**Abstract:**
The present invention provides a valve assembly for a faucet that provides a rigid mounting for valve bodies.
ABSTRACT

The present invention provides a valve assembly for a faucet that provides a rigid mounting for valve bodies.
VALVE ASSEMBLY FOR FAUCET

FIELD

[0001] The present invention relates generally to a valve assembly for a faucet, and, more particularly, to a valve assembly for a faucet that provides a rigid mounting for valve bodies.

BACKGROUND

[0002] A valve assembly for a faucet includes valve bodies that need to be rigidly mounted. Prior valve assemblies require complicated and/or expensive structure to rigidly mount the valve bodies or do not rigidly mount the valve bodies.

SUMMARY

[0003] The present invention provides a valve assembly for a faucet that provides a rigid mounting for valve bodies.

[0004] In an exemplary embodiment, the valve assembly includes a first valve body, a second valve body, and a tray. The first valve body includes a first end section and a second end section. The first end section includes a first opening. The first opening is operable to fluidly connect to a water supply. The second end section includes a second opening. The second opening is operable to receive a valve cartridge. The first valve body includes a passageway
extending between the first opening and the second opening. The first valve body includes a third opening between the first end section and the second end section. The third opening is in fluid communication with the passageway. The first valve body includes a key extending outwardly therefrom between the first end section and the second end section. The second valve body includes a first end section and a second end section. The first end section includes a first opening. The first opening is operable to fluidly connect to a water supply. The second end section includes a second opening. The second opening is operable to receive a valve cartridge. The second valve body includes a passageway extending between the first opening and the second opening. The second valve body includes a third opening between the first end section and the second end section. The third opening is in fluid communication with the passageway. The second valve body includes a key extending outwardly therefrom between the first end section and the second end section. The tray includes a first end section, a second end section, and an intermediate section. The first end section includes a first opening. The tray includes a first keyway extending outwardly from the first opening. The first opening is operable to receive the first valve body with the first keyway in the tray being operable to receive the key on the first valve body. The second end section including a second opening. The tray including a second keyway extending outwardly from the second opening. The second opening being operable to receive the second valve body with the second keyway in the tray being operable to receive the key on the second valve body. The intermediate section extending between the first opening and the second opening. The tray including a ridge. The ridge extending around a portion of the intermediate section of the tray.

[0005] In an exemplary embodiment, the valve assembly includes a first valve body, a second valve body, and a tray. The first valve body includes a first end section and a second end
section. The first end section includes a first opening. The first opening is operable to fluidly connect to a water supply. The second end section includes a second opening. The second opening is operable to receive a valve cartridge. The first valve body includes a passageway extending between the first opening and the second opening. The first valve body includes a third opening between the first end section and the second end section. The third opening is in fluid communication with the passageway. The first valve body includes a key extending outwardly therefrom between the first end section and the second end section. The second valve body includes a first end section and a second end section. The first end section includes a first opening. The first opening is operable to fluidly connect to a water supply. The second end section includes a second opening. The second opening is operable to receive a valve cartridge. The second valve body includes a passageway extending between the first opening and the second opening. The second valve body includes a third opening between the first end section and the second end section. The third opening is in fluid communication with the passageway. The second valve body includes a key extending outwardly therefrom between the first end section and the second end section. The tray includes a first end section, a second end section, and an intermediate section. The first end section includes a first opening. The tray includes a first keyway extending outwardly from the first opening. The first opening is operable to receive the first valve body with the first keyway in the tray being operable to receive the key on the first valve body. The second end section including a second opening. The tray including a second keyway extending outwardly from the second opening. The second opening being operable to receive the second valve body with the second keyway in the tray being operable to receive the key on the second valve body. The intermediate section extending between the first opening and
the second opening. The tray including a ridge. The ridge extending around at least sixty-five percent of the intermediate section of the tray.

[0006] In an exemplary embodiment, the valve assembly includes a first valve body, a second valve body, and a tray. The first valve body includes a first end section and a second end section. The first end section includes a first opening. The first opening is operable to fluidly connect to a water supply. The second end section includes a second opening. The second opening is operable to receive a valve cartridge. The first valve body includes a passageway extending between the first opening and the second opening. The first valve body includes a third opening between the first end section and the second end section. The third opening is in fluid communication with the passageway. The first valve body includes a key extending outwardly therefrom between the first end section and the second end section. The second valve body includes a first end section and a second end section. The first end section includes a first opening. The first opening is operable to fluidly connect to a water supply. The second end section includes a second opening. The second opening is operable to receive a valve cartridge. The second valve body includes a passageway extending between the first opening and the second opening. The second valve body includes a third opening between the first end section and the second end section. The third opening is in fluid communication with the passageway. The second valve body includes a key extending outwardly therefrom between the first end section and the second end section. The tray includes a first end section, a second end section, and an intermediate section. The first end section includes a first opening. The tray includes a first keyway extending outwardly from the first opening. The first opening is operable to receive the first valve body with the first keyway in the tray being operable to receive the key on the first valve body. The second end section including a second opening. The tray including a second
keyway extending outwardly from the second opening. The second opening being operable to receive the second valve body with the second keyway in the tray being operable to receive the key on the second valve body. The intermediate section extending between the first opening and the second opening. The tray including a ridge. The ridge extending around at least thirty-five percent of the tray.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0007] Figures 1a-1h are views of a valve assembly according to an exemplary embodiment of the present invention, including valve bodies, valve cartridges, cartridge nuts, a bridge, and a tray - Figure 1a is a perspective view, Figure 1b is an exploded perspective view, Figure 1c is a front elevational view, Figure 1d is a top plan view, Figure 1e is a cross-sectional view taken along the line 1e-1e in Figure 1c, Figure 1f is a cross-sectional view taken along the line 1f-1f in Figure 1c, Figure 1g is a cross-sectional view taken along the line 1g-1g in Figure 1d, and Figure 1h is a cross-sectional view taken along the line 1h-1h in Figure 1d;

[0008] Figures 2a-2b are views of a valve assembly according to another exemplary embodiment of the present invention - Figure 2a is a perspective view and Figure 2b is an exploded perspective view;

[0009] Figures 3a-3g are views of the valve bodies of Figures 1a-1h and 2a-2b - Figure 3a is a perspective view, Figure 3b is a front elevational view, Figure 3c is a left side elevational view, Figure 3d is a right side elevational view, Figure 3e is a top plan view, Figure 3f is a bottom plan view, and Figure 3g is a cross-sectional view taken along the line 3g-3g in Figure 3c;

[0010] Figures 4a-4f are views of the valve cartridges of Figures 1a-1h and 2a-2b - Figure 4a is a perspective view, Figure 4b is an exploded perspective view, Figure 4c is a top
plan view, Figure 4d is a bottom plan view, Figure 4e is a cross-sectional view taken along the line 4e-4e in Figure 4c, and Figure 4f is a cross-sectional view taken along the line 4f-4f in Figure 4c;

[0011] Figures 5a-5d are views of the cartridge nuts of Figures 1a-1h and 2a-2b - Figure 5a is a perspective view, Figure 5b is a front elevational view, Figure 5c is a top plan view, and Figure 5d is a cross-sectional view taken along the line 5d-5d in Figure 5c;

[0012] Figures 6a-6h are views of the bridge of Figures 1a-1h - Figure 6a is a perspective view, Figure 6b is a front elevational view, Figure 6c is a right side elevational view, Figure 6d is a top plan view, Figure 6e is a bottom plan view, Figure 6f is a cross-sectional view taken along the line 6f-6f in Figure 6b, Figure 6g is a cross-sectional view taken along the line 6g-6g in Figure 6b, and Figure 6h is a cross-sectional view taken along the line 6h-6h in Figure 6d;

[0013] Figures 7a-7g are views of the bridge of Figures 2a-2b - Figure 7a is a perspective view, Figure 7b is a front elevational view, Figure 7c is a right side elevational view, Figure 7d is a top plan view, Figure 7e is a bottom plan view, Figure 7f is a cross-sectional view taken along the line 7f-7f in Figure 7b, and Figure 7g is a cross-sectional view taken along the line 7g-7g in Figure 7d;

[0014] Figures 8a-8k are views of the tray of Figures 1a-1h and 2a-2b - Figure 8a is a perspective view, Figure 8b is a front elevational view, Figure 8c is a left side elevational view, Figure 8d is a top plan view, Figure 8e is a bottom plan view, Figure 8f is a cross-sectional view taken along the line 8f-8f in Figure 8b, Figure 8g is a cross-sectional view taken along the line 8g-8g in Figure 8d, Figure 8h is a cross-sectional view taken along the line 8h-8h in Figure 8d, Figure 8i is a cross-sectional view taken along the line 8i-8i in Figure 8d, Figure 8j is a cross-
sectional view taken along the line 8j-8j in Figure 8d, and Figure 8k is a detail view of the circled area 8k in Figure 8j; and

[0015] Figures 9a-9f are views of a faucet incorporating the valve assembly of Figures 1a-1h - Figure 9a is a perspective view, Figure 9b is a front elevational view, Figure 9c is a top plan view, Figure 9d is a cross-sectional view taken along the line 9d-9d in Figure 9b, Figure 9e is a cross-sectional view taken along the line 9e-9e in Figure 9b, and Figure 9f is a cross-sectional view taken along the line 9f-9f in Figure 9c.

DETAILED DESCRIPTION

[0016] The present invention provides a valve assembly for a faucet that provides a rigid mounting for valve bodies.

[0017] An exemplary embodiment of a valve assembly 10 of the present invention is shown in Figures 1a-1h. The valve assembly 10 is generally for use with a fixed spout. Another exemplary embodiment of a valve assembly 10' of the present invention is shown in Figures 2a-2b. The valve assembly 10' is generally for use with a swing spout.

[0018] In the illustrated embodiments, the valve assembly 10, 10' includes a first valve body 12, a first valve cartridge 14, a first cartridge nut 16, a second valve body 18, a second valve cartridge 20, a second cartridge nut 22, a bridge 24, 24', and a tray 26. Valve assemblies are well-known in the art and, therefore, only the relevant components of the valve assembly 10, 10' will be described in greater detail.

[0019] An exemplary embodiment of the first valve body 12 and the second valve body 18 is shown in Figures 3a-3g. Each valve body 12, 18 includes a first end section 28, a second end section 30, and an intermediate section 32. The first end section 28 of each valve body 12, 18 includes a first opening 34 and a first outer surface 36. The first opening 34 in each valve
body 12, 18 is operable to fluidly connect to a water supply, e.g., a hot water supply or a cold water supply. The first outer surface 36 of each valve body 12, 18 includes first structure operable to secure each valve body 12, 18 from below a mounting surface. In an exemplary embodiment, the first securing structure is first threads 38. The second end section 30 of each valve body 12, 18 includes a second opening 40 and a second outer surface 42. The second opening 40 in each valve body 12, 18 is operable to receive a valve cartridge. The second outer surface 42 of each valve body 12, 18 includes second structure operable to secure each valve body 12, 18 from above the mounting surface. In an exemplary embodiment, the second securing structure is second threads 44. Additionally, the second outer surface 42 of each valve body 12, 18 includes first structure operable to retain each valve cartridge 14, 20 in each valve body 12, 18. In an exemplary embodiment, the first retaining structure is third threads 46. Each valve body 12, 18 includes a passageway 48 extending between the first opening 34 and the second opening 40. The intermediate section 32 of each valve body 12, 18 extends between the first end section 28 of each valve body 12, 18 and the second end section 30 of each valve body 12, 18. The intermediate section 32 of each valve body 12, 18 includes a third opening 50 and a third outer surface 52. The third opening 50 in each valve body 12, 18 is in fluid communication with the passageway 48. Each valve body 12, 18 includes a key 54 extending outwardly from the third outer surface 52 of each valve body 12, 18. In an exemplary embodiment, the first valve body 12 and the second valve body 18 are made from a metal. In an exemplary embodiment, the first valve body 12 and the second valve body 18 are made from brass.

[0020] An exemplary embodiment of the first valve cartridge 14 and the second valve cartridge 20 is shown in Figures 4a-4f. In an exemplary embodiment, each valve cartridge 14, 20 includes a cartridge shell 56, a stem bearing 58, an upper disc 60, a lower disc 62, a seal 64, a
retaining ring 66, and O-rings 68. The first valve cartridge 14 is operable to control the volume of water flowing from a first water supply, e.g., a hot water supply. The second valve cartridge 20 is operable to control the volume of water flowing from a second water supply, e.g., a cold water supply. Valve cartridges are well-known in the art and, therefore, will not be described in greater detail.

[0021] An exemplary embodiment of the first cartridge nut 16 and the second cartridge nut 22 is shown in Figures 5a-5d. Each cartridge nut 16, 22 includes second structure operable to retain each valve cartridge 14, 20 in each valve body 12, 18. In an exemplary embodiment, the second retaining structure is fourth threads 70. The first cartridge nut 16 is operable to retain the first valve cartridge 14 in the first valve body 12. The second cartridge nut 22 is operable to retain the second valve cartridge 20 in the second valve body 18. Cartridge nuts are well-known in the art and, therefore, will not be described in greater detail.

[0022] An exemplary embodiment of the bridge 24 is shown in Figures 6a-6h. An exemplary embodiment of the bridge 24' is shown in Figures 7a-7g. The bridge 24, 24' includes a first end 72 and a second end 74. The first end 72 of the bridge 24, 24' includes a first opening 76. The first opening 76 in the bridge 24, 24' is operable to fluidly connect to the third opening 50 in the first valve body 12. The second end 74 of the bridge 24, 24' includes a second opening 78. The second opening 78 in the bridge 24, 24' is operable to fluidly connect to the third opening 50 in the second valve body 18. The bridge 24, 24' includes a passageway 80 extending between the first opening 76 and the second opening 78. The bridge 24, 24' includes an outlet 82 between the first end 72 of the bridge 24, 24' and the second end 74 of the bridge 24, 24'. The outlet 82 of the bridge 24, 24' is in fluid communication with the passageway 80. Additionally, the outlet 82 of the bridge 24, 24' is operable to fluidly connect and supply water
to a spout of a faucet. In an exemplary embodiment, the bridge 24, 24’ is made from a plastic.
In an exemplary embodiment, the bridge 24, 24’ is made from a modified polyphenylsulfone
(“PPS”). In an exemplary embodiment, the bridge 24, 24’ is made from a metal. In an
exemplary embodiment, the bridge 24, 24’ is made from brass.

[0023] An exemplary embodiment of the tray 26 is shown in Figures 8a-8k. In an
exemplary embodiment, the tray 26 is generally oblong shaped. The tray 26 includes a first
end section 84, a second end section 86, and an intermediate section 88. The first end section 84 of
the tray 26 includes a first opening 90. In an exemplary embodiment, the tray 26 includes a first
keyway 92 extending outwardly from the first opening 90 in the tray 26. Additionally, the first
end section 84 of the tray 26 includes two (2) first tabs 94 extending into the first opening 90 in
the tray 26. In an exemplary embodiment, the first tabs 94 extending into the first opening 90 in
the tray 26 are angled downwardly. The first opening 90 in the tray 26 is operable to receive the
first valve body 12 with the first keyway 92 in the tray 26 being operable to receive the key 54
on the first valve body 12 and the first tabs 94 on the tray 26 being operable to interface with the
first valve body 12. The second end section 86 of the tray 26 includes a second opening 96. In
an exemplary embodiment, the tray 26 includes a second keyway 98 extending outwardly from
the second opening 96 in the tray 26. Additionally, the second end section 86 of the tray 26
includes two (2) second tabs 100 extending into the second opening 96 in the tray 26. In an
exemplary embodiment, the second tabs 100 extending into the second opening 96 in the tray 26
are angled downwardly. The second opening 96 in the tray 26 is operable to receive the second
valve body 18 with the second keyway 98 in the tray 26 being operable to receive the key 54 on
the second valve body 18 and the second tabs 100 on the tray 26 being operable to interface with
the second valve body 18. While the tray 26 has been shown and described in the illustrated
embodiment as including two (2) first tabs 94 and two (2) second tabs 100, one of ordinary skill in the art will appreciate that the tray 26 could include more or less than two (2) first tabs 94 and more or less than two (2) second tabs 100 and that there could be a different number of first tabs 94 and second tabs 100. In an exemplary embodiment, an inner diameter of the first tabs 94 and an inner diameter of the second tabs 100 are less than an outer diameter of the intermediate section 32 of each valve body 12, 14. The intermediate section 88 of the tray 26 extends between the first opening 90 in the first end section 84 of the tray 26 and the second opening 96 in the second end section 86 of the tray 26. In an exemplary embodiment, the tray 26 is made from a metal. In an exemplary embodiment, the tray 26 is made from stainless steel.

[0024] The tray 26 includes a ridge 102 extending around at least a portion of the tray 26. In the illustrated embodiment, the ridge 102 extends around the entire tray 26 near a perimeter 104 of the tray 26 with two (2) discontinuities 106 in the ridge 102 on the intermediate section 88 of the tray 26. In the illustrated embodiment, one (1) discontinuity 106 is for a lift rod used with the fixed spout and one (1) discontinuity 106 is for a lift rod used with the swing spout.

[0025] While the tray 26 has been shown and described in the illustrated embodiment as including a ridge 102 that extends around the entire tray 26 near a perimeter 104 of the tray 26 with two (2) discontinuities 106 in the intermediate section 88 of the tray 26, one of ordinary skill in the art will appreciate that the ridge 102 does not need to extend around the entire tray 26, there could be more or less than two (2) discontinuities 106, and a distance of the ridge 102 from the perimeter 104 of the tray 26 could vary. For example, the ridge 102 could only extend around the intermediate section 88 of the tray 26 and not extend around the first opening 90 in the tray 26 and the second opening 96 in the tray 26.
In an exemplary embodiment, the ridge 102 on the tray 26 extends partially around the tray 26. In an exemplary embodiment, the ridge 102 extends around at least twenty percent (20%) of the tray 26. In an exemplary embodiment, the ridge 102 extends around at least forty percent (40%) of the tray 26. In an exemplary embodiment, the ridge 102 extends around at least sixty percent (60%) of the tray 26.

In an exemplary embodiment, the ridge 102 on the tray 26 extends partially around the intermediate section 88 of the tray 26, i.e., between the first opening 90 in the tray 26 and the second opening 96 in the tray 26. In an exemplary embodiment, the ridge 102 extends around at least forty percent (40%) of the intermediate section 88 of the tray 26. In an exemplary embodiment, the ridge 102 extends around at least sixty percent (60%) of the intermediate section 88 of the tray 26. In an exemplary embodiment, the ridge 102 extends around at least eighty-five percent (85%) of the intermediate section 88 of the tray 26.

During assembly of the valve assembly 10, 10', the first valve cartridge 14 and the second valve cartridge 20 are inserted into the first valve body 12 and the second valve body 18, respectively. The first cartridge nut 16 and the second cartridge nut 22 are threaded onto the first valve body 12 and the second valve body 18, respectively. O-rings 108 are placed on the first end 72 and the second end 74 of the bridge 24, 24'. The first end 72 and the second end 74 of the bridge 24, 24' are inserted into the third opening 50 in the first valve body 12 and the third opening 50 in the second valve body 18, respectively. The key 54 of the first valve body 12 and the key 54 of the second valve body 18 are aligned with the first keyway 92 and the second keyway 98 in the tray 26, respectively. The first end section 28 of the first valve body 12 and the first end section 28 of the second valve body 18 are inserted into the first opening 90 and the second opening 96 in the tray 26, respectively, until the intermediate section 32 of the first valve
body 12 and the intermediate section 32 of the second valve body 18 interface with the first opening 90 and the second opening 96 in the tray 26, respectively. Once assembled, the key 54 of the first valve body 12 and the key 54 of the second valve body 18 interface with the first keyway 92 and the second keyway 98 in the tray 26, respectively.

[0029] As the first valve body 12 and the second valve body 18 are inserted into the first opening 90 and the second opening 96 in the tray 26, respectively, an interference press fit is created between the first valve body 12 and the second valve body 18 and the tray 26. More specifically, as the first valve body 12 and the second valve body 18 are inserted into the first opening 90 and the second opening 96 in the tray 26, respectively, the third outer surface 52 of the first valve body 12 and the third outer surface 52 of the second valve body 18 deform the first tabs 94 extending into the first opening 90 and the second tabs 100 extending into the second opening 96, respectively. The deformation of the first tabs 94 and the second tabs 100 includes both elastic (or reversible) deformation and plastic (or irreversible) deformation. As a result of the elastic deformation, a preload is created between the first valve body 12 and the second valve body 18 and the tray 26.

[0030] The valve assembly 10, 10' can be installed as part of a faucet. As shown in Figures 9a-9f, the valve assembly 10 is installed as part of a faucet 110. In an exemplary embodiment, the faucet 110 includes a spout 112, a first handle 114, a second handle 116, and an escutcheon 118. The faucet 110 can be installed on a mounting surface M. The mounting surface M includes a first mounting hole H1 and a second mounting hole H2. The first end section 28 of the first valve body 12 and the first end section 28 of the second valve body 18 are inserted into the first mounting hole H1 and the second mounting hole H2 in the mounting surface M, respectively, until the intermediate section 32 of the first valve body 12 and the
intermediate section 32 of the second valve body 18 interface with the first mounting hole H1 and the second mounting hole H2 in the mounting surface M, respectively. The faucet 110 is installed over the valve assembly 10. More specifically, the escutcheon 118 is installed over the entire valve assembly 10, the spout 112 is installed over the outlet 82 of the bridge 24, the first handle 114 is installed over the first valve cartridge 14, and the second handle 116 is installed over the second valve cartridge 20. In the installed state, the tray 26 does not contact the mounting surface M.

[0031] One of ordinary skill in the art will now appreciate that the present invention provides a valve assembly for a faucet that provides a rigid mounting for valve bodies. Although the present invention has been shown and described with reference to particular embodiments, equivalent alterations and modifications will occur to those skill in the art upon reading and understanding this specification. The present invention includes all such equivalent alterations and modifications and is limited only by the scope of the following claims in light of their full scope of equivalents.
CLAIMS

What is claimed is:

1. A valve assembly for a faucet, comprising:

   a first valve body, the first valve body including a first end section and a second end section, the first end section including a first opening, the first opening being operable to fluidly connect to a water supply, the second end section including a second opening, the second opening being operable to receive a valve cartridge, the first valve body including a passageway extending between the first opening and the second opening, the first valve body including a third opening between the first end section and the second end section, the third opening being in fluid communication with the passageway, the first valve body including a key extending outwardly therefrom between the first end section and the second end section;

   a second valve body, the second valve body including a first end section and a second end section, the first end section including a first opening, the first opening being operable to fluidly connect to a water supply, the second end section including a second opening, the second opening being operable to receive a valve cartridge, the second valve body including a passageway extending between the first opening and the second opening, the second valve body including a third opening between the first end section and the second end section, the third opening being in fluid communication with the passageway, the second valve body including a key extending outwardly therefrom between the first end section and the second end section; and

   a tray, the tray including a first end section, a second end section, and an intermediate section, the first end section including a first opening, the tray including a first keyway extending outwardly from the first opening, the first opening being operable to receive the first valve body with the first keyway in the tray being operable to receive the key on the first valve body, the

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second end section including a second opening, the tray including a second keyway extending outwardly from the second opening, the second opening being operable to receive the second valve body with the second keyway in the tray being operable to receive the key on the second valve body, the intermediate section extending between the first opening and the second opening, the tray including a ridge, the ridge extending around a portion of the intermediate section of the tray.

2. The valve assembly of claim 1, wherein the ridge extends around at least forty percent of the intermediate section of the tray.

3. The valve assembly of claim 1, wherein the ridge extends around at least sixty percent of the intermediate section of the tray.

4. The valve assembly of claim 1, wherein the ridge extends around at least eighty-five percent of the intermediate section of the tray.

5. The valve assembly of claim 1, wherein the tray includes a tab extending into at least one of the first opening and the second opening.

6. The valve assembly of claim 1, wherein:
   the first end section of the first valve body includes a first outer surface, the first outer surface including structure operable to secure the first valve body from below a mounting surface;
the second end section of the first valve body includes a second outer surface, the second outer surface including structure operable to secure the first valve body from above the mounting surface;

the first end section of the second valve body includes a first outer surface, the first outer surface including structure operable to secure the second valve body from below the mounting surface; and

the second end section of the second valve body includes a second outer surface, the second outer surface including structure operable to secure the second valve body from above the mounting surface.

7. The valve assembly of claim 1, further including a bridge, the bridge including a first end and a second end, the first end including a first opening, the first opening being operable to fluidly connect to the third opening in the first valve body, the second end including a second opening, the second opening being operable to fluidly connect to the third opening in the second valve body, the bridge including a passageway extending between the first opening and the second opening, the bridge including an outlet between the first end and the second end, the outlet being in fluid communication with the passageway, the outlet being operable to fluidly connect and supply water to a spout of a faucet.

8. A valve assembly for a faucet, comprising:

a first valve body, the first valve body including a first end section and a second end section, the first end section including a first opening, the first opening being operable to fluidly connect to a water supply, the second end section including a second opening, the second
opening being operable to receive a valve cartridge, the first valve body including a passageway extending between the first opening and the second opening, the first valve body including a third opening between the first end section and the second end section, the third opening being in fluid communication with the passageway, the first valve body including a key extending outwardly therefrom between the first end section and the second end section;

a second valve body, the second valve body including a first end section and a second end section, the first end section including a first opening, the first opening being operable to fluidly connect to a water supply, the second end section including a second opening, the second opening being operable to receive a valve cartridge, the second valve body including a passageway extending between the first opening and the second opening, the second valve body including a third opening between the first end section and the second end section, the third opening being in fluid communication with the passageway, the second valve body including a key extending outwardly therefrom between the first end section and the second end section; and

a tray, the tray including a first end section, a second end section, and an intermediate section, the first end section including a first opening, the tray including a first keyway extending outwardly from the first opening, the first opening being operable to receive the first valve body with the first keyway in the tray being operable to receive the key on the first valve body, the second end section including a second opening, the tray including a second keyway extending outwardly from the second opening, the second opening being operable to receive the second valve body with the second keyway in the tray being operable to receive the key on the second valve body, the intermediate section extending between the first opening and the second opening, the tray including a ridge, the ridge extending around at least forty percent of the intermediate section of the tray.
9. The valve assembly of claim 8, wherein the ridge extends around at least sixty percent of the intermediate section of the tray.

10. The valve assembly of claim 8, wherein the ridge extends around at least eighty-five percent of the intermediate section of the tray.

11. The valve assembly of claim 8, wherein the tray includes a tab extending into at least one of the first opening and the second opening.

12. The valve assembly of claim 8, wherein:

   the first end section of the first valve body includes a first outer surface, the first outer surface including structure operable to secure the first valve body from below a mounting surface;

   the second end section of the first valve body includes a second outer surface, the second outer surface including structure operable to secure the first valve body from above the mounting surface;

   the first end section of the second valve body includes a first outer surface, the first outer surface including structure operable to secure the second valve body from below the mounting surface; and

   the second end section of the second valve body includes a second outer surface, the second outer surface including structure operable to secure the second valve body from above the mounting surface.
13. The valve assembly of claim 8, further including a bridge, the bridge including a first end and a second end, the first end including a first opening, the first opening being operable to fluidly connect to the third opening in the first valve body, the second end including a second opening, the second opening being operable to fluidly connect to the third opening in the second valve body, the bridge including a passageway extending between the first opening and the second opening, the bridge including an outlet between the first end and the second end, the outlet being in fluid communication with the passageway, the outlet being operable to fluidly connect and supply water to a spout of a faucet.

14. A valve assembly for a faucet, comprising:

   a first valve body, the first valve body including a first end section and a second end section, the first end section including a first opening, the first opening being operable to fluidly connect to a water supply, the second end section including a second opening, the second opening being operable to receive a valve cartridge, the first valve body including a passageway extending between the first opening and the second opening, the first valve body including a third opening between the first end section and the second end section, the third opening being in fluid communication with the passageway, the first valve body including a key extending outwardly therefrom between the first end section and the second end section;

   a second valve body, the second valve body including a first end section and a second end section, the first end section including a first opening, the first opening being operable to fluidly connect to a water supply, the second end section including a second opening, the second opening being operable to receive a valve cartridge, the second valve body including a passageway extending between the first opening and the second opening, the second valve body
including a third opening between the first end section and the second end section, the third opening being in fluid communication with the passageway, the second valve body including a key extending outwardly therefrom between the first end section and the second end section; and

a tray, the tray including a first end section, a second end section, and an intermediate section, the first end section including a first opening, the tray including a first keyway extending outwardly from the first opening, the first opening being operable to receive the first valve body with the first keyway in the tray being operable to receive the key on the first valve body, the second end section including a second opening, the tray including a second keyway extending outwardly from the second opening, the second opening being operable to receive the second valve body with the second keyway in the tray being operable to receive the key on the second valve body, the intermediate section extending between the first opening and the second opening, the tray including a ridge, the ridge extending around at least thirty-five percent of the tray.

15. The valve assembly of claim 14, wherein the ridge extends around at least forty-five percent of the tray.

16. The valve assembly of claim 14, wherein the ridge extends around at least fifty-five percent of the tray.

17. The valve assembly of claim 14, wherein the ridge extends around at least sixty-five percent of the intermediate section of the tray.
18. The valve assembly of claim 14, wherein the ridge extends around at least seventy-five percent of the intermediate section of the tray.

19. The valve assembly of claim 14, wherein the ridge extends around at least eighty-five percent of the intermediate section of the tray.

20. The valve assembly of claim 14, wherein the tray includes a tab extending into at least one of the first opening and the second opening.