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(54) **Household appliance with knob**

(57) Household appliance comprising:
■ an instrument panel (2);
■ a knob (3) applied to the instrument panel (2) and com-

prising at least one insert (30) co-moulded and shaped
like an alphanumeric character.

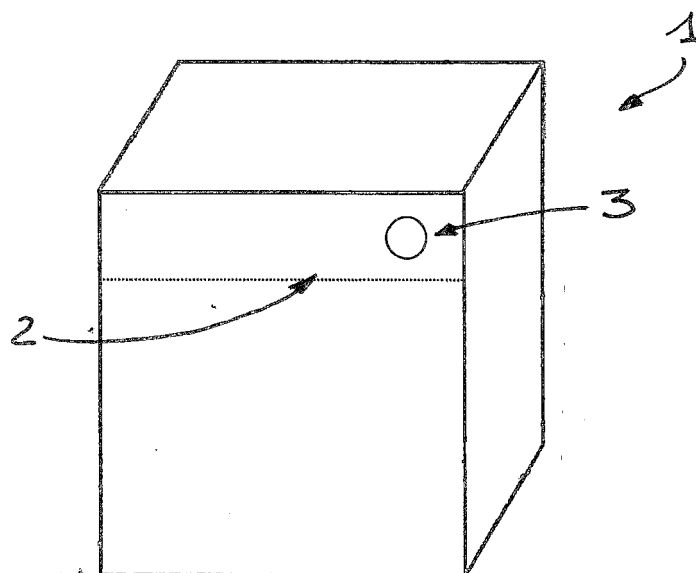


Fig. 1

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Description

[0001] This invention relates to a household appliance equipped with a control knob.

[0002] Laundry drying machines are known comprising a knob for selecting washing program by a user.

[0003] Such knob comprises a plurality of serigraphs arranged along a perimeter ring of the knob. In order to select the drying program, the user has to turn the knob placing at a fixed graphic the serigraphy associated with the desired treatment.

[0004] A drawback of this production solution is linked to the fact that the serigraphs with time and with wear could be partially removed. In this way they would be less evident with the risk of making difficult the choice of the desired drying program.

[0005] A further drawback is that the realization of a serigraphy requires the realization of a independent phase that requires time, equipment and determines an increase of costs.

[0006] In this context, the technical purpose at the base of the present invention is to propose an appliance that allows to overcome the drawbacks mentioned above.

[0007] The technical purpose mentioned and the specified aims are substantially achieved by an appliance, comprising the technical features exposed in one or more of the appended claims.

[0008] Further features and advantages of present invention will become more apparent from the indicative and therefore non-limiting description of one preferred but not exclusive embodiment of a laundry drying machine, as illustrated in the accompanying drawings in which:

- Figure 1 shows a schematic view of an appliance according to this invention;
- Figure 2 shows a detail of Figure 1;
- Figure 3 shows a sectional view of a portion of Figure 2.

[0009] In the accompanying figures the reference number 1 indicates an household appliance. Preferably, but not necessarily the household appliance 1 is a laundry drying machine such as a dryer or a washer-dryer. In an alternative embodiment the household appliance may be of different type, preferably belonging to the type of so-called "white household appliances", for example a washing machine, of the type laundry washing machine or dishwasher.

[0010] The appliance 1 comprises an instrument panel 2. The appliance 1 also comprises a knob 3 applied to the instrument panel 2. The knob 3 comprises at least one insert 30 co-moulded and shaped as an alphanumeric character.

[0011] The alphanumeric character refers to a letter of the alphabet and / or to a numeric digit. On the instrument panel there is a visual reference.

[0012] Turning the knob 3 it is possible to position such

insert 30 in correspondence with said visual reference, in order to correspond to the selection of a specific command in advance associated with said orientation of the knob 3.

[0013] Through a legend to each alphanumeric character is associated a specific command. In the preferred embodiment the knob 3 is a knob for selecting a drying program.

[0014] Preferably the knob 3 comprises a plurality of alphanumeric inserts 30 co-moulded and arranged along a perimeter portion 31 of the knob 3. To different orientations of the knob 3 correspond the selection of a different command (in particular of a different drying program, and more in general of a different laundry program treatment).

[0015] The knob 3 comprises a central grip zone 34. The grip zone 34 comprises a protrusion which protrudes away from the instrument panel 2 to facilitate the grip by a user. Conveniently, the perimeter portion 31 of the knob 3 comprises a perimeter ring 310. Said at least one insert 30 is arranged along the ring 310.

[0016] Preferably said plurality of co-moulded alphanumeric inserts 30 are placed along the ring 310. In particular, the inserts 30 are distributed along the ring 310. Conveniently the ring 310 has an outer circumferential perimeter.

[0017] The knob 3 comprises a body 33 having at least a seat 32 for housing said at least one insert 30. Such body 33 is turning with respect to the instrument panel 2. Conveniently such body 33 is one piece.

[0018] Preferably the seat 32 passes from side to side the knob 3 and it is obstructed by said insert 30. The seat 32 passes through the knob 3 along a direction parallel to an axis of rotation of the knob 3.

[0019] The knob 3 comprises a groove 35 that extends internally to the knob 3 (see figure 3, which shows a section, conducted orthogonally to the plane of the sheet of one of the inserts of Figure 2). The insert 30 defines a bottom of said groove 35. Preferably, but not necessarily the depth of such groove 35 is between 0 and 0.5 mm.

[0020] Said at least one insert 30 is of a different colour with respect to the surrounding portions of the knob 3. Said at least one insert 30 may be transparent and possibly define a guiding light. Advantageously, such insert 30 is made of a material different from that of the body 30 of the knob 3.

[0021] As described in this description with reference to an alphanumeric co-moulded insert 30 can be repeated for a plurality of co-moulded inserts (and possibly for their seats). Conveniently, as described in this description with reference to an insert 30 can be repeated for all the alphanumeric inserts of the knob 3.

[0022] Conveniently the knob 3 comprises aesthetic and decorative inserts, for example an annular element 4 in correspondence of the central grip zone 34.

[0023] Advantageously, the knob 3 is devoid of serigraphs, in particular is devoid of alphanumeric character serigraphs. Object of this invention is also a production

method of a selector knob of a household appliance.

[0024] Conveniently this household appliance comprises one or more of the characteristics previously described.

[0025] The method comprises the steps of:

■ realizing by moulding a body 33 of a knob 3 comprising a perimeter portion 31 with at least one slot shaped like an alphanumeric character (preferably a plurality of slots each shaped like an alphanumeric character)

■ realizing by co-moulding, inserts 30 inside said slots. These slots coincide with the housing seats 32 previously described.

[0026] The step of realizing by co-moulding the inserts 30 inside said slots takes place in a mould having at least some walls in common with the mould wherein it is realized by molding said body 33 of the knob 3.

[0027] For example, for realizing the body 33 of the knob 3 a first mould that includes protrusions is used to generate the slots.

[0028] In order to realize by co-moulding the inserts 30, these protrusions must be removed in order to allow the introduction of the material used to make said inserts 30, but advantageously parts of the original mould can be recycled in order to speed up the process. In an alternative solution for realizing said inserts 30, a mould is used completely separate and independent from the mould used to realize the body 33 of the knob 3.

[0029] This invention reaches several advantages. At first, it allows to optimize the timing of production of the knob 3. In fact, normally in the existing knobs there is a co-moulded insert with an aesthetic purpose. In this way, during the realization of the aesthetic insert, are realized also inserts that draw icons that allow the selection of commands to be given to the household appliance (avoiding subsequent serigraphs).

[0030] Moreover, avoiding the serigraphs, it can be minimized the risk that in the time the same may be damaged for example due to rubbing with the fingers of a user.

[0031] The invention thus described is susceptible of numerous modifications and variants, all within the field of the inventive concept that characterizes it. Moreover, all details can be replaced by other technically equivalent elements. In practice, all materials used, as well as the dimensions, may be any according to requirements.

Claims

1. A household appliance comprising:

- an instrument panel (2);
- a knob (3) applied to the instrument panel (2) and comprising at least one insert (30) co-moulded and shaped like an alphanumeric character.

2. The household appliance according to claim 1, **characterized in that** the knob (3) comprises a plurality of co-moulded alphanumeric inserts (30) arranged along a perimeter portion (31) of the knob (3).

3. The household appliance according to claim 2, **characterized in that** the knob (3) comprises a central grip zone (34), said perimeter portion (31) of the knob (3) comprising a perimeter ring (310), said plurality of co-moulded alphanumeric inserts (30) being located along the ring (310).

4. The household appliance according to any one of the preceding claims, **characterized in that** the knob (3) comprises a seat (32) for housing said at least one insert (30).

5. The household appliance according to claim 4, **characterized in that** the seat (32) passes through the knob (3) and is blocked by said insert (30).

6. The household appliance according to any one of the preceding claims, **characterized in that** said knob (3) comprises a groove (35) that extends internally of the knob (3), said insert (30) defining a bottom of said groove (35).

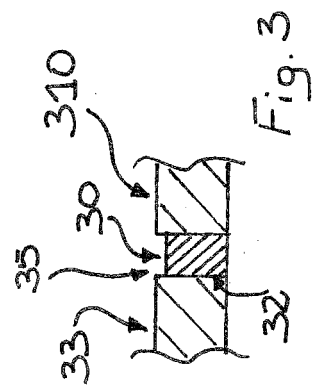
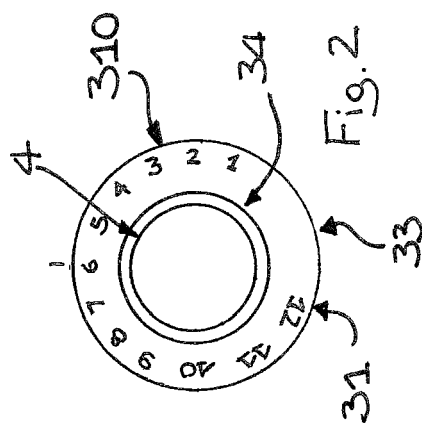
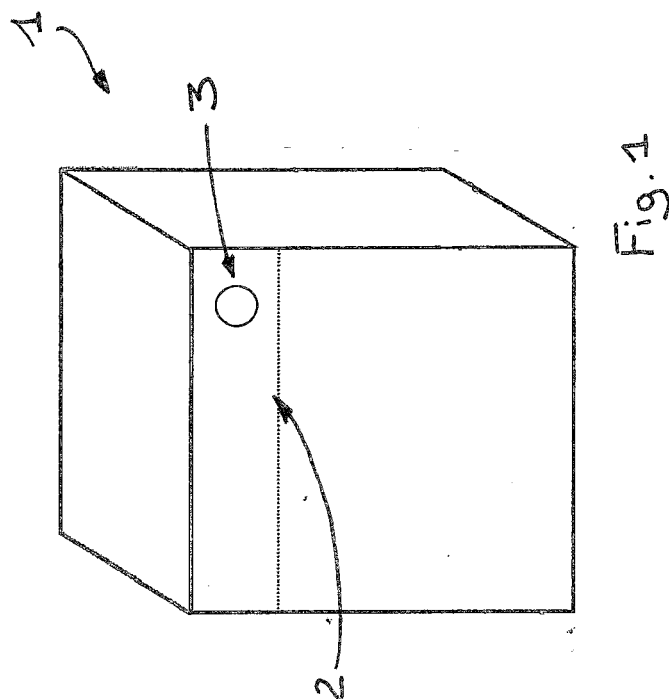
7. The household appliance according to any one of the preceding claims, **characterized in that** said at least one insert (30) is of a different colour with respect to the surrounding portions of the knob (3).

8. The household appliance according to any one of the preceding claims, **characterized in that** it is a laundry dryer, a dishwasher or a laundry washing machine, said knob (3) being a knob for selecting a drying or washing program.

9. A method for producing a selector knob for a household appliance, said method being **characterized in that** it comprises the steps of:

- realizing, by moulding, a body of a knob (3) comprising a perimeter portion (31) provided with slots shaped like an alphanumeric character;
- realizing, by co-moulding, inserts (30) inside said slots.

10. The method according to claim 9, **characterized in that** the stage of realizing, by co-moulding, inserts (30) inside said slots takes place in a mould having at least some walls in common with the mould wherein in said body of the knob (3) is realized by moulding.





EUROPEAN SEARCH REPORT

Application Number
EP 14 16 9211

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2 202 371 A (BRUCKMAN WILLIAM C) 28 May 1940 (1940-05-28) * page 1, line 33 - page 1, line 54; figure 1 *	1,9	INV. D06F39/00 A47L15/42
A	JP 2002 200522 A (HITACHI KOKI KK) 16 July 2002 (2002-07-16) * abstract *	1,9	
A	FR 1 574 878 A (HOOVER LIMITED) 18 July 1969 (1969-07-18) * page 9, line 7 - page 9, line 33; figure 12 *	1,9	
			TECHNICAL FIELDS SEARCHED (IPC)
			D06F A47L
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 September 2014	Examiner Fachin, Fabiano
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EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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18-09-2014

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2202371	A	28-05-1940	NONE	

JP 2002200522	A	16-07-2002	NONE	

FR 1574878	A	18-07-1969	DE 1760446 A1	14-10-1971
			FR 1574878 A	18-07-1969
			GB 1232383 A	19-05-1971

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EPO FORM P0459

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82