CLAIMS

1. A container handling vehicle, comprising:

a container bed; and

a container handling means, the container handling means configured to:

contact a container;

lever the container around a pivot point on the vehicle to raise from a floor a first floor contact point of the container; and

subsequently propel the raised container along the container bed.

2. A vehicle according to Claim 1, wherein the container handling means is configured to, following levering of the container around the pivot point, slide the raised container along a surface of the container bed.

3. A vehicle according to Claim 1 or Claim 2, wherein the container handling means is moveable with a single degree of freedom.

4. A vehicle according to Claim 3, wherein the container handling means is configured to lever and propel the container such that the container has two degrees of freedom.

5. A vehicle according to any preceding claim, wherein the container handling means comprises a pivotable member, and a distal portion for contacting the container.

6. A vehicle according to Claim 5, wherein the pivotable member comprises a pair of arms hinged on the vehicle, the arms having distal ends for contacting the container.

7. A vehicle according to any preceding claim, wherein the pivot point is disposed at an end of the container bed.

8. A vehicle according to any preceding claim, wherein the pivot point is configured to engage a pivot member coupled to and projecting outwardly from the container, to facilitate levering of the container around the pivot point.

9. A vehicle according to any preceding claim, wherein the container handling means is configured to engage a coupling member of the container in order to lever and subsequently propel the container.

10. A vehicle according to Claim 9, the coupling member of the container comprising a curved surface, wherein the handling means is configured to engage the curved surface with a camming action in order to lever and subsequently propel the container.

11. A vehicle according to Claim 10 as dependent on Claim 6, wherein each of the pair of pivotable arms is configured to engage the curved surface and, during pivoting of the arm, glide along and around the curved surface.

12. A vehicle according to Claim 11, wherein the pivotable arm is configured to exert a levering force on the coupling member around the pivot point, while allowing gliding of the curved surface on the arm.

13. A vehicle according to Claim 12, wherein the pivotable arm is configured to subsequently exert a linear translational force on the coupling member, while allowing gliding of the curved surface on the arm, to propel the container along the container bed.

14. A vehicle according to any of the Claims 9 to 13, wherein the container handling means is configured to be brought to engage the coupling member from below the coupling member, and to at least partially support the weight of the container during container handling.

15. A vehicle according to any preceding claim, wherein the container bed is inclined away from an end of the vehicle at which the container handling means is configured to lever the container.

16. A vehicle according to any of the Claim 5 to 15, wherein the container bed extends beyond a hinge point of the pivotable member.

17. A vehicle according to any of the Claims 7 to 16, wherein the container bed is positioned such that the pivot point is contactable by the container below an upper portion of the container.

18. A vehicle according to any preceding claim, wherein the pivot point comprises a rotary element.

19. A vehicle according to any preceding claim, wherein the container handling means comprises a distal end hook member.

20. A vehicle according to any of the Claims 8 to 19, wherein the container bed comprises an inlet to accommodate the pivot member projecting from the container, and propelling of the pivot member along the container bed with the container.

21. A container handling means for a vehicle according to any preceding claim.

22. A container handling system comprising a vehicle according to any of the Claims 1 to 20, and a container leverable around the pivot point by the container handling means.

23. A container for a container handling system according to Claim 22.

24. A method of handling a container with a container handling vehicle, the vehicle comprising a container bed, the method comprising:

contacting the container;

levering the container around a pivot point on the vehicle to raise from a floor a first floor contact point of the container; and

subsequently propelling the raised container along the container bed.

25. A method according to Claim 24, further comprising:

propelling the raised container back along the container bed; and

pivoting the container around the pivot point to lower the container to a floor contact point.

26. A method according to Claim 25, wherein the step of pivoting the container comprises, during propelling of the container back along the container bed, engaging at the pivot point a pivot member coupled to and projecting outwardly from the container.

CLAIMS

1. A container handling vehicle, comprising:

a container bed; and

a container handling means, the container handling means configured to:

contact a container;

lever the container around a pivot point on the vehicle to raise from a floor a first floor contact point of the container; and

subsequently propel the raised container along the container bed.

2. A vehicle according to Claim 1, wherein the container handling means is configured to, following levering of the container around the pivot point, slide the raised container along a surface of the container bed.

3. A vehicle according to Claim 1 or Claim 2, wherein the container handling means is moveable with a single degree of freedom.

4. A vehicle according to Claim 3, wherein the container handling means is configured to lever and propel the container such that the container has two degrees of freedom.

5. A vehicle according to any preceding claim, wherein the container handling means comprises a pivotable member, and a distal portion for contacting the container.

6. A vehicle according to Claim 5, wherein the pivotable member comprises a pair of arms hinged on the vehicle, the hinged arms having distal ends for contacting the container.

7. A vehicle according to any preceding claim, wherein the pivot point is disposed at an end of the container bed.

8. A vehicle according to any preceding claim, wherein the pivot point is configured to engage a pivot member coupled to and projecting outwardly from the container, to facilitate levering of the container around the pivot point.

9. A vehicle according to any preceding claim, wherein the container handling means is configured to engage a coupling member of the container in order to lever and subsequently propel the container.

10. A vehicle according to Claim 9, the coupling member of the container comprising a curved surface, wherein the handling means is configured to engage the curved surface with a camming action in order to lever and subsequently propel the container.

11. A vehicle according to Claim 10 as dependent on Claim 6, wherein each of the pair of hinged arms is configured to engage the curved surface and, during pivoting of the each hinged arm, glide along and around the curved surface.

12. A vehicle according to Claim 11, wherein the hinged arm is configured to exert a levering force on the coupling member around the pivot point, while allowing gliding of the curved surface on the hinged arm.

13. A vehicle according to Claim 12, wherein the hinged arm is configured to subsequently exert a linear translational force on the coupling member, while allowing gliding of the curved surface on the hinged arm, to propel the container along the container bed.

14. A vehicle according to any of the Claims 9 to 13, wherein the container handling means is configured to be brought to engage the coupling member from below the coupling member, and to at least partially support the weight of the container during container handling.

15. A vehicle according to any preceding claim, wherein the container bed is inclined away from an end of the vehicle at which the container handling means is configured to lever the container.

16. A vehicle according to any of the Claim 5 to 15, wherein the container bed extends beyond a hinge point of the pivotable member.

17. A vehicle according to any of the Claims 7 to 16, wherein the container bed is positioned such that the pivot point is contactable by the container below an upper portion of the container.

18. A vehicle according to any preceding claim, wherein the pivot point comprises a rotary element.

19. A vehicle according to any preceding claim, wherein the container handling means comprises a distal end hook member.

20. A vehicle according to any of the Claims 8 to 19, wherein the container bed comprises an inlet to accommodate the pivot member projecting from the container, and propelling of the pivot member along the container bed with the container.

21. A container handling means for a vehicle according to any preceding claim.

22. A container handling system comprising a vehicle according to any of the Claims 1 to 20, and a container leverable around the pivot point by the container handling means.

23. A container for a container handling system according to Claim 22.

24. A method of handling a container with a container handling vehicle, the vehicle comprising a container bed, the method comprising:

contacting the container;

levering the container around a pivot point on the vehicle to raise from a floor a first floor contact point of the container; and

subsequently propelling the raised container along the container bed.

25. A method according to Claim 24, further comprising:

propelling the raised container back along the container bed; and

pivoting the container around the pivot point to lower the container to a floor contact point.

26. A method according to Claim 25, wherein the step of pivoting the container comprises, during propelling of the container back along the container bed, engaging at the pivot point a pivot member coupled to and projecting outwardly from the container.