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(54) **SYSTEM FOR STORING A CAMERA FOR QUICK USE**

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G03B 17/56 (2006.01)

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CPC **F16M 11/04** (2013.01); **F16M 11/12** (2013.01); **F16M 11/10** (2013.01); **F16M 11/18** (2013.01); **G03B 17/56** (2013.01)
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See application file for complete search history.

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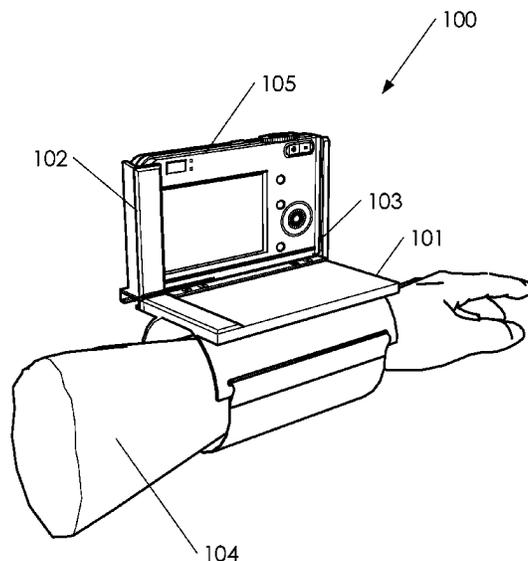
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(57) **ABSTRACT**

A system for mounting a camera to an arm is disclosed. Specifically, the system can comprise a bracket system capable of supporting a camera; and an arm mount, wherein the bracket system connects to the arm mount. The system can also comprise a hinge system that mounts bracket system to arm mount. The hinge system can comprise a first portion and a second portion. The first portion can connect to the bracket system, and the second portion can connect to the arm mount.

17 Claims, 7 Drawing Sheets



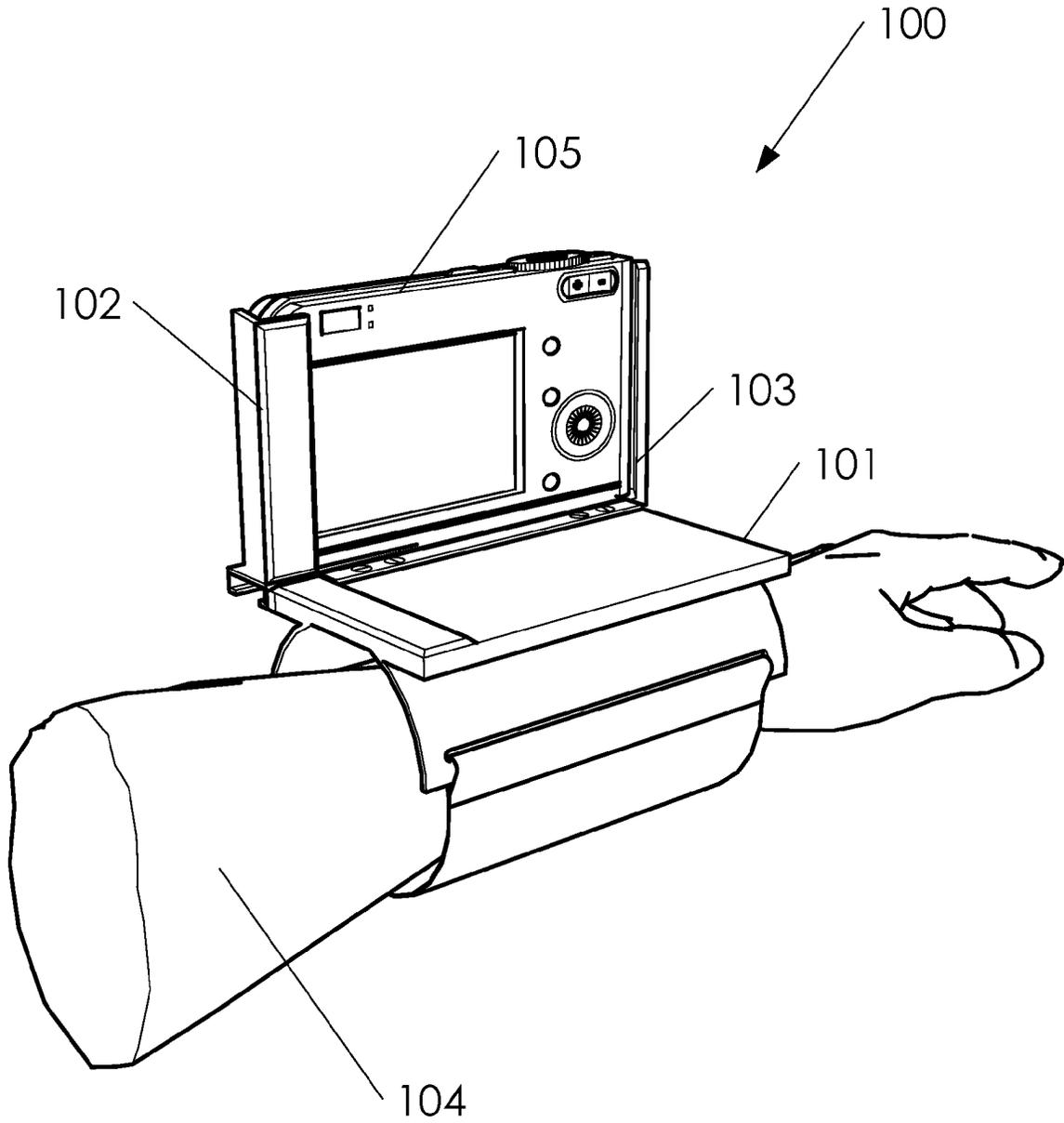


Fig. 1

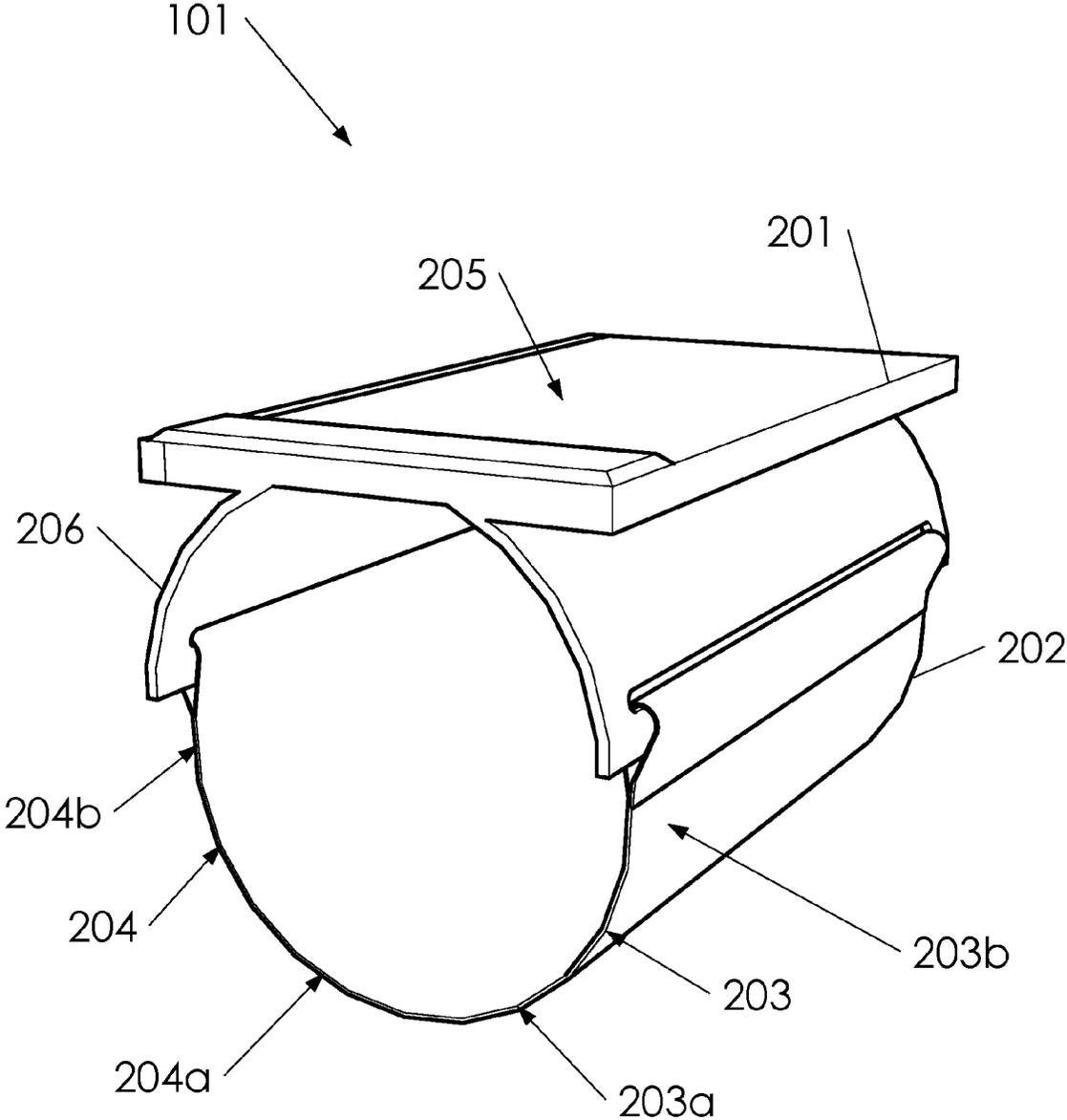


Fig. 2

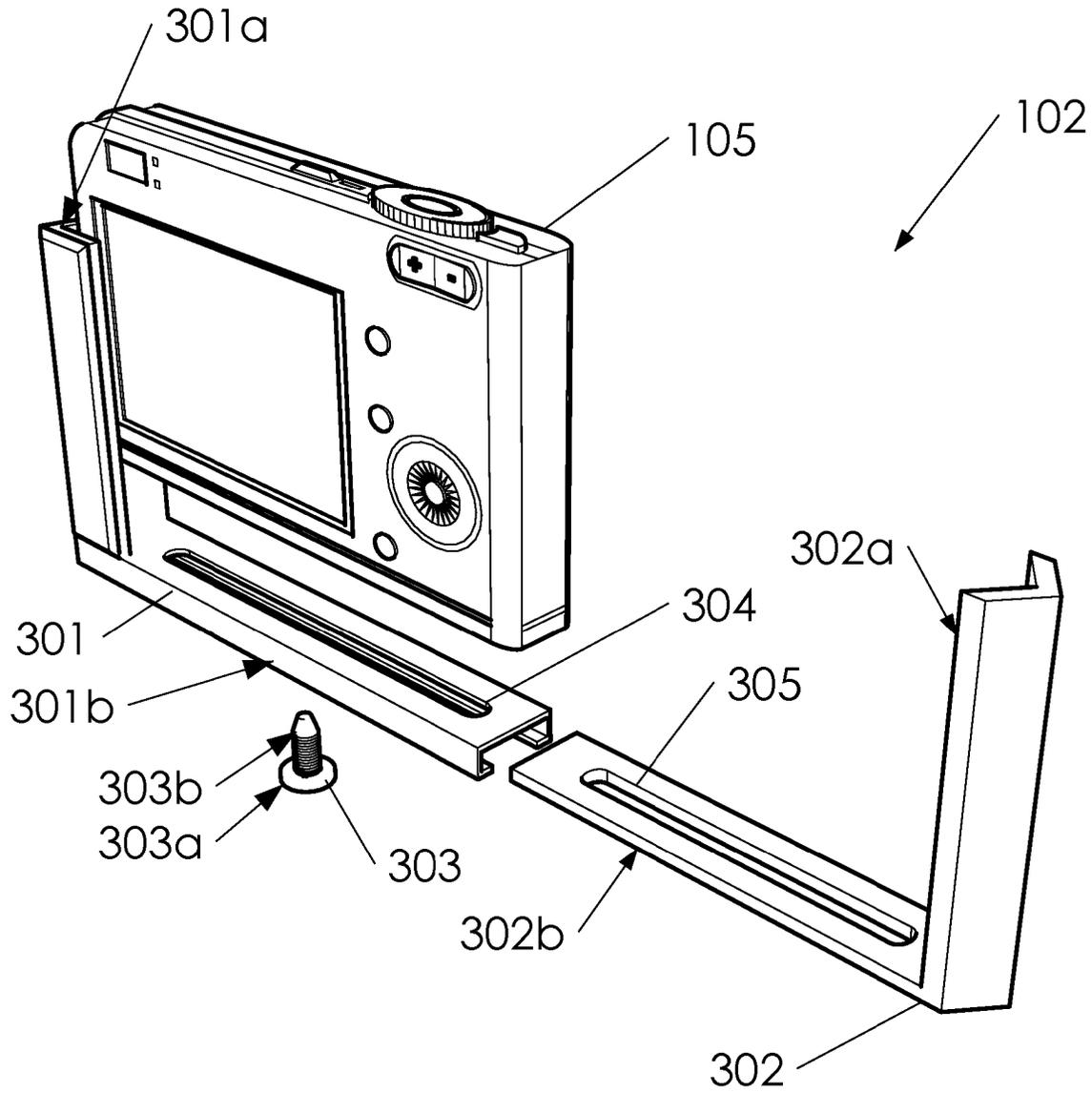


Fig. 3

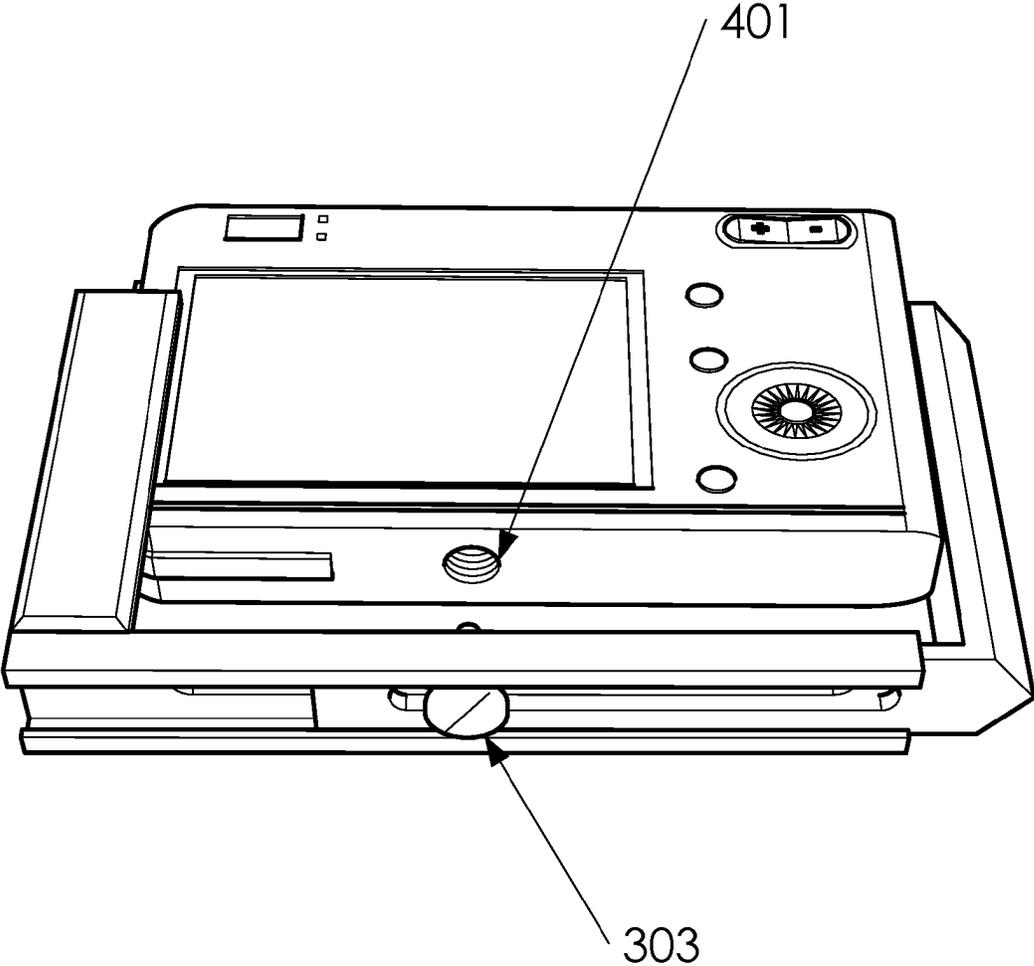


Fig. 4

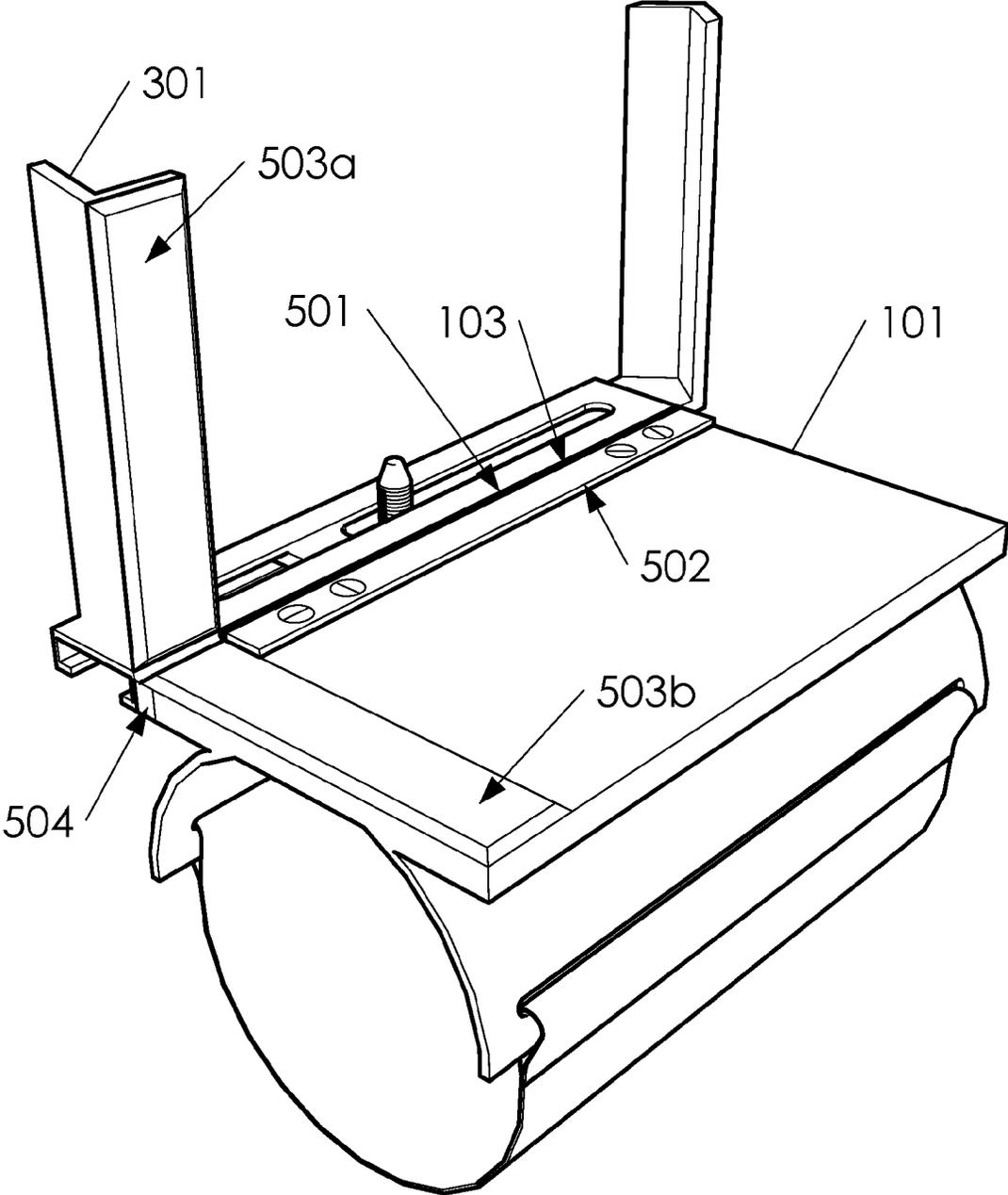


Fig. 5A

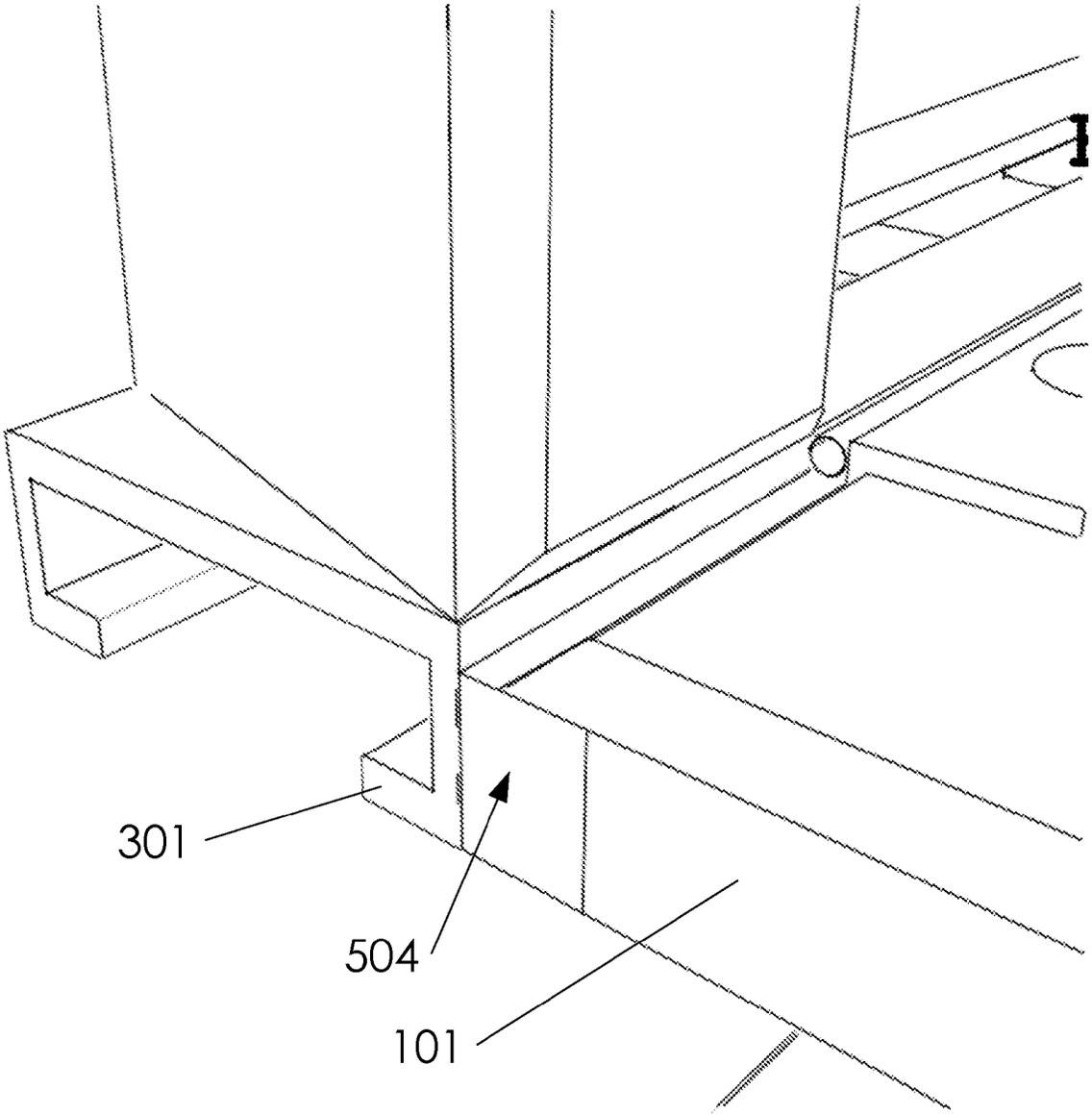


Fig. 5B

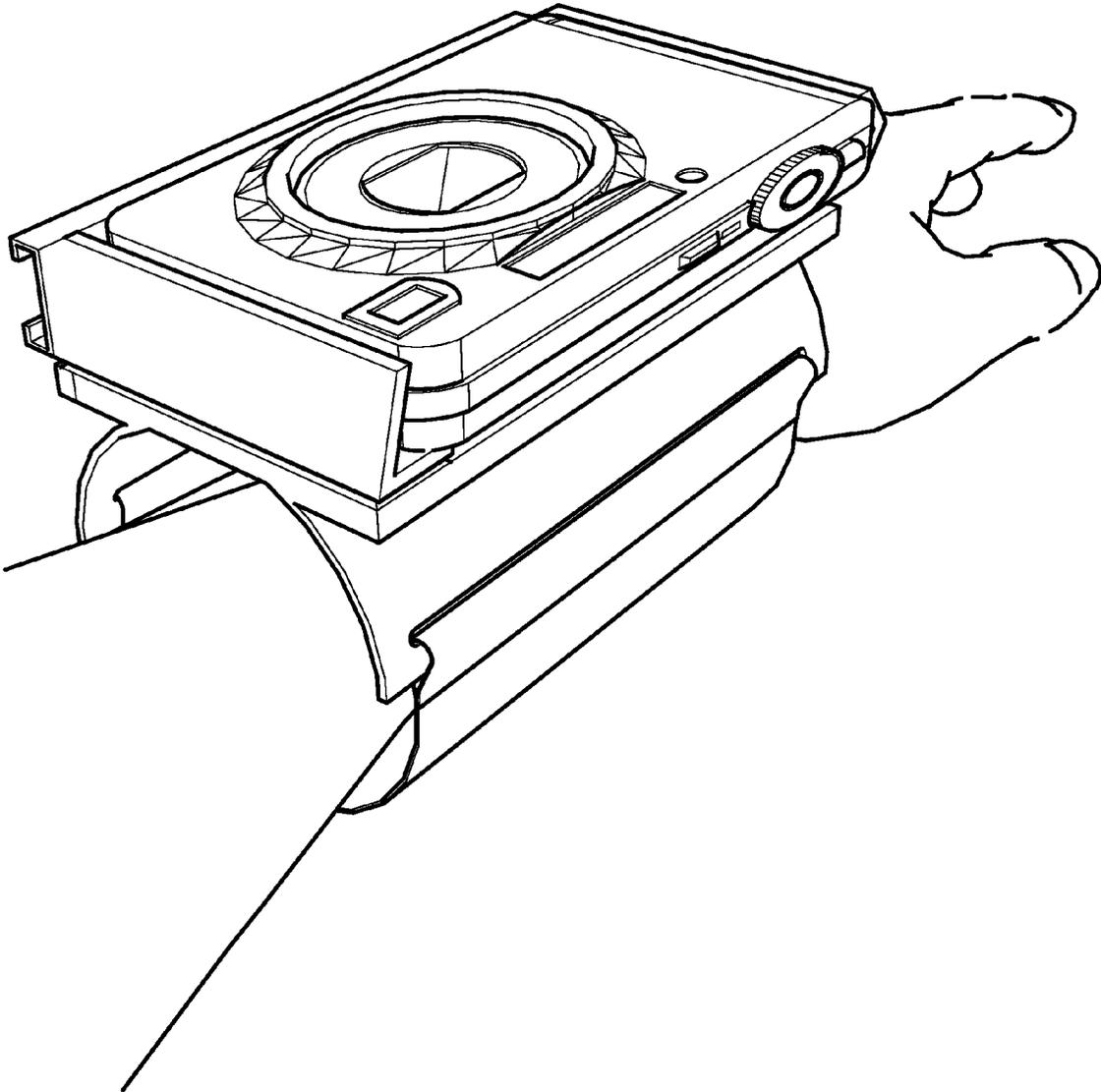


Fig. 6

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SYSTEM FOR STORING A CAMERA FOR QUICK USE

BACKGROUND

This disclosure relates to a system for a camera arm mount system.

Today, cameras are smaller, cheaper and produce better quality pictures than ever before. As a consequence more and more people carry cameras to capture moments while on vacation and in their daily lives. In some situations, such as during an important event or at a particular location, a user may wish to take many photos. However, the user may also need the use of his or her hands, forcing the user to store and remove the camera between uses. To alleviate this problem, a few solutions have been offered. One current solution includes attaching a rope loop to the camera, capable of sliding over a wrist. Another solution is to place a neckband on the camera to allow the camera to hang around the user's neck. Still another solution includes mounting a case to a belt buckle.

However, each solution mentioned above has problems associated with it. The rope loop often is too loose, and even when fitted snugly, still allows the camera to hang down, exposing it to damage, or requiring the user to hold the camera. The neckband also allows the camera to hang freely, exposing the camera to greater risk of damage, particularly if the user is in an active environment. A belt loop mounted case protects the camera, but can be bulky and requires extra time to take out the camera.

It would therefore be advantageous to implement a camera arm mount system.

SUMMARY

A system for mounting a camera to an arm is disclosed. Specifically, the system can comprise a bracket system capable of supporting a camera; and an arm mount, wherein the bracket system connects to the arm mount. The system can also comprise a hinge system that mounts bracket system to arm mount. The hinge system can comprise a first portion and a second portion. The first portion can connect to the bracket system, and the second portion can connect to the arm mount.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a camera arm mount system.

FIG. 2 illustrates arm mount.

FIG. 3 illustrates bracket system.

FIG. 4 illustrates camera fastener interacting with second frame bracket and first bracket, wherein second frame bracket is in a closed position.

FIG. 5A illustrates hinge system in an open position.

FIG. 5B illustrates a detailed view of open position clasp device.

FIG. 6 illustrates a hinge system in a non-use position.

DETAILED DESCRIPTION

Described herein is a camera arm mount system. The following description is presented to enable any person skilled in the art to make and use the invention as claimed and is provided in the context of the particular examples discussed below, variations of which will be readily apparent to those skilled in the art. In the interest of clarity, not all features of an actual implementation are described in this specification. It will be appreciated that in the development of any such actual

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implementation (as in any project), numerous design decisions must be made to achieve the designer's specific goals (e.g., compliance with system- and business-related constraints), and that these goals will vary from one implementation to another. It will also be appreciated that such development effort might be complex and time-consuming, but would nevertheless be a routine undertaking for those of ordinary skill in the applicable art. Accordingly, the claims appended hereto are not intended to be limited by the disclosed embodiments, but are to be accorded their widest scope consistent with the principles and features disclosed herein.

FIG. 1 illustrates a camera arm mount system **100**. Camera arm mount system **100** can comprise an arm mount **101**, a bracket system **102**, and a hinge system **103**. In one embodiment, arm mount **101** can attach to an arm **104**. Bracket system **102** can support a camera **105**. Further, in one embodiment, hinge system **103** can connect bracket system **102** to arm mount **101**.

FIG. 2 illustrates arm mount **101**. Arm mount **101** can comprise a non-use support **201** for camera **105**, and an armband **202**. In one embodiment, non-use support **201** and armband **202** are formed from substantially the same piece of material. In another embodiment, non-use support **201** and armband **202** can be two or more different pieces of material. In such embodiment, armband **202** can affix arm mount **101** to arm **104** in a number of ways. In one embodiment, armband **202** can comprise a first side **203** and a second side **204**. First side **203** can comprise a bottom portion **203a** and a top portion **203b**. Second side **204** can comprise a bottom portion **204a** and a top portion **204b**. Bottom portion **203a** can comprise a set of one or more fasteners capable of mating with a set of one or more fasteners on a bottom side **204a**. Examples of mateable fasteners include, but are not limited to, watchstraps and buckles, buttons, and clasps. In one embodiment, the first and second side of armband **202** can be a single article capable of stretching over and around arm **105**, as shown in FIG. 2. In one embodiment, armband **202** can comprise an elastic material. In another embodiment, an armband first side top portion **203b** and an armband second side top portion **204b** can connect to non-use support **201**. In such embodiment, top portions **203b** and **204b** can connect to opposite sides of non-use support **201**. In another configuration, the top portions **203b** and **204b** can be connected to form a single top portion.

Non-use support **201** can comprise a surface **205**. In one embodiment, surface **205** can be a curved surface, in the general shape of the curvature of arm **104**. In another embodiment, surface **201** can be substantially flat. In such embodiment, non-use support **201** can further comprise a subsurface **206**, existing below and attached to surface **205**. In one embodiment, top portions **203b** and **204b** can connect to surface **205**. In another embodiment, top portions **203b** and **204b** can connect to subsurface **206**, as shown in FIG. 2.

FIG. 3 illustrates bracket system **102**. The bracket system **102** can support camera **105**. Bracket system **102** can comprise a first bracket **301**, a second bracket **302**, and/or a camera fastener **303**. Camera fastener **303** can comprise a camera fastener head **303a** and a camera fastener body **303b**. First bracket **301** can be substantially in the shape of an "L", having a side portion **301a** and a bottom portion **301b**. In one embodiment, side portion **301a** can comprise two connected substantially planar walls, one wall substantially parallel with the back of camera **105**, and a second wall substantially parallel with a side of camera **105**, as is shown in FIG. 3. In another embodiment, side portion **301a** can be curved or substantially in the shape of a "V". In yet another embodi-

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ment, side portion **301a** can be planar and substantially parallel with a side of camera **105**.

In one embodiment, bottom portion **301b** can be flat. In another embodiment, edges can be bent downward so as to form an upside down “U” shape. Still further, in another embodiment, bottom portion **301b** edges can each be bent downward and inward, as shown in FIG. 3, to form a track for second bracket **302**. Bottom portion **301b** can comprise an aperture **304**. In one embodiment, aperture **304** can extend along bottom portion **301b**, aperture **304** having a length much longer than its width, as shown in FIG. 3.

Second bracket **302** can also be substantially in the shape of an “L”, having a side portion **302a** and a bottom portion **302b**. In one embodiment, side portion **302a** can be planar and substantially parallel with a second side of camera **105**. In another embodiment, side portion **302a** can be curved or substantially in the shape of a “V”. Bottom portion **302b** can comprise an aperture **305**. In one embodiment, aperture **304** can extend along the bottom portion **301b**, aperture **305** having a length much longer than its width, as shown in FIG. 3. Second bracket **302** can align with first bracket such that at least a portion of aperture **304** and aperture **305** overlap. In one embodiment, apertures **304** and **305** can each be a plurality of individual orifices, each large enough for only a portion of camera fastener **303** to pass through. In another embodiment, apertures **304** and **305** can each vary in width intermittently to form interval positions at which only a camera fastener **303** can pass. In one embodiment, bottom portion **302b** can slide inside a track formed by bended edges of bottom portion **301a**. In another embodiment, camera **105** can be held in bracket system **102** by a combination of camera fastener **303**, side portion **301a**, and side portion **302a**. In one embodiment, where side portions **301a** and **302a** are substantially in the shape of a “V”, camera **105** is prohibited from rotating about the central axis of camera fastener **303** by the shapes of side portions **301a** and **302a**.

FIG. 4 illustrates camera fastener **303** interacting with second frame bracket **302** and first bracket **301**, wherein second frame bracket **302** is in a closed position. Camera **105** can comprise a camera fastener receiver **401**. In one embodiment, camera fastener body **303b** and camera fastener receiver **401** can be threaded, which is common to most cameras. As camera fastener body **303b** is placed into camera receiver **401** through aperture **304** and aperture **305**, either by screwing or some other secure fashion known in the art, first bracket **301** and second bracket **302** can be pressed against each other. In one embodiment, the pressure created from securing the camera fastener **303** in camera fastener bracket **401** compresses first bracket **301** against second frame bracket **302** such that second frame bracket **302** can no longer move freely. In one embodiment, a washer can be placed between the camera fastener head **303a** and bracket system **102**. Further, in one embodiment, at least a portion of each surface of frame bracket **301** and frame bracket **302** can have a high coefficient of friction where first bracket **301** and second frame bracket **302** touch, thereby creating grip. A high coefficient of friction can be achieved using a rough surface as opposed to a smooth surface, or a material such as rubber. In another embodiment, a washer can be placed between the camera fastener head **303a** and frame brackets. In such embodiment, such washer can be made of an elastic or deformable material, such as rubber.

FIG. 5A illustrates hinge system **103** in an open position. Hinge system **103** comprises a first portion **501** and a second portion **502**. In one embodiment, hinge system first portion **501** can be structurally built into frame bracket system **103**, as shown in FIG. 5A. In another embodiment, first portion **501**

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can be a separate component from hinge system **103**. In one embodiment, hinge system second portion **502** can be structurally built into arm mount **101**. In another embodiment, second portion **502** can be a separate component from arm mount **101**, as shown in FIG. 5A.

The camera arm mount system **100** can comprise a non-use position clasp device **503**. Non-use position clasp device **503** can comprise a first portion **503a** and a second portion **503b**. In one embodiment, the non-use position clasp device **503** can be one or more magnets. For example, first bracket **301** can be made of a ferromagnetic material. In such embodiment, non-use position clasp device **503** can comprise of one or more magnets attached to arm mount **101**. In another embodiment, at least a portion of arm mount **101** can be made of a ferromagnetic material. In such embodiment, non-use clasp device **503** can comprise of one or more magnets attached to first bracket **301**. In another embodiment, non-use position clasp device **503** can comprise of two sets of magnets, one set attached to first bracket **301** and the other set attached to arm mount **101**. In another embodiment, clasp device **503** can be a pair of hook-and-loop fasteners (such as Velcro® strips) where first portion **503a** is attached on first bracket **301** and second portion **503b** is attached to arm mount **101**, as shown in FIG. 5A. In another embodiment, arm mount **101** can comprise a latch that “catches” or receives frame bracket **101**. A person having ordinary skill in the art will recognize that there are many suitable types of non-use position clasp device **503**.

FIG. 5B illustrates a detailed view of an open position clasp device **504**. To hold hinge system in an open position, a number of clasp devices can be used. In one embodiment open position clasp device **504** can be one or more magnets. For example, first bracket **301** can be made of a ferromagnetic material. In such an embodiment, open clasp device **504** can comprise of one or more magnets attached to arm mount **101**, as shown in FIG. 5B. In another embodiment, at least a portion of arm mount **101** can be made of a ferromagnetic material. In such an embodiment, open clasp device **504** can comprise of one or more magnets attached to first bracket **301**. In another embodiment, open clasp device **504** can comprise of two sets of magnets, one set attached to first bracket **301** and the other set attached to arm mount **101**. In another embodiment, clasp device **504** can be a pair of hook-and-loop fasteners (such as Velcro® strips), one strip attached on first bracket **301**, and the other strip attached to arm mount **101**. In another embodiment, arm mount **101** can comprise a latch that “catches” or receives frame bracket **101**. A person having ordinary skill in the art will recognize that there are many suitable types of clasp devices **504**.

FIG. 6 illustrates a hinge system in a non-use position. Placing camera **105** in a non-use position can help prevent damage to camera when it is not being used.

Various changes in the details of the illustrated operational methods are possible without departing from the scope of the following claims. Some embodiments may combine the activities described herein as being separate steps. Similarly, one or more of the described steps may be omitted, depending upon the specific operational environment the method is being implemented in. It is to be understood that the above description is intended to be illustrative, and not restrictive. For example, the above-described embodiments may be used in combination with each other. Many other embodiments will be apparent to those of skill in the art upon reviewing the above description. The scope of the invention should, therefore, be determined with reference to the appended claims, along with the full scope of equivalents to which such claims

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are entitled. In the appended claims, the terms “including” and “in which” are used as the plain-English equivalents of the respective terms “comprising” and “wherein.”

The invention claimed is:

1. A system for mounting a camera to an arm comprising: a bracket system capable of supporting a camera; an arm mount; a hinge system, having a first portion and a second portion, wherein said hinge system connects said bracket system to said arm mount; said bracket system comprises a first bracket and a second bracket; said first portion of said hinge system connects to said bracket system, and said second portion of said hinge system connects to said arm mount; said hinge system comprises an in-use position and a non-use position; said hinge system is rotated with said bracket system substantially parallel with said arm mount while in said non-use position; said hinge system is rotated with said bracket system substantially perpendicular to said arm mount while in said in-use position; said first bracket comprises a ferromagnetic material; a first magnet is connected to a side of said arm mount below said hinge system and said first bracket; and said first magnet is capable of stabilizing said bracket system while in said in-use position.
2. The system of claim 1 wherein said first bracket comprises a first bottom portion and said second bracket comprises a second bottom portion, further wherein said first bottom portion comprises a first aperture, and said second bottom portion comprises a second aperture.
3. The system of claim 2 wherein said first bottom portion comprises bended edges, further wherein said second bottom portion is capable of sliding between said bended edges.
4. The system of claim 2 further comprising a friction interface between an underside of said first bottom portion and a topside of said second bottom portion, wherein said underside and said topside each comprise rubber.
5. The system of claim 4 wherein said underside and said topside each comprise a rough surface.
6. The system of claim 2 further comprising a camera fastener comprising a camera fastener body and a camera fastener head, wherein said camera fastener body is capable of passing through said first aperture and second aperture, and attaching to a camera fastener receiver of said camera.
7. The system of claim 2 wherein said first bracket further comprises a side portion capable of supporting a first side of said camera.
8. The system of claim 7 wherein said side portion comprises two connected substantially planar walls, one wall substantially parallel with a back of said camera and a second wall substantially parallel with said side of said camera.
9. The system of claim 1, wherein said arm mount comprises a non-use support and an armband.
10. The system of claim 9 wherein said armband comprises a left side comprising a first set of one or more fasteners, and a right side comprising a second set of one or more fasteners, wherein said first set of one or more fasteners is mateable with said second set of one or more fasteners.
11. The arm mount of claim 9 wherein said armband comprises an elastic material.
12. The system of claim 9 wherein said non-use support comprises a substantially flat surface.

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13. The system of claim 10 wherein said first one or more fasteners are straps and said second one or more fasteners are buckles.

14. The system of claim 1 wherein said first portion of said hinge system is structurally built into said first bracket, and said second portion of said hinge system is structurally built into said arm mount.

15. The system of claim 1 wherein said bracket system and said arm mount comprise opposing portions of a latching system having a first portion and a second portion; wherein said first portion and said second portion of said latching system are aligned and attached to one another when said bracket system is rotated down into said non-use position, and said first portion and said second portion of said latching system can be released when said bracket system is rotated out of said non-use position.

16. A system for mounting a camera to an arm comprising: a bracket system capable of supporting a camera; an arm mount; a hinge system, having a first portion and a second portion, wherein said hinge system connects said bracket system to said arm mount; said bracket system comprises a first bracket and a second bracket; said first portion of said hinge system connects to said bracket system, and said second portion of said hinge system connects to said arm mount; said hinge system comprises an in-use position and a non-use position; said hinge system is rotated with said bracket system substantially parallel with said arm mount while in said non-use position; said hinge system is rotated with said bracket system substantially perpendicular to said arm mount while in said in-use position; said first bracket comprises a ferromagnetic material; said bracket system and said arm mount comprise opposing strips of hook-and-loop fasteners having a first portion and a second portion; said hook-and-loop fasteners are aligned and attached to one another when said bracket system is rotated down into said non-use position; and said hook-and-loop fasteners release when said bracket system is rotated out of said non-use position.

17. A system for mounting a camera to an arm comprising: a bracket system capable of supporting a camera; an arm mount; a hinge system, having a first portion and a second portion, wherein said hinge system connects said bracket system to said arm mount; said bracket system comprises a first bracket and a second bracket; said first portion of said hinge system connects to said bracket system, and said second portion of said hinge system connects to said arm mount; said hinge system comprises an in-use position and a non-use position; said hinge system is rotated with said bracket system substantially parallel with said arm mount while in said non-use position; said hinge system is rotated with said bracket system substantially perpendicular to said arm mount while in said in-use position; said first bracket comprises a ferromagnetic material;

said bracket system and said arm mount comprise opposing strips of hook-and-loop fasteners having a first portion and a second portion;
said hook-and-loop fasteners are aligned and attached to one another when said bracket system is rotated down 5
into said non-use position; and
said hook-and-loop fasteners release when said bracket system is rotated out of said non-use position.

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