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Harris et al.

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(54) **SYSTEMS AND METHODS FOR MODULAR SINK WITH RAPID INSTALLATION**

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E03C 1/182 (2006.01)

(52) **U.S. Cl.**
CPC ***E03C 1/33*** (2013.01); ***E03C 1/182*** (2013.01)

(58) **Field of Classification Search**
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USPC D23/284–287, 290, 293.1
See application file for complete search history.

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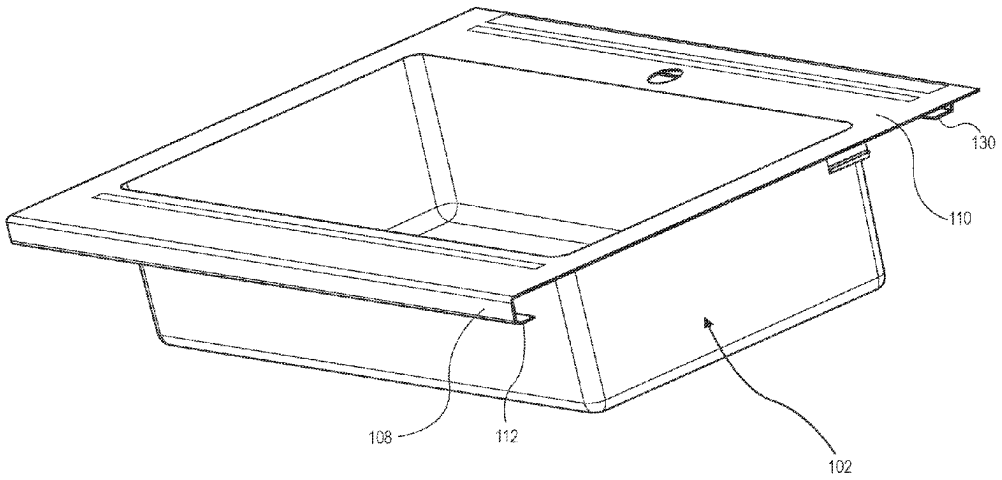
(57) **ABSTRACT**

Systems and methods for rapid installation of modular sinks into cabinetry are described. In an embodiment, a sink system includes a sink basin including a rim sized and dimensioned to extend from a back surface of a countertop of the cabinet system to beyond a front surface of the countertop. At least a portion of the sink basin is sized and dimensioned to fit between a first cut extending from the back surface of the countertop to the front surface of the countertop and a second cut extending from the back surface of the countertop to the front surface of the countertop. The sink basin includes a front portion angled downward from the rim to cover at least a portion of the front surface of the countertop. The sink basin including a lip extending outwardly from a bottom portion of the front portion.

12 Claims, 8 Drawing Sheets



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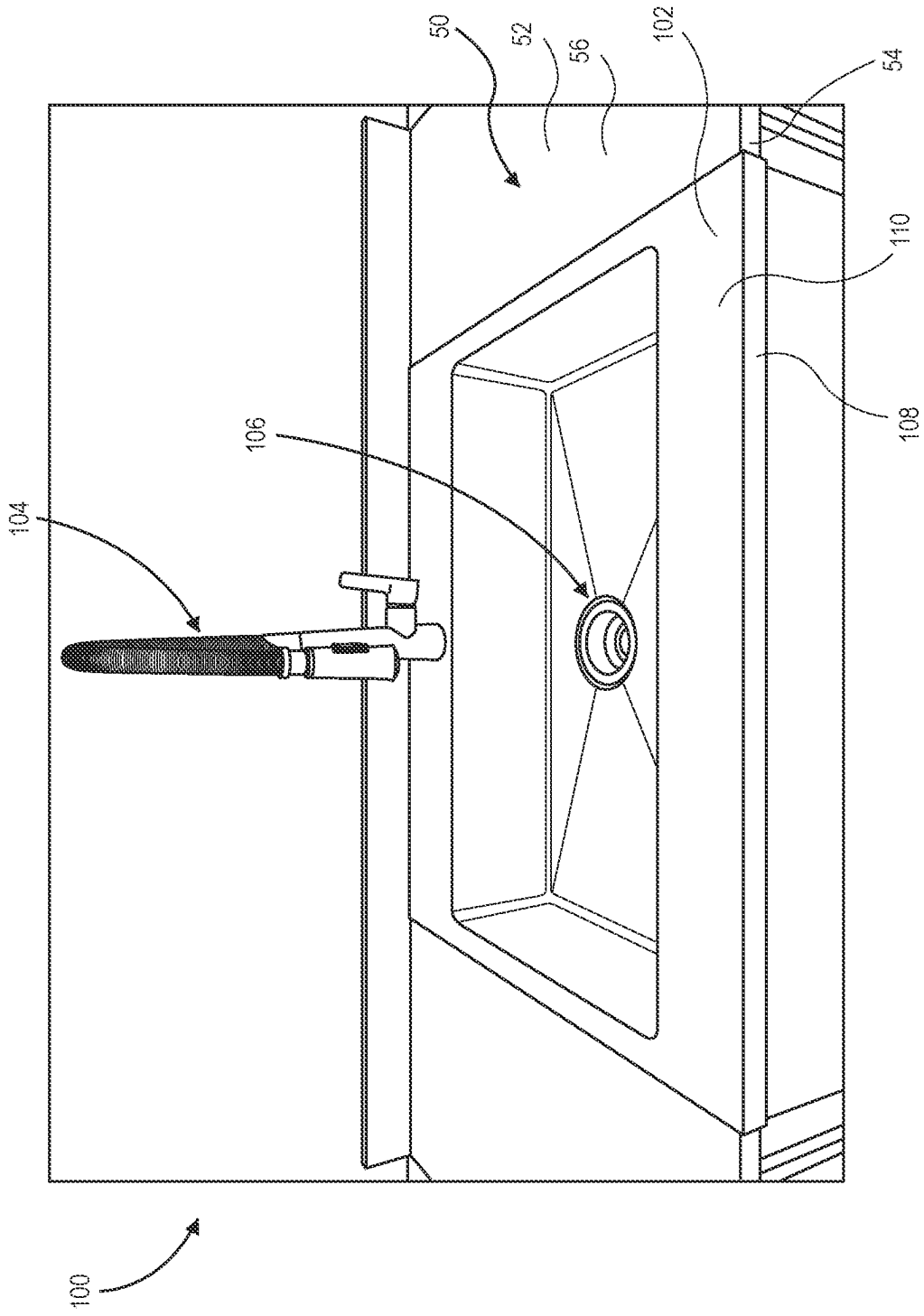

FIG. 1

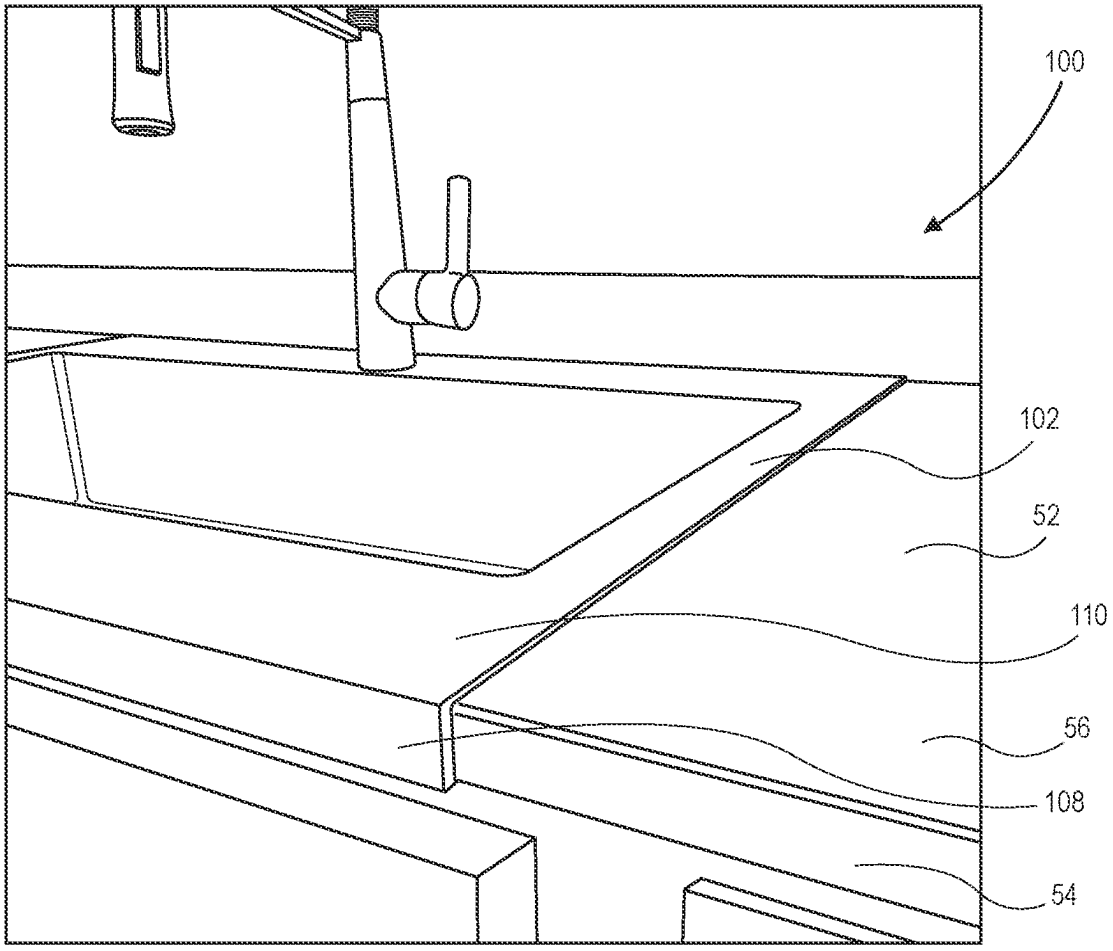

FIG. 2

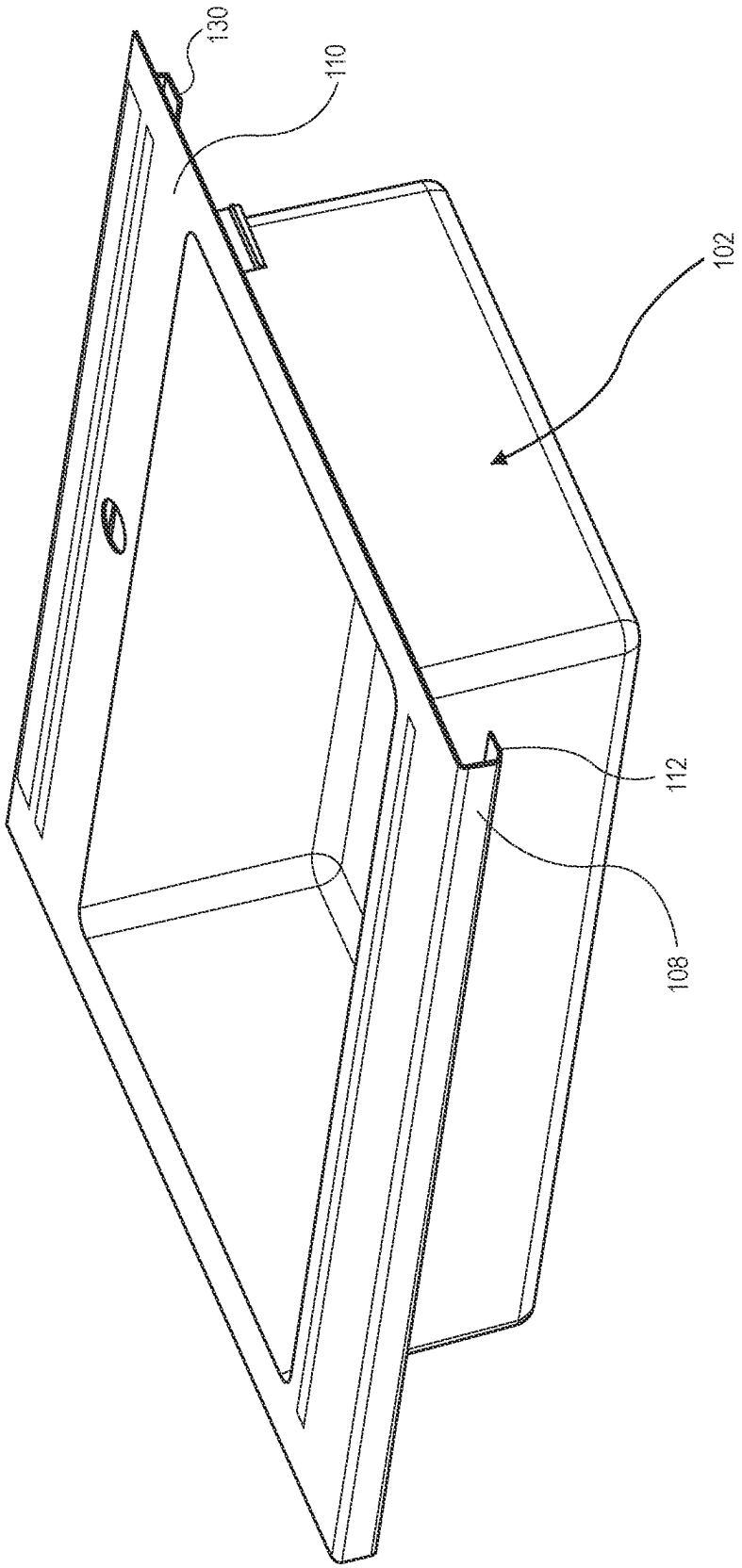

FIG. 3

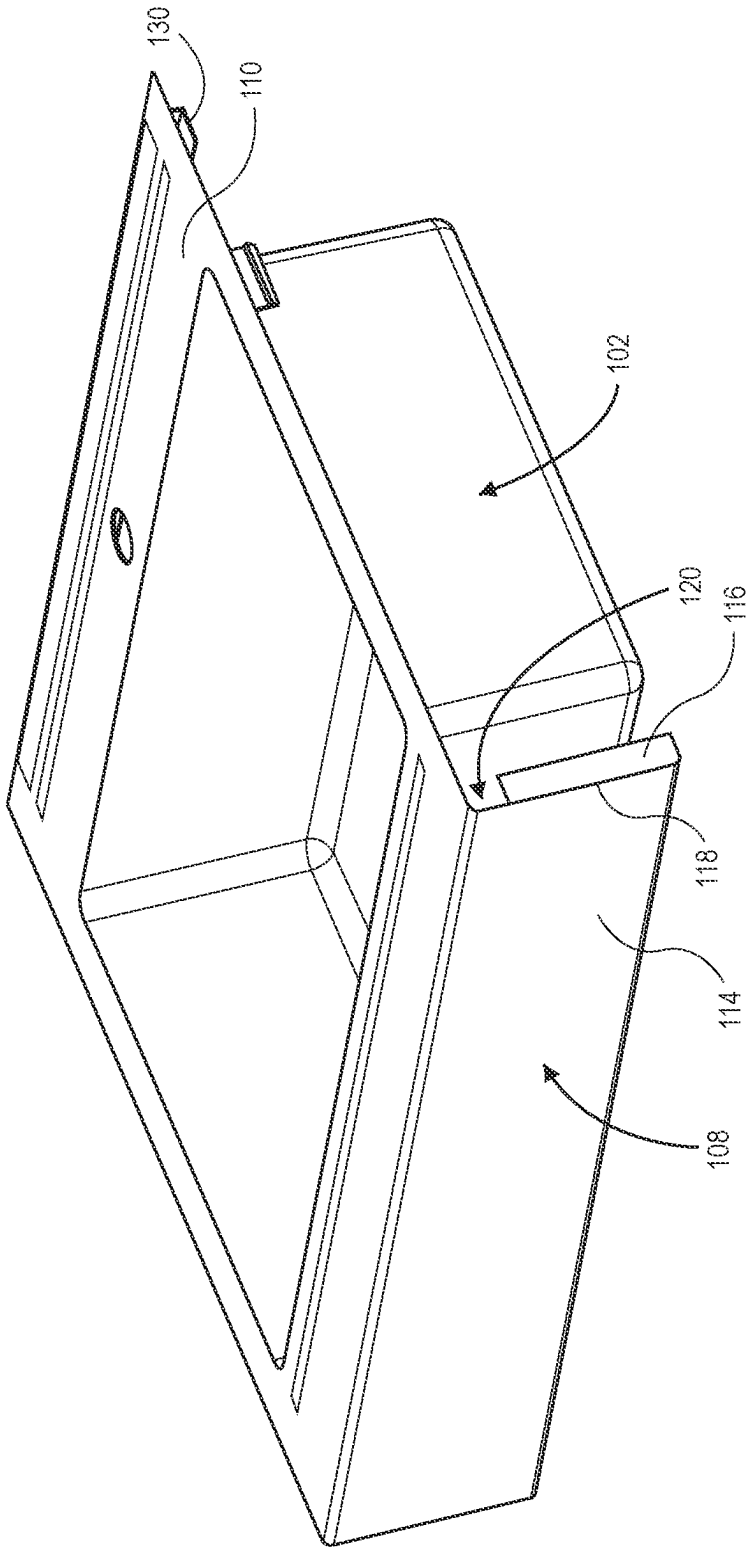

FIG. 4

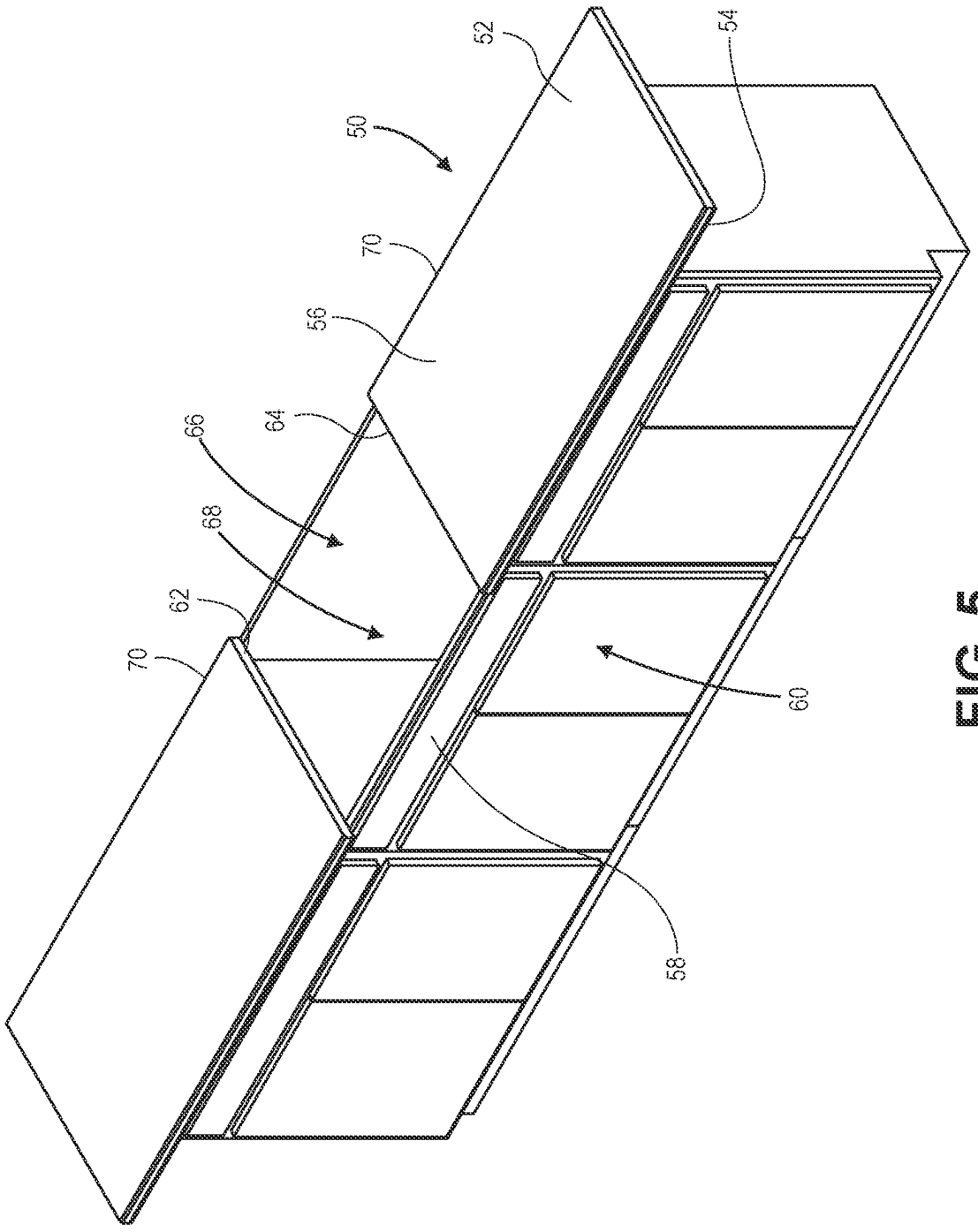

FIG. 5

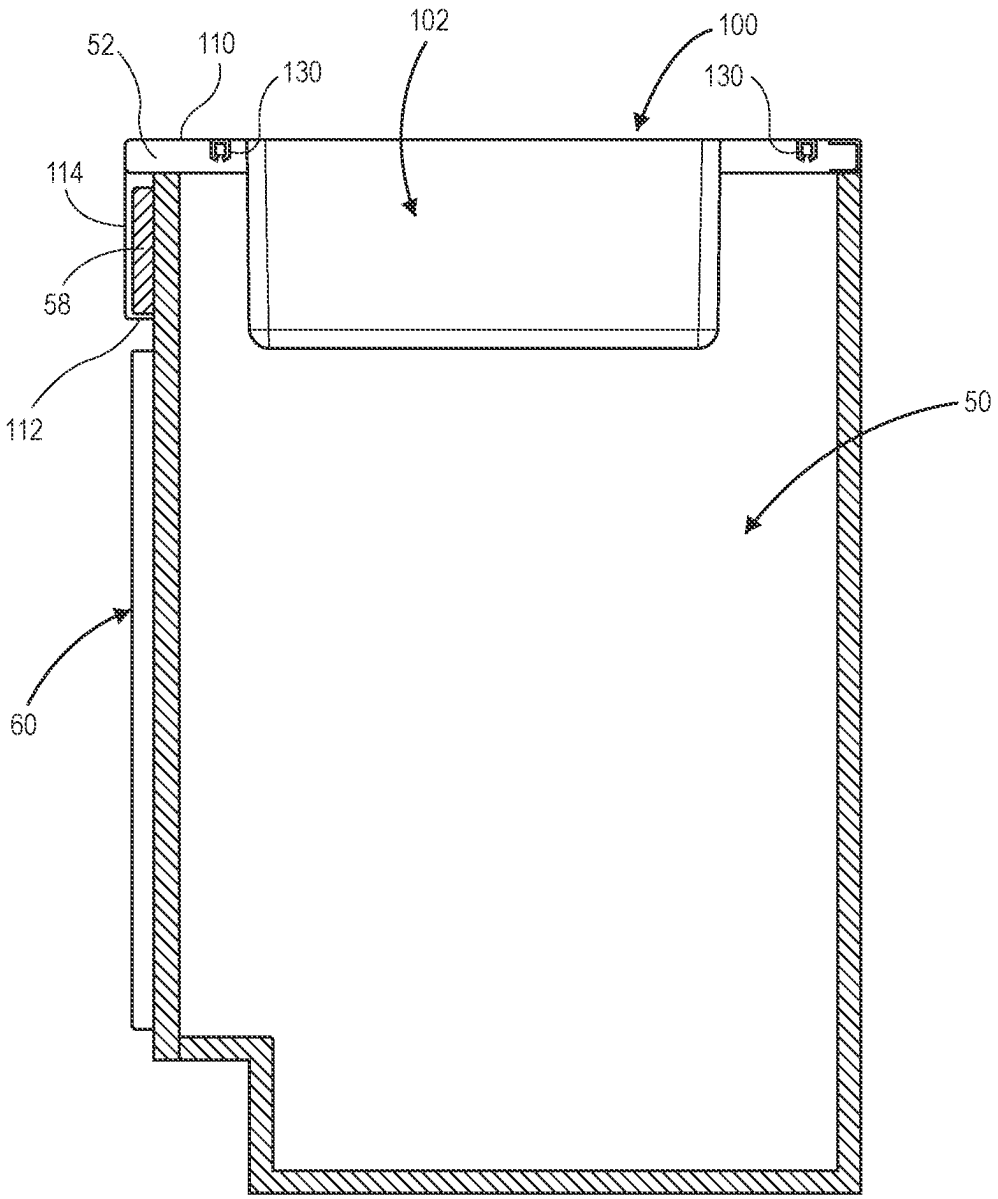

FIG. 6

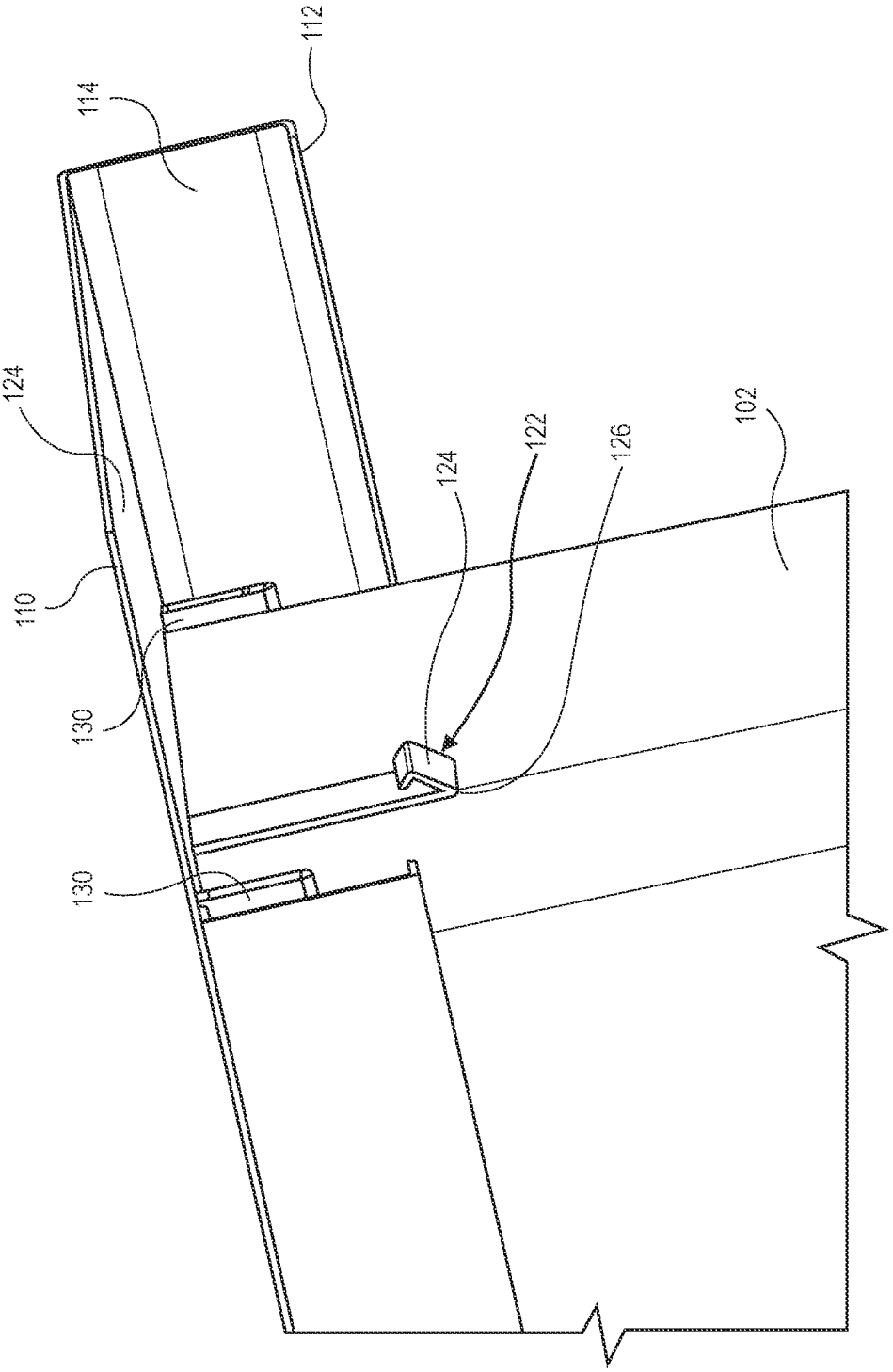

FIG. 7

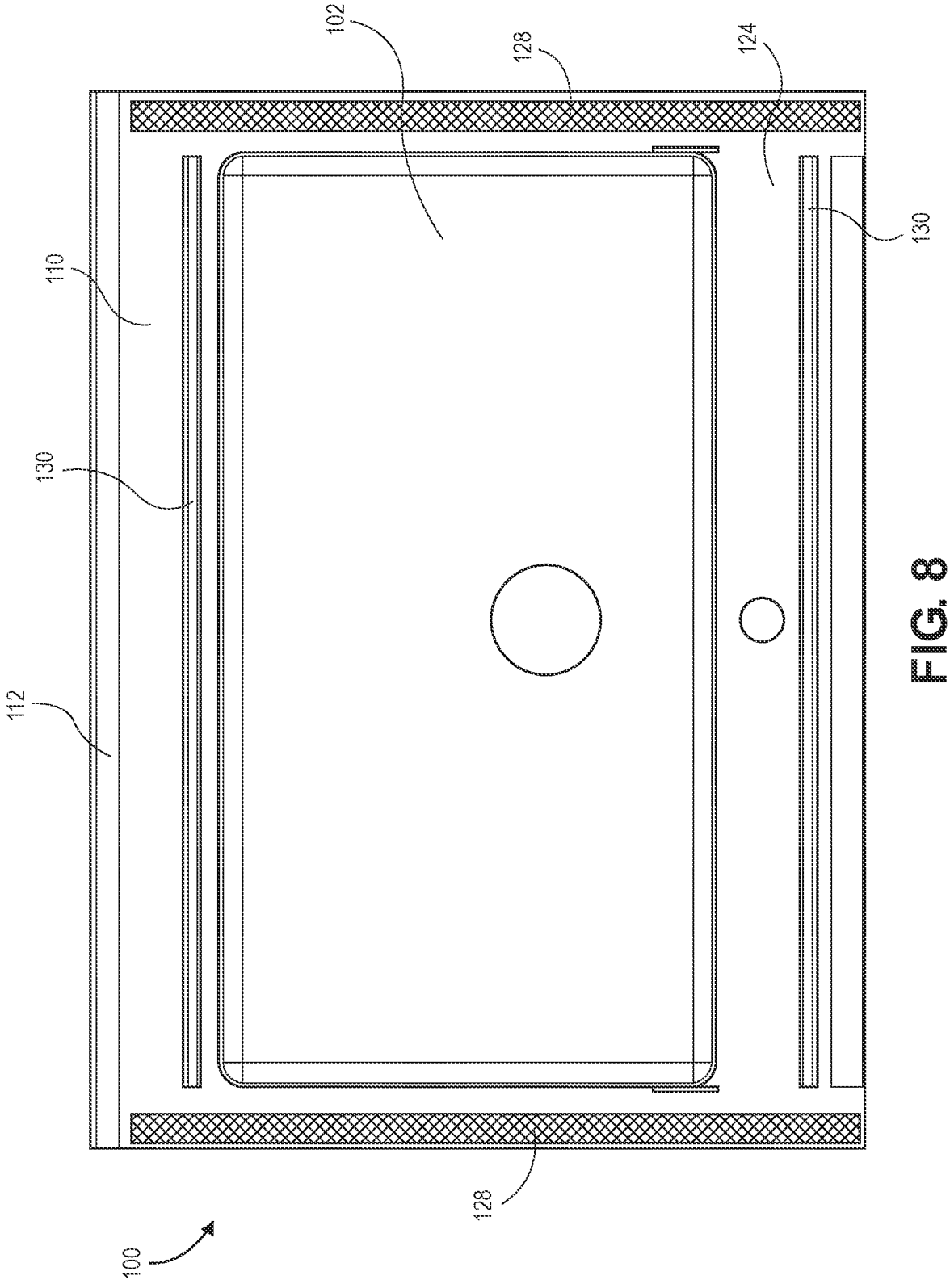

FIG. 8

SYSTEMS AND METHODS FOR MODULAR SINK WITH RAPID INSTALLATION

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims the benefit under 35 U.S.C. § 119(e) of U.S. Provisional Application Ser. No. 63/155,363, entitled SYSTEMS AND METHODS FOR MODULAR SINK WITH RAPID INSTALLATION, filed Mar. 2, 2021. U.S. Provisional Application Ser. No. 63/155,363 is hereby incorporated by reference in its entirety.

BACKGROUND

Sinks can include basins with water faucets mounted to the basin or in proximity thereto. The basins can be mounted to a wall, positioned on a pedestal, or supported by cabinets or cabinet systems. Installation of the basins into cabinetry can involve cutting one or more holes into the surface of the cabinets and applying a sealant between the basin and the cabinet surface.

SUMMARY

This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key and/or essential features of the claimed subject matter. Also, this Summary is not intended to limit the scope of the claimed subject matter in any manner.

Aspects of the disclosure pertain to systems and methods for rapid installation of modular sinks into cabinetry. In one aspect, a sink system includes a sink basin including a rim sized and dimensioned to extend from a back surface of a countertop of the cabinet system to beyond a front surface of the countertop. At least a portion of the sink basin is sized and dimensioned to fit between a first cut extending from the back surface of the countertop to the front surface of the countertop and a second cut extending from the back surface of the countertop to the front surface of the countertop. The sink basin includes a front portion angled downward from the rim to cover at least a portion of the front surface of the countertop. The sink basin including a lip extending outwardly from a bottom portion of the front portion.

In one aspect, a method for installing a modular sink system into a cabinet system includes, but is not limited to, cutting a first cut into a countertop of a cabinet system, the first cut extending from a front surface of the countertop to a back surface of the countertop; cutting a second cut into the countertop, the second cut extending from the front surface of the countertop to the back surface of the countertop, the second cut spaced apart from the first cut; removing a portion of the countertop defined between the first cut and the second cut to form an aperture in the countertop; introducing a sink basin of a modular sink system into the aperture, the sink basin supported by a rim interacting with the countertop at the first cut and the second cut; and overlapping the front surface of the countertop with a front portion angled downward from the rim to cover at least a portion of the front surface of the countertop, the front portion including a lip extending outwardly from a bottom portion of the front portion to interface with a bottom surface of the countertop adjacent the front surface.

DRAWINGS

The Detailed Description is described with reference to the accompanying figures. In the figures, the use of the same reference numbers in different instances in the description and the figures may indicate similar or identical items.

FIG. **1** is a perspective view of a modular sink system in accordance with example implementations of the present disclosure.

FIG. **2** is an isometric view of the modular sink system of FIG. **1**, shown with a front portion interfacing with a cabinet countertop.

FIG. **3** is an isometric view of a sink basin of a modular sink system in accordance with example implementations of the present disclosure.

FIG. **4** is an isometric view of a farmhouse style sink basin of a modular sink system in accordance with example implementations of the present disclosure.

FIG. **5** is an isometric view of a cabinet system having two parallel cuts made in a cabinet countertop to prepare for installation of a modular sink system in accordance with example implementations of the present disclosure.

FIG. **6** is a cross-sectional side view of a modular sink system installed into a cabinet system, with a front portion of the modular sink system interfacing with a false drawer front of the cabinet system.

FIG. **7** is a partial perspective view of the modular sink system of FIG. **4**, showing a side clip configured to interface with a cabinet countertop.

FIG. **8** is a bottom view of the modular sink system of FIG. **4**, showing an adhesive configured to adhere to a top surface of a cabinet countertop.

DETAILED DESCRIPTION

Features of the detailed description can be embodied in many different forms and should not be construed as limited to the combinations set forth herein; rather, these combinations are provided so that this disclosure will be thorough and complete, and will fully convey the scope. Among other things, the features of the disclosure can be embodied as modular sink systems and installation methods for modular sink systems. The following detailed description is, therefore, not to be taken in a limiting sense.

Installation of a sink basin and faucet for a sink can be a time intensive process. For installation within a cabinet system (e.g., into a countertop of the cabinet), an installation process can generally include: measuring the sink basin, marking an outline or dimensions in the countertop of the cabinet, cutting a hole into an upper surface of the cabinet system matching the outline or dimensions, setting the basin into the hole, installing faucets and other components onto the basin, applying a sealant to the underside of the basin to interact with the hole, aligning the sealed basin back into the hole, aligning and installing hardware and fasteners to secure the basin with respect to the countertop, applying a sealant to an edge of the basin along the top surface of the countertop, and the like. Many of these steps can be cumbersome during initial installation or during installation of a replacement sink into an existing countertop. For instance, a jigsaw or other tool can be utilized to cut the opening into the countertop, but such cutting can require precision handling by the operator to cut ovals, rectangles, squares, or other opening shapes. Additionally, applying sealant to the sink basin, such as on an underside of the sink basin (e.g., to interface with the top or side of the countertop) or between the edge of the sink and the top of the countertop can require precise and even application to avoid sealant from seeping, spilling, or otherwise providing a mess.

Accordingly, the present disclosure is directed, at least in part, to systems and methods for rapid installation of modu-

lar sinks into cabinetry. In an aspect, installation of a modular sink system involves two straight cuts into a cabinet countertop of a cabinet system to provide an aperture into which a sink basin is inserted. The two straight cuts can be substantially parallel cuts from a front of the cabinet countertop to the back of the cabinet countertop or from the back of the cabinet countertop to the front of the cabinet countertop to remove a section of the countertop between the two cuts. Alternatively, the cabinet system can be initially designed to include an opening extending substantially through from a front edge of the cabinet system to a back edge of the cabinet system. The modular sink system includes a front portion that interfaces with a front surface of the cabinet countertop, a false front of the cabinet system, or combinations thereof, and a side portion to overhang the top surface of the cabinet countertop to support the modular sink system on the cabinet countertop with the sink basin within the countertop interior beneath the section removed via the two cuts. The front portion defines an aperture or gap into which a portion of the countertop can rest following installation of the sink basin onto the cabinet and provides a seamless installation appearance from the front and top of the cabinet.

The modular sink system can also include adhesive strips to secure and seal the sink basin onto the cabinet countertop while ensuring proper adhesive coverage on the sink system without concern for messy adhesive application. The adhesive strips can include removable covers that can be removed just prior to installation to avoid unwanted application of adhesive to countertop surfaces. In implementations, the modular sink system includes one or more clips projecting from a bottom surface of a rim of the sink basin, where the one or more clips are configured to secure against an edge of the cabinet countertop where the straight cuts were made or where edges of the cabinet countertop that form the opening for the sink basin are located. Thus, while the modular sink system employs simple cabinet preparation for receiving the sink basin (e.g., via two cuts), the modular sink system maintains securing fitting within the cabinet system to provide a convenient and simple installation process with proper sealing against and within the cabinet.

Example Implementations

Referring to FIGS. **1-8**, a modular sink system **100** is shown in accordance with example implementations of the present disclosure. The sink system **100** is configured for rapid installation into a cabinet system **50** having a countertop **52**. For example, the countertop **52** can be prepared for installation of the sink system **100** through two cuts into the countertop **52**, described further herein, to remove a section of the countertop therebetween, with the sink system **100** supported on top of the countertop **52** and within the cabinet system **50** beneath the removed section of countertop **52**. The sink system **100** is shown generally having a sink basin **102** to engage with one or more features of the cabinet system **50**, such as the countertop **52** and edges thereof, including but not limited to, front edges (e.g., facing a user of the sink basin **102**), interior edges (e.g., facing towards the sink basin **102**), or the like. The sink system **100** can include one or more features including, but not limited to, a faucet **104**, a drain **106**, and combinations thereof. The faucet **104** is configured for coupling to a water supply line or lines to provide access to water for the sink system **100**. The drain **106** provides an interface between the sink system **100** and a plumbing drainpipe, a garbage disposal system, or combinations thereof. In implementations, the sink system **100** includes each of the faucet **104** and the drain **106** integrated with portions of the sink basin **102**. In other implementations, the sink system **100** includes the drain **106** integrated with the sink basin **102**, whereas the faucet **104** is separated from the sink basin **102** (e.g., installed separately from the sink system **100**).

Referring to FIG. **2**, the sink system **100** is shown with the sink basin **102** including a front portion **108** that interfaces with a front surface **54** of the countertop **52**. For example, the front portion **108** can be angled downward from a rim portion **110** of the sink basin **102** to cover at least a portion of the front surface **54** of the countertop **52**. In general, the sink basin **102** interfaces with the front surface **54** of the countertop **52** at opposing sides of the rim portion **110**, with a gap in the front surface **54** of the countertop **52** present from removal of a section of the countertop **52** in preparation to receive the sink system **100**. When the sink basin **102** is installed into cabinet system **50**, the front portion **108** covers the gap present in the front surface **54** of the countertop **52**. In implementations, the front portion **108** is arranged substantially perpendicularly with respect to the rim portion **110** of the sink basin **102** to match a rectangular edge of a transition between a top surface **56** of the countertop **52** and the front surface **54** of the countertop **52**. Alternatively, the sink basin **102** can include one or more transition portions between the rim portion **110** and the front portion **108**, such as to conform to non-rectangular edges of the countertop **52**, such as for beveled edges, sloped edges, rounded edges, irregular edges, or the like.

In implementations, an example of which is shown in FIG. **3**, the front portion **108** includes a lip **112** extending from a bottom of the front portion **108** in the direction towards the sink basin **102**. For instance, the front portion **108** can extend downwards from the rim portion **110** of the sink basin **102** at a top of the front portion **108** with the lip **112** extending outwards from the bottom towards the sink basin **102** and distal the top of the front portion **108**. The lip **112** can interface with a bottom surface of the countertop **52** (e.g., shown in FIG. **2**) to secure the sink basin **102** against the countertop **52** by preventing upward motion of the sink basin **102** due to interaction between the lip **112** and the countertop **52**. For example, the lip **112**, the front portion **108**, and the rim portion **110** together can form an aperture into which a portion of the countertop **52** can rest following installation of the sink basin **102** onto the cabinet system **50** (e.g., resting against an interior surface defined by one or more of the lip **112**, the front portion **108**, and the rim portion **110**).

Alternatively or additionally, the front portion **108** can include an extension **114** (e.g., shown in FIG. **4**) configured to cover an upper portion of a front side of the cabinet system **50**. The extension **114** can include one or more tabs **116** extending along a side edge **118** of the extension **114** in a direction towards the sink basin **102**. The extension **114** and tabs **116** can provide a farmhouse-style façade for the sink system **100** without requiring removal of base portions of the cabinet system **50**. For example, the extension **114** can at least substantially cover a false drawer front **58** (e.g., shown in FIG. **5**) of a front side **60** of the cabinet system **50** to provide a farmhouse-style sink basin without removal of the false drawer front **58** or other portion of the front side **60** of the cabinet system **50**. In implementations, the tabs **116** are spaced from the rim portion **110** by a gap **120** sized and dimensioned to receive the front surface **54** of the countertop **52** into the gap **120**. For example, the gap **120** can be sized and dimensioned similar to, or the same as, the aperture

formed by the lip **112**, the front portion **108**, and the rim portion **110** described with reference to FIG. **3**.

Referring to FIG. **5**, the cabinet system **50** is shown prior to installation of the sink system **100**. The cabinet system **50** is shown including a first cut **62** through the top surface **56** of the countertop **52** and a second cut **64** through the top surface **56** of the countertop **52** to form an aperture **66** through the countertop **52** to provide access to an interior region **68** of the cabinet system **50** between the first cut **62** and the second cut **64**. The cuts **62**, **64** can be made with any suitable carpentry or masonry cutting tool including, but not limited to, circular saws, jigsaws, reciprocating saws, carpenter saws, undercut saws, and the like. The interior region **68** can house plumbing equipment for connection to the sink system **100**, such as water lines, drain lines, garbage disposal systems, the like. In implementations, the first cut **62** and the second cut **64** are substantially parallel to provide a rectangular aperture **66** into which at least a portion of the sink basin **102** fits. Alternatively or additionally, in implementations, the first cut **62** and the second cut **64** extend from the front surface **54** of the countertop **52** to a back surface **70** of the countertop **52**, such that the aperture **66** displaces the entirety of the countertop **52** between the first cut **62** and the second cut **64**. For example, during installation of the sink system **100** into the cabinet system **50**, a user can create the aperture **66** by making two sole cuts along straight lines, without need for non-linear cuts that require significant precision of the cutting tool. Alternatively, the cabinet system **50** can be initially designed to include the aperture **66** extending substantially through from the front surface **54** of the countertop **52** to the back surface **70** of the countertop **52** without additional cuts utilized for installation of the sink system **100**.

Referring to FIG. **6**, the sink system **100** is shown installed into the cabinet system **50**, with the rim portion **110** supported on the countertop **52** and with the extension **114** interfacing with the front surface **54** of the countertop **52** and extending downwards past the countertop **52** to cover the false drawer front **58**, with the lip **112** extended along the bottom surface of the false drawer front **58**. In implementations, the sink system **100** includes one or more clips **122** (e.g., shown in FIG. **7**) projecting from a bottom surface **124** of the rim **110** of the sink basin **102**. The one or more clips **122** facilitate securing the sink system **100** within the cabinet system **50** once installed into the aperture **66** by engaging the clips **122** against the countertop **52**. For example, the clips **122** are configured to secure against an edge of the cabinet countertop **52** where the straight cuts **62** and **64** were made. In implementations, the clips **122** include an angled portion **124** that extends upwardly from a bottom portion **126** of the clips **122** to facilitate introduction of the clips **122** into the aperture **66** by pressing the angled portion **124** against the edge of the countertop **52** at the straight cut **62** or **64** and to press against the bottom surface of the countertop **52**. Alternatively or additionally, the clips **122** can include the angled portion **124** or another angled portion at an intermediate portion along the portion of the clip **122** extending from the rim **110** (e.g., above the bottom portion **126**). While FIG. **7** shows one clip **122**, the sink system **100** is not limited to a single clip **122** on one portion of the rim **100**, and the sink system **100** can include multiple clips **122** on one side of the sink basin **102**, multiple clips **122** on multiple sides of the sink basin **102**, and the like.

In implementations, the sink system **100** incorporates one or more adhesive materials directly on the rim **110** or other portion of the sink system **100** to provide a rapid mechanism for sealing the sink system **100** onto the countertop **52**. For example, referring to FIG. **8**, the sink system **100** includes adhesive strips **128** positioned on the bottom surface **124** of the sink basin **102**. While the sink system **100** is shown with two adhesive strips **128** positioned at opposing sides of the bottom surface **124** of the sink basin **102**, the sink system **100** is not limited to two adhesive strips **128** or to such positioning of the adhesive strips **128**. For instance, the sink system **100** can include one adhesive strip **128** or more than two adhesive strips **128**. In implementations, the adhesive strips **128** can include a cover configured to be peeled off to expose the adhesive, where during installation, the sink basin **102** is introduced to the aperture **66** with the cover on the adhesive strips **128**. Once the sink basin **102** is positioned with respect to the countertop **52**, the cover can be removed, exposing the adhesive on the adhesive strips **128** to interface with the top surface **56** of the countertop **52**. Such configuration can avoid seepage of sealant or other problems experienced with introducing sealants, such as caulking materials, to the sink basin **102** during or following installation.

The sink system **100** can include support structure to facilitate placement of the sink system **100** in the cabinet system spanning across the aperture **66**. For example, the sink system **100** is shown including a support bar **130** coupled to the bottom surface **124** of the sink basin **102** and extending along the width of the rim **110** to structurally support the sink system **100** as the rim **110** spans from one side of the countertop **52** to the other side of the countertop **52**. The sink system **100** can include one or more support bars **130** with various orientations on the rim **110**, sink basin **102**, or other portion(s) of the sink system **100**, where such number and arrangement of support bars **130** can depend on the partial size and shape of the sink system **100**.

An example installation process for the sink system **100** can include preparing a cabinet system **50** to receive the sink basin **102** by making two cuts into the cabinet countertop **52**. For example, the countertop **52** can be cut with two straight cuts (e.g., the first cut **62** and the second cut **64**) to form the aperture **66** in the countertop **52**. In general, the two straight cuts can be substantially parallel (e.g., within about 15 degrees relative to each other) to provide a rectangular aperture **66** through the countertop **52** upon removal of the section of countertop **52** between the cuts. For instance, removal of the section of countertop **52** between the cuts provides a gap in the front surface **54** of the countertop **52** between the first cut **62** and the second cut **64** which will be covered by the front portion **108** of the sink system **100**. Such cabinet preparation avoids laborious and time-consuming process of precise sawing of various shapes through the top surface **56** of the countertop **52** (e.g., ovals, rectangles, squares, or other opening shapes) that is required for traditional sink systems. When the aperture **66** is formed in the cabinet system, a user can lower the sink system **100** onto the cabinet system **50** with the sink basin **102** being introduced to the aperture **66** and into the interior region **68** of the cabinet system **50** between the first cut **62** and the second cut **64**, with the rim portion **110** resting on the top surface **56** of the countertop **52**, with the front portion **108** interfacing with the front surface **54** of the countertop **52**, and with the lip **112** secured against the bottom surface of the countertop **52**. The sink system **100** can include the faucet **104** and the drain **106** secured to the sink basin **102** prior to installation into the cabinet system **50**. Alternatively, one or more of the faucet **104** and the drain **106** can be installed onto the sink basin **102** following installation into the cabinet system **50**. Once the sink basin **102** is supported by the top surface **56** of the countertop **52**, the covers of the adhesive strips **128** can be

removed to expose the adhesive to the top surface **56** of the countertop **52** to secure the sink system **100** with respect to the cabinet system **50**.

CONCLUSION

Although the subject matter has been described in language specific to structural features and/or process operations, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described above. Rather, the specific features and acts described above are disclosed as example forms of implementing the claims.

The invention claimed is:

1. A modular sink system for installation into a cabinet system, comprising:

a sink basin including a rim sized and dimensioned to extend from a back surface of a countertop of the cabinet system to beyond a front surface of the countertop, at least a portion of the sink basin sized and dimensioned to fit into an aperture of the cabinet system defined between a first cut extending from the back surface of the countertop to the front surface of the countertop and a second cut extending from the back surface of the countertop to the front surface of the countertop, the sink basin including a front portion angled downward from the rim to cover at least a portion of the front surface of the countertop, the sink basin including a lip extending outwardly from a bottom portion of the front portion in a direction towards the portion of the sink basin sized and dimensioned to fit between the first cut and the second cut, the lip, the front portion, and the rim forming an aperture into which the countertop can fit at each of the first cut and the second cut, the lip configured to interface with a bottom surface of the countertop to secure the sink basin against the countertop by preventing upward motion of the sink basin due to interaction between the lip and the countertop, wherein the rim extends outwardly along a plane to terminate in an edge on the plane configured to rest on each of the back surface of the countertop and the front surface of the countertop extending beyond one of the first cut and the second cut.

2. The modular sink system of claim **1**, wherein the front portion includes an extension configured to cover at least a portion of the cabinet system beneath the front surface of the countertop.

3. The modular sink system of claim **2**, wherein the extension includes at least one tab extending along a side edge of the extension in a direction towards the sink basin.

4. The modular sink system of claim **3**, wherein the at least one tab is spaced from the rim portion by a gap.

5. The module sink system of claim **4**, wherein the gap is sized and dimensioned to receive the front surface of the countertop.

6. The modular sink system of claim **1**, wherein the rim includes a clip projecting from a bottom surface of the rim, the clip configured to interface with the countertop at one of the first cut or the second cut.

7. The modular sink system of claim **6**, wherein the clip includes an angled portion extending upwardly from a portion of the clip, the angled portion configured to interface with an edge of the countertop during installation of the sink basin into the aperture of the cabinet system.

8. The modular sink system of claim **1**, wherein the rim includes an adhesive strip coupled to a bottom surface of the rim.

9. The modular sink system of claim **1**, further comprising a drain coupled to the sink basin.

10. The modular sink system of claim **9**, further comprising a faucet coupled to the rim.

11. The modular sink system of claim **1**, further comprising a support bar coupled to a bottom surface of the rim of the sink basin in a position between the sink basin and a rear edge of the rim of the sink basin configured for positioning adjacent the back surface of a countertop.

12. The modular sink system of claim **11**, wherein a width of the support bar across the bottom surface of the rim is substantially the same as a width of the sink basin.

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