(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 933 463 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
07.05.2003 Bulletin 2003/19

(51) Int Cl.[7]: **D06F 37/26**

(21) Application number: **99500018.9**

(22) Date of filing: **29.01.1999**

(54) **System for fixing a shock absorber to a washing machine tank**

Vorrichtung zum Befestigen eines Dämpfers an dem Laugenbehälter einer Waschmaschine

Dispositif pour fixer un amortisseur à la cuve d'une machine à laver

(84) Designated Contracting States:
DE ES FR GB GR IT
Designated Extension States:
SI

(30) Priority: **02.02.1998 ES 9800195**

(43) Date of publication of application:
04.08.1999 Bulletin 1999/31

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EP 0 933 463 B1

Printed by Jouve, 75001 PARIS (FR)

Description

OBJECT OF THE INVENTION.

[0001] As is expressed in the title of the present descriptive report, the following invention consists on a system for fixing shock absorbers to a washing machine tank. Such shock absorbers may have, e.g., a fastening structure of plastic material, so that its two fastening extremities end both in ring-shaped bodies in whose inner part a gum piece and a metallic ferrule are lodged, being fixed to the washing machine tank by a screw that goes through the cited ferrule, and by both holes of a pair of opposite lugs.

[0002] One object of the invention is to propose a fixing system for shock absorbers to the tank, the material cost of its fixing elements is reduced, because of the drastic reduction of the number of elements necessary for doing a new fastening and hence the expenditur of work for the fixing is decreasing.

[0003] The proposed fixing system for shock absorbers to the tank is specially applicable with the closing system for plastic tank for washing machine of EP0789 1041A1 of the same applicant, and it is an object of the invention that in the same closing operation of the two plastic halves through a joining system by a press knock, the fixing from the pair of shock absorbers to the tank body takes place in relationship to the common perimeter of the two tank halves.

FIELD OF APPLICATION.

[0004] The system for fixing shock absorbers to a washing machine tank is specially applicable to those washing machine tanks that are made up of two plastic halves that in relationship to their joined open bases, one of them has some axial projections ended in a harpoon-like tip and the other half coinciding with the latter, has some earlike radial projections with an opening negative formed in respect to the axial projection, so that the fixing elements come into engagement by a press knock.

BACKGROUND OF THE INVENTION.

[0005] Conventionally, the fastening extremities of the shock absorbers used for damping oscillations of washing machine tanks are formed by a ring-shaped body of plastic material, whose inner structure is provided with a tubular gum and a also tubular metallic ferrule. For fastening the shock absorber to the washing machine tank, the corresponding extremity of the absorber is placed between a pair of radial lugs which are provided with respective passing holes. The fixing of the shock absorber positioned to the tank is finished by a fastening screw, crossing the holes of the lugs and the more inner metallic ferrule of the extremity of the shock absorber, and a securing nut with the interposition of a spring washer.

[0006] Due to the material cost of numerous pieces of this conventional fastening system (a gum and a metallic ferrule in the ring-shaped extremity of shock absorber, and a screw, a nut and a spring washer for the fixing), as well as the necessary amount of manpower for assembling this system will cause high costs.

[0007] On the other hand, this conventional fastening system can hold a strength of more than 1.000 kg., but is totally disproportioned compared with the low strength that it has to hold (about 6 kg.). These disadvantages have to be avoided by the invention.

DESCRIPTION OF THE INVENTION.

[0008] In the present report, a system for fixing shock absorbers to a washing machine tank, being of the kind of those shock absorbers whose fastening extremity is defined in a ring-shaped body, being fixed to a lug of the tank by boltlike fastening means, which tank is made up of two halves of plastic material which are joined one to another with its open ends turned towards.

This fixing system will avoid the disadvantages of conventional fastening system by the invention described below.

[0009] The tank has a pair of radial lugs, one of them respectiv in one of the two joining halves of the tank, the radial lugs being materialized during the manufacture process of the tank halves one to the respective other and both near to the common base. This invention is characterized in that the lug of one of the halves of the tank has a passing hole, and the second lug of the second half has a hollow cylindrical projection that is placed in an axial central position in relation to the passing hole of the first lug, while the ring-shaped body of the shock absorber for fixing to the tank is provided with an inner tubular body of gum.

[0010] In this way, when the two halves of the tank are joined through a simple press knock, the extremity of the shock absorber that have to be joined to the tank is placed coaxial to the hole which the radial lug of one of the tank halves is provided with. By the following press knock for joining the two halves of the tank, the axial central hollow cylindrical projection of the radial lug of the other tank half will get through the gum body of the extremity of the shock absorber and the opposite radial lug of the other tank half, while - in a further embodiment of the invention - some axial aligned ribs on the external surface of the cylindrical projection dig in the inner surfaces of the gum body and the passing hole of the opposite radial lug.

[0011] With the described structure, there is a substantial reduction of the number of elements for materializing the fixing, which reduces also the manpower required for assembling the fixing system of the invention, so that all that these results in an important economic saving without loss of reliability.

[0012] In order to complement the description which

is done hereinafter and with the object and with the purpose of providing a better understanding of the invention characteristics, the present descriptive report is accompanied by a set of drawings, in whose figures the most significant details of the invention are defined in an illustrative and not limitative way.

BRIEF DESCRIPTION OF THE DESIGNS.

[0013]

Figure 1 shows a sectioned view of the system for fixing a shock absorber to a washing machine tank, where the extremity of the shock absorber is ended in a ring-shaped body, provided with a tubular gum body and is fixed to the two joined plastic halves that form the washing machine tank.

Figure 2 shows a detailed view of a longitudinal section along the axis of the hollow cylindrical projection rooted from the corresponding radial lug of one of the tank halves.

Figure 3 shows - according to the transverse section I-I of figure 2 a sectional view of the hollow cylindrical projection with-in this view-visible axial aligned ribs on the external surface, of the cylindrical projection.

DESCRIPTION OF A PREFERRED EMBODIMENT.

[0014] In view of the above cited figures and in accordance with the adopted numbering, we can see as the system for fixing a shock absorber to the washing machine tank is made up of the respective radial lug 1 of one half 2 of the plastic tank. Preferably two lugs of this typ are distributed around the perimeter of the large opening of the shell of this tank half. This lug 1 is provided with a hollow cylindrical projection 3, while the other tank half 4 has likewise distributed - an equal number of radial lugs 5 provided with a passing hole, so that in the assembly of the two halves 2 and 4 that form the plastic tank, both of the cylindrical projections get through the passing holes in the assembly of the tank, so that the radial projections of both halves are standing one opposite to the other.

[0015] With this structure, the fixing of the shock absorbers 6 will be done in respect to the joint of both of the halves 2 and 4 that form the tank, whereby at the moment of the joining both of the tank halves, the corresponding extremities of the shock absorbers 6 are placed in relationship to the respective radial lugs 5 of one of the tank halves, and the other half 2 will be assembled by a simple press knock so that the cylindrical projections 3 provided with the hole 9 pass through the gum body 7 in the ring-shaped extremity of the shock absorbers 6 and through the hole in the lug of the other tank half 4.

[0016] On the other hand, as the axial cylindrical projection 3 of the corresponding radial lug 1 of the other tank half 2 has some axial aligned ribs 8 on its external surface, there is a perfect fixing between the cylindrical projections 3 and the corresponding possinghole without any additional element.

[0017] The system for fixing shock absorbers 6 to the washing machine tank is specially applicable with the object of EP 0 789 104 A1 of the same applicant, which shows a closing system for washing machine plastic tank which is made up of two plastic halves whose open bases are joined by locking means and a simple press knock, for which one of the tank halves has, in respect to its equal perimeter, one typ of the projections as an earlike projection with an opening negative formed in respect to the axial projection of the corresponding locking means as ended in a harpoon like tip of the other tank half has, so that the joint is completed when the extremity of the prolongation like a tip of harpoon remains related to the earlike prolongation of the corresponding projection. In the case of completed joint the the extremities of the shock absorbers are necessarily fastened between the respective two lugs of the tank.

[0018] Thus, there is realized an economic saving due to the smaller number of pieces necessary for the fastening of the shock absorbers as well as less of expenses of manpower for the assembly of shock absorbers with the washing machine tank.

Claims

1. System for fixing shock absorbers (6) to a washing machine tank, being of the kind of those shock absorbers whose fastening extremity is defined in a ring-shaped body, being fixed to a lug of the tank by boltlike fastening means, which tank is made up of two halves (2,4) of plastic material which are joined one to another with its open ends turned towards, said tank has a pair of radial lugs (1 and 5), one of them respectiv in one of the two joining halves (2 and 4) of the tank, the radial lugs being materialized during the manufacture process of the tank halves (2,4) one to the respective other and both near to the common base, and **characterized in that** the lug (5) of one of the halves of the tank (4) has a passing hole, and the second lug (1) of the second half (2) has a hollow cylindrical projection (3) that is placed in an axial central position in relation to the passing hole of the first lug (5), while the ring-shaped body of the shock absorber (6) for fixing if to the tank is provided with an inner tubular body (7) of gum.

2. Fixing system according to claim 1, **characterized in that** the ring-shaped body of the shock absorber (6) while fastening with the tank holves (2 , 4) is placed upon the axial central hollow cylindrical pro-

jection (3) and between the lug (5) of one of the halves (4) that is provided with a passing hole and the lug (1) of the second half (2) that is provided with the axial cylindrical projection (3) the external surface of the projection (3) of the lug (1) being provided with axial aligned ribs (8), so that the ribs (8) are geared into the gum body (7) of the extremity of the shock absorber (6) and into the inner surface of the passing hole of the radial lug (5) of the other tank half (4).

Patentansprüche

1. Vorrichtung zum Befestigen von Dämpfern (6) an dem Laugenbehälter einer Waschmaschine, wobei die Dämpfer, deren Befestigungsende einen ringförmigen Körper bildet, mit stiftähnlichen Befestigungsmitteln an einem Auge des Behälters befestigt sind, wobei der Behälter aus zwei Hälften (2, 4) aus Kunststoffmaterial beschaffen ist, die mit ihren offenen Enden einander zuweisend miteinander verbunden werden, wobei der Behälter ein Paar radial angeordneter Augen (1 und 5) aufweist, jeweils eins an einer der beiden Verbindungshälften (2 und 4) des Behälters, wobei die radial angeordneten Augen während des Herstellungsprozesses der Behälterhälften (2, 4) in Bezug zueinander und beide in der Nähe der gemeinsamen Grundfläche ausgeführt werden, **dadurch gekennzeichnet, dass** das Auge (5) einer der Behälterhälften (4) ein Durchgangsloch hat, und das zweite Auge (1) der zweiten Hälfte (2) einen hohl ausgebildeten zylindrischen Vorsprung (3) hat, der in einer axial zentralen Stellung in Bezug auf das Durchgangsloch des ersten Auges (5) angeordnet ist, während der ringförmige Körper des Dämpfers (6) zum Befestigen mit einem inneren röhrenförmigen Körper (7) aus Gummi ausgebildet ist.

2. Befestigungsvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** der ringförmige Körper des Dämpfers (6) beim Befestigung mit den Behälterhälften (2, 4) auf dem axial angeordneten mittigen hohlen zylindrischen Vorsprung (3) und zwischen dem Auge (5) einer der Hälften (4) angeordnet ist, die mit einem Durchgangsloch und dem Auge (1) der zweiten Hälfte (2) versehen sind, welche mit dem axial angeordneten zylindrischen Vorsprung (3) versehen ist, wobei die Außenfläche des Vorsprungs (3) des Auges (1) mit axial ausgerichteten Rippen (8) versehen ist, so dass die Rippen (8) in den Gummikörper (7) des Endes des Dämpfers (6) und in die Innenfläche des Durchgangsloches des radial angeordneten Auges (5) der anderen Behälterhälfte (4) hineingedrückt werden.

Revendications

1. Système de fixation d'amortisseurs (6) à une cuve de machine à laver, ces amortisseurs étant du type dont l'extrémité de fixation est définie par un corps de forme annulaire, fixés à une patte de la cuve par des moyens de fixation de type boulons, laquelle cuve est constituée de deux moitiés (2, 4) en matière plastique jointes l'une à l'autre, leurs extrémités ouvertes étant tournées vers le haut, ladite cuve possédant une paire de pattes radiales (1 et 5), l'une d'elles se trouvant respectivement dans l'une des deux moitiés jointes (2 et 4) de la cuve, les pattes radiales étant matérialisées pendant le procédé de fabrication des moitiés de cuve (2, 4), l'une sur l'autre respective, et les deux étant situées près de la base commune, et **caractérisé en ce que** la patte (5) de l'une des moitiés de la cuve (4) possède un trou de passage, et la deuxième patte (1) de la deuxième moitié (2) possède une saillie creuse cylindrique (3) disposée dans une position axiale centrale par rapport au trou de passage de la première patte (5), alors que le corps de forme annulaire de l'amortisseur (6) pour le fixer à la cuve est muni d'un corps intérieur tubulaire (7) en gomme.

2. Système de fixation selon la revendication 1, **caractérisé en ce que** le corps de forme annulaire de l'amortisseur (6), pendant sa fixation aux moitiés de cuve (2, 4), est disposé sur la saillie creuse, cylindrique, axiale, centrale (3) et entre la patte (5) de l'une des moitiés (4) munie d'un trou de passage et la patte (1) de la deuxième moitié (2) munie de la saillie axiale cylindrique (3), la surface exteme de la saillie (3) de la patte (1) étant munie de nervures axiales alignées (8), de sorte que les nervures (8) sont en prise dans le corps en gomme (7) de l'extrémité de l'amortisseur (6) et dans la surface intérieure du trou de passage de la nervure radiale (5) de l'autre moitié de cuve (4).

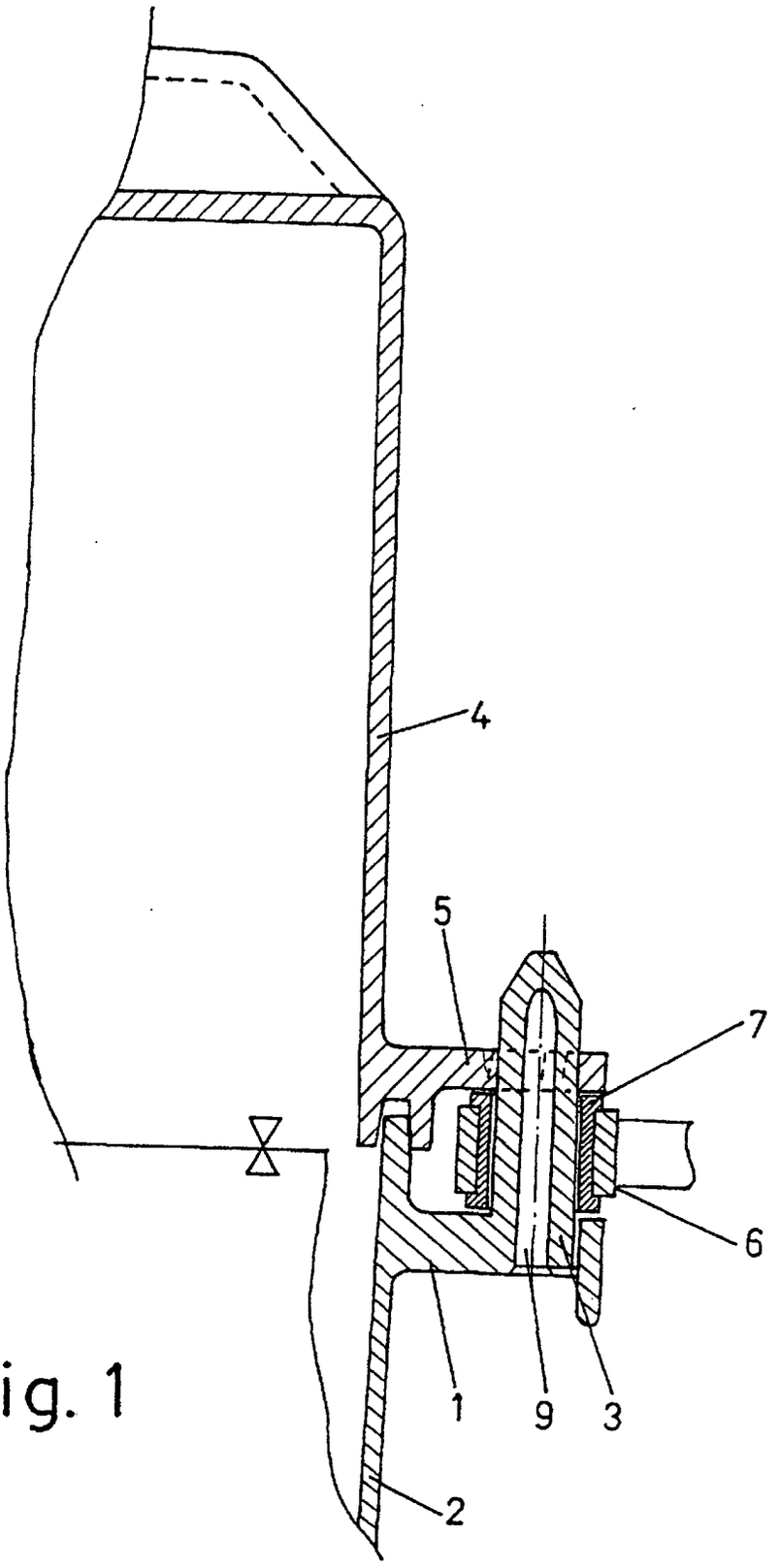

Fig. 1

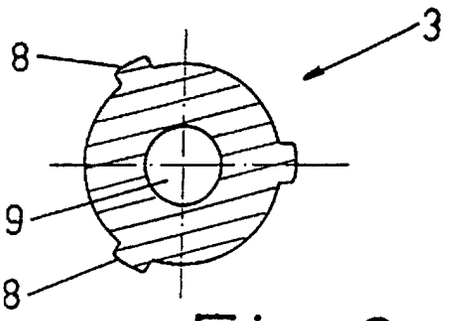

Fig. 3

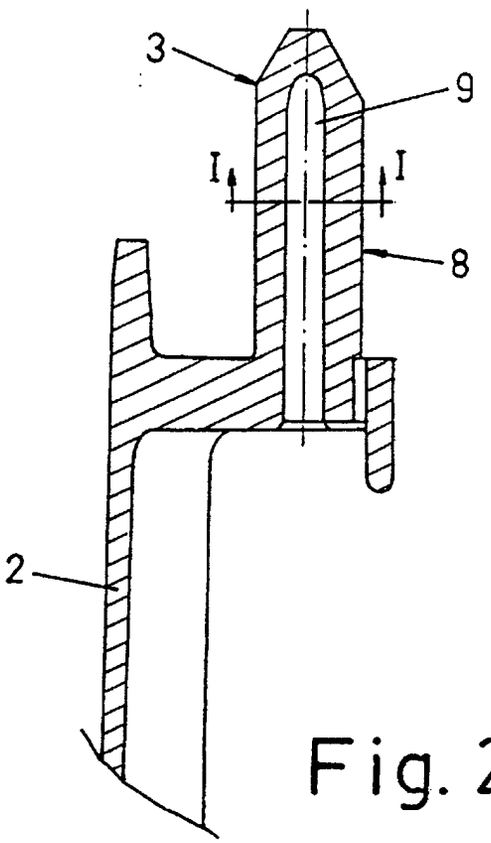

Fig. 2