CLAIMS

1. A lift mechanism (50) for a wheel assembly (52), the lift mechanism (50) comprising:

a lever arm (58) comprising a first axis of rotation (64);

a first torque transfer plate (60) comprising a second axis of rotation (66) coincident with the first axis of rotation; (64) and,

a lift block (62) engagable by the first torque transfer plate (60), the lift block (62) having a first angularly disposed surface (72) and a resting surface (74) adjacent to the first angularly disposed surface (72),

wherein the lift mechanism (50) is configured such that rotation of the lever arm (58) causes the first torque transfer plate (60) to rotate into engagement with the lift block (62), thereby causing linear motion of the lift block (62), and causing the wheel assembly (52) to be raised and lowered by contact between a portion (54) of the wheel assembly (52) and the first angularly disposed surface (72) of the lift block (62) and held in a raised position when the portion of the wheel assembly (52) is positioned with respect to the resting surface (74), and

wherein the first torque transfer plate (60) is a torque transfer fork that comprises a slot (68) and the lift block (62) comprises a pin (70) that is positioned within the slot (68).

2. The lift mechanism (50) of claim 1 wherein the lever arm (58) comprises a first end (76) and a second end (78) and the first axis of rotation (64) is closer to the second end (78) than to the first end (76).

3. The lift mechanism (50) of claim 1 or 2 wherein the first torque transfer plate (60) is integrally formed with the lever arm (58).

4. The lift mechanism (50) of claim 1 or 2 wherein the slot (68) comprises an open end (82) and a closed end (84) and the open end (82) is distal relative to the second axis of rotation (66).

5. The lift mechanism (50) of claim 1 or 2 further comprising:

a second torque transfer plate (88) comprising the second axis of rotation (66),

wherein rotation of the lever arm (58) causes the first and second torque transfer plates (60, 88) to rotate into engagement with a lift block (62), thereby causing linear motion of the lift block (62).

6. The lift mechanism (50) of claim 1 or 2 and 4 wherein the lift block (62) further comprises a second angularly disposed surface (92) positioned at an edge (94) of the first angularly disposed surface (72) opposite the resting surface (74).

7. The lift mechanism (50) of claim 6 wherein the first angularly disposed surface (72) comprises a first angle (96) relative to a projection (98) of the resting surface (74), the second angularly disposed surface (92) comprises a second angle (100) relative to a projection (98) of the resting surface (74), and the first angle (96) is less than the second angle (100).

8. The lift mechanism (50) of claim 1 wherein the pin (70) comprises a first longitudinal axis (102) parallel to the first and second axes of rotation (64, 66).

9. A bed (108) comprising:

a frame (110);

a driven wheel (52) secured to the frame and comprising a lift bearing (54); and,

a lift mechanism (50) of any preceding claim secured to the frame (110),

wherein the wheel (52) is raised and lowered by contact between the lift bearing (54) and the first angularly disposed surface (72) of the lift block (62).

10. The bed (108) of claim 9 further comprising:

a second torque transfer plate (88) comprising the second axis of rotation (66),

wherein rotation of the lever arm (58) causes rotation of the first and second torque transfer plates (60, 88) to rotate into engagement with the pin (70), thereby causing linear motion of the lift block (62).

11. The bed (108) of claim 9 or 10, wherein the lift block (62) further comprises a second angularly disposed surface (92) positioned at an edge (94) of the first angularly disposed surface (72) opposite the resting surface (74).

12. A bed (108) comprising:

a frame (110);

a first driven wheel (120) secured to the frame (110) and comprising a first lift bearing (124);

a second driven wheel (122) secured to the frame (110) and comprising a second lift bearing (126); and,

a lift mechanism (118) secured to the frame (110) and comprising:

a lever arm (128) comprising a first axis of rotation (140);

a rotatable shaft (130) comprising a longitudinal axis (142) coincident with the first axis of rotation (140), the rotatable shaft (130) is secured to the lever arm (128);

a first torque transfer plate (132) comprising a second axis of rotation (144) coincident with the first axis of rotation (140), the first torque transfer plate (132) is a torque transfer fork that comprises a first slot and is secured to the rotatable shaft (130);

a second torque transfer plate (134) comprising a third axis of rotation (148) coincident with the first axis of rotation (140), the second torque transfer plate (134) is secured to the rotatable shaft (130);

a first lift block (136) comprising a first pin (152), positioned within the first slot, engagable by the first torque transfer plate (132), a first angularly disposed surface (154) and a first resting surface (156) adjacent to the first angularly disposed surface (154); and,

a second lift block (138) comprising a second pin (158) engagable by the second torque transfer plate (134), a second angularly disposed surface (160) and a second resting surface (162) adjacent to the second angularly disposed surface (160),

wherein the lift mechanism (118) is configured such that rotation of the lever arm (128) causes the first and second torque transfer plates (132, 134) to rotate into engagement with the first and second pins (152, 158), thereby causing linear motion of the first and second lift blocks (136, 138), respectively, and causing the first and second

wheels (120, 122) to be raised and lowered by contact between the first lift bearing (124) and the first angularly disposed surface (154) of the first lift block (136) and the second lift bearing (126) and the second angularly disposed surface (160) of the second lift block (138), respectively.