

Title (en)  
Laundry washing machine

Title (de)  
Waschmaschine

Title (fr)  
Machine à laver le linge

Publication  
**EP 2657388 A1 20131030 (EN)**

Application  
**EP 12165290 A 20120424**

Priority  
EP 12165290 A 20120424

Abstract (en)  
Laundry washing machine (1) comprising an outer casing (2) and, inside said outer casing (2), a washing tub (3), a rotatable drum which is arranged in axially rotating manner inside the washing tub (3) and is structured for receiving the laundry to be washed, a detergent dispensing assembly (9) which is structured for supplying detergent into the washing tub (3), a fresh-water supply circuit (10) which is structured for selectively channeling a flow of fresh water from the water mains towards the detergent dispensing assembly (9) and/or the washing tub (3), and a water softening device (11) which is interposed between the fresh-water supply circuit (10) and the detergent dispensing assembly (9) or the washing tub (3), and is structured for reducing the hardness degree of the fresh water supplied to the washing tub (3); the water softening device (11) in turn comprising: a water-softening agent container (26) which is crossed by the fresh water arriving from the fresh-water supply circuit (10) and is filled with a water softening agent able to reduce the hardness degree of the fresh water flowing through the same water-softening agent container (26); a regeneration-agent reservoir (27) which is structured to receive a salt or other regeneration agent for performing a regeneration of the water softening function of the water softening agents stored into the water-softening agent container (26); a water supply circuit (28) which is structured for selectively channeling a given amount of fresh water into the regeneration-agent reservoir (27) to form brine; a valve assembly (29) which is interposed between the water-softening agent container (26) and the regeneration-agent reservoir (27) and which is structured for selectively allowing the brine to flow by gravity from the regeneration-agent reservoir (27) to the water-softening agent container (26); and a water drain line (41) which is structured for selectively draining the fresh water out of the resin container (26) and which comprises an electrically-powered water pump assembly (42) that communicates with the water-softening agent container (26) and is structured for preventing, when deactivated, any outflow of the brine or fresh water from the water-softening agent container (26), and for sucking out of the water-softening agent container (26), when activated, the fresh water stored into the water-softening agent container (26).

IPC 8 full level  
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CPC (source: EP US)  
**D06F 39/007** (2013.01 - EP US); **D06F 39/028** (2013.01 - EP US); **D06F 39/02** (2013.01 - EP US)

Citation (applicant)  
EP 1085118 A2 20010321 - HITACHI LTD [JP]

Citation (search report)  
• [I] EP 2113602 A1 20091104 - HAIER GROUP CORP [CN], et al  
• [A] WO 2011154426 A1 20111215 - ARCELIK AS [TR], et al  
• [A] DE 3527182 A1 19870212 - LICENTIA GMBH [DE]  
• [A] US 2005224100 A1 20051013 - MAUNSELL STEPHEN R [NZ], et al

Cited by  
EP4393371A1; CN110331558A; WO2016078717A1; WO2016096009A1

Designated contracting state (EPC)  
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**EP 12165290 A 20120424**; EP 13717517 A 20130422; EP 2013058251 W 20130422