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(54) **Household appliance with knob**

Haushaltsgerät mit Knopf

Appareil ménager avec bouton

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EP 2 806 061 B1

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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] Document US 202 371 relates to an assembly for mounting molded actuating knob on a shaft.

[0007] Document JP 2002 200522 relates to blade for cutting of materials, wherein the surface of the blade is coated with copper plating.

[0008] 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.

[0009] 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.

[0010] 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.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] 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.

[0015] 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.

[0016] 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).

[0017] 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.

[0018] 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.

[0019] 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.

[0020] 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.

[0021] 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.

[0022] 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.

[0023] 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.

[0024] Conveniently the knob 3 comprises aesthetic

and decorative inserts, for example an annular element 4 in correspondence of the central grip zone 34.

[0025] 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.

[0026] Conveniently this household appliance comprises one or more of the characteristics previously described.

[0027] 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.

[0028] 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.

[0029] For example, for realizing the body 33 of the knob 3 a first mould that includes protrusions is used to generate the slots.

[0030] 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.

[0031] 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).

[0032] 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.

[0033] 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);
- characterized in that** said knob (3) comprises 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 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).
6. 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).
7. 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.
8. A method for producing a selector knob for a household appliance, comprising the step of realizing, by moulding, a body of a knob (3) comprising a perimeter portion (31) provided with slots; said method being **characterized in that** said slots are shaped like an alphanumeric character and **in that** said method further comprises the step of realizing, by co-moulding, inserts (30) inside said slots.
9. The method according to claim 8, **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 said body of the knob (3) is realized by moulding.

Patentansprüche

1. Haushaltsgerät, umfassend:

- eine Instrumententafel (2);
- einen Knopf (3), welcher an der Instrumententafel (2) angebracht ist;
- dadurch gekennzeichnet, dass** der Knopf (3) wenigstens einen Einsatz (30) umfasst, welcher im Verbund gegossen und wie ein alphanumerisches Zeichen geformt ist.

2. Haushaltsgerät nach Anspruch 1, **dadurch gekennzeichnet, dass** der Knopf (3) eine Mehrzahl von im Verbund gegossenen alphanumerischen Einsätzen (30) umfasst, welche entlang eines Umfangsabschnitts (31) des Knopfs (3) angeordnet sind.

3. Haushaltsgerät nach Anspruch 2, **dadurch gekennzeichnet, dass** der Knopf (3) eine zentrale Griffzone (34) umfasst, wobei der Umfangsabschnitt (31) des Knopfs (3) einen Umfangsring (310) umfasst, wobei die Mehrzahl von im Verbund gegossenen alphanumerischen Einsätzen (30) entlang des Rings (310) positioniert ist.

4. Haushaltsgerät nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Knopf (3) einen Sitz (32) zum Aufnehmen des wenigstens einen Einsatzes (30) umfasst.

5. Haushaltsgerät nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Knopf (3) eine Nut (35) umfasst, welche sich innerhalb des Knopfs (3) erstreckt, wobei der Einsatz (30) einen Boden der Nut (35) definiert.

6. Haushaltsgerät nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der wenigstens eine Einsatz (30) von einer anderen Farbe bezüglich den umgebenden Bereichen des Knopfs (3) ist.

7. Haushaltsgerät nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** es sich um einen Wäschetrockner, eine Geschirrspülmaschine oder eine Waschmaschine handelt, wobei der Knopf (3) ein Knopf zum Auswählen eines Trocknungs- oder Waschprogramms ist.

8. Verfahren zum Herstellen eines Auswahlknopfs für ein Haushaltsgerät, umfassend die Schritte eines Erzeugens durch Gießen eines Körpers eines Knopfs (3), umfassend einen mit Schlitzen bereitgestellten Umfangsabschnitt (31); wobei das Verfahren **dadurch gekennzeichnet ist, dass** die Schlitze wie alphanumerische Zeichen geformt sind, und dadurch, dass das Verfahren ferner den Schritt des Er-

zeugens durch Gießen im Verbund von Einsätzen (30) innerhalb der Schlitze umfasst.

9. Verfahren nach Anspruch 8, **dadurch gekennzeichnet, dass** der Vorgang eines Erzeugens durch Gießen im Verbund von Einsätzen (30) innerhalb der Schlitze in einer Form stattfindet, welche wenigstens einige Wände mit der Form gemeinsam hat, in welcher der Körper des Knopfs (3) durch Gießen erzeugt wird.

Revendications

1. Appareil ménager comportant :

- un tableau de bord (2) ;
- un bouton (3) appliqué sur le tableau de bord (2) ;
- caractérisé en ce que** ledit bouton (3) comprend au moins une pièce d'insertion (30) co-moulée et mise sous en forme de caractère alphanumérique.

2. Appareil ménager selon la revendication 1, **caractérisé en ce que** le bouton (3) comprend une pluralité de pièces d'insertion alphanumériques co-moulées (30), agencées le long d'une partie périphérique (31) du bouton (3).

3. Appareil ménager selon la revendication 2, **caractérisé en ce que** le bouton (3) comporte une zone centrale de prise (34), ladite partie périphérique (31) du bouton (3) comprenant une bague périphérique (310), ladite pluralité de pièces d'insertion alphanumériques co-moulées (30) étant placée le long de la bague (310).

4. Appareil ménager selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le bouton (3) comporte une embase (32) pour loger ladite, au moins une, pièce d'insertion (30).

5. Appareil ménager selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit bouton (3) comporte une gorge (35) qui s'étend à l'intérieur du bouton (3), ladite pièce d'insertion (30) définissant une partie de fond de ladite gorge (35).

6. Appareil ménager selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ladite, au moins une, pièce d'insertion (30) présente une couleur différente par rapport aux parties environnantes du bouton (3).

7. Appareil ménager selon l'une quelconque des revendications précédentes, **caractérisé en ce que** cet appareil est un sèche-linge, un lave-vaisselle ou

une machine à laver le linge, ledit bouton (3) étant un bouton permettant de sélectionner un programme de séchage ou de lavage.

8. Procédé permettant de fabriquer un bouton de sélection destiné à un appareil ménager, comportant l'étape comprenant le fait de réaliser par moulage le corps d'un bouton (3) comportant une partie périphérique (31 dotée de fentes ; ledit procédé étant **caractérisé en ce que** lesdites fentes sont mises en forme de caractère alphanumérique et **en ce que** ledit procédé comporte, de plus, l'étape comprenant de réaliser par co-moulage des pièces d'insertion (30) à l'intérieur desdites fentes.
9. Procédé selon la revendication 8, **caractérisé en ce que** la phase de réalisation des pièces d'insertion (30) par co-moulage à l'intérieur desdites fentes se produit dans un moule comportant au moins quelques parois communes avec le moule dans lequel ledit corps du bouton (3) est fabriqué par moulage.

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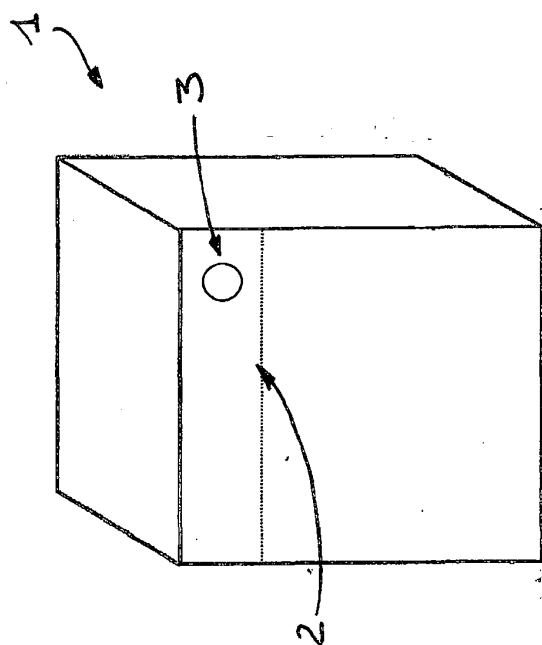


Fig. 1

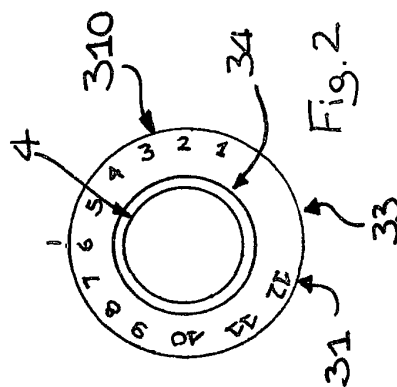


Fig. 2

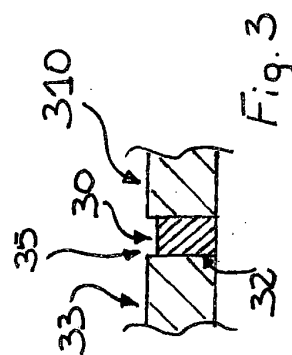


Fig. 3

REFERENCES CITED IN THE DESCRIPTION

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