empty weight of the platform. In addition, multiple components may increase maintenance costs and may lead to shorter maintenance intervals.

It is also known to drive two pinions with a single electric motor using a device with a single planetary gear set, as disclosed in US 2008/0116427. A drawback of this device is however that, in order to obtain the high reduction ratio, a lot of additional gear steps are still required. In addition, assembly of the device on site can be relatively complex.

French patent publication FR 2 753 466 relates to a jacking system for platforms comprising two pinions driven by a motor over a rack. Between the motor and the pinions there is a first reduction part and a second reduction part. The second reduction part comprises a planetary gear set with a first output from the carrier to the pinion and a second output from the ring via a gear or a chain belt to the pinion. The configuration of FR 2 753 466 has a similar setup as the setup disclosed in publication US 2008/0116427 mentioned above.

There is a need for an improved drive unit for driving two drive shafts simultaneously. An object of the invention is to provide for an improved drive unit obviating at least one of the above mentioned drawbacks. In particular, a drive unit that achieves weight reduction and/or component reduction may be aimed for.

Thereto, the invention provides for a drive unit for driving ~~at least~~ two drive shafts, wherein the drive unit comprises a motor unit and a gear train coupled to the motor unit, wherein the gear train comprises a compound differential planetary gear system having at least one input shaft coupled to the motor unit and ~~at least~~ two output shafts of which each output shaft is arranged for driving a drive shaft, wherein the compound differential planetary gear system comprises ~~at least~~ two planetary gear sets with different form factors each comprising four gear shafts, of which two gear shafts of each planetary gear set ~~that~~ are coupled to each other to create a compound planetary gear setup, of which each planetary gear set is provided with an

Claims

1. Drive unit for driving ~~at least~~ two drive shafts,
wherein the drive unit comprises a motor unit and a gear train coupled to the motor unit, wherein the gear train comprises a compound differential planetary gear system having at least one input shaft coupled to the motor unit and ~~at least~~ two output shafts of which each output shaft is arranged for driving a drive shaft, wherein the compound differential planetary gear system comprises ~~at least~~ two planetary gear sets with different form factors each comprising four gear shafts, of which two gear shafts of each planetary gear set ~~that~~ are coupled to each other to create a compound planetary gear setup, of which each planetary gear set is provided with an output shaft for driving a drive shaft to create the compound differential planetary gear setup.

2. Drive unit according to claim 1, wherein a shaft of sun gears of the respective planetary gear sets are coupled to each other via the input shaft.

3. Drive unit according to claim 1 or 2, wherein either one of a carrier or a ring gear of the planetary gear system is provided as an output shaft for driving the drive shaft.

4. Drive unit according to any one of the preceding claims, wherein a final gear set is arranged between each output shaft and each drive shaft that are coupled to each other to provide a reaction-torque free gear train.

5. Drive unit according to any one of the preceding claims, wherein the gear train is arranged in a housing.

6. Drive unit according to claim 5, wherein the housing comprises first connecting elements for connection with the motor unit and second connecting elements for connection with the drive shafts.

7. Drive unit according to any one of the preceding claims, wherein the drive shaft is a pinion that is arranged for engaging a rack.

8. Drive unit according to any one of the preceding claims, wherein the motor unit has an output shaft being in line with the at least one input shaft of the compound differential planetary gear system and/or integrated therewith.

9. Drive unit according to any one of the preceding claims, wherein the motor unit is placed at least partly, preferably substantially completely, between the ~~at least~~ two output shafts of the compound differential planetary gear system.

10. Gear box comprising a gear train for use in a drive unit according to any one of the claims 1 – 9.

11. Gear box according to claim 10, wherein the gear train is arranged in a housing.

12. Drive system for driving multiple drive shafts simultaneously, comprising a number of drive units according to any one of the claims 1 – 9.

13. Drive system according to claim 12, wherein the drive shaft comprises a pinion that is arranged for engagement with a rack.

14. Drive system according to claim 13, wherein pinions driven by a drive unit are arranged on the same rack.

15. Drive system according to claim 13, wherein pinions driven by a drive unit are arranged on different racks alongside each other.

16. Drive system according to any one of the claims 12 – 15, wherein the racks are positioned in a standing position for driving the pinions up or down along the racks.

17. Drive system according to any one of the claims 12 – 15, wherein the racks are positioned in a lying position for driving the pinions forwards or backwards along the racks.

18. Offshore structure comprising a drive system according to any one of claims 12 – 17.