

[54] **PACKING BRACE FOR WASHING
MACHINES**

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[58] Field of Search..... 206/46 M, 46 FC, 46 F;
217/53; 229/14 C

[56] **References Cited**

UNITED STATES PATENTS

2,860,768	11/1958	Smithers	206/46 FC
3,471,305	10/1969	Marbach	229/14 C
3,620,365	11/1971	Elwell	206/46 M

Primary Examiner—William T. Dixon, Jr.

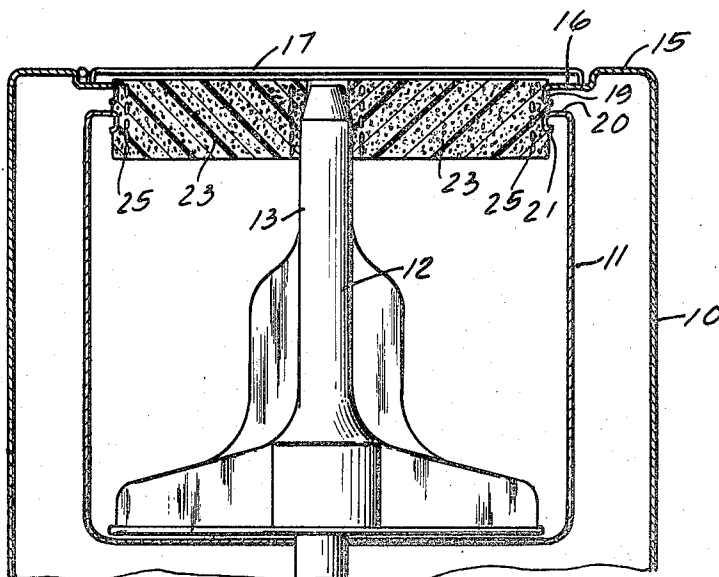
Attorney, Agent, or Firm—Hill, Sherman, Meroni,
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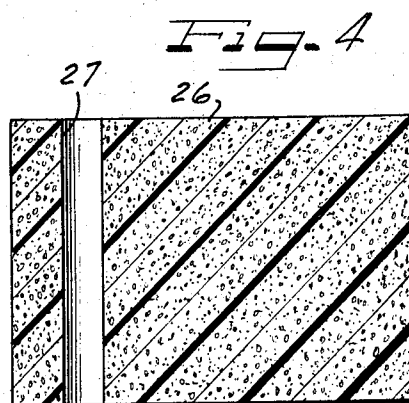
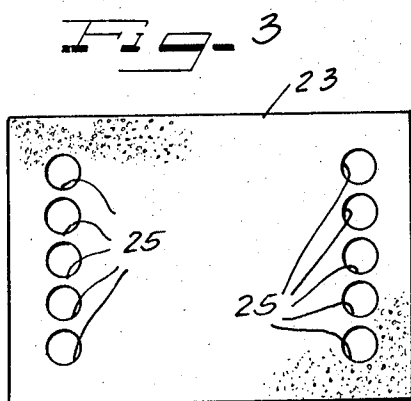
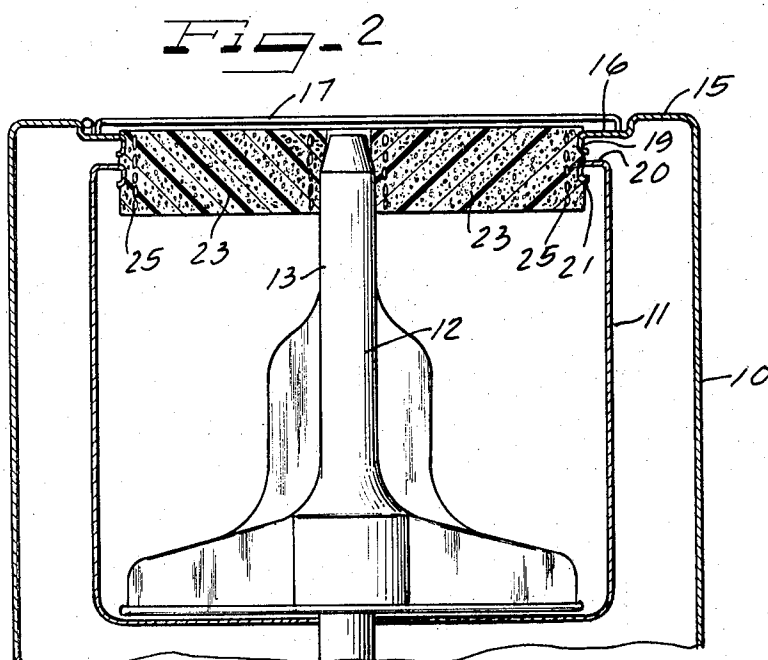
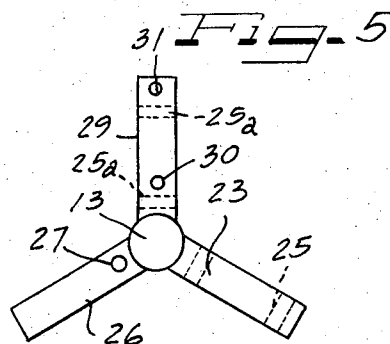
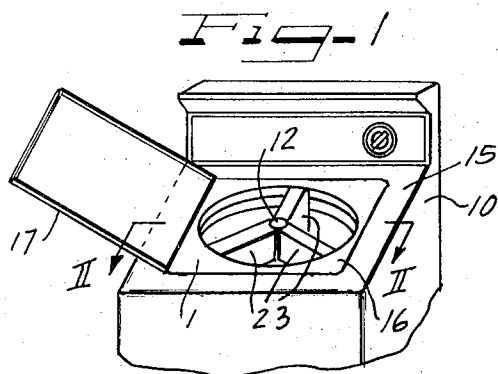
[57] **ABSTRACT**

Packing brace for automatic washing machines, brac-

ing the agitator, spin basket and casing of the machine from movement relative to each other when moving the machine from one location to another. The brace is made from two or more blocks of resilient plastic material of a length slightly greater than the distance from the rim of the casing and the spin basket to the center post of the agitator and of a depth to contact the rim of the casing, the spin basket and center posts of agitators of varying heights. The blocks are each internally relieved along one or more ends thereof to increase the resiliency thereof and the ease in locating a block in position between the rim of the casing of the machine and rim of the spin basket and agitator of the machine. The relief is attained by a series of holes in the block extending transversely thereof in the region of the rim of the casing and rim of the spin basket, or by a single hole extending vertically through the block. The holes may be at each end of the block to make the blocks symmetrical so they will always be in their bracing positions regardless of which end of the block is placed in engagement with the rim of the casing and rim of the spin basket.

5 Claims, 5 Drawing Figures





PACKING BRACE FOR WASHING MACHINES**FIELD OF THE INVENTION**

Packing braces for automatic washing machines holding the agitator and spin basket of the machine from relative movement with respect to the casing of the machine when transporting the machine from place to place, and of the type found in Class 202-46.

PRIOR ART

Elwell U.S. Pat. No. 3,620,365 dated Nov. 16, 1971, the references cited in the file of the Elwell patent, plus the U.S. Pats. Nos. to Collin 3,335,849; Elwell 3,321,071; and Bjerum 3,184,048 disclose various forms of prior art bracing means for automatic washing machines.

BACKGROUND, SUMMARY AND ADVANTAGES OF INVENTION

In moving and shipping automatic washing machines having a spin basket rotatable about a vertical axis, an agitator at the center of the basket and a casing or housing for the spin basket and agitator, it is necessary to brace the agitator and spin basket to the machine casing to prevent damage to the machine during shipment. Such devices are customarily provided by the manufacturer for the shipment of new machines or by the mover moving the machine from one place to another. The bracing means in many cases are formed from corrugated board disks fitting over the agitator and engaging the flange of the clothes opening in the casing and often slipping along the agitator during shipment and coming out of engagement with the casing. Other bracing devices have been provided which are usually made from a number of parts and must be tied together to be retained in position and are relatively complicated and expensive in construction and in most cases, are left in the washing machine when the machine reaches its destination. The necessity of tying such bracing devices together, which is usually about the center post of the agitator, to efficiently hold the agitator and spin basket from movement relative to the casing consumes an undesirable amount of time and the parts of the devices are usually not of a uniform construction, and are, therefore, difficult to store prior to use and for reuse where the bracing devices are returned for this purpose.

The packing brace of the present invention is made from two or more blocks of resilient material, which may be a foam material all of the same size and relieved at least inwardly of one end thereof to increase the compressibility of the blocks in the region of contact and thereby to enable the blocks to be properly located relative to the casing and spin basket of the washing machine to perform their bracing function. The relief may be by the provision of a series of holes adjacent the end of the block engaging the rim of the casing and spin basket of the machine, or a hole extending vertically through the block, adjacent the center post of the agitator of the machine, or both. This relief enables the rim of the casing and spin basket to be more easily recessed within the blocks and, therefore, in addition to properly locating the blocks relative to the casing and spin basket, holds the blocks from twisting during shipment of the washing machine.

The relief in the form of holes extending transversely through the block need only be on one end of the

block, but preferably is on opposite ends of the block, to make it unnecessary to locate a specific end with regard to the rim of the container and spin basket of the washing machine.

The blocks may be of sufficient width to give them the rigidity required for efficient bracing and may be of such a length and depth as to be used for bracing the agitators and spin baskets of different makes of agitator types of household and commercial washing machines.

Among the advantages of the invention are that the blocks provide a simple, effective, inexpensive and expeditious means for retaining or securing the agitator and spin basket of an automatic washing machine in centered relation with respect to its casing and prevent detrimental movement thereof during transit or moving.

A further advantage of the invention is that any number of individual blocks may be used for bracing purposes and that the blocks are all interchangeable and may readily be stored for use.

Other advantages of the invention are that the blocks may be rectangular and that relief in the blocks enables the blocks to have a secure fit with the washing machine tub, spin basket and agitator and prevents twisting of the blocks relative to the parts secured from movement.

A further advantage in the invention is that the blocks are lightweight and easy to install by an inexperienced person and are of such a low or moderate cost that they may be discarded when once used.

Other objects, features and advantages of the invention will be readily apparent from the following description of a preferred embodiment thereof, taken in conjunction with the accompanying drawings, although variations and modifications may be effected without departing from the spirit and scope of the novel concepts of the disclosure.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the top portion of an automatic washing machine showing bracing blocks constructed in accordance with the principles of the present invention in position to hold the agitator and spin basket of the machine from relative movement with respect to the casing for the spin basket.

FIG. 2 is a vertical sectional view taken substantially along line II—II of FIG. 1.

FIG. 3 is a view illustrating one form of bracing block constructed in accordance with the principles of the present invention.

FIG. 4 is a view illustrating a modified form of block constructed in accordance with the principles of the present invention; and

FIG. 5 is a view showing a series of blocks of different forms positioned relative to the center post of the agitator of an automatic washing machine and illustrating modified ways in which the blocks may be constructed.

DESCRIPTION OF PREFERRED EMBODIMENT OF INVENTION

In FIGS. 1 and 2 of the drawings, I have shown the upper portion of a conventional top-loading automatic washing machine and have shown a section through the upper part of this machine. The washing machine includes an outer casing 10, a foraminous tub or spin bas-

ket 11 rotatably supported within said casing for rotation about a vertical axis for extracting water from the clothes therein and held from rotation during a washing operation. I have also shown an agitator 12 within said basket having conventional agitating vanes extending along a center post 13 of the agitator, shown as extending above the top of the basket 11, but which in some forms of automatic washing machines, is beneath the top of the spin basket.

The agitator 12 is oscillatably driven during the washing operation by a conventional drive mechanism and is usually free to rotate with the basket and clothes therein during the extracting operation. The drive to the basket may also be of a conventional form, so need not herein be shown or described.

The outer casing 10 is shown in FIGS. 1 and 2 as having a top portion 15 having a rectangular recessed portion 16 therein for a hinged lid 17. The recessed portion 16 has a central opening therein defined by a downwardly extending and inturned flanged portion 19. The spin basket 11 also has an inwardly extending annular flange 20 extending inwardly of the outer wall thereof and terminating into a cylindrical wall portion or rim 21, shown as being in alignment with the inturned flanged portion 19, and turned inwardly at its lower end to free the basket from rough edges which may catch the clothes as placed in or removed from said basket. The machine just described, therefore, is a conventional household washing machine, the features of which are on all automatic oscillatable agitator types of washing machines. Aside from the particular drive mechanisms for driving the spin basket and oscillatably driving the agitator or accommodating the agitator to spin with the spin basket during an extracting operation, the spin basket and casing are much the same in appearance in all machines, particularly as to the clothes receiving openings for household washing machines, although the center post of the agitator may vary in height and shape and/or centerline and may be shorter on some makes of machines than others.

Referring now in particular to the bracing means of the present invention for retaining the agitator and spin basket from relative movement with respect to the casing 10 of the washing machine, I have shown in FIG. 3 a generally rectangular block 23 of plastic material, of a width sufficient to give rigidity to the block and accommodate compression thereof without causing buckling of the block, of a length to be compressed between the casing, spin basket and center post of the agitator of the machine and of a height to accommodate the holding of the agitators of all standard types of household washing machines from movement relative to the casings of the machines during shipment.

The block may be made from a lightweight suitable foam plastic such as polyethylene known to the trade as Dow Chemical "Ethafoam" or other suitable inexpensive lightweight plastic materials. The block 23 is shown in FIG. 3 as being relieved in the region of the rim of the casing and the rim of the spin basket to accommodate compressibility thereof in this region and ready location of the block in the correct position, by a series of apertured portions in the form of vertically spaced holes 25. As shown herein, the relief is provided by a series of vertically aligned holes 25 extending transversely through the block 23 and shown as being located near each end of the block, to provide a symmetrical block so either end of the block may be lo-

cated along the rim of the washing machine casing and rim of the spin basket, and to accommodate ready compressibility of the blocks in this region.

When it is desired to brace the agitator and spin basket to the casing 10, a first block is located with a relieved portion thereof adjacent the rim of the casing, between the rim of the casing and the center post of the agitator. This will bring the rim of the spin basket into alignment with a relieved portion of the block, and accommodate compressibility of the block to the extent sufficient that the rims of the casing and spin basket will enter into the end wall of the block and hold the block from twisting movement relative to the agitator. While two or more blocks may be inserted at the same time into the position shown in FIG. 5 and while three blocks are usually required for a bracing operation, in many cases, two blocks may be sufficient or in other cases, it may be of advantage to use more than three blocks.

A block 26 is shown in FIG. 4 of the drawings, in which relief in the block is provided by a single vertical hole 27, extending through the block from the top to the bottom thereof adjacent the end of the block adjacent the center post of the agitator.

The vertical hole 27 thus provides relief to increase the compressibility of the block at the longitudinal center of the block along the rims of the casing and spin basket of the machine, and accommodate the block to partially fit along the center post of the agitator, which in cooperation with one or more other blocks 26 will prevent twisting movement of the blocks relative to the agitator, when placed between the rim of the casing and agitator and will hold the spin basket and agitator from relative movement with respect to the casing of the machine.

In FIG. 5 of the drawings, I have shown a block 29 having transversely extending holes 25a, like the holes 25, at each end of the block, a vertical hole 31 on the inside of one set of holes and a second vertical hole 32 on the outside of the other set of holes 25a, to increase the adaptability of the block to the agitator, tub and container of certain automatic washing machines.

In these forms of the invention, the bracing blocks are readily located relative to the casing and spin basket of the machine and a wedging fit is provided between the casing, spin basket and agitator in which the bracing blocks are located by the relieved or compressible portions thereof, and held from twisting movement thereby and from falling into the basket during transportation.

What I claim is:

1. In a packing bracing means for washing machines, maintaining the agitator and spin basket of the machine free from movement relative to the casing of the machine during transportation comprising: a plurality of rectangular blocks of a length greater than the distance from the casing and spin basket of the machine to the agitator of the machine in a radial direction, said blocks being made from a resilient plastic material and having plane side and end walls and top and bottom walls, the respective walls being parallel to each other, each block having a portion spaced inwardly of each end thereof forming relief in the block to increase the compressibility of the block and enable the block to fit the casing, agitator and spin basket of the machine to hold the agitator and spin basket from movement relative to the casing during shipment upon placing of the blocks

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in their radial bracing positions, said blocks being of sufficient depth to hold agitators of different commercial heights from movement relative to the casing and the portions of said block forming relief being in the form of at least one hole extending entirely through each block and adjacent, but inwardly of each end thereof.

2. The packing bracing means of claim 1, wherein the resilient plastic material is a polyethylene foam material, and wherein at least three blocks spaced equal distances apart are utilized to maintain the agitator and spin basket from movement relative to the casing during transportation.

3. The packing bracing means of claim 2, wherein the inwardly relieved portions of the blocks comprise a series of equally spaced holes extending transversely

through the blocks near each end of each block.

4. The packing bracing means of claim 1, wherein the inwardly relieved portions of the blocks consist of a series of equally spaced holes extending transversely through the blocks near each end thereof, a vertical hole extending through each block adjacent and outwardly of one set of equally spaced holes and a second vertical hole extending through the block adjacent and outwardly of the other set of equally spaced holes.

5. The packing bracing means of claim 1, wherein the inwardly relieved portions of the blocks consist of a series of equally spaced holes extending transversely through each block adjacent one end thereof, and a vertical hole extending through each block adjacent the opposite end thereof.

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