

Title (en)
CONDITIONING APPARATUS FOR THE AIR SUPPLY STREAM OF A DRYING CHAMBER OF AN ENAMELING LINE AND METHOD FOR
CONDITIONING THE AIR SUPPLY STREAM

Title (de)
KONDITIONIERVORRICHTUNG FÜR DEN ZULUFTSTROM EINER TROCKNUNGSKABINE EINER LACKIERANLAGE UND VERFAHREN ZUR
KONDITIONIERUNG DES ZULUFTSTROMS

Title (fr)
DISPOSITIF DE CONDITIONNEMENT POUR LE FLUX D'AIR FRAIS D'UNE CABINE DE SÉCHAGE D'UNE INSTALLATION DE VERNISSAGE
ET PROCÉDÉ POUR LE CONDITIONNEMENT DU FLUX D'AIR FRAIS

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Application
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Abstract (en)
[origin: CA2669257A1] A conditioning apparatus (1) for the air supply stream of a drying chamber (2) of an enameling line has a fresh air duct (8) and an air supply duct (10) connected thereto through which a fresh air or air supply stream can be directed into the drying chamber (2); an exhaust air duct (13) and an escaping air duct (14) connected thereto through which an exhaust air stream can be guided out of the drying chamber (2) or out of an escaping air duct into the surrounding area; an absorption or adsorption device (4) which is arranged in the escaping air duct (14) and in the air supply duct (10) and in which the air supply stream can be dehumidified and heated to a predetermined level of humidity by means of the escaping air stream; a device for heat recovery (6) which is arranged upstream of the absorption or adsorption device (4) in the escaping air duct (14) and which is arranged downstream of the absorption or adsorption device (4) in the air supply duct (10) and in which the air supply stream which is dehumidified and heated in the absorption or adsorption device (4) by means of the escaping air stream emitted from the drying chamber (2) can be cooled; an aftercooler (7) which is arranged downstream of the heat recovery device (6) in the air supply duct (10) and in which the air supply stream which is precooled in the heat recovery device (6) can be cooled to a temperature required for entry into the drying chamber (2); and an afterheater (5) which is arranged in the escaping air duct (14) downstream of the heat recovery device (6) and upstream of the absorption or adsorption device (4) and in which the escaping air stream can be heated to a temperature suitable for the regeneration of the absorption or adsorption device (4). To reduce the use of energy for the operation of the conditioning apparatus (1), it is suggested that a recirculating air duct (11) branch off from the exhaust air duct (13) coming out of the drying chamber (2) at a first junction place (12); and that through said recirculating air duct, a part of the exhaust air stream coming out of the drying chamber (2) can be brought, together with the fresh air stream, as a recirculating air stream in a second junction place (9), and can then be directed through the air supply duct (10) as an air supply stream into the drying chamber (2); and that a precooler (3), by means of which the fresh air stream can be cooled and dehumidified, is arranged upstream of the second junction place (9) in the fresh air duct (8).

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