

Title (en)

COOLING LINE WITH VALVES AND PRESSURE VESSELS FOR PREVENTING PRESSURE SURGES

Title (de)

KUEHLSTRECKE MIT VENTILEN UND DRUCKGEFAESSEN ZUR VERMEIDUNG VON DRUCKSCHLAEGEN

Title (fr)

SECTION DE REFROIDISSEMENT POURVUE DE SOUPAPES ET DE RÉCIPIENTS À PRESSION PERMETTANT D'ÉVITER LES CHOCS DE PRESSION

Publication

EP 3993917 B1 20230809 (DE)

Application

EP 20733964 A 20200618

Priority

- EP 19184168 A 20190703
- EP 2020066970 W 20200618

Abstract (en)

[origin: WO2021001162A1] The invention relates to a device for cooling a metal rolling stock (1) rolled in a rolling train, having multiple cooling devices (4), to which water (5) is supplied via a respective branch line (7) and by means of which the water (5) is applied to the rolling stock (1). The branch lines (7) are equipped with a respective valve (8), by means of which the water flow flowing through the respective branch line (7) is adjusted. Each of the valves (8) is paired with a drive (9), via which the respective valve (8) is actuated. The cooling devices (4) form multiple groups, each of which is paired with a dedicated pressure vessel (10) in a proprietary manner. Each pressure vessel (10) is connected to a respective feed line (12) at a respective connection point (11), and the water (5) is supplied to the branch lines (7) of the cooling devices (4) of the corresponding group via said feed line. When viewed in the flow direction of the water (5), each connection point (11) is arranged upstream of the valves (8) of the respective group of cooling devices (4).

IPC 8 full level

B21B 45/02 (2006.01)

CPC (source: CN EP KR US)

B05B 1/30 (2013.01 - US); **B21B 45/0215** (2013.01 - CN EP); **B21B 45/0218** (2013.01 - KR); **B21B 45/0224** (2013.01 - CN US); **B21B 45/0233** (2013.01 - KR); **B21B 45/0233** (2013.01 - EP)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 3760326 A1 20210106; CN 114040821 A 20220211; EP 3993917 A1 20220511; EP 3993917 B1 20230809; EP 3993917 C0 20230809; JP 2022538856 A 20220906; JP 7318023 B2 20230731; KR 20220029599 A 20220308; MX 2021015940 A 20220203; US 2022362823 A1 20221117; WO 2021001162 A1 20210107

DOCDB simple family (application)

EP 19184168 A 20190703; CN 202080048919 A 20200618; EP 2020066970 W 20200618; EP 20733964 A 20200618; JP 2021577112 A 20200618; KR 20217043390 A 20200618; MX 2021015940 A 20200618; US 202017623923 A 20200618