

CLAIMS

1. System (1) for conching edible mass, in particular cocoa containing mass, such as chocolate, cocoa liquor or compound, comprising a shear device, in particular a so-called taste-changer (14), in turn comprising a housing (16), a shaft (17) rotatably mounted in the housing (16), means (19, 20) for subjecting the edible mass to high shear stresses, means (21, 22) for spreading the edible mass after it has been subjected to high shear, and an inlet (24, 25) for supplying a gas to the spread edible mass, and
5 **characterized by** a thin film evaporator (15) to further treat the edible mass exiting the shear device (14).

2. System (1) according to claim 1, wherein the shear device (14) and the thin film evaporator (15) are integrated in the same device.

3. System (1) according to claim 1 or 2, wherein the shear device (14) is positioned above, preferably on top of the thin film evaporator (15).

4. System (1) according to any one of the preceding claims, comprising a humidifier upstream from the gas inlet (24) of the shear device (14).

5. System (1) according to any one of the preceding claims, wherein the means (19, 20) for subjecting the edible mass to high shear stresses comprises at least one rotor (19) and at least one corresponding stator (20) and wherein, in axial direction, the at least one stator (20) extends above and/or beneath the rotor (19) and wherein the clearance between the rotor (19) and the stator (20) is preferably less than 6 mm, preferably less than 4 mm, preferably less than 3 mm.

6. System (1) according to any one of the preceding claims, wherein the thin film evaporator (15) comprises a rotationally symmetrical inner wall (31) for conveying a film of edible mass, means for heating the inner wall, and a

plurality of nozzles (34) for directing a gas towards the inner wall (31) and mounted, preferably rotatably, within the confines of this wall (31).

5 7. System (1) according to claim 6, comprising a drum (32) mounted rotatably within the confines of the inner wall (31) and provided with openings forming the nozzles (34).

10 8. System (1) according to any one of the preceding claims, wherein the thin film evaporator (15) is oriented vertically.

9. System (1) according to any one of the preceding claims, wherein the central driving shafts of the taste-changer (14) and the thin film evaporator (15) are co-axial.

15 10. System (1) according to any one of the preceding claims, comprising a ball mill (4, 5) upstream from the taste-changer (14).

20 11. Process for treating a flowable substance, in particular conching edible mass, comprising the steps of subjecting the edible mass to high shear stresses, spreading the edible mass to form a film and/or mist,

supplying a gas, typically hot air, to the spread edible mass

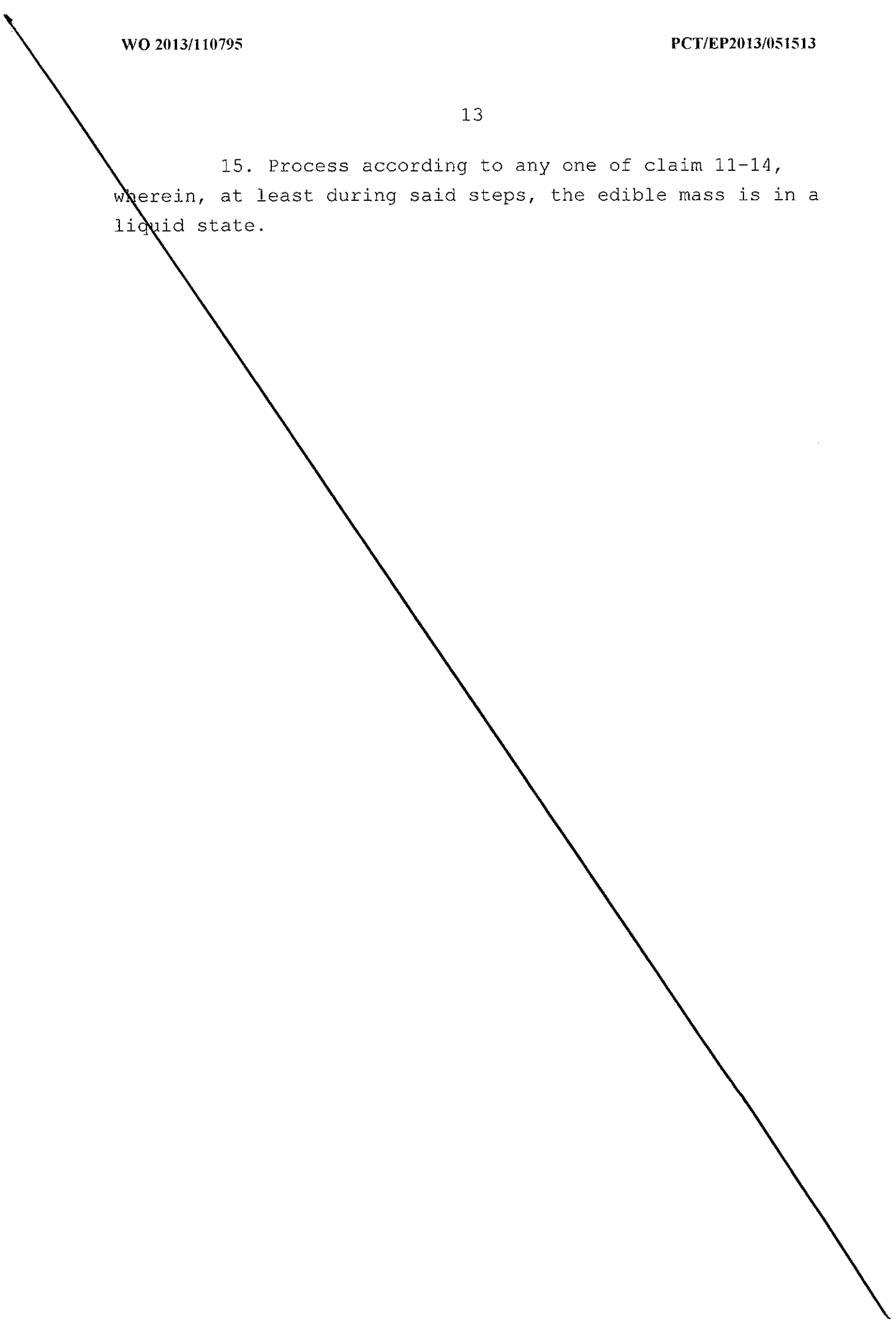
25 and subsequently feeding the edible mass to a thin film evaporator (15).

12. Process according to claim 11, wherein the gas is humified, preferably to at least 80% relative humidity at 20°C, before supplying it to the spread edible mass.

30 13. Process according to claim 11 or 12, wherein the edible mass flows substantially vertically through the thin film evaporator (15).

14. Process according to any one of claim 11-13, wherein a gas is supplied to the thin film evaporator (15) and the edible mass and the gas flow in opposite directions.

15. Process according to any one of claim 11-14, wherein, at least during said steps, the edible mass is in a liquid state.



CLAIMS

1. System (1) for conching edible mass, in particular cocoa containing mass, such as chocolate, cocoa liquor or compound, comprising a shear device, in particular a so-called taste-changer (14), in turn comprising a housing (16), a shaft (17) rotatably mounted in the housing (16), means (19, 20) for subjecting the edible mass to high shear stresses, means (21, 22) for spreading the edible mass after it has been subjected to high shear, and an inlet (24, 25) for supplying a gas to the spread edible mass, and characterized by a thin film evaporator (15) to further treat the edible mass exiting the shear device (14).

2. System (1) according to claim 1, wherein the shear device (14) and the thin film evaporator (15) are integrated in the same device.

3. System (1) according to claim 1 or 2, wherein the shear device (14) is positioned above, preferably on top of the thin film evaporator (15).

4. System (1) according to any one of the preceding claims, comprising a humidifier upstream from the gas inlet (24) of the shear device (14).

5. System (1) according to any one of the preceding claims, wherein the means (19, 20) for subjecting the edible mass to high shear stresses comprises at least one rotor (19) and at least one corresponding stator (20) and wherein, in axial direction, the at least one stator (20) extends above and/or beneath the rotor (19) and wherein the clearance between the rotor (19) and the stator (20) is preferably less

than 6 mm, preferably less than 4 mm, preferably less than 3 mm.

6. System (1) according to any one of the preceding claims, wherein the thin film evaporator (15) comprises a rotationally symmetrical inner wall (31) for conveying a film of edible mass, means for heating the inner wall, and a plurality of nozzles (34) for directing a gas towards the inner wall (31) and mounted, preferably rotatably, within the confines of this wall (31).

7. System (1) according to claim 6, comprising a drum (32) mounted rotatably within the confines of the inner wall (31) and provided with openings forming the nozzles (34).

8. System (1) according to any one of the preceding claims, wherein the thin film evaporator (15) is oriented vertically.

9. System (1) according to any one of the preceding claims, wherein the central driving shafts of the taste-changer (14) and the thin film evaporator (15) are co-axial.

10. System (1) according to any one of the preceding claims, comprising a ball mill (4, 5) upstream from the taste-changer (14).

11. Process for treating a flowable substance, in particular conching edible mass, comprising the steps of
subjecting the edible mass to high shear stresses,
spreading the edible mass to form a film and/or mist,
supplying a gas, typically hot air, to the spread edible mass

and subsequently feeding the edible mass to a thin film evaporator (15).

12. Process according to claim 11, wherein the gas is humified, preferably to at least 80% relative humidity at 20°C, before supplying it to the spread edible mass.

13. Process according to claim 11 or 12, wherein the edible mass flows substantially vertically through the thin film evaporator (15).

14. Process according to any one of claim 11-13, wherein a gas is supplied to the thin film evaporator (15) and the edible mass and the gas flow in opposite directions.

15. Process according to any one of claim 11-14, wherein, at least during said steps, the edible mass is in a liquid state.