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COLLAPSIBLE TROLLEY FOR LUGGAGE

The present invention relates to a collapsible trolley for luggage or the like.

5 According to the invention, there is provided a collapsible trolley for luggage, which trolley comprises a elongate body having an upper end and a lower end, a handle provided at the upper end of the body, a pair of pivotable legs adjacent the lower end of the body, the legs being movable relative to the body between a position in which the legs
10 lie substantially alongside the body and a position in which free ends of the legs fan out from the body, and wheels provided at or near the free ends of the legs.

In a preferred embodiment, each wheel is supported at or near one end of a respective arm, each arm being pivotably
15 mounted intermediate its length to the free end of a respective leg and movable between a position where the arm lies substantially alongside the respective leg and a position substantially at right angles thereto.

Advantageously, the axes of rotation of the wheels are off-
20 set with one another when the legs are substantially alongside the elongate body and coincide with each other when the legs are fanned out.

Preferably, each leg is connected to the body by a strut, the ends of which are hinged to the leg and to the body,

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respectively.

It is preferred that the legs are hinged to a sleeve which is slidable along the body.

5 Locking means may be provided for locking the legs and arms in a position lying substantially alongside the body.

Preferably, the locking means comprise co-operable engagement members provided on each arm and on the body, respectively, one of said engagement members being resiliently biased to an engaging position with the other
10 engagement member.

Advantageously, the legs are resiliently biased to fan out by a spring.

The spring is preferably connected to move the sleeve along the body in order to bias the legs to fan out.

15 It is preferred that each wheel is arranged to be out of contact with the ground when the trolley is standing on the ground in an upright position.

The invention will now be more particularly described, by way of example only, with reference to the accompanying
20 drawings, in which:

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Figure 1 is a front perspective view of an embodiment of a collapsible trolley for luggage, according to the invention, said trolley being in a fully extended position;

Figure 2 is a rear view of the collapsible trolley of Figure 1;

Figure 3 is a bottom view of the collapsible trolley of Figure 1;

Figure 4 is a front view of the collapsible trolley of Figure 1, showing the manner in which the trolley is collapsed;

Figure 5 is a side view of the collapsible trolley of Figure 1, showing the manner in which the trolley is collapsed;

Figure 6 is a perspective view of the collapsible trolley of Figure 1, in a partially collapsed position; and

Figure 7 is a perspective view of the collapsible trolley of Figure 1, in a fully collapsed position.

Referring firstly to Figures 1 to 3 of the drawings, there is shown an embodiment of a collapsible trolley 10 for luggage, in a fully extended position. The trolley 10 comprises a elongate hollow body 11, a handle 12 provided

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upstanding from an upper end of the body 11, and a pair of
elongate arms 13 provided at a lower end of the body 11.
A pair of wheels 14 are mounted at the rear ends of the
respective arms 13. It is clear that the wheels 14 will,
in use, be moved apart or together by and with the arms 13.

The arms 13 are connected to opposite sides of the body 11
by means of respective connecting legs 15. The legs 15 are
hinged at their upper ends to a sleeve 16 which is slidable
along the upper end of the body 11. Each leg 15 is further
connected to the body 11 by a strut 17. One end of each
strut 17 is hinged to the body 11 by means of a bracket 24
and the other end thereof is hinged to and within the
corresponding leg 15.

As best shown in Figures 4 and 5, the arrangement is such
that the sleeve 16 will be slid upwards along the body 11
when the legs 15 are pivoted onto the body 11. Each leg 15
has a C-shaped channel cross-section, and the corresponding
strut 17 is arranged to lie wholly within the leg 15 when
the latter is pivoted onto the body 11. It is appreciated
that with the use of the sleeve 16, the two legs 15 are
pivotal in unison in opposite directions even when force
is applied to only one of them.

The sleeve 16 is resiliently biased downwards by two
springs 18 connected between the sleeve 16 and the
corresponding hinging brackets 24 on opposite sides of the

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body 11, resulting in the legs 15 being maintained under bias in the fully extended or fanning out position.

Each arm 13 is hinged, at a position immediately in front of the corresponding wheel 14, to the lower end of the corresponding leg 15 about an axis transversal relative to the hinge axis between each leg 15 and the body 11.

For storage purpose, the legs 15 are pivoted to lie alongside opposite sides of the body 11 and the arms 13 are pivoted to lie alongside the respective legs 15 and hence the body 11 in order to form a compact configuration. Co-operable engagement formations 19 and 20 are provided on the body 11 and each arm 13 for locking the arms 13 and the legs 15 in this folded position. The engagement formations 19 are in the form of movable tongs 19 extending transversely in opposite directions, and the engagement formations 20 are rigid hooks 20 attached to the inner sides of the corresponding arms 13. The relative position of the engagement formations 19 and 20 is designed such that each hook 20 will come into engagement with the corresponding tong 19 when the associated arm 13 is folded up against the respective leg 15 after the latter is folded against the body 11.

The tongs 19 are resiliently biased by a spring (not shown) provided within the body 11, into engagement with the co-operating hooks 20, and are manually releasable from

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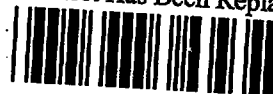
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such engagement by means of a knob 28 provided at an uppermost end 11a of the body 11. The knob 28 is mechanically associated with the tongs 19 through the use of a slidable strip 25 (see Figure 4). In use, the knob 28 is slid upwards in order to release the arms 13 from the body 11, resulting in the legs 15 fanning out automatically under the action of the springs 18 acted upon the sleeve 16. The arms 13 pivot downwards automatically upon release from the corresponding legs 15 through approximately 90 degrees for luggage to be loaded thereon.

The handle 12 is provided by a handle bar 21 connected to the upper end of the body 11 by a shaft 22. The uppermost end of the shaft 22 bends forwards to form a short limb 23 at which the handle bar 21 is hinged. The handle bar 21 is in use pivoted backwards to extend in a direction opposite to that of the limb 23.

The shaft 22 has two sections 22a and 22b which, together with the hollow body 11, form a telescopic arrangement such that the whole shaft 22 can be retracted into the body 11. In the fully extended position, the two shaft sections 22a and 22b are locked against each other by means of a self-engaging self-releasing snapping projection 30, whereas the lower shaft section 22b is releasably engageable with the upper end of the body 11 by means of a pivotable cam 23 provided on and passing through the uppermost end 11a of the body 11.

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5 The trolley 10 includes a luggage-fastening elastic strap 26 connected at one end to the lowermost end of the body 11. The free end of the strap 26 has a hook 27 which, after the strap 26 has been placed round luggage loaded on the trolley 10, is to be brought into engagement with a bar 31 provided on the uppermost end 11a of the body 11.

10 As best shown in Figure 5, the wheels 14 are arranged to be out of contact from the ground when the trolley 10 is standing on the ground in an upright position in order to avoid any unintended trolley movement.

Reference is now also made to Figures 6 and 7 of the drawings. In order to collapse the trolley 10 from the fully extended condition shown in Figure 1, the legs 15 are firstly folded against the body 11, as described above. 15 After having been brought together by the corresponding legs 15, the arms 13 are then folded up until the hooks 20 engage with the corresponding tongs 19, thereby bringing the trolley 10 into a partially collapsed condition as shown in Figure 6. Subsequently, the shaft 22 is retracted 20 into the body 11, and the handle bar 21 is rotated forwards over until it bears against the body 11. The hook 27 of the strap 26 is finally brought into engagement with an inner end of the handle bar 21 in order to hold the handle bar 21 and in turn the upper shaft section 22a in position. 25 The trolley 10 is hence in the fully collapsed condition, as shown in Figure 7, for storage or transportation.

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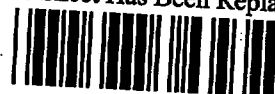
In order to open up the trolley 10, the procedures just described above are repeated, essentially, but in the reverse order.

5 It will be appreciated that the axes of rotation of the wheels 14 are off-set with one another when the legs 15 are lying alongside the body 11 and coincide with each other when the legs 15 are fanned out for smooth trolley movement.

10 The invention has been given by way of example only, and various modifications of and/or alterations to the described embodiment may be made by persons skilled in the art without departing from the scope of the invention as specified in the appended claims.



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CLAIMS

1. A collapsible trolley for luggage, which trolley comprises an elongate body having an upper end and a lower end, a handle provided at the upper end of the body, a pair of pivotable legs adjacent the lower end of the body, the legs being movable relative to the body between a position in which the legs lie substantially alongside the body and a position in which free ends of the legs fan out from the body, and wheels provided at or near the free ends of the legs.
2. A collapsible trolley as claimed in claim 1, wherein each wheel is supported at or near one end of a respective arm, each arm being pivotably mounted intermediate its length to the free end of a respective leg and movable between a position where the arm lies substantially alongside the respective leg and a position substantially at right angles thereto.
3. A collapsible trolley as claimed in claim 1 or claim 2, wherein the axes of rotation of the wheels are off-set with one another when the legs are substantially alongside the elongate body and coincide with each other when the legs are fanned out.
4. A collapsible trolley as claimed in any one of claim 1 to claim 3, wherein each leg is connected to the body by

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a strut, the ends of which are hinged to the leg and to the body, respectively.

5. A collapsible trolley as claimed in claim 4, wherein the legs are hinged to a sleeve which is slidable along the body.

6. A collapsible trolley as claimed in any one of claims 2 to 5, wherein locking means are provided for locking the legs and arms in a position lying substantially alongside the body.

7. A collapsible trolley as claimed in claim 6, wherein said locking means comprise co-operable engagement members provided on each arm and on the body, respectively, one of said engagement members being resiliently biased to an engaging position with the other engagement member.

8. A collapsible trolley as claimed in any one of the preceding claims, wherein the legs are resiliently biased to fan out by a spring.

9. A collapsible trolley as claimed in claim 8 when dependent upon claim 5, wherein the spring is connected to move the sleeve along the body in order to bias the legs to fan out.

10. A collapsible trolley as claimed in any one of the



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preceding claims, wherein each wheel is arranged to be out of contact with the ground when the trolley is standing on the ground in an upright position.

- 5 11. A collapsible trolley for luggage, substantially as hereinbefore described with reference to Figures 1 to 7 of the accompanying drawings.

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