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(54) Fixing system from the shock absorbers to the washing machines tank

(57) Fixing system from the shock absorbers to the washing machine tank, being of the kind of those shock absorbers whose fasteners extremes define a ring-shaped body in whose inner part there are a tubular body of gum and a metallic ferrule, being they fixed between a pair of lugs of the tank, by means of an screw and its corresponding nut, having a pair of radial lugs (1) and (5) predicted in each one of the two halves (2) and (4) that will be joined for forming the tank, and materialized in the manufacture process of the same ones in relationship to the joining base, so that the lug (5) of one of the tank halves has a passing hole and the second lug (1) of the second half (2) has a hollow cylindrical projection (3) in an axial central position whose extemal surface is endowed of some axial ribs (8), while the ring-shaped extreme of the shock absorber (6) of fixing to the tank has an only ring-shaped body (7) of gum.

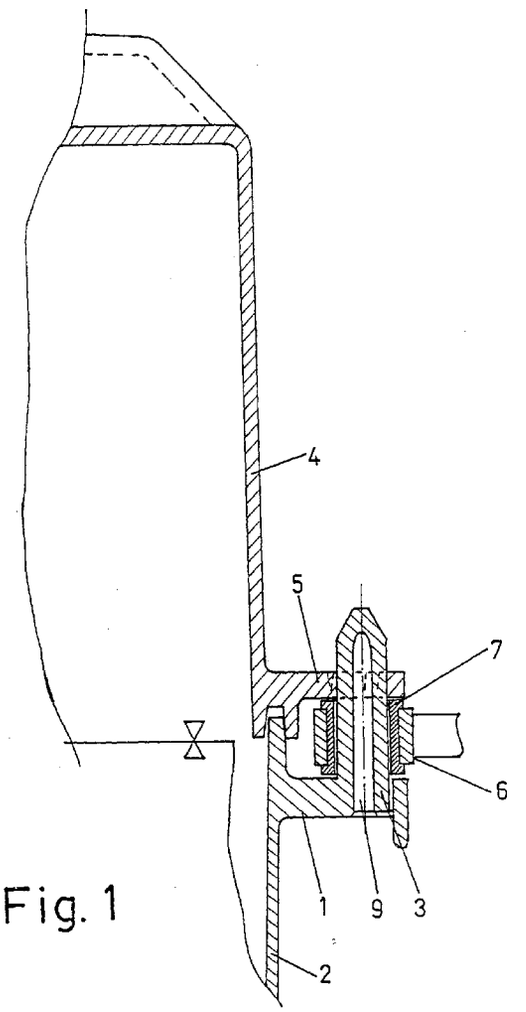

Fig. 1

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Description

OBJECT OF THE INVENTION.

[0001] As is expressed in the title of the present descriptive report, the following invention consists on a fixing system from the shock absorbers to the washing machine tank, being of the kind of those shock absorbers that have a fastening structure of plastic material, so that its two fastening extremes are finished off by both ring-shaped bodies in whose inner part a gum piece and a metallic ferrule are lodged, being fixed to the washing machine tank by an screw that goes through the cited ferrule, and by both holes of a pair of confronted lugs, being the extreme of the shock absorber that has to be fastened to the tank between both lugs, so that by means of the present fixing system, the fastening from the shock absorber extreme to the tank is done during the own operation of union between both plastic halves of the tank.

[0002] For it, one of the two halves of the tank has a radial lug with a cylindrical axial prolongation endowed of some axial ribs in its external surface, while the shock absorbers has not the most inner metallic ferrule in the angular fastening extreme.

[0003] Through the proposed fixing system from the shock absorbers to the tank, the material cost of the fixing elements is reduced, because of the drastic reduction of the amount of elements necessary for doing the cited fastening and because of the labour is not necessary for the fixing.

[0004] The proposed fixing system from the shock absorbers to the tank is specially applicable with the object of the Invention Patent P9600222 of the same applicant, in which a closing system for plastic tank of washing machine is described and claimed, so that in the own 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 union perimeter of the two tank halves.

FIELD OF APPLICATION.

[0005] The fixing system from the shock absorbers to the washing machine tank is specially applicable for those washing machine tanks that are made up of two plastic halves that in relationship to their union open bases, one of them has some axial projections finished off like a tip of harpoon and the other half, coinciding with them, has some radial projections like a inverted U, so that the fixing takes place by a press knock, in whose process the pair of shock absorbers will be fixed only placing the fastening extreme in the corresponding fixing point.

BACKGROUND OF THE INVENTION.

[0006] Conventionally, the fastening extremes of the shock absorbers used for the subjection of the washing machines tanks are finished off by a ring-shaped body of plastic material, whose inner part has a tubular gum and a metallic ferrule also tubular so that for its fastening to the washing machine tank, the corresponding extreme of the same one is placed between a pair of radial lugs that are endowed of the respective passing holes.

[0007] Once the extreme of the shock absorber has been placed thus, a fastening screw is placed crossing the holes of the lugs and the more inner metallic ferrule of the extreme of the shock absorber, so that it is fixed by a nut with the interposition of a slotted washer.

[0008] This fastening system, because of the material cost of the amount of pieces that form the same one (a gum and a metallic ferrule in the ring-shaped extreme of shock absorber, and an screw, a nut and a slotted washer for the fixing), as well as the necessary amount of labour, mean a high cost.

[0009] In the other hand, the used fastening system can hold a strength greater than 1.000 kg., being totally disproportioned compared with the lowest strength that it has to hold (around 6 kg.).

DESCRIPTION OF THE INVENTION.

[0010] In the present report, a fixing system from the shock absorbers to the washing machine tank is described, being of the kind of those shock absorbers whose fastening extremes define a ring-shaped body, in whose inner part a body of gum and a metallic ferrule are placed, being they fixed between a pair of radial lugs of the tank by means of an screw and the corresponding nut, so that the tank is defined by two halves and because of their union, the shock absorbers remains fastened by one of its extremes, being the fixing system formed by a pair of radial lugs predicted in each one of the two joining halves of the plastic tank, that are materialized in relationship to the baseof joining, so that one of the lugs of one of the tank halves has a passing hole and the second lug of the second half has a cylindrical projection in an axial central position whose external surface is endowed of some axial ribs, while the ring-shaped extreme of the shock absorber that fixed to the tank has an only ring-shaped gum body in its inner part.

[0011] In this way, when the two halves of the tank are joined through a simple press knock, the extreme of the shock absorbers that have to be joined to the tank is placed in relationship to the radial lug endowed of a passing hole of one of the tank halves, so that with the press knock for joining the two halves of the tank, the axial central hollow cylindrical projecting of the radial lug of a tank half, whose extemal surface is endowed of some axial ribs, is geared in the gum body of the extreme of the shock absorber and in the opposed radial lug of the other tank half.

[0012] With the described structure, there is a substantial reduction of the amount of elements for materializing the fixing, which means an important economic

saving both of material and labour, that is almost inexistent with this system, so that all that means an important economic saving without decrease of reliability.

[0013] 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.

[0014] Figure 1 .- It shows a sectioned view of the fixing system from the shock absorbers to the washing machine tank, where it is observed as the union extreme of the shock absorber is finished off by a ring-shaped body, is endowed of a gum ferrule and remains in relationship to the union of the two plastic halves that form the washing machine tank, doing the fixing through a cylindrical axial projection of a radial lug of one of the tank halves, so that the cited cylindrical axial projection is endowed of some axial ribs in its extemal surface, and it is inserted into the gum ferrule of the ring-shaped extreme of the shock absorber and into the corresponding hole of the radial lug of the other tank half.

[0015] Figure 2 .- It shows a detailed view of a longitudinal diametrical section of the hollow cylindrical projection whose extemal surface is endowed of the corresponding radial lug of one of the tank halves.

[0016] Figure 3.- According to the transverse cut I-I of the previous figure, it shows a sectioned view of the hollow cylindrical projection in the corresponding radial lug of one of the tank halves, where it is observed the axial ribs in its extemal surface.

DESCRIPTION OF A PREFERRED EMBODIMENT.

[0017] In view of the above cited figures and in accordance with the adopted numbering, we can observe as the fixing system from the shock absorbers to the washing machine tank is made up of the respective radial lugs (1) of a half (2) of the plastic tank that are endowed of some hollow cylindrical projections (3), while the other tank half (4) has some radial lugs (5) endowed of a hole, so that in the assembly of the two halves (2) and (4) that form the plastic tank, they correspond between them in the assembly of the tank, so that the radial projections of both halves are materialized in relationship to the union open base of both tank halves.

[0018] With this structure, the assembly of the shock absorbers (6) will be done in relationship to the union between both halves (2) and (4) that form the tank, so that at the moment of the union betwen both tank halves, the corresponding extreme of the shock absorbers (6) is placed in relationship to the radial lug (5) of one of the tank halves, and the other half (2) will be assembled by a simple press knock so that the cylindrical projection (3) endowed of the hole (9) pass through the gum body (7) in the ring-shaped extreme of the shock absorber (6) and through the hole in the lug of the other tank half (4).

[0019] In the other hand, as the axial cylindrical projection (3) of the corresponding radial lug (1) of the other tank half (2) has a whole of axial ribs (8) in its extemal surface, there is a perfect fixing without any additional element.

[0020] The fixing system from the shock absorbers (6) to the washing machine tank is specially applicable with the object of the Invention Patent P9600222 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 between them by means of a simple press knock, for which one of the tank halves has, in relationship to its union perimeter, a projection like a reversed U, with a posterior jutting out prolongation, while the other tank half has, in relationship to the cited projections like a reversed U, some axial projections that are finished off like a tip of harpoon , so that the union takes place when the extreme of the prolongation like a tip of harpoon remains related to the jutting out prolongation of the corresponding projection like a reversed U, since the fastening from the extremes of the shock absorbers to the tank also takes place during the cited operation of assembly.

[0021] Thus, there is an economic saving because of the lesser amount of pieces neccesary for the fastening of the shock absorbers as well as because the amount of labour is almost inexistent, so that definively there is a very important economic saving.

Claims

1. FIXING SYSTEM FROM THE SHOCK ABSORBERS TO THE WASHING MACHINE TANK, being of the kind of those shock absorbers whose fastening extremes define a ring shaped body in whose inner part there are a tubular body of gum and a metallic ferrule , being they fixed between a pair of lugs of the tank, by means of an screw and its corresponding nut, so that the tank is made up of two halves and when they are joined, the corresponding shock absorber is fastened through one of its extremes. This fixing system is characterized because it has a pair of radial lugs (1) and (5) in each one of the two joining halves (2) and (4) of the tank, being they materialized during the manufacture process of the same ones in relationship to the union base, so 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 and whose extemal surface is endowed of some axial ribs (8), while the ring-shaped extreme of the shock absorber (6) of fixing to the tank has an only ring-shaped body (7) of gum.

2. FIXING SYSTEM FROM THE SHOCK ABSORBERS TO THE WASHING MACHINE TANK according to the first claim and characterized because at the union moment between the two halves (2) and (4) of the tank by a press knock, the extreme of the shock absorber (6) of union to the tank is placed in relationship to the lug (5) of one of the halves that is endowed of a passing hole, so that with the press knock for the union between the two halves (2) and (4) that form the tank, the axial central hollow cylindrical projecting (3), whose extemal surface is endowed of the axial ribs (8), in the radial lug (1) of a half of the tank is geared into the gum body (7) of the extreme of the shock absorber (6) and into the radial lug (5) of the other tank half (4).

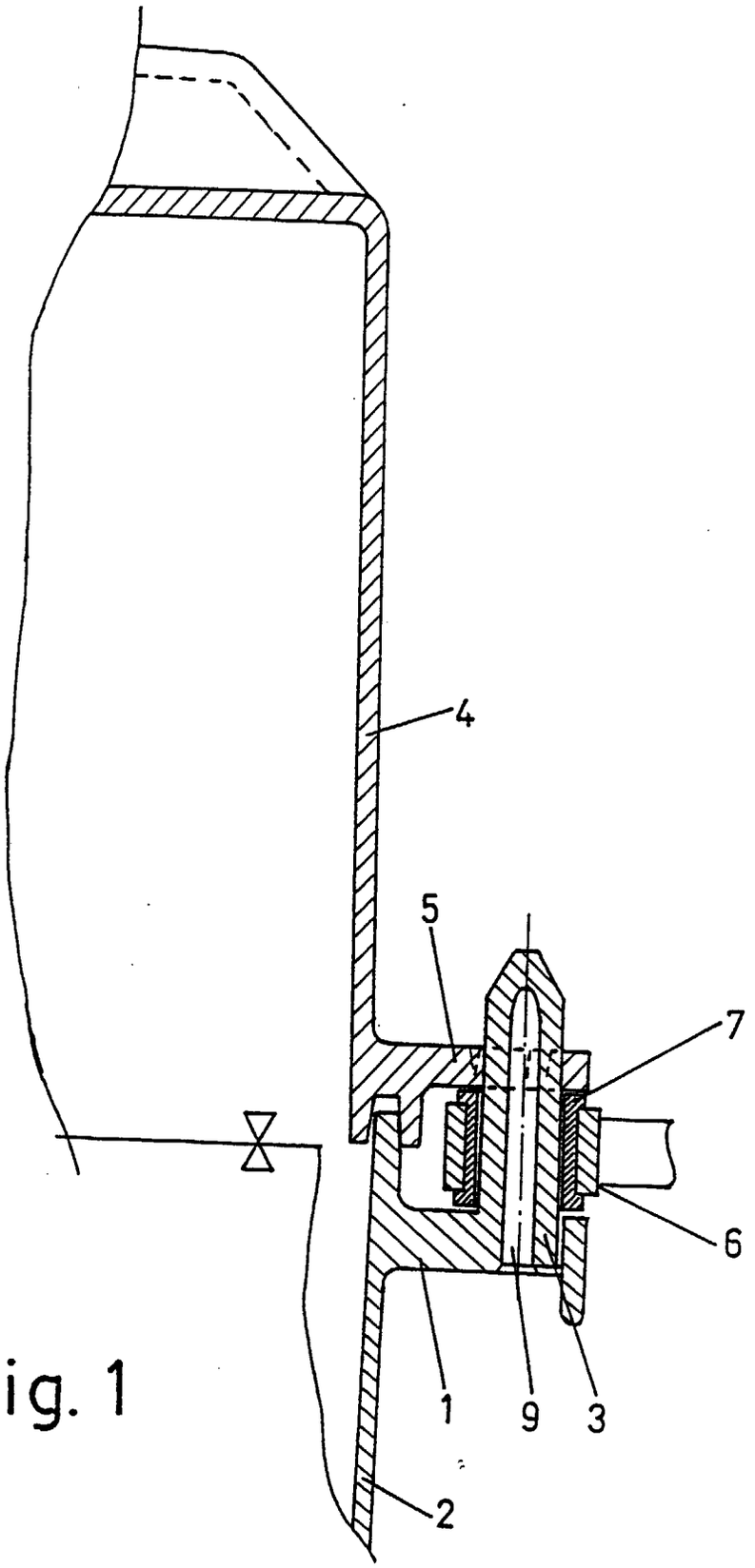

Fig. 1

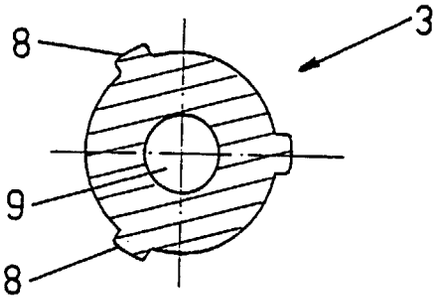

Fig. 3

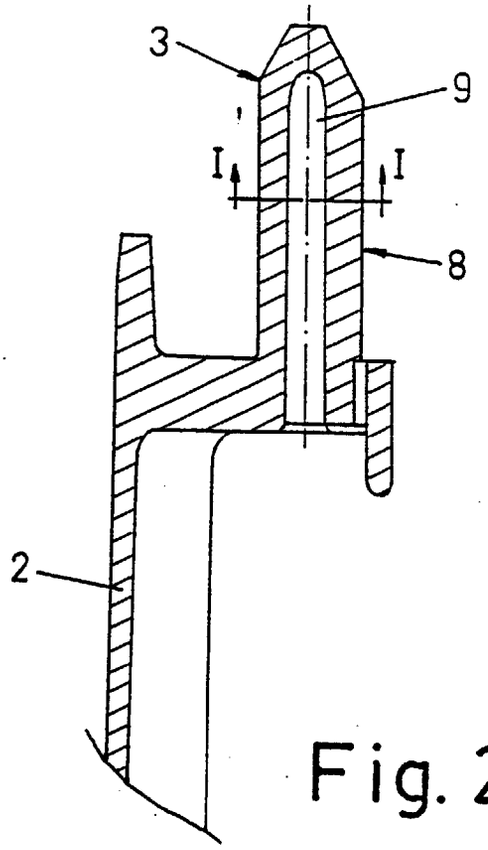

Fig. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 50 0018

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP 0 497 109 A (ZANUSSI ELETTRODOMESTICI S.P.A.) 5 August 1992 * column 2, line 40 - line 49; figures 1,2 *	1	D06F37/26
A	EP 0 789 104 A (BALAY S.A.) 13 August 1997		

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29 April 1999	Courrier, G

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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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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29-04-1999

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