

CLAIMS:

1. A mixed cargoes barge or carrier comprising:
a hull;
a conveyor located along a central longitudinal or a transverse axis of the hull; and
5 a load plate with an inner edge being located adjacent the conveyor, so that when the load plate is controllably tilted, bulk cargoes loaded on the load plate is allowed to fall onto the conveyor for discharging.
2. The mixed cargoes barge or carrier according to claim 1, wherein the load plate is
10 located on each of two sides of the conveyor.
3. The mixed cargoes barge or carrier according to claim 1 or 2, wherein each load plate is segmented in a direction along the conveyor or transverse to the conveyor, with adjacent segments being pivotable, so as to provide various ways of folding and unfolding
15 the segmented load plate, thus providing various loading spaces in the hull to transport mixed cargoes.
4. The mixed cargoes barge or carrier according to any one of claims 1-3, wherein the conveyor is a V-belt or screw type.
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5. The mixed cargoes barge or carrier according to any one of the preceding claims, further comprising mounting rails for fixing inside the hull, a deck inside the hull or onto the load plate, so that the mounting rails are operable to secure shipping containers or IMO tanks onto the load plate, inside the hull or on the deck during transportation.
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6. The mixed cargoes barge or carrier according to claim 5, wherein a space below the deck is configured to house storage tanks for storing fluid, liquid, flowable cargoes or ballasting water.
- 30 7. The mixed cargoes barge or carrier according to any one of claims 3-6, wherein each load plate or each segmented load plate is controllably tiltable by retracting hydraulic actuators located on an inner edge adjacent to the conveyor after being loaded with bulk cargoes.

8. The mixed cargoes barge or carrier according to any one of claims 3-6, wherein each load plate or each segmented load plate is controllably tiltable by operating hoists mounted on pillars or an overhead gantry prior to being loaded with bulk cargoes, and operating the hoists to discharge any remaining bulk cargoes after an initial partial
5 discharge.

9. The mixed cargoes barge or carrier according to any one of claims 3-8, further comprising:
end plates located at each end of the load plate or each of the segmented load plate;
10 and
a fender located on an outer edge of the load plate, each of the segmented load plate or each of the end plates, so that the end plates and the fenders increase a load volume in the hull.

15 10. The mixed cargoes barge or carrier according to any one of claims 3-9, further comprising:
a chute located along the inner edge of the load plate or each of the segmented load plate, wherein the chute is pivotably indexable or slidable; and
intake valves located between the chute and the conveyor to regulate the amount of
20 bulk cargoes to be discharged onto the conveyor.

11. The mixed cargoes barge or carrier according to any one of the preceding claims, further comprising a receiving hopper disposed at a discharge end of the conveyor and a discharge conveyor pivotably connected to the receiving hopper.
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12. A method of transporting mixed cargoes on a mixed cargoes barge or carrier according to any one of claims 1-11, the method comprising:
loading a load plate or a segmented load plate separately with bulk cargoes, a shipping container, an IMO tank or general cargoes; and
30 at the same time, carrying fluid or flowable cargoes in storage tanks located in a hull of the mixed cargoes barge or carrier, or in IMO tanks secured to a deck of the hull;
such that the mixed cargoes barge or carrier allows transport of mixed cargoes:
- bulk cargoes that are loaded onto the load plate or the segmented load plate which have been tilted inwardly to a conveyor;

- shipping containers or IMO tanks that are loaded and secured on container mounting rails mounted on the load plate, the segmented load plate, on the hull or on the deck of the hull;
 - fluid or flowable cargoes are loaded into the hull or into storage tanks located
5 below the deck; or
 - general cargoes located in the hull or on the deck,
- so that different types of cargoes and goods can be transported together, thereby substantially maximizing utility of the mixed cargoes barge or carrier.

10 13. The method according to claim 12, wherein the load plate or the segmented load plate located on each side of the conveyor are operable to tilt inwardly before bulk cargoes is loaded thereon.

14. The method according to claim 13, wherein tilting of the load plate or the
15 segmented load plate is controllably operable by retracting hydraulic actuators located along an inner edge of the load plate or the segmented load plate adjacent to the conveyor.

15. The method according to claim 14, further comprising extending hydraulic actuators located along an outer edge of the load plate or the segmented load plate or
20 hoisting to tilt the load plate or the segmented load plate after part of the bulk cargoes has been discharged.

16. The method according to claim 13, wherein tilting of the load plate or the segmented load plate are mechanically guided by pillars, with hoists on the pillars being
25 operated to tilt the load plate or the segmented load plate and locking pins are used to locate and secure the tilted load plate or tilted segmented load plate at the desired angle of inclination, prior to loading of the bulk cargoes.

17. The method according to any one of claims 12-16, wherein the load plate or a
30 segmented load plate had being used for transporting shipping containers, IMO tanks, bulk cargoes or general cargoes and when a load space is emptied, the load space can then be used to transport other shipping containers, IMO tanks, bulk cargoes or general cargoes, or vice versa.

18. A method of transporting bulk cargoes on a mixed cargoes barge or carrier according to any one of apparatus claims 1-11, comprising:

transporting a bulk cargo in a hull or in a compartment in the hull of the barge or carrier during a trip; and

- 5 transporting another bulk cargo in the hull or in the compartment in the hull after deploying segmented load plates in the hull or in the compartment to contain the another bulk cargo during a subsequent trip, so as to minimize cross-contamination.