

TITLE OF THE INVENTION
A COUPLING DEVICE FOR A SADDLE BOX USED IN MOTORCYCLES

BACKGROUND OF THE INVENTION

5 **(a) Field of the invention**

The present invention relates to a coupling device for a saddle box, and particularly, to a coupling device used to mount a saddle box or container or the like onto a motorcycle.

10 **(b) Description of the prior art**

As is known, manufactures used to provide motorcycles with containers, boxes or the like, consisting of flat stands connected with the body of the motorcycle by means of straps and the like. It is therefore only necessary for the user to remove the strap to take hold of the box and thus readily transport the objects contained in the box or container. One of the disadvantage of this conventional box is that the user needs to take the entire box in order to avoid any risk of the theft. Such fastening means to the box or container used in the motorcycle is not very practical.

20 Another type of motorcycle container or box made of plastic has solved the problem by rigidly fixed to the motorcycle. However, there are occasions that the whole box or container needs to be removed and carried away.

25 For the reasons just stated, the object of the present invention is to provide a coupling device for saddle box used in motorcycles such that the saddle box can be easily mounted on the motorcycle and can be easily released or removed from the motorcycle if the user needs to carry the saddle box away.

30 In other words, the saddle box with the coupling device of the present invention can be very readily and rapidly fixed in position or withdrawn.

SUMMARY OF THE PRESENT INVENTION

The purpose of the present invention is that of overcoming drawbacks of difficulties in securing the saddle box to the motorcycle.

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It is another object of the present invention to provide a coupling device for a saddle box used in motorcycles, wherein the coupling device is adaptable to mount an existing saddle box over a motorcycle.

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It is also an object of the present invention to provide a coupling device for a saddle box used in motorcycles, wherein the coupling device is extremely easy to apply on and also securely attachable to the body, so that it is not possible for the container to fall down while driving on a bumpy road.

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It is further an object of this invention to provide a coupling for a saddle box used in motorcycles, wherein the coupling device allows the saddle box to be releasably removed by pulling an element against a spring.

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According to a preferred embodiment of the present invention, a coupling device for a saddle box, having an upper housing and a lower housing with a flat bottom surface, comprising a box support having the bottom surface thereof and a first end fixed to a framework of the motorcycle, the other end being provided with a vertical projection having an engaging element protruded away from the first end, a fastening plate substantially rectangular having a first longitudinal edge mounted to a spring and a second longitudinal edge mounted to a pulling tab, an engaging slot provided substantially on the fastening plate, said spring together with said fastening plate, secured to the flat bottom surface of the lower housing of the saddle box, a suspension member having a first hook and a second hook, said first hook being engageably mounted to the external wall of the saddle box and said second end being provided with a slot which is adapted to the pulling tab, thereby the saddle box is mounted to the box support when the engaging slot of the fastening plate is in

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engagement with the engaging element of the vertical projection provided on the box support and is releasable by pulling the pulling tab toward the user and lifted up the tab to disengage from the engaging element.

5 Other objects and advantages of the invention will be apparent to those skilled in the art from the following detailed description of the invention, with reference made to the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

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Fig. 1 is a schematic view of the saddle box secured to a motorcycle using the coupling device in accordance with the present invention;

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Fig. 2 is a sectional view of the box support with a vertical projection having an engaging element of the coupling device of the present invention;

Fig. 3 is a schematic view of the fastening plate and a suspension element to support the plate the saddle box in accordance with the present invention;

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Fig. 4 is a top view of the fastening plate in accordance with the present invention, and

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Fig. 5 is a sectional view of the coupling means at the closing position, indicating the engaging element being slotted into the slot on the fastening plate, in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

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Hereinafter, the embodiment of the invention will be described in detail with reference to the drawings.

As illustrated in Fig. 1, the saddle box 30 comprises an upper housing 32 and a lower housing 34 having a flat bottom surface 36 to mount over a motorcycle. In accordance with the present invention, the saddle box 30 is preferably made from glass-reinforced plastic. The saddle box 30 is secured to the motorcycle's rigid framework (not shown) by means of a coupling device depicted in Figs. 2, 3 and 4. The framework is not described herein as it is similar to a number of commercially sold motorcycle framework found in the market.

In accordance with the present invention, the coupling device comprises a box support 20 (Fig. 2), a fastening plate 10 (Figs. 3 & 4) and a suspension member 50 (Figs. 3 & 5). As shown in Fig. 2, the box support 20 has a flat bottom surface secured to the top surface of the framework of the motorcycle, and a first end of the box support 20 fixed to the framework. The other end of the box support 20 is provided with a vertical projection 22 having an inverted U-shaped engaging element 24 protruded away from the first end. A stopper 26 is mounted at right angle to the vertical projection 22 at the center thereof.

As shown in Fig. 3, fastening plate 10 is substantially a rectangular shape having a first longitudinal edge 12 which is connected to a spring 18 at one end, and a second longitudinal edge 14 mounted to a pulling tab 16. The other end of the spring 18 is mounted to the bottom surface of the lower housing 30 and within a channel 13 defined by the bottom of the flat bottom surface of the lower housing 30. An engaging slot 19 which can accommodate the engaging element 24 is formed at the center of the fastening plate 10 (refer to Fig. 4). In this case, the fastening plate 10 can be extended outward when the user pulls the pulling tab 16 towards himself and at the same time, it can be lifted out from its original horizontal position.

The suspension member 50 can be hingeably mounted to the housing 32,34 of the saddle box 30 (not shown) by having a bottom hook 54 and a top hook 52 in engagement to a mounting structure (not shown) provided to the saddle box 30. At the lower section of the suspension member 50 adjacent to the bottom hook 54, a slot 55

is provided and it is adaptable to the pulling tab 16 of the fastening plate 10 so as to support and secure the fastening plate 10. In accordance with the present invention, the center of the suspension member 50 is hinged to the saddle box 30 at the lateral side thereof such that the lower section of the suspension member 50 is moveable about the hinging point.

Fig. 4 is a top view illustrating the fastening plate 50 of the present invention. As shown in figure, the engaging slot 19 is located substantially at the center of the plate 50.

Fig. 5 shows a sectional view of the present coupling device at the closing position, wherein the bottom surface of the saddle box 30 being fixed with the fastening plate 10 is slotted into the vertical projection 22 of the box support 20 via the slot 19. The fastening plate 10 is in engagement with the engaging element 24. The process of mounting the fastening plate 10 with the box support 20 is explained below.

In accordance with the present invention, the fastening plate 10 is pulled outward towards the user by pulling the pulling tab 16 against the spring 18 until the slot 19 is aligned with the vertical projection 22.

Next, place down the fastening plate 10 and the engagement of the two components 10, 20 is formed. In order to rigidly secure the fastening plate 10, the suspension member 50 having been fixed at the hook 52 or the saddle box 30, is then mounted to the pulling tab 16 with the slot 55 of the suspension member 50 passed through the tab 16 and hold the fastening plate 10. As the lower section of the suspension member 50 is hinged at the center thereof, the lower section can be freely pushed in or pull out to withdraw from the tab 16. In the preferred embodiment, the bottom surface of the fastening plate 10 sits onto the stopper 26 after it has engaged with the engaging element 24. Thus, the combination of all these parts is rigid and secured.

In order to withdraw or remove the saddle box 30, the pulling tab 16 is pulled towards the user against the spring 18, then, lifted up the pulling tab 16 to disengage from the engagement with the engaging element 24. Next, the lower section of the suspension member 50 is pulled away to disengage the engagement of the slot 55 of the suspension member 50 with the pulling tab 16. This, the saddle box 30 is then removed from the motorcycle is framework.

It will be pointed out that a locking mechanism (not shown) can be mounted to the suspension member 50 so that the movement of the lower section of the suspension member 50 can only be moved away from the pulling tab 16 when it is opened with a key. The present of the locking mechanism is to further secure the engagement of the saddle box 30 with the motorcycle's framework.

While the present invention has been described with reference to a preferred embodiment, the description is illustrative of the invention and is not to be construed as limiting the invention. Various modifications may occur to those skilled in the art without departing from the true spirit and scope of the invention defined by the appended claims.



CLAIMS

1. A coupling device for a saddle box (30) having an upper housing (32) and a lower housing (34) with a flat bottom surface (16) comprising

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- (a) a box support (20) having a bottom surface thereof and a first end fixed to a motorcycle's framework, the other end being provided with a vertical projection (22) having an engaging element (24) protruded away from the first end,

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- (b) a fastening plate (10) substantially rectangular having a first longitudinal edge (12) mounted to a spring (18) and a second longitudinal edge (14) mounted to a pulling tab (16), an engaging slot (19) provided substantially on the fastening plate (10)

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- (c) said spring (18) together with said fastening plate (10), secured to the flat bottom surface of the lower housing (34) of the saddle box (20),

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- (d) a suspension member (50) having a first hook (52) and a second hook (54), said first hook (52) being engageably mounted to the external wall of the saddle box (30) and said second end (54) being provided with a slot (55) which is adapted to the pulling tab (16),

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thereby the saddle box (30) is mounted to the box support (20) when the engaging slot (19) of the fastening plate is in engagement with the engaging element (24) of the vertical projection (22) provided on

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the box support (20) and is releasable by pulling the pulling tab (16) toward the user and lifted up the tab (16) to disengage from the engagement element (24)

5 2. A coupling device for a saddle box as set forth in Claim 1, further comprises a stopper (26) mounted perpendicularly to the vertical projection (22) to support and hold the fastening plate (10) in a horizontal position.

10 3. A coupling device for a saddle box as set forth in Claim 1, wherein the engaging element is inverted U-shaped.