



US011191373B2

(12) **United States Patent**
Ng et al.

(10) **Patent No.:** **US 11,191,373 B2**
(45) **Date of Patent:** **Dec. 7, 2021**

(54) **MOUNTING DEVICE FOR WALL-MOUNTED ARTICLES**

(56) **References Cited**

U.S. PATENT DOCUMENTS

(71) Applicant: **Nielsen & Bainbridge, LLC.**,
Wilmington, DE (US)

D29,072 S 7/1898 Dolby
D31,665 S 10/1899 McKay
(Continued)

(72) Inventors: **Kimkie Ng**, Hong Kong (HK); **Patrick Pun**, Tuen Mun (HK); **Randall Ben Faltese**, Georgetown, TX (US); **Jamey Yarnall**, Leander, TX (US); **John Fenno**, Cleves, OH (US)

FOREIGN PATENT DOCUMENTS

WO 2011122952 10/2011

OTHER PUBLICATIONS

Search Report, PCT/US18/35699, dated Sep. 17, 2018, 2 pgs.
(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

Primary Examiner — Amy J. Sterling

(74) Attorney, Agent, or Firm — Egan, Enders & Huston LLP.

(21) Appl. No.: **16/691,792**

(22) Filed: **Nov. 22, 2019**

(57) **ABSTRACT**

(65) **Prior Publication Data**

US 2020/0085215 A1 Mar. 19, 2020

Related U.S. Application Data

(63) Continuation of application No. PCT/US2018/035699, filed on Jun. 1, 2018.
(Continued)

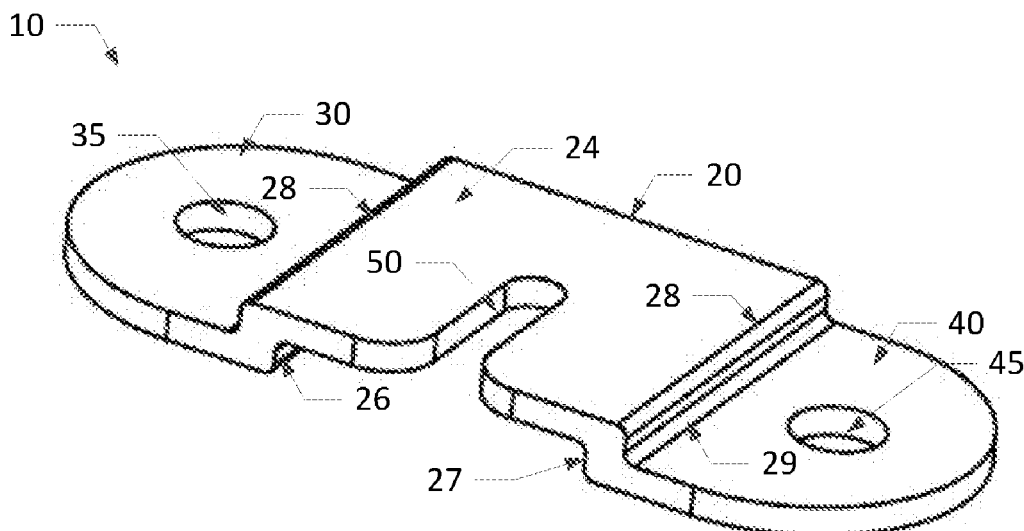
A mounting device is provided for hanging articles on a wall or other mounting surface. The disclosed mounting device includes a bracket having a raised center portion arranged between two side portions formed integral and contiguous with the raised center portion, and a fastener having a flattened head and a shaft extending therefrom. The raised center portion of the bracket includes a first pair of opposing sidewalls, and the flattened head of the fastener includes a second pair of opposing sidewalls. When the flattened head of the fastener is slidably engaged with the raised center portion of the bracket, each of the second pair of opposing sidewalls is arranged adjacent and parallel to a respective one of the first pair of opposing sidewalls. This prevents substantial rotational movement of the bracket around the fastener to ensure that the wall-mounted article remains at a desired location and orientation on the wall.

(51) **Int. Cl.**
F16M 11/00 (2006.01)
A47G 1/16 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **A47G 1/1606** (2013.01); **F16M 13/02** (2013.01); **A47B 97/001** (2013.01)

(58) **Field of Classification Search**
CPC F16M 13/02; A47G 1/1606; A47G 1/1613
See application file for complete search history.

22 Claims, 12 Drawing Sheets



Related U.S. Application Data

- (60) Provisional application No. 62/514,193, filed on Jun. 2, 2017.

- (51) **Int. Cl.**
F16M 13/02 (2006.01)
A47B 97/00 (2006.01)

References Cited

U.S. PATENT DOCUMENTS

795,553	A	7/1905	Sherman	
895,846	A	8/1908	Diers	
1,338,154	A	4/1920	Pipkin	
D139,216	S	7/1944	Spanholtz	
2,443,149	A *	6/1948	Rundell	A47G 1/1613 248/264
2,639,109	A *	5/1953	Hoag	A47G 1/162 248/497
D197,188	S	12/1963	Anderson	
3,300,173	A	1/1967	Kennedy	
3,529,799	A *	9/1970	Schaefer	A47G 1/0655 248/496
3,878,589	A	4/1975	Schaefer	
D235,308	S	6/1975	Clarke	
3,912,216	A	10/1975	Gano	
D239,593	S	4/1976	Douma	
D243,190	S	1/1977	Knutsson et al.	
D244,508	S	5/1977	Neece	
D246,346	S	11/1977	Strunk	
4,132,335	A	1/1979	Ingram	
D252,851	S	9/1979	Church	
4,171,117	A *	10/1979	Prochaska	A47G 1/1613 248/495
D262,688	S	1/1982	Nilsson	
4,419,794	A	12/1983	Horton et al.	
D272,044	S	1/1984	Fesler	
D272,211	S	1/1984	Rock et al.	
4,458,872	A	7/1984	Couch	
D295,369	S	4/1988	Niwa	
D298,604	S	11/1988	Newton	
D303,716	S	9/1989	Waller	
D310,479	S	9/1990	Speetzen	
D313,740	S	1/1991	Witt	
5,014,892	A	5/1991	Copeland	
5,054,170	A	10/1991	Otrusina	
D324,991	S	3/1992	Gary	
D329,192	S	9/1992	Susac	
5,398,906	A *	3/1995	Aydelott	A47G 1/205 248/477
5,484,126	A	1/1996	Kitchin	
5,549,234	A	8/1996	Hong	
5,605,313	A	2/1997	Erickson et al.	
5,687,942	A	11/1997	Johnson	
D5,850,954		12/1998	Dong-Joo	
D408,267	S	4/1999	Egigian et al.	
D409,079	S	5/1999	Sobczynski	
D409,663	S	5/1999	Wagner et al.	
D410,032	S	5/1999	Wagner et al.	
D414,207	S	9/1999	Wagner et al.	

D428,058	S	7/2000	Wagner	
6,142,892	A	11/2000	Dennis	
D438,536	S	3/2001	Willison et al.	
D452,081	S	12/2001	Rowan	
D454,591	S	3/2002	Vidmar et al.	
D464,993	S	10/2002	Rosen	
D465,147	S	11/2002	Chaky	
D468,357	S	1/2003	Rosen	
D492,187	S	6/2004	Mottini	
6,866,940	B1	3/2005	Laughlin	
D507,959	S	8/2005	Mottini	
D511,088	S	11/2005	Chiu	
D531,223	S	10/2006	Lynch	
D547,637	S	7/2007	Blackner	
D560,221	S	1/2008	Hoglan et al.	
D567,740	S	4/2008	Smith	
D572,117	S	7/2008	Daun et al.	
D572,122	S	7/2008	Cave	
7,594,632	B2	9/2009	Van Den Bossche et al.	
D607,711	S	1/2010	Adams et al.	
D623,046	S	9/2010	Murphy	
D623,507	S	9/2010	Bowen	
D629,293	S	12/2010	DuFour	
8,303,226	B1	11/2012	Derrig et al.	
D685,991	S	7/2013	Pearce	
8,544,805	B2	10/2013	Virgin	
D704,035	S	5/2014	Wills	
D715,859	S	10/2014	Costas	
D732,929	S	6/2015	Harrow	
9,138,082	B2	9/2015	Crescenzo	
D753,982	S	4/2016	Guirlinger	
9,683,696	B2	6/2017	McCullough et al.	
D817,152	S	5/2018	Ng et al.	
D818,801	S	5/2018	Ng et al.	
D819,428	S	6/2018	Ng et al.	
D829,079	S	9/2018	Hailing	
2006/0186304	A1	8/2006	McGee	
2007/0039907	A1	2/2007	Zandt	
2007/0186384	A1*	8/2007	Broehl	A47G 1/1613 16/355
2008/0209698	A1	9/2008	Colorado	
2008/0237282	A1	10/2008	Sin	
2008/0272257	A1	11/2008	Murphy	
2013/0168429	A1	7/2013	Pearce	
2013/0232840	A1	9/2013	Miller	
2015/0204366	A1	7/2015	Cave	

OTHER PUBLICATIONS

Dovetailed Hanging Slots in the Art Boards Watercolor Art Panels,
Printed from Internet Jan. 8, 2019, <http://www.art-boards.com/cp-slotdiagam-watercc.html>, 2 pgs.

China DLC Machinery Co., Barbed U Pin Making Machine for Cable Pin or Pipe Pin Making, 2011, 2 pgs.

HP Quick Release Kit, New Retail, EM870AA, 2011, 2 pgs.

No Stud? No Problem!: No Stud Drywall Picture Hanger, 2010, 1 pg.

Quick Release Grey Lcd Tv Vesa Wall Bracket, Ref. 11409115,
2015, 2 pgs.

Spring Lock, Spring Lock Security Picture Fixings, 2 pgs.

* cited by examiner

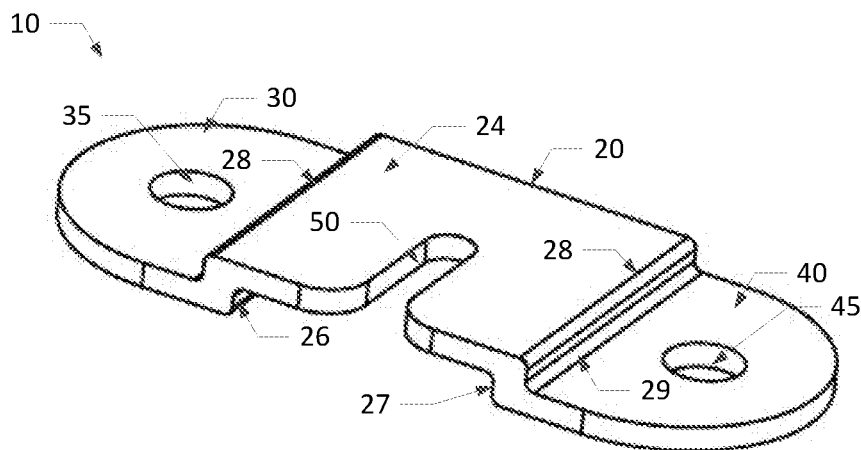


FIG. 1

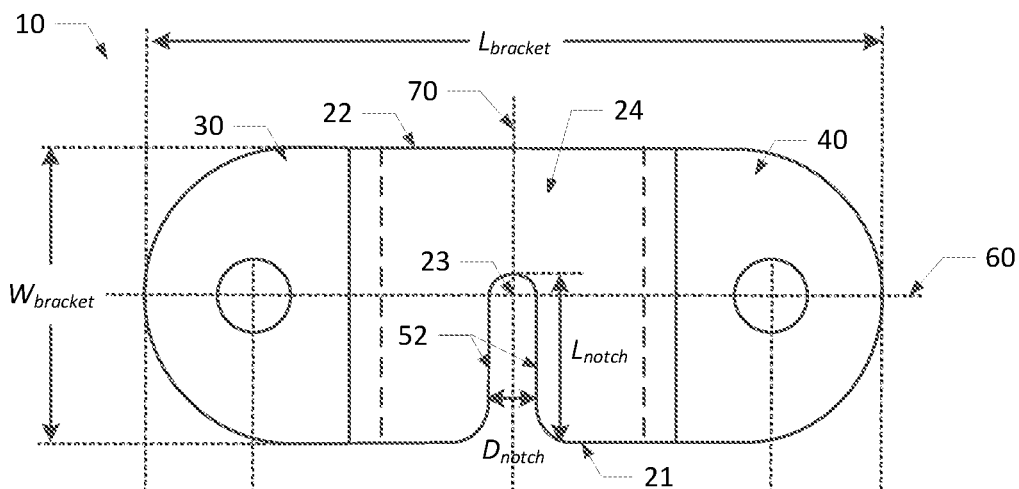


FIG. 2

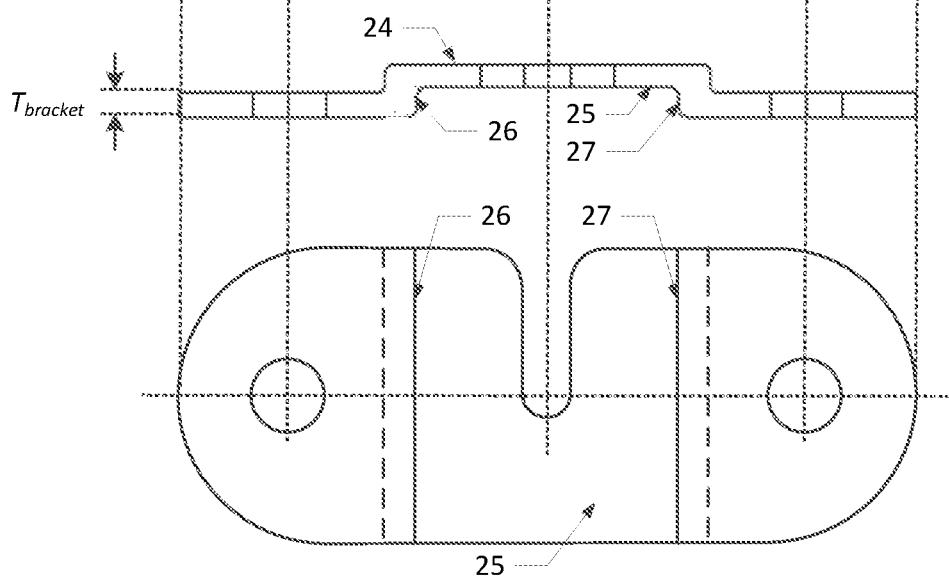


FIG. 3

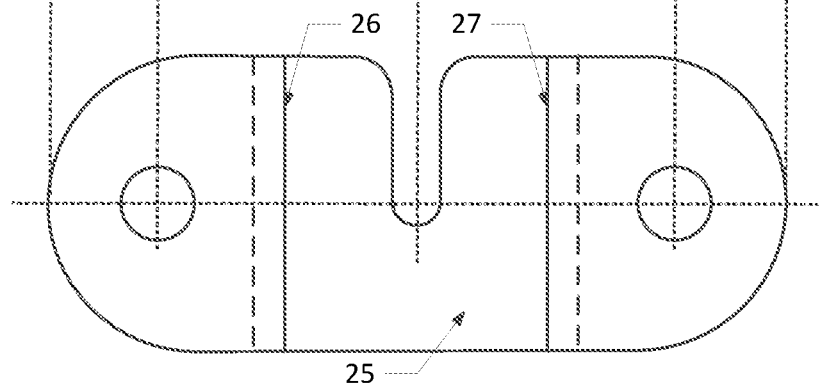


FIG. 4

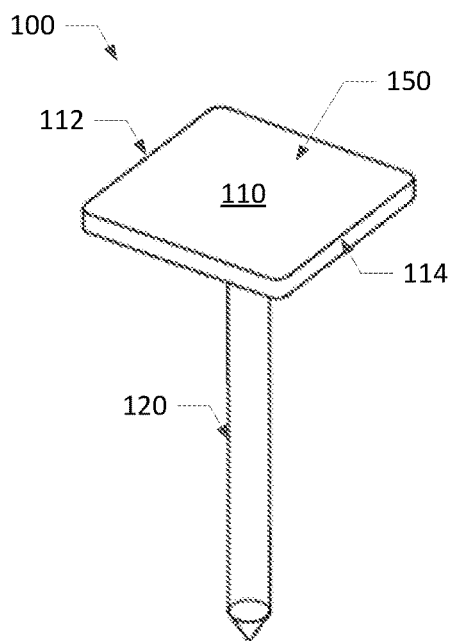


FIG. 5

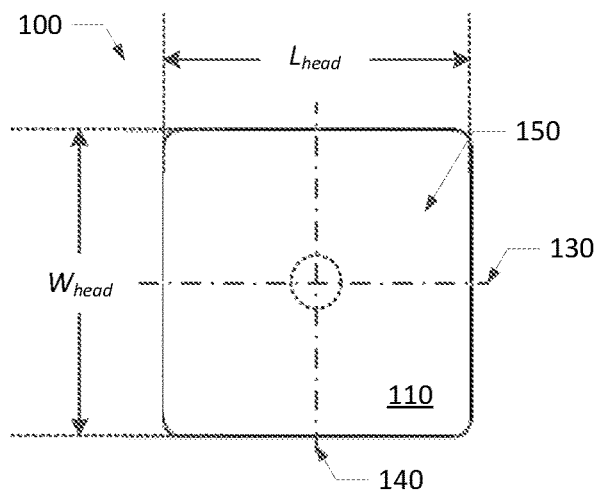


FIG. 6

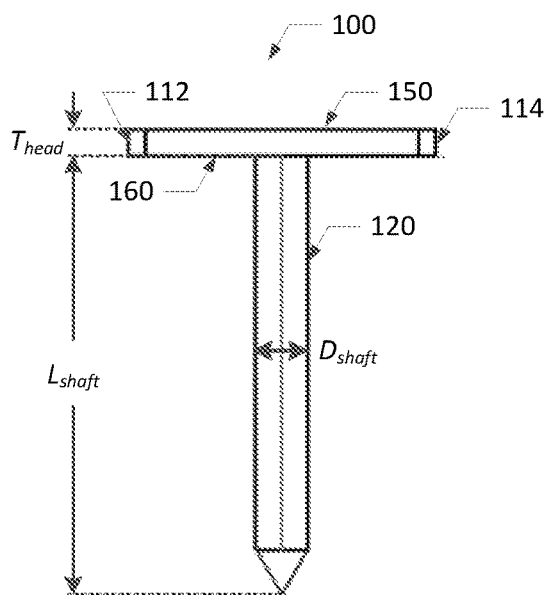


FIG. 7

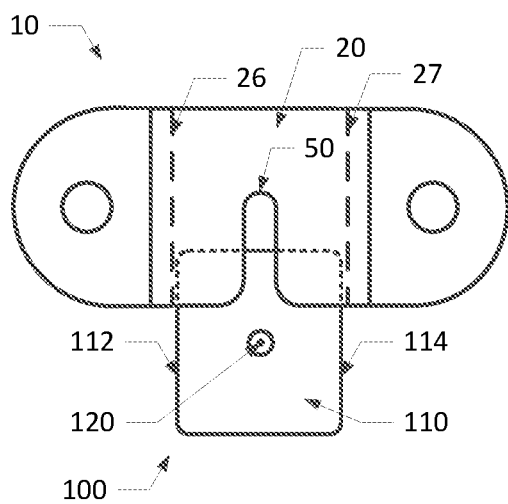


FIG. 8

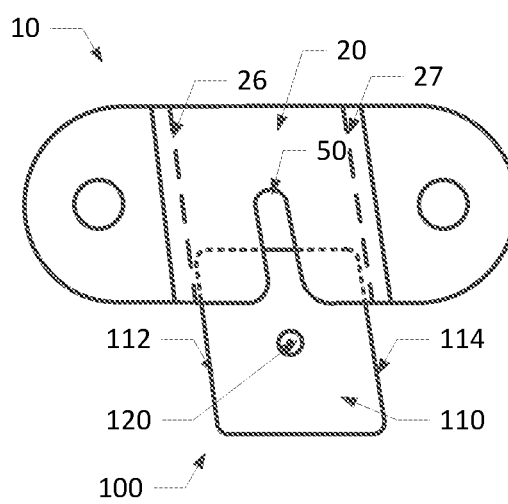


FIG. 9

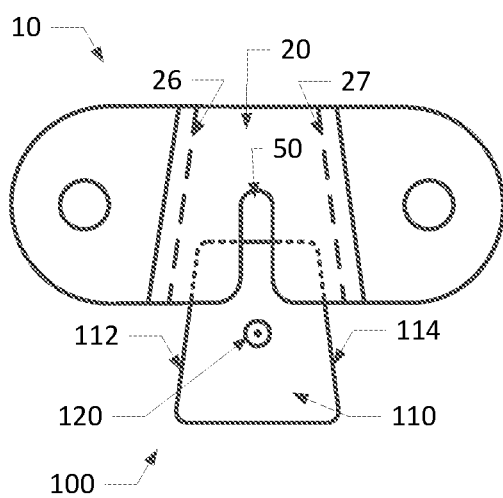


FIG. 10

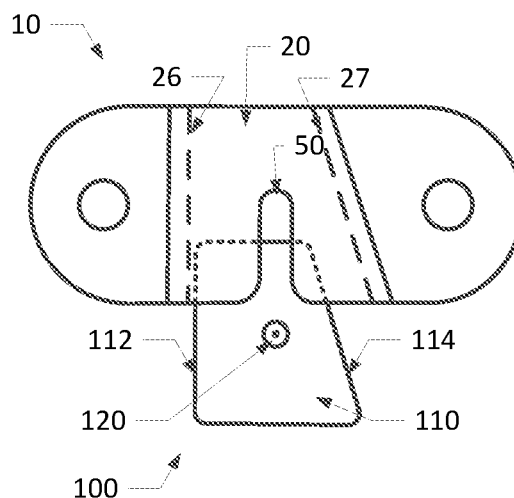


FIG. 11

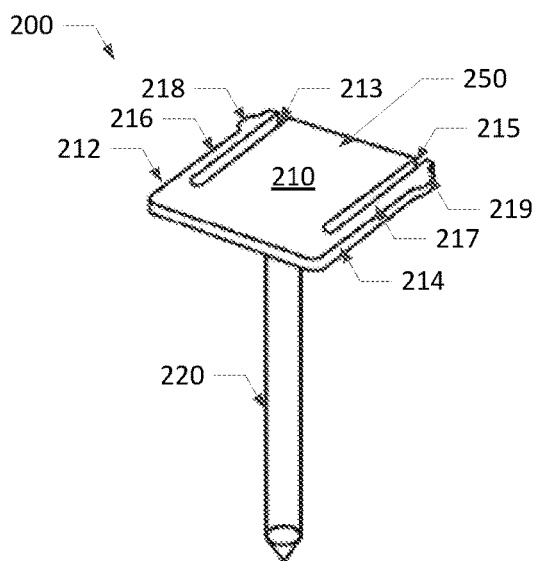


FIG. 12

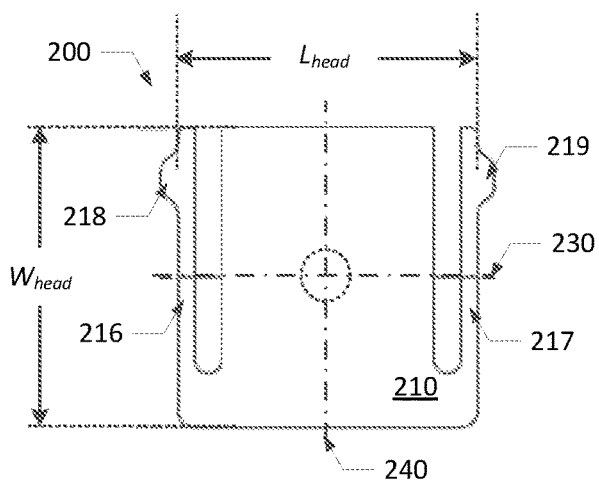


FIG. 13

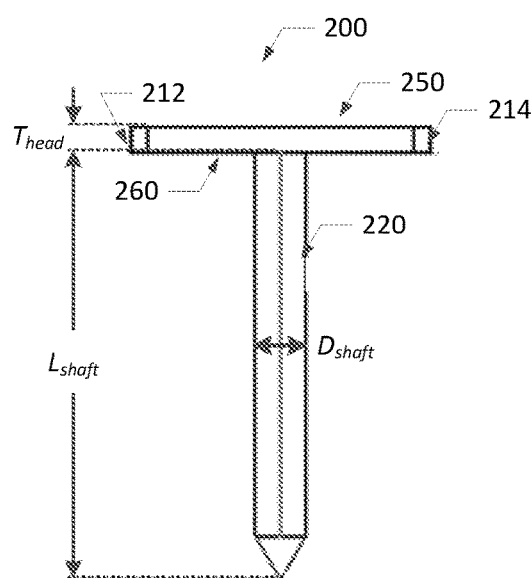


FIG. 14

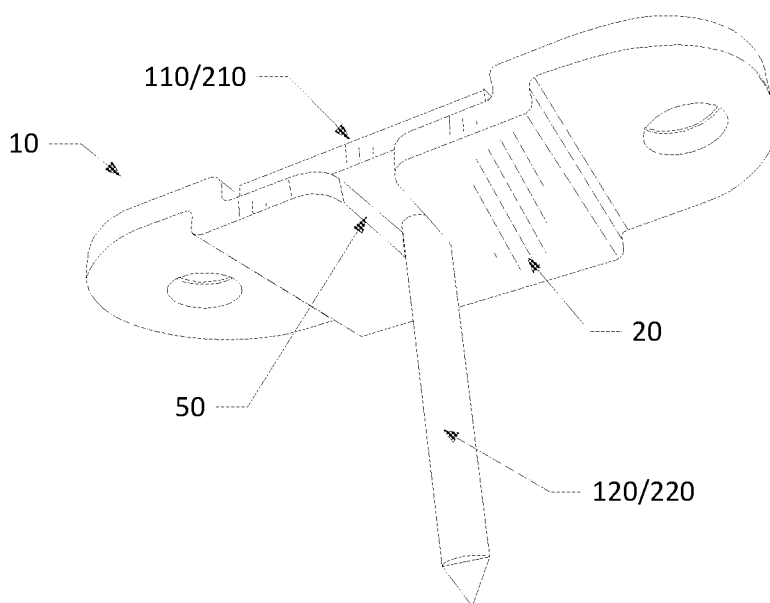


FIG. 15A

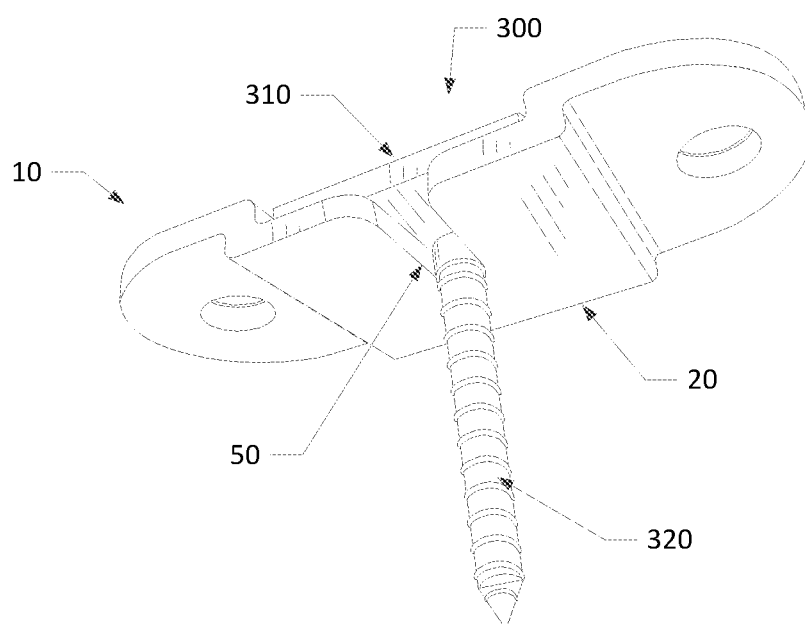


FIG. 15B

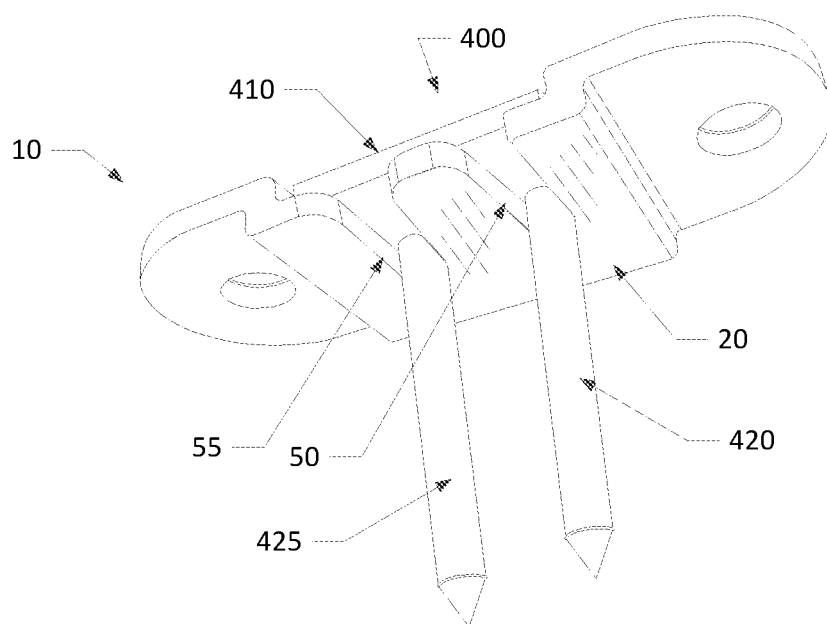


FIG. 15C

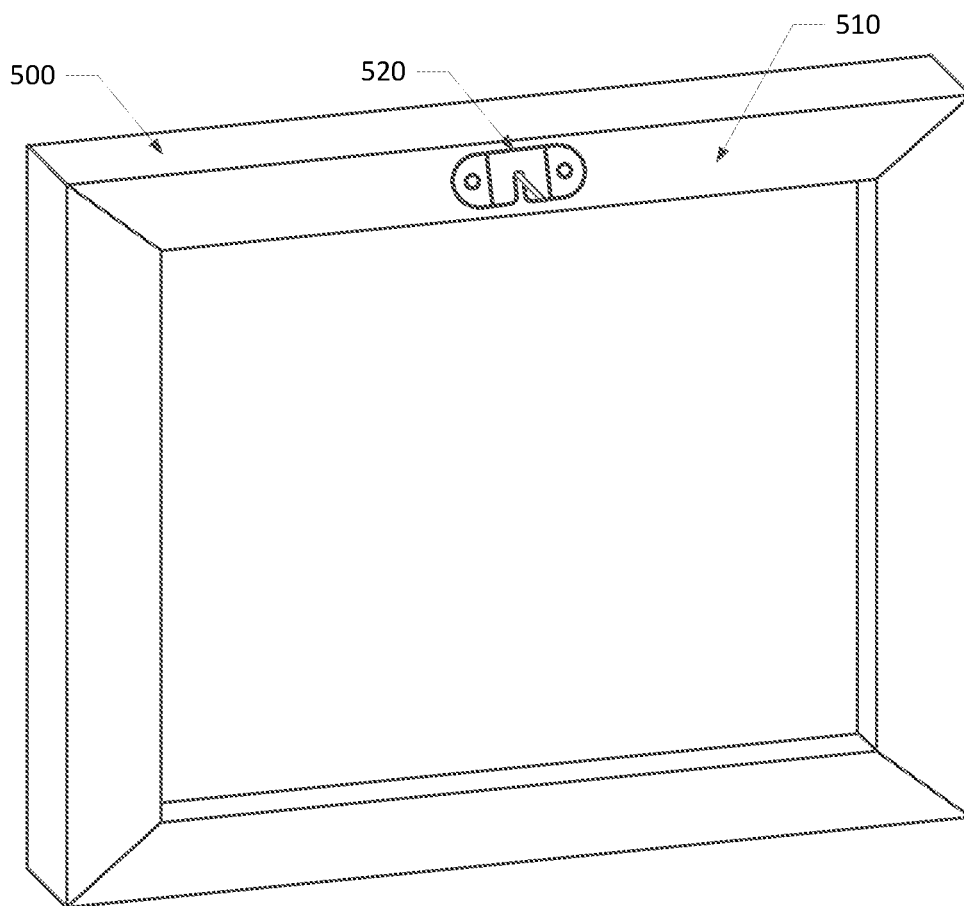


FIG. 16A

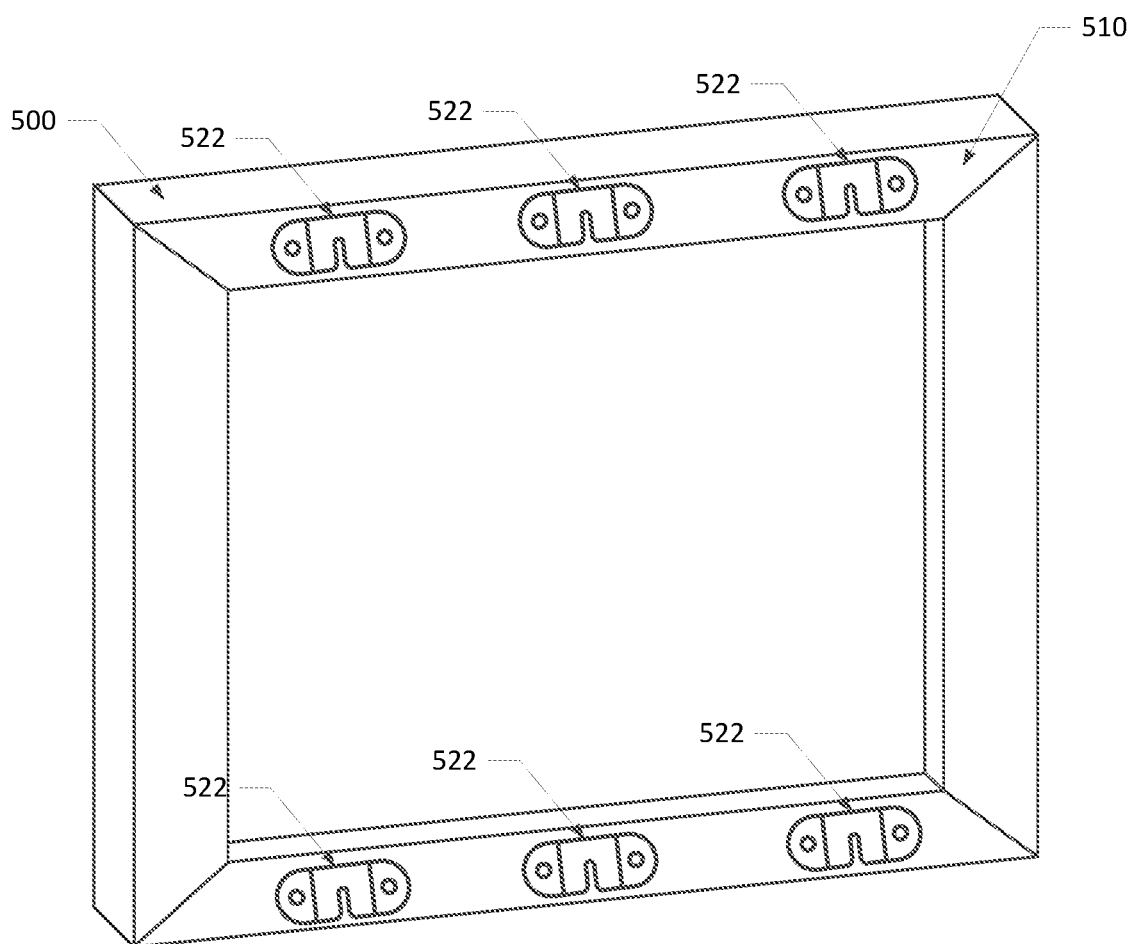


FIG. 16B

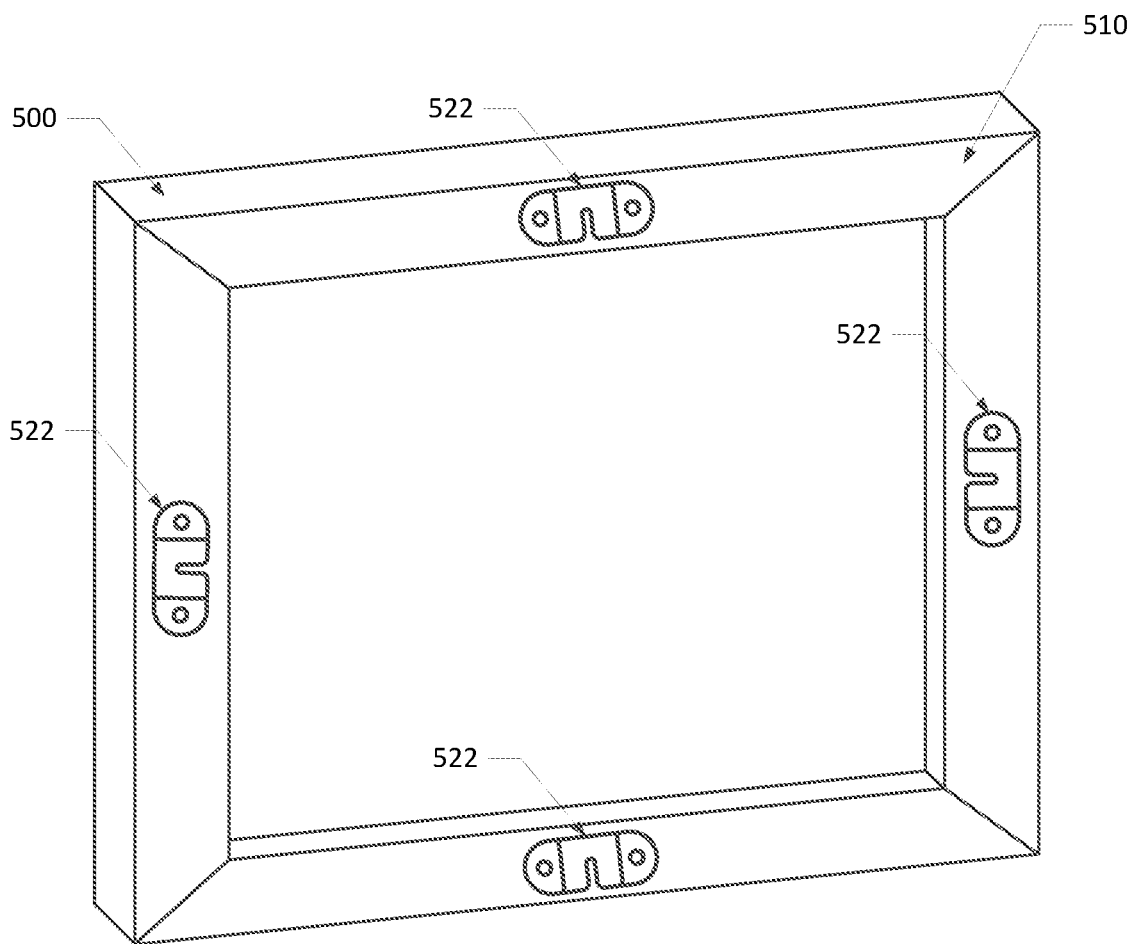


FIG. 16C

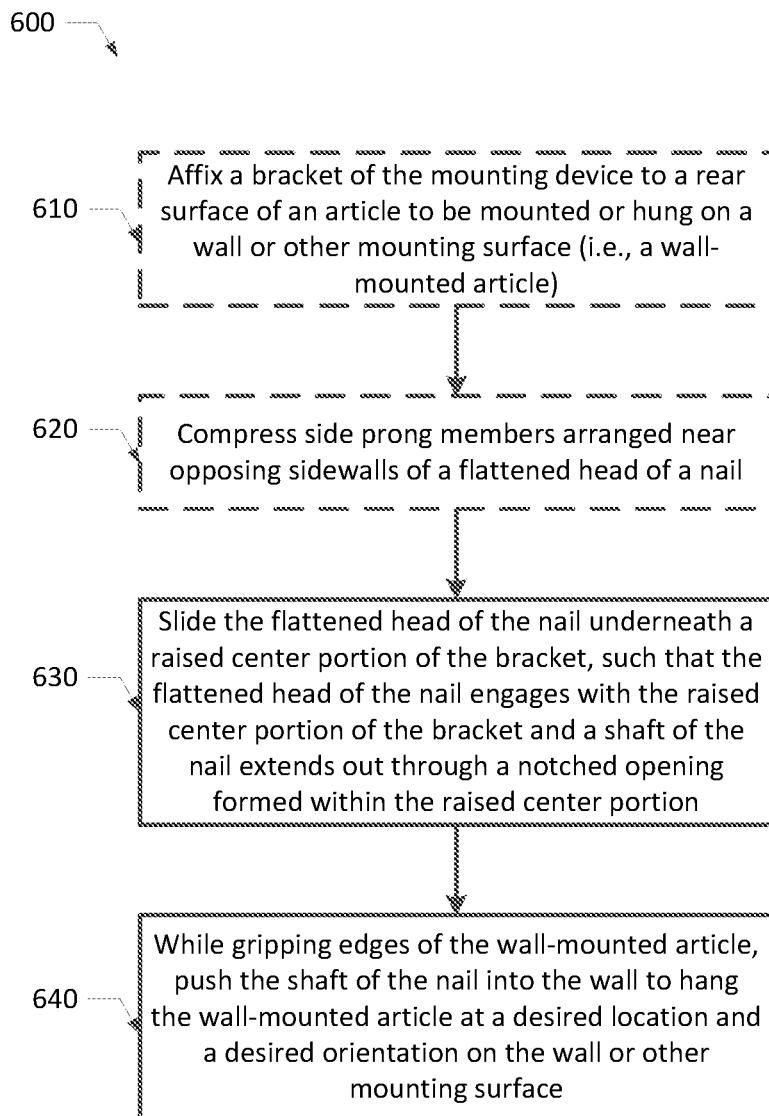


FIG. 17

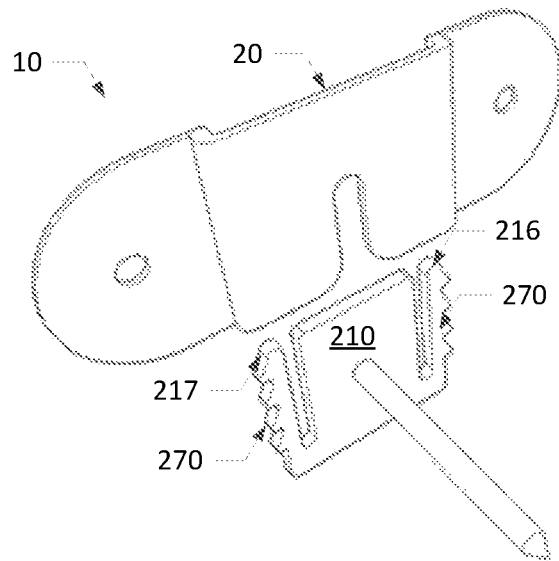


FIG. 18A

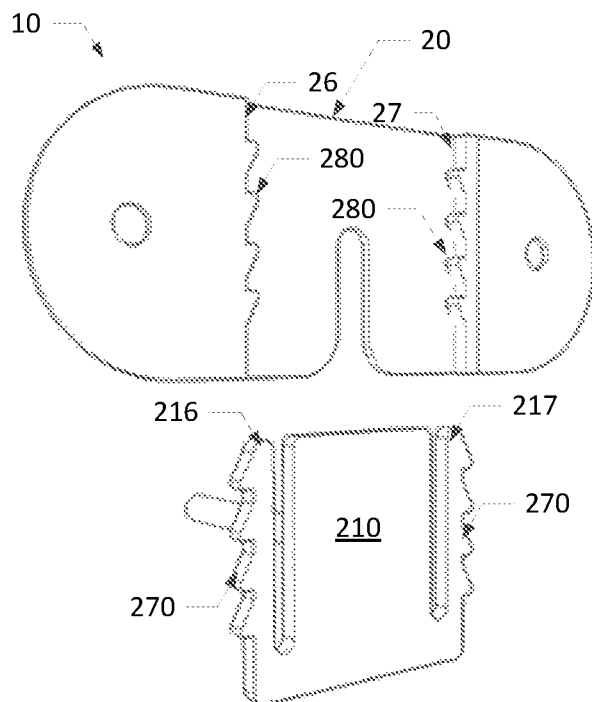


FIG. 18B

1

MOUNTING DEVICE FOR WALL-MOUNTED ARTICLES**PRIORITY CLAIM**

This application is a continuation of International Patent Application No. PCT/US2018/035699 filed Jun. 1, 2018, which designates the United States and claims priority to U.S. Provisional Patent Application No. 62/514,193, filed Jun. 2, 2017.

BACKGROUND**1. Field of the Disclosure**

This disclosure relates to mounting devices for wall-mounted articles and, more particularly, to mounting devices that maintain wall-mounted articles in a desired location and orientation once hung.

2. Description of the Relevant Art

The following descriptions and examples are provided as background only and are intended to reveal information that is believed to be of possible relevance to the present invention. No admission is necessarily intended, or should be construed, that any of the following information constitutes prior art impacting the patentable character of the subjected matter claimed herein.

There are many different types of mounting devices available for mounting or hanging articles, such as frames, mirrors, art, bulletin boards, clocks and other wall-mounted articles, on a vertical surface, such as a wall. These include various forms of hooks, brackets, wires and bores, which are typically used in conjunction with traditional nails, screws, bolts, etc. Some wall-mounted articles are commercially available with mounting devices pre-installed onto the article. This may increase the packaging size of such articles, in some cases. When mounting devices are pre-installed onto an article, the consumer may be unable to choose an alternative orientation for hanging the article, and/or may be unable to use an alternative mounting device more suitable to his/her needs. Other commercially available wall-mounted articles are provided with a mounting device, which the consumer installs on the back of the article prior to hanging.

In either case (i.e., articles provided with pre-installed or separate mounting devices), the mounting devices provided with such articles typically use traditional fasteners, such as nails, screws, bolts etc., for attaching the articles to a wall. One problem with such mounting devices is that additional tools, such as a hammer, screw driver, etc., are often required to insert such fasteners into the wall. Once a fastener is inserted, it can be difficult to blindly align the mounting device onto the wall-mounted fastener. Another problem with such mounting devices is that they often fail to maintain the wall-mounted article at the desired orientation. For example, actions such as dusting, bumping into walls or slamming doors often disturb wall-mounted articles, causing them to be crooked or skewed from the desired orientation.

A need, therefore, exists for a mounting device for hanging wall-mounted articles that overcomes the disadvantages of commercially available devices.

SUMMARY

The present disclosure provides various embodiments of mounting devices, wall-mounted articles comprising such

2

mounting devices and methods for hanging wall-mounted articles via such mounting devices. The following description of various embodiments of mounting devices, wall-mounted articles and methods represent example embodiments and is not to be construed in any way as limiting the subject matter of the appended claims.

According to one embodiment, a mounting device for hanging wall-mounted articles is provided herein with a specially configured bracket and fastener. In general, the bracket may be described as having a raised center portion arranged between two side portions formed integral and contiguous with the raised center portion, and the fastener may be described as having a flattened head and a shaft extending there from. As described in more detail below, the flattened head of the fastener is configured to slidably engage with the raised center portion of the bracket, such that once engaged and used to hang an article on a wall or other mounting surface, the mounting device may prevent the wall-mounted article from deviating from a desired orientation (i.e., may prevent the wall-mounted article from becoming crooked) once hung. To enable such engagement, embodiments of the bracket disclosed herein may be provided with a notched opening extending from a bottom edge of the raised center portion toward a mid-point of the raised center portion.

When the flattened head of the fastener is slidably engaged with the raised center portion of the bracket, the shaft of the fastener extends out through the notched opening of the raised center portion. The notched opening in the raised center portion of the bracket may be generally configured for receiving and guiding the shaft of the fastener as the flattened head of the fastener is slid underneath the raised center portion. In order to receive the shaft of the fastener, a diameter of the notched opening may be slightly larger than a diameter of the shaft of the fastener. To guide the shaft of the fastener, the diameter of the notched opening may be substantially consistent along a majority of a length of the notched opening. In some embodiments, the fastener may be a nail having two shafts extending from the flattened head, and the bracket may include a pair of notched openings, each configured for receiving and guiding the two shafts of the nail when the flattened head of the nail is slid underneath the raised center portion of the bracket.

In one embodiment, a lower surface of the raised center portion of the bracket may be elevated above a lower surface of the two side portions. The raised center portion of the bracket may be provided with a first pair of opposing sidewalls, and the flattened head of the fastener may be provided with a second pair of opposing sidewalls. When the flattened head of the fastener is slidably engaged with the raised center portion of the bracket, each one of the second pair of opposing sidewalls may be arranged adjacent and parallel to a respective one of the first pair of opposing sidewalls. This configuration prevents the bracket from pivoting around the fastener to increase the likelihood that the wall-mounted article will remain in the desired orientation once hung.

The upper surface of the flattened head of the nail and the lower surface of the raised center portion of the bracket may be provided with a variety of different shapes. In some embodiments, the upper surface of the flattened head and the lower surface of the raised center portion may be provided with substantially identical quadrilateral shapes; although they are not strictly limited to quadrilateral shapes. In some exemplary embodiments, the upper surface of the flattened head and the lower surface of the raised center portion may be provided with square, rectangular or parallelogram

3

shapes. In such embodiments, opposing sidewalls of the first pair of opposing sidewalls of the raised center portion may be parallel to one another, and opposing sidewalls of the second pair of opposing sidewalls of the flattened head may be parallel to one another. In other exemplary embodiments, the upper surface of the flattened head and the lower surface of the raised center portion may be provided with various trapezoidal shapes. In such embodiments, opposing sidewalls of the first pair of opposing sidewalls of the raised center portion may not be parallel to one another, and opposing sidewalls of the second pair of opposing sidewalls of the flattened head may not be parallel to one another.

In some embodiments, the flattened head of the fastener may include a pair of notched openings. In such embodiments, each of the notched openings in the flattened head of the fastener may be arranged proximate to a respective one of the second pair of opposing sidewalls of the flattened head to form a pair of side prong members, which may be compressed prior to slidably engaging the flattened head of the fastener with the raised center portion of the bracket. In doing so, the side prong members may apply an outward force against the first pair of opposing sidewalls of the raised center portion to secure the flattened head of the fastener within the raised center portion of the bracket. In some embodiments, each side prong member may include a projection arranged proximate to a distal end of the side prong member to increase the amount of outward force applied by the side prong member at the distal end. In some embodiments, each side prong member may include one or more notched openings or teeth, which may engage with a complementary set of one or more notched openings or teeth provided on the first pair of opposing sidewalls of the raised center portion of the bracket to at least temporarily lock the flattened head of the fastener within the raised center portion of the bracket.

According to one embodiment, the mounting device described herein may be provided separate from an article (referred to herein as a wall-mounted article) to be mounted or hung on a wall or other mounting surface. According to another embodiment, a wall-mounted article comprising at least one of the mounting device embodiments described herein may be provided herein. In such an embodiment, the at least one mounting device may be pre-installed on a rear surface of the wall-mounted article, or may be provided separately for subsequent installation by the consumer.

According to another embodiment, a method is provided herein for hanging an article (i.e., a wall-mounted article) on a wall or other mounting surface via the mounting device described herein. In some embodiments, the method may include sliding the flattened head of the nail described herein underneath the raised center portion of the bracket described herein, such that the flattened head of the nail engages with the raised center portion of the bracket and the shaft of the nail extends out through the notched opening of the bracket. While gripping opposing edges of the wall-mounted article, the shaft of the nail may be pushed into the wall to hang the wall-mounted article at a desired location and a desired orientation on the wall or other mounting surface. Because opposing sidewalls of the flattened head of the nail are positioned adjacent and parallel to opposing sidewalls of the raised center portion of the bracket when the flattened head of the nail is engaged with the raised center portion of the bracket, the mounting device and method provided herein prevents the bracket (and thus, the wall-mounted article) from pivoting around the nail. As a consequence, the disclosed mounting device may substantially prevent the wall-

4

mounted article from deviating from a desired orientation after the wall-mounted article is hung.

In some embodiments, the article may include a plurality of mounting devices affixed to a rear surface of the article, where each mounting device includes a specially configured bracket and nail, as described herein. In such embodiments, the method may include repeating the step of sliding the flattened head of the nail underneath the raised center portion of the bracket for each mounting device prior to pushing the shafts of the nails into the mounting surface to hang the article on the wall or other mounting surface at the desired location and orientation. Compared to embodiments which use only one mounting device, embodiments of the method that use a plurality of mounting devices to hang the wall-mounted article may ensure that the wall-mounted article does not deviate from the desired orientation after the wall-mounted article is hung.

In some embodiments, one or more steps may be performed prior to sliding the flattened head of the nail underneath the raised center portion of the bracket. For example, the method may include affixing the bracket to a rear surface of the wall-mounted article prior to sliding the flattened head of the nail underneath the raised center portion of the bracket, if the bracket was not pre-installed. In some cases, the flattened head of the nail may include a pair of side prong members, as described above. In such cases, the method may include compressing the side prong members prior to sliding the flattened head of the nail underneath the raised center portion of the bracket. Once compressed and engaged with opposing sidewalls of the raised center portion, the side prong members may apply an outward force against the opposing sidewalls of the raised center portion to secure the flattened head of the nail within the raised center portion of the bracket.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the accompanying drawings.

FIG. 1 is a three-dimensional (3D) perspective view illustrating one embodiment of a bracket included with the mounting device described herein;

FIG. 2 is a top view of the bracket shown in FIG. 1;

FIG. 3 is a side view of the bracket shown in FIG. 1;

FIG. 4 is a bottom view of the bracket shown in FIG. 1;

FIG. 5 is a 3D perspective view illustrating one embodiment of a nail that may be included with the mounting device described herein;

FIG. 6 is a top view of the nail shown in FIG. 5;

FIG. 7 is a side view of the nail shown in FIG. 5;

FIG. 8 is a top view of the bracket shown in FIG. 1 and a bottom view of the nail shown in FIG. 5;

FIG. 9 is a top view of a bracket and a bottom view of a nail that may be included with the mounting device described herein, according to another embodiment;

FIG. 10 is a top view of a bracket and a bottom view of a nail that may be included with the mounting device described herein, according to another embodiment;

FIG. 11 is a top view of a bracket and a bottom view of a nail that may be included with the mounting device described herein, according to another embodiment;

FIG. 12 is a 3D perspective view illustrating another embodiment of a nail that may be included with the bracket shown in FIGS. 1-4 and 8;

FIG. 13 is a top view of the nail shown in FIG. 12;

5

FIG. 14 is a side view of the nail shown in FIG. 12;

FIG. 15A is a 3D perspective view illustrating the nail shown in the embodiments of FIGS. 5-8 and 12-14 slidably engaged with the bracket shown in the embodiments of FIGS. 1-4 and 8;

FIG. 15B is a 3D perspective view illustrating a screw slidably engaged with the bracket shown in the embodiments of FIGS. 1-4 and 8;

FIG. 15C is a 3D perspective view illustrating a nail with two shafts slidably engaged with a bracket having two notched openings within the raised center portion thereof;

FIG. 16A is a 3D perspective view illustrating one embodiment of a wall-mounted article including at least one mounting device described herein;

FIG. 16B is a 3D perspective view illustrating one embodiment of a wall-mounted article including a plurality of mounting devices described herein;

FIG. 16C is a 3D perspective view illustrating another embodiment of a wall-mounted article including a plurality of mounting devices described herein;

FIG. 17 is a flowchart diagram illustrating one embodiment of a method for hanging a wall-mounted article on a wall using one embodiment of the mounting device described herein;

FIG. 18A is a 3D front perspective view of a bracket and a 3D rear perspective view of a nail that may be included with the mounting device described herein, according to another embodiment; and

FIG. 18B is a 3D rear perspective view of the bracket and a 3D front perspective view of the nail shown in FIG. 18A.

While the present disclosure is susceptible to various modifications and alternative forms, specific embodiments thereof are shown by way of example in the drawings and will herein be described in detail. It should be understood, however, that the drawings and detailed description thereto are not intended to limit the present disclosure to the particular form disclosed, but on the contrary, the intention is to cover all modifications, equivalents and alternatives falling within the spirit and scope of the present disclosure as defined by the appended claims.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Generally speaking, the present disclosure provides various embodiments of a mounting device that may be used for mounting or hanging wall-mounted articles on a wall or other substantially vertical surface. Although embodiments of mounting device(s) are illustrated in FIGS. 16A-16C as affixed to a rear surface of a picture frame, the mounting device embodiments described herein may be used for hanging a wide variety of wall-mounted articles, including, but not limited to, picture frames, mirrors, art, bulletin boards, signs, clocks and other wall-mounted articles. Although some embodiments are intended for hanging articles on interior walls of a building or residence, the mounting device described herein is not so limited, and may be used to hang articles on other suitable indoor surfaces (such as, e.g., cubicle walls) or outdoor surfaces (such as, e.g., exterior wooden walls, pillars or posts).

In all embodiments shown and described herein, the disclosed mounting device enables an article to be mounted or hung on a wall, or another mounting surface, at a desired location and orientation, and in some embodiments, prevents the wall-mounted article from deviating from the desired orientation once it is hung. Even in embodiments in which a single mounting device is used to provide a single point of

6

attachment to the wall or mounting surface, the mounting devices described herein prevent the wall-mounted article from rotating or pivoting around the single point of attachment (i.e., prevents the article from becoming "crooked") when the article or the wall upon which the article is mounted is disturbed (e.g., due to dusting, people or animals bumping into the wall, doors being slammed, etc.).

In some embodiments, at least a portion of the mounting devices described herein (e.g., the bracket portion) may be pre-installed on a rear surface of an article to be hung or mounted on a wall (i.e., a wall-mounted article). In other embodiments, the mounting devices described herein may be provided along with a wall-mounted article, so that a consumer may install the mounting device where he/she so chooses. In yet other embodiments, the mounting devices described herein may be provided separately from a wall-mounted article, thereby enabling the consumer to use the mounting device for hanging substantially any suitable wall-mounted article.

In most embodiments, the mounting device described herein includes a specially configured bracket and fastener (e.g., a specially configured nail or screw). In general, the bracket disclosed herein may include a raised center portion arranged between two side portions, which are formed integral and contiguous with the raised center portion, and the disclosed fastener may include an enlarged, flattened head with at least one shaft extending there from. As used herein, the term "fastener" may refer to a specially configured nail, as shown in FIGS. 5-15A, 15C, 18A and 18B or a specially configured screw as depicted in FIG. 15B. As set forth in more detail below, the flattened head of the fastener may be configured to slidably engage with the raised center portion of the bracket, such that once engaged and used to hang an article on a wall, the mounting device prevents the bracket from pivoting around the fastener. As a consequence, the mounting device may prevent the wall-mounted article from deviating from the desired orientation (i.e., prevent the wall-mounted article from becoming crooked) once hung.

As used herein, the term "slidably engaged" means that the flattened head of the fastener is slid underneath the raised center portion of the bracket to engage with the raised center portion. When the bracket is affixed to a rear surface of a wall mounted article, and the flattened head of the fastener is "slidably engaged" with the raised center portion, the flattened head of the fastener may be sandwiched between a lower surface of the raised center portion and the rear surface of the wall-mounted article.

As described in more detail below, the flattened head of the fastener may be generally shaped and dimensioned, so as to engage with (or substantially contact) one or more surfaces of the raised center portion of the bracket when the flattened head of the fastener is "slidably engaged" with the raised center portion. For example, the flattened head of the fastener may have a shape similar to, yet be dimensioned slightly smaller than, a lower surface of the raised center portion of bracket, so that when the flattened head of the fastener is slid underneath the lower surface of the raised center portion, opposing sidewalls of the flattened head of the fastener are arranged adjacent and parallel to opposing sidewalls of the raised center portion. FIGS. 8-11 (discussed in more detail below) provide various examples of shapes that may be considered for the flattened head of the fastener and raised center portion of the bracket disclosed herein.

Turning now to the drawings, FIGS. 1-4 illustrate one embodiment of a bracket 10 that may be included with the mounting device described herein. In particular, FIG. 1

7

provides a 3D perspective view, FIG. 2 provides a top view, FIG. 3 provides a side view, and FIG. 4 provides a bottom view of bracket 10. As shown in FIGS. 1-4, bracket 10 includes a raised center portion 20 arranged between two side portions 30 and 40, which are formed integral and contiguous with the raised center portion, and a notched opening 50 extending from a bottom edge 21 of the raised center portion toward a top edge 22 of the raised center portion.

The raised center portion 20 of bracket 10 includes an upper surface 24 and a lower surface 25. As shown in FIGS. 1 and 3, the lower surface 25 of raised center portion 20 is raised or elevated above a lower surface 60 of side portions 30 and 40. This creates a space beneath the lower surface 25 of raised center portion 20 for receiving a flattened head of a nail or screw, as shown in the example embodiments of FIGS. 15A-15C and discussed below. As shown in FIGS. 3 and 4, the raised center portion 20 of the bracket comprises a first pair of opposing sidewalls 26 and 27 connecting the lower surface 25 of the raised center portion 20 to the lower surface 60 of the side portions 30 and 40. As described in more detail below in reference to FIGS. 8-11, the opposing sidewalls 26 and 27 of raised center portion 20 may be configured to align with opposing sidewalls of the flattened head of the disclosed fastener (e.g., a nail as shown in FIGS. 5-15A, 18A, 18B or screw as shown in FIG. 15B) to secure the flattened head within the raised center portion 20 of the bracket 10. This prevents bracket 10 from pivoting around the fastener, and as a consequence, may prevent the wall-mounted article from deviating from a desired orientation once hung.

The notched opening 50 formed within raised center portion 20 is generally dimensioned to receive a shaft of the fastener when the flattened head of the fastener is slidably engaged with the raised center portion. As shown in FIG. 2, notched opening 50 may extend from a bottom edge 21 and terminate near a mid-point 23 of the raised center portion 20. In some embodiments, the diameter (D_{notch}) of the notched opening 50 may be substantially consistent along a majority of the length (L_{notch}) of the notched opening, and may be slightly larger (e.g., about 10-40%) than a diameter of the shaft of the fastener. In such embodiments, the sidewalls 52 of the notched opening 50 may function to guide the shaft of the fastener within the notched opening as the flattened head of the fastener is slidably engaged with the raised center portion 20. As described in more detail below with respect to FIG. 15A, the terminus of notched opening 50 may rest upon the shaft of the fastener when the flattened head of the fastener is fully engaged with the raised center portion 20 of the bracket 10. In some embodiments, more than one notched opening may be formed within the raised center portion of the bracket for receiving more than one shaft of a nail, as shown, e.g., in FIG. 15C.

Side portions 30 and 40 of bracket 10 respectively include apertures 35 and 45 through which additional screws, nails, etc., may be used to affix bracket 10 to a rear surface of a wall-mounted article. Although side portions 30 and 40 are illustrated as having a substantially curved or rounded perimeter, the side portions are not so limited, and may be configured in alternative embodiments with substantially any perimeter shape and size. As noted above, side portions 30/40 are formed integral and contiguous with the raised center portion 20 of bracket 10. In other words, side portions 30/40 and raised center portion 20 are formed as one integral component. In one embodiment, bracket 10 may be formed by stamping, cutting, or etching an outline of the bracket from a metal sheet or plate to extract a flattened shape of the

8

bracket, and by bending the flattened shape along lines 28 and 29 to form raised center portion 20. In another embodiment, bracket 10 may be formed using a mold or die cast method.

Bracket 10 may be formed in a variety of different sizes to accommodate mounting different shapes, sizes and weights of wall-mounted articles. As shown in FIGS. 2-4, bracket 10 may be generally described as having a length ($L_{bracket}$) extending along an axis 60 of the bracket, a width ($W_{bracket}$) extending along an axis 70 of the bracket, and a thickness ($T_{bracket}$) extending through the bracket. As shown in FIG. 2, axis 60 and axis 70 are perpendicular axes, which lie in a plane parallel to upper surface 24 of raised center portion 20 and pass through mid-point 23 of raised center portion 20 to respectively bisect the width and length of raised center portion 20. In one embodiment, bracket 10 may have a length of about 1 inch (about 25.4 mm), a width of about 0.4 inches (about 10.15 mm) and a thickness of about 0.03 inches (about 0.8 mm). In such an embodiment, the raised center portion 20 of the bracket 10 may have a length of about 0.4 inches (about 10.15 mm), a width of about 0.4 inches (about 10.15 mm) and a thickness of about 0.03 inches (about 0.8 mm). The notched opening 50 in the raised center portion 20 may also be described as having a length (L_{notch}) and a diameter (D_{notch}). In one embodiment, the notched opening 50 may have a length of about 0.45 inches and a diameter of about 0.07 inches.

It is noted, however, that bracket 10 is not limited to the exemplary dimensions described above and may be configured with substantially smaller and/or larger lengths, widths and/or thicknesses, in other embodiments. For example, bracket 10 may be configured with substantially smaller dimensions when intended for mounting relatively smaller and/or lighter articles, and may be configured with substantially larger dimensions when intended for mounting relatively larger and/or heavier articles. As such, bracket 10 may be provided with a variety of lengths ranging between about 1 inches and about 2 inches, a variety of widths ranging between about 0.375 inches and about 0.75 inches, and a variety of thicknesses ranging between about 0.02 inches and about 0.04 inches, for mounting different shapes, sizes and weights of wall-mounted articles. Likewise, raised center portion 20 of bracket 10 may also be provided with a variety of lengths ranging between about 0.35 inches and about 0.75 inches, a variety of widths ranging between about 0.35 inches and about 0.75 inches, and a variety of thicknesses ranging between about 0.02 inches and about 0.04 inches. Similarly, the notched opening 50 may have a variety of lengths ranging between about 0.4 inches to about 0.8 inches and a variety of diameters ranging between about 0.04 inches to about 0.07 inches.

FIGS. 5-7 illustrate one embodiment of a fastener (i.e., a nail) 100 that may be included with the mounting device described herein. In particular, FIG. 5 provides a 3D perspective view, FIG. 6 provides a top view, and FIG. 7 provides a side view of nail 100. As shown in FIGS. 5-7, nail 100 includes a flattened head 110 and a single shaft 120 extending there from. In other embodiments (shown, e.g., in FIG. 15C), the nail shown in FIG. 5 may have more than one shaft.

As noted above, the flattened head 110 of nail 100 is configured to slidably engage with the raised center portion 20 of bracket 10. To slidably engage with the raised center portion 20, flattened head 110 is slid underneath raised center portion 20, such that the flattened head is sandwiched between the lower surface 25 of the raised center portion 20 and a rear surface of the wall-mounted article. When slid-

ably engaged, the shaft **120** of the nail **100** passes through and extends out of the notched opening **50** of the bracket **10**. In the embodiment shown in FIG. **5**, nail **100** is illustrated as having a substantially smooth, straight shaft **120** without any threads.

In some instances, the substantially smooth, straight shaft **120** of nail **100** may allow the nail to rotate around the insertion point (i.e., the point at which shaft **120** is inserted into a wall or other mounting surface), possibly allowing a wall-mounted article to become crooked if only one mounting device is provided on the rear surface of the wall-mounted article. In other embodiments (shown in FIG. **15B**), nail **100** may instead be implemented as a screw having a flattened head and a shaft comprising substantially any number and size of threads. When a screw is inserted into the wall, the threaded shaft of the screw grips the wall material and prevents the screw from rotating around the insertion point. As such, embodiments of the mounting device described herein that combine a screw having a flattened head with the bracket **10** shown, e.g., in FIGS. **1-4** may ensure that a wall-mounted article does not deviate from a desired orientation once hung, even when only one mounting device is provided on the rear surface of the wall-mounted article.

In some embodiments, the flattened head **110** and shaft **120** of the nail **100** may be fabricated from a single material (e.g., a metal, such as but not limited to, steel, stainless steel, aluminum, copper, brass, bronze, zinc, iron) and formed as one integral component. In other embodiments, the flattened head **110** and shaft **120** may be formed as separate components, which are coupled together to form nail **100**. In such embodiments, flattened head **110** and shaft **120** may be fabricated from the same material (e.g., a metal) or from different materials. In one example, shaft **120** may be fabricated from a metal material (such as steel, stainless steel, aluminum, copper, brass, bronze, zinc, iron, etc.) and flattened head **110** may be a hard plastic material (such as, e.g., Acrylonitrile Butadiene Styrene, ABS) formed around or coupled to an upper end of the shaft.

The flattened head **110** and shaft **120** of nail **100** may be formed in a variety of different shapes and sizes to accommodate different shapes and sizes of bracket **10**, as well as to accommodate mounting different shapes, sizes and weights of wall-mounted articles. As shown in FIGS. **6-7**, for example, the flattened head **110** of nail **100** may be described as having a length (L_{head}) extending along an axis **130** of the nail head, a width (W_{head}) extending along an axis **140** of the nail head, and a thickness (T_{head}) extending through the nail head. As shown most clearly in FIG. **6**, axis **130** and axis **140** are perpendicular axes, which lie in a plane parallel to the upper surface of flattened head **110** and pass through a center point of the flattened head to respectively bisect the width and length of the flattened head. In one exemplary embodiment, flattened head **110** may have a length and width of about 0.35 inches (about 8.9 mm) and a thickness of about 0.03 inches (about 0.8 mm). The shaft **120** of the nail **100** may be described as having a length (L_{shaft}) and diameter (D_{shaft}). In one exemplary embodiment, shaft **120** may have a length of about 0.5 inches (about 12.7 mm) and a diameter of about 0.06 inches (about 1.6 mm).

It is noted, however, that nail **100** is not limited to the exemplary dimensions discussed above, and may be configured with substantially smaller and/or larger lengths, widths, thicknesses and/or diameters, in other embodiments. For example, nail **100** may be configured with substantially smaller dimensions when intended for mounting smaller

and/or lighter articles, and may be configured with substantially larger dimensions when intended for mounting larger and/or heavier articles. As such, flattened head **110** may be provided with a variety of lengths ranging between about 0.35 inches and about 0.6 inches, a variety of widths ranging between about 0.35 inches and about 0.6 inches, and a variety of thicknesses ranging between about 0.02 inches and about 0.04 inches for mounting different sizes and shapes of wall-mounted articles. Likewise, shaft **120** may be provided with a variety of lengths ranging between about 0.6 inches and about 0.8 inches, and a variety of diameters ranging between about 0.03 inches and about 0.06 inches for mounting different sizes and shapes of wall-mounted articles.

All nails, to some extent, may be described as having a flattened head. As used herein, however, the term "flattened head" means that the flattened head **110** has: (a) a planar upper surface **150** and a planar lower surface **160** substantially parallel to the planar upper surface **150**, (b) a diameter (e.g., L_{head} or W_{head}) approximately 10 to 20 times larger than the diameter (D_{shaft}) of the shaft **120**, and (c) a thickness (T_{head}) between approximately 5% and 10% of the diameter of the flattened head. In addition, the flattened head **110** of the nail **100** may be specifically dimensioned, so that when the flattened head is slidably engaged with the raised center portion **20** of the bracket **10**, one or more surfaces of the flattened head engage with (or substantially contact) one or more surfaces of the raised center portion of the bracket.

As shown in FIGS. **5** and **7**, for example, flattened head **110** includes a pair of opposing sidewalls **112** and **114**, which are configured to align with the opposing sidewalls **26** and **27** of the raised center portion **20** of the bracket **10** to secure the flattened head within the raised center portion **20** of the bracket. FIG. **8** provides a top view of bracket **10** and a bottom view of nail **100**, depicting the flattened head **110** of the nail **100** engaging with the raised center portion **20** of the bracket **10**. As flattened head **110** is slid underneath raised center portion **20**, the opposing sidewalls **112** and **114** of the flattened head **110** align with the opposing sidewalls **26** and **27** of the raised center portion **20**. When the shaft **120** of the nail **100** is fully seated within the notched opening **50** of the bracket, each opposing sidewall **112** and **114** of the flattened head **110** is arranged adjacent and parallel to a respective one of the opposing sidewalls **26** and **27** of the raised center portion **20**. This prevents significant rotational movement of the bracket **10** around the nail **100** to ensure that the wall-mounted article remains positioned in the desired orientation.

In general, the upper surface **150** of the flattened head **110** of the nail **100** and the lower surface **25** of the raised center portion **20** of the bracket **10** may be formed to include substantially identical quadrilateral shapes. In the exemplary embodiments shown in FIGS. **1-8**, the flattened head **110** of the nail **100** and the raised center portion **20** of the bracket **10** are depicted as substantially rectangular in shape. It is noted, however, that flattened head **110** and raised center portion **20** are not strictly limited to rectangular shapes, and may be alternatively provided with a variety of different shapes and/or sizes. Regardless of the particular shape chosen, each opposing sidewall **112** and **114** of the flattened head **110** is preferably configured so that it is parallel to a respective opposing sidewall **26** and **27** of the raised center portion **20** when engaged. This enables flattened head **110** to be slid underneath raised center portion **20** without impediment, and enables the flattened head to be held securely in place. However, there is no requirement that opposing sidewalls **112** and **114** of the flattened head **110** be parallel

11

to one another, or that opposing sidewalls **26** and **27** of the raised center portion **20** be parallel to one another. This means that quadrilateral shapes (other than parallelograms) can be used to form flattened head **110** and raised center portion **20** without departing from the scope of the present disclosure.

FIGS. **8-11** illustrate various embodiments of the present disclosure, in which the flattened head **110** of the nail **100** and the raised center portion **20** of the bracket **10** are formed to include a variety of different quadrilateral shapes. As noted above, flattened head **110** of the nail **100** and the raised center portion **20** of the bracket **10** comprise rectangular shapes in the embodiment shown in FIG. **8**. In FIG. **9**, flattened head **110** and raised center portion **20** are each depicted as parallelograms. In FIG. **10**, flattened head **110** and raised center portion **20** are each depicted as trapezoids. Another trapezoidal shape (different from FIG. **10**) is depicted in FIG. **11** for the flattened head **110** and raised center portion **20**.

FIGS. **8-9** illustrate embodiments in which the opposing sidewalls **112** and **114** of the flattened head **110** are parallel to one another, and the opposing sidewalls **26** and **27** of the raised center portion **20** of the bracket **10** are parallel to one another. On the other hand, FIGS. **10-11** illustrate embodiments in which the opposing sidewalls **112** and **114** of the flattened head **110** are not parallel to one another (in this case, they are convergent), and the opposing sidewalls **26** and **27** of the raised center portion **20** of the bracket **10** are also not parallel to one another (again, they are convergent).

FIGS. **12-14** illustrate an alternative embodiment of a fastener (i.e., a nail) **200** that may be provided along with the bracket **10** shown in FIGS. **1-4** and **8**. In particular, FIG. **12** provides a 3D perspective view, FIG. **13** provides a top view, and FIG. **14** provides a side view of nail **200**. Like the previous embodiment of the nail **100** shown in FIGS. **5-7**, nail **200** generally includes a flattened head **210** and a shaft **220** extending from the flattened head **210**, as discussed above. The flattened head **210** of nail **200** generally includes a pair of opposing sidewalls **212/214**, a planar upper surface **250** and a planar lower surface **260**, as discussed above. Although illustrated in FIGS. **12-14** as having a single shaft **220**, nail **200** may be configured with more than one shaft in other embodiments (shown, e.g., in FIG. **15C**).

In some embodiments, the flattened head **210** and shaft **220** of the nail **200** may be dimensioned similar to the flattened head **110** and shaft **120** of nail **100**. In other embodiments, flattened head **210** and/or shaft **220** may be dimensioned substantially different from that previously described. In one example embodiment, flattened head **210** may have a length (L_{head}) of about 0.39 inches (about 9.9 mm), a width (W_{head}) of about 0.35 inches (about 8.9 mm) and a thickness (T_{head}) of about 0.019 inches (about 0.5 mm). In such an embodiment, the slightly larger length (9.9 mm vs 8.9 mm) and slightly smaller thickness (0.5 mm vs 0.8 mm) of nail **200** may enable the side prong members **216** and **217** (discussed below) of nail **200** to be compressed.

Unlike the nail **100** shown in FIGS. **5-7**, the flattened head **210** of the nail **200** shown in FIGS. **12-14** includes a pair of notched openings **213** and **215**, each arranged proximate to a respective one of the opposing sidewalls **212** and **214** to form a pair of side prong members **216** and **217**. Side prong members **216** and **217** are configured to be compressed by the user prior to slidably engaging the flattened head **210** of nail **200** with the raised center portion **20** of the bracket **10**. When the flattened head **210** is fully engaged with the raised center portion **20** of the bracket, side prong members **216** and **217** provide an outward force against the opposing

12

sidewalls **26** and **27** of the raised center portion **20** to secure the flattened head **210** of nail **200** within the raised center portion of the bracket. In some embodiments (shown in FIGS. **12** and **13**), each side prong member **216** and **217** may include a projection **218** and **219** arranged proximate to a distal end of the side prong member to increase the amount of outward force provided by the side prong member at the distal end.

In some embodiments (shown in FIGS. **18A** and **18B**), each side prong member **216** and **217** may include one or more notched openings or teeth **270**, which may engage with a complementary set of one or more notched openings or teeth **280** provided on the opposing sidewalls **26** and **27** of the raised center portion **20** of bracket **10** to at least temporarily lock the flattened head **210** of the nail **200** within the raised center portion of the bracket. Although FIGS. **18A** and **18B** illustrate four teeth **270/280** included on each side prong member **216/217** of flattened head **210** and each sidewall **26/27** of raised center portion **20**, the present disclosure is not limited to such. In other embodiments, any suitable number of teeth **270/280** may be included on the side prong members **216/217** of the flattened head **210** and the sidewalls **26/27** of the raised center portion **20** without departing from the scope of the present disclosure. Once the flattened head **210** of the nail **200** is slidably engaged with the raised center portion **20** of the bracket **10** and the teeth **270/280** are engaged, the side prong members **216/217** may be compressed to disengage the teeth **270/280** and remove the flattened head of the nail from the raised center portion of the bracket.

FIG. **15A** is a 3D perspective view illustrating the nails **100/200** shown in the embodiments of FIGS. **5-8**, FIGS. **12-14** and FIGS. **18A-18B** slidably engaged with the bracket **10** shown in the embodiment of FIGS. **1-4** and **8**. As noted above, the flattened head **110/210** of the nail **100/200** may be slidably engaged with the raised center portion **20** of the bracket **10** by sliding the flattened head underneath the raised center portion, such that the flattened head is sandwiched between the lower surface **25** of the raised center portion **20** and a rear surface of the wall-mounted article. In doing so, the shaft **120/220** of the nail **100/200** passes through and extends out of the notched opening **50** in the raised center portion **20** of the bracket **10**. When the shaft **120/220** is fully seated within the notched opening **50**, opposing sidewalls of the flattened head **110/210** are adjacent and parallel to a respective opposing sidewall of the raised center portion **20**. This configuration and arrangement prevents significant rotational movement or pivoting of the bracket **10** around the nail **100/200**. In doing so, the mounting device may ensure that the wall-mounted article remains positioned in the desired orientation once hung.

FIG. **15B** is a 3D perspective view illustrating a fastener (i.e., a screw) **300** slidably engaged with the bracket **10** shown in the embodiment of FIGS. **1-4**, **8** and **18A-B**. Screw **300** may have a flattened head **310**, which is shaped and dimensioned similar to any of the flattened heads **110/210** of the nails **100/200** shown in the embodiments of FIGS. **5-8**, FIGS. **12-14** and FIGS. **18A-18B**. Screw **300** may also have a shaft **320** comprising substantially any number and size of threads. Similar to the previously disclosed embodiments, the flattened head **310** of the screw **300** may be slidably engaged with the raised center portion **20** of the bracket **10** by sliding the flattened head underneath the raised center portion, such that the flattened head is sandwiched between the lower surface **25** of the raised center portion and a rear surface of the wall-mounted article. In doing so, the shaft **320** of the screw **300** passes through and extends out of the

13

notched opening **50** in the raised center portion **20** of the bracket **10**. When the shaft **320** is fully seated within the notched opening **50**, opposing sidewalls of the flattened head **310** are adjacent and parallel to a respective opposing sidewall of the raised center portion **20** of the bracket **10**.

When screw **300** is inserted into a wall, the threaded shaft **320** of the screw grips the wall material and prevents the screw from rotating around the insertion point. When the flattened head **310** of the screw **300** is slidably engaged with the bracket **10** shown, e.g., in FIGS. 1-4, the mounting device embodiment comprising screw **300** and bracket **10** ensures that a wall-mounted article does not deviate from a desired orientation once hung, even when only one mounting device is provided on the rear surface of the wall-mounted article.

FIG. 15C is a 3D perspective view illustrating yet another embodiment of a mounting device including a specialized bracket **10** and fastener (i.e., a nail) **400**. In the embodiment shown in FIG. 15C, bracket **10** includes a pair of notched openings **50**, **55** in the raised center portion **20** of the bracket. With the exception of the notched openings **50**, **55**, bracket **10** may be dimensioned and configured similar to that shown in FIGS. 1-4 and described above. Nail **400** includes two shafts **420**, **425**, which are dimensioned and configured to slidably engage with the notched openings **50**, **55** formed within the raised center portion **20** of the bracket **10** shown in FIG. 15C. Aside from having dual shafts, however, nail **400** may be generally configured as shown in FIGS. 6-7 and 13-14 and described above. Similar to the mounting device embodiment including screw **300** (FIG. 15B), the mounting device embodiment shown in FIG. 15C may ensure that a wall-mounted article does not deviate from a desired orientation once hung, even when only one mounting device is provided on the rear surface of the wall-mounted article.

FIG. 16A is a 3D perspective view illustrating one embodiment of a wall-mounted article **500** having at least one mounting device **520**, which is affixed to a rear surface **510** of a wall-mounted article **500** at one example location. Mounting device **520** may include any of the mounting device embodiments shown in FIGS. 1-15, 18 and described herein. In the illustrated embodiment, wall-mounted article **500** is a picture frame, mirror, framed art piece, etc., having a single mounting device **520** affixed to and extending from its rear surface **510**. It is noted, however, that the depiction of wall-mounted article **500** in FIG. 16A is merely exemplary, and further noted that any of the embodiments of mounting devices described herein and shown in FIGS. 1-15 and 18 can be used for mounting or hanging substantially any type of decorative or non-decorative article on a wall or other mounting surface. It is additionally noted that, although only one mounting device **520** is shown in FIG. 16A, more than one mounting device **520** can be affixed to a rear surface **510** of a wall-mounted article, in one or more locations on the rear surface **510**, in other embodiments. Affixing more than one mounting device **520** to the rear surface **510** guarantees that the wall-mounted article will maintain its desired orientation once hung.

FIGS. 16B and 16C illustrate exemplary embodiments of a wall-mounted article **500** having a plurality of mounting devices (only the mounting bracket **522** portion of the mounting devices is shown) affixed to a rear surface **510** of the wall mounted article at a variety of locations. As in the previous embodiment, the depiction of wall-mounted article **500** in FIGS. 16B and 16C is merely exemplary, and further noted that any of the embodiments of mounting devices described herein and shown in FIGS. 1-15 and 18 can be

14

used for mounting or hanging substantially any type of decorative or non-decorative article on a wall or other mounting surface. It is additionally noted that, although a particular number of mounting brackets **522** are shown as being affixed to the rear surface **510** at particular locations, a fewer or greater number of mounting brackets **522** could be provided on the rear surface **510** at possibly different locations or orientations without departing from the scope of the present disclosure.

FIG. 17 is a flowchart diagram illustrating one embodiment of a method **600** that may be used for hanging a wall-mounted article on a wall or other vertical surface using a mounting device including a bracket and a nail, as described herein. In some embodiments, method **600** may begin in step **630** by sliding the nail into a notched opening of the bracket, such that a flattened head of the nail engages with a raised center portion of the bracket and the shaft of the nail extends out through the notched opening. While gripping opposing edges of the wall-mounted article, the shaft of the nail may be pushed into the wall (in step **640**) to hang the wall-mounted article at a desired location and a desired orientation on the wall. Because opposing sidewalls of the flattened head are positioned adjacent and parallel to opposing sidewalls of the raised center portion of the bracket when the flattened head of the nail is engaged with the raised center portion, the mounting device and method provided herein prevents the bracket from pivoting around the nail. As discussed above, this may substantially prevent the wall-mounted article from deviating from the desired orientation once the wall-mounted article is hung.

In some embodiments, one or more steps may be performed prior to sliding the nail into the notched opening of the bracket in step **630**. For example, method **600** may include affixing the bracket to a rear surface of the wall-mounted article in optional step **610** prior to sliding the nail into the notched opening of the bracket, if the bracket was not pre-installed on the rear surface of the article.

In some cases, the flattened head of the nail may include a pair of side prong members, as described above and shown in FIGS. 12-14 and FIGS. 18A-18B. In such cases, method **600** may further include compressing the side prong members in optional step **620** prior to sliding the nail into the notched opening of the bracket in step **630**. Once compressed and engaged with opposing sidewalls of the raised center portion, the side prong members apply an outward force against the opposing sidewalls of the raised center portion to secure the flattened head of the nail within the raised center portion of the bracket.

In some embodiments, the shaft of the nail may simply be pushed into the wall (or other mounting surface) in step **640** to hang the wall-mounted article at a desired location and a desired orientation, as shown in FIG. 17 and described above. Such embodiments are suitable when the wall or other mounting surface comprises a relatively soft material, such as drywall (or gypsum board), cork board, and some soft woods.

In other embodiments, it may be necessary to first attach the nail to the wall (or other mounting surface) before guiding the bracket onto the wall-mounted nail. This alternative installation method may be used when mounting a wall-mounted article onto substantially harder surfaces, when the shaft of the nail hits a stud behind a softer wall material, etc. In one example, a hammer or other blunt object may be used to forcibly insert the shaft of the nail into the wall. Once the nail is attached to the wall at the desired

15

location and the desired orientation, a user gripping edges of the wall-mounted article may simply guide the bracket onto the wall-mounted nail.

In other embodiments, the nail may, instead, be implemented as a screw having a flattened head and a threaded shaft, which may be screwed into the wall. In one example embodiment, the screw may be similar to screw **300** shown in FIG. **15B** and discussed above. If a screw is used, the screw may be inserted into the wall before or after the flattened head of the screw is engaged with the raised center portion of the bracket. In one exemplary embodiment, the flattened head of the screw may be slidably engaged with the raised center portion of the bracket prior to positioning the wall-mounted article at a desired location on the wall. While gripping edges of the article, the article may be rotated a number of times, while applying a force normal to the wall, to insert the screw into the wall. Alternatively, a screw driver or other torque tool may be used to insert the screw into the wall at the desired location and orientation, and while gripping edges of the article, a user may simply guide the bracket onto the wall-mounted screw.

Regardless of the particular installation method used, the unique configuration of the various mounting device embodiments described herein enables an article to be mounted or hung on a wall at a desired location and orientation, and by the specific configuration of the mounting device, prevents the wall-mounted article from deviating from the desired orientation once it is hung. Even in embodiments in which a single mounting device is used to provide a single point of attachment to the wall, the mounting device described herein prevents the wall-mounted article from rotating around the single point of attachment (i.e., prevents the article from becoming "crooked") when the article or the wall upon which the article is mounted is disturbed (e.g., due to dusting, people or animals bumping into the wall, doors being slammed, etc.).

It will be appreciated to those skilled in the art having the benefit of this disclosure that this disclosure is believed to provide various embodiments of mounting devices, wall-mounted articles comprising such mounting devices and methods for mounting or hanging wall-mounted articles using such mounting devices. Further modifications and alternative embodiments of various aspects of the disclosure will be apparent to those skilled in the art in view of this description. It is to be understood that the various embodiments of the disclosed mounting devices shown and described herein are to be taken as the presently preferred embodiments. Elements and materials may be substituted for those illustrated and described herein, parts and processes may be reversed, and certain features of the disclosed embodiments may be utilized independently, all as would be apparent to one skilled in the art after having the benefit of this disclosure. It is intended, therefore, that the following claims be interpreted to embrace all such modifications and changes and, accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

What is claimed is:

1. A mounting device for hanging an article on a mounting surface, the mounting device comprising:

a bracket having a raised center portion arranged between two side portions formed integral and contiguous with the raised center portion, wherein a lower surface of the raised center portion is elevated above a lower surface of the two side portions, and wherein the raised center portion comprises opposing sidewalls connecting the

16

lower surface of the raised center portion to the lower surface of the two side portions; and

a fastener having a flattened head comprising opposing sidewalls and a shaft extending from the flattened head, wherein the flattened head of the fastener is shaped and dimensioned, such that when the flattened head of the fastener is slidably engaged with the raised center portion of the bracket:

each one of the opposing sidewalls of the flattened head is arranged adjacent and parallel to a respective one of the opposing sidewalls of the raised center portion of the bracket; and

the flattened head of the fastener is sandwiched between a lower surface of the raised center portion of the bracket and a rear surface of the article; and wherein the bracket comprises a notched opening extending from a bottom edge of the raised center portion toward a mid-point of the raised center portion, and wherein the notched opening is configured for receiving and guiding the shaft of the fastener when the flattened head of the fastener is slidably engaged with the raised center portion of the bracket.

2. The mounting device as recited in claim **1**, wherein a diameter of the notched opening is substantially consistent along a majority of a length of the notched opening, and wherein the diameter of the notched opening is slightly larger than a diameter of the shaft of the fastener.

3. The mounting device as recited in claim **1**, wherein the fastener comprises a nail having two shafts extending from the flattened head, and wherein the bracket comprises a pair of notched openings configured for receiving and guiding the two shafts of the nail when the flattened head of the nail is slidably engaged with the raised center portion of the bracket.

4. The mounting device as recited in claim **1**, wherein an upper surface of the flattened head of the fastener and the lower surface of the raised center portion of the bracket comprise substantially identical quadrilateral shapes.

5. The mounting device as recited in claim **1**, wherein the opposing sidewalls of the raised center portion are parallel to each other, and wherein the opposing sidewalls of the flattened head are parallel to each other.

6. The mounting device as recited in claim **1**, wherein the opposing sidewalls of the raised center portion are not parallel to each other, and wherein the opposing sidewalls of the flattened head are not parallel to each other.

7. The mounting device as recited in claim **1**, wherein the flattened head of the fastener comprises a pair of notched openings, wherein each of the notched openings is arranged proximate to a respective one of the opposing sidewalls of the flattened head to form a pair of side prong members.

8. The mounting device as recited in claim **7**, wherein each side prong member comprises a projection arranged proximate to a distal end of the side prong member.

9. The mounting device as recited in claim **7**, wherein each side prong member comprises one or more teeth, which are configured to engage with one or more teeth included on the opposing side walls of the raised center portion of the bracket.

10. The mounting device as recited in claim **1**, wherein the fastener is a nail having a substantially smooth, straight shaft without any threads.

11. The mounting device as recited in claim **1**, wherein the fastener is a nail having two substantially smooth, straight shafts without any threads.

12. The mounting device as recited in claim **1**, wherein the fastener is a screw having a threaded shaft.

17

13. An article comprising at least one mounting device affixed to a rear surface of the article for hanging the article on a mounting surface, wherein the at least one mounting device comprises:

a bracket having a raised center portion arranged between two side portions formed integral and contiguous with the raised center portion, wherein a lower surface of the raised center portion is elevated above a lower surface of the two side portions, and wherein the raised center portion comprises opposing sidewalls connecting the lower surface of the raised center portion to the lower surface of the two side portions; and

a fastener having a flattened head comprising opposing sidewalls and a shaft extending from the flattened head, wherein the flattened head of the fastener is shaped and dimensioned, such that when the flattened head of the fastener is slidably engaged with the raised center portion of the bracket:

each one of the opposing sidewalls of the flattened head is arranged adjacent and parallel to a respective one of the opposing sidewalls of the raised center portion of the bracket; and

the flattened head of the fastener is sandwiched between a lower surface of the raised center portion of the bracket and a rear surface of the article; and

wherein the bracket comprised a notched opening extending from a bottom edge of the raised center portion toward a mid-point of the raised center portion, and wherein the notched opening is configured for receiving and guiding the shaft of the fastener when the flattened head of the fastener is slidably engaged with the raised center portion of the bracket.

14. The article as recited in claim 13, wherein the fastener comprises a nail having two shafts extending from the flattened head, and wherein the bracket comprises a pair of

18

notched openings configured for receiving and guiding the two shafts of the nail when the flattened head of the nail is slidably engaged with the raised center portion of the bracket.

15. The article as recited in claim 13, wherein the opposing sidewalls of the raised center portion are parallel to each other, and wherein the opposing sidewalls of the flattened head are parallel to each other.

16. The article as recited in claim 13, wherein the opposing sidewalls of the raised center portion are not parallel to each other, and wherein the opposing sidewalls of the flattened head are not parallel to each other.

17. The article as recited in claim 13, wherein the flattened head of the fastener comprises a pair of notched openings, wherein each of the notched openings is arranged proximate to a respective one of the opposing sidewalls of the flattened head to form a pair of side prong members.

18. The article as recited in claim 17, wherein each side prong member comprises a projection arranged proximate to a distal end of the side prong member.

19. The article as recited in claim 17, wherein each side prong member comprises one or more teeth, which are configured to engage with one or more teeth included on the opposing side walls of the raised center portion of the bracket.

20. The article as recited in claim 13, wherein the fastener is a nail having a substantially smooth, straight shaft without any threads.

21. The article as recited in claim 13, wherein the fastener is a nail having two substantially smooth, straight shafts without any threads.

22. The article as recited in claim 13, wherein the fastener is a screw having a number of threads.

* * * * *