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⑤④ **Obturator device for the tub of a laundry washing machine.**

⑤⑦ An obturator device for the tub of a laundry washing machine comprising a tub housing the drum containing the laundry to be washed and having its bottom portion formed with a port forming a seat for an obturator element coupled to a cinematic transmission mechanism advantageously actuated by a solenoid connected to the discharge pump for energization in synchronism therewith, so that during the initial phases of the washing operation the water and the detergent supplied thereto are exclusively utilized for the washing operation, without any portion of the solution flowing into the discharge circuit disposed below the level of the tub and only accessible during operation of the discharge pump.

1 Obturator Device for the Tub of a Laundry
Washing Machine

5 Description

The present invention relates to a device intended for incorporation in a laundry washing machine with the object of exhaustively utilizing the detergent introduced into the washing water.

10 As generally known, in laundry washing machines the introduction of a detergent is brought about by the first litres of water flowing through the compartments of a detergent supply receptacle previously filled with the
15 detergent. A certain amount of the thus formed water-detergent solution flows into the at this time still empty parts of the liquid flow circuit situated below the levels whereat the agitation of the liquid and laundry takes place, so that this portion of the water-
20 detergent mixture is not utilized for the laundry washing operation.

It is an object of the present invention to prevent the solution of water and detergent from flowing into these non-productive circuit parts, so that the full amount
25 of the solution is utilized for soaking and washing the laundry without flowing into the discharge section of the flow circuit until the washing operation has been carried out.

30 To this purpose, the tub containing the drum in which the laundry to be washed is contained has its lower portion provided with a plug maintained in a closure position while the laundry is being washed, particularly during the first phase of the operating cycle, so as to prevent the water
35 with the detergent from flowing into sections of the liquid flow circuit situated below the bottom of the tub and forming part of the discharge system. The aforementioned plug may be actuated to open at a suitable time with the

1 aid of a mechanism associated to a piston device compris-
ing a solenoid valve the operation of which is coupled
to that of the electric discharge pump. Until such time
at which the said pump is energized for discharging the
5 water that has been used for the washing operation, the
plug remains in its closed position, so that there occur
no losses of water and useable detergent.

The characteristics of the invention will become more
10 clearly evident from the following description, given
by way of example with reference to the accompanying
drawings, the only figure of which shows a diagrammatical
illustration of a laundry washing machine provided with
an obturator device according to the invention.

15 Shown in the drawings is a simplified illustration of
the hydraulic and electromechanical parts of the device
designated by reference numerals to which reference is
made in the following.

20 The tub 1 of a washing machine houses a conventional drum 2
containing the laundry to be washed, and has its lower
portion formed with a port 3 forming a seat for a plug 4
operatively connected to a transmission linkage 5 one
end portion of which is articulated to the rod of a
25 piston enclosed in a cylinder 6. The displacement of the
piston is advantageously brought about by means of an
electromagnet associated to a solenoid valve the energiz-
ation of which is synchronized with that of an electric
pump 7 employed for discharging the washing liquid and
30 communicating through a passage 8 with a chamber 9 asso-
ciated to port 3 and plug 4 and acting as a washing liquid
drain.

The outlet of electric pump 7 is conventionally connected
35 to a discharge conduit 10 having a discharge assembly 11
at its free end.

In the described manner it is ensured that the detergent

1 supplied to the washing water is exhaustively utilized
for the washing operation, and that part of it does not
get lost by unrecoverably entering the spaces represented
by chamber 9, passage 8 and pump 7.

5 Any particulars not affecting, altering or modifying the
essentials of the described device shall be variable
within the scope of the present invention.

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5 Obturator Device for the Tub of a Laundry
 Washing Machine

Patent Claim:

10 Obturator device for the tub of a laundry washing
 machine, essentially characterized in that the tub (1)
 housing the drum (2) containing the laundry to be washed
 has its bottom portion formed with a port (3) forming a
 seat for an obturator element (4) coupled to a cinematic
15 transmission mechanism (5) actuated by a cylinder-piston
 mechanism (6), the latter being advantageously actuated
 by a solenoid connected to a discharge pump (7) for
 energization in synchronism therewith, so that during
 the initial phases of the washing operation, the water
20 and the detergent supplied thereto are exclusively util-
 ized for the washing operation, without any portion of
 this solution flowing into the discharge circuit situated
 below the level of the tub and accessible only during
 operation of the discharge pump (7).

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