

Title (en)

APPARATUS FOR CONTROLLING THE SUPPLY OF LIQUID DETERGENTS IN A WASHING MACHINE, PARTICULARLY A LAUNDRY WASHING MACHINE

Publication

**EP 0331149 A3 19900214 (EN)**

Application

**EP 89103592 A 19890301**

Priority

IT 4570888 A 19880302

Abstract (en)

[origin: EP0331149A2] Described is an apparatus for controlling the supply of liquid detergents to the tub of a laundry washer, adapted to establish preselected detergent concentrations in the water admitted to the tub. The apparatus comprises an electronic comparator (15) for comparing a preselected reference voltage generated by a control circuit (21) adjusted to a value corresponding to the degree of hardness of the water, to a voltage generated by one of two integrator circuits (17, 18) each having a different time constant, said integrator circuit being selected by an electric contact (10) of the programme timing control unit (6) of the machine for energizing or deenergizing a liquid detergent metering pump (12) via a pilot stage (13) connected to said comparator (15). Also described are two alternative embodiments of the invention.

IPC 1-7

**D06F 39/00**

IPC 8 full level

**D06F 39/00** (2006.01)

CPC (source: EP US)

**D06F 34/22** (2020.02 - EP US); **D06F 2103/22** (2020.02 - EP US); **D06F 2105/02** (2020.02 - EP US); **D06F 2105/42** (2020.02 - EP US)

Citation (search report)

- [A] GB 2051413 A 19810114 - LICENTIA GMBH
- [A] EP 0231843 A2 19870812 - BOSCH SIEMENS HAUSGERAETE [DE]
- [A] US 4503575 A 19850312 - KNOOP DONALD E [US], et al
- [A] DE 3446288 A1 19860619 - LICENTIA GMBH [DE]

Cited by

EP1215329A3; EP1639175A4; US7971301B2; US8015645B2

Designated contracting state (EPC)

DE ES FR GB IT SE

DOCDB simple family (publication)

**EP 0331149 A2 19890906; EP 0331149 A3 19900214; EP 0331149 B1 19930107**; DE 68904210 D1 19930218; DE 68904210 T2 19930506; ES 2037891 T3 19930701; IT 1220742 B 19900621; IT 8845708 A0 19880302

DOCDB simple family (application)

**EP 89103592 A 19890301**; DE 68904210 T 19890301; ES 89103592 T 19890301; IT 4570888 A 19880302