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COLLAPSIBLE CRADLE FOR AUTOMATIC WASHERS

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Fig. 4

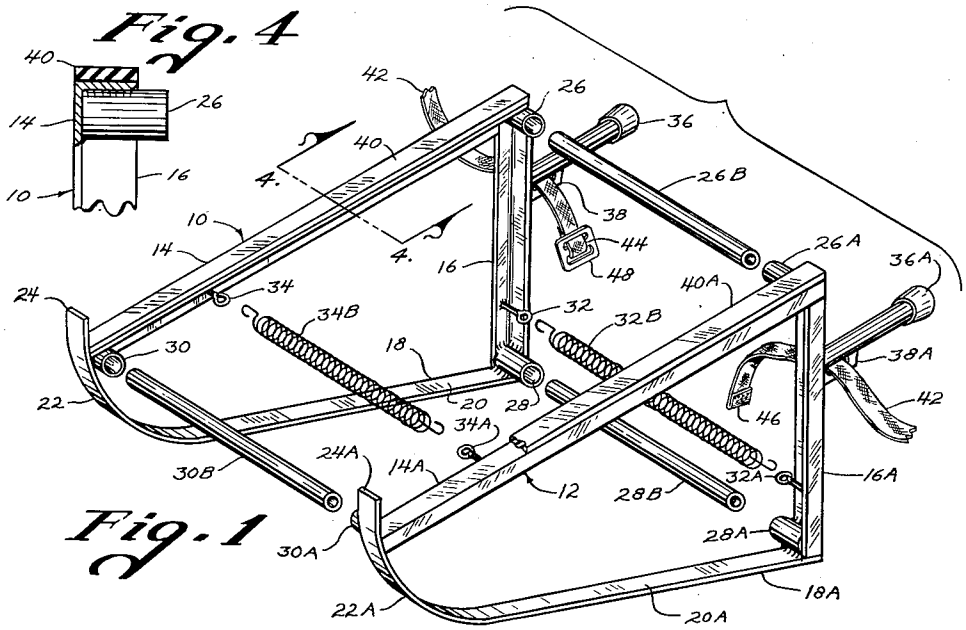


Fig. 1

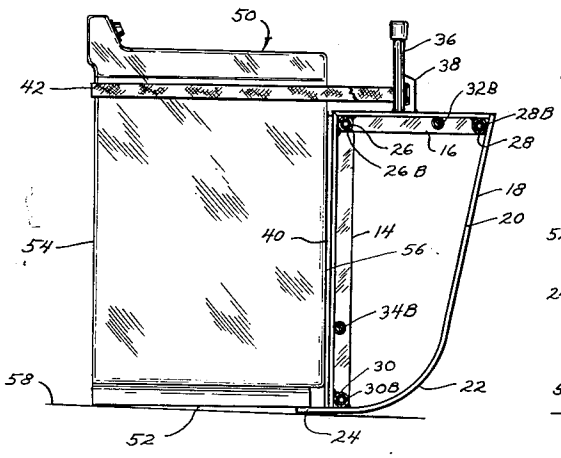


Fig. 2

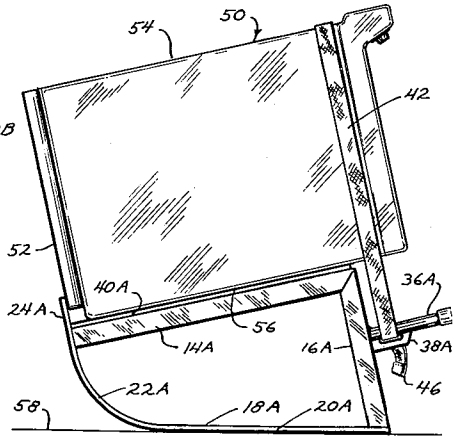


Fig. 3

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COLLAPSIBLE CRADLE FOR AUTOMATIC WASHERS

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Our invention relates to tools for servicing automatic washers and more particularly to a collapsible cradle that can be used to position an automatic washer for the servicing operation.

It is often necessary to gain access to the bottom and rearward portions of automatic washers for repair purposes. Because of the great weight of these washing machines, it is extremely difficult to position the machines to effect the servicing operation. Cradle devices which assist in the overtuning of the machines have been devised to alleviate this problem, but these cradles usually require the services of at least two persons. Furthermore, these devices known to us invite damage to the machines as their normal operation permits the possible inadvertent removal of the washing machine from the cradle. The existing cradles are built in a sturdy and permanent manner to withstand the extreme weight of the machines but this rigid construction makes them very cumbersome to the serviceman who must carry the cradle to dwellings for maintenance purposes.

Therefore, the principal object of our invention is to provide a cradle for automatic washers which is collapsible and which can be compactly carried from point to point.

A further object of our invention is to provide a collapsible cradle for automatic washers that can be easily and quickly assembled and disassembled.

A still further object of our invention is to provide a collapsible cradle for automatic washers that will prevent the washer from inadvertently falling from the cradle device during the tipping movement of the cradle.

A still further object of our invention is to provide a collapsible cradle for automatic washers that will preserve the finish on the exterior surface of the washer.

A still further object of our invention is to provide a collapsible cradle for automatic washers that is economical of manufacture, durable in use, and refined in appearance.

These and other objects will be apparent to those skilled in the art.

Our invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in our claims, and illustrated in the accompanying drawings, in which:

FIG. 1 is a schematic perspective view of our device showing the interrelation of the respective parts;

FIG. 2 is a sectional view of our device taken when it is attached to an automatic washing machine just prior to the tipping operation;

FIG. 3 is an elevational view of our device with the washer mounted thereon and the washer and our device being in tipped position; and

FIG. 4 is a sectional view of our device taken on line 4—4 of FIG. 1.

We have used the numerals **10** and **12** to generally designate the two side frames of our device. Frames **10** and **12** are substantially identical in construction except that the positions of some of the elements on each of the frames are reversed as will be explained hereafter. Frames **10** and **12** are shown in FIG. 1 in a tipped position which is also the position depicted in FIG. 3. Frame **10** is comprised of a plurality of elements including an elongated angle member **14**. Angle member **16** is welded or otherwise secured to one end of angle

member **14** and extends substantially at right angles therewith. One end of a flat elongated bar **18** is secured to the lower end of angle member **16** as viewed in FIG. 1. Bar **18** extends away from angle member **16** in the same vertical plane in which angle member **14** dwells. The portion **20** of bar **18** is straight and terminates in an arcuate portion **22** which in turn terminates in a straight protruding end portion **24**. Bar **18** is welded or otherwise secured to the end of angle member **14** opposite to angle member **16**. Bar **18** is so positioned with respect to angle member **14** that the end portion **24** thereof extends above angle member **14** as depicted in FIG. 1. It should also be noted that the straight portion **20** of bar **18** tends to converge toward angle member **14** and this phenomenon is clearly shown in FIG. 3 by the acute angle which exists between angle member **16** and the straight portion **20** of bar **18**.

Hollow sleeve **26** is welded or otherwise secured to angle members **14** and **16** at their point of intersection. A hollow sleeve **28** is welded or otherwise secured to angle member **16** at a point just removed from the point of connection between angle member **16** and bar **18**. Hollow sleeve **30** is welded or otherwise secured to angle member **14** at a point just removed from the point of connection between angle member **14** and bar **18**. Eyelet **32** is welded or otherwise secured to angle member **16** at a point just above sleeve **28** as viewed in FIG. 1 and eyelet **34** may be secured in the same manner to angle member **14** near the midpoint of that angle member. The longitudinal axis of sleeves **26**, **28** and **30** and the longitudinal axis of eyelets **32** and **34** are all perpendicular to the plane defined by the angle members **14** and **16** and bar **18**. Handle **36** is welded or otherwise secured to angle member **16** and extends therefrom in a direction opposite to that of angle member **14**. As viewed in FIG. 1, handle **36** is positioned at a point just below the point of intersection of angle members **14** and **16**. A bracket **38** is welded or otherwise secured to the lower edge portion of handle **36** at a point adjacent angle member **16**, as viewed in FIG. 1. A strip of sponge rubber **40** can be glued or otherwise secured to the upper surface of angle member **14** as viewed in FIG. 1.

Frame **12** is comprised of elements **14A**, **16A**, **18A**, **20A**, **22A**, **24A**, **26A**, **28A**, **30A**, **32A**, **34A**, **36A**, **38A**, and **40A** and each of these elements is identical to the previously described elements **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**, **30**, **32**, **34**, **36**, **38** and **40**, respectively. It should be noted that the positions of identical elements in the two side frames **10** and **12** have been reversed so that the two side frames form a complementary pair. Thus, for example, sleeves **26** and **26A** extend toward each other and are in axial alignment with each other when the two side frames **10** and **12** are symmetrically positioned in parallel planes.

Rods **26B**, **28B** and **30B** are all of the same length and are capable of having their ends slidably inserted within the sleeves **26** and **26A**, **28** and **28A**, and **30** and **30A**, respectively. Springs **32B** and **34B** are shorter than rods **26B**, **28B** and **30B** and are adapted to be secured to and extend between eyelets **32** and **32A** and **34** and **34A**, respectively. Each of the brackets **38** and **38A** has an elongated slot that is adapted to receive a belt **42** which has free ends **44** and **46**. Conventional buckle **48** is secured in any convenient manner to end **44** of belt **42** and the ends **44** and **46** of the belt should be located between the handles **36** and **36A** so that a loop is formed between the two ends.

The normal operation of our device is as follows: In its dismantled condition, our device can be kept in a relatively flat container with the two side frames **10** and **12** engaging one another and the rods **26B**, **28B** and **30B**, and springs **32B** and **34B** located in any convenient posi-

tion. Upon receiving a call to service a washing machine 50 which has a bottom portion 52 and a rear portion 54, an operator can easily pick up our device, carry it in any vehicle or truck, and can easily carry it through doorways or like. To assemble our device, the serviceman needs only to place rods 26B, 28B and 30B in the axially aligned sleeves 26 and 26A, 28 and 28A, and 30 and 30A, respectively. Spring 32B can then be stretched to have its respective ends hooked in eyelets 32 and 32A. Spring 34B can be similarly stretched to have its respective ends hooked in the eyelets 34 and 34A. Since springs 32B and 34B are shorter than rods 26B, 28B and 30B, the springs will necessarily be under tension when stretched to the length of these rods and the tension in the springs will tend to pull the two side frames 10 and 12 toward each other and force the rods 26B, 28B and 30B into compression. The action of the springs in tending to pull the two side frames together coupled with the action of the rods to keep the side frames apart will weld these components into one unitary structure.

Our device can then be positioned with respect to the washing machine 50 as depicted in FIG. 2 with the protruding end portion 24 of bar 18 extending slightly under the machine. The angle members 14 and 14B with resilient strips 40 and 40A thereon engage the forward portion 56 of the machine as it rests on supporting surface 58. The belt 42 can then be placed around the machine as depicted in FIG. 2 and the ends 44 and 46 of the belt can be secured together by buckle 48 at a point in between the two handles 36 and 36A to tightly secure the washing machine to the cradle. The operator can then grasp the handles 36 and 36A and exert a turning force thereon in a direction away from the washing machine 50 which will cause the washing machine and the cradle to tip on the arcuate portion 22 of bar 18 so that the washing machine and the cradle will assume the position shown in FIG. 3. The operator can then have easy access to the rearward and bottom portions of the machine 50 to effect any maintenance effort. The arcuate portions 22 and 22A of the bars 18 and 18A are located away from the midpoint of the bars so that some lifting effort must be exerted on the handles 36 and 36A to move the machine to the upright position of FIG. 2 from the inclined position of FIG. 3. The cradle can be removed from the machine by releasing belt 42 therefrom and by withdrawing the ends 24 and 24A of bars 18 and 18A, respectively, from underneath the machine. The serviceman can then dismantle the cradle by reversing the above described assembly procedure.

Thus, it is seen that our device will accomplish at least all of its stated objectives.

Some changes may be made in the construction and arrangement of our collapsible cradle for automatic washers without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

We claim:

1. In a device of the class described, two symmetrical side frames of the same substantial size and shape, each of said side frames being comprised of two elongated first and second frame members secured together by one of their respective ends and being substantially perpendicularly disposed to each other, a bar secured by one of its ends to the free end of said second frame member, the free end of said bar having an arcuate portion secured to the free end of said first frame member, said bar being completely straight except for said arcuate portion, a plurality of pairs of hollow sleeves secured to said side frames, said pairs of sleeves on said side frames being in axial alignment, elongated rods extending between said pairs of sleeves, said sleeves slidably receiving the ends of said rods, and means secured to said frames for detachably holding the ends of said rods within said sleeves.

2. In a device of the class described, two symmetrical side frames of the same substantial size and shape, each of said side frames being comprised of two elongated first and second frame members secured together by one of their respective ends and being substantially perpendicularly disposed to each other, a bar secured by one of its ends to the free end of said second frame member, the free end of said bar having an arcuate portion secured to the free end of said first frame member, said bar being completely straight except for said arcuate portion, a plurality of pairs of hollow sleeves secured to said side frames, said pairs of sleeves on said side frames being in axial alignment, elongated rods extending between said pairs of sleeves, said sleeves slidably receiving the ends of said rods, and spring means secured to said frames for detachably holding the ends of said rods within said sleeves.

3. In a device of the class described, two symmetrical side frames of the same substantial size and shape, each of said side frames being comprised of two elongated first and second frame members secured together by one of their respective ends and being substantially perpendicularly disposed to each other, a bar secured by one of its ends to the free end of said second frame member, the free end of said bar having an arcuate portion secured to the free end of said first frame member, said bar being completely straight except for said arcuate portion, a plurality of pairs of hollow sleeves secured to said side frames, said pairs of sleeves on said side frames being in axial alignment, elongated rods extending between said pairs of sleeves, said sleeves slidably receiving the ends of said rods, and at least one spring element secured by its respective ends to each of said side frames; said spring element being normally under tension to urge said side frames toward each other to maintain the ends of said rods within said sleeves.

4. In a device of the class described, two symmetrical side frames of the same substantial size and shape, each of said side frames being comprised of two elongated first and second frame members secured together by one of their respective ends and being substantially perpendicularly disposed to each other, a bar secured by one of its ends to the free end of said second frame member, the free end of said bar having an arcuate portion secured to the free end of said first frame member, said bar being completely straight except for said arcuate portion, a plurality of pairs of hollow sleeves secured to said side frames, said pairs of sleeves on said side frames being in axial alignment, elongated rods extending between said pairs of sleeves, said sleeves slidably receiving the ends of said rods, and at least one spring element secured by its respective ends to each of said side frames; said spring element being normally under tension to urge said side frames toward each other to maintain the ends of said rods within said sleeves; at lease one end of said spring element being detachably secured to its respective side frame.

5. In a device of the class described, two symmetrical side frames of the same substantial size and shape, each of said side frames being comprised of two elongated first and second frame members secured together by one of their respective ends and being substantially perpendicularly disposed to each other, a bar secured by one of its ends to the free end of said second frame member, the free end of said bar having an arcuate portion secured to the free end of said first frame member, said bar being completely straight except for said arcuate portion, a plurality of pairs of hollow sleeves secured to said side frames, said pairs of sleeves on said side frames being in axial alignment, elongated rods extending between said pairs of sleeves, said sleeves slidably receiving the ends of said rods, means secured to said frames for detachably holding the ends of said rods within said sleeves, and handle elements secured to each of said side

frames at a point adjacent the intersection between said first and second frame members.

6. In a device of the class described, two symmetrical side frames of the same substantial size and shape, each of said side frames being comprised of two elongated first and second frame members secured together by one of their respective ends and being substantially perpendicularly disposed to each other, a bar secured by one of its ends to the free end of said second frame member, the free end of said bar having an arcuate portion secured to the free end of said first frame member, said bar being completely straight except for said arcuate portion, a plurality of pairs of hollow sleeves secured to said side frames, said pairs of sleeves on said side frames being in axial alignment, elongated rods extending between said pairs of sleeves, said sleeves slidably receiving the ends of said rods, a flexible belt secured to said side frames, and means secured to said frames for detachably holding the ends of said rods within said sleeves.

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