Patent Claims

1. A loading arm assembly for a load-handling vehicle configured for unloading and loading of ISO containers and transportation containers having a hook, the loading arm assembly comprising:

a main arm,

an auxiliary arm connected with respect to the main arm,

a crossbeam, connected with respect to the auxiliary arm, comprising ~~having~~ two corner grippers, and

a telescoping gripping hook connected with respect to the auxiliary arm, wherein:

the telescoping gripping hook is telescopically moveable relative to the crossbeam and corner grippers between a retracted position and a deployed position, such that when the telescoping gripping hook is in the retracted position, the loading arm assembly is configured for unloading and loading of ISO containers via the two corner grippers, and when the telescoping gripping hook is in its deployed position, the loading arm assembly is configured for unloading and loading of transportation containers having a hook.

2. The loading arm assembly according to claim 1, wherein:

the auxiliary arm comprises first and second outer sleeves and first and second internal parts,

the first and second outer sleeves form a functional unit that is fastened to the main arm,

the crossbeam and the respective corner grippers for gripping ISO containers are disposed on the first internal part that is guided in the first outer sleeve, and

the gripping hook is disposed on the second internal part that is guided in the second outer sleeve.

3. The loading arm assembly according to claim 1, wherein the crossbeam is pivotable relative to the auxiliary arm about two axes.

4. The loading arm assembly according to claim 3, wherein:

the crossbeam is pivotable about a transverse axis,

the transverse axis extends perpendicularly to a longitudinal axis of the crossbeam and perpendicularly to a longitudinal axis of the auxiliary arm, and

wherein the crossbeam is pivotable about the longitudinal axis of the auxiliary arm.

5. The loading arm assembly according to claim 3, wherein:

the crossbeam and the auxiliary arm are connected by way of a universal joint,

the universal joint has a crosspiece comprising two axle stump pairs,

the auxiliary arm is rotatably connected to one axis stump pair, and

the crossbeam is rotatably connected to the other axle stump pair.

6. The loading arm assembly according to claim 3, wherein:

the auxiliary arm comprises a housing,

the crossbeam engages through the housing, and

one axle stump pair is rotatably disposed on the housing.

7. The loading arm assembly according to claim 6, wherein:

the axle stump pair that rotatably engages on the housing extends perpendicularly to the crossbeam and perpendicularly to a longitudinal direction of the auxiliary arm.

8. The loading arm assembly according to claim 1, wherein the main arm is configured so as to be telescopic.

9. The loading arm assembly according to claim 1, wherein the auxiliary arm is configured as to be telescopic.

10. The loading arm assembly according to claim 1, wherein:

the crossbeam comprises two crossbeam regions, and

each of the two crossbeam regions is configured so as to be telescopic.

11. The loading arm assembly according to claim 1, wherein the corner grippers are pivotable about a longitudinal axis of the crossbeam.

12. A load-handling vehicle comprising a loading arm assembly according to claim 1.

13. A load-handling vehicle comprising a loading arm assembly according to claim 2.

14. A load-handling vehicle comprising a loading arm assembly according to claim 3.

15. A load-handling vehicle comprising a loading arm assembly according to claim 4.

16. A load-handling vehicle comprising a loading arm assembly according to claim 5.

17. A load-handling vehicle comprising a loading arm assembly according to claim 6.

18. A load-handling vehicle comprising a loading arm assembly according to claim 7.

19. A load-handling vehicle comprising a loading arm assembly according to claim 8.

20. A load-handling vehicle comprising a loading arm assembly according to claim 9.