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(54) **Anchorage device of the washing machine counterweight**

Verankerungsvorrichtung für den Ballast einer Waschmaschine

Dispositif d'ancrage du ballast d'une machine à laver

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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 of an anchorage system for washing machine counterweights, being of the kind of those in which the counterweight is made of a concrete body, with a general shape like a circular and semirectangular crown that is provided with a lot of orifices in relationship to its basis, for allowing its fixing to the front plate of the tank of the washing machine, that remains in relation with the door of access for the clothes.

[0002] The anchorage system is based on the combination of pairs of pieces, so that one of them is integrated into the concrete body and the other piece is integrated into the tank, so that the piece which is integrated into the concrete body is in general of a tubular shape and has an internal body that will be inserted into the piece that is joint to the tank, the fixing of both of the pieces is materialized in that one of the pieces is made of a hollow cylindrical body that has several independent branches. For that purpose the other piece will be inserted between these independent branches by spreading them.

[0003] On the other hand, the pieces that are integrated into the concrete body have pads on their external upper base for avoiding breaks of the concrete bodies when they are stacked.

[0004] There is a considerable economical saving by using the anchorage system according to the invention, because the fixing of the pieces is achieved by simply pressing on one of the pieces. There is no need for any screws to materialize this anchorage, which results in saving labour and material.

### FIELD OF APPLICATION

[0005] As expressed before, the present anchorage system is applied in fastening the front counterweight of a washing machine tank, so that the cited counterweight is made of a concrete body like a circular crown with a rectangular sectional view, that is provided with several orifices for its fixing by some corresponding screws to the front plate of the washing machine tank as it remains around the door.

### BACKGROUND OF THE INVENTION

[0006] Conventional front counterweights of washing machine tanks are formed by a circular concrete body that is provided with several passing orifices for fixing the counterweights to the tank front plate by so many screws as orifices are existing (DE 42 38 686 C1 and DE 42 38 685 A1).

[0007] In this way, the concrete bodies will often get broken because of their fragility. Besides, their orifices

do not stay perfectly clean.

[0008] Thus, the fixing exclusively made by tightened screws increases the costs for the screws and for mounting the counterweights of the state of the art.

### DESCRIPTION OF THE INVENTION

[0009] An anchorage system for the front counterweight of the washing machine tanks is described in the present report, so that it is being applicable for the anchorage of a concrete body that is fixed to the frontal part of the washing machine tank, whereby the counterweight is provided with at least one piece with a general cylindrical tubular internal shape with a diminishing diameter towards the base of the washing machine tank, that the washing machine tank is provided with at least one piece with a general cylindrical shape, being formed of branches for the introduction into a piece of the counterweight, and that the anchorage system comprises a body of anchorage for the insertion between the branches of the piece of the washing machine tank to open them in order to join them to the internal surface of a piece of the counterweight, the body of anchorage being fixed to the piece through flanges that can be broken.

[0010] The piece of the washing machine tank can be obtained during the process of injection moulding of the plastic tank, while the second piece is joined to the concrete body which acts as a counterweight.

[0011] The pieces that are integrated into the concrete body have cylindrical tubular internal shapes with a diminishing internal diameter towards the front plate of the washing machine tank. At their external end the pieces are joined to the body of anchorage by several flanges which may be destroyed, if the body of anchorage is pushed down between the branches of the pieces of the tank during the fixing process. Thus, when the internal body of anchorage presses from the inside onto the wall of the pieces of the concrete body, it will materialize the anchorage with the joint pieces of the tank.

[0012] The body of anchorage that is joint to the piece of the concrete body is defined by a cylindrical tubular external stretch and a second stretch which has a conical shape, being provided with an axial threaded central orifice, so that its conical shape makes it easy to join the body of anchorage to the piece of the tank for obtaining the anchorage of the counterweight to the tank.

[0013] On the other side, for securing the fixing of the elements of anchorage one to another the body of the tank has an axial threaded orifice in its base that coincides with the orifice of the internal body as a part of the piece of counterweight so that the piece of tank and the internal body can be joint together forming a uniform screw hole.

[0014] In further development of the invention the piece of the counterweight has a projection on its external upper base and carrying pads. Thus, if the concrete body is stacked for stock or for transportation the concrete bodies will be protected against damage like

breaking.

[0015] In order to complement the description which is made hereinafter and for the purpose of providing a better understanding of its characteristics, the present descriptive report is accompanied by a set of drawings, in whose figures the most significant details of the invention are represented.

## BRIEF DESCRIPTION OF THE DRAWINGS

### [0016]

Figur 1 shows a sectional view, according to a diametrical plane, of the piece that is integrated into the concrete body that serves as a counterweight, so it is to see the internal body which is defined by a first stretch with a tubular cylindrical shape and a second conical stretch extended more to the inner space of the piece of counterweight and is provided with an axial threaded central orifice.

Figur 2 shows a sectional view, according to a longitudinal plane, of the piece that is joint to the tank or integrated into it. This piece has a tubular shape in its lower part with a threaded orifice, and in its upper part it has several independent branches which generally set forth the tubular shape a space inbetween.

Figur 3 shows a sectional view, according to a diametrical longitudinal plane, of the pairs of pieces after making the anchorage, so it is to see how the internal body, which is pushed into the piece that is integrated into the concrete body, has been separated from the flanges and inserted among the branches of the piece of the tank, opening the branches for pressing over the internal surface of the tubular piece of the concrete body, materializing the fixing.

## DESCRIPTION OF A PREFERRED EMBODIMENT

[0017] In view of the above cited figures and according to the used numbering, it is to see how the piece 2 of general tubular cylindrical shape is integrated into the casted concrete body 1. This piece 2 is provided with a projection 3 on its external upper base. This projection 3 carries pads 4 for protecting the concrete bodies 1 on a stack against shocks and breaking. The upper internal surface 5 of the piece 2 converges to the internal base, finishing in a cylindrical stretch.

[0018] The concrete body 1 has in general an annular shape and is fixed to the front plate 10 of the tank so that it serves as a counterweight.

[0019] In the inner space of the cited piece 2 there is a second body 6 that is joint to the piece 2 by several

flanges 7 which can be broken easily by pushing the second body 6 down into the inner space of the piece 2. The second body 6 is defined by a tubular stretch and a conical stretch which is provided with a threaded axial central orifice 8.

[0020] On the tank side there is a piece 9 with in general hollow cylindrical shape, which is an integrated part of the tank of the washing machine. In relationship to one of its bases, this piece has a projection 10 as a part of the front plate of the washing machine tank. The piece 9 is formed by a tubular stretch that is provided with an internal threaded axial central orifice 11 in form of a blind hole, and by an external stretch that is defined by several branches 12 separated from each other by a groove.

[0021] In this way, the assembly of the concrete body 1 with the front plate 10 of the washing machine tank will be materialized by positioning the pieces 9 of the tank to the internal surface of the tubular pieces 2 of the counterweight, whereby the internal bodies 6 are in relation with the groove between the branches 12, and then pushing said bodies 6 deeply into the space between the branches 12 while the flanges 7 are breaking and thus the bodies 6 are separating from the pieces 2 and causing the inclination of the branches 12 against the internal surfaces 5 of the pieces 2, getting a perfect anchorage as can be seen in figure 3.

[0022] Likewise, for securing the fixing of the elements of anchorage, the body 6 can be provided with a threaded axial orifice 8 so that it corresponds to a threaded orifice 11 of the piece 9 for materializing their fixing by a screw (not shown).

[0023] Thus, the assembly of the tank front plate 10 with the concrete body 1 is done in a safe, economical and fast way. The concrete body 1 will serve as a counterweight of the washing machine tank. Besides, the pads 4 of the external surface of the pieces 2 avoid breaking of the bodies 1 when they are stacked and/or transported.

## Claims

1. Anchorage system for washing machines counterweights (1), being applicable for the anchorage of a concrete body that is fixed to the front base of the washing machine tank, **characterised in that** the counterweight (1) is provided with at least one piece (2) with a general cylindrical tubular internal shape with a diminishing diameter towards the base of the washing machine tank, that the washing machine tank is provided with at least one piece (9) with a general cylindrical shape, being formed of branches (12), for the introduction in a piece (2) of the counterweight (1), and that the anchorage system comprises a body (6) of anchorage for the insertion between the branches (12) of the piece (9) of the washing machine tank to open them in order to join them to the internal surface of a piece (2) of the

counterweight (1), the body (6) of anchorage being fixed to the piece (2) through flanges (7) that can be broken.

2. Anchorage system according to claim 1, **characterized in that** the body (6) of anchorage that is joined to the piece (2) is defined by a cylindrical tubular external stretch and a second stretch which has a conical shape, being provided with an axial threaded central orifice (8).
3. Anchorage system according to claim 1 or 2, **characterized in that** the body (9) has an axial threaded orifice (11) in its base that coincides with the orifice (8) of the body (6) so that the piece (9) and the body (6) can be joint together using a threaded screw.
4. Anchorage system according to one of the foregoing claims, **characterized in that** the piece (2) has a projection (3) on its external upper base carrying pads (4).

#### Patentansprüche

1. Verankerungsvorrichtung für den Ballast einer Waschmaschine (1) zum Verankern eines Betonkörpers, der an dem vorderen Grundkörper des Laugenbehälters der Waschmaschine befestigt ist, **dadurch gekennzeichnet, dass** der Ballast (1) mit mindestens einem Teil (2) mit einer allgemein zylindrischen, röhrenförmigen Innenform mit zum Grundkörper des Laugenbehälters der Waschmaschine kleiner werdendem Durchmesser ausgebildet ist, dass der Laugenbehälter der Waschmaschine mit mindestens einem Teil (9) mit einer allgemein zylindrischen Form versehen ist, das aus Armen (12) gebildet ist, um in ein Teil (2) des Ballastes (1) eingeführt zu werden, und dass die Verankerungsvorrichtung einen Verankerungskörper (6) zum Einführen zwischen die Arme (12) des Teils (9) des Laugenbehälters der Waschmaschine umfasst, um sie zu öffnen, um sie mit der Innenfläche eines Teils (2) des Ballastes (1) zu verbinden, wobei der Verankerungskörper (6) über Flansche (7) mit dem Teil (2) befestigt ist, die zerbrochen werden können.
2. Verankerungssystem nach Anspruch 1, **dadurch gekennzeichnet, dass** der Verankerungskörper (6), der mit dem Teil (2) verbunden wird, durch eine zylindrische, röhrenförmige Außenstrecke und eine zweite konisch ausgebildete Strecke begrenzt ist, die mit einer axial-mittigen Gewindeöffnung (8) versehen ist.
3. Verankerungsvorrichtung nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Körper (9) mit einer axialen Gewindeöffnung (11) in seinem

Grundkörper versehen ist, die mit der Öffnung (8) des Körpers (6) zusammentrifft, so dass das Teil (9) und der Körper (6) mittels der Gewindeschraube miteinander verbindbar sind.

4. Verankerungsvorrichtung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das Teil (2) einen Vorsprung (3) auf seinem äußeren oberen Grundkörper hat, der Auflagen (4) trägt.

#### Revendications

1. Dispositif d'ancrage pour contrepoids (1) de machine à laver, applicable pour l'ancrage d'un corps en béton qui est fixé à la base avant de la cuve de machine à laver, **caractérisé en ce que** le contrepoids (1) est équipé d'au moins une pièce (2) ayant une forme interne générale tubulaire cylindrique avec un diamètre décroissant vers la base de la cuve de machine à laver, **en ce que** la cuve de machine à laver est équipée d'au moins une pièce (9) avec une forme générale cylindrique étant formée de branches (12), pour l'introduction dans une pièce (2) du contrepoids (1), et **en ce que** le dispositif d'ancrage comprend un corps (6) d'ancrage pour l'insertion entre les branches (12) de la pièce (9) de la cuve de machine à laver pour les ouvrir afin de les rattacher à la surface interne d'une pièce (2) du contrepoids (1), le corps (6) d'ancrage étant fixé à la pièce (2) par l'intermédiaire de brides (7) qui peuvent être brisées.
2. Dispositif d'ancrage selon la revendication 1, **caractérisé en ce que** le corps (6) d'ancrage qui est rattaché à la pièce (2) est défini par une extension tubulaire cylindrique externe et une deuxième extension qui a une forme conique, étant équipée d'un orifice axial central taraudé (8).
3. Dispositif d'ancrage selon la revendication 1 ou 2, **caractérisé en ce que** le corps (9) a un orifice axial taraudé (11) dans sa base qui coïncide avec l'orifice (8) du corps (6) afin que la pièce (9) et le corps (6) puissent être raccordés ensemble à l'aide d'une vis.
4. Dispositif d'ancrage selon l'une quelconques des revendications précédentes, **caractérisé en ce que** la pièce (2) présente une saillie (3) sur sa base supérieure extérieure supportant des patins (4).

