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(54) **Control linkage with an eccentric adjustment pin, for water distribution in domestic washing machines.**

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Description

This invention relates to a control linkage for water distribution in domestic washing machines, the linkage being of the type comprising: a lever system which takes its movement from a conventional motor means (such as the programmer) incorporated in the machine and transfers it to a member which directs the water towards predetermined points, and means provided in said lever system for adjusting or presetting the lever system itself. In order for the water stream to be correctly directed towards the predetermined points, the linkage has to be preset. According to German utility model 8220740.2, in order to enable this presetting to be carried out, the linkage comprises two mutually engaged toothed sectors provided at the ends of two levers. The wash requirements can be properly set by adjusting the position of engagement between the two toothed sectors. However this known method has the defect of being relatively complicated and bulky, and during the assembly stage requires the assistance of specialists.

In FR-A-2 446 883 is disclosed a lever system where the adjusting and presetting means act directly on the fixed pivot of one lever.

The main object of the present invention is to provide a lever system of the indicated type which incorporates simple and compact adjustment and presetting means without this affecting its operability or its ease of adjustment, and which therefore requires no special experience by the personnel concerned. This and other objects which will be more apparent from the detailed description given hereinafter are attained by a linkage in which the adjustment means are provided in correspondence with an articulated joint of the lever system at which two of its elements converge, and comprise an eccentric pin on which one of said elements is pivoted and which is carried by a toothed male member housed in a toothed female seat provided in the other element, so that any variation in the angular position of the toothed male member relative to the female seat, implemented by adjusting the pin, results in an adjustment to the lever system. Advantageously, the female seat is diametrically slotted, so that the male member can be repositioned angularly in the seat without having to be extracted, and by simply rotating it in the seat, this being enabled by the presence of the slot, by the elastic characteristics of the material and by the geometrical shape of the seat. Thus the making of this adjustment causes a slight widening of the female seat followed by the elastic return of the seat into its locking position.

The invention will be more apparent from the detailed description given hereinafter by way of example with reference to the accompanying draw-

ing in which:

Figure 1 is a partial plan view of the linkage according to the invention;

Figure 2 is a section on the line II-II of Figure 1; and

Figure 3 is a detail of the articulated joint at which the compensation takes place.

With reference to the figures, the illustrated control linkage 1 for water distribution in domestic washing machines receives movement from a motor means, not shown but generally consisting of the programmer (timer) incorporated in the machine, and transfers it to a member 2 which directs a water stream towards predetermined points, such as the conventional detergent drawer incorporated in the machine.

This linkage comprises a first element or rod 3 of elastically deformable material (such as plastics) which is directly or indirectly connected at its non-visible end to said motor means, whereas at the end visible in Figure 1 it comprises a female seat or eyelet 4 which is diametrically slotted at 5, so that the eyelet is elastically deformable in the sense that its two sides (y) are able to diverge to a certain extent.

The inner face (x) of the eyelet is densely toothed.

The eyelet 4 houses a male member 6 in the form of a peripherally cylindrical body correspondingly toothed at Z. A discoidal part 7 is rigid with the male member and rests at its edge on a step 8 of the eyelet 4. The discoidal part 7 carries an eccentric pin 9 which is lowerly cylindrical at 9A and upperly square at 9B. With the use of a tool, the male member 6 can be rotated by means of the square portion 9B so as to reposition the eccentric pin 9 in the desired direction relative to the eyelet 4.

The end of a further element or lever 10 of the lever system is pivoted on the cylindrical portion 9A and receives movement from the first lever 3 through the pin 9.

At an intermediate point the lever 10 is pivoted on a fixed pin provided in the washing machine. The lever 10 terminates with an elongated hole 12 into which a pin 13 of the controlled member 2 penetrates.

In order to adjust or preset the lever system and thus set the reference position of the controlled member 2 it is necessary only for the operator to engage the tool on the square portion 9B and rotate the tool as required, so equally rotating the toothed male member 6 which consequently rotates in the eyelet 4, this widening sufficiently because of the presence of the slot. On termination of the rotation, the toothings re-engage, and the male member 6 and consequently the eccentric pin 9 are locked in their newly adjusted position.

Claims

1. A control linkage for water distribution in domestic washing machines, the linkage comprising: a lever system which takes its movement from a motor means (such as the programmer) incorporated in the machine and transfers it to a member which directs the water towards predetermined points; and means provided in said lever system for adjusting, presetting or compensating the lever system itself, characterized in that the adjustment means are provided in correspondence with an articulated joint at which two of the lever system elements (3, 10) converge, and comprise an eccentric pin (9) on which one (10) of said elements (3, 10) is pivoted and which is carried by a toothed male member (6) housed in a toothed female seat (4) provided in the other element (3), so that any variation in the angular position of the toothed male member (6) relative to the female seat (4), implemented by adjusting the pin (9), results in an adjustment to the lever system (3, 10).
2. A linkage as claimed in Claim 1, characterized in that the female seat (4) is represented by an eyelet which is slotted (at 5) and is provided in one (10) of said elements (3, 10) .

Revendications

1. Raccord de commande pour la distribution de l'eau dans des machines à laver électroménagères, raccord comportant: un système de leviers qui emprunte son mouvement à des moyens moteurs conventionnels (tels que le programmeur) incorporés dans la machine et qui le transmet à un élément dirigeant l'eau vers des points prédéterminés, et des moyens prévus dans ledit système de leviers pour ajuster ou préréglé le système de leviers lui-même, caractérisé en ce que les moyens d'ajustement sont prévus en correspondance avec un joint articulé où deux éléments (3,10) du système de leviers convergent, et en ce qu'ils comportent une tige excentrique (9) sur laquelle peut pivoter l'un (10) desdits éléments (3,10) et qui est supportée par un élément mâle denté (6) logé dans un siège femelle denté (4) prévu dans l'autre élément (3), de sorte que toute variation de la position angulaire de l'élément mâle denté (6) par rapport au siège femelle (4), réalisée par ajustement de la tige (9) provoque un ajustement au système de leviers (3,10).
2. Raccord selon la revendication 1, caractérisé

en ce que le siège femelle (4) est constitué par un oeillet présentant une fente (en 5) et prévu dans l'un (10) desdits éléments (3, 10).

Patentansprüche

1. Steuerhebelwerk zur Wasserverteilung in Haushaltswaschmaschinen, wobei dieses Hebelwerk die nachfolgenden Teile aufweist: ein Hebelsystem, das von einem Motormittel (wie von der Programmschaltuhr) in der Maschine bewegt wird und diese Bewegung auf ein Element überträgt, das das Wasser vorbestimmten Stellen zuführt; und wobei in dem genannten Hebelsystem Mittel vorgesehen sind zum Einstellen, Voreinstellen oder Ausgleichen des Hebelsystems selbst, dadurch gekennzeichnet, daß die Einstellmittel in Übereinstimmung mit einer Gelenkverbindung, an der zwei Hebelsystemelemente (3, 10) zusammentreffen, vorgesehen sind, und einen exzentrischen Stift (9) aufweisen, an dem eines (10) der genannten Elemente (3,10) gelenkig angeordnet ist und von einem außenverzahnten Element (6) in einem innenverzahnten Sitz (4) in dem anderen Element (3) unterstützt wird, so daß jede Änderung der Winkellage des außenverzahnten Elementes (6) gegenüber dem innenverzahnten Sitz (4), verursacht durch Einstellung des Stiftes (9), zu einer Einstellung des Hebelsystems (3,10) führt.
2. Steuerhebelwerk nach Anspruch 1, dadurch gekennzeichnet, daß der innenverzahnte Sitz (4) durch eine (bei 5) geschlitzte und mit einem (10) der genannten Elemente (3,10) versehene Öse gebildet wird.



