EUROPEAN PATENT SPECIFICATION

(54) Unlocking member arranging structure for vehicles

Entriegelungseinrichtung für Fahrzeuge

Structure de déverrouillage pour véhicules

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Description

[0001] The present invention relates to a vehicle in which a functional part arranged in a body cover is supported by a body frame and to which a lid enabling a closed state covering the functional part to be locked is openably fitted to the body cover in a position matching the functional part, and more particularly to the improvement of the arranging structure for an unlocking member for releasing the lid from the locked state.

[0002] A configuration in which fuel tank as a functional part is arranged on the low floor part of a scooter type vehicle and a lid covering the fuel refill cap if the fuel tank is fitted to the body cover, and a keyhole for inserting a key to unlock a locking mechanism for locking the lid in a closed state is arranged in the vicinity of the lid in a position overlooking the outer face of the body cover is known from Patent Document 1.


[0003] However, if part of an unlocking member provided with a keyhole is arranged with part of it overlooking the outer face of the body cover as in the conventional configuration mentioned above, it will be subject to undesirable tampering, and moreover it is required to configure the unlocking member which has sufficient durability to stand even under the influence of external disturbance such as an unfavorable weather.

Patent document US 5,291,067 relates to an electric circuit system for a motorcycle provided with a storage box, the electric circuit system including a switch means operatively connected to electromagnetic key mechanism for electromagnetically opening keys provided for a lid of the storage box and a lid of a fuel tank injection port. The electric circuit system includes a main switch means including one switch capable of unlocking a storage box without stopping the operation of the engine and another switch capable of unlocking a cover of a fuel tank port in which the engine comes to stop after the main switch is operated.

Patent document FR 2802 889 relates to a locking mechanism of a motorcycle, wherein a lock bar is fixed to a cowling of the motorcycle having a pivotally supported cover member to cover the lock bar and the cover member to be fixed by interlock means.

[0004] An object of the present invention, attempted in view of these circumstances, is to provide an unlocking member arranging structure for vehicles which can prevent the unlocking member for releasing the lid from its locked closed state from being undesirably tampered with and minimize the risk for the unlocking member to be influenced by external disturbance such as an unfavorable weather.

[0005] In order to achieve the object stated above, the invention as stated in Claim 1 relates to a vehicle, comprising a body frame, a body cover, covering the body flame, a functional part, arranged in the body cover, supported by the body frame, and a lid which makes it possible to lock a closed state covering said functional part, openably fitted to said body cover in a position matching said functional part, and is characterised in that the vehicle further comprises a cover member arranged in a position away from the lid is openably fitted to the body cover and an unlocking member for releasing the lid from a locked state is so arranged on the body cover as to be covered by the cover member in a closed state, whereby the cover member and the unlocking member are arranged onto an inner cover which covers from behind a head pipe provided on the body frame at its front end and constitutes part of the body cover.

[0006] The invention as stated in claim 2 is characterized in that a storage compartment in the inner cover is covered by the cover member from the rear part of the body in addition to the configuration of the invention as stated in claim 1.

[0007] The invention as stated in Claim 3 is characterized in that the storage compartment is disposed in the inner cover to be slidable in the back-and-forth direction of the body between a fully closed position of being accommodated in the inner cover and a fully open position of protruding from the inner cover and is offset from the storage compartment as viewed from behind in the back-and-forth direction of the body; the unlocking member is disposed on the inner cover in a position of at least partly overlapping the head pipe; and the cover member is so fitted to the storage compartment as to cover the unlocking member in a state in which the storage compartment is in the fully closed position in addition to the configuration of the invention as stated in Claim 2.

[0008] The invention as stated in Claim 4 is characterized in that the storage compartment is disposed in the inner cover along the direction of the body width with a space between them, and the unlocking member is arranged between the left and right front storage sections.

[0009] The invention as stated in Claim 5 is characterized in that left and right front storage sections are disposed in the inner cover along the direction of the body width with a space between them, and the unlocking member is arranged between the left and right front storage sections.

[0010] The invention as stated in Claim 6 is characterized in that the unlocking member is arranged in a position offset from the body center line toward one side in the right-and-left direction in addition to the configuration of the invention as stated in Claim 5.

[0011] Further, the invention as stated in Claim 7 is characterized in that the functional part is a fuel tank arranged in the vicinity of a step floor which the body cover is provided with and the lid is so fitted to the body cover as to cover the fuel refill cap of the fuel tank in addition to the configuration of the invention as stated in Claim 1.

[0012] According to the invention as stated in Claim 1, as long as the cover member is in a closed state, the unlocking member will not be exposed, and therefore it is possible to prevent the unlocking member from being undesirably tampered with and to minimize the risk for the unlocking member to be influenced by external dis-
Furthermore, according to the invention as stated in Claim 1, it is possible to facilitate the manipulation of the unlocking member by arranging the unlocking member in a position in a forward position close to the rider.

According to the invention as stated in Claim 2, it is made possible to reduce the number of components by making a dedicated member to cover the unlocking member unnecessary.

According to the invention as stated in Claim 3, it is made possible to arrange the unlocking member with greater space efficiency while securing an adequate capacity for the storage compartment by making it a drawer type.

According to the invention as stated in Claim 4, it is made possible to making unnecessary a dedicated locking mechanism for opening the lid because, in order to open the lid, it is necessary to release the storage compartment from the locked state in its fully closed position.

According to the invention as stated in Claim 5, it is made possible to arrange the unlocking member with greater space efficiency by arranging the unlocking member in the space created between the left and right front storage sections.

According to the invention as stated in Claim 6, it is made possible, by arranging the unlocking member in a position close to either hand of the rider on the riding seat, to facilitate its manipulation.

According to the invention as stated in Claim 7, greater effectiveness is achieved because the lid is so arranged as to cover the fuel refill cap, which is frequently used.

A mode for carrying out the present invention will be described below with reference to one embodiment of the invention illustrated in the accompanying drawings.

Fig. 1 through Fig. 23 illustrate one embodiment of the invention, wherein Fig. 1 is a left profile of a scooter-type motorcycle; Fig. 2, a perspective view of a body frame in a state of being fitted with a fuel tank and a radiator; Fig. 3, a left profile of the scooter-type motorcycle in the back-and-forth direction in a state in which the riding seat and body cover are removed; Fig. 4 is an arrow 4 view of Fig. 3 in a state in which a storage box is removed; Fig. 5 is an enlarged longitudinal sectional profile of the rear part of the scooter-type motorcycle; Fig. 6 is a longitudinal section of the vicinity of the rear part of the storage box; Fig. 7 is an enlarged view of the essential part of Fig. 5 in a state in which the front seat is opened; Fig. 8 is an arrow 8 view of Fig. 7; Fig. 9 is an enlarged arrow 9 view of Fig. 1; Fig. 10 is a schematic section along line 10-10 of Fig. 9; Fig. 11 is a section along line 11-11 of Fig. 9; Fig. 12 is a section along line 12-12 of Fig. 11; Fig. 13 is a profile of the storage compartment in the fully closed position as viewed in the arrow 13 direction of Fig. 10; Fig. 14 is an arrow 14 view of Fig. 13; Fig. 15 is a diagram of the compartment locking mechanism when the storage compartment is in a locked fully closed state as viewed in the same direction as Fig. 14; Fig. 16 is a diagram matching Fig. 15 when the compartment locking mechanism is in a state of being released from locking; Fig. 17 is a profile matching Fig. 13 in a state in which the storage compartment is temporarily held by a holding mechanism in approximately the middle between the fully closed position and the fully open position; Fig. 18 is a longitudinal section for showing the configuration of the holding mechanism; Fig. 19 is a section along line 19-19 of Fig. 9; Fig. 20 is a section along line 20-20 of Fig. 9; Fig. 21 is a diagram showing the configuration of a smart entry system; Fig. 22 is a section along line 22 of Fig. 9; Fig. 23 is an enlarged view of the essential part of Fig. 22.
of the rear part of the scooter-type motorcycle; Fig. 6, a longitudinal section of the vicinity of the rear part of the storage box; Fig. 7, an enlarged view of the essential part of Fig. 5 in a state in which the front seat is opened; Fig. 8, an arrow view of Fig. 7; Fig. 9, an enlarged arrow 9 view of Fig. 1; Fig. 10, a schematic section along line 10-10 of Fig. 9; Fig. 11, a section along line 11-11 of Fig. 9; Fig. 12, a section along line 12-12 of Fig. 11; Fig. 13, a profile of the storage compartment in a fully closed position as viewed in the arrow 13 direction of Fig. 10; Fig. 14, an arrow 14 view of Fig. 13; Fig. 15, a diagram of the compartment locking mechanism when the storage compartment is in a locked fully closed state as viewed in the same direction as Fig. 14; Fig. 16, a diagram matching Fig. 15 when the compartment locking mechanism is in a state of being released from locking; Fig. 17, a profile matching Fig. 13 in a state in which the storage compartment is temporarily held by a holding mechanism in approximately the middle between the fully closed position and the fully open position; Fig. 18, a longitudinal section for showing the configuration of the holding mechanism; Fig. 19, a section along line 19-19 of Fig. 9; Fig. 20, a section along line 20-20 of Fig. 9; Fig. 21, a diagram showing the configuration of a smart entry system; Fig. 22 a section along line 22-22 of Fig. 9; and Fig. 23, an enlarged view of the essential part of Fig. 22.

First in Fig. 1, the body frame F of a scooter-type motorcycle as a vehicle is provided at its front end a front fork 25 bearing the shaft of the front wheel WF and a head pipe 27 steerably bearing a steering handlebar 26 linked to the front fork 25; a unit swing engine UE supporting at its rear end the rear wheel WR is borne to be movable up and down by the central part, in the back-and-forth direction, of the body frame F; and the body frame F is mounted farther forward than the unit swing engine UE with a fuel tank 28, which is a functional part formed to be long in the vertical direction in a profile view, and a radiator 29 arranged farther backward than the fuel tank 28. In the rear part of the body frame F, there is arranged a seating 31 composed of a rider’s seat 32 and a pillar 33 in tandem. Further, a synthetic resin-made body cover 34 covering the body frame F, the front part of the unit swing engine UE, the fuel tank 28 and the radiator 29 is fitted to the body frame F.

With reference to Fig. 2 and Fig. 3 together, the body frame F is provided with the head pipe 27; a pair of left and right upper down frames 37 ... linked to the head pipe 27 and extending downward toward the back; a pair of left and right lower down frames 38 and 38 composed by integrally linking their horizontal portions 38b ... to the rear ends of their inclined portions 38a ... linked to the head pipe 27 in a lower position than those upper down frames 37 ... and extending downward toward the back and welding their rear ends to the rear end parts of the upper down frames 37 ...; a pair of left and right seat rails 39 and 39 extending backward and upward from the middle parts of the upper down frames 37 ...; a pair of left and right rear frames 40 and 40 linking the rear ends of the upper down frames 37 ... and the rear ends of the seat rails 39 ...; and a pair of left and right support frames 41 and 41 arranged along the outer side of the upper down frames 37 ...; the lower down frames 38 ... and the rear frames 40 ....

[0025] The two support frames 41 ... support from underneath step floors 15 ... provided on the left and right of the body cover 34; the front ends of the two support frames 41 ... are coupled to the lower parts of the inclined portions 38a ... in lower down frames 38 ...; and the rear ends of the two support frames 41 ... are coupled to the middle parts of the rear frames 40 ....

[0026] Referring to Fig. 4 and Fig. 5 together, the unit swing engine UE is configured of an air-cooled engine E whose cylinder axis is horizontal and a belt-type continuously variable transmission M for continuously changing the output of the engine E in speed with a transmission belt and a pulley and transmitting it to the rear wheel WR; the continuously variable transmission M continuously varies the gear ratio by driving a movable pulley on the crankshaft side in response to the operation of an electric motor 42 for speed change use.

[0027] The transmission case 43 of the continuously variable transmission M is so linked to the left side of the crankcase 44 in the engine E as to protrude leftward from the engine E, and extends to the left side of the rear wheel WR. The right side of the crankcase 44 is coupled to the front end of a swing arm, not shown, and the rear wheel WR is borne between the rear end of the transmission case 43 and that of the swing arm.

[0028] Brackets 49 and 49 are disposed between the middle parts of the seat rails 39 ... and the rear frames 40 ... in the body frame F, and a pair of supporting protrusion 44a and 44a protrude from the upper face of the crankcase 44 in the engine E. A link 50 is provided with a link cylindrical portion 50a extending in the direction of the body width and with cylindrical supporting cylinders 50b and 50b at both ends of the link cylindrical portion 50a, and the two supporting protrusion 44a and 44a and the link cylindrical portion 50a are linked by a linking shaft 51. The supporting cylinders 50b and 50b at the two ends of the link 50 are rotatably borne by the brackets 49 and 49 via spindles 52 and 52 which are parallel to the linking shaft 51. Thus, the unit swing engine UE is borne by the body frame F to be oscillatable around the shafts of the two spindles 52 and 52.

[0029] Incidentally, a tension rod 53 is disposed between the engine E and the body frame F, and ring-shaped linking portions 53a and 53b are provided at the two ends of this tension rod 53. And the linking portion 53a at one end of the tension rod 53 is rotatably fitted to a fitting portion 54 provided on the righthand seat rail 39 and the rear frames 40 of the body frame F, and the linking portion 53b at the other end of the tension rod 53 is rotatably linked to the righthand end of the linking shaft 51 which links the crankcase 44 to the link 50.

[0030] And the fitting portion 54 is provided with a supporting cylinder 55 hanging backward and extending ob-
liquely backward from the front part of the righthand seat rail 39, a bracket 56 in a substantially U shape open backward, fastened to the rear end of the supporting cylinder 55, and a linking cylinder 57 linking the righthand rear frame 40 and the bracket 56 to each other, wherein the linking portion 53a at one end of the tension rod 53 is rotatably borne by the fitting portion 54 with a bolt 58 inserted into the bracket 56 and the linking cylinder 57 and fixed to the body frame F.

[0031] At the rear ends of the two seat rails 39 ... in the body frame F. supporting plates 61 and 61 hanging downward are fastened, and the upper ends of rear cushions 64 and 64 are linked to a pair of brackets 63 and 63 provided on a supporting pipe 62 spanning between the two supporting plates 61 and 61, with the low ends of the two rear cushions 64 and 64 being linked to the rear end of the transmission case 43 and that of a swing arm.

[0032] Brackets 65 ... are fitted to the rear ends, i.e. the lower ends, of the two upper down frames 37 ..., and a main stand 66 is rotatably supported by the two brackets 65 ... And when the main stand 66 is erected, the scooter-type motorcycle can be caused to sustain itself by keeping the rear wheel WR off the ground as shown in Fig. 1 and, when the motorcycle is to run, the main stand 66 can be stowed to bring the rear wheel WR into contact with the ground.

[0033] To the upper face of a cylinder head 46 in the engine E, the downstream end of a throttle body 68 is connected via an intake pipe 67 curved backward from the cylinder head 46, and the upstream end of the throttle body 68 is connected to an air cleaner 69 arranged above the continuously variable transmission in the unit swing engine UE via a connecting pipe 70 passing above a link cylindrical portion 50a in the link 50.

[0034] A fuel injection valve 74 is fitted to the intake pipe 67. A control box 76 accommodating a controller 75 for controlling the ignition timing of the engine E and the fuel injection quantity of the fuel injection valve 74 is fitted to the throttle body 68.

[0035] An exhaust pipe 77 is connected to the lower face of the cylinder head 46, and the exhaust pipe 77 is connected to an exhaust muffler 78 arranged to the right of the swing arm.

[0036] Fuel is fed from the fuel tank 28 to the fuel injection valve 74 which injects fuel toward the engine E, and this fuel tank 28 is surrounded by the pair of left and right upper down frames 37 ... and the pair of left and right lower down frames 38 out of the body frame F at the same time arranged in a space immediately behind the front wheel WF, and moreover is so formed as to extend vertically from behind the lower part of the head pipe 27 to underneath the two lower down frames 38 ...

[0037] And fitting plates 95 ... for fastening the upper part of the fuel tank 28 is welded onto the inclined portions 38a ... of the two lower down frames 38 ..., and fitting plates 96 ... for fastening the lower part of the fuel tank 28 are welded onto the horizontal portions 38b ... of the two lower down frames 38 ...

[0038] A pump unit 97 is to be accommodated in the lower part of the fuel tank 28, and this pump unit 97 is inserted into the fuel tank 28 through a fitting hole 98 bored in the rear face of the lower part of the fuel tank 28 and fitted to the fuel tank 28 from the rear side of the fuel tank 28.

[0039] Moreover, the pump unit 97 is to be fitted with its rotation axis being inclined forward, and a fuel filter 99 appended to the pump unit 97 so as to suck fuel in the fuel tank 28 is arranged in the lowermost part of the fuel tank 28. A float 101 which moves up and down according to the quantity of fuel in the fuel tank 28 extends out of the pump unit 97, and the remaining quantity of fuel detected by this float 101 is transmitted to the controller 75 in the control box 76 fitted to the throttle body 68.

[0040] The radiator 29 having a radiator fan 35 is to be arranged in a position with a spacing behind the fuel tank 28, and this radiator 29 is supported by a supporting frame 100 disposed between the rear parts of the horizontal portions 38b ... in the two lower down frames 38 ... of the body frame F and the rear parts of the two upper down frames 37 ... in the body frame F.

[0041] The lower end of a hose 105 extending upward is connected to a reservoir tank 104 continuous from the radiator 29, and the upper end of this hose 105 is connected to a water inlet forming member 108 constituting a water inlet 107 which can be opened and closed with a cap 106.

[0042] Moreover, the water inlet forming member 108 is supported by the fitting portion 54 of the tension rod 53, disposed between the body frame F and the unit swing engine UE oscillatably supported by the body frame F, toward the body frame F. Thus the water inlet forming member 108 is supported by the supporting cylinder 55 hanging backward and extending obliquely backward from the front part of the righthand seat rail 39 and constituting part of the fitting portion 54.

[0043] With reference to Fig. 6 together, a storage box 30, which is a storage part, is arranged underneath the seating 31 behind the upper down frames 37 ... in the body frame F and between the two seat rails 39 ... and the two rear frames 40 ...; this storage box 30 consists of a box body 110 whose upper end is open and an upper face cover 111 coupled to the box body 110 so as to cover the box body 110, and is so arranged as to extend from underneath the front end of the seating 31 to the vicinity of the upper part of the rear cushions 64 ...

[0044] In order to have the storage box 30 supported by the body frame F, front supporting members 112 ... are welded onto the middle parts of the pair of seat rails 39 ... in the body frame F, and rear supporting members 113 ..., which are long in the back-and-forth direction, are welded onto the rear parts of the two seat rails 39 ... On the other hand, front fitting parts 110a ... to be mounted on the front supporting members 112 ... and the rear fitting parts 110b ... to be mounted on the middle parts in the lengthwise direction of the rear supporting members 113 ... are provided above the two sides of the box body
110 in the storage box 30; the front fitting parts 110a ... are fastened with bolts 114 ... to the front supporting members 112 ... and the rear fitting parts 110b ... are fitted with bolts 115 ... to the rear supporting members 113 ....

[0045] A front helmet storage part 119 arranged underneat the rider's seat 32 to enable a helmet H1 to be stored, a rear helmet storage part 120 arranged underneat the pillion 33 to enable a helmet H2 to be stored, and a substantially flat shallow bottom part 110c ar- ranged between the front helmet storage part 119 and the rear helmet storage part 120 are formed in the bottom wall of the storage box 30, i.e. the bottom wall of the box body 110, and the front and rear helmet storage parts 119 and 120 are formed in a downward bulging shape. Moreover, the front edge of the upper face cover 111 in the storage box 30 is formed in an arc shape bulging backward as viewed from above to enable the helmet 2 to be stored in the rear helmet storage part 120. Further, an illuminating device 116 for illuminating the inside of the storage box 30 is fitted to an inner side face of the box body 110 in the part matching the front part of the upper face cover 111.

[0046] Underneath the shallow bottom part 110c in the storage box 30, the throttle body 68 and the fuel injection valve 74 are arranged with their upper end positions being substantially equated; the reservoir tank 104 and the water inlet 107 are also arranged; and a first maintenance lid 117 is openably fitted to the shallow bottom part 110c above the water inlet 107.

[0047] Behind the storage box 30, there are disposed the supporting pipe 62, which is the upper fitting portion of the rear cushions 64 ... to the body frame F and a rear bulging part 121 bulging farther behind the rear end of the pillion 33; a narrow width portion 121a is disposed in the middle of the rear part of the rear bulging part 121; and a tail lamp units 123 ... are arranged on the two sides of that narrow width portion 121a.

[0048] The lower portion of the rear bulging part 121 is to be arranged lower than the supporting pipe 62, which is the fitting portion for the rear cushions 64 ... to the body frame F; a rising part 110d matching the fitting portion to the body frame F above the rear cushions 64 ... is so formed as to partially raise the bottom wall of the storage box 30, namely the bottom wall of the box body 110, and a glove compartment 124, with the rising part 110d inter- vening between it and the rear helmet storage part 120, is formed within the rear bulging part 121.

[0049] The pillion 33 of the seating 31 is so formed as to cover the front side of the upper face cover 111 on the storage box 30, and detachably fitted to the upper face cover 111. An endlessly continuous rectangular first rib 127 protrudes from the upper face of the upper face cover 111, and a storage space 128, surrounded by this first rib 127, available dependent on the attachment of detach- ment of the pillion 33 is formed on the upper face of the upper face cover 111. From the bottom plate 33a of this pillion 33, a second rib 129, which is endlessly con- 

[0050] A grab rail 118 is a metallic item integrally hav- ing grabbing portions 118a ... arranged on the two sides of the pillion 33 and extending in the back-and-forth di- rection and a linking portion 118b, and the front parts of the two grabbing portions 118a are fastened to the rear supporting members 113 ... welded onto the rear parts of the seat rails 39 ... in the body frame F with bolts 134 ... in two positions where the fastening portion to the rear supporting members 113 ... are held between front and rear.

[0051] The linking portion 118b is arranged in a position with a spacing upward from the upper part of the rear bulging part 121 of the storage box 30 and integrally linked to the rear ends of the two grabbing portions 118a ... with their height substantially equalized to the upper face of the pillion 33, and a back rest 135 for holding from behind the waist of the passenger riding the pillion 33, is detachably fitted to this linking portion 118b.

[0052] Thus, a plurality of legs 136a ... in contact with the linking portion 118b of the grab rail 118 are integrally disposed on and protrude from the bottom plate 136 of the back rest 135. Nuts 138 ... are embedded into the legs 136a ... , and the back rest 135 is detachably fitted to the upper face of the rear part of the grab rail 118, namely the upper face of the linking portion 118b, by fastening bolts 137 ... inserted from underneath into the linking portion 118b of the grab rail 118 by screwing into the nuts 138 ....

[0053] Moreover, the back rest 135 has on its top a forward inclining face 135a falling forward as viewed sideways and a backward inclining face 135b falling backward, and is so formed that its width gradually nar- rows backward as viewed from above; the grab rail 118 and the back rest 135 overlap each other almost wholly as viewed from above.

[0054] The rider's seat 32 of the seating 31 has in its rear part integrally a back rest part 32a rising so as to hold from behind the waist of the rider seated on the rider's seat 32, and is so arranged on the storage box 30 as to cover from above the front opening of the storage box 30 not covered by the upper face cover 111; the front end of the rider's seat 32 is linked to the front end of the storage box 30 via a hinge pin 139. Thus, the front end of the rider's seat 32 is borne by the storage box 30 to be vertically openable.

[0055] A substantially U-shaped striker 141 is fitted to the rear part of the bottom plate 140 of the rider's seat 32; in a position matching the central part in the widthwise direction of the pillion 33 and between the front parts of the rider's seat 32 and of the pillion 33 of the upper face cover 111 in the storage box 30, there is arranged a seat locking mechanism 142 capable of changing over be- tween a seat locked state in which the rider's seat 32 is held in a closed state by grabbing the striker 141 and a
seat unlocked state in which the opening/closing of the rider’s seat 32 is made possible by releasing the striker 141 from grabbing; this seat locking mechanism 142 is so configured as to be engaged with the striker 141 to enter into the seat locked state when the rider’s seat 32 in a state of being opened upward is descended to close the opening of the storage box 30 and to change over from the seat unlocked state to the seat locked state by the pulling of a transmission cable 143.

[0056] The seat locking mechanism 142 is disposed on a metallic bridging plate 144 arranged between the front ends of the two grabbing portions 118a ... in the grab rail 118, and this bridging plate 144 is so formed as to enter between the upper face cover 111 and the pillion 33 from the two grabbing portions 118a ... and to be along the front upper face of the upper face cover 111.

[0057] In the front part of the middle in the widthwise direction of the pillion 33, a cover 146 having a notch (see Fig. 8 to let the striker 141 be inserted retrievably is so fitted as to cover the seat locking mechanism 142 from above in the opened state of the rider’s seat 32.

[0058] With reference to Fig. 7 and Fig. 8 together, the fuel tank 28 is disposed in the vicinity of step floors 159 which the body cover 34 is provided with and ahead of the storage box 30, and a front bulged portion 122 bulging forward to the vicinity of the bottom of the fuel tank 28 is so disposed underneath the front end of the storage box 30 as to be arranged between the fuel tank 28 and the radiator 29; a battery 147 is housed in the front bulged portion 122. Thus, the battery 147 is arranged between the fuel tank 28 and the radiator 29. The front bulged portion 122 also houses, in addition to the battery 147, electrical units 148, 149, 150 and so forth.

[0059] A second maintenance lid 151 to partition between the front bulged portion 122 and the front helmet storage part 119 is openably fitted to the bottom wall of the box body 110 in the storage box 30; by opening the second maintenance lid 151 in state in which the rider’s seat 32 is opened, maintenance work on the battery 147 and electrical units 148 through 150 in the front bulged portion 122 is made possible.

[0060] A damper rod 152 to assist in the opening/closing operations of the rider’s seat 32 by enabling the rider’s seat 32 to be opened with little and, when the rider’s seat 32 is to be closed, slowing down the closing speed is disposed between the front part of the rider’s seat 32 and the that of the storage box 30; the lower part of this damper rod 152 is accommodated into the front bulged portion 122, and a slit 153 to enable the damper rod 152 to be inserted by allowing displacement of the damper rod 152 accompanying the opening/closing of the rider’s seat 32 is provided in the second maintenance lid 151.

[0061] Referring to Fig. 1 again, the body cover 34 is provided with a front cover 155 for covering the front part of the head pipe 27 of and the upper part of the front wheel WF; a pair of left and right front side covers 156 ... joined to the left and right sides of the front cover 155; an inner cover 157 covering the head pipe 27 from behind to be continuous to front side covers 156 ...; leg shields 158 ... so joined to the two front side covers 156 ... and the inner cover 157 as to cover the front of the legs of the rider seated in the rider’s seat 32; a pair of left and right floor center covers 160 ... extending backward continuous from the leg shields 158 ... and constituting the step floors 159 ... at their lower ends; a pair of left and right floor side covers 161 ... hanging down the outer edges of the step floors 159 ...; a pair of left and right passenger steps 162 ... disposed on the rear parts of the step floors 159 ...; a pair of left and right body side covers 163 ... arranged underneath the two sides of the seating 31 and continuous to the floor side covers 161 ... to extend backward; a rear lower cover 164 linked to the rear lower parts of the body side covers 163 ...; a rear upper cover 165 arranged between the rear parts of the rear bulging part 121 and the grab rail 118 of the storage box 30; and a rear center cover 166 arranged between the pair of left and right tail lamp units 123 ... and continuous to the rear upper cover 165 so as to be continuous to the narrow width portion 121a in the rear bulging part 121 of the storage box 30 so as to cover it from behind.

[0062] A floor tunnel part 167 caused by part of the leg shields 158 ... and the floor center covers 160 ... to rise between the step floors 159 ... is formed to be arranged from behind the head pipe 27 to underneath of the front end of the seating 31 and to be positioned above the fuel tank 28 and the radiator 29; a fuel refill lid 169 to enable refill the fuel tank 28 with fuel by opening the fuel refill cap 168 which the fuel tank 28 is provided with at its top end is openably fitted to this floor tunnel part 167, and a hinge cover 170 covering the hinged part of the rider’s seat 32 to the storage box 30 is joined to the rear end of the floor tunnel part 167.

[0063] Head lamps 171 ... are arranged between both sides of the front part of the front cover 155 and the pair of left and right front side covers 156 ..., and wipers 172 ... are arranged underneath the head lamps 171 ... in the front parts of the two front side covers 156 ... A panel 173 for arranging meters and gauges is joined to the upper parts of the front cover 155, the two front side covers 156 ..., the inner cover 157 and the leg shields 158 ..., and a meter visor 173a is integrally so provided in a rising shape in front of this panel 173. Further, a windshield 174 is arranged ahead of the meter visor 173a.

[0064] A front fender 175 covering the front wheel WF from above is supported by the front fork 25, and a pair of left and right rear view mirrors 176 ..., a switch case 177 for audio equipment control and a switch case 178 for controlling various lamps are fitted to the steering handlebar 26.

[0065] In the left floor center cover 160 out of the pair of left and right floor center covers 160 ... a plug maintenance lid 180 for use in the maintenance of ignition plugs 179 which the engine E is equipped with is openably fitted in a position ahead of the passenger steps 162.

[0066] A license plate 182, a reflector 183 and a license
lamp 184 are fitted to a rear fender 181 covering the rear wheel WR from behind, and the rear bulging part 121 of the storage box 30, together with the pair of left and right tail lamp units 123 ... , the rear upper cover 165 and the rear center cover 166, is fitted to this rear fender 181.

[0067] Also on the under face of the box body 110 in the storage box 30 ahead of the rear fender 181, a pair of projecting strips 110e ... performing the function of rear fenders are so disposed as to be arranged on the left and right sides of the rear wheel WR as shown in Fig. 5.

[0068] In Fig. 9 through Fig. 12, a left front storage section 191 and a right front storage section 192 are disposed with a spacing between them in the direction of the body width in the inner cover 157, and the left front storage section 191, having a storage compartment 193 which can be drawn out of the inner cover 157 and removed, is configured in a drawer type.

[0069] With reference to Fig. 13 and Fig. 14 together, the storage compartment 193 is composed by fixing a decorative cover 195 as a cover member to the outer end of a case body 194 formed, for instance, of synthetic resin into a rectangular box shape with an open top. In the inner cover 157, a rectangular opening 196 through which the storage compartment 193 is to be inserted or drawn out is formed, and a storage wall 197 formed in a rectangular sleeve shape continuous from the opening 196 is integrally linked to it, the inner end of the storage wall 197 being closed by an end wall 197a.

[0070] To the lower parts of the two sides of the case body 194, movable rails 198 and 198 extending in the back-and-direction are fixed, and supporting parts 198a and 198a each composed in a substantial inverted U shape are integrally formed in other parts than the front part in the back-and-direction of the body at the upper ends of those the movable rails 198 ... On the other hand, immovable rails 200 and 200 extending in the back-and forth direction matching the movable rails 198 ... are fixed to both inner side faces of the storage wall 197, and rollers 199 and 199 to be mounted with the supporting parts 198a ... of the movable rails 198 ... are axially borne by the rear parts of the immovable rails 200 ... in the back-and forth direction of the body. On the other hand, sliders 190 ... in sliding contact with the upper under faces of the immovable rails 200 and 200 are fixed to the front parts of the movable rails 198 ... in the back-and forth direction of the body.

[0071] This enables the storage compartment 193 to slide between the fully closed position in which the decorative cover 195 of the storage compartment 193 are made continuously on substantially the same plane as the rear face of the leg shields 158 and the fully open position in which most part of it has been drawn out of the storage wall 197 and to be inserted into the storage wall 197 through the opening 196; it is also possible to draw the whole storage compartment 193 from the inner cover 157. Moreover, the storage compartment 193 is so formed as to cover, in its fully closed position, the head pipe 27 from its left side.

[0072] Incidentally, the end wall 197a of the storage wall 197 is provided with a maintenance window 201 which facilitates, when the storage compartment 193 has been drawn out of the leg shields 158, maintenance work such as replacing the bulbs 171a of the head lamps 171 positioned ahead of the end wall 197a, and this window 201 is covered with a detachable lid 202.

[0073] At the outer end side of the storage compartment 193, there is disposed a bulging portion 193a bulging inward in the widthwise direction of the body, and in the storage wall 197, too, there is formed, opposite the head pipe 27 from behind, a concave 197b for accommodating the bulging portion 193a when the storage compartment 193 is stored in the fully closed position.

[0074] With reference to Fig. 15 together, between the storage compartment 193 and the inner cover 157, there is disposed a compartment locking mechanism 208 for locking the storage compartment 193 in its fully closed position. This compartment locking mechanism 208 is provided with a pin-shaped striker 209 to be stuck to the under face of the case body 194 in the storage compartment 193; a catcher 210 borne to be rotatably toward the inner cover 157 so as to catch the striker 209 along with the sliding of the storage compartment 193 in the closing direction to the fully closed position; an engaging member 211 that can engage with the catcher 210 to hold the catcher 210 in a state of holding the striker 209; and a coil spring 212 to apply pressure to the engaging member 211 in the direction of engaging with the catcher 210.

[0075] Between the pair of immovable rails 200 and 200 fixed to the inner cover 157, a supporting frame 214 having a guide concave 213 to cause the striker 209 to be inserted along with the sliding of the storage compartment 193 in the closing direction to the fully closed position is so installed as to be opposite the under face of the case body 194, and the catcher 210 arranged underneath the supporting frame 214 is rotatably borne by the supporting frame 214 via a supporting pin 216. In this catcher 210, an engaging concave 216 to engage with the striker 209 to be inserted into the guide concave 213 is disposed.

[0076] The engaging member 211 is arranged underneath the supporting frame 214 on the reverse side to the catcher 210 with respect to the guide concave 213, and is rotatably borne by the supporting frame 214 via a supporting pin 217 parallel to the supporting pin 216.

[0077] The coil spring 212 is installed in a contracted state between the catcher 210 and the engaging member 211 so as to exert springy force of applying pressure to rotate the catcher 210 in the counterclockwise direction in Fig. 15 and applying pressure to rotate the engaging member 211 in the clockwise direction in Fig. 15; the supporting frame 214 is provided with a stopper 218 for restricting the end of the catcher 210 rotating in the counterclockwise direction by the springy force of the coil spring 212 and a stopper 219 for restricting the end of the engaging member 211 in the clockwise direction by the springy force of the coil spring 212.

[0078] The catcher 210, in a state in which the striker
209 is off the guide concave 213 as shown in Fig. 16, has been rotated to the rotation restriction end in contact with the stopper 218 by the springy force of the coil spring 212, and in this state the open end of the engaging concave 215 in a position overlooking the guide concave 213. Moreover, in the part of the catcher 210 toward the engaging member 211, there is disposed an engaging step 210a overlooking the front in the direction of rotational pressure of the catcher 210. In this state, even if an external force is exerted on the engaging member 211, the engaging member 211 is provided with an engaging stub 211a which restricts the rotation of the catcher 210 in the direction of rotational pressure of the catcher 210 by engaging with the engaging step 210a.

And when the striker 209 is off the guide concave 213 as shown in Fig. 16 in a state in which the engaging member 211 is not caused to exert an unlocking force, the engaging member 211 is a position of having undone the engagement of the engaging stub 211a with the engaging step 210a; when it shifts from the position indicated by the striker 209 to the position of entering into the guide concave 213 as shown in Fig. 15, the catcher 210 goes over the engaging stub 211a by coming into contact with the engaging concave 213 which rotates the engaging member 211 in the counterclockwise direction against the springy force of the coil spring 212. And after the catcher 210 has gone over the engaging stub 211a, the engaging member 211 is in the counterclockwise direction against the springy force of the coil spring 212. And when it rotates the engaging stub 211a to engage with the engaging step 210a of the catcher 210, in this state, even if an external force is exerted in the opening direction is brought to work on the storage compartment 193 and an attempt is made to rotate the catcher 210 in the counterclockwise direction via the striker 209, the catcher 210 will not rotate the striker 209 in the counterclockwise direction in Fig. 15 to cause the engaging concave 213 to come off because the rotation of the engaging member 211 whose engaging stub 211a with the engaging step 210a in the clockwise direction is inhibited by the stopper 219, and the fully closed state of the storage compartment 193 is locked by the compartment locking mechanism 208.

To release the compartment locking mechanism 208 from the locked state, an unlocking force to cause the engaging member 211 to go off the stopper 219, namely to rotate it in the counterclockwise direction can be brought to work on the engaging member 211, and the unlocking force can be brought to work from a first electric actuator 221 via a transmission cable 220 linked to the engaging member 211.

The first electric actuator 221, when it operates, exerts an unlocking force in the direction of pulling the transmission cable 220; if the transmission cable 220 is pulled by the first electric actuator 221 in the locked state of the compartment locking mechanism 208, the engaging member 211, while working to rotate the catcher 210 in the clockwise direction against the springy force of the coil spring 212, will rotate in the counterclockwise direction to cause the engaging stub 211a to go over the engaging step 210a and, when the engaging stub 211a has gone over the engaging step 210a, the catcher 210 will be caused by the springy force of the coil spring 212 to thrust the striker 209 in the direction of going off the guide concave 213 as shown in Fig. 16 and rotate in the counterclockwise direction to come into contact with the stopper 218.

Thus, by causing the first electric actuator 221 to work in the locked state of the compartment locking mechanism 208, an unlocking force is brought to work on the compartment locking mechanism 208 to undo the locked state, and the striker 209, namely the storage compartment 193, is slightly thrust out of the fully closed position in the opening direction by the springy force of the coil spring 212 which the locking mechanism 208 is provided with.

Between the storage compartment 193 and the inner cover 157, there is disposed springing means 222 which applies a springy pressure to the storage compartment 193 in the full opening direction in a state in which the storage compartment 193 is in the fully closed position.

The springing means 222 is provided with a sleeve 223 extending in the back-and-forth direction of the body; a rod 224 which, making possible relative shifting in the axial direction within a limited range along the back-and-forth direction of the body, is slidably snapped into the sleeve 223 and partly protruding from the rear end of the sleeve 223 in the back-and-forth direction of the body; and a spring (not shown), provided between the sleeve 223 and the rod 224, applies pressure to the rod 223 backward in the back-and-forth direction of the body.

Between the pair of immovable rails 200 and 200 ahead of the supporting frame 214 in the back-and-forth direction of the body, a front supporting frame 225 is so installed as to be positioned lower than the storage compartment 193 which is in the fully closed position; the front end of the sleeve 223 is linked to the front supporting frame 225 in a fixed way; and the middle part in the axial direction of the sleeve 223 is held by a holding member 227 fitted to the supporting frame 214. Further, farther backward the supporting frame 214 in the back-and-forth direction of the body and between the pair of movable rails 198 and 198, there is installed a rear supporting frame 226 positioned underneath the storage compartment 193, and this rear supporting frame 226 is provided with a contact plate part 226a to come into contact with the rear end of the rod 224 in a position near the fully closed position when the storage compartment 193 has shifted toward the fully closed position.

With such springing means 222, when the compartment locking mechanism 208 is released from the locked state in a state in which the storage compartment 193 is in the fully closed position, the springy force of the coil spring 212 of the compartment locking mechanism 208 and the springy pressure of the springing means 222
work on the storage compartment 193, and the storage compartment 193 slightly slides from the fully closed position in the opening direction, and the storage compartment 193 can be drawn out after that.

In Fig. 17 and Fig. 18, between the storage compartment 193 and the inner cover 157, there is provided a holding mechanism 230 for temporarily holding the storage compartment 193, when it has been operated for release from the fully closed position, in a middle position between the fully closed position and the fully open position, in this embodiment in substantially the central part between the fully closed position and the fully open position; the position of the storage compartment 193 in it is temporarily held by this holding mechanism 230, so set that the knees of a person of no taller than 175 cm, the height range of 90% of the Japanese population, may not hit the storage compartment 193 when seated on the rider's seat 32 (see the chain line indication in Fig. 1).

The holding mechanism 230 is provided with an engaging shaft 232 which is supported by a supporting member 231 stuck to the end of the immovable rail 200, positioned on the righthand side as viewed from backward in the back-and-forth direction of the body, out of the pair of left and right immovable rails 200 and 200 fixed to the inner cover 157 and extending in the widthwise direction of the body; an oscillatory engaging member 235 oscillatably borne by a bracket 233 stuck to the rear supporting frame 226 fixed to the storage compartment 193 via a spindle 234 having an axis parallel to the engaging shaft 232; and a torsion spring 236 disposed between the bracket 233 and the oscillatory engaging member 235 so as to apply pressure to the oscillatory engaging member 235 in the counterclockwise direction in Fig. 17 and Fig. 18.

The engaging shaft 232, with its one end protruding from the immovable rail 200 toward the storage compartment 193, is supported by the supporting member 231. Further, the oscillatory engaging member 235, integrally having an engaging portion 235a bulging from the bracket 233 toward the immovable rail 200, is rotatably borne by the bracket 233; the rotating end of the oscillatory engaging member 235, subjected to rotational pressure by the springy force of the torsion spring 236 in the direction of turning upward the engaging portion 235a, namely in the counterclockwise direction of Fig. 17 and Fig. 18, is restricted by the coming into contact of the oscillatory engaging member 235 with the rear supporting frame 226.

On the upper side edge of the engaging portion 235a, there are formed an engaging concave 238 for engaging the engaging shaft 232 by springing; a forward guide face 239 arranged ahead of the engaging concave 238 in the back-and-forth direction of the body; and a backward guide face 240 so arranged behind the engaging concave 238 as to sandwich the engaging concave 238 between the forward guide face 239 and itself.

In a state in which the oscillatory engaging member 235 is at an end under rotational pressure by the torsion spring 236, the forward guide face 239 is formed in an inclined face where the position increases in height as its shifts backward, while the backward guide face 240 is so formed in an inclined face whose slope is easier than the forward inclined face 239 that the position decreases in height as its shifts backward. The inner side face of the engaging concave 238 toward the backward inclined face 240 is formed to be substantially parallel to the forward guide face 239 in a state in which the oscillatory engaging member 235 is at an end under rotational pressure by the torsion spring 236.

With such a holding mechanism 230, when the storage compartment 193 in the fully closed position is subjected to opening operation, coming contact of the engaging shaft 232 in a fixed position with the backward guide face 240 causes the oscillatory engaging member 235 to be rotationally driven in the direction of pressing down the engaging portion 235a against the springy force of the torsion spring 236, namely in the clockwise direction of Fig. 18; when the storage compartment 193 slides farther toward the fully open position while keeping the backward guide face 240 in sliding contact, the fall of the engaging shaft 232 from the backward guide face 240 into the engaging concave 232 causes the oscillatory engaging member 235 to be rotated in the direction of thrusting upward the engaging portion 235a, namely in the counterclockwise direction of Fig. 18, by the springy force of the torsion spring 236, and the spring-driven engagement of the engaging shaft 232 with the engaging concave 238 causes the storage compartment 193 to be temporarily held.

To undo such a temporarily held state, the oscillatory engaging member 235 can be forcibly rotated against the springy force of the torsion spring 236 as indicated by the chain line of Fig. 18, and by doing so the engaging shaft 232 is released from the spring-driven engagement with the engaging concave 238, making it possible to slide the storage compartment 193 toward the fully open position.

When the storage compartment 193 in the fully open position is pressed into the fully closed position, the engaging shaft 232 comes into contact with the forward guide face 239 on the way, but, as the forward guide face 239 is an inclined face down forward, further pressing-in of the storage compartment 193 would cause the oscillatory engaging member 235 to so rotate as to press down the engaging portion 235a, and the engaging concave 238 falls into the engaging shaft 232. However, as the inner side face of the engaging concave 238 toward the backward inclined face 240 is inclined to be substantially parallel to the forward guide face 239, further pressing-in of the storage compartment 193 causes the engaging shaft 232 to so rotate the oscillatory engaging member 235 and come into sliding contact with the backward guide face 240 as to further press down the engaging portion 235a, making it possible to press the storage compartment 193 into the fully closed position.

Incidentally, in releasing the temporary holding
of the storage compartment 193 by the holding mechanism 230, a synthetic resin-made hold releasing member 237 fastened to the oscillatory engaging member 235 can be rotated in the direction indicated by an arrow in Fig. 18; this hold releasing member 237 is arranged on the under face of the storage compartment 193 in a position closer to the body center line C and the rear part of the body.

[0095] On the reverse side to the left front storage section 191 and in the vicinity of the head pipe 27, there is arranged a handlebar locking module 241 that can make the steering operation of the steering handlebar 26 impossible; the right front storage section 192 is so arranged as to sandwich the handlebar locking module 241 between the left front storage section 191 and itself.

[0096] In Fig. 19, the handlebar locking module 241 makes possible steering operation of the steering handlebar 26 in response to the operation under prescribed conditions of a knob 242 for smart entry, arranged on the inner cover 157 between the left and right front storage sections 191 and 192 and makes possible starting of the engine E; the first electric actuator 221 is arranged on this handlebar locking module 241.

[0097] In Fig. 20, the right front storage section 192 is so composed that an accommodating concave 244 formed in the inner cover 157 is openly covered by a lid member 245 hinged onto the inner cover 157; the accommodating concave 244 is so formed as to be smaller than the storage compartment 193 of the left front storage section 191 and to slightly narrow toward the front end.

[0098] The lid member 245 is hinged onto the inner cover 157 via a pivot 256 to be rotatable between the open position of opening the accommodating concave 244 by rotating downward, as indicated by the chain line of Fig. 20, and the closed position of closing the accommodating concave 244, as indicated by the solid line of Fig. 20, and a knob 247 for facilitating the rotating operation is fitted to the lid member 215.

[0099] Underneath the knob 242 for smart entry, namely beside the left front storage section 191 and between the left front storage section 191 and the right front storage section 192, a plurality of unlocking buttons for releasing a plurality of storage sections including the left front storage section 191, in this embodiment the left front storage section 191 and the storage box 30, from the locked state are arranged on the inner cover 157; in this embodiment, a first unlocking button 248a for the left front storage section 191 and a second unlocking button 249a for the storage box 30 are arranged vertically in positions offset from the body center line C either leftward or rightward (rightward in this embodiment), with the first unlocking button 248a in the lower position.

[0100] The first and second unlocking buttons 248a and 249a constitute part of first and second unlocking switches 248 and 249 for varying the switching mode by operating those operational buttons 248a and 249a; the first and second unlocking switches 248 and 249 are so fitted to the inner cover 157 that the first and second unlocking buttons 248a and 249a overlook the outer face of the inner cover 157 and, moreover, the first and second unlocking buttons 248a and 249a are formed to be longer in the lateral dimension.

[0101] The first unlocking button 248a for releasing the left front storage section 191 from the locked state, the locking mechanism 208 which the left front storage section 191 is equipped with, and the first electric actuator 221 for causing an unlocking force to work on the locking mechanism 208 are arranged at substantially the same heights.

[0102] In Fig. 21, the controller 75 to be accommodated in the control box 76 fitted to the throttle body 68, the handlebar locking module 241 and the first and second unlocking switches 248 and 249 constitute part of the smart entry system; the handlebar locking module 241 permits rotational operation with the knob 242, and is provided with a cylinder lock 250 which, when to be put to rotational operation, releases the handlebar 26 from the state of being locked to the head pipe 27, a lock solenoid 251 which can make the rotation of the cylinder lock 250 impossible, a main switch 252 to be operated for switching in response to rotation of the cylinder lock 250, and a control unit 253 into which signals from the main switch 252 are entered, while the lock solenoid 251 is controlled by the control unit 253.

[0103] The control unit 253 is to so control a transmission antenna 255 as to transmit a signal urging ID signal transmission from a portable transmitter 256 carried by the vehicle user, and also the result of signal reception by a receiver unit 257 for receiving signals from the portable transmitter 256 is entered into the control unit 253. And the control unit 253, when it has confirmed that the ID signal transmitted from the portable transmitter 256 is a prescribed signal, so operates the lock solenoid 251 as to permit rotational operation of the cylinder lock 250 with the knob 242.

[0104] Also the control unit 253, when it has confirmed that the ID signal transmitted from the portable transmitter 256 is a prescribed signal, makes possible in response to conduction by the main switch 252, makes possible operation control of the engine E with the controller 75; in response to a signal from the first unlocking switch 248 matching the operation of the first unlocking button 248a in the conducting state of the main switch 252, the first electric actuator 221 is caused to operate, and, in response to a signal from the second unlocking switch 249 matching the operation of the second unlocking button 249a in the conducting state of the main switch 252, a second electric actuator 258 is caused to operate. And the second electric actuator 258 pulls the transmission cable 143 (see Fig. 5 and Fig. 6) according to its operation, and thereby releases the seat locking mechanism 142 from the locked state.

[0105] Further the control unit 253, when it has confirmed that the ID signal transmitted from the portable transmitter is a prescribed signal, undoes the compartment locking mechanism 208 of the storage compart-
ment 193 by operating the unlocking button 248a; the storage compartment 193 is made drawable from the fully closed position to an intermediate held position, and an unlocking member 272 becomes operable in that drawn-out state.

[0106] The receiver unit 257 is arranged either in the storage box 30 or in the seating 31; in this embodiment, a receiver unit accommodating part 101f formed by depressing downward part of the shallow bottom part 110c of the storage box 30 is disposed in the storage box 30, and the receiver unit 257 is accommodated in that receiver unit accommodating part 101f. Moreover, a first maintenance lid 117 for use in maintenance work related to the engine E arranged underneath the storage box 30 is openly provided in the shallow bottom part 110c, and the receiver unit 257 is so accommodated in the receiver unit accommodating part 101f as to be covered by part of the first maintenance lid 117.

[0107] On the other hand, the transmission antenna 212 is arranged in a position away from the handlebar locking module 211, and in this embodiment it is arranged above the handlebar locking module 211, for instance immediately underneath the panel 173 constituting part of the body cover 34.

[0108] In Fig. 22, the fuel refill lid 169 is fastened to a frame member 261 extending in the back-and-forth direction of the body with a plurality of screw members 262..., and a hinge arm 263 continuous from the rear end of the frame member 261 in the back-and-forth direction of the body is rotatably borne via a spindle 266 by a supporting plate 264 fixed to the body frame F and a bracket 265 fixed to the hinge cover 170.

[0109] The front end of the frame member 261 in the back-and-forth direction of the body is provided with an engaging portion 267, and a lid locking mechanism 268 for locking the closed state of the fuel refill lid 169 holds the fuel refill lid 169 in a locked state by engaging with the engaging portion 267.

[0110] The lid locking mechanism 268 is provided with a rod 270 extending in the back-and-forth direction of the body ahead of the fuel refill lid 169 and underneath the floor tunnel part 167, and a spring 271 for applying pressure to the rod 270 backward in the back-and-forth direction of the body, and a synthetic resin-made cap 269 that can engage with the engaging portion 267 is fitted to the rear end of the rod 270.

[0111] By the operation of the unlocking member 272, a force works on the rod 270 against the springy force of the spring 271 in the direction of undoing the engagement of the cap 269 with the engaging portion 267, namely a forward force; the unlocking member 272 is to be so arranged on the inner cover 157 as to be covered, when the decorative cover 195 arranged on the inner cover 157 is in a closed state, by the decorative cover 195 in a position between the left and right front storage sections 191 and 192 and either to the left or right (left in this embodiment) of the body center line C; in this embodiment, as viewed from the rear in the back-and-forth direction of the body, the unlocking member 272 is arranged on the inner cover 157, offset from the storage compartment 193 in the left front storage section 191, and in a position at least partly overlapping the head pipe 27; when the storage compartment 193 is in the fully closed position, the decorative cover 195 is so fitted to the storage compartment 193 as to cover the unlocking member 272.

[0112] Thus, since the bulging portion 193a bulging inward in the wide direction of the body is to be disposed on the outer end side of the storage compartment 193 and the decorative cover 195 is to be fitted to the outer end of the storage compartment 193, a supporting case 274 is fitted to the inner cover 157 in a position where it can be covered by the bulging portion 193a, and the upper part of the unlocking member 272 is rotatably borne by this supporting case 274 via a shaft 273. Further, the rod 270 integrally has in its front part a bent portion 270a bent toward the unlocking member 272, and that bent portion 270a is linked to the lower part of the unlocking member 272. Therefore in a state in which the left front storage section 191 of the storage compartment 193 has been drawn out to the intermediate opened position (the position of the chain line in Fig. 22) restricted by the holding mechanism 230 or a farther open position, an operation of rotation by the user in the direction of the arrow in Fig. 22 by pressing in the unlocking member 272 with a finger reaching the rear side of the bulging portion 193a enables the rod 270 to be operated in the direction of causing the cap 269 to move in the direction away from the engaging portion 267.

[0113] In Fig. 23, a rod holding frame 278 is fitted with a screw member 279 onto the inner face of the floor tunnel part 167 ahead of the fuel refill lid 169, and the middle part of the rod 270 is held by the rod holding frame 278 to be shiftable in the axial direction. Moreover, a stop ring 275 is fitted to the rod 270 within the holding frame 278, and between a ring-shaped spring retaining member 276 which is engaged with that stop ring 275 from the front and can also be in contact and engaged with the rear wall of the rod holding frame 278 and a ring-shaped spring retaining member 277 which can be in contact and engaged with the front wall of the rod holding frame 278, the coil-shaped spring 271 surrounding the rod 270 is installed in a contracted state.

[0114] Incidentally, when to close the fuel refill lid 169 in an open state, it is necessary to press forward the rod 270 of the lid locking mechanism 268, but a pressure plate part 267a for pressing backward the cap 269 at the rear end of the rod 270 according to the operation to close the fuel refill lid 169 is integrally linked to the engaging portion 267 on the fuel refill lid 169 side; when the fuel refill lid 169 is closed from an open state, the pressure plate part 267a will press forward the rod 270 via the cap 269 and, when the fuel refill lid 169 rotates to the closed position, the springy force of the spring 271 causes the rod 270 to shift backward to engage the cap 269 with the engaging portion 267, with the result that the closed state
of the fuel refill lid 169 is locked.

[0115] Next to describe the actions of this embodiment, as the rear bulging part 121 bulging farther backward than the supporting pipe 62 which is the upper fitting portion of the rear cushions 64 to the rear end of the pillion 33 and the rear part of the body frame F is disposed behind the front helmet storage part 119 arranged underneath the rider's seat 32 which the tandem-type seating 31 is provided with and the storage box 30 having the rear helmet storage part 120 arranged underneath the pillion 33 which the seating 31 is provided with, it is made possible to accommodate in the storage box 30 long items such as golf clubs extend backward beyond the rear end of the seating 31 can be stored inside and accordingly to expand the capacity of the storage box 30. Moreover, it is made possible to store small items other than helmets in the rear part of the storage box 30, and items less frequently used, such as tools, can be properly stored in the storage box 30.

[0116] Furthermore, as the rear bulging part 121 bulges backward to substantially the same position as the rear end of the grab rail 118 arranged around the pillion 33, the capacity of the storage box 30 can be increased, and the rear part of the storage box 30 can be protected with the grab rail 118.

[0117] Further in the rear part of the rear bulging part 121, there is provided a narrow-width portion 121a with enters between the left and right tail lamp units 123 ... as viewed from above, making it possible to effectively utilize the space generated between the pair of left and right tail lamp units 123 ... to expand the capacity of the storage box 30 and making it easier to form a space for bulb replacement of the tail lamp units 123 ....

[0118] Incidentally, as the storage box 30 has the upper face cover 111 arranged underneath the pillion 33 and the storage space 128 available for use depending on the attachment or detachment of the pillion 33 on the top face of the upper face cover 111, a space for the storage of small items can be secured in addition to the inside of the storage box 30 while avoiding an increase in the number of parts and complication of the structure. In addition, as the storage space 128 is formed within the first rib 127 erected on the upper face cover 111 to be endlessly continuous and the endlessly continuous second rib 129, forming a labyrinth structure in synergy with the first rib 127, hangs down from the bottom plate 33a of the pillion 33, infiltration of rain water, dust and the like into the storage space 128 from the surroundings can be prevented with a simple structure.

[0119] Moreover, as the illuminating device 116 for illuminating the inside of the storage box 30 is fitted to the inner side face of the storage box 30 in the part matching the front part of the upper face cover 111, the rear inside of the storage box 30 which tends to be darkened by the presence of the upper face cover 111 can be effectively illuminated without being obstructed by anything stored in the rear part of the storage box 30; furthermore in the part matching the front part of the upper face cover 111, the inner side face of the storage box 30 is conspicuous enough to make exhaustion of the bulbs of the illuminating device 116 and other faults readily noticeable.

[0120] Further, as the rear bulging part 121 is fitted with the rear upper cover 165 and the rear center cover 166 to cover the rear bulging part 121, the pair of left and right tail lamp units 123 ... and the rear fender 181, a plurality of members arranged around the rear part of the storage box 30 can be taken off at once by merely removing the wiring of the tail lamp units 123 ..., making it possible to improve the maintenance ease.

[0121] The storage box 30 is provided with the shallow bottom part 110c arranged between the front helmet storage part 119 and the rear helmet storage part 120 and, underneath the shallow bottom part 110c, the throttle body 68 on which the control box 76 accommodating the controller 75 is installed and the fuel injection valve 74 are arranged with their upper end positions substantially the same. Therefore, by forming flat the shallow bottom part 110c between the front and rear helmet storage parts 119 and 120, it can be effectively utilized as a storage space, and moreover part of the intake line of the engine E can be effectively arranged in the space underneath the shallow bottom part 110c.

[0122] The lower part of the rear bulging part 121 is arranged at a lower level than the fitting portions of the upper parts of the rear cushions 64 to the rear part of the body frame F by forming within the rear bulging part 121 the glove compartment 124 intervening between the rising part 110d formed by partially raising the bottom wall of the storage box 30 and the rear helmet storage part 120; the rear helmet storage part 120 and the glove compartment 124 farther backward than the rear helmet storage part 120 are partitioned from each other by the rising part 110d to improve the convenience of use and making it possible for small items stored in the backward glove compartment 124 to be prevented from moving back and forth by the rising part 110d.

[0123] As the fuel tank 28 formed long in the vertical direction as viewed sideways is arranged ahead of the storage box 30 and the front bulged portion 122 bulging forward to the vicinity of the bottom of the fuel tank 28 is provided underneath the front end of the storage box 30, the front part of the storage box 30 can be formed deep to facilitate accommodation of long items and the capacity of the storage box 30 can be expanded.

[0124] Moreover, as the front bulged portion 122 can accommodate the battery 147 and other electrical units 148 through 150, the battery 147 and other electrical units 148 through 150 can be stored in the storage box 30 without obstructing the accommodation of the helmet H1 or the like.

[0125] Further, the openable fitting of the second maintenance lid 151, which partitions the inside of the front bulged portion 122 and the front helmet storage part 119 from each other, to the storage box 30 can prevent the stored items in the front bulged portion 122 and the helmet H1 stored in the front helmet storage part 119 from
Moreover, as the pump unit 97 is fitted in a position lower than the linking portion of the electric motor 42 extending vertically so as to assist the opening/closing of the rider’s seat 32 is accommodated into the front part of the body cover 34 covering the body frame F, the body frame F is provided with the head pipe 27, the pair of left and right upper down frames 37 ... extending down backward from the head pipe 27, and the pair of left and right lower down frames 38 ... having the inclined portions 38a ... extending down backward from the head pipe 27 in a position lower than the linking portion of to those upper down frames 37 ... to the head pipe 27; the fuel tank 28 extending vertically from the lower rear part of the head pipe 27 to the lower parts of the two lower down frames 38 ... is surrounded by the two upper down frames 37 ... and the two lower down frames 38 ... and arranged in a space immediately after the front wheel WF.

Therefore, by arranging the tall fuel tank 28 immediately after the front wheel WF, the part matching the lower portion of the head pipe 27 is prevented from becoming a dead space, and an arrangement of parts making effective use of the space underneath the floor tunnel part 167 made possible; moreover, by bringing the fuel tank 28, whose weight tends to be rather heavy, closer to the front wheel WF, and the turning performance can be improved by increasing the distributed load of the front wheel WF. Furthermore, as the tall fuel tank 28 can keep the level of the remaining fuel relatively high when its quantity has become small, the pump can more efficiently suck the fuel where the fuel tank 28 is equipped with the pump unit 97 as in this embodiment.

Also, as the radiator 29 is arranged behind the fuel tank 28 and the battery 147 is arranged between the engine E and the rear wheel WR is arranged underneath the passenger steps 162 disposed before the step floor 159 which the body cover 34 is provided with; the arrangement of the electric motor 42 in the relatively low position can contribute to lowering the center of gravity of the motorcycle.

As the pump unit 97, accommodated and arranged in the lower part of the fuel tank 28, is fitted from the rear side of the fuel tank 28 to that fuel tank 28, the pump unit 97 can be so fitted to the fuel tank 28 as not to be affected by any level difference in the ground surface.

Moreover, as the pump unit 97 is fitted in a posture wherein its rotation axis is inclined forward, to the fuel tank 28, the intake port of the pump unit 97 can be brought extremely close to the bottom of the fuel tank 28 thereby to minimize the dead residual of fuel within the fuel tank 28.

Further, regarding the water inlet 107 for use in the reservoir tank 104 of the radiator 29, the water inlet 107 for the reservoir tank 104 is disposed underneath the first maintenance lid 117 which is detachably fitted to the bottom wall of the storage box 30 arranged underneath the seating 31. Therefore, the arrangement of the radiator 29 behind the fuel tank 28 makes it easier to have the water inlet 107 of the radiator tank 104 overlook the bottom part of the seating 31, enabling the water inlet 107 to be arranged higher than where the step floor 159 immediately above the reservoir tank 104 overlooks the water inlet, resulting in improved water feeding ease.

Moreover, as the water inlet forming member 108 to constitute the water inlet 107 is supported by the fitting portion 54 toward the body frame F side for the tension rod 53, disposed between the body frame F and the unit swing engine UE oscillatably borne by the body frame F, there is no particular contrivance needed for supporting the water inlet forming member 108, and the water inlet forming member 108 can be supported by the body frame F.

Further, whereas fuel from the fuel tank 28 is to be fed to the fuel injection valve 74, the use of the pump unit 97 to which pressure is applied with the fuel tank 28 in which the level of the remaining fuel is made relatively high when the remaining volume of fuel is small enables the fuel in the fuel tank 28 to be effectively fed to the fuel injection valve 74.

The electric motor 42 for varying the gear ratio of the continuously variable transmission M intervening between the engine E and the rear wheel WR is arranged underneath the passenger steps 162 disposed before the step floor 159 which the body cover 34 is provided with; the arrangement of the electric motor 42 in the relatively low position can contribute to lowering the center of gravity of the motorcycle.

Further, the continuously variable transmission M is a belt-type unit constituting the unit swing engine UE together with the engine E whose axis of cylinder 45 is substantially horizontal; as the electric motor 42 is arranged ahead of the continuously variable transmission M and alongside the cylinder 45, the electric motor 42 can be protected by the cylinder 45 of the engine E and the continuously variable transmission M. Moreover, as the body frame F is provided with the support frames 41 for supporting the step floor 159 from underneath, and the electric motor 42 is arranged in a lower position than the support frames 41, the electric motor 42 can be protected more effectively by the highly rigid support frames 41.

The grab rail 118 is fitted to the rear part of the body frame F, and the back rest 135, formed in a substantially streamlined shape having on its top the forward
inclining face 135a falling forward as viewed sideways and the backward inclining face 135b falling backward and fitted to the rear top face of the grab rail 118, is arranged behind the pillion 33, which the seating 31 is provided with.

Therefore, as the forward inclining face 135a falling forward, out of the top face of the back rest 135, can securely hold the passenger on the pillion 33 and, moreover, the back rest 135 is substantially streamlined as viewed sideways, its appearance can be improved and its aerodynamic performance enhanced; also as the backward inclining face 135b falling backward out of the top face of the back rest 135 can be utilized, any part of the luggage protruding beyond the rear end of the pillion 33 can be mounted on the back rest 135.

Also, since the back rest 135 is so formed as to decrease in width backward as viewed from above, it is possible to form the back rest 135 compactly, secure the coordination of designs together with the shape of the body cover 34 and at the same time to enhance the aerodynamic performance.

Further, as the rear top face of the grab rail 118 is substantially equalized in height to the top face of the pillion 33 and the back rest 135 is detachably fitted to the rear top face of the grab rail 118, if many luggages are to be mounted on the pillion 33, the rear top face of the grab rail 118 after taking off the back rest 135 can be effectively utilized to mount luggages.

Whereas the fuel refill lid 169 enabling its closed state, in which the fuel tank 28 arranged in the floor tunnel part 167 of the body cover 34 is covered, to be locked is openably fitted to the floor tunnel part 167 of the body cover 34 in a position matching the fuel tank 28, the decorative cover 195 arranged in a position away from the fuel refill lid 169 is openably arranged on the inner cover 157 of the body cover 34, and the unlocking member 272 for releasing the fuel refill lid 169 from the locked state is so arranged on the inner cover 157 as to be covered by the decorative cover 195 in the closed state. Therefore, as long as the decorative cover 195 is in the closed state, the unlocking member 272 will never be exposed, and accordingly the risk for the unlocking member 272 to be undesirably tampered can be minimized, and that for the unlocking member to be influenced by external disturbance such as an unfavorable weather can also be minimized.

Further, as the inner cover 157 constitutes part of the body cover 34 by covering the head pipe 27 from behind and the decorative cover 195 and the unlocking member 272 are arranged on this inner cover 157, the manipulation of the unlocking member 272 can be facilitated by arranging the unlocking member 272 in a forward position closer to the rider.

Also, as the decorative cover 195 is an item to cover from the rear part of the body the storage compartment 193 installed in the inner cover 157 but no dedicated member to cover the unlocking member 272, it is made possible to dispense with a dedicated member to cover the unlocking member 272 and thereby reduce the number of parts. For instance, if a purse is kept in the storage compartment 193, it will be easier, when a fuel refill is to be received at a service station, to pay the price and therefore convenient, because the storage compartment 193 will be opened every time the fuel refill lid 169 is opened.

Moreover, the storage compartment 193 is disposed in the inner cover 157 to be slidable in the back-and-forth direction of the body between the fully closed position in which it is stored in the inner cover 157 and the fully open position in which it protrudes from the inner cover 157 and offsets from the storage compartment 193 when viewed from the rear in the back-and-forth direction of the body; the unlocking member 272 is arranged on the inner cover 157 in a position where at least part of it overlaps the head pipe 27; and the decorative cover 195 is so fitted to the storage compartment 193 as to cover the unlocking member 272 in a state in which the storage compartment 193 is in the fully closed position; accordingly, by making it drawable, the unlocking member 272 can be arranged with high space efficiency while securing a sufficient capacity for the storage compartment 193.

Further, as the left front storage section 191 is provided with the compartment locking mechanism 208 which locks the storage compartment 193 in its fully closed position and opening the fuel refill lid 169 requires undoing of the locked state of the storage compartment 193 in its fully closed position, no dedicated locking mechanism for opening the fuel refill lid 169 is required, enabling the lock structure to be simplified.

Incidentally, as the left and right front storage sections 191 and 192 are disposed on the inner cover 157 in the widthwise direction of the body with a space between them and the unlocking member 272 is arranged between the left and right front storage sections 191 and 192, the unlocking member 272 can be arranged with high space efficiency by arranging the unlocking member 272 in the space created between the left and right front storage sections 191 and 192.

Moreover, as the unlocking member 272 is arranged in a position offset leftward, for instance, from the body center line C, the unlocking member 272 can be arranged in a position close to the left hand of rider mounting the seating 31 to facilitate his operation. Moreover, since the unlocking member 272 is arranged as described above in relation to the fuel refill lid 169 covering the fuel refill cap 168 which is frequently used, greater effectiveness can be achieved.

Incidentally in the left front storage section 191, when operation is done to open the storage compartment 193 from its fully closed position the holding mechanism 230 for temporarily holding the storage compartment 193 in an intermediate position between the fully closed position and the fully open position is disposed between the storage compartment 193 and the inner cover 157; therefore it is possible to temporarily hold the storage compartment 193 in the intermediate position between the
fully closed position and the fully open position, making it possible to use the storage compartment by matching it with many different conditions of use.

Moreover, the holding mechanism 230 is configured to be able to temporarily hold the storage compartment 193 in substantially the central position between the fully closed position and the fully open position, goods of proper size can be put into or taken out of the storage compartment 193 while holding the storage compartment 193 in an appropriately opened state.

Further, as the storage compartment 193 is fitted the inner cover 157 to be able to slide in the back-and-forth direction of the body between the fully closed position of being accommodated in the inner cover 157 and the fully open position in which it protrudes from the inner cover 157, and the hold releasing member 237 for undoing the holding state of the holding mechanism 208 is arranged on the back part of the body and on the rear part of the body, the hold releasing member 237 can be arranged in a position where it can be easily manipulated when the storage compartment 193 is to be released from the state of being temporarily held by the holding mechanism 230.

There is further provided the compartment locking mechanism 208 which locks the storage compartment 193 in the fully closed position in response to the sliding of the storage compartment 193 in the direction of the body between the fully closed position of being accommodated in the inner cover 157 and the fully open position, and to undo the locked state of the storage compartment 193 in a position closer to the body center line C and the rear part of the body, the hold releasing member 237 can be arranged in a position where it can be easily manipulated when the storage compartment 193 is to be released from the state of being temporarily held by the holding mechanism 230.

Also, the first and second unlocking buttons 248a and 249a for undoing the respective locked states of the left front storage section 191 and the storage box 30 are arranged the inner cover 157 along a side of the left front storage section 191, and the plurality of unlocking buttons 248a and 249a are concentrically arranged along the side of the left front storage section 191; therefore the operation to unlock the left front storage section 191 and the storage box 30 is facilitated.

Further, as the first and second unlocking buttons 248a and 249a are arranged in positions offset rightward from the body center line C, the unlocking operation by the rider mounting the seating 31 is made easier.

Moreover, since the first and second unlocking buttons 248a and 249a measuring greater in width are arranged one over the other, the plurality of unlocking buttons 248a and 249a can be compactly arranged without allowing the first and second unlocking buttons 248a and 249a to occupy a large space in the longitudinal direction.

Further, as the first unlocking button 248a for releasing the left front storage section 191 from the locked state, the compartment locking mechanism 208 which the left front storage section 191 is equipped with and the first electric actuator 221 for bringing an unlocking force to work on the compartment locking mechanism 208 are arranged at substantially the same heights, wiring between the unlocking button 248a for releasing the left front storage section 191 from the locked state and the first electric actuator 221 and the power transmission line between the first electric actuator 221 and the compartment locking mechanism 208 can be compactly configured.

While the embodiment of the present invention has been described so far, the invention is not limited to the above-described embodiment.

For instance the embodiment above consisted of a case in which the invention is applied in connection with the fuel refill lid 169, it is also possible to apply the invention in connection with the lid for covering the storage box 30 underneath the seating 31, or the invention can as well be applied to a lid for use in maintenance work on the internal structure of the body. Further, the unlocking member 272 is not limited to operation members for mechanically releasing a lid from a locked closed state, but can as well be intended for an electric actuator to undo a locked state, or a key hole for releasing the lid locking mechanism is also conceivable. The invention is applicable to a variety of vehicles including motorcycles, three-wheeled vehicles and buggies.

Reference Numerals

27 Head pipe
28 Fuel tank which is a functional part
34 Body cover
157 Inner cover
159 Step floors
168 Fuel refill cap
169 Lid
191 Left front storage section
192 Right front storage section
193 Storage compartment
195 Decorative cover as cover member
208 Compartment locking mechanism
272 Unlocking member
C Body center line
F Body frame
Claims

1. A vehicle, comprising
   - a body frame (F),
   - a body cover (34), covering the body frame (F),
   - a functional part (28), arranged in the body cover (34), supported by the body frame (F), and
   - a lid (169) which makes it possible to lock a closed state covering said functional part (28), openly fitted to said body cover (34) in a position matching said functional part (28),

   characterised in that
   the vehicle further comprises
   - a cover member (195) arranged in a position away from said lid (169), openly fitted to said body cover (34) and
   - an unlocking member (272) for releasing said lid (169) from a locked state, so arranged on said body cover (34) as to be covered by said cover member (195) in a closed state,

   whereby said cover member (195) and said unlocking member (272) are arranged onto an inner cover (157) which covers from behind a head pipe (27) provided on the body frame (F) at its front end and constitutes part of said body cover (34).

2. A vehicle as claimed in Claim 1, characterized in that
   a storage compartment (193) in said inner cover (157) is covered by said cover member (195) from the rear part of the body.

3. A vehicle according to claim 2, characterized in that
   said storage compartment (193) is disposed in said inner cover (157) to be slidable in the back-and-forth direction of the body between a fully closed position of being accommodated in said inner cover (157) and a fully open position of protruding from said inner cover (157) and is offset from said storage compartment (193) as viewed from behind in the back-and-forth direction of the body; said unlocking member (272) is disposed on said inner cover (157) in a position of at least partly overlapping said head pipe (27); and said cover member (195) is so fitted to the storage compartment (193) as to cover said unlocking member (272) in a state in which said storage compartment (193) is in the fully closed position.

4. A vehicle according to claim 2 or 3, characterized by being provided with a compartment locking mechanism (208) to lock said storage compartment (193) in its fully closed position.

5. A vehicle according to any of the preceding claims, characterized in that left and right front storage sections (191, 192) are disposed in said inner cover (157) along the direction of the body width with a space between them, and said unlocking member (272) is arranged between the left and right front storage sections (191, 192).

6. A vehicle according to any of the preceding claims, characterized in that said unlocking member (272) is arranged in a position offset from the body center line (C) toward one side in the right-and-left direction.

7. A vehicle according to any of the preceding claims, characterized in that said functional part is a fuel tank (28) arranged in the vicinity of step floors (159) which said body cover (34) is provided with and said lid (169) is so fitted to said body cover (34) as to cover the fuel refill cap (168) of the fuel tank (28).

Patentansprüche

1. Fahrzeug, mit:
   - einem Körperrahmen (F),
   - einer Körperabdeckung (34), welche den Körperrahmen (F) abdeckt,
   - einem innerhalb der Körperabdeckung (34) angeordneten Funktionsteil (28), das von dem Körperrahmen (F) abdecken ist, und
   - einem Deckel (169), der es ermöglicht, einen geschlossenen Zustand, bei dem das Funktionsteil (28) abgedeckt ist, zu verriegeln, und der geöffnet der Körperabdeckung (34) in einer Position angepasst ist, die zu dem Funktionsteil (28) passend ist,

   dadurch gekennzeichnet, dass
   das Fahrzeug ferner folgendes aufweist:
   - ein Abdeckungselement (195), das in einer von dem Deckel (169) entfernten Position angeordnet ist, und das geöffnet der Körperabdeckung (34) angepasst ist, und
   - ein Entriegelungselement (272) zur Lösung des Deckels (169) aus einem verriegelten Zustand, dar derart an der Körperabdeckung (34) angeordnet ist, dass es von dem Abdeckungselement (195) in einem geschlossenen Zustand abgedeckt ist, wobei das Abdeckungselement (195) und das Entriegelungselement (272) auf einer inneren Abdeckung (157) angeordnet sind, die sich von hinten ein Vorderrohr (27), das an dem Körperrahmen (F) an seinem vorderen Ende bereitgestellt ist, bedeckend erstreckt und ein Teil der Körperabdeckung (34) bildet.

2. Fahrzeug nach Anspruch 1, dadurch gekennzeichnet, dass
   ein Aufbewahrungsfach (193) innerhalb
der inneren Abdeckung (157) durch das Abdeckungselement (195) von dem hinteren Teil des Körpers abgedeckt ist.


7. Fahrzeug nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass das Funktionssteil ein Treibstofftank (28) ist, der in Umgebung der Trittbrettern (159) angeordnet ist, mit denen die Körperabdeckung (34) versehen ist, und der Deckel (169) der Körperabdeckung (34) so angepasst ist, dass es den Treibstoff-Nachfülledeckel (168) des Treibstofftanks (28) abdeckt.

Revendications

1. Véhicule comportant :

- un châssis de carrosserie (F),
- un capot de carrosserie (34) recouvrant le châssis de carrosserie (F),
- une pièce fonctionnelle (28), disposée dans le capot de carrosserie (34), supportée par le châssis de carrosserie (F), et
- un couvercle (169) qui permet de verrouiller un état fermé recouvrant ladite pièce fonctionnelle (28), équipant de manière ouvrable ledit capot de carrosserie (34) dans une position correspondant à ladite pièce fonctionnelle (28),

caractérisé en ce que le véhicule comporte en outre

- un élément de capot (195) occupant une position écarter dudit couvercle (169), équipant ledit capot de carrosserie (34) de manière ouvrable et
- un élément de déverrouillage (272) servant à libérer ledit couvercle (169) de son état verrouillé, disposé sur ledit capot de carrosserie (34) pour être recouvert par ledit élément de capot (195) dans un état fermé,

dans lequel ledit élément de capot (195) et ledit élément de déverrouillage (272) sont disposés sur un capot interne (157) qui recouvre depuis l’arrière un tube de tête (27) aménagé sur le châssis de carrosserie (F) en son extrémité avant et constitue une partie dudit capot de carrosserie (34).

2. Véhicule selon la revendication 1, caractérisé en ce qu’un compartiment de rangement (193) dans ledit capot interne (157) est recouvert par ledit élément de capot (195) depuis la partie arrière de la carrosserie.

3. Véhicule selon la revendication 2, caractérisé en ce que ledit compartiment de rangement (193) est disposé dans ledit capot interne (157) pour coulissier dans le sens arrière et avant de la carrosserie entre une position complètement fermée, logée dans ledit capot interne (157), et une position complètement ouverte faisant saillie à partir dudit capot interne (157) et décalée dudit compartiment de rangement (193) comme vu de derrière dans le sens arrière et avant de la carrosserie ; ledit élément de déverrouillage (272) est disposé sur ledit capot interne (157) dans une position chevauchant au moins partiellement ledit tube de tête (27) ; et ledit élément de capot (195) équipe le compartiment de rangement (193) pour recouvrir ledit élément de déverrouillage (272) dans un état dans lequel ledit compartiment de rangement (193) occupe la position complète-
ment fermée.

4. Véhicule selon la revendication 2 ou 3, caractérisé en ce par un mécanisme de verrouillage de compartiment (208) pour verrouiller ledit compartiment de rangement (193) dans sa position complètement fermée.

5. Véhicule selon l’une des revendications précédentes, caractérisé en ce que les sections de rangement avant de gauche et de droite (191, 192) sont disposées dans ledit capot interne (157) dans le sens de la largeur de la carrosserie, séparées par un espace, et ledit élément de déverrouillage (272) est prévu entre les sections de rangement avant de gauche et de droite (191, 192).

6. Véhicule selon l’une des revendications précédentes, caractérisé en ce que ledit élément de déverrouillage (272) occupe une position décalée par rapport à la ligne médiane de carrosserie (C) vers un côté dans le sens droite et gauche.

7. Véhicule selon l’une des revendications précédentes, caractérisé en ce que ladite pièce fonctionnelle est un réservoir de carburant (28) disposé au voisinage de marches (159) équipant ledit capot de carrosserie (34) et ledit couvercle (169) est fixé sur ledit capot de carrosserie (34) de manière à recouvrir le capuchon de remplissage de carburant (168) du réservoir de carburant (28).