer additional features and hardware. Handles are mounted through the pane of the door. In framed designs, the handle may be mounted to the frame along an edge of the door. Handles come in various styles and finishes, from sleek chrome to brushed nickel. Rubber or silicone seals may be provided along the edges of shower doors to help prevent leaks and maintain water containment. For sliding doors, track subassemblies may include a top and sometimes a bottom track, to guide movement of the door. Some doors have built-in towel bars or hooks for added convenience, which may also be utilized as handles.
[0065] The design of a shower door can range from minimalist to ornate, depending on the overall bathroom decor. Clear glass doors can make a space feel larger and more open, while frosted or patterned glass can provide additional privacy. A selected shower door assembly combines functionality with aesthetics, helping to define a look and usability of the shower enclosure.
[0066] FIG. **1** illustrates a shower door assembly **20** according to an embodiment. The shower door assembly **20** is illustrated installed into a shower stall **22**. The shower stall **22** includes a pair of spaced apart and opposed sidewalls **24**, **26** or upright support surfaces, and an underlying floor **28**. The shower stall **22** may also include a sill **30** extending up from the floor **28**, as an underlying support surface. The shower door assembly **20** includes a hinged door subassembly **32** pivotally mounted to the first sidewall **24** to permit ingress and egress of an occupant into and out of the shower stall **22**. The shower door assembly **20** also includes a stationary panel subassembly **34**, often referred to as a fixed panel **34**, or a bypass panel **34**. This shower door assembly **20** provides the ability to be mounted by the installer to either the right or left side of the enclosure, such that the hinged door subassembly **32** can be either affixed to the first sidewall **24** or the second sidewall **26**, depending on the preferences of the installer or end user.
[0067] The shower door assembly **20** is also illustrated in an exploded view in FIG. **2**. With reference to FIGS. **1-3**, the shower door assembly **20** includes a lower rail **36**. The lower rail **36** is sized to be received upon the sill **30** between the sidewalls **24**, **26**. The sill **30** may be sized to be cut to length at installation. As illustrated in FIG. **3**, the rail **36** includes a channel **38** formed therein. The rail **36** may be provided from a structural material, such as a metallic alloy with a decorative surface finish and/or coating.
[0068] With reference now to FIG. **2**, the fixed panel subassembly **34** includes plurality of supports **40** within the channel **38** to support the fixed panel subassembly **34**. The supports **40** are spaced apart and are sized to be received in the channel **38**. The supports **40** may be provided from a polymeric material. The supports **40** can be provided in multiple thicknesses and can be combined in such a way as to provide a vertical orientation to the sides of the fixed panel subassembly **34** and a horizontal orientation to the top of the panel-which can be helpful when a sill **30** is uneven or not level. The supports **40** provide additional protection of the panel as well as an ability to level the fixed panel subassembly **34**, if desired.
[0069] A fixed panel wall jamb **42** is illustrated in FIGS. **1** and **2**, which is fastened to the second sidewall **26**. The wall jamb **42** may also be formed from a metallic alloy with a matching surface finish and/or coating. The wall jamb **42** also includes a channel **44** (FIG. **2**) formed in a side thereof facing away from the second sidewall **26**. The fixed panel wall jamb **42** is reversible for installation of the fixed panel subassembly **34** on either sidewall **24**, **26**.
[0070] A gasket **46** is illustrated in FIGS. **2** and **4**. The gasket **46** is sized to be received in the channel **44** of the wall jamb **42**, when a glass panel **48** is inserted into channel **44**—such that the glass panel **48** is tightly secured into the channel **44** of wall jamb **42**.

[0071] Referring again to FIGS. **1** and **2**, the fixed panel subassembly **34** also includes the fixed panel **48**. The fixed panel **48** may be formed from a pane of tempered glass or any suitable material. The fixed panel **48** has a width that is less than a shower door opening between the sidewalls **24**, **26** of the shower stall **22**. The fixed panel **48** is supported upon the supports **40** in the channel **38** of the lower rail **36**. The fixed panel **48** is also received within the channel **44** of the wall jamb **42** in contact with the gasket **46** to seal the engagement of the fixed panel **48** and the wall jamb **42**.
[0072] The fixed panel subassembly **34** also includes a mount subassembly **52**, also known as a stay bar assembly **52**. According to the depicted embodiment, the mount subassembly **52** is a hardware subassembly **52**. According to at least one embodiment, the mount subassembly **52** is located at an upper end of the fixed panel subassembly **34**. The mount subassembly **52** is installed to the second sidewall **26** and the wall jamb **42** and connects to the fixed panel **48** to support and brace a partially exposed upper edge **54** of the fixed panel **48**. The mount subassembly **52** permits adjustment of the fixed panel **48**, which is simplified in comparison to the prior art.
[0073] FIGS. **1**, **2**, and **5** illustrate a strike seal **56** mounted to a distal side end of the fixed panel **48**. As depicted in FIG. **5**, the strike seal **56** includes a channel **58** sized to receive the distal end of the fixed panel **48**. The strike seal **56** also includes a flange **60** extending away from the channel **58** and the fixed panel **48** to provide a limit to a pivot range of the hinged door subassembly **32**. The strike seal **56** may be formed from a polymeric material, a metallic alloy with a surface finish and/or coating, or the like.
[0074] FIGS. **2** and **6** illustrate a channel insert **62**, which is sized to plug the rail channel **38** beneath the hinged door subassembly **32**. The insert **62** may be contoured to descend into the stall **22** so that any water that runs or drips onto the insert **62** is directed back into the shower stall **22**.
[0075] Referring again to FIGS. **1** and **2**, the hinged door subassembly **32** includes a pair of hinges **64**, which are fastened to the first sidewall **24**. The hinged door assembly **32** is also reversible and may be mounted to either sidewall **24**, **26**. A template **66** is provided in FIG. **2** to assist in alignment, marking, and drilling of apertures in the first sidewall **24** to receive fasteners to attach the hinges **64**. After the holes are drilled, the template **66** may be discarded or recycled. A pair of hinge shims **68** are also provided for adjustment, if applicable, of the hinged door subassembly **32**. The hinge shims **68** may be formed from a flexible polymeric material, or any suitable material. The hinge shims **68** provide additional adjustment of the shower door assembly **20**, as will be discussed later in further detail.
[0076] FIGS. **1** and **2** illustrate that the hinged door subassembly **32** includes a pivot door panel **70**, which may be formed from a pane of tempered glass. The pivot door panel **70** is attached to the hinges **64** and supported upon the first sidewall **24**. A handle **72** is mounted to the pivot door panel **70** for manual opening and closing of the hinged door subassembly **32**.
[0077] FIG. **2** illustrates a pair of installation support blocks **74** which may be utilized to rest the pivot door panel **70** directly thereon to support the pivot door panel **70** while the hinges **64** are installed into the first sidewall **24**. The installation support blocks **74** may be sized to rest directly upon the sill **30** prior to installation of the rail **36**. After installation of the hinges **64**, the support blocks **74** may be discarded or recycled.
[0078] FIGS. **2** and **7** illustrate a water diverter **76** with a channel **78** for installation upon a lower edge of the pivot door panel **70**. The water diverter **76** may be formed from a polymeric material and shaped to divert water that flows down the pivot door panel **70** back into the shower stall **22**.
[0079] FIGS. **2** and **8** depict a seal **80** with a channel **82** sized to receive an inner edge of the pivot door panel **70**. The seal **80** is sized to engage the first sidewall **24** to seal a gap between the first sidewall **24** and the pivot door panel **70**. The seal **80** may be formed from a flexible polymeric material. The seal **80** may be cut by the installer for clearance around the hinges **64**.
[0080] FIGS. **9-16** illustrate the mount subassembly **52** in further detail. The mount subassembly **52** includes a mount as a mount block **84**, which is adapted to be mounted to one of the sidewalls

24, **26**. The mount block **84** may be formed from a metallic alloy and may include a surface finish and/or coating. The mount block **84** has a body with a length, a height, and a depth. The mount block **84** includes a plurality of through apertures **86** formed through the depth direction for receipt of fasteners **88** (FIGS. **14-16**). The fasteners **88** fasten the mount block **84** to the second sidewall **26** of the shower stall **22**. The apertures **86** may be countersunk for receipt of heads of the fasteners **88**. The mount block **84** also includes a pair of threaded apertures **90** as illustrated in FIG. **9** that are formed in a height direction. The mount block **84** is symmetrical so that the mount block **84** can be mounted to either one of the first sidewall **24** or the second sidewall **26**. Therefore, one mount subassembly **52** may be employed to mount the fixed panel subassembly **34** to either the right or left sidewall **24**, **26**.

[0081] Referring again to FIGS. **9-12**, and **14-16**, the mount subassembly **52** also includes a bracket **92**, which provides a brace for the fixed panel **48**. The bracket **92** is formed from a metallic alloy, and may include a surface finish and/or coating. The bracket **92** includes a transverse portion **94** with a transverse width sized to cover, or partially cover, the length of the mount block **84** to be supported upon the mount block **84**. In the depicted embodiment, the transverse portion **94** has a transverse width to extend beyond the mount block **84**. The bracket transverse portion **94** also includes a longitudinal depth to cover, or partially cover, the depth of the mount block **84**. As illustrated in FIG. **9**, a pair of through apertures **96** are formed through the bracket transverse portion **94**. The bracket through apertures **96** are sized to align with the mount threaded apertures **90** for receipt of fasteners **98** to fasten the bracket **92** to the mount block **84**. The apertures **96** may be countersunk for receipt of heads of the fasteners **98**. The mount subassembly **52** does not provide any additional adjustment feature between the bracket **92** and the mount block **84** to simplify the design and minimize components, cost, and complexity.

[0082] The bracket **92** also includes a longitudinal portion **100** extending away from the transverse portion **94** and generally perpendicular, within manufacturing tolerances, to the transverse portion **94**. The longitudinal portion **100** is offset from the mount block **84** to extend over the wall jamb **42** and the fixed panel **48**. The bracket **92** also has a common thickness, which may be a stock material thickness. The bracket **92** is symmetrical so that the bracket **92** can be flipped from the orientation in FIGS. **9-12** and **14-16** to be installed on the mount block **84** on the left sidewall **24**. Likewise, the apertures **96** may be countersunk on both sides of the transverse portion **94** for receipt of the fasteners **98** in either installation direction.

[0083] The longitudinal portion **100** has a length to extend a distal end away from the proximal end of the transverse portion **94** to extend over the fixed panel **48** away from the second sidewall **26**. The longitudinal portion **100** extends from a lateral end of the transverse portion in the shape of a capital letter ‘L’. The longitudinal portion **100** has a sufficient width to brace the fixed panel **48** and resist loads against the fixed panel **48**. The longitudinal portion **100** may be sized with a length to brace fixed panels **48** of various widths for various sizes of shower door openings. The bracket **92** may be shortened by the installer by cutting the distal end of the longitudinal portion **100** to shorten the bracket **92** to the specific application. The shower door assembly **20** may include instructions for the installer to cut the bracket **92** to the appropriate size.

[0084] With continued reference to FIGS. **9**, **10**, **12**, and **14-16**, the mount subassembly **52** also includes a clamp block **102** to attach to the distal end of the bracket longitudinal portion **100** and to clamp the fixed panel **48**. The clamp block **102** includes a body that may be formed from a metallic alloy and may include a surface finish and/or coating. The clamp block **102** includes a longitudinal through aperture **104** as an enclosed slot **104** that is sized to receive the distal end of the longitudinal portion **100** of the bracket **92** therein. A plurality of threaded apertures **106** are formed in a height direction through the clamp block **102** and intersecting the slot **104**. A plurality of externally threaded fasteners **108** as set screws **108** are provided to be received in the threaded apertures **106**. Two of the set screws **108** are employed to secure the clamp block **102** upon a position upon the longitudinal portion **100** of the bracket **92**. An optional trim member **110** is

provided as a plug for the exposed end of the slot **104**. The trim member **110** has a surface finish and/or coating to match the other components and is installed in the slot **104** to cover a raw or cut end of the longitudinal portion **100** of the bracket **92**. The trim member **110** is held in place in the slot **104** by one of the remaining set screws **108**.

[0085] The clamp block **102** includes a downward facing open slot **112** that is sized to receive an upper edge of the fixed panel **48** within the slot **112**. A gasket **114** is provided within the slot **112** to provide an elastomeric seal and a distributed grip between the clamp block **102** and the fixed panel **48**. A plurality of threaded apertures **116** are formed in a transverse direction in the clamp block and intersecting the slot **112**. Another plurality of set screws **118** are provided in the apertures **116** to engage the gasket **114** and clamp the fixed panel **48** within the clamp block **102** to clamp and support the fixed panel **48** to mount subassembly **52**.

[0086] With reference to FIG. **9**, installation steps for the mount subassembly are discussed in further detail. The bracket **92** is fastened to the mount block **84** by fasteners **98**. The clamp block **102** is fastened to the bracket **92** by fasteners **108**. The trim member **110** is fastened to the clamp block **102** by a fastener **108**. Next, with reference to FIG. **10**, the mount subassembly **52** is slid upon the fixed panel **48** as illustrated by arrow **1**. Subsequently, and illustrated in FIG. **11**, the mount subassembly **52** is then slid in the direction of arrow **2** upon the fixed panel **48** toward the second sidewall **26** to cover the wall jamb **42** as illustrated in FIG. **12**.

[0087] In this position of FIG. **12**, an installer may place a level upon the transverse portion **94** of the bracket **92**, and shift the mount subassembly **52** until the bracket **92** is level. Once leveled, the installer may use a pencil through the apertures **86** to mark the hole pattern of the apertures **86**. Subsequently, the mount subassembly **52** is removed from the fixed panel **48**. Apertures are drilled into the second sidewall **26**, and if necessary, wall mount anchors are installed into the apertures. The mount subassembly **52** is reinstalled on the fixed panel **48** per the steps of FIGS. **10-12**. Next, the fasteners **88** are installed in the fastener apertures **86** to attach the mount block **84** to the second sidewall **26**. Then, the set screws **118** are tightened to clamp the fixed panel **48** into the clamp block **102**.

[0088] FIG. **13** illustrates an angled shim **120** for the mount subassembly **52**. The shim **120** includes a length and a height sized to match the mount block **84**. The shim **120** also includes an angled thickness with an angle, which may be up to five degrees. The shim **120** is reversible, as depicted in FIGS. **14-16**, which thereby doubles the angular range of adjustment of the shim **120**. One or more shims **120** may be provided to be stacked for a range of angular adjustment. The shim **120** also includes a pattern of apertures **122** sized to correspond with the apertures **86** of the mount block **84** to receive the fasteners **88**. The shim **120** may be provided by any suitable material. One suitable shim material is silicone, which is a compressible plastic, thereby providing some flexibility to the adjustment angle of the shim **120**, depending upon compression of the shim **120** from the fasteners **88**. An alternate material is nylon which is relatively rigid and machinable; and nylon may also be extruded or molded. Although nylon and silicone are disclosed, any suitable material, such as a polymeric, or a thermoplastic material may be utilized. Softer or harder durometer materials may also be employed.

[0089] FIG. **14** illustrates the shower door assembly **20** in an installed orientation. In this orientation, fasteners **124** are installed into the hinges **64** to fasten the hinges **64** to the first sidewall **24**. Additionally, the hinged door subassembly **32** is illustrated in a design or resting closed position. If the fixed panel **48** is offset from the hinged door subassembly **32** in a direction A**1** into the shower stall **22**, then the mount subassembly **52** can be adjusted in a direction A**2**. In order to do so, the shim **120** is installed in the orientation A**3** to rotate the fixed panel subassembly **34** in a rotary direction A**4** relative to the second sidewall **26** by rotation about a vertical axis. Referring now to FIG. **15**, the screws **88** are removed; the shim **120** is installed with the enlarged thickness toward the stall **22**; and the screws are refastened through the mount block **84**, the shim **120**, and into the second sidewall **26**. If the adjustment in the direction A**1** is not enough, then another shim

120 can be installed repeating these adjustment steps. The second shim **120** may have the same angle as the first shim **120**, and the shims **120** may be stacked to double the angled assistance provided by the shims **120**. Alternatively, the second shim **120** may have a different angle and may be stacked or may replace the first shim **120**. If the adjustment is too much for alignment, then the fasteners **88** can be further tightened, thereby compressing the shim **120**, or shims **120**, until alignment of the panel subassemblies **32**, **34** is obtained.

[0090] If the fixed panel **48** is offset from the hinged door subassembly **32** in a direction B**1** away from the shower stall **22** in FIG. **14**, then the mount subassembly **52** can be adjusted in a direction B**2**. In order to do so, the shim **120** is installed in the orientation B**3** to rotate the fixed panel subassembly **34** in a rotary direction B**4** relative to the second sidewall **26** and into the shower stall **22**. Referring now to FIG. **16**, the screws **88** are removed; the shim **120** is installed with the reduced thickness toward the stall **22**; and the screws are refastened through the mount block **84**, the shim **120**, and into the second sidewall **26**. If the adjustment in the direction B**1** is not enough, then another shim **120** can be installed repeating these adjustment steps. If the adjustment is too much for alignment, then the fasteners **88** can be further tightened, thereby compressing the shim **120**, or shims **120**, until alignment of the panel subassemblies **32**, **34** is obtained.

[0091] By adding the shim **120** as an angled support component behind the upper wall brace mount subassembly **52**, the fixed panel **48** is secured in place, while gaining an additional angle of adjustment of the fixed panel **48**. This adjustment of the mount subassembly **52**, and consequently the fixed panel subassembly **34** permits the installer to better align the fixed panel **48** with the separate corresponding hinged or pivoting door panel subassembly **32** to complete the shower door assembly **20**. The alignment of the panel subassemblies **32**, **34** assists in the aesthetics and functionality of the shower door assembly **20**. This adjustment is additionally useful for aligning the seal **56** with the pivot door panel **70**. According to another embodiment, the seal **56** is magnetic, and the adjustment of the wall mount subassembly **52** is useful for aligning the magnetic seal **56** with another magnetic seal on the pivot door panel **70**. The wall mount subassembly **52** permits the adjustment without requiring additional fasteners and other complexities that add cost and weight. The wall mount subassembly **52** permits the adjustment without requiring redrilling and reinstallation of the panel subassemblies **32**, **34**. The wall mount subassembly **52** also permits the adjustment without requiring uninstallation of a large quantity of components.

[0092] Referring again to FIG. **14**, the shower door assembly **20** permits additional adjustment for alignment of a gap between the panel subassemblies **32**, **34** by rotation about a horizontal axis. A gap between the panel subassemblies **32**, **34** may not be aligned, due to variations in a plum or vertical alignment of the sidewalls **24**, **26**. If the hinged shower door panel subassembly **32** is offset from the fixed panel subassembly **34** in a direction C**1**, then the shim **68** can be installed behind the upper hinge **64**. The hinge shim **68** is illustrated in FIGS. **2** and **17**. Referring now to FIG. **17**, the shim **68** includes a pair of slots **126** that are aligned with the fasteners **124**. By installing the shim **68** behind the upper hinge **64** as depicted in FIG. **17**, the hinged shower door subassembly **32** is pivoted about a horizontal axis in direction C**2** in FIG. **14** to align the panels **48**, **70** in a parallel and vertical orientation. If the hinged door panel subassembly **32** requires further adjustment in the direction C**2**, an additional shim **68** can be installed behind the upper hinge **64**. The shim **68** may be formed from a compressible polymeric material. If overadjustment is reached, the fasteners **124** of the upper hinge **64** can be further tightened to compress the shim **68** or shims **68** until a target orientation is reached.

[0093] If the hinged shower door panel subassembly **32** is offset from the fixed panel subassembly **34** in a direction D**1**, then the shim **68** can be installed behind the lower hinge **64**. By installing the shim **68** behind the lower hinge **64** as depicted in FIG. **17**, the hinged shower door subassembly **32** is pivoted about a horizontal axis in direction D**2** in FIG. **14** to align the panels **48**, **70** in a parallel and vertical orientation. If the hinged door panel subassembly **32** requires further adjustment in the direction D**2**, an additional shim **68** can be installed behind the lower hinge **64**. If overadjustment is

reached, the fasteners **124** of the lower hinge **64** can be further tightened to compress the shim **68** or shims **68** until a target orientation is reached.
[0094] Referring again to FIG. **17**, each of the hinges **64** includes a mounting plate **128** to be mounted to the sidewall **24**. The mounting plate **128** includes a plurality of apertures **130** to receive the fasteners **124**, which fasten the mounting plates **128** to the sidewall **24**. Each hinge **64** includes a knuckle **132** projected from the mounting plate **128**. A pair of hinge leaves **134** clamp to the shower door panel **70** and are pivotally connected to the knuckle **132**.
[0095] In order to install the shim **68**, the installer loosens the screws **124** to provide a gap between the mounting plate **128** and the first sidewall **24**. Then, the installer slides the shim **68** between the mounting plate **128** and the first sidewall **24** by sliding the shim in the direction indicated in FIG. **17** whereby the slots **126** receive the fasteners **124** within the slots **126**. Then, the installer retightens the fasteners **124**. The slotted shim **68** permits adjustment of the hinged shower door subassembly **32** without removing the hinged shower door subassembly **32** from the first sidewall **24**.
[0096] While various embodiments are described above, it is not intended that these embodiments describe all possible forms of the invention. Rather, the words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the invention. Additionally, the features of various implementing embodiments may be combined to form further embodiments of the invention.

Claims

1. A shower door hardware assembly comprising: a mount adapted to be mounted to an upright support surface; a bracket attachable to the mount; a clamp oriented on the bracket to receive, clamp, and support a shower door panel; and a shim sized to be received between the mount and the upright support surface to adjust a position of the bracket relative to the upright support surface.
2. The shower door hardware assembly of claim 1, wherein the bracket is not adjustable relative to the mount.
3. The shower door hardware assembly of claim 1, wherein an aperture is formed through the clamp and sized to receive a distal end of the bracket.
4. The shower door hardware assembly of claim 3, further comprising a plug sized to be received in the aperture of the clamp.
5. The shower door hardware assembly of claim 4, wherein the clamp comprises a surface finish or a coating; and wherein the plug comprises a surface finish or a coating to match that of the clamp.
6. The shower door hardware assembly of claim 4, further comprising a fastener in cooperation with the clamp and the plug to retain the plug within the aperture of the clamp.
7. The shower door hardware assembly of claim 1, wherein the shim comprises an angled thickness.
8. The shower door hardware assembly of claim 7, wherein an angle of the angled thickness of the shim is five degrees or less.
9. The shower door hardware assembly of claim 1, wherein the shim comprises a length and a height sized to match the mount.
10. The shower door hardware assembly of claim 1, wherein the shim comprises a polymeric material.
11. The shower door hardware assembly of claim 1, wherein the shim comprises a silicone material.
12. The shower door hardware assembly of claim 1, wherein the shim comprises a nylon material.
13. A shower door assembly comprising: a panel sized to be installed in a shower stall opening; and the shower door hardware assembly of claim 1 to install and support the panel in the shower stall opening.

14. The shower door assembly of claim 13, further comprising: a channel sized to be installed to a sill of the shower stall opening and sized to receive the panel in the channel; and a support sized to be received within the channel to receive and support the panel.

15-20. (canceled)

21. A shower door hardware assembly comprising: a mount adapted to be mounted to a first upright support surface; a bracket attachable to the mount at a proximal end of the bracket, wherein the bracket is not adjustable relative to the mount; a clamp oriented at a distal end of the bracket to receive, clamp, and support a shower door panel; a hinge subassembly with a plurality of apertures to be fastened to a second upright support surface and to pivotally support a shower door panel relative to the second upright support surface; and a shim sized to be received between the hinge subassembly and the second upright support surface to adjust a position of the hinge subassembly relative to the second upright support surface, wherein the shim includes a slot aligned with at least one of the plurality of apertures for installation while the hinge subassembly is fastened to the second upright support surface.

22. A method comprising: installing a hinged shower door to a first upright support surface; installing a fixed shower door panel to a second upright support surface that is spaced apart and opposed to the first upright support surface; and installing a shim between the fixed shower door panel and the second upright support surface to align the fixed shower door with the hinged shower door.

23. The method of claim 22, further comprising: cutting a bracket to length; and installing the bracket to the fixed shower door panel and the second upright support surface.

24. The method of claim 23, further comprising: installing a trim member to conceal a cut end of the bracket.

25. The method of claim 24, further comprising: installing a clamp on the bracket; clamping the clamp upon the fixed shower door panel; and installing the trim member on the clamp.

26. The method of claim 24, further comprising: installing a clamp on the bracket; sliding the clamp onto the fixed shower door panel; sliding the bracket into engagement with the first upright support surface; installing the bracket to the first upright support surface; and clamping the fixed shower door panel to the clamp.

27-29. (canceled)