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Description

The invention relates to mop wringers and buckets for use in wet mopping. It is particularly concerned with wringers of the type which mount on a mop bucket and which are manually operated, by means of a lever handle, to squeeze out into the bucket a mop inserted in the wringer.

Known wringers of the foregoing type mount on the rear wall of the bucket, which is severely stressed with a buckling force which has to balance the operating force applied to the wringer handle. Thus the length of the handle which can be used is limited by the necessity of avoiding over-stressing of the bucket wall, which in turn limits the squeeze pressure which can be applied to a mop. A further disadvantage is that yielding of the bucket wall results in a non-positive yielding "feel" when applying the operating force to the handle.

EP-A-0254507 shows a wringer arrangement of this known type where the wringer has a mounting structure for engagement with the rear wall of the bucket to mount the wringer removably thereon. The rear wall of the bucket provides the sole support for the wringer and is therefore severely stressed with a buckling force when the wringer is operated.

US-A-1351805 showed an alternative form of mop wringer for mounting on a conventional circular bucket. The wringer has a mounting structure for removably mounting the wringer on the wall of the bucket, and also includes a transverse member with downwardly bent end portions which is spaced from the mounting structure and bears on the top edges of the wall of the bucket, away from the mounting structure, to provide additional support.

A principle aim of the invention is to provide a mop wringer arrangement having improved support for the wringer on the bucket to enable a longer operating handle to be employed with a resultant improved wringing-out action.

According to the invention there is provided a mop wringer arrangement comprising a bucket having a rear wall, side walls, and a front wall; a wringer having a mounting structure for engagement with the rear wall of the bucket to mount the wringer removably on the rear wall of the bucket; the wringer including pressure applying means operatively connected to a lever-type handle which is movable from a resting position to a wringing position so that, in use, movement of the handle from said resting position to said wringing position applies a squeeze pressure to a mop inserted in the wringer; characterised in that the bucket includes support ledges integrally formed on the internal surfaces of the side walls respectively of the bucket and spaced below the upper edges of the side walls, and in that the wringer includes spaced feet

which, when the wringer is mounted on the rear wall of the bucket, lie inwardly of the side walls respectively of the bucket and engage and rest on said support ledges, whereby the wringer is partly supported by said ledges.

As the operating moment applied to the wringer handle is no longer withstood by bending and buckling forces applied to the rear wall of the bucket, but by an upward tension at the rear wall and downward compressive forces at the side walls, a longer handle can be used and a more solid "feel" is provided as the operating force is applied. The longer leverage thus obtained enables a wringer to be manufactured with which the average cleaning operative can achieve a completely wrung-out mop, whereas with present handle lengths mops are commonly incompletely wrung out. At the same time thinner bucket walls will often suffice with a moulded bucket, thus saving on the cost of the moulding material and providing a cheaper bucket construction.

Each said support ledge may be formed by a generally horizontal step in the respective side wall.

Each support ledge preferably extends along only a part of the respective side wall of the bucket. For example, each support ledge may extend from the rear wall of the bucket forwardly along the length of the respective side wall and only part way towards the front wall of the bucket.

Each support ledge may be of substantially constant width and extend parallel to its respective side wall.

As the length of the handle is increased the front floor support of the bucket may have to be moved forwardly to prevent the bucket tipping over towards the operative when operating the wringer. Thus the bucket may have two floor support outriggers adjacent said front wall of the bucket, and the handle preferably has a length to extend forwardly beyond the main body volume of the bucket when in said wringing position.

The invention will now be further described with reference to the accompanying drawings in which:

Figure 1 is a perspective view of a hand-operated wringer mounted on a mop bucket, not in accordance with the invention, but illustrating certain features of a preferred embodiment of the invention;

Figure 2 diagrammatically illustrates a rear mounting of the wringer of Figure 1;

Figures 3A and 3B are respectively top and front views of a cross member of the wringer arrangement of Figures 1 and 2;

Figures 4 and 5 are partial views illustrating another wringer arrangement (not in accordance with the invention);

Figure 6 is a plan view of a bucket of a wringer arrangement in accordance with the present invention; and

Figure 7 is a diagrammatic front view with the bucket sectioned on the line X-X in Figure 6.

Figure 1 illustrates a hand-operated wringer 1 with an operating lever handle 2 and which mounts on top of a mop bucket 3 as shown. Movement of the handle from a generally upright resting position (not shown) to the more or less horizontal and forwardly projecting position ("wringing" position) illustrated applies a squeeze pressure to a mop such as 4, inserted in the wringer 1 from above. The wringer 1 is of conventional general construction and hence is not further described herein except for the novel features associated with the invention.

The wringer 1 mounts on the rear wall 5 of the moulded plastics bucket 3, and it is supported at the front on the bucket side walls 6 and 7. Such front support is not, in this case, in accordance with the present invention, but is provided by a cross member 8 which is fixed at the front of the wringer 1, by suitable fixings 9 such as screws or rivets, and which rests on the rim 10 of the bucket. The ends 8a and 8b of the cross member 8 hook over and seat on the rim 10 so as to oppose any tendency for the side walls 6 and 7 to spread apart during a wringing operation.

The cross member 8, which may be manufactured and supplied for attachment to existing wringers, is as shown more particularly in Figures 3A and 3B. As can be seen therefrom the member 8 is formed from a length of flat metal strip, for example being of galvanized mild steel, with end portions 8a and 8b twisted through 90° and then bent down at right angles to provide end flanges 11a and 11b. Thus the member 8 has end formations which hook over and seat on the bucket rim 10. The main flat body 8c of the member 8 has suitable fixing holes 8d for the described fixings 9.

The rear mounting of the wringer 1 on the rear wall 5 is such that it opposes a tendency for the back of the wringer 1 to lift off the bucket as the operating force is applied to the handle 2 as indicated by the arrow F. In Figure 2 there is illustrated an example of a suitable rear mounting structure on the wringer 1, comprising a hook-like rear formation which, as the wringer 1 is fitted, hooks around and beneath the rim 10 of the bucket. This formation may be provided on each of two spaced mounting projections 12 at the rear of the wringer 1.

As a result of the rear mounting and front support of the wringer 1 the wringing force is distributed, largely as a compressive load on the bucket 3 by the cross member 8 as indicated by the arrows L in Figure 1. As the wringing force is

not withstood by buckling forces on the rear wall, as it is in a conventional arrangement, the wringing action has a "solid" feel and wringer deflection does not dissipate the wringing forces. Furthermore, a longer handle 2 can be employed which enables much greater wringing forces to be applied for given operative effect. The arrangement enables a handle to be used which in some circumstances can be of the order of twice the length of the handles as normally used in the past.

For mobility the bucket 3 is mounted on four corner castors, referenced 13 at the rear and 14 at the front. As can be appreciated from the view of Figure 1, the increased length of the handle 2 not only increases the wringing efficiency but it facilitates use of the handle 2 for propelling and steering the bucket 3 on the castors 13, 14. The rear castors 13 are fitted to floor support outriggers such as 15 and the front castors 14 to outriggers 16. The outriggers 15 are generally aligned with the rear wall 5, and normally the outriggers 16 would be similarly disposed with respect to the front wall 17 of the bucket 3, as is shown in broken lines for the left-hand corner in Figure 1. However, in view of the increased length of the handle 2 the front castors 14 are moved forwardly, to prevent the bucket 3 tipping over forwardly when the operating force is applied to the handle 2. The outriggers 16 are now cranked to extend forwardly so that the front floor reaction forces indicated by the arrows R lie in a lateral plane, in front of the main body volume of the bucket 1, which plane also contains the arrow F. Thus the castors are effectively brought into line with the vertical handle load to prevent the bucket tipping.

In the modification of Figures 4 and 5 outrigger support members 30 and 31 are positioned at the two sides near to the front of the wringer 1. Each support 30 or 31 has a lower recess, 32 or 33, which seats on the bucket rim 10 to provide the same advantages as the cross member 8 of the arrangement of Figures 1 to 3. However, in this case the rim 10 is engaged on both its inner and outer sides so that the support members 30 and 31 act to strengthen the bucket side walls against both inward and outward movement and thus provide particularly firm lateral relative location of wringer and bucket. The cross member of the earlier arrangement may if desired be modified so that it likewise engages on both sides of the rim 10. The supports 30 and 31 are detachably secured to the wringer 1, each having a plug-in connection thereto as shown in Figure 5. Flanged projections 34 and 35 respectively engage at a lower open ended slot 36 and an upper keyhole slot 37 at the sides of the wringer.

The embodiment of Figures 6 and 7 employs a design of bucket, in accordance with the present

invention, which enables the above-mentioned advantages to be achieved with an existing wringer construction. The bucket 60 is moulded with internal ledges 61 at the sides, these ledges 61 extending from the bucket rear wall 62 for a distance slightly greater than that spanned by the wringer 63. Front feet 64 of the wringer 63, which are normally provided to enable the wringer to be stood on the floor when not in use, respectively rest on the ledges 61. This supports the wringer 63 on the bucket side walls 65, of which the ledges 61 form part, at the front in accordance with the invention. The wringer 63 mounts on the rear wall 62 as before.

As may be seen from Figure 7, each support ledge 61 is spaced below the upper edges of the side walls of the bucket and is formed by a generally horizontal step in the respective side wall 65. As shown in Figure 6, each support ledge 61 extends from the rear wall 62 of the bucket forwardly along the length of the respective side wall 65 and only part way towards the front wall of the bucket. Also as shown in Figure 6, each support ledge 61 is of substantially constant width and extends parallel to its respective side wall 65.

In that it enables a longer handle to be fitted to the wringer the invention has important ergonomic advantages in addition to that of better wringing-out of a mop. Thus the invention provides excellent benefits for people regularly using mop buckets and wringers, particularly in lessening the back strain commonly suffered by cleaning operatives. Not only can a given or improved wringing action be achieved with far less effort than hitherto, but the handle can be operated higher up so that less stooping is involved when wringing out the mop.

Claims

1. A mop wringer arrangement comprising a bucket having a rear wall (62), side walls (65), and a front wall; a wringer (63) having a mounting structure (12) for engagement with the rear wall (62) of the bucket to mount the wringer removably on the rear wall of the bucket; the wringer including pressure applying means operatively connected to a lever-type handle (2) which is movable from a resting position to a wringing position so that, in use, movement of the handle from said resting position to said wringing position applies a squeeze pressure to a mop (4) inserted in the wringer; characterised in that the bucket includes support ledges (61) integrally formed on the internal surfaces of the side walls (65) respectively of the bucket and spaced below the upper edges of the side walls, and in that the wringer (63) includes spaced feet (64) which, when the

wringer is mounted on the rear wall of the bucket, lie inwardly of the side walls (65) respectively of the bucket and engage and rest on said support ledges (61), whereby the wringer is partly supported by said ledges.

2. A mop wringer arrangement according to Claim 1, wherein each said support ledge (61) is formed by a generally horizontal step in the respective side wall (65).
3. A mop wringer arrangement according to Claim 1 or Claim 2, wherein each support ledge (61) extends along only a part of the respective side wall (65) of the bucket.
4. A mop wringer arrangement according to Claim 3, wherein each support ledge (61) extends from the rear wall (62) of the bucket forwardly along the length of the respective side wall (65) and only part way towards the front wall of the bucket.
5. A mop wringer arrangement according to any of Claims 1 to 4, wherein each support ledge (61) is of substantially constant width and extends parallel to its respective side wall (65).
6. A mop wringer arrangement according to any of Claims 1 to 5, wherein the bucket has two floor support outriggers (16) adjacent said front wall of the bucket, and the handle (2) has a length to extend forwardly beyond the main body volume of the bucket when in said wringing position.

Patentansprüche

1. Mopwringieranordnung, mit einem Eimer, welcher eine Rückwand (62), Seitenwände (65) und eine Vorderwand hat, einem Wringer (63), welcher eine Montagestruktur (12) hat, um mit der Rückwand (62) des Eimers in Eingriff zu kommen, um den Wringer lösbar auf der Rückwand des Eimers zu montieren; wobei der Wringer eine Druckenbringvorrichtung hat, welche wirksam mit einem hebelartigen Griff (2) verbunden ist, welcher aus einer Ruhestellung in eine Wringstellung bewegbar ist, so dass, im Betrieb, die Bewegung des Griffes von der Ruhestellung in die Wringstellung einen Wringdruck auf den Mop (4), welcher in den Wringer eingeführt ist, ausübt; dadurch gekennzeichnet, dass der Eimer Tragleisten (61) aufweist, welche als integrierter Teil auf der Innenfläche der jeweiligen Seitenwand (65) des Eimers unterhalb des oberen Randes der Seitenwände angeformt ist, und, dass der Wringer (63) in

- Abstand voneinander angeordnete Füße (64) hat, welche, wenn der Wringer auf der Rückwand des Eimers montiert ist, sich innerhalb einer jeweiligen Seitenwand (65) des Eimers befinden und die Tragleisten (61) berühren und auf ihnen aufliegen, wodurch der Wringer zum Teil von den Tragleisten getragen wird. 5
2. Mopwringeranordnung nach Anspruch 1, bei welcher die Tragleiste (61) von einer im allgemeinen horizontalen Stufe in der jeweiligen Seitenwand (65) gebildet ist. 10
3. Mopwringeranordnung nach Anspruch 1 oder 2, bei welcher die Tragleiste (61) sich nur entlang eines Teiles der jeweiligen Seitenwand (65) des Eimers erstreckt. 15
4. Mopwringeranordnung nach Anspruch 3, bei welcher jede Tragleiste (61) sich von der Rückwand (62) des Eimers nach vorne entlang der Länge der jeweiligen Seitenwand (65) und nur auf einem Teil des Weges in Richtung der Vorderwand des Eimers erstreckt. 20
5. Mopwringeranordnung nach einem der Ansprüche 1 bis 4, bei welcher jede Tragleiste (61) eine im wesentlichen gleichmässige Breite hat und sich parallel zu seiner jeweiligen Seitenwand (65) erstreckt. 25
6. Mopwringeranordnung nach einem der Ansprüche 1 bis 5, bei welcher der Eimer Auslegerbodenstützen (16) neben der Vorderwand des Eimers hat, und der Griff (2) eine solche Länge hat, dass er sich nach vorne über das Hauptkörpervolumen des Eimers erstreckt, wenn er in der Wringstellung ist. 30
- Revendications** 40
1. Arrangement de presse à exprimer pour balai à laver, comprenant un seau ayant une paroi arrière (62), des parois latérales (65) et une paroi de devant; une presse à exprimer (63) ayant une structure de montage (12) pour venir en prise avec la paroi arrière (62) du seau pour monter la presse à exprimer de façon amovible sur la paroi arrière du seau; la presse à exprimer comprenant un moyen d'application de pression connecté de façon active à une poignée (2) du type levier, qui est mobile d'une position de repos vers une position d'essorage de sorte, qu'en service, le déplacement de la poignée de la position de repos dans la position d'essorage applique une pression d'essorage sur le balai à laver (4) inséré dans la presse à exprimer; caractérisé en ce que le seau comprend des saillies de support (61) formées de façon intégrante sur les surfaces intérieures des parois latérales (65) respectives du seau et espacées vers le bas des bords supérieurs des parois latérales, et en ce que la presse à exprimer (63) comprend des pieds (64) espacés, qui, quand la presse à exprimer est montée sur la paroi arrière du seau, se trouvent à l'intérieur des parois latérales (65) respectives du seau et contactent et reposent sur lesdites saillies de support (61), de sorte que la presse à exprimer est supportée partiellement par lesdites saillies. 2.
- Arrangement de presse à exprimer pour balai à laver selon la revendication 1, dans lequel ladite saillie de support (61) est formée par un échelon généralement horizontal dans la paroi latérale (65) respective. 3.
- Arrangement de presse à exprimer pour balai à laver selon la revendication 1 ou 2, dans lequel chaque saillie de support (61) s'étend seulement le long d'une partie de la paroi latérale (65) respective du seau. 4.
- Arrangement de presse à exprimer pour balai à laver selon la revendication 3, dans lequel chaque saillie de support (61) s'étend à partir de la paroi arrière (62) du seau vers l'avant le long de la longueur de la paroi latérale (65) respective et seulement sur une partie en direction de la paroi de devant du seau. 5.
- Arrangement de presse à exprimer pour balai à laver selon une quelconque des revendications 1 à 4, dans lequel chaque saillie de support (61) a une largeur substantiellement constante et s'étend parallèlement à sa paroi latérale (65) respective. 6.
- Arrangement de presse à exprimer pour balai à laver selon une quelconque des revendications 1 à 5, dans lequel le seau a deux pieds de support en porte-à-faux (16) adjacents à la paroi de devant du seau et la poignée (2) a une longueur qui s'étend vers l'avant au-delà du volume du corps principal du seau, quand elle se trouve dans la position d'essorage. 5

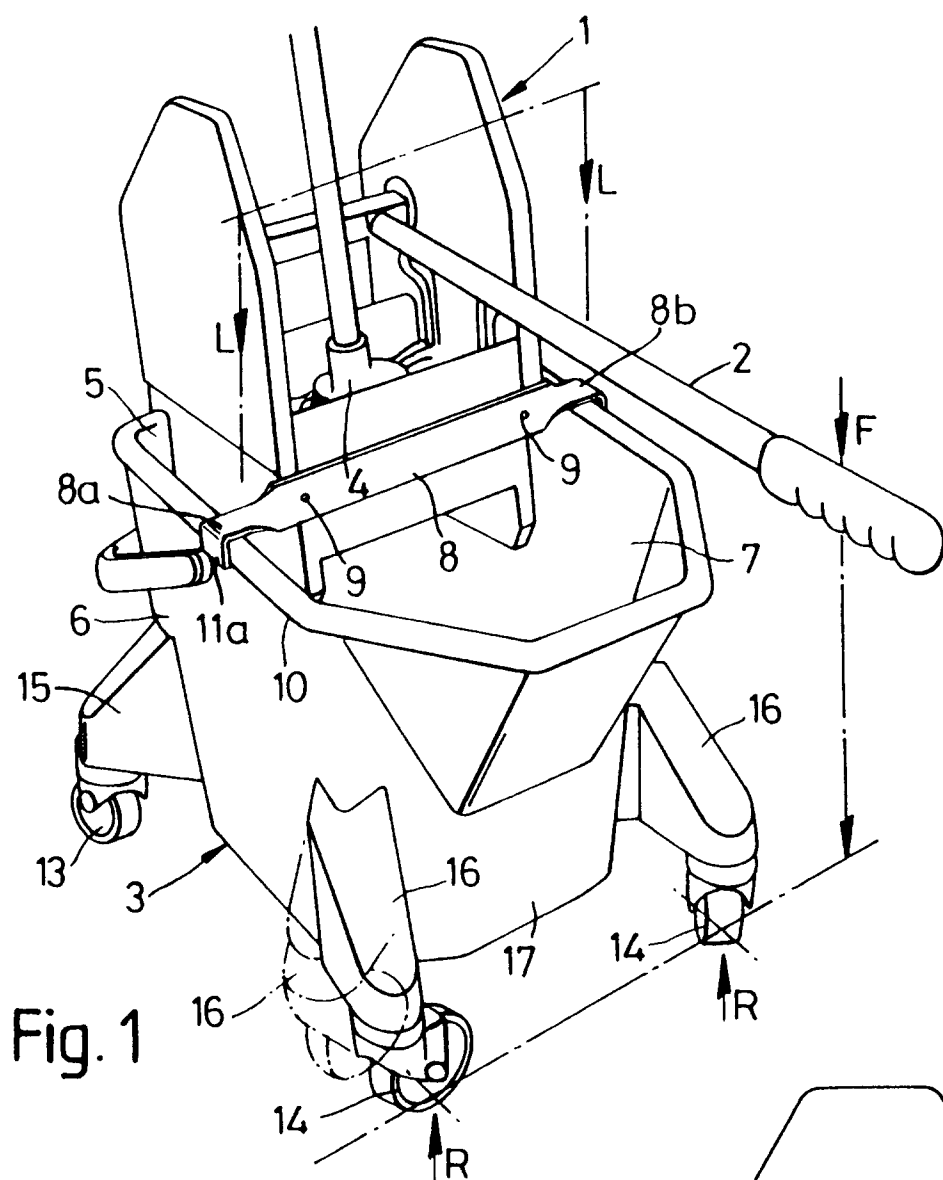


Fig. 1

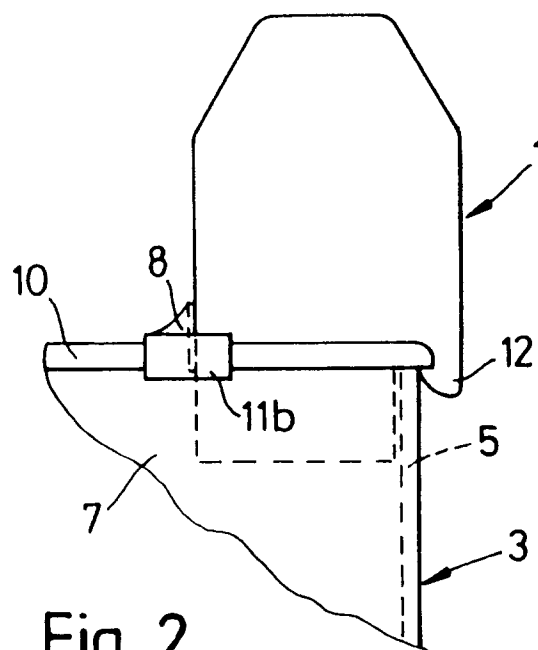


Fig. 2



Fig. 3A

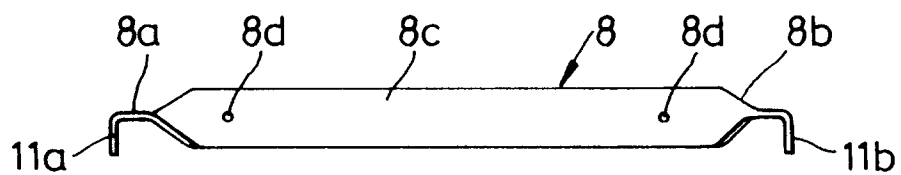


Fig. 3B

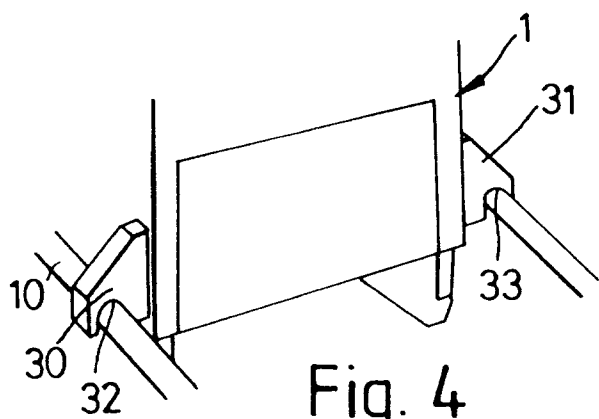


Fig. 4

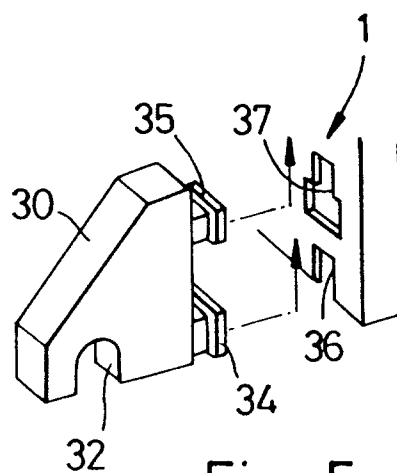


Fig. 5

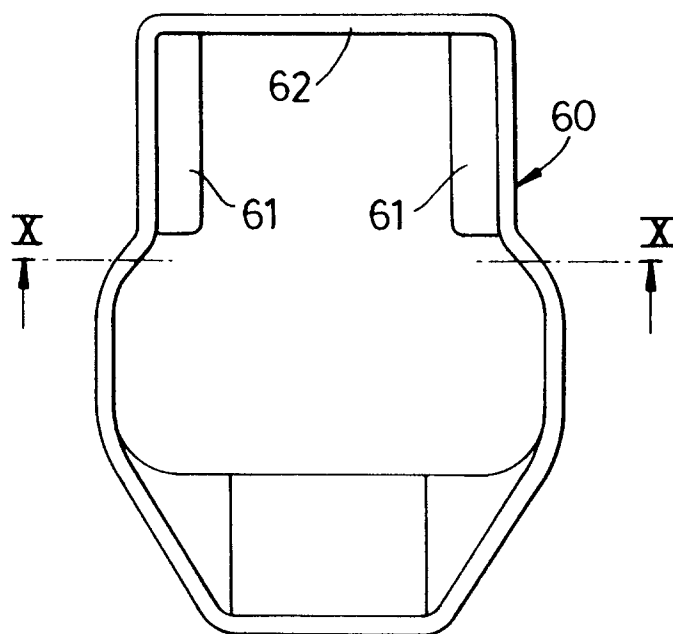


Fig. 6

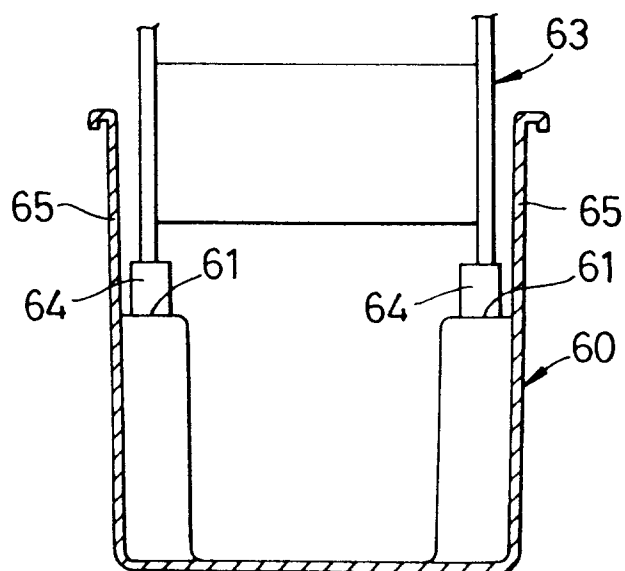


Fig. 7