

Title (en)  
MULTISTAGE CENTRIFUGAL PUMP WITH A BALANCING LINE THAT EXTENDS AXIALLY THROUGH A PLURALITY OF STAGE CASINGS

Title (de)  
MEHRSTUFIGE KREISELPUMPE MIT EINER ENTLASTUNGSLEITUNG, DIE SICH AXIAL DURCH EINE MEHRHEIT VON STUFENGEHÄUSEN ERSTRECKT

Title (fr)  
POMPE CENTRIFUGE À ÉTAGES MULTIPLES AVEC UN CONDUIT D'ÉQUILIBRAGE QUI S'ÉTEND AXIALEMENT À TRAVERS UNE PLURALITÉ DE CARTERS D'ÉTAGE

Publication  
**EP 3889434 A1 20211006 (EN)**

Application  
**EP 20166687 A 20200330**

Priority  
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Abstract (en)  
A multistage pump for conveying a fluid is proposed, comprising a pump shaft (9) configured for rotating about an axial direction (A), a plurality of stages (3) arranged one after another with respect to the axial direction (A), said plurality of stages (3) comprising at least a first stage (31) and a last stage (33), each stage comprising a stage casing (6), and an impeller (7) for acting on the fluid, wherein each impeller (7) is mounted to the pump shaft (9) in a torque proof manner, the multistage pump further comprising a pump inlet (4) for supplying the fluid to the impeller (7) of the first stage (31), a pump outlet (5) for discharging the fluid, a balance drum (12) for balancing an axial thrust, and a balance line (40), wherein the balance drum (12) is fixedly connected to the pump shaft (9), and has a front side facing one of the impellers (7), as well as a back side facing a low pressure chamber (13), wherein a relief passage (122) is provided between the balance drum (12) and a stationary part (121) configured to be stationary with respect to the stage casings (6), wherein the relief passage (122) is extending from the front side to the back side, and wherein the balance line (40) is configured to provide a fluid communication between the low pressure chamber (13) and the pump inlet (4), and wherein the balance line (40) is configured to pass through a plurality of the stage casings (6).

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Citation (search report)  
• [A] US 6309174 B1 20011030 - OKLEJAS JR ELI [US], et al  
• [A] US 3718406 A 19730227 - ONAL H  
• [A] US 2265834 A 19411209 - GARRAWAY GEORGE H

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