Structure of front storage compartment of motorcycle

A front storage compartment (3) is mounted to a back cover board (A) of the motorcycle. The front storage compartment (3) includes at least a compartment body (4) and a cover (5). The compartment body (4) forms an opening (41). The compartment body (4) has a lower portion forming a slide rail (43). The cover (5) has a lower portion forming a pivotal joint seat (524). The pivotal joint seat (524) is pivotally connected to a slidable member (6). The slidable member (6) has an end received in the slide rail (43) of the compartment body (4) and an opposite end connected to the pivotal joint seat (524). When the cover (5) is released from the compartment body (4), the cover (5) can be opened to the maximum available angle to ease the access of articles in the front storage compartment (3) by a rider and thus improving the usability of the front storage compartment (3).
The present invention generally relates to a structure of front storage compartment of motorcycle, and more particularly to a structure of front storage compartment of motorcycle that improves the usability of the front storage compartment.

(a) Technical Field of the Invention

(b) Description of the Prior Art

[0001] The present invention generally relates to a structure of front storage compartment of motorcycle, and more particularly to a structure of front storage compartment of motorcycle, that improves the usability of the front storage compartment.

[0002] For a two-wheeled vehicle, such as a scooter type motorcycle, as shown in Figure 1, a motorcycle 1 comprises a steering mechanism 11. The steering mechanism 11 comprises a steering handle 111. A back cover board 12 is provided under the steering mechanism 11. The back cover board 12 is provided with a front storage compartment 2. The front storage compartment 2 is closeable by a front storage compartment cover 21. The back cover board 12 is provided with a front storage compartment that improves the usability of the front storage compartment.

[0003] Next, referring to Figures 1 and 2, the known front storage compartment 2 is mounted to the back cover board 12 and the front storage compartment 2 forms an opening 2a in a surface of the back cover board 12. The opening 2a is provided with the front storage compartment cover 21 for selectively closing the front storage compartment 2. The front storage compartment 2 has a lower portion below the opening 2a and having opposite side faces forming a through opening to constitute a pivotal joint seat 2b. The front storage compartment cover 21 has a lower portion having two ends from which rotation axes 211 respectively extend. The rotation axes 211 are insertable into the through opening of the pivotal joint seat 2b so that the front storage compartment cover 21 is rotatable about a center defined by the rotation axes 211 for selectively closing the opening 2a of the front storage compartment 2 to set the front storage compartment 2 a closed condition or an open condition. Further, to allow the front storage compartment cover 21 to completely shield the front storage compartment 2, a lower end 212a of the extension 212 gets engagement with the pivotal joint seat 2b, making the opening angle of the front storage compartment cover 21 opened from the front storage compartment 2 severely constrained, as shown in Figure 1. Consequently, with the opening angle of the front storage compartment cover 21 from the front storage compartment 2 being constrained in such a way, it is difficult for a motorcycle rider to access articles in the front storage compartment 2 so that the usability of the front storage compartment 2 and the rider’s attempts to use the storage compartment become poor.

[0005] In view of such shortcomings of the conventional front storage compartment of motorcycle, it is a major issue of the motorcycle industry to provide a structure of front storage compartment that improves the usability of the front storage compartment.

SUMMARY OF THE INVENTION

[0006] The present invention aims to overcome the shortcoming that the cover of the conventional front storage compartment cannot be opened to a large angle thereby making the usability of the front storage compartment poor.

[0007] The primary technical solution of the present invention is providing a structure of front storage compartment of motorcycle. The front storage compartment is mounted to a back cover board of the motorcycle. The front storage compartment comprises at least a compartment body and a cover. The compartment body forms an opening. The compartment body has a lower portion forming a slide rail. The cover has a lower portion forming a pivotal joint seat. The pivotal joint seat is pivotally connected to a slidable member. The slidable member has an end received in the slide rail of the compartment body and an opposite end connected to the pivotal joint seat. With the slide rail being formed in the lower portion of the compartment body and the slide rail slidably receiving the slidable member therein and also with the opposite end of the slidable member being pivotally jointed to the pivotal joint seat of the cover, when the cover is released from the compartment body, the cover can be opened to the maximum available angle to ease the access of articles in the front storage compartment by a rider and thus improving the usability of the front storage compartment.

[0008] The foregoing objectives and summary provide only a brief introduction to the present invention. To fully appreciate these and other objects of the present invention as well as the invention itself, all of which will become apparent to those skilled in the art, the following detailed description of the invention and the claims should be read in conjunction with the accompanying drawings. Throughout the specification and drawings identical reference numerals refer to identical or similar parts.

[0009] Many other advantages and features of the present invention will become manifest to those versed in the art upon making reference to the detailed descrip-
tion and the accompanying sheets of drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

FIG 1 is a schematic view showing a conventional front storage compartment of motorcycle.

FIG 2 is an exploded view of the conventional front storage compartment.

Figure 3 is an exploded view showing a front storage compartment according to the present invention.

FIG 4 is an exploded view showing a cover and a slidable member and a movable piece according to the present invention.

FIG 5 is an exploded view of a cover of the front storage compartment according to the present invention.

Figures 6, 7, and 8 are schematic views illustrating an operation of the front storage compartment according to the present invention.

Figure 9 illustrates a front storage compartment according to another embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] The following descriptions are exemplary embodiments only, and are not intended to limit the scope, applicability or configuration of the invention in any way. Rather, the following description provides a convenient illustration for implementing exemplary embodiments of the invention. Various changes to the described embodiments may be made in the function and arrangement of the elements described without departing from the scope of the invention as set forth in the appended claims.

[0012] Referring first to Figures 3, 4, and 5, the present invention provides a front storage compartment 3, which is mounted to a back cover board A of a motorcycle. The front storage compartment 3 comprises at least a compartment body 4 and a cover 5.

[0013] The compartment body 4 forms an opening 41. The opening 41 allows a rider to reach a hand a handle into the compartment body 4 for accessing articles stored in the compartment. The opening 41 forms a circumferential rim 411 that is raised in a direction toward the cover 5. The compartment body 4 has a bottom end 4a that forms a through hole 42. Specifically, the through hole 42 is arranged in the end of the compartment body 4 that is opposite to the opening 41. The through hole 42 allows installation of a power supply component, such as an electrical charging connector E. The compartment body 4 has a lower portion forming a slide rail 43. The slide rail 43 extends from the opening 41 to the bottom end 4a. The slide rail 43 comprises a stop section 431 formed at a location close to the bottom end 4a. The stop section 431 comprises two opposite projecting blocks 4311 projecting from the slide rail 43. Further, the compartment body 4 has an upper portion forming a lock section 44.

The compartment body 4 has left and right portions each having an inside surface forming an insertion aperture 45 at a location close to the opening 41. The insertion aperture 45 functions to receive insertion and installation of a blocking member 46 therein. The blocking member 46 has two ends forming projecting ears 461 respectively projecting therefrom to insert into the compartment body 4, whereby the blocking member 46 may block and prevent tiny objects from falling out of the compartment body 4.

[0014] The cover 5 comprises an outer cover member 51 and an inner cover member 52. As shown in Figure 4, the outer cover member 51 comprises a locking pawl 511 and a plurality of mounting posts 512 arranged around the locking pawl 511. An enclosing flange 513 is set outside and surrounding the mounting posts 512. The enclosing flange 513 has a lower portion forming a plurality of holding sections 514.

[0015] The inner cover member 52 forms a through opening 521. The through opening 521 allows the locking pawl 511 of the outer cover member 51 to extend therethrough. Further, a plurality of mounting holes 522 is arranged around the through opening 521 in such a way that the mounting holes 522 respectively correspond to the mounting posts 512 of the outer cover member 51, whereby threaded fasteners S are respectively put through the mounting holes 522 to threadingly engage the mounting posts 512 to securely fix the inner cover member 52 to the outer cover member 51. The inner cover member 52 has an outer circumference from which a circumferential projecting reinforcement rim 523 projects toward the outer cover member 51. The projecting rim 523 defines an area that is slightly larger than an area delimited by the enclosing flange 513 of the outer cover member 51 so that the projecting rim 523 may set over and cover outside the enclosing flange 513 of the outer cover member 51. The inner cover member 52 has a lower portion forming a pivotal joint seat 524. The pivotal joint seat 524 forms a pivot hole 5241. The pivotal joint seat 524 also forms a plurality of strengthening ribs 5242 on the back side of the pivot hole 5241. Further, the pivotal joint seat 524 has two ends each forming a retention hook 525. The retention hooks 525 are set in hooked engagement with the holding sections 514 of the outer cover member 51 so as to have the lower end portion 52a of the inner cover member 52 and the lower end portion 51a of the outer cover member 51 to securely joint to each other. The inner cover member 52 forms a receiving groove 526 facing the compartment body 4 and the receiving groove 526 receives and retains therein a leak-proof gasket P. The leak-proof gasket P receives the rim 411 of the opening 41 of the compartment body 4 to tightly position thereon so as to ensure bettered dust.
Also referring to Figures 3 and 4, the pivotal and water resistance of the front storage compartment 2. The pivotal joint seat 542 of the cover 5 is set in pivotal connection with a slidable member 6. The slidable member 6 is fit into the slide rail 43 of the compartment body 4 to be reciprocally slidable within the slide rail 43. The slidable member 6 has an end forming guide sections 61. The guide sections 61 are respectively formed of projecting guide blocks 611 projecting outward from opposite sides of the slidable member 6. The guide sections 61 are engageable with the stop section 431 of the slide rail 43 to show a retained condition, whereby when the guide sections 61 of the slidable member 6 are received in the stop section 431 of the slide rail 43, the stop section 431 of the slide rail 43 provides a retention effect on and thus constraining the guide sections 61 of the slidable member 6 to thus effect positioning of the slidable member 6. The slidable member 6 forms, at an opposite end, axle hole sections 62. Specifically, the axle hole sections 62 are arranged at the ends opposite to the guide sections 61. The axle hole sections 62 define therebetween a recess 621. The recess 621 has a width that is exactly equal to width of the pivotal joint seat 542 of the cover 5, whereby the slidable member 6 is fit, with the recess 621 thereof, over the pivotal joint seat 542 of the cover 5. The axle hole section 62 receives a rotation axle 63 to extend therethrough. With the rotation axle 63 extending through the axle hole section 62 of the slidable member 6 and the pivot hole 5421 of the pivotal joint seat 542 of the cover 5, the slidable member 6 is securely and rotatably jointed to the cover 5.

To practice the present invention, as shown in Figures 6, 7, and 8, when the front storage compartment 3 is closed, the locking pawl 511 of the cover 5 is in engagement with the lock section 44 of the compartment body 4. Meanwhile, the guide sections 61 of the slidable member 6 are received in the stop section 431 of the slide rail 43 so that the stop section 431 of the slide rail 43 sets constraint on and effects a retaining engagement with the guide sections 61 of the slidable member 6 so as to retain the slidable member 6 in such a position. Such positioning of the slidable member 6 also achieves retaining of the lower portion of the cover 5 in position and the upper portion of the cover 5 is retained in position by the locking pawl 511 engaging the lock section 44 of the compartment body 4. As such, the cover 5 is securely retained on and covers the opening 41 of the compartment body 4 and thus the compartment body 4 is completely closed as shown in Figure 6. When a rider attempts to access the front storage compartment 3, the rider uses a hand to disengage (through an upward pulling operation) the locking pawl 511 of the cover 5 from the lock section 44 of the compartment body 4 and at the same time draw the cover 5 outward. At the same time, the guide sections 61 of the slidable member 6 are also caused to disengage from the constraint set forth by the stop section 431 of the slide rail 43 and the guide sections 61 of the slidable member 6 are caused by the cover 5 to slide along the slide rail 43. After the slidable member 6 slides along the slide rail 43 for a distance, the cover 5 is spaced from the compartment body 4 so that the cover 5 is driven to tilt downward by the gravity thereof about the rotation axle 63 of the slidable member 6. As such, the cover 5 can be opened to show a substantially horizontal condition with respect to the slidable member 6, as shown in Figures 7 and 8, whereby the opening 41 of the compartment body 4 is set in a fully open condition to allow easy access of articles therein by the rider.

Referred to Figure 9, in an embodiment of the front storage compartment 3 according to the present invention, the stop section 431 of the slide rail 43 is formed of a resilient metal plate 432 that is of substantial resiliency. The resilient metal plate 432 comprises a protrusion portion 4321. The protrusion portion 4321 may set a constraining engagement with the guide sections 61 of the slidable member 6. By forming the stop section 431 with the resilient metal plate 432, abrasion and wear of the guide sections 61 of the slidable member 6 can be reduced.

The efficacy of the present invention is that a slide rail 43 is formed in a lower portion of a compartment body 4 to slidably receive a slidable member 6 inserted therein with an opposite end of the slidable member 6 pivotally jointed to a pivotal joint seat 542 of a cover 5, whereby when the cover 5 is released from the compartment body 4, the cover 5 can be opened to the maximum available angle to ease the access of articles in the front storage compartment 3 by a rider and thus improving the usability of the front storage compartment 3.

It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods differing from the type described above.

While certain novel features of this invention have been shown and described and are pointed out in the annexed claim, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.

**Claims**

1. A front storage compartment of motorcycle, the front storage compartment (3) being mounted to a back cover board (A) of a motorcycle, the front storage compartment (3) comprising at least a compartment body (4) and a cover (5); the compartment body (4) forming an opening (41), the compartment body (4) having a lower portion forming a slide rail (43); and the cover (5) having a lower portion forming a pivotal joint seat (524), the pivotal joint seat (524) being piv-
2. The front storage compartment of motorcycle according to claim 1, wherein the opening (41) of the compartment body (4) forms a rim (411) that is raised in a direction toward the cover (5), the compartment body (4) having a bottom end (4a) forming a through hole (42), the compartment body (4) having an upper portion forming a lock section (44), the compartment body (4) forming insertion apertures (45) in inside surfaces thereof close to the opening (41), the insertion apertures (45) receiving insertion and installation of a blocking member (46), the blocking member (46) having two ends forming projecting ears (461) projecting therefrom to insert into the insertion apertures (45).

3. The front storage compartment of motorcycle according to claim 1, wherein the slide rail (43) extends from the opening (41) to the bottom end (4a) of the compartment body (4), the slide rail (43) comprising a stop section (431) formed at a location close to the bottom end (4a).

4. The front storage compartment of motorcycle according to claim 3, wherein the stop section (431) comprises two opposite projecting blocks (4311) projecting from the slide rail (43).

5. The front storage compartment of motorcycle according to claim 3, wherein the stop section (431) is formed of a resilient metal plate (432) that is of substantial resiliency, the resilient metal plate (432) comprising a protrusion portion (4321).

6. The front storage compartment of motorcycle according to claim 1, wherein the cover (5) comprises an outer cover member (51) and an inner cover member (52).

7. The front storage compartment of motorcycle according to claim 6, wherein the outer cover member (51) comprises a locking pawl (511), a plurality of mounting posts (512) being arranged around the locking pawl (511), an enclosing flange (513) being set outside and surrounding the mounting posts (512), the enclosing flange (513) having a lower portion forming a plurality of holding sections (514).

8. The front storage compartment of motorcycle according to claim 6, wherein the inner cover member (52) forms a through opening (521), the through opening (521) allowing a locking pawl (511) of the outer cover member (51) to extend therethrough, a plurality of mounting holes (522) being arranged around the through opening (521) in such a way that the mounting holes (522) respectively correspond to the mounting posts (512) of the outer cover member (51), the inner cover member (52) having a lower portion forming a pivotal joint seat (524), the pivotal joint seat (524) forming a pivot hole (5241), the pivotal joint seat (524) having two ends each forming a retention hook (525), the retention hooks (525) being set in hooked engagement with the holding sections (514) of the outer cover member (51).

9. The front storage compartment of motorcycle according to claim 1, wherein the slideable member (6) has an end forming guide sections (61), the guide sections (61) being respectively formed of projecting guide blocks (611) projecting outward from opposite sides of the slideable member (6).

10. The front storage compartment of motorcycle according to claim 1, wherein the slideable member (6) forms the axle hole sections (62) at an end thereof opposite to the guide sections (61), the axle hole sections (62) defining therebetween a recess (621), the recess (621) receiving the pivotal joint seat (524) of the cover (5) therein, the axle hole section (62) receiving a rotation axle (63) to extend therethrough, whereby with the rotation axle (63) extending through the axle hole section (62) of the slideable member (6) and the pivot hole (5241) of the pivotal joint seat (524) of the cover (5), the slideable member (6) is rotatably jointed to the cover (5).

Amended claims in accordance with Rule 137(2) EPC.

1. Motorcycle comprising a front storage compartment, the front storage compartment (3) being mounted to a back cover board (A) of a motorcycle, the front storage compartment (3) comprising at least a compartment body (4) and a cover (5); characterized in that the compartment body (4) forms an opening (41), the compartment body (4) having a lower portion forming a slide rail (43); and the cover (5) has a lower portion forming a pivotal joint seat (524), the pivotal joint seat (524) being pivotally connected to a slideable member (6), the slideable member (6) having an end received in the slide rail (43) of the compartment body (4) and an opposite end connected to the pivotal joint seat (524).

2. The motorcycle comprising a front storage compartment according to claim 1, wherein the opening (41) of the compartment body (4) forms a rim (411) that is raised in a direction toward the cover (5), the compartment body (4) having a bottom end (4a) forming a through hole (42), the compartment body (4) having an upper portion forming a lock section...
(44), the compartment body (4) forming insertion apertures (45) in inside surfaces thereof close to the opening (41), the insertion apertures (45) receiving insertion and installation of a blocking member (46), the blocking member (46) having two ends forming projecting ears (461) projecting therefrom to insert into the insertion apertures (45).

3. The motorcycle comprising a front storage compartment according to claim 1, wherein the slide rail (43) extends from the opening (41) to the bottom end (4a) of the compartment body (4), the slide rail (43) comprising a stop section (431) formed at a location close to the bottom end (4a).

4. The motorcycle comprising a front storage compartment according to claim 3, wherein the stop section (431) comprises two opposite projecting blocks (4311) projecting from the slide rail (43).

5. The motorcycle comprising a front storage compartment according to claim 3, wherein the stop section (431) is formed of a resilient metal plate (432) that is of substantial resiliency, the resilient metal plate (432) comprising a protrusion portion (4321).

6. The motorcycle comprising a front storage compartment according to claim 1, wherein the cover (5) comprises an outer cover member (51) and an inner cover member (52).

7. The motorcycle comprising a front storage compartment according to claim 6, wherein the outer cover member (51) comprises a locking pawl (511), a plurality of mounting posts (512) being arranged around the locking pawl (511), an enclosing flange (513) being set outside and surrounding the mounting posts (512), the enclosing flange (513) having a lower portion forming a plurality of holding sections (514).

8. The motorcycle comprising a front storage compartment according to claim 6, wherein the inner cover member (52) forms a through opening (521), the through opening (521) allowing a locking pawl (511) of the outer cover member (51) to extend therethrough, a plurality of mounting holes (522) being arranged around the through opening (521) in such a way that the mounting holes (522) respectively correspond to the mounting posts (512) of the outer cover member (51), the inner cover member (52) having a lower portion forming a pivotal joint seat (524), the pivotal joint seat (524) forming a pivot hole (5241), the pivotal joint seat (524) having two ends each forming a retention hook (525), the retention hooks (525) being set in hooked engagement with the holding sections (514) of the outer cover member (51).

9. The motorcycle comprising a front storage compartment according to claim 1, wherein the slidable member (6) has an end forming guide sections (61), the guide sections (61) being respectively formed of projecting guide blocks (611) projecting outward from opposite sides of the slidable member (6).

10. The motorcycle comprising a front storage compartment according to claim 1, wherein the slidable member (6) forms the axle hole sections (62) at an end thereof opposite to the guide sections (61), the axle hole sections (62) defining therebetween a recess (621), the recess (621) receiving the pivotal joint seat (524) of the cover (5) therein, the axle hole section (62) receiving a rotation axle (63) to extend therethrough, whereby with the rotation axle (63) extending through the axle hole section (62) of the slidable member (6) and the pivot hole (5241) of the pivotal joint seat (524) of the cover (5), the slidable member (6) is rotatably jointed to the cover (5).
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TECHNICAL FIELDS SEARCHED (IPC)

- B62J
- B62K

The present search report has been drawn up for all claims.

Place of search: Munich
Date of completion of the search: 4 March 2013
Examiner: Feber, Laurent

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT
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