



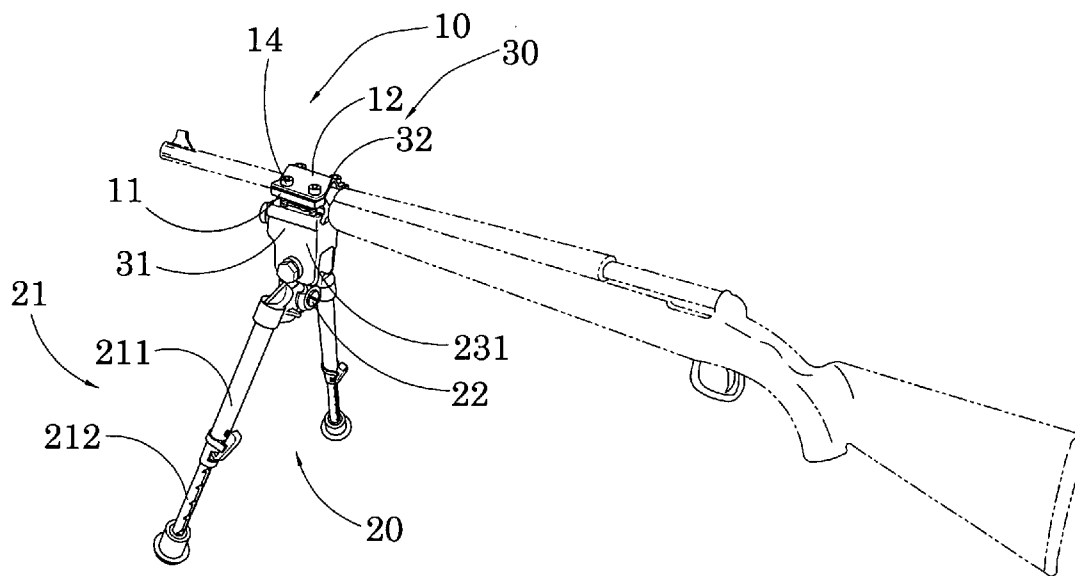
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(19) **United States**(12) **Patent Application Publication**
Cheng(10) **Pub. No.: US 2010/0307046 A1**(43) **Pub. Date: Dec. 9, 2010**(54) **DETACHABLE MOUNTING ARRANGEMENT
FOR UNIVERSAL BI-POD**(52) **U.S. Cl. 42/94**(57) **ABSTRACT**(76) **Inventor: Carson Cheng, El Monte, CA (US)**

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A universal bi-pod for stably supporting and holding an object in position includes an attachment base adapted for detachably coupling with the object, a leg frame adapted for supporting the object in a stably manner; and a detachable mounting arrangement. The mounting arrangement includes a mounting seat provided on the leg frame and having a sliding slot defining an open end at a peripheral side of the mounting seat, a detachable adapter provided at the attachment base to slide into the sliding slot through the open end thereof in a detachably mounting manner; and a locker arrangement provided at the mounting seat for detachably locking the detachable adapter at the sliding slot. Therefore, the object is able to be easily and quickly held and supported by the universal bi-pod and detached from the universal bi-pod.



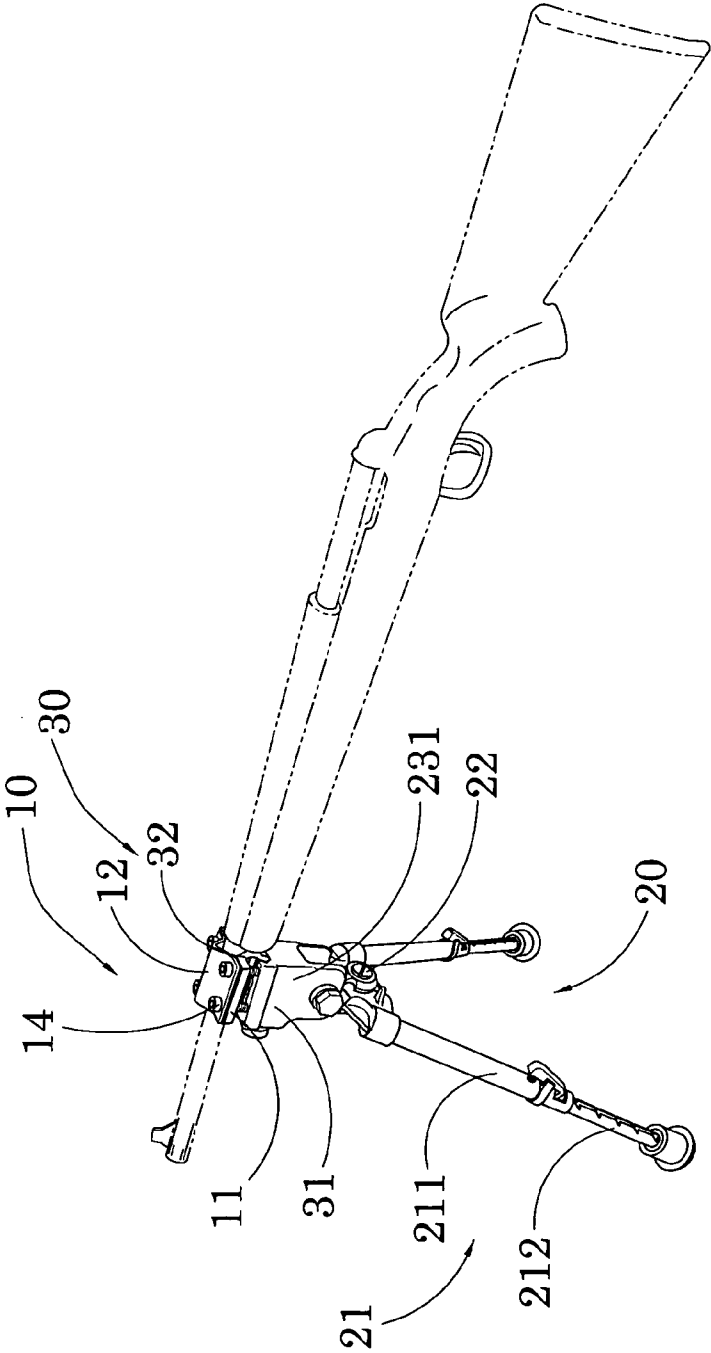


FIG.1

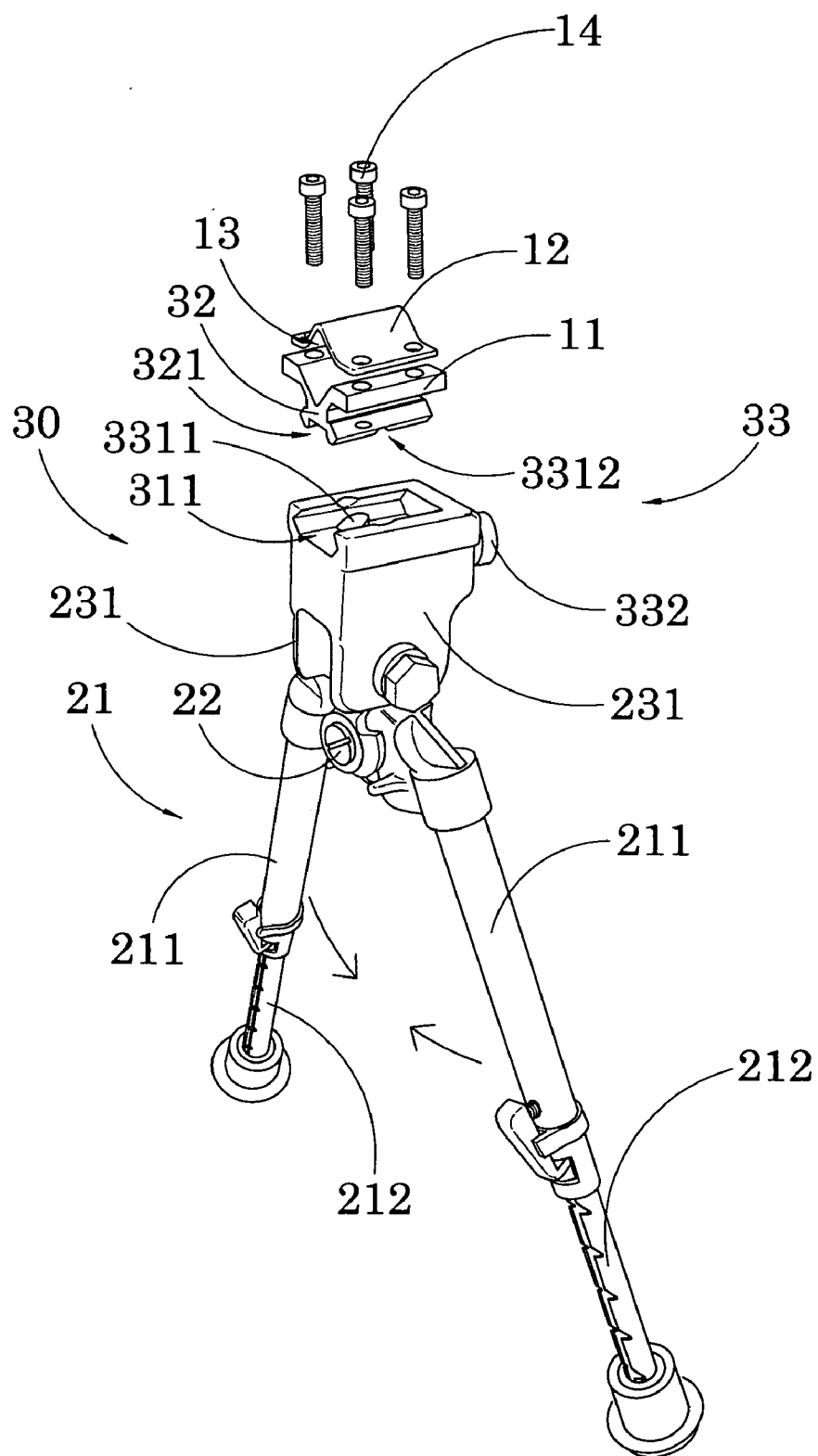


FIG.2

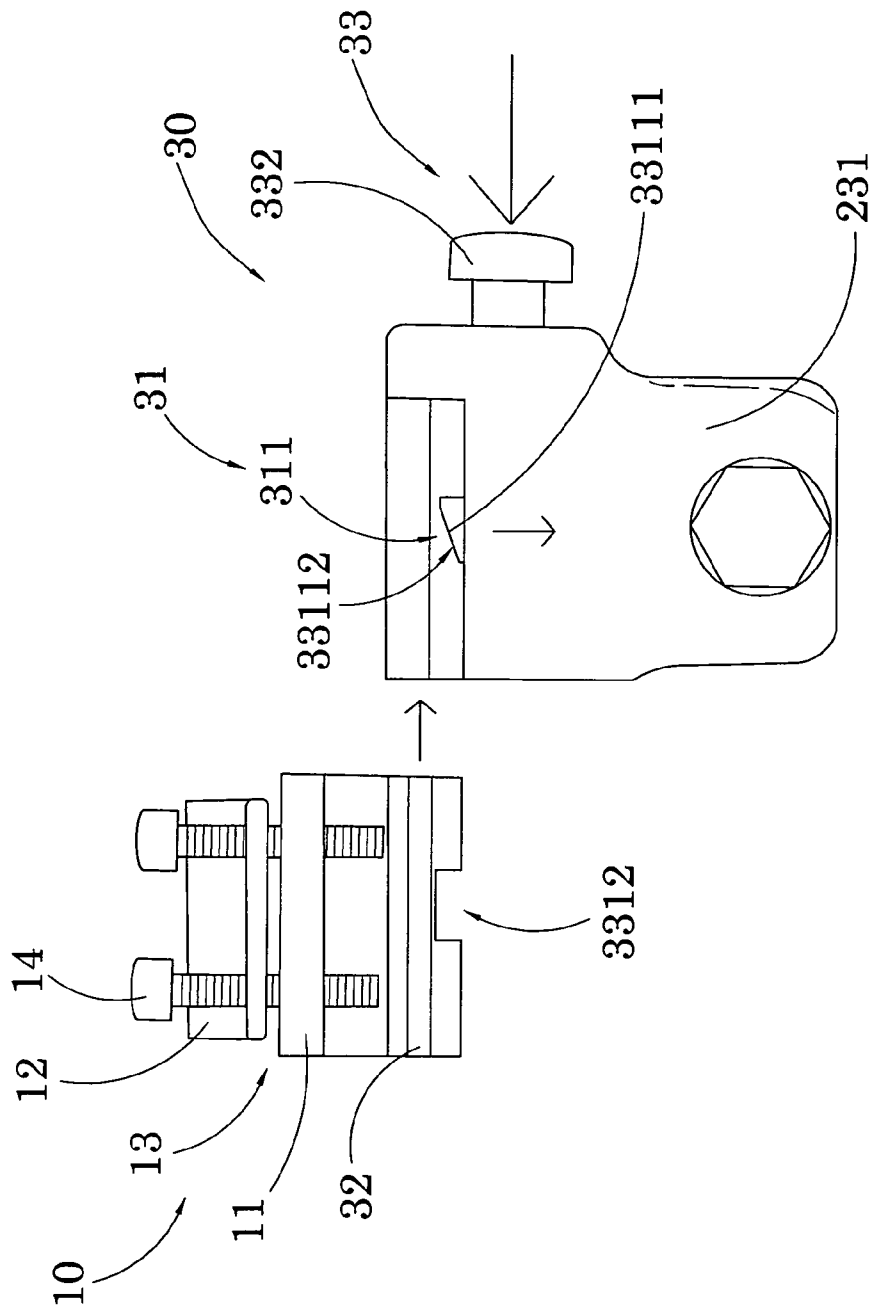


FIG.3A

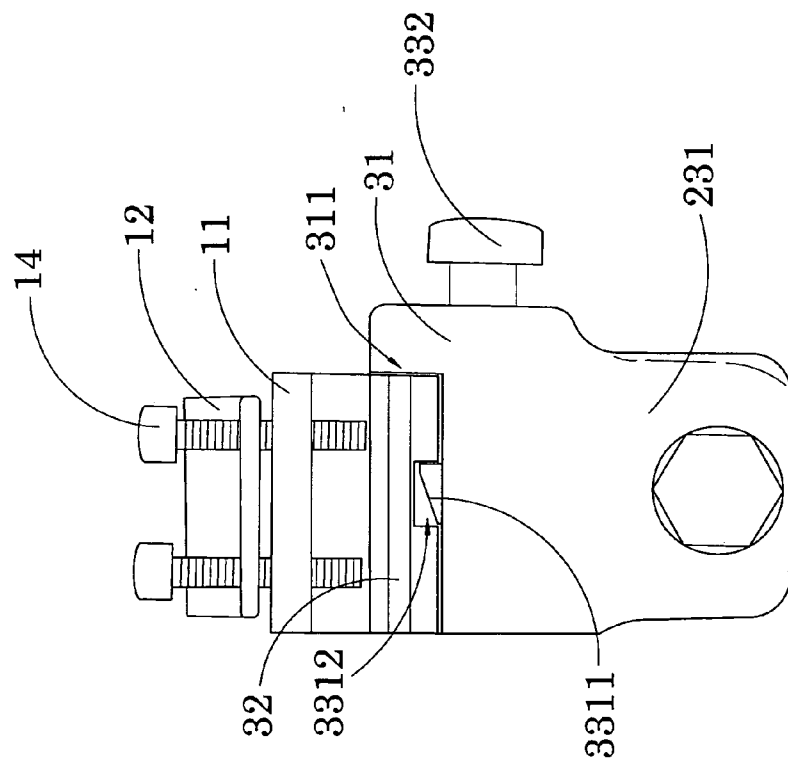


FIG.3B

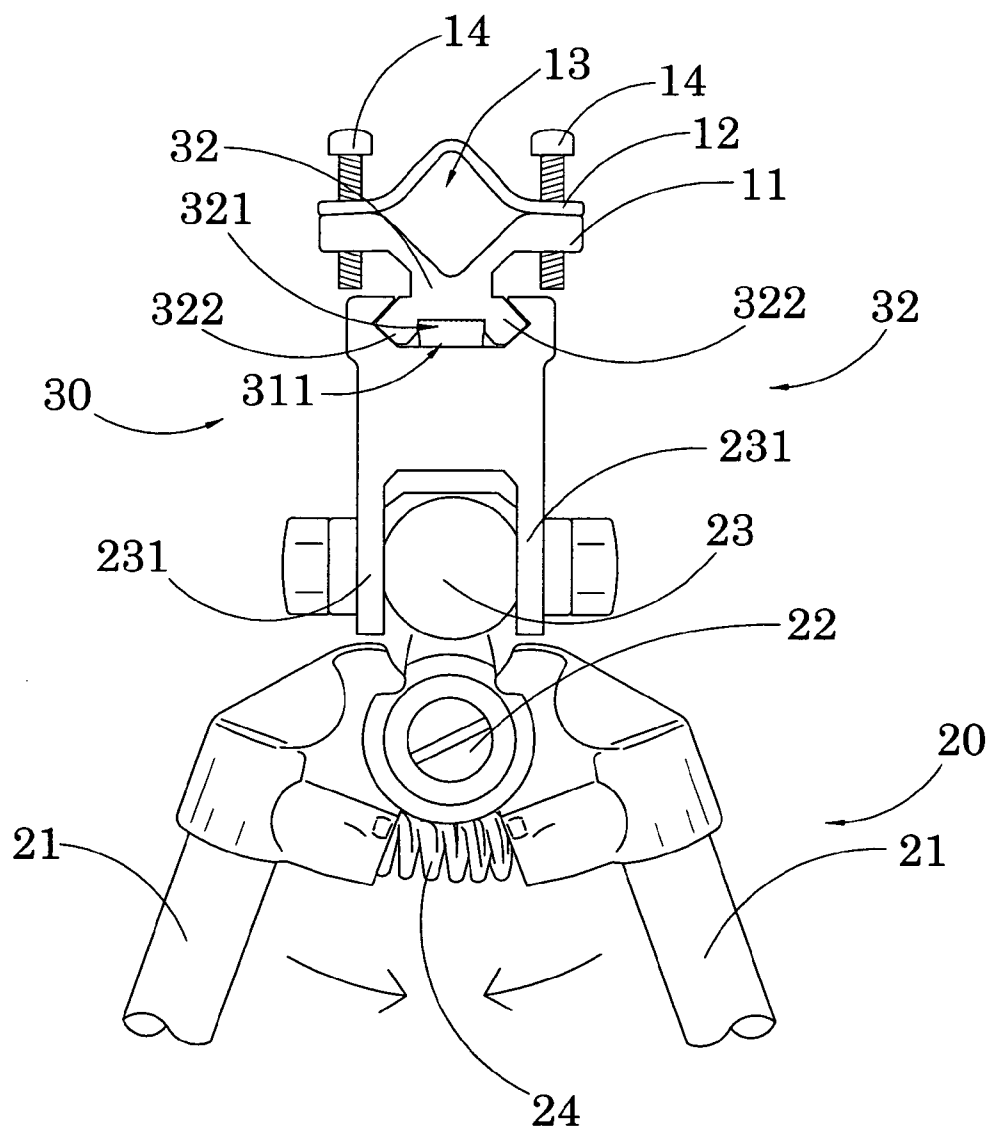


FIG.4

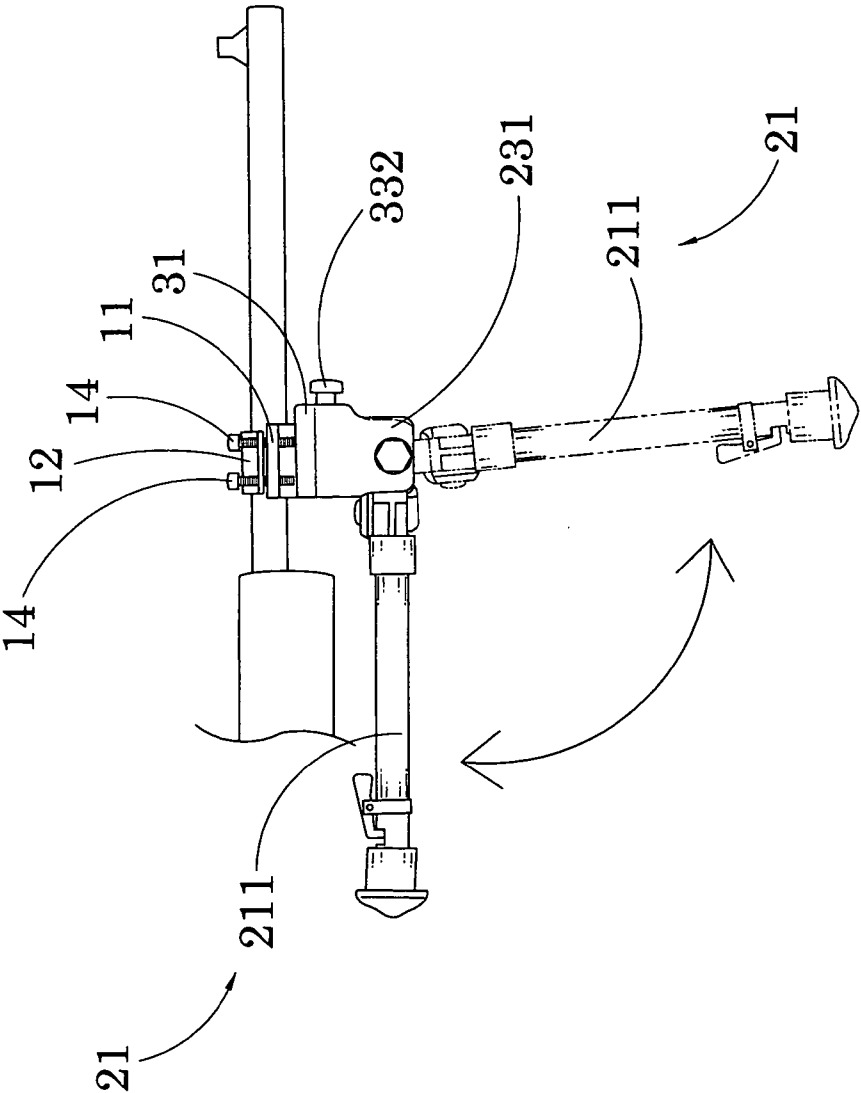


FIG.5

DETACHABLE MOUNTING ARRANGEMENT FOR UNIVERSAL BI-POD

BACKGROUND OF THE INVENTION

[0001] 1. Field of Invention

[0002] The present invention relates to a bi-pod, and more particularly to a universal bi-pod with a detachable mounting arrangement for supporting and stabilizing an object, such as a firearm, wherein the detachable mounting arrangement provides a quick and easy detachable attachment between the universal bi-pod and the object.

[0003] 2. Description of Related Arts

[0004] A bi-pod is usually provided for stably supporting an object to hold in a position. The bi-pod is also commonly provided for a rifle or the like to reduce the unwanted motion, so as to accurately aim a shooting target. In order to fire long continuous bursts of fire, the machine guns provide an improved shooting ability for the hunters or shooters for a long distance shooting and aiming, but at the cost of increased weight to absorb the stresses and increased recoil, so as to decrease the accuracy of shooting.

[0005] Since the firearm is always heavier, the bi-pod significantly permits the operator to stably rest the weapon on the ground, a barrier, or other places via in conjunction the bi-pod with the firearm of the rifles or machine guns. The bi-pod not only reduces the fatigue of the operator while they are aiming the shooting target by forwardly resting the firearm, but also provides a significant stability along two axes motion of the bi-pod. The bi-pod is capable of to reduce the recoil, vibration, or wavering from the firing of the Rifles or machine guns.

[0006] However, for those early bi-pods, they are usually bulky and complex for incorporating with other objects, such as the firearms. The operators of the firearm, such as the hunters for example, have to carry the heavy gun and bulky bi-pod as long as other personal stuff for the wild hunting. Although there are some recent bi-pods which are more compact, but the complication to set up the bi-pod with the firearm is still a hassle for the operators. The complication of setting up the bi-pod is another main concerned issue.

[0007] The conventional bi-pod is inconvenient to assemble and disassemble. The problem of the conventional bi-pod is that the structure of the bi-pod is usually complicated which maximum the assembling time to set up the bi-pod for holding and supporting the firearms in position.

[0008] One of the complicated set up of the bi-pod is mounting the firearm on the bi-pod. Lots of bi-pod requires special tools or complicated steps for mounting the firearm on the legs frame of the bi-pod. Thus, the operator may have to mount the bi-pod with the firearm all the time to carry the gun with the bi-pod mounted on the front portion of the firearm, which increases the actual weight on the operator according to the ergonomics.

[0009] Even though some bi-pods can be attached to and detached from the firearm, the attachment arrangement of the bi-pod and the firearm still involves a considerable operation and installation. It is exhaust and time consuming if the operator wants to attach to and detach the bi-pod from the firearm each time they are aiming the shooting target.

SUMMARY OF THE PRESENT INVENTION

[0010] A main object of the present invention is to provide a universal bi-pod, which is able to quickly and easily to incorporate with an object, such as a firearm, for holding and supporting thereon.

[0011] Another object of the present invention is to provide a universal bi-pod, wherein a detachable mounting arrangement is adapted for detachably mounting an attachment base with a sliding slot of the mounting seat for holding the object in position on a leg frame.

[0012] Another object of the present invention is to provide a universal bi-pod, wherein a detachable adapter of the attachment has a polygonal, and preferably a hexagonal shape, for relatively more stably engaging with a sliding slot to prevent the unwanted lateral movement.

[0013] Another object of the present invention is to provide a universal bi-pod, wherein the detachable adapter is able to be slidably attached to or detached from the sliding slot.

[0014] Another object of the present invention is to provide a universal bi-pod, wherein a locker arrangement is able to securely engaging the detachable adapter with the sliding slot of the mounting seat.

[0015] Another object of the present invention is to provide a universal bi-pod, wherein the detachable adapter of the attachment base is able to be detachably and slidably slid at the sliding slot from either one of the sliding portions of the detachable adapter.

[0016] Another object of the present invention is to provide a universal bi-pod, wherein the leg frame can be selectively folded in different position while a length of the leg frame of the universal bi-pod is adjustable.

[0017] Accordingly, in order to accomplish the above objects, the universal bi-pod of the present invention comprises an attachment base adapted for detachably coupling with the object, and a leg frame adapted for supporting the object in a stably manner.

[0018] The universal bi-pod further comprises a detachable mounting arrangement for detachably coupling the leg frame with the attachment base, wherein the detachable mounting arrangement comprises a mounting seat, a detachable adapter, and a locker arrangement.

[0019] The mounting seat is provided on the leg frame, wherein the mounting seat has a sliding slot defining an open end at a peripheral side of the mounting seat.

[0020] The detachable adapter is provided at the attachment base to detachably couple at the mounting seat, wherein the detachable adapter has a polygonal cross section corresponding to the sliding slot of the mounting seat in such a manner that the detachable adapter is slid into the sliding slot through the open end thereof in a detachably mounting manner.

[0021] The locker arrangement is provided at the mounting seat for detachably locking the detachable adapter at the sliding slot.

[0022] These and other objectives, features, and advantages of the present invention will become apparent from the following detailed description, the accompanying drawings, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] FIG. 1 is a perspective view of a universal bi-pod with a detachable mounting arrangement for according to a preferred embodiment of the present invention, illustrating an example of the bi-pod in conjunction with a firearm of rifle or machine gun.

[0024] FIG. 2 is an exploded perspective view of the detachable mounting arrangement for the universal bi-pod according to the preferred embodiment of the present invention.

[0025] FIGS. 3A and 3B are sectional views of the detachable mounting arrangement for the universal bi-pod according to the preferred embodiment of the present invention, illustrating a locking groove disengaging and engaging with a locking latch respectively.

[0026] FIG. 4 is a front view of the detachable mounting arrangement for the universal bi-pod according to the preferred embodiment of the present invention.

[0027] FIG. 5 is a side view of the universal bi-pod with the detachable mounting arrangement according to the preferred embodiment of the present invention, illustrating the folding positions of the leg frame.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0028] Referring to FIGS. 1 to 5 of the drawing, a detachable mounting arrangement for universal bi-pod according to a preferred embodiment of the present invention is illustrated, wherein the universal bi-pod comprises an attachment base 10 for detachably coupling with an object, a leg frame 20 for detachably engaging with the attachment base 10 to stably hold and support the object in a position, and a detachable mounting arrangement 30 adapted for detachably engaging the attachment base 10 with the leg frame 20, so that a operator of the object, such as a rifle or machine gun which needs to be firmly supported thereon, is able to easily detach the object from the leg frame 20 via the detachable mounting arrangement 30.

[0029] According to the preferred embodiment, the detachable mounting arrangement 30 comprises a mounting seat 31, which is provided on the leg frame 20, having a sliding slot 311 therewithin to define an open end at a peripheral side of the mounting seat 31, a detachable adapter 32 provided at a bottom side of the attachment base 10 for detachably engaging with the sliding slot 311 on the mounting seat 31, and a locker arrangement 33 provided at the mounting seat 31 for detachably locking the detachable adapter 32 at the sliding slot 311.

[0030] Accordingly, the detachable adapter 32 is slidably sliding into the sliding slot 311 through the open end thereof, wherein the locker arrangement 33 is automatically and detachably locking the detachable adapter 32 on the bottom side of the attachment base 10 with the mounting seat 31 in a detachably mounting manner. Thus, the attachment base 10 is capable of slidably and detachably mounting on the leg frame 20 by detachably engaging the mounting seat 31 with the detachable adapter 32 of the detachable mounting arrangement 30.

[0031] As shown in FIGS. 1 and 2, the attachment base 10 comprises a lower attaching panel 11 upwardly extended from the detachable adapter 32 at the bottom of the attachment base 10, and an upper attaching panel 12 overlapping with the lower attachment 11 to define an attachment cavity 13 therebetween. The lower and upper attaching panels 11, 12 are adjustably overlapping with each other via at least an adjustable fastener 14 adjustably coupling the lower attaching panel 11 with the upper attaching panel 12 to selectively adjust the distance therebetween, so as to adjust the attachment cavity 13 in accordance with the object for stably holding the object in position. The fasteners 14 are embodied as screws adapted for adjustably fastening the lower attaching panel 11 and upper attaching panel 12.

[0032] As shown in FIG. 1, the barrel of the firearm, as an example of the object, is securely mounted between the lower

and upper attaching panels 11, 12 within the attachment cavity 13, wherein the adjustable fastener 14 is adapted to selective adjust the distance between the lower and upper attaching panels 11, 12 to fit the barrel of the firearm within the attachment cavity 13.

[0033] The detachable adapter 32 has a polygonal shaped cross section which is matching the cross section of the sliding slot 311 of the mounting seat 31, such that when the detachable adapter 32 is slidably engaged at the sliding slot 311, the detachable adapter 32 is retained in position to prevent the unwanted lateral movement of the attachment base 10 with respect to the leg frame 20.

[0034] Accordingly, the detachable adapter 32 is preferably a hexagonal cross section, geographically matching the size and shape of the sliding slot 311 for slidably being received therewithin, so as to securely and stably mounting the attachment base 10 on the leg frame 20 via detachably mounting the detachable adapter 32 with the mounting seat 31.

[0035] It is worth to mention that the hexagonal shaped detachable adapter 32 efficiently prevent the unwanted lateral movement of the attachment base 10 moving via the detachable mounting between the detachable adapter 32 and the mounting seat 31, so as to provide a relatively more stable support for holding the object in position.

[0036] The locker arrangement 33 comprises a locker unit 331 and an operation button 332 operatively coupling with the locker unit 331 to move the locker unit 331 from a locked position to an unlocked position. The locker unit 331 comprises at least one locking latch 3311, preferably two locking latches 3311 upwardly and slidably extended from a bottom wall of the sliding slot 311 of the mounting seat 31, and at least one locking groove 3312 transversely indented from a bottom side of the detachable adapter 32 for engaging with the locking latches 3311, so as to detachably lock the detachable adapter 32 at the sliding slot 311 of the mounting seat 31.

[0037] The operator button 332 is provided at a surrounding wall of the mounting seat 31 to operatively move the locker unit 331 between the locked position and the unlocked position. At the locked position, the two locking latches 3311 are spacedly and upwardly protruded from the bottom wall of the sliding slot 311 to engage with the bottom side of the detachable adapter 32 at the locking groove 3312 for locking the detachable adapter 32 at the mounting seat 31. At the unlocked position, the operation button 332 is pressed towards the surrounding wall of the mounting seat 31, wherein the two locking latches 3311 are spacedly and downwardly slid below the bottom wall of the sliding slot 311 such that the locking latches 3311 are disengaged with the bottom side of the detachable adapter 32 so as to enable the detachable adapter 32 being slidably detached from the sliding slot 311.

[0038] More specifically, the operator button 332 is arranged to operate the locking latches 3311 of the locking unit 331 to downwardly slide toward the bottom wall of the sliding slot 311, so as to disengage the locking latches 3311 with the locking groove 3312 for slidably unlocking the detachable adapter 32 and the mounting seat 31 by detachably sliding manner.

[0039] It is worth to mention that the locking groove 3312 is preferred to transversely and indently provided at the middle of the bottom side of the detachable adapter 32, so that two symmetrical sliding portions at the bottom side of the detachable adapter 32 are formed. The locking latches 3311 of the locker unit 331 are preferably provided at the mid-

portion of the bottom wall of the sliding slot 311 in accordance with the locking groove 3312 for releasably engaging the locking latches 3311 with the locking groove 3312. Therefore, the detachable adapter 32 is able to be slid at the sliding slot 311 through the open end from either one of the sliding portions of the detachable adapter 32. Therefore, the detachable adapter 32 can be forwardly or backwardly slid to the sliding slot 311 through the open end thereof for detachably coupling the attachment base 10 to the leg frame 20.

[0040] In other words, the locking groove 3312 is longitudinally extended at the mid-portion of the bottom side of the detachable adapter 32 to define the two symmetrical sliding portions of the detachable adapter, wherein the locking latches 3311 are upwardly extended from the mid-portion of the bottom wall of the sliding slot 311 in such a manner that the detachable adapter 32 is adapted to slidably engage with the sliding slot 311 from one of the sliding portions of the detachable adapter 32.

[0041] Accordingly, the sliding slot 311 further has a close end provided at the peripheral wall of the mounting seat 31 at a position that is opposite to the open end of the sliding slot, so that when the detachable adapter 32 is slidably sliding into the sliding slot 311 through the open end, the detachable adapter 32 is slidably blocked by the close end to retain the detachable adapter 32 in a position. It is worth to mention that when the detachable adapter 32 is slid at the sliding slot 311 until the detachable adapter 32 is blocked at the close end of the sliding slot 311, the locking latches 3311 are engaged with the locking groove 3312 so as to lock up the detachable adapter 32 with the mounting seat 31.

[0042] As shown in FIGS. 3A and 3B, each of the locking latches 3311 has a tapered free end portion 33111 upwardly protruded from the bottom wall of the sliding slot 311 and defines an inclined guiding surface 33112 facing towards the open end of the sliding slot 311 for guiding the detachable adapter 32 being slidably guided to slide into the sliding slot 311 of the mounting seat 31. In other words, the tapered free end portion of each of the locking latches 3311 is slidably protruded from the bottom wall of the sliding slot 311, in such a manner that when the detachable adapter 32 is slid at the sliding slot 311, the detachable adapter 32 is guided to slide at the guiding surfaces 33112 of the locking latches 3311 until the locking latches 3311 are engaged with the locking groove 3312 of the detachable adapter 32.

[0043] The detachable adapter 32 further has an indentation slot 321 transversely indented on the bottom side of the detachable adapter 32 for reducing the sliding friction between the bottom side of the detachable adapter 32 and the bottom wall of the sliding slot 311, so as to form two spaced apart longitudinal guiding portions 322 of the detachable adapter 32 parallelly and downwardly extended from the bottom side of the detachable adapter 32. The two longitudinal guiding portions 322 also have the hexagonal shape matching the sliding slot 311.

[0044] It is appreciated that the two longitudinal guiding portions 322 are downwardly extended along two sides of peripheral edge of the indentation slot 321, and parallelly extended along the sliding direction of the detachable adapter 32 sliding at the sliding slot 311, so as to easily slide the detachable adapter 32 into the sliding slot 311 to detachably mount with the mounting seat 31.

[0045] It is worth mentioning that each of the two longitudinal guiding portions 322 is divided into two symmetrical sliding portions by the transverse locking groove 3312 at the

two symmetrical sliding portions of the detachable adapter 32 respectively, so that the detachable adapter 32 at the bottom of the attachment base 10 is able to be slid at the sliding slot 311 from one of the sliding portions via slidably engaging the longitudinal guiding portions 322 with the sliding slot 311 of the mounting seat 31.

[0046] Accordingly, the leg frame 20 of the universal bi-pod for supporting and holding the object in position preferably comprises two length-adjustable supporting legs 21 for stably supporting and holding the object, and a pivot hinge 22 pivotally coupling with the supporting legs 21.

[0047] The pivot hinge 22 is pivotally coupling with the upper ends of the supporting legs 21 to pivotally fold the supporting legs 21 between an unfolded position and a folded position, wherein at the unfolded position, the supporting legs 21 are pivotally and outwardly unfolded away from one of another supporting leg 21 to form an inversed V-shaped configuration. At the folded position, the supporting legs 21 are pivotally and inwardly folded toward one of another supporting leg 21, so as to be folded in parallel.

[0048] In order to substantially retain the supporting legs 21 at the inversed V-shaped configuration of the unfolded position, a retention spring 24 is further provided between the two supporting legs 21 at a vertex point of the V-shaped configuration of the supporting legs 21. Accordingly, two ends of the retention spring 24 are biased against the supporting legs 21 respectively for exerting an urging force therebetween so as to retain the supporting legs 21 at the unfolded position to hold and support the object.

[0049] The leg frame 20 further comprises a folding hinge 23 provided at the mounting seat 31 for pivotally coupling the mounting seat 31 with the leg frame 20, and preferably by pivotally folding the mounting seat 31 to retain the supporting legs 21 at the folded position, and to release the supporting legs 21 at the unfolded position for supporting the object.

[0050] In other words, the mounting seat 31 is being folded via the folding hinge 23 between a set up position and a storage position, as shown in FIG. 5, wherein at the set up position, the supporting legs 21 are pivotally folded at unfolded position via the pivot hinge 22 and are vertically extended from the mounting seat 31, i.e. perpendicular to the barrel of the firearm. At the storage position, the supporting legs 21 are pivotally folded at the folded position via the pivot hinge 22 and are horizontally extended from the mounting seat 31, i.e. parallel to the barrel of the firearm. Therefore, at the storage position, the universal bi-pod will occupy the minimum space with respect to the firearm for storage purpose and easy carrying.

[0051] It is worth to mention that when the supporting legs 21 are pivotally folded at the storage position, the supporting legs 21 are retained at the parallel extending manner at the folded position. Accordingly, two retention walls 231 are downwardly extended from the mounting seat 31 for the folding hinge 23 pivotally coupling between the retention walls 231. When the supporting legs 21 are pivotally folded at the set up position, the upper ends of the supporting legs 21 are located below the bottom edges of the retention walls 231 respectively. Before the supporting legs 21 are pivotally folded at the storage position, the supporting legs 21 must be pivotally folded at the folded position. Once the supporting legs 21 are pivotally folded at the folded position, the supporting legs 21 are adapted to pivotally fold via the folding hinge 23. Accordingly, the upper ends of the supporting legs 21 will be blocked by either the front or rear edges of the

retention walls **231**, depending on the folding direction, to retain the supporting legs **21** at the folded position.

[0052] Accordingly, each of the length-adjustable supporting legs **21** comprises a fixed portion **211** having a hollow longitudinal shape to define a cavity therewithin, and an extendable portion **212** slidably received within the cavity of the fixed portion **211** of the supporting leg **21** for adjustably extending out from the cavity of the fixed portion **211**, so as to adjust the length of the supporting legs **21**.

[0053] It is worth to mention that the length-adjustable supporting legs **21** allow the operator to adjust the high of the bi-pod for supporting the object, such as the firearm of rifle or other machine guns. Thus, the operator is able to selectively adjust the length of the supporting legs **21** via the extendable portion **212** according to different purposes. When the operator is shooting in an indoor facility, the operator is able to set up the universal bi-pod on a low wall and adjust the length of the supporting legs **21** align the firearm supported on the bi-pod with the shoulder of the operator depending on how tall the operator is.

[0054] Therefore, the object, such as the firearm of weapons for example, is able to be held within the attachment cavity **13** via the lower and upper attaching panel **11**, **12** to detachably and securely attach the firearm with the attachment base **10**. The detachable adapter **32** on the bottom of the attachment base **10** is capable of detachably mounting at the sliding slot **31** of the mounting seat **31**, so as to stably support the firearm on the leg frame **20** and minimize the fatigue of the operator from holding the heavy and long firearm of machine gun.

[0055] The attachment base **10** is capable of being slidably detached and attached from the leg frame **20** easily via the mounting seat **31** and the detachable adapter **32** of the detachable mounting arrange **30**, so that the operator, such as a hunter aiming a shooting goal, is able to only attach the attachment base **10** on the firearm and quickly set up the firearm being held and supported on the leg frame **20** of the universal bi-pod via detachably and slidably mounting manner. The operator is able to set up the bi-pod on the ground or low wall for stably supporting the firearm in position easily via detaching or attaching the detachable adapter **32**.

[0056] The detachably mounting arrangement is also capable of being incorporated with a tri-pod or other supporting stands for stably holding and supporting other objects.

[0057] One skilled in the art will understand that the embodiment of the present invention as shown in the drawings and described above is exemplary only and not intended to be limiting.

[0058] It will thus be seen that the objects of the present invention have been fully and effectively accomplished. The embodiments have been shown and described for the purposes of illustrating the functional and structural principles of the present invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

What is claimed is:

1. A universal bi-pod for an object, comprising:

- an attachment base adapted for detachably coupling with said object;
- a leg frame adapted for supporting said object in a stably manner; and

a detachable mounting arrangement which comprises:

- a mounting seat provided on said leg frame, wherein said mounting seat has a sliding slot defining an open end at a peripheral side of said mounting seat,
- a detachable adapter provided at said attachment base to detachably couple at said mounting seat, wherein said detachable adapter has a polygonal cross section corresponding to said sliding slot of said mounting seat in such a manner that said detachable adapter is slid into said sliding slot through said open end thereof in a detachably mounting manner; and
- a locker arrangement provided at said mounting seat for detachably locking said detachable adapter at said sliding slot.

2. The universal bi-pod, as recited in claim 1, wherein said detachable adapter has a hexagonal cross section matching with said sliding slot such that when said detachable adapter is slidably engaged with said sliding slot, said attachment base is securely mounted to said leg frame for preventing an unwanted lateral movement of said attachment base.

3. The universal bi-pod, as recited in claim 1, wherein said sliding slot further has a close end formed at said peripheral side of said mounting seat at a position opposite to said open end to retain said detachable adapter in position when said detachable adapter is slidably blocked at said close end of said sliding slot.

4. The universal bi-pod, as recited in claim 2, wherein said sliding slot further has a close end formed at said peripheral side of said mounting seat at a position opposite to said open end to retain said detachable adapter in position when said detachable adapter is slidably blocked at said close end of said sliding slot.

5. The universal bi-pod, as recited in claim 1, wherein said locker arrangement comprises a locker unit upwardly and slidably extended from a bottom wall of said sliding slot, and an operation button operatively provided at said mounting seat to move said locker unit between a locked position that said locker unit is engaged with a bottom side of said detachable adapter for locking said detachable adapter at said mounting seat, and an unlocked position that said locker unit is disengaged with said bottom side of said detachable adapter to enable said detachable adapter being slidably detached from said sliding slot.

6. The universal bi-pod, as recited in claim 2, wherein said locker arrangement comprises a locker unit upwardly and slidably extended from a bottom wall of said sliding slot, and an operation button operatively provided at said mounting seat to move said locker unit between a locked position that said locker unit is engaged with a bottom side of said detachable adapter for locking said detachable adapter at said mounting seat, and an unlocked position that said locker unit is disengaged with said bottom side of said detachable adapter to enable said detachable adapter being slidably detached from said sliding slot.

7. The universal bi-pod, as recited in claim 4, wherein said locker arrangement comprises a locker unit upwardly and slidably extended from a bottom wall of said sliding slot, and an operation button operatively provided at said mounting seat to move said locker unit between a locked position that said locker unit is engaged with a bottom side of said detachable adapter for locking said detachable adapter at said mounting seat, and an unlocked position that said locker unit is disengaged with said bottom side of said detachable

adapter to enable said detachable adapter being slidably detached from said sliding slot.

8. The universal bi-pod, as recited in claim 5, wherein said locker unit has a locking groove indently formed at said bottom side of said detachable adapter and comprises two locking latches spacedly extended from said bottom wall of said sliding slot and arranged in such a manner that when said detachable adapter is slidably engaged with said sliding slot, said locking latches are engaged with said locking groove to lock up said detachable adapter with said mounting seat.

9. The universal bi-pod, as recited in claim 6, wherein said locker unit has a locking groove indently formed at said bottom side of said detachable adapter and comprises two locking latches spacedly extended from said bottom wall of said sliding slot and arranged in such a manner that when said detachable adapter is slidably engaged with said sliding slot, said locking latches are engaged with said locking groove to lock up said detachable adapter with said mounting seat.

10. The universal bi-pod, as recited in claim 7, wherein said locker unit has a locking groove indently formed at said bottom side of said detachable adapter and comprises two locking latches spacedly extended from said bottom wall of said sliding slot and arranged in such a manner that when said detachable adapter is slidably engaged with said sliding slot, said locking latches are engaged with said locking groove to lock up said detachable adapter with said mounting seat.

11. The universal bi-pod, as recited in claim 8, wherein each of said locking latches has a tapered free end portion slidably protruding from said bottom wall of said sliding slot and defines an inclined guiding surface facing towards said open end of said sliding slot in such a manner that when said detachable adapter is slid at said sliding slot, said detachable adapter is guided to slide at said guiding surfaces of said locking latches until said locking latches are engaged with said locking groove.

12. The universal bi-pod, as recited in claim 9, wherein each of said locking latches has a tapered free end portion slidably protruding from said bottom wall of said sliding slot and defines an inclined guiding surface facing towards said open end of said sliding slot in such a manner that when said detachable adapter is slid at said sliding slot, said detachable adapter is guided to slide at said guiding surfaces of said locking latches until said locking latches are engaged with said locking groove.

13. The universal bi-pod, as recited in claim 10, wherein each of said locking latches has a tapered free end portion slidably protruding from said bottom wall of said sliding slot and defines an inclined guiding surface facing towards said open end of said sliding slot in such a manner that when said detachable adapter is slid at said sliding slot, said detachable adapter is guided to slide at said guiding surfaces of said locking latches until said locking latches are engaged with said locking groove.

14. The universal bi-pod, as recited in claim 10, wherein said locking groove is longitudinally extended at a mid-portion of said bottom side of said detachable adapter to define two symmetrical sliding portions of said detachable adapter, wherein said locking latches are upwardly extended from a mid-portion of said bottom wall of said sliding slot in such a manner that said detachable adapter is adapted to slidably engage with said sliding slot from one of said sliding portions of said detachable adapter.

15. The universal bi-pod, as recited in claim 13, wherein said locking groove is longitudinally extended at a mid-portion

of said bottom side of said detachable adapter to define two symmetrical sliding portions of said detachable adapter, wherein said locking latches are upwardly extended from a mid-portion of said bottom wall of said sliding slot in such a manner that said detachable adapter is adapted to slidably engage with said sliding slot from one of said sliding portions of said detachable adapter.

16. The universal bi-pod, as recited in claim 13, wherein said operation button is operatively mounted at a surrounding wall of said mounting seat and arranged in such a manner that when said operation button is pressed, said tapered free end portions of said locking latches are driven to slide below said bottom wall of said sliding slot so as to disengage said locking latches with said locking groove.

17. The universal bi-pod, as recited in claim 15, wherein said operation button is operatively mounted at a surrounding wall of said mounting seat and arranged in such a manner that when said operation button is pressed, said tapered free end portions of said locking latches are driven to slide below said bottom wall of said sliding slot so as to disengage said locking latches with said locking groove.

18. The universal bi-pod, as recited in claim 10, wherein said detachable adapter further has an indentation slot transversely indent on said bottom side of said detachable adapter for minimizing a friction between said bottom side of said detachable adapter and said bottom wall of said sliding slot when said detachable adapter slides at said sliding slot.

19. The universal bi-pod, as recited in claim 13, wherein said detachable adapter further has an indentation slot transversely indent on said bottom side of said detachable adapter for minimizing a friction between said bottom side of said detachable adapter and said bottom wall of said sliding slot when said detachable adapter slides at said sliding slot.

20. The universal bi-pod, as recited in claim 17, wherein said detachable adapter further has an indentation slot transversely indent on said bottom side of said detachable adapter for minimizing a friction between said bottom side of said detachable adapter and said bottom wall of said sliding slot when said detachable adapter slides at said sliding slot.

21. The universal bi-pod, as recited in claim 1, wherein said leg frame comprises two length-adjustable supporting legs, a pivot hinge pivotally coupling with said supporting legs to pivotally fold said supporting legs at an unfolded position that said supporting legs are formed in an inversed V-shaped configuration, and a folded position that said supporting legs are extended in parallel.

22. The universal bi-pod, as recited in claim 20, wherein said leg frame comprises two length-adjustable supporting legs, a pivot hinge pivotally coupling with said supporting legs to pivotally fold said supporting legs at an unfolded position that said supporting legs are formed in an inversed V-shaped configuration, and a folded position that said supporting legs are extended in parallel.

23. The universal bi-pod, as recited in claim 21, wherein said leg frame further comprises a folding hinge pivotally coupling said pivot hinge with said mounting seat to pivotally fold said supporting legs at a setup position that said supporting legs are formed at said inversed V-shaped configuration and are vertically extended from said mounting seat, and a storage position that said supporting legs are extended in parallel and are horizontally extended from said mounting seat.

24. The universal bi-pod, as recited in claim 22, wherein said leg frame further comprises a folding hinge pivotally

coupling said pivot hinge with said mounting seat to pivotally fold said supporting legs at a setup position that said supporting legs are formed at said inversed V-shaped configuration and are vertically extended from said mounting seat, and a storage position that said supporting legs are extended in parallel and are horizontally extended from said mounting seat.

25. The universal bi-pod, as recited in claim **1**, wherein said attachment base comprises a lower attaching panel integrally and upwardly extended from said detachable adapter, an upper attaching panel overlapping on said lower attaching panel and defining an attachment cavity between said lower and upper attaching panels for retaining said object in position, and an adjustable fastener coupling between said lower and upper attaching panels to selectively adjust a distance therebetween so as to selectively adjust a size of said attachment cavity matching with said object.

26. The universal bi-pod, as recited in claim **20**, wherein said attachment base comprises a lower attaching panel inte-

grally and upwardly extended from said detachable adapter, an upper attaching panel overlapping on said lower attaching panel and defining an attachment cavity between said lower and upper attaching panels for retaining said object in position, and an adjustable fastener coupling between said lower and upper attaching panels to selectively adjust a distance therebetween so as to selectively adjust a size of said attachment cavity matching with said object.

27. The universal bi-pod, as recited in claim **24**, wherein said attachment base comprises a lower attaching panel integrally and upwardly extended from said detachable adapter, an upper attaching panel overlapping on said lower attaching panel and defining an attachment cavity between said lower and upper attaching panels for retaining said object in position, and an adjustable fastener coupling between said lower and upper attaching panels to selectively adjust a distance therebetween so as to selectively adjust a size of said attachment cavity matching with said object.

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