C L A I M S

1. A paint booth with a purifier, characterized by comprising:

a booth body (12) comprising a coating chamber (11) and a booth opening (14);

a water tank (20) disposed in a lower part of the booth body (12);

a water rope formation mechanism (22) comprising a water case (30) disposed in an upper part of the booth body (12) and configured to form a plurality of parallel water ropes (40) from water falling from nozzles (35) formed in a bottom wall (31) of the water case (30);

a pump (27) configured to draw up water from the water tank (20) and feed the water into the water case (30);

a barrier member (45) comprising a vertically extending wall portion (45a) disposed behind the water ropes (40);

an exhaust chamber (46) formed behind the barrier member (45) and divided from the coating chamber (11) by the barrier member (45);

an exhaust mechanism (28) configured to discharge air from the exhaust chamber (46);

an inclined plate (50) disposed below the nozzles (35) and comprising a water receiving surface (55) sloping forwardly down at an angle (θ) from a vertically

intermediate portion of the barrier member (45) toward a water surface (W1) of the water tank (20);

a windshield plate (60) comprising an upper end (61) and a lower end (62) and defining an air circulation section (65) in conjunction with a rear surface (54) of the inclined plate (50), the lower end (62) contacting water (W) in the water tank (20); and

a sludge removal mechanism (26) comprising a conveyor (25) configured to discharge paint sludge (M') in the water tank (20) to the outside of the water tank (20)~~.~~,

characterized by further comprising:

a porous ventilation section (57) with holes (56)(56A) disposed at a lower part of the inclined plate (50); and

an intake guide member (58), which extends upwardly from a sidewall (20b) of the water tank (20) in front of the porous ventilation section (57), and an airflow inlet (59) disposed between the intake guide member (58) and the porous ventilation section (57) and communicating with the coating chamber (11).

~~2. The paint booth with a purifier according to claim 1, characterized by comprising a porous ventilation section (57) with a large number of holes (56) disposed at a lower part of the inclined plate (50).~~

~~3~~2. The paint booth with a purifier according to claim ~~2~~1, characterized in that the porous ventilation

section (57) is made of a punching metal disposed at the lower part of the inclined plate (50).

~~4. The paint booth with a purifier according to claim 2, characterized by comprising an intake guide member (58), which extends upwardly from a sidewall (20b) of the water tank (20) in front of the porous ventilation section (57), and an airflow inlet (59) disposed between the intake guide member (58) and the porous ventilation section (57) and communicating with the coating chamber (11).~~

~~5. The paint booth with a purifier according to claim 3, characterized by comprising an intake guide member (58), which extends upwardly from a sidewall (20b) of the water tank (20) in front of the porous ventilation section (57), and an airflow inlet (59) disposed between the intake guide member (58) and the porous ventilation section (57) and communicating with the coating chamber (11).~~

~~6~~3. The paint booth with a purifier according to claim 1, characterized by comprising an airflow guide plate (41) disposed between the bottom wall (31) of the water case (30) and an eave portion (12f) of the booth body (12) formed above the booth opening (14) and configured to close a gap between the eave portion (12f) and the water case (30).

~~7~~4. The paint booth with a purifier according to claim 1, characterized in that the conveyor (25) comprises

an upper-side portion (95) movable along the water surface (W1) of the water tank (20) and a lower-side portion (96) movable along a bottom portion (20a) of the water tank (20), chains (25a, 25b) at the upper-side portion (95) and chains (25a, 25b) at the lower-side portion (96) being individually disposed below the water surface (W1) in the water tank (20).

~~8~~5. The paint booth with a purifier according to claim 1, characterized by comprising ~~a~~ the porous ventilation section (57) with ~~a plurality of~~ vertically extending slits (56A) disposed at a lower part of the inclined plate (50).

~~9~~6. The paint booth with a purifier according to claim ~~8~~5, characterized by comprising a reinforcing plate (121) extending along the slits (56A) on a rear surface of the inclined plate (50).

~~10~~7. The paint booth with a purifier according to claim ~~9~~6, characterized by comprising a handle (120) disposed on an upper part of the inclined plate (50).

~~11~~8. The paint booth with a purifier according to claim ~~8~~5, characterized by comprising ~~a first~~ the porous ventilation section (57) with ~~a plurality of~~ vertically extending first slits (56A) disposed at a lower part of the inclined plate (50) and ~~a second~~another porous ventilation section (57') with ~~a plurality of~~ vertically extending

second slits (56B) disposed at an upper part of the inclined plate (50), the length (L2) of the second slits (56B) being shorter than the length (L1) of the first slits (56A).