

A motorcycle case

Field of the invention.

The present invention relates to a motorcycle case.

Background art known to the applicant.

Lockable top and/or side cases for motorcycles are well known and enable a rider to temporarily store and protect material against the elements prior to riding their motorcycle from one location to another. In the alternative, such cases may be useful when the rider simply requires somewhere to temporarily store items where they will be relatively safe and away from prying eyes.

Typically, two forms of motorcycle case exist, those which are integral with the motorcycle and those which are demountable from the motorcycle, the latter can act as brief cases for motorcycle couriers and the like. Demountable cases come in a variety of shapes sizes and colours and are to all intents and purposes may be viewed as lockable storage boxes. The main differences between these types of boxes tend to be the quality of the material used in their construction and the complexity and number of components required to assemble them.

Accordingly, for a given quality of case, the main factors which determine the cost of production, all other factors being equal, are generally the number of components and the complexity of the build. In addition, if motorcycle cases are manufactured for export, the size of the case becomes an issue as shipping containers tend to be of the same fixed volume and so the more cases one can ship per container, the cheaper the overall cost of production. In the constant strive to drive down costs, build complexity and case size, are problems that the industry faces as a whole.

The ability to open the case and have immediate and easy access to its interior may also be an issue on occasion, especially if the rider's hands and arms occupied carrying material to be placed into the case does not want to let go of the material they are carrying.

Therefore there is a need to be able to produce motorcycle cases involving fewer components and there is also a need to maximise the available volume within a shipping container if cases are being manufactured for export. There is also a need for easy access to the interior of motorcycle case. Accordingly, it is an object of present invention to attempt to alleviate the aforementioned problems.

In addition and for the avoidance of doubt, the term 'motorcycle' or 'motorcycles' as used in this specification is intended to include the term 'motorbike' or 'motorbikes' respectively as, in some countries, 'motorbikes' might be considered to be distinct from 'motorcycles' due to the type and/or power of the engine used.

Statements of the invention.

With the foregoing in view, the invention, although embodied in several different aspects, is so linked as to form part of a single general inventive concept.

Accordingly, the invention in one aspect resides broadly in a motorcycle case including:

- a) a closeable container comprising a container top and a container bottom;
- b) biasing means fitted to the container to bias the container top and the container bottom towards a 'container open' position; and
- c) a latch fitted to the container and moveable between unlatched and latched positions to unlock and lock the container;

wherein latch movement from an unlatched to a latched position after initially engaging one of the container top and container bottom, can only occur once the container has been urged shut against the bias of the biasing means. In such form, the latch is a single (integrally assembled or integrally formed) item.

Such an arrangement of biasing means ensures that once unlatched, the case is open and cannot be closed again until the lid is forced shut and the latch applied thus providing easier access to the case. Furthermore, the latch being a single item reduces the number parts that are required to make the motorcycle case.

Preferably, the latch is pivotally mounted to the container and only capable of rotational movement between latched and unlatched positions about the pivot. This simple pivot and lever type arrangement further reduces the number of component parts that may typically be found in a number of motorcycle cases, thus further reducing the number of components that go into the build.

Preferably, the latch is provided with latch biasing means engageable with the container to bias the latch towards its latched position. This has the advantage of generally returning the latch to substantially the same position it was in when the latch had been in its latched position whether the container is open or closed. If the container is open, the top of the latch enters the air gap created by the biasing means. In such form, the respective biasing means lie in substantially the same plane. The plane is a vertical plane which moves in a direction from the front to the rear of the case bisecting it. The biasing means could be located below the pivot.

More preferably, the respective biasing means are substantially orthogonal with respect to each other. In this arrangement, the respective biasing forces are able to apply their full force and are thus at their most efficient.

Although in some embodiments of the invention, the container top and container bottom may be connected together via a conventional hinge halves linked via a hinge pin, preferably, the container is a pinless hinged container. This is particularly advantageous, as it dispenses with a component of the assembly process, at least one and probably a plurality of hinge pins are now no longer required.

Preferably, at least one of the container top and container bottom is nestable with a like component. Currently, the transportation of fully assembled motorcycle cases in shipping containers was the accepted norm however, for the most part, the shipping containers are transporting 'air' as the volume occupied by each case was simply that.

Accordingly, if one or both of the container top and container bottom was nestable, and unassembled or semi finished nested components were packed into shipping containers, less 'air' would be carried.

Ideally, all of the remaining components required to assemble a motorcycle case will be provided within the reduced air gap between nested components. In such form, the or each of the container top and container bottom is provided with one or more nesting points. Such an arrangement would 'spread the load' and reduce the chance of damage when these components are being nested and/or stacked in their nested arrangement.

Preferably, the latch in its latched position, is at least partially surrounded by a mount which is so sized and shaped as to deter or prevent attempts by third parties to force the latch. The face of the mount is likely to be planar and substantially flush with the planar front face of the latch, the clearance between the latch and the mount being such that the working tapered end of a typical screwdriver would not be able to penetrate the clearance gap between the mount and the latch.

Preferably, the case further includes a lock adapted to lock or unlock the latch to either prevent or enable the latch to be moveable between its latched and unlatched positions.

Preferably, the case further includes a frame mountable to a motorcycle and wherein the frame and container bottom are provided with complementary engaging members so adapted as to enable the container to be demountably attached to the frame.

Such an arrangement allows the motorcycle case to be fitted to most motorcycles and once the frame has been secured to the motorcycle, the case itself can be demounted from it when required. In such form, the case further includes a release member which when actuated allows relative movement between the engaging members to take place to enable the container to be demounted from the frame. Typically the frame is made of metal and includes all of the component parts fitted to it to enable it to be fitted to a motorcycle e.g. nuts, bolts and brackets. These simply have to be undone and arranged on the motorcycle and done up again.

Preferably, the lock adapted to lock or unlock the latch, is also adapted to lock or unlock the complementary engaging members to either prevent or enable the complementary engaging members from being moveable relative to each other. In such form, both the latch and the complementary engaging members are simultaneously locked and unlocked by the lock.

Preferably, the case further includes latch actuation means to move the latch from its latched to its unlatched position. The means would be located towards the bottom of the latch and below the pivot.

In such form, the means is a button which forms part of the injection molded latch, the button preferably having a hollow portion to enable a biasing member to sit within it.

The invention includes within its scope one of a container top and container bottom for use in forming a motorcycle case or part thereof as specified herein.

The invention also includes within its scope a motorcycle incorporating a motorcycle case as specified herein.

The invention in another aspect resides broadly in a motorcycle case including a closeable container comprising a container top and a container bottom wherein the container top and/or the container bottom is/are adapted to be nestable.

The invention in another aspect resides broadly in a method of placing:

- a) packaged un-assembled motorcycle cases (or parts thereof); or
- b) packaged semi-finished motorcycle cases (or parts thereof);

into a shipping container including the steps of:

- a) providing a plurality of un-assembled or semi-finished motorcycle case container tops adapted to be nestable and/or providing a plurality of un-assembled or semi-finished motorcycle case container bottoms adapted to be nestable;
- b) nestably stacking the un-assembled or semi-finished container tops and/or nestably stacking the un-assembled or semi-finished container bottoms;
- c) packaging the nestably stacked un-assembled or semi-finished container tops and/or packaging the nestably stacked un-assembled or semi-finished container bottoms in a manner suitable for placing into a shipping container; and

- d) placing the packaged nestably stacked un-assembled or semi-finished container tops and/or placing the packaged nestably stacked un-assembled or semi-finished container bottoms into a shipping container.

Such an arrangement enables far more motorcycle cases (albeit in an incomplete form) to be placed into a shipping container and if the container tops and or container bottoms included nesting points in their design, the chance of damage to these components during transit would be reduced. The nesting points could be moulded projections or apparent 'natural' features of the respective container bottom or top or combinations of both.

In short, such a method will ensure that far less 'air' will be transported and far more equipment will be transported than when using conventional shipping container packaging methods.

Preferably, the method further includes the step of placing in the shipping container a sufficient number of remaining parts to enable a plurality of motorcycle cases to be assembled from the contents of the shipping container. Ideally, the reduced air gaps between nested tops and/or bottoms could contain the remaining components required to enable either that top or bottom or indeed the motorcycle case to be fully assembled.

Preferably, the un-assembled or semi-finished container tops are nested into groups of eight.

Preferably, the un-assembled or semi-finished container bottoms are nested into groups of eight.

The invention includes within its scope a shipping container loaded with packaged nestably stacked container tops and/or packaged nestably stacked container bottoms employing the method as specified herein.

The invention in another aspect resides broadly in a kit of un-assembled motorcycle case parts or semi-finished motorcycle case parts including:

- a) a nestable motorcycle container top and a nestable motorcycle container bottom which when connected together form a closeable container;
- b) a frame mountable to a motorcycle, the frame and container bottom being provided with complementary engaging members so adapted as to enable the container bottom to be mounted to the frame;
- c) biasing means fittable or fitted to the container to bias the container top and the container bottom towards a 'container open' position;
- d) a latch fittable or fitted to the container and moveable between latched and unlatched positions to lock and unlock the container;
- e) a lock fittable or fitted to the container and adapted to lock or unlock the latch to either prevent or enable the latch to be moveable between its latched and unlatched positions.

Such a kit will enable a motorcycle case to be assembled far more rapidly as it involves far fewer pieces than normal motorcycle cases and therefore, far less time will be required to assemble the kit.

Preferably, the kit further includes one or more of the following:

- a) biasing means engageable with the container to bias the latch towards its latched position;
- b) a lock cover.

The lock cover is essentially an apertured plate which houses the lock and could also house buttons to actuate the latch and/or enable the container to be demountable.

Preferably, the container bottom is demountable from the frame.

Preferably, the nestable motorcycle container top and a nestable motorcycle container bottom are connectable via a pinless hinge.

Preferably, the kit or a part thereof is for use with the method as specified herein.

Brief description of the drawings.

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings wherein:

Fig 1 is a pictorial representation of one embodiment of the invention showing a fully assembled motorcycle case.

Fig 2 is a pictorial representation of the embodiment of Fig 1 showing an exploded view of the component parts of the motorcycle case.

Fig 3 illustrates a pictorial sectional representation (substantially through the vertical plane which bisects the case) and a pictorial front representation of the release mechanism and lock of the embodiment of Fig 1.

Fig 4 illustrates a pictorial front and pictorial side sectional representation (again substantially through the vertical plane which bisects the case) of the embodiment of Fig 1 without any of the decorative or 'add on' features showing how the release mechanism and in particular, the latch closing the case, keeps the lid of the case closed.

Fig 5 includes the pictorial representation of Fig 3 but also shows the position of the latch keeping the case closed in its unlatched position.

Fig 6 illustrates pictorial front and off rear views of the release mechanism previously illustrated.

Fig 7 illustrates pictorial views of the sequence of events from unlocking of the release mechanism, the actuation of the latch to release the lid and the moment the case opens.

Fig 8 illustrates pictorial views of the nesting points located on the container bottom together with a stack of nested container bottoms.

Fig 9 illustrates pictorial views of the nesting points located on the container top of the case together with a stack of nested container tops.

Fig 10 illustrates pictorial views of how the hook cover is fitted to the container top of the case.

Fig 11 also illustrates pictorial views of how the hook cover is fitted to the container top of the case which complements those of Fig 10.

Description of the preferred embodiments.

Figs 1 and 2 illustrate the same embodiment of a motorcycle case of the present invention.

Fig 1 illustrates a fully assembled closed and locked case and Fig 2 illustrates an exploded view of the case; the case in both Figs is generally referenced 10.

The motorcycle case 10 includes a closeable container 11 formed from durable plastics material, the container 11 comprising a container top 12 and a container bottom 13.

The container top 12 is adapted to receive one of a number of different decorative design covers 14 within a recessed area 15 of the top 12 such that if and when such a decorative cover 14 is fitted to the top 12, the outer face 16 of the cover 14 will be flush with the rest of the face 17 of the top 12.

The front 18 of the container top 12 is also adapted to receive a panel 19 which itself is adapted to receive a head light reflective component 20 which when fitted to the panel 19, given that the front 18 of the container top 12 will be toward the rear of a motorcycle once the case 10 has been fitted to it, will provide a useful additional safety feature for the motorcycle. The outer face 21 of the panel 19, like the decorative cover 14, will be substantially flush with the top 12 once fitted and is intended to hide the upper part of a latch 22 and latch surround 23.

The latch surround 23 is a mount which partly surrounds the upper part of the latch 22 and serves as a support for a hook cover 56 (see Figs 10 and 11) in the form of a horizontal bar with a pair of downwardly depending members at each end of the bar, each member containing a slot enabling the hook cover 56 to slot over each arm of the latch surround 23.

The hook cover 56 once slotted over the arms of the latch surround 23 is screwed into place by a single screw 57.

Once screwed in place, the clearance between the hook cover 56 and the upper portion of the latch 22 is narrow and the exterior face of the latch 22 once in its latched position is substantially flush with the exterior face of the hook cover 56.

With such an arrangement, the hook cover 56 acts to prevent tampering with the latch 22 by third parties to prevent them for example 'forcing the lock' (or in this case the latch 22) with a screwdriver to gain access to the case 10 (once mounted to a motorcycle) should the panel 19 of the case 10 be removed.

Biasing means 24,25 located within a vertical plane bisecting the case 10 from front to rear are fitted to a columnar compartment 26 in the upper portion 27 of the container bottom 13 and consist of a cap 24 covered spring 25 which sits within compartment 26, the cap 24 able to contact a corresponding face 28 in the lower portion 29 of the container top 12 adjacent the compartment 26 when the case 10 is closed such that the cap 24 covered spring 25 is able to bias the container top 12 and the container bottom 13 towards a 'container open' position.

Integrally formed as a single item from injection molded plastics material of a different colour to the case, the latch 22 is substantially an elongate plate 30 pivotally connected to the container bottom 13 by opposed pivot points 31 so as to only be capable of rotational movement between latched and unlatched positions about the pivot 31 to lock and unlock the case 10.

The latch 22 at its upper end 32 includes a projection 33 which extends along the entire width of the latch 22 and projects at right angles to it. The base of the projection 33 sits on a cooperating projecting lip 35 on the container top 12 when the case 10 is closed to seal the container top 12 and container bottom 13 together. The latch 22 further includes a latch actuation member 36 in the form of a hollow projection 36, the capped end 37 of the projection 36 acting as a button to move the latch 22 from its latched to its unlatched position, therefore minimising the number of components that need to make up the latch 22.

Biasing means 38 in the form of one end of another spring 38 located towards the lower end of the latch 22 below the pivot points 31 within the same vertical plane as the previous biasing means 24,25 but substantially orthogonal to the previous one is located within a recess 39 of the container bottom 13, the other end being located within the hollow of the projection 36 of the latch 22. The spring 38 is so designed as to engage the container 11 and to bias the latch 22 towards its latched position once fitted. A lock 40 is provided which is adapted to rotate a locking plate 41 through 90 degrees which locks or unlocks the latch 22 to either prevent or enable movement of the latch 22. The container top 12 and container bottom 13 are connected together by cooperating pinless hinge components 42 located at rear of the case 10.

With the arrangement thus far described, it will be seen that latch movement from an unlatched to a latched position after initially engaging the lip 35 of the container top 12, can only occur once the case 10 has been urged shut against the bias of the biasing means 24,25. In addition, the design of the container top 12 and container bottom 13 are such that both the container top 12 and container bottom 13 are nestable with a like component, that is to say, for example, a container bottom 13 can be nested with another container bottom 13, and if two nested container bottoms 13 are further nested together, the beginnings of a stack of nested container bottoms 13 is formed.

To assist the ability of the stacking and nestability of the container tops 12 and container bottoms 13, not only is the shape of these items so configured to enable nesting to take place, but each of the container top 12 and container bottom 13 incorporate one or more nesting points 43, 44, 58.

The case also includes a frame 45 which is mountable to a motorcycle using conventional nuts and bolts (not illustrated), the frame 45 itself being provided with complementary inter-engaging members 46, 47, 48, 49, 50 located (46, 47, 48, 49) on the container bottom 13 and (50) the frame 45 to demountably connect the container bottom 13 to the frame 45.

The engagement member 50 on the frame 45 consists of an upright 51 and a shoulder 52 to form a catch 50 and the complementary engagement member 46, 47, 48, 49 on the container

bottom 13 consists of an apertured 46, elongate, spring biased 47 slidable 48 element able to move back and forth within a guide 49 located at the base 53 of the container bottom 13.

The complementary engagement member 46, 47, 48, 49 on the container bottom 13, is biased towards the catch 50, thus when the aperture 46 of the slidable 48 element slips over the shoulder 52 of the catch 50, the biasing spring 47 forces the slidable 48 element and thus the periphery of the aperture 46 back against the upright 51 of the catch 50. The shoulder 51 of the catch 50 will now prevent upward movement of the container bottom 13 beyond the shoulder 52 of the catch 50 (and consequently prevent the removal of the container 11 from the frame 45).

The lock 40 which locks or unlocks the latch 22 is also (via the same locking plate 30) able to simultaneously lock or unlock the complementary engaging members 46, 47, 48, 49, 50 to either prevent or enable the complementary engaging members 46, 47, 48, 49, 50 from being moveable relative to each other. Therefore, the lock 40 not only locks the container 11 to the frame 45 but simultaneously locks the container 10 shut.

As the frame 45 and the slidable 48 element are both made of metal (for strength), a plastics push button 54 is provided which fits onto the proximal end of the slidable element 48 and acts as a release member when actuated, to allow relative movement between the engaging members 46, 47, 48, 49, 50 to take place to enable the container 11 to be demounted from the frame 45, as pushing the button 54 will slide the periphery of the aperture 46 to a position beyond the edge of the overlying shoulder 52 of the catch 50 enabling the container bottom 13 to be removed from the frame 45.

The location of the latch projection 36 (or button) is directly above the lock 40 and the location of the release member push button 54 is located directly below the lock 40 and if that was not sufficient distinction for a rider to tell which button 36, 54 he or she were pressing, both buttons 36, 53 are further distinguished by being different shapes.

Accordingly, confusion between accidentally releasing the container 11 from the frame 45 and opening the container 11 when the case 10 is in use is further reduced by this arrangement. Such an arrangement is achieved in this embodiment by employing the use of an apertured

lock cover 55, fittable to the container bottom 13 which is adapted to house the buttons 36, 54 and the lock 40 and to provide a desirable professional finish to the case 10.

Given that the container top 12 and container bottom 13 are designed to be nestable, an improved method of loading a shipping container (not illustrated) with packaged unassembled motorcycle cases (or parts thereof) or semi-finished motorcycle cases (or parts thereof) is envisioned. Accordingly, instead of shipping completed cases in shipping containers, one could ship nested container bottoms and/or container tops instead which would enable far more packaged unassembled motorcycle cases to be sent per shipping container than packaged assembled motorcycle cases.

One shipping container could include all of the components associated with and including the container top 12 and another shipping container could include all of the components associated with and including the container bottom 13. However, it would be more usual to have a shipping container containing all of the unassembled packaged nested components or all of the semi-finished packaged nested components required to assemble a plurality of motorcycle cases, enabling the customer at the other end the opportunity of assembling the components to form the finished products.

Such a method of placing packaged un-assembled motorcycle cases (or parts thereof); or packaged semi-finished motorcycle cases (or parts thereof); into a shipping container would include the following steps:

- a) providing a plurality of un-assembled or semi-finished motorcycle case container tops adapted to be nestable and/or providing a plurality of un-assembled or semi-finished motorcycle case container bottoms adapted to be nestable;
- b) nestably stacking the un-assembled or semi-finished container tops and/or nestably stacking the un-assembled or semi-finished container bottoms;
- c) packaging the nestably stacked un-assembled or semi-finished container tops and/or packaging the nestably stacked un-assembled or semi-finished container bottoms in a manner suitable for placing into a shipping container; and

- d) placing the packaged nestably stacked un-assembled or semi-finished container tops and/or placing the packaged nestably stacked un-assembled or semi-finished container bottoms into a shipping container.

In addition, there could be provided a kit of un-assembled motorcycle case parts or semi-finished motorcycle case parts including:

- a) a nestable motorcycle container top and a nestable motorcycle container bottom which when connected together form a closable container;
- b) a frame mountable to a motorcycle, the frame and container bottom being provided with complementary engaging members so adapted as to enable the container bottom to be mounted to the frame;
- c) biasing means fittable or fitted to the container to bias the container top and the container bottom towards a 'container open' position;
- d) a latch fittable or fitted to the container and moveable between latched and unlatched positions to lock and unlock the container;
- e) a lock fittable or fitted to the container and adapted to lock or unlock the latch to either prevent or enable the latch to be moveable between its latched and unlatched positions.

Such a kit could be involved in the method described herein.

Each kit could be opened at the other end after the shipping container has been transported to its final destination and each kit could be assembled or fully assembled in the country of export as opposed to sending completed motorcycle cases to the country of export or region of transport.

Claims

1. A motorcycle case including:

a closeable container comprising a container top and a container bottom;
biasing means fitted to the container to bias the container top and the container bottom towards a 'container open' position; and
a latch fitted to the container provided with latch biasing means engageable with the container to bias the latch towards its latched position, the latch being moveable between latched and unlatched positions to lock and unlock the container the latch being pivotally mounted to the container and only capable of rotational movement between latched and unlatched positions about the pivot, the pivot being the point of rotation in a lever system;

wherein latch movement from an unlatched to a latched position after initially engaging one of the container top and container bottom, can only occur once the container has been urged shut against the bias of the biasing means, and wherein the case further includes a frame mountable to a motorcycle and wherein the frame and container bottom are provided with complementary engaging members so adapted as to enable the container to be demountably attached to the frame, and wherein respective biasing means lie in substantially the same vertical plane.

2. A motorcycle case as claimed in claim 1, wherein respective biasing means are substantially orthogonal with respect to each other.

3. A motorcycle case as claimed in claim 1 or claim 2, wherein the container is a pinless hinged container.

4. A motorcycle case as claimed in any one of the preceding claims, wherein at least one of the container top and container bottom is nestable with a like component.

5. A motorcycle case as claimed in claim 4, wherein the or each of the container top and container bottom is provided with one or more nesting points.

6. A motorcycle case as claimed in any one of the preceding claims, wherein the latch in its latched position, is at least partially surrounded by a mount which is so sized and shaped as to deter or prevent attempts by third parties to force the latch.
7. A motorcycle case as claimed in any one of the preceding claims, wherein the container further includes a latch actuation member to move the latch from its latched to its unlatched position.
8. A motorcycle case as claimed in any one of the preceding claims, wherein the case further includes a lock adapted to lock or unlock the latch to either prevent or enable the latch to be moveable between its latched and unlatched positions.
9. A motorcycle case as claimed in any one of the preceding claims, wherein the lock adapted to lock or unlock the latch, is also adapted to lock or unlock the complementary engaging members to either prevent or enable the complementary engaging members from being moveable relative to each other.
10. A motorcycle case as claimed in any one of the preceding claims, wherein the container further includes a release member which when actuated, allows relative movement between the engaging members to take place to enable the container to be demounted from the frame.
11. A motorcycle case as claimed in any one of the preceding claims, wherein the case further includes latch actuation means to move the latch from its latched to its unlatched position.
12. A motorcycle case as claimed in any one of the preceding claims, wherein each biasing means is located substantially adjacent to each other located in the container bottom.
13. One of a container top and container bottom for use in forming a motorcycle case or part thereof as claimed in any one of the preceding claims.
14. A motorcycle incorporating a motorcycle case as claimed in any one of claims 1-12.
15. A kit of un-assembled motorcycle case parts or semi-finished motorcycle case parts

including:

- a) a nestable motorcycle container top and a nestable motorcycle container bottom which when connected together form a closeable container;
- b) a frame mountable to a motorcycle, the frame and container bottom being provided with complementary engaging members so adapted as to enable the container bottom to be mounted to the frame;
- c) biasing means fittable or fitted to the container to bias the container top and the container bottom towards a 'container open' position;
- d) a latch fittable or fitted to the container and moveable between latched and unlatched positions to lock and unlock the container;
- e) a lock fittable or fitted to the container and adapted to lock or unlock the latch to either prevent or enable the latch to be moveable between its latched and unlatched positions.

16. A kit as claimed in claim 15, wherein the kit further includes one or more of the following:

biasing means engageable with the container to bias the latch towards its latched position;
and
a lock cover.

17. A kit as claimed in claim 15 or claim 16, wherein the container bottom is demountable from the frame.

18. A kit as claimed in any one of claims 15-17, wherein the nestable motorcycle container top and a nestable motorcycle container bottom are connectable via a pinless hinge.