Title: BAG FOR A PUPIL

Abstract: A bag is disclosed. The bag has shoulders straps connected with a backside of a main body of the bag into which necessary things are put and a hand carrier provided at a front-side of the bag. Preferably, the bag has at least a wheel capable of emitting light. Since the hand carrier is located at the front-side of the bag, the bag can have a wide room in the back-side for introducing various kinds of designing elements to enhance elegance of the bag and has no inconvenience that a frame of the hand carrier is hard on or snagged with user’s shoulder or back. As the wheel emits light during the bag is dragged with rolling the wheel, it can contribute to the prevention of a car accident.

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BAG FOR A PUPIL

Technical Field

The present invention relates to a school bag, and more particularly, to a bag for a pupil having a hand carrier, which after receiving school things, such as textbooks, reference books, and pencil cases, can be carried with one hand, or on the shoulder, and when necessary, can be drawn with one hand.

Background Art

Generally, a bag for a pupil comprises a bag body which can receive necessary things and be opened and closed with a zipper and the like, straps which are connected on the surface of the backside of the bag body, and a handle which is positioned on the topside of the bag body. Since it should be carried with one hand or on the shoulder, this bag for a pupil is a big burden to a pupil who has to carry many books and other things. If a growing child carries a heavy bag in one hand gripping the handle or on the shoulder with the straps, it may have a negative effect on the child's growth.

To solve this problem, some bags for a pupil further have wheels and a hand carrier so that the bag can be drawn by the hand carrier when necessary.

However, the prior art bags for a pupil having these hand carriers have a drawback that the hand carrier and wheels are positioned at the backside of the bag, that is, at the side to which straps are connected, and therefore, if the bag is worn and carried on the shoulder, the bag gives discomfort of the vertical frame of the hand carrier and wheels digging into the shoulder and back, and if the back is carried for a long time, it may cause pains. Accordingly, if a bag has a hand carrier of this structure, it is inconvenient to carry the bag on the shoulder and it is more difficult to use the bag for a long time. In addition, if this bag is drawn for a while and then is worn on the shoulder, foreign materials
such as mud adhering to the wheels adhere to the backside of the clothes such that the clothes are stained.

In addition, in the prior art bags for a pupil, a plastic member for mounting wheels is attached to the base of the bag, that is, the outercircumference of the bag such that the plastic member is seen as is from the outside, and particularly when the wheels are broken, it is difficult to change the wheels.

Besides, in the prior art bag for a pupil the vertical frame of the hand carrier is exposed to the inside receiving space such that the received things can be damaged, and when the bag is opened, the vertical frame is seen to the user and looks not good.

In addition, though the prior art bag for a pupil faithfully performs the original functions, for example, that it should be convenient for young pupils to carry a bag with books and other things put inside, it does not have a preventive function to protect the user pupil from a car accident.

**Disclosure of the Invention**

To solve the above problems, it is an objective of the present invention to provide a bag for a pupil which can be drawn by the hand carrier or can be carried on the shoulder with straps while it is convenient to carry the bag on the shoulder with straps because user’s back is not dug or snagged by wheels when the bag is carried on the shoulder, and foreign materials adhering to the wheels cannot stain clothes.

It is another objective of the present invention to provide a bag for a pupil which is convenient to carry on the shoulder with straps, while degradation due to a plastic member can be prevented because the plastic member is not much exposed to the outside.
It is another objective of the present invention to provide a bag for a pupil whose wheels are easy to install and change.

It is another objective of the present invention to provide a bag for a pupil whose wheels are easy to install and change while the vertical frame of a hand carrier is not seen inside the bag.

It is another objective of the present invention to provide a bag for a pupil which can be carried with one hand or on the shoulder or can be drawn with one hand as needed, and in addition is helpful to prevent a car accident.

The ultimate object of the present invention having detailed objectives as described above is to provide a bag for a pupil that is easy to use and useful to prevent accidents.

According to an aspect of the present invention, there is provided a bag for a pupil having a bag body which receives necessary things and can be opened or closed, and straps which is attached to the backside of the bag body and enables a user to wear the bag on his shoulder, the bag for a pupil comprising the hand carrier which is positioned at the front side of the bag body and is to draw the bag; and a wheel which is mounted on the front side of the hand carrier or the bag body.

Preferably, the hand carrier comprises a base plate which supports the wheels so that the wheels rotate; a pair of left and right vertical frames each of which is perpendicularly fixed to the base plate, wherein an upper vertical frame is inserted into a lower vertical frame and retracted into or extended from the lower vertical frame; and a horizontal grip which connects the top ends of the vertical frames.

It is preferable that the base plate comprises two side wall units which support an axis of the wheels so that the axis rotates; and a pair of frame holders which are perpendicularly fixed on the bottom surface of the base plate.
and into which the lower vertical frames of the vertical frames are inserted and fixed.

In addition, the base plate has a box shape with the top part open, and supports the axis of the wheels with both side wall units and axis support units protruding from the inside bottom so that the axis of the wheel rotates, and a pair of frame holders, into which the lower vertical frames of the vertical frames are perpendicularly inserted and fixed, are provided on the front wall unit.

Also, when necessary, the base plate has a box shape with the top part open, and predetermined parts of the side wall units are recessed correspondingly to the wheels and the wheels are received by the recessed parts so that the axis of the wheel rotates, and a pair of frame holders, into which the lower vertical frames of the vertical frames are perpendicularly inserted and fixed, are provided on the front wall unit.

It is more preferable that the wheel mounted on the front part of the base plate of the hand carrier is a light-emitting wheel which emits light by itself.

It is preferable that the bag body further comprises a wheel cover which covers the wheel when the wheel is not used.

The top end of each of the straps is sewn and fixed to the top part of the bag body and the bottom end may be detachably coupled with the bottom part of the bag body.

Preferably, the bag for a pupil further comprises a back pocket which after the bottom end of each of the strap is detached from the bag body, receives the bottom end in order to prevent the straps from contacting the ground and being stained or damaged when the bag is drawn by using the hand carrier.

It is preferable that cushions are provided inside the straps and inside the back panel part of the bag body where user's body contacts with the bag when the bag is worn on user's shoulder.
According to another aspect of the present invention, there is provided a bag for a pupil having a main body unit which surrounds a predetermined space with a flexible material so as to receive necessary things and can be opened and closed, a vertical frame which is provided so as to be folded or unfolded along one side of the main body unit, and has a grip at the end of the vertical frame, and a wheel which is mounted on the base surface of the main body unit and make the main body unit easily move, the bag for a pupil comprising an internal frame which has a base unit which is installed on the inside bottom of the main body unit, a wall unit which is extended upward from an edge of the base unit, and frame holders which are mounted on the wall unit and connected to the bottom end of the vertical frame, and in which a wheel mounting unit for mounting the wheel is formed at least one side; and straps which are provided at the opposite side to the side of the vertical frame, so that the bag is worn on the shoulder.

It is preferable that the wall unit is formed along the edges of the base unit; each of the frame holders has a square-pipe shape with an inside hole; the wheel mounting unit is provided in the form of penetration holes on the wall unit and on the frame holders, the holes on an identical line, so that the wheel axis of the wheels is inserted from the side surface; and the wheel axis of the wheels are divided and are inserted from both sides of the internal frame, respectively, and coupled with the internal frame.

Preferably, the internal frame has a rectangular box shape; a secession-prevention ring with one side open and for preventing the wheel axis from being detached is coupled with the outercircumference surface of the wheel axis of the wheels; and inside the main body unit, a cover for covering the vertical frame and the base unit is provided in the form of multiple layers capable of being folded, and detachable adhesive belts are installed on the end of the cover and the corresponding part of the main body unit.
The internal frame may have a rectangular container shape and the wheels may be light emitting wheels.

It is preferable that inside the main body unit, a cover for covering the vertical frame and the base unit is provided in the form of multiple layers capable of being folded, and detachable adhesive belts are installed on the end of the cover and the corresponding part of the main body unit.

According to another aspect of the present invention, there is provided a bag for a pupil having a bag body which receives necessary things and can be opened and closed and a hand carrier which is installed in the bag body and whose length can be adjustable, the bag for a pupil comprising a light emitting wheel which is installed in the bag body or hand carrier to make transportation easier and emits light.

The light emitting wheel comprises a wheel body; a rotator which is mounted in the wheel body and rotates with the wheel body and on which a coil is wound; a bearing which supports the wheel body so that the wheel body rotates about the wheel axis; a fixing unit which is mounted in the wheel axis and has a magnet; and a light emitting diode which is mounted in the wheel body, rotates with the rotator, and is connected to the coil through a conductive material, and if power is provided, emits light.

The hand carrier may contain a luminous material. For example, in the process of manufacturing a plastic hand carrier, the raw material of the hand carrier can be mixed with a luminous material. When necessary, a fluorescent paint can be applied to the surface of the hand carrier. The bag body may also contain a luminous material.

**Brief Description of the Drawings**
FIG. 1 is a perspective view of a preferred embodiment of a bag for a pupil in which a hand carrier is positioned at the front side of the bag according to the present invention;

FIG. 2 is a back view of the bag of FIG. 1;

FIG. 3 is a perspective view showing the structure of the inside of a front pocket of the bag of FIG. 1;

FIG. 4 is a perspective view of a bag, in which a hand carrier is positioned at the front side of the bag according to the present invention, and which is opened in order to show the inside structure of the bag;

FIG. 5 is an enlarged detailed diagram of part A of FIG. 4;

FIG. 6 is a perspective view of a preferred embodiment of a hand carrier assembly mounted inside a bag for a pupil of the present invention;

FIG. 7 is a perspective view of another preferred embodiment of a hand carrier assembly mounted inside a bag for a pupil of the present invention;

FIG. 8 is a perspective view of still another preferred embodiment of a hand carrier assembly mounted inside a bag for a pupil of the present invention;

FIG. 9 is a perspective view of another preferred embodiment of a bag for a pupil according to the present invention;

FIG. 10 is a vertical cross-sectional view for explaining the inside structure of the bag of FIG. 9;

FIG. 11 is a perspective exploded view for explaining the installation structure of a vertical frame, wheels, and internal frame;

FIG. 12 is a perspective view of a secession-prevention ring installing tool which is used to fix a secession-prevention ring; and

FIG. 13 is a cross sectional view of an example of a wheel to be installed in a bag for a pupil according to the present invention.

Best mode for carrying out the Invention
As shown in FIG. 1, a bag for a pupil 10 of the present invention comprises a bag body 100 receiving school things. Accordingly, the bag body 100 has an internal space which can receive things such as books, a pencil case, and a lunch box, and has a main zipper 102 which opens and closes to bag body 100 so as to put things in or to take things out of the internal space. This main zipper 102 is extended from both side surfaces to the top surface and roughly forms a U-shape. The main zipper 102 comprises a pair of zippers positioned along the front top and back top, respectively, such that it is easy to put things into and take things out of the bag body 100. A handle 110 is attached on a predetermined part of the top surface of the bag body 100 so that the bag can be easily carried with one hand. To the back surface of the bag body 100, a pair of left and right straps 120 is connected as shown in FIG. 2. Accordingly, if the user wears the straps on his left and right shoulders, he can wear the bag on the back comfortably. The top ends of the straps 120 are sewn integrally to the top part of the bag body 100 and the bottom ends of the straps 120 are made detachable to the bottom part of the bag body 100 with buckles 122, clips or the like. In order to give a good feeling when the user wears the bag 10 on his back with the straps 120, and therefore to give a comfortable feeling to the user, the back panel part of the back surface of the bag body 100 and the inside surface of each strap 120, with which the body of the user contacts, have 3-dimensional air cushion meshes 104 and 124, respectively. In addition, the back surface of the bag body 100 has a back pocket 130 so that when the straps 120 are not needed, the bottom ends of the straps 120 can be detached from the bottom end of the bag body 100 and inserted into the back pocket 130 to rearrange the straps conveniently. Particularly, a Velcro fastener is disposed at the center of a part close to the entry of the back pocket 130 so that even after the straps 120 are inserted, the back pocket 130 is closed as much as possible. By doing so, when the bag 10
is drawn on the ground, it can prevent the inserted straps 120 from slipping out of the back pocket 130 and make the appearance of the bag 10 good. This is very useful for preventing the straps 120 from contacting with the ground and being stained when the bag 10 is drawn on the ground by the hand carrier 200 to be described later.

The bag 10 also has a front pocket 140 on the front surface of the bag body 100 and the front pocket 140 is covered by a pocket lid 142. The pocket lid 142 can be opened and closed by a pocket zipper 144 in front the bag body 100. Inside the front pocket 140, formed as pen slots 146, to which pencils and ballpoint pens can be inserted, and a pocket 148 in which other small things can be put. If frequently used things are put in the pocket 148, the front pocket 140 is easily opened and then the things can be used quickly and conveniently.

Preferably, the bag body 100 constructed as described above is made of light accumulating fiber or a luminous paint is applied on the surface of the bag body 100 so that a driver can easily find the bag at night.

The bag for a pupil 10 of the present invention has a hand carrier 200 so that when the bag is heavy, it can be drawn by the hand carrier 200. The hand carrier 200 is positioned in the front of the bag body 100 so that when the bag 10 is worn on the shoulder with the straps 120, discomfort of snagging or digging into the back can be eliminated. The hand carrier 200 has at least one or more wheels 210 at the base of the bag 10 so that the bag can be drawn smoothly on the ground and preferably, a pair of left and right wheels as shown. As wheels, ordinary wheels, color wheels, luminous wheels, light emitting wheels can be used, and preferably, light emitting wheels are employed so that a driver can easily find the wheels to help enhance safety. More details on the light emitting wheels will be explained later.

In addition, the present invention has a pair of pocket-type wheel covers
150 which can cover a pair of wheels 210. The wheel covers 150 are hung to the bag body 100 with a fixing string 152 with elasticity such as a rubber string and used. One side of each wheel cover 150 is open so that the wheel 210 can be put in through the open side. This entrance 154 is formed by folding part of cloth so that even when the entrance 154 is a little opened, the inside cannot be seen and even when foreign materials fall from the wheel 210, the foreign materials are not discharged to the outside from the inside. Accordingly, when necessary, the user forcibly opens the entrance 154 of the wheel cover 150 to remove the contents inside. When the user wants to wear the bag 10 on his back after drawing the bag 10 for a while, the user first covers the wheels 210 with the wheel covers 150 before wearing the bag 10, which is very useful for preventing foreign materials adhering to the wheels 210 from adhering to the clothes of the user.

As shown in the figure, the grip 220 of the hand carrier 200 is located outside the bag 10 and the vertical frame 230 connected to the grip 220 and the base plate are located inside the bag 10. More specifically, a pair of left and right frame holes 106 is formed on the front part of the top of the bag 10. Through these frame holes 106, predetermined part of the vertical frame 230 of the hand carrier 200 installed perpendicularly to the bag body 100 protrudes. The grip 220 horizontally connects the top parts of the left part and right part of the protruding vertical frames 230. Accordingly, predetermined part of the vertical frame 230 and the base plate, which supports the vertical frame 230 and is mounted to enable light emitting wheels 210 to rotate, are received inside the bag 10. Thus received vertical frame 230 and the base plate give not a good appearance when the bag 10 is opened, and bump or interfere with school things put in the bag 10. To prevent this problem from the source, the bag body 100 has an inside cover 160 which can cover components of the hand carrier 200 received inside the bag body 100. In the inside cover 160, a pair of
left and right side panel units 162 and 162a are coupled at the center by a cover zipper 164 so that the inside cover 160 is closed from the bottom to the top or opened from the top to the bottom. The top center part of the left and right side panel parts 162 and 162a are covered by a top panel unit 166 to complete the inside cover 160. At this time, the cover zipper 164 is disposed inside of the left and right side panel units 162 and 162 and cannot be seen from the outside such that it gives a fresher and cleaner image. In addition, the contact parts of the top panel unit 166 and the left and right side panel units 162 and 162a have Velcro fasteners on their surfaces so that those parts can contact with each other and be fixed. Preferably, a pair of the Velcro fasteners 168 are disposed at the left side and right side of the inside of the top panel unit 166 so that when those parts are coupled, contact parts do not get loose and adhesive power is doubled.

The detailed structure of the hand carrier described above will be explained referring to FIGS. 6 through 8. In order to show essential parts effectively, the hand carrier is seen from the backside in these figures.

As shown in FIG. 6, the hand carrier 200 comprises a base plate 240, a pair of vertical frame parts 230 and 230a installed perpendicularly to this base plate 240, and a horizontal grip 200 connecting the top ends of the vertical frame parts 230 and 230a. The base plate 240 has a pair of side plate units 242 and 242a that are folded from both ends of the base plate 240 roughly perpendicularly to the base plate 240. In these side plate units 242 and 242a, axis holes 244 and 244a are formed and through these left and right axis holes 244 and 244a, a wheel axis 212 is secured and supported. To both ends of the wheel axis 212 supported by the side plate units 242 and 242a, a pair of left and right wheels 210 and 210a is coupled. Accordingly, the wheels 210 and 210a rotate with being supported by the base plate 240 of the hand carrier 200, and as this pair of left and right wheels 210 and 210a, preferably, light emitting
wheels are employed. In the present embodiment, the back part of the base plate 240 is folded to form a back wall unit 246 roughly perpendicular to the base plate 240. On the front part of the base plate 240, a pair of left and right frame holders 248 and 248a is positioned to stand upright. The interval between the frame holders 248 and 248a corresponds to the interval between the vertical frame parts 230 and 230a. Each of the frame holders 248 and 248a has a square-pipe shape with an inside hole of a diameter a little longer than that of each of the vertical frame parts 230 and 230a. The vertical frames 230 and 230a are inserted from the upside into the frame holders 248 and 248a to be mounted. After thus inserting a pair of left and right vertical frame parts 230 and 230a into the frame holders 248 and 248a, bolts 250 and 240a are fastened from the outside to completely fix the vertical frame parts 230 and 230a.

Each of the vertical frame parts 230 and 230a comprises a lower bar 232 and 232a having a square-pipe shape and an upper bar 234 and 234a having a square-pipe shape with an inside hole of a diameter a little shorter than that of the lower bars 232 and 232a. Accordingly, the upper bars 234 and 234a are retracted into or extended from the lower bars 232 and 232a. In this retraction and extension of the upper bars 234 and 234a in the lower bars 232 and 232a, when the user wants to use the carrier grip 220, the upper bars 234 and 234a are extended from the lower bars 232 and 232a along the marked dash-dot lines so that the carrier grip 220 is placed in a location and a state convenient for the user to hold. Meanwhile, when the user uses the handle 110 or the straps 120, the upper bars 234 and 234a are retracted into the lower bars 232 and 232a to the maximum so that the carrier grip 220 is placed closely to the top of the bag 10. By doing so, the carrier grip 220 is made not to protrude and it becomes easy to carry the bag 10. The upper bars 234 and 234a are made to be caught at the maximum extension locations of the lower
bars 232 and 232a so as to prevent secession. In addition, the vertical frame parts 230 and 230a have clicks in predetermined intervals for the retraction and extension so that the user can stop the retraction at a desired interval and convenience of user is enhanced.

The hand carrier 200a can be constructed with a base plate 240a in the form of a box having its top side open as shown in FIG. 7. The base plate 240a has a front wall unit 249 and a back wall unit 246a, in which the front wall unit 248 is a little higher than the back wall unit 246a. A pair of frame holders 248b and 248c are vertically attached to the front wall unit 249 so that the vertical frame parts 230 and 230a can be fixed. As described above, into the frame holders 248b and 248c, the bottom ends of the vertical frame parts 230 and 230a are inserted and fixed. Of course, for fixation, the vertical frame parts 230 and 230a and the frame holders 248b and 248c may be made in an insertion-fixing type, or may be fixed by fastening bolts from the outside. In addition, axis holes 244b and 244c, through which a wheel axis 212 is inserted, are formed on the front parts of the sidewalls 242b and 242c of the base plate 240a. In order to solidly support the wheel axis 212 inserted into the side wall parts 242b and 242c of the base plate 240a, axis support units 245 and 245a, on which axis support holes 243 and 243a are formed, are protruding from the front part of the base plate 240a. One pair of these axis support units 245 and 245a are positioned close to the left and right wheels 210 and 210a, respectively.

When the base plate 240a is thus constructed in the form of a box, it can more solidly support the entire frame of the bag 10, and in particular, by forming the axis support units 245 and 245a on the base plate 240a, support to the wheel axis 210 increases and operational stability or durability against the load improves.

FIG. 8 shows another preferred embodiment of the hand carrier 200b,
in which predetermined parts of both side walls of the box-type base plate 240b are made farther back corresponding to the wheels 210 and 210a, in order to form receiving holes 247 and 247a. By doing so, predetermined parts of the wheels 210 and 210a are received in the base plate 240b such that the appearance of the bag is simplified and beautified. In addition, on the front wall unit 249a of the base plate 240b, frame holders 248d and 248e are attached so that the vertical frame parts 230 and 230a can be inserted and mounted.

Referring to the figures described above, the operation of the present invention will now be explained in detail.

Using the straps 120, the user can wear the bag 10 on the back and carry it. At this time, cushions 124 disposed inside the straps 120 and a cushion 104 attached to the back panel side makes the wearing comfortable. When the user carries the bag 10 with one hand, the user can hold the handle 110 with one hand and carry the bag 10. At this time, the vertical frame parts 230 and 230a of the hand carrier 200 is retracted to the maximum and the close contact of the carrier grip 220 and the bag body 100 is maintained.

In the state as described above, if the user wants to draw the bag 10 because it is heavy, first, the bottom end of each strap 120 is detached from the bag body 100 and inserted into the back pocket 130. Then, if the carrier grip 220 is held and pulled upward, the vertical frame parts 230 and 230a are extended. More specifically, as the upper bars 234 and 234a are extended from the lower bars 232 and 232a, the length of each of the vertical frame parts 230 and 230a increases. At this time, if the length becomes appropriate to the height of the user, the extension is stopped and the location is maintained. Thus, the hand carrier 200 is extended from the bag 10 appropriately to the user and then, if the user draws the bag 10 with holding the carrier grip 220, the light emitting wheels 210 and 210a in contact with the ground rotate smoothly.
such that the heavy bag 10 can be carried conveniently. When the bag 10 is carried, the light emitted from the light emitting wheels 210 and 210a makes a driver easily find the pedestrian to help prevent a car accident, and in particular, improves safety more for walking at night.

As shown in FIGS. 9 through 11, the bag for a pupil 300 according to another preferred embodiment of the present invention has a main body unit 310 capable of receiving necessary things. The main body unit 310 is made of flexible materials such as textiles, and surrounds the internal space. A zipper 312 to open or close the bag 300 is positioned along the outer circumference surface of the main body unit 310. On the top end of the main body unit 310, a handle 314 to carry the bag 300 with one hand is attached, and at the back surface of the main body unit 310, a pair of left and right straps 320 to carry the bag 300 on the shoulder is attached.

In order to give a good feeling when the user wears the bag 300 on his back with the straps 320, and therefore to give a comfortable feeling to the user, the back panel part of the back surface of the main body unit 300, and the inside surface of each strap 320, with which the body of the user contacts, have 3-dimensional air cushion meshes 316, respectively.

On the front surface of the main body unit 310, a front pocket 318 to receive small things is provided and on the back surface, a back pocket 319 is provided. Pencil slots to which pencils or ballpoint pens can be inserted may be provided inside the front pocket 318 or the back pocket 319.

Preferably, the main body unit 300 constructed as described above is made of light accumulating fiber or a luminous paint is applied on the surface of the main body unit 300 so that a driver can easily find the bag 300 at night.

As shown in the figure, on the front surface of the bag 300, the opposite side from the surface to which the straps 320 are provided, a vertical frame 330, which when necessary, can be retracted or extended and has a grip 332 at the
end of the vertical frame 330, is installed. Wheels 340 are installed at the base surface of the main body unit 310, and the vertical frame 330 and the wheels 340 are connected to an internal frame 350 which is internally installed closely to the bottom of the main body unit 310. This is shown in FIG. 11. The vertical frame 330 and the internal frame 350 play the role of the hand carrier 330a.

Two pairs of coupling units 336 and a connection support part 338 to fix the main body unit 310 to the vertical frame 330 are installed on the outercircumference of a part of the vertical frame 330, the part penetrating the main body unit 310. The coupling units 336 and the connection support part 338 have respective holes 337 and 339 for the vertical frame 330 penetrating.

Internally installed closely to the bottom of the main body unit 310, the internal frame 350 maintains a desired shape by providing a solid frame in the vicinity of the bottom and allows the vertical frame 330 and the wheels 340 to be installed. Preferably, the internal frame 350 is made of plastic, but when necessary, can be made of metals such as stainless steel or aluminum.

As shown in the figure, the internal frame 350 comprises a bottom unit 351, which is installed at the internal bottom of the main body unit 310, and wall units 352a through 352d extending upright from edges of the bottom unit 351.

Preferably, as shown in FIG. 11, the wall units 352a through 352d are provided in all four edges to construct the internal frame 350 in the form of a rectangular box. Also, preferably, the front wall unit 352a is high, the back wall unit 352d is low, and the both sidewall units 352b and 352c are lowered with increasing distance from the front side. Of course, the wall units 352a through 352d are not necessarily provided in all edges of the bottom unit 351 and when necessary, only the front wall unit 352 may be provided.

As shown in FIG. 11, frame holders 353 are attached to the front wall unit 352a. The frame holders 353 are to connect the bottom ends the vertical
frame 330. Each of the frame holders 353 has a square-pipe shape with an inside hole into which the bottom end of the vertical frame 330 can be inserted. The frame holders 352 are extended from the top end of the front wall to the bottom end of the front wall unit 352a.

In the internal frame 350, a wheel mounting part 354 is formed. The wheel mounting part 354 here is formed with penetration holes of the both side wall units 352b and 352c and penetration holes on the frame holders 353, which are formed close to the bottom ends of the frame holders 353, and the penetration holes are on an identical line. Around the wheel mounting part 354, support units 355 are provided. In this case, preferably, penetration holes 334 are also formed on the bottom ends of the vertical frame 330 so that the bottom ends of the vertical frame 330 can be fixed by the wheel axis 341 of the wheels 340 to be explained later.

As shown in the figure, the wheel axis 341 to which the wheels 340 are mounted is divided into two parts, and is inserted through the wheel mounting part 354 in the form of penetration holes from both sides of the internal frame 350. The end of each part of the wheel axis 341 is protruding to the other side of the frame holder 353 and a secession-prevention ring 343 is coupled with the protruding end of the wheel axis 341 so as to prevent the axis wheel 341 from being seceded. Of course, one side of the secession-prevention ring 343 is open and a groove is formed along the outercircumference surface of the wheel axis 341, to which the secession-prevention ring is coupled. That is, after the wheels 340 are mounted on the wheel axis 341, from both sides of the internal frame 350, two parts of wheel axis 341 are inserted through the wheel mounting part 354 in the form of penetration holes. Then, by using a dedicated tool, the secession-prevention rings are coupled with the ends of the wheel axis 341. By doing so, installation of the wheels 340 is completed and therefore the installation is very easily performed. In addition, when the wheels 340 are
broken in the middle of using the bag 300, only the secession-prevention ring is
detached and then the wheel axis 341 is detached. Then, new wheels 340 are
mounted to the wheel axis 341 and are installed again as described above such
that changing the wheels 340 is also very easily performed. Also, the plastic
material is not exposed to the outside such that it is not needed to worry about
degradation of the quality.

In addition, since the hand carrier 330a is installed at the front side of
the main body unit 310, when the bag 300 is worn on the back with the straps
320, digging or snagging into the back is eliminated. The hand carrier 330 has
at least one wheel 340 at the base surface of the bag 300 so that the bag 300
can be drawn easily on the ground, and preferably, as shown in the figure, a
pair of left and right wheels is provided. As wheels 340, ordinary wheels, color
wheels, luminous wheels, and light emitting wheels can be employed, and in
addition to the light emitting wheels described above, any wheels that can emit
light, for example, those using dry cells, or those already developed and
shipped, can be employed as the light emitting wheels.

As shown in the figure, inside the main body unit 310, a cover 360 is
provided. This cover 360 hides the vertical frame 330 and the bottom unit 351
of the internal frame 350 when the bag 300 is opened, and can be folded in
multiple layers by placing solid plates inside the cover 330. At the end of the
cover 360 and the corresponding part of the main body unit 310, detachable
adhesive belts, such as Velcro fasteners, are attached so that when necessary
the end of the cover 360 can be attached or detached. The cleanly arranged
state of the inside of the bag 300 is maintained by this cover 360, and when the
wheels 340 are broken and desired to be changed, with the cover 360 pulling
upward, the wheels 340 can be changed.

As shown in FIG. 12, the secession-prevention ring-installing tool 50
comprises a handle 52 and a secession-prevention ring-installing member 54
having a secession-prevention ring-installing round end 55 at its end. The secession-prevention ring-installing member 54 is divided into two sides. This is to allow the divided part of the secession-prevention ring installing 55 to open a little more and to hold more solidly the secession-prevention ring 343 when the secession-prevention ring described above is fit into the secession-prevention ring installing round end 55. Also, this is to provide a room for allowing the open end of the secession-prevention ring 343 to open more in the installation process. After the secession-prevention ring 343 is fit into the open end 55 of the secession-prevention ring-installing tool 50, if the open end of the secession-prevention ring 343 is pushed to the groove of the wheel axis, the secession-prevention ring 343 is coupled with the wheel axis.

As shown in FIG. 13, the light-emitting wheel 450 has a wheel body 451 made of a translucent or transparent material. Of course, not the entire wheel body 451 is needed to be made of a translucent or transparent material, and only a part from which light is emitting can be transparent or translucent. Preferably, the wheel body 451 is formed with two separate parts, an inner unit 452 made of a solid material and an outer unit 453 made of a material having high elasticity.

As shown in FIG. 13, a rotator 454 is coupled with the inner unit 452 of the wheel body 451. This rotator 454 rotates with the wheel body 451 and around the rotator 454, coil 455 is wound.

As shown in FIG. 13, a light emitting diode (LED) 456 is mounted in the outer unit 453 of the wheel body 451. This LED rotates with the wheel body 451 and the rotator 454 and is connected to the coil through a conductive material 457. The LED 456 emits light by receiving a current induced by relative movements of the rotator 454 and a fixing unit 458 and a variety of colors can be used. Inside the rotator 454, a fixing unit 458 having a ring-shaped permanent magnet is provided. This fixing unit 458 is fixed to the
wheel axis 460 and does not rotate.

A bearing 462, which supports the wheel body 451 so that the wheel body 451 can rotate about the wheel axis 460, is mounted between the wheel body 451 and the wheel axis 460.

That is, if the user holds the grip unit 436 of the hand carrier 430 and draws the bag 400, the wheel body 451 rotates about the wheel axis 460. Accordingly, the rotator 454 and the LED 456 mounted in the wheel body 451 also rotate together with the wheel body 451. As the rotator 454 rotates, relative movements occur between the fixing unit 458 and the rotator 454 and an induced current is generated in the coil 455 of the rotator 454. This current is provided to the LED 456 through the conductive material 457. Accordingly, the LED rotates together with the wheel body 451 and emits light such as red light or blue light.

In addition to the self-generation-type light emitting wheels 450 described above, any wheels that can emit light, for example, those using dry cells, or those already developed and shipped, can be employed as the light emitting wheels 450.

To the base unit 431, the back panel frame unit 432 is connected roughly perpendicularly. The back panel frame unit 432 is positioned along the both sides of the back panel surface 412 of the bag body 410 and has a vertical frame 434 with an inside hole, in which a first latching unit 433 is formed.

Among a variety of possible embodiments, the embodiments disclosed here are selected as preferred examples to help understanding of those skilled in the art. It is noted that the present invention is not limited to the preferred embodiment described above, and it is apparent that variations and modifications by those skilled in the art can be effected within the spirit and scope of the present invention defined in the appended claims.
Industrial Applicability

As described above, the bag for a pupil according to the present invention, in which the hand carrier is positioned at the front side of the bag for a pupil, can be worn on the shoulder with the straps, or carried with one hand holding the handle, and in addition, when the bag is heavy, can be drawn with one hand using the hand carrier provided in the bag. Particularly, since the hand carrier is positioned at its front side, a variety design elements can be introduced on its backside to enhance decoration beauty and the discomfort of the frame of the hand carrier digging or snagging into the shoulder or back is eliminated. Also, with cushions inserted into the inside of the straps and the back panel part, the bag provides a comfortable wearing feeling. In addition, wheel covers are provided in the bag so that when the bag is worn after being drawn for a while, wheels can be covered with the wheel covers, and accordingly foreign materials adhering to the wheels are not adhering to the clothes of the user. Furthermore, if the bag is drawn, the LED wheels emit light so that a driver can easily find the pedestrian and a car accident can be prevented, and this is more effective at night in particular. Moreover, the back pocket is provided close to the straps so that when the bag is drawn, the straps can be inserted into the back pocket for keeping. Accordingly, the straps are not protruding, which prevents the straps from being stained by touching the ground. Thus, the present invention enables the bag carried in a variety of ways and provides an elegant appearance and versatility.

In addition, the plastic member is not exposed much to the outside so that degradation of quality of the plastic member can be prevented and installation and change of the wheels are very easily performed.

Also, the cover inside the bag covers the vertical frame of the hand carrier and enables the wheels to be easily installed or changed.

Besides, the cushions inserted inside the straps and back panel part,
where the user's body contacts with the bag, provides a comfortable wearing feeling.
What is claimed is

1. A bag for a pupil having a bag body which receives necessary things and can be opened or closed, and straps which is attached to the backside of the bag body and enables a user to wear the bag on his shoulder, the bag for a pupil comprising:

   a hand carrier which is positioned at the front side of the bag body and is to draw the bag; and

   a wheel which is mounted on the front side of the hand carrier or the bag body.

2. The bag for a pupil of claim 1, wherein the hand carrier comprises:

   a base plate which supports the wheels so that the wheels rotate;

   a pair of left and right vertical frames each of which is perpendicularly fixed to the base plate, wherein an upper vertical frame is inserted into a lower vertical frame and retracted into or extended from the lower vertical frame; and

   a horizontal grip which connects the top ends of the vertical frames.

3. The bag for a pupil of claim 2, wherein the base plate comprises:

   two side wall units which support an axis of the wheels so that the axis rotates; and

   a pair of frame holders which are perpendicularly fixed on the bottom surface of the base plate and into which the lower vertical frames of the vertical frames are inserted and fixed.

4. The bag for a pupil of claim 2, wherein the base plate has a box shape with the top part open, and supports the axis of the wheels with both side wall units and axis support units protruding from the inside bottom so that the axis of the wheel rotates, and a pair of frame holders, into which the lower vertical
frames of the vertical frames are perpendicularly inserted and fixed, are provided on the front wall unit.

5. The bag for a pupil of claim 2, wherein the base plate has a box shape with the top part open, and predetermined parts of the side wall units are recessed correspondingly to the wheels and the wheels are received by the recessed parts so that the axis of the wheel rotates, and a pair of frame holders, into which the lower vertical frames of the vertical frames are perpendicularly inserted and fixed, are provided on the front wall unit.

6. The bag for a pupil of any one of claims 3 through 5, wherein the wheel mounted on the front part of the base plate of the hand carrier is a light emitting wheel which emits light by itself.

7. The bag for a pupil of claim 1, wherein the bag body further comprises a wheel cover which covers the wheel when the wheel is not used.

8. The bag for a pupil of claim 1, wherein the top end of each of the straps is sewn and fixed to the top part of the bag body and the bottom end is detachably coupled with the bottom part of the bag body.

9. The bag for a pupil of claim 8, further comprising:
   a back pocket which after the bottom end of each of the strap is detached from the bag body, receives the bottom end in order to prevent the straps from contacting the ground and being stained or damaged when the bag is drawn by using the hand carrier.
10. The bag for a pupil of claim 1, wherein cushions are provided inside the straps and inside the back panel part of the bag body where user's body contacts with the bag when the bag is worn on user's shoulder.

11. A bag for a pupil having a main body unit which surrounds a predetermined space with a flexible material so as to receive necessary things and can be opened and closed, a vertical frame which is provided so as to be folded or unfolded along one side of the main body unit, and has a grip at the end of the vertical frame, and a wheel which is mounted on the base surface of the main body unit and make the main body unit easily move, the bag for a pupil comprising:

   an internal frame which has a base unit which is installed on the inside bottom of the main body unit, a wall unit which is extended upward from an edge of the base unit, and frame holders which are mounted on the wall unit and connected to the bottom end of the vertical frame, and in which a wheel mounting unit for mounting the wheel is formed at least one side; and

   straps which are provided at the opposite side to the side of the vertical frame, so that the bag is worn on the shoulder.

12. The bag for a pupil of claim 11, wherein the wall unit is formed along the edges of the base unit; each of the frame holders has a square-pipe shape with an inside hole; the wheel mounting unit is provided in the form of penetration holes on the wall unit and on the frame holders, the holes on an identical line, so that the wheel axis of the wheels is inserted from the side surface; and the wheel axis of the wheels are divided and are inserted from both sides of the internal frame, respectively, and coupled with the internal frame.
13. The bag for a pupil of any one of claims 11 and 12, wherein the internal frame has a rectangular box shape; a secession-prevention ring with one side open and for preventing the wheel axis from being detached is coupled with the outercircumference surface of the wheel axis of the wheels; and inside the main body unit, a cover for covering the vertical frame and the base unit is provided in the form of multiple layers capable of being folded, and detachable adhesive belts are installed on the end of the cover and the corresponding part of the main body unit.

14. The bag for a pupil of any one of claims 11 and 12, wherein the internal frame has a rectangular container shape and the wheels are light emitting wheels.

15. The bag for a pupil of any one of claims 11 and 12, wherein inside the main body unit, a cover for covering the vertical frame and the base unit is provided in the form of multiple layers capable of being folded, and detachable adhesive belts are installed on the end of the cover and the corresponding part of the main body unit.

16. A bag for a pupil having a bag body which receives necessary things and can be opened and closed and a hand carrier which is installed in the bag body and whose length can be adjustable, the bag for a pupil comprising:

   a light emitting wheel which is installed in the bag body or hand carrier
   to make transportation easier and emits light.

17. The bag for a pupil of claim 16, wherein the light emitting wheel comprises:

   a wheel body;
a rotator which is mounted in the wheel body and rotates with the wheel body and on which a coil is wound;

a bearing which supports the wheel body so that the wheel body rotates about the wheel axis;

5 a fixing unit which is mounted in the wheel axis and has a magnet; and

a light emitting diode which is mounted in the wheel body, rotates with the rotator, and is connected to the coil through a conductive material, and if power is provided, emits light.

10 18. The bag for a pupil of claim 16, wherein the hand carrier contains a luminous material.

19. The bag for a pupil of claim 16, wherein the bag body contains a luminous material.
### INTERNATIONAL SEARCH REPORT

#### A. CLASSIFICATION OF SUBJECT MATTER

**IPC7 A45C 13/00**

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A45C, A45F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

KR : IPC as above
JP (utility models) : IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
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<td>JP 3045972 U (Sya Kokei; Sya Eijun) 20 FEBRUARY 1998 See the whole document</td>
<td>2-6, 11-15</td>
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</table>

Further documents are listed in the continuation of Box C. See patent family annex.

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& document member of the same patent family

Date of the actual completion of the international search

05 SEPTEMBER 2003 (05.09.2003)

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