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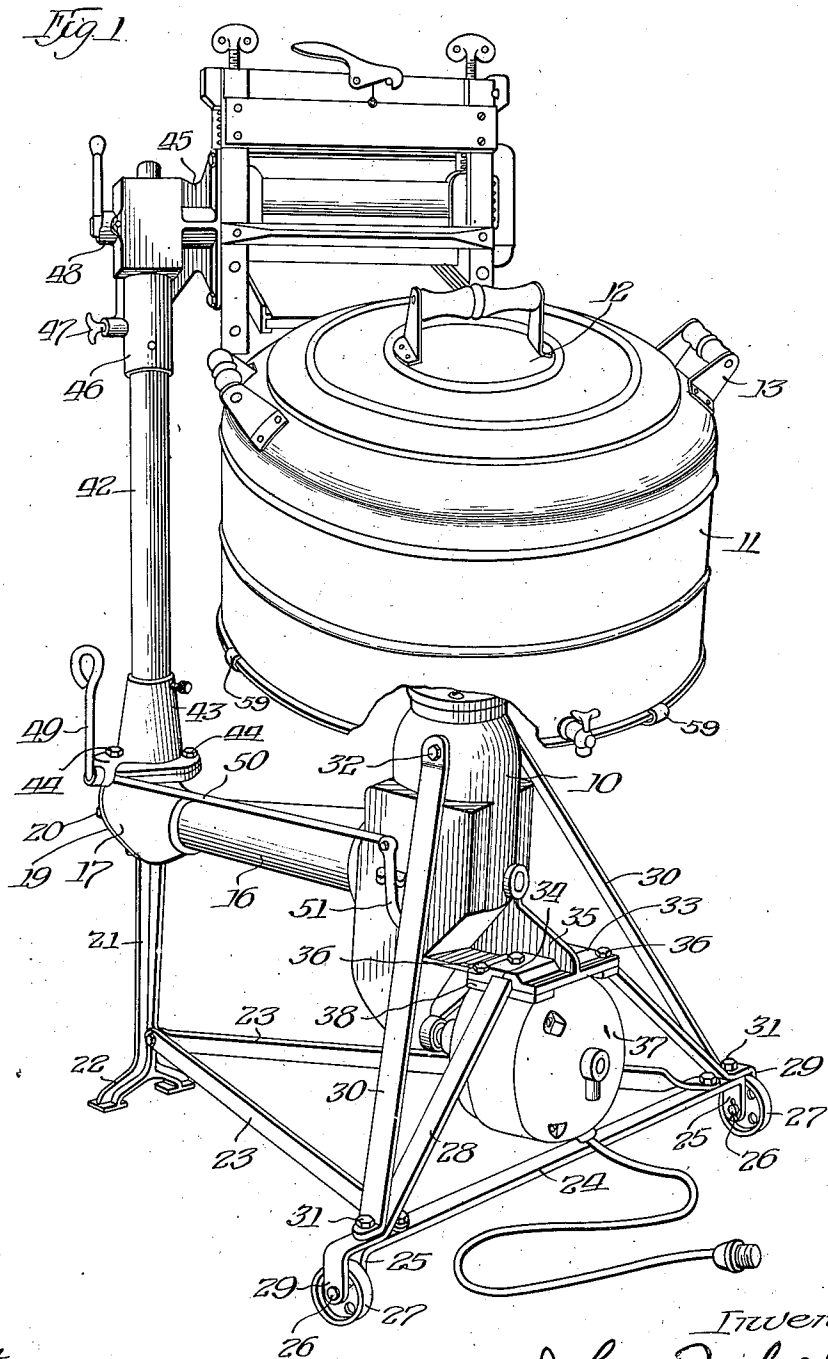
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J. TEDELL

WASHING MACHINE ASSEMBLY

Filed Jan. 22, 1925

3 Sheets-Sheet 1



Witness:

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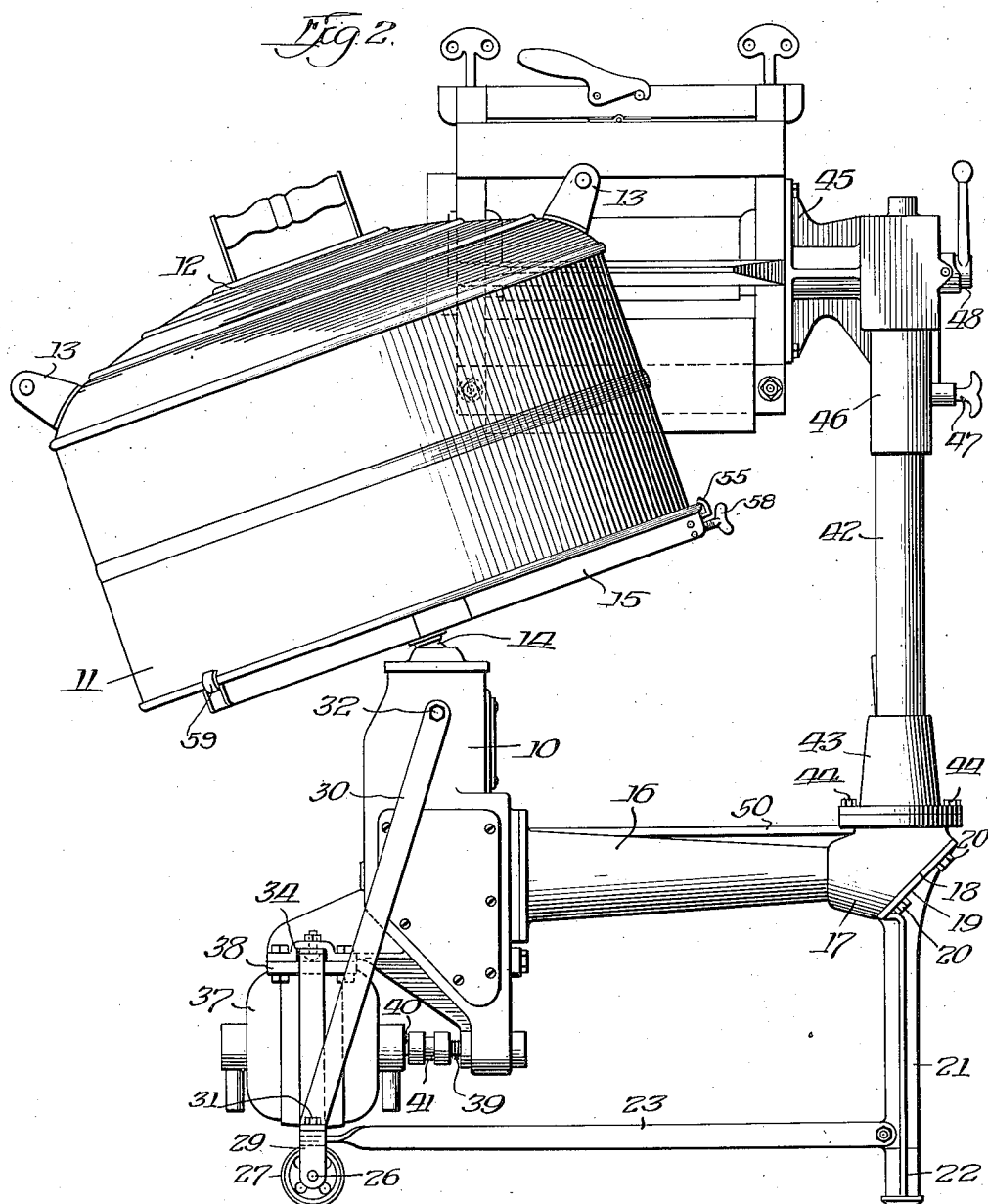
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WASHING MACHINE ASSEMBLY

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3 Sheets-Sheet 2



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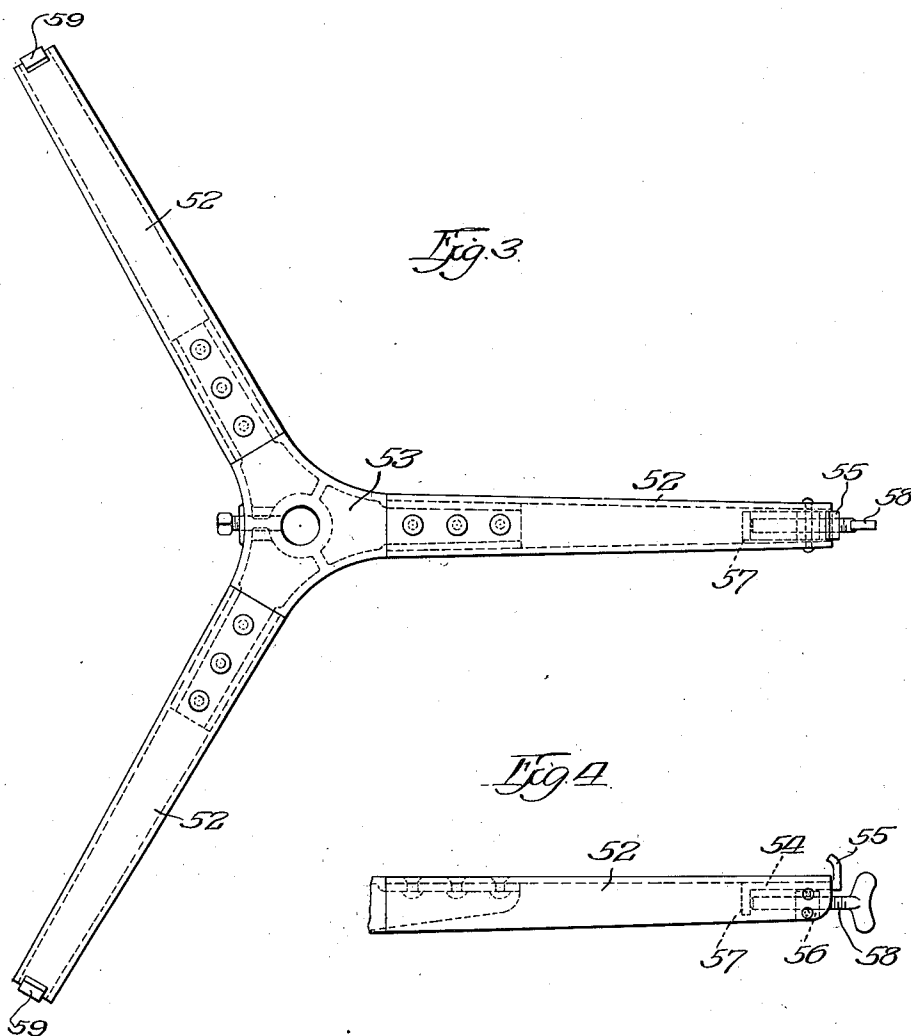
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WASHING MACHINE ASSEMBLY

Filed Jan. 22, 1925

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

JOHN TEDELL, OF SPRINGFIELD, ILLINOIS, ASSIGNOR TO MONTGOMERY WARD & CO.,
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WASHING-MACHINE ASSEMBLY.

Application filed January 22, 1925. Serial No. 3,996.

This invention has to do with washing machines of the type generally employed for domestic use in the cleansing of clothes, although the invention has capabilities of
5 adaptation in other machines.

Its primary object is the provision of a novel form of machine assembly wherein the general machine structure is properly balanced to insure efficient operation of the
10 mechanism, and also by which the operative parts most likely to cause injury to the operator are effectually concealed from contact by the operator.

A further object of the invention is the
15 provision of a machine assembly in which the frame proper is of such character and construction as to be readily manufactured and its parts brought together with ease, and which are so related to the tub or container for the articles to be cleansed as to
20 sustain the weight of the tub or container and its contents in the most effective manner.

Other objects and advantages will appear as the nature of the improvements is better
25 understood; the invention consisting substantially in the novel construction, combination and arrangement of parts herein-after fully described, illustrated in the accompanying drawings, and finally pointed
30 out in the appended claims.

One practical embodiment of the invention is made the basis of the present disclosure. It delineates what is regarded at this time as a preferred adaptation of the invention,
35 but the same is susceptible to change, modification and variation, wherefore, the present disclosure is to be considered from the illustrative standpoint, rather than imposing restriction on the invention.

40 In the drawings—

Fig. 1 is a perspective view of a washing machine assembly embodying the present invention, parts being slightly broken away for clearness of illustration.

45 Fig. 2 is a side elevation thereof.

Fig. 3 is a top plan view, on an enlarged scale, of the holder for the tub.

Fig. 4 is a detail elevation of one of the arms of the holder and the associated tub
50 clamp.

Referring now to the accompanying drawings, the numeral 10 designates a vertically disposed casing or housing wherein is enclosed the gearing and clutch mechanism of
55 the machine. This casing serves also as a

support for a tub 11 designed to receive the articles to be cleansed, which tub has a detachable cover 12 for closing its upper open end, and the handles 13 by which it may be readily carried when detached from the
60 machine structure. The tub 11 is mounted for tiltable movement on the casing 10, as by a suitably operative connection 14 between said tub and the gearing within the casing 10, the tub being carried by a holder
65 15 to which the operative connection 14 is directly connected.

The mechanism for operating the tub 11 is not claimed herein, the same being the subject of an application filed by Leland G. Knapp and myself concurrently herewith,
70 Serial No. 4,025, and to which reference may be had for a more complete understanding of that mechanism.

Extending outwardly from the gear casing 10 is a hollow horizontal arm 16, said arm being tapering in form, the extremity thereof being enlarged to provide a gear chamber 17. This chamber has an inclined side
75 18, which is open for access to the interior of the chamber, and said open side has a closure plate 19 fitted thereover and suitably fastened, as by bolts 20, to the chamber 17. Connected to the closure plate 19 is a depending supporting leg 21 for sustaining
80 the weight of the portions of the machine structure immediately thereabove. This leg 21 is of flanged construction to reinforce the same and impart rigidity thereto, it being formed preferably as a casting, and its
85 lower end has associated therewith oppositely disposed supporting feet 22.

Bolted or otherwise suitably fastened to the lower end of the supporting link 21 is a pair of divergent tie rods 23 the opposite
90 ends of which are suitably connected to a wheel supporting bar 24 which is arranged across the ends of the tie bars 23. The extremities of the wheel supporting bar 24 are bent downwardly to form perforated
95 ears 25 which receive the axles 26 of supporting wheels 27, whereby the machine may be easily moved over the floor or other surface on which it is placed. Located over the wheel supporting bar 24 is an inverted
100 substantially V-shaped bracing strut 28. The extremities of this strut are bent downwardly to provide perforated ears 29, said ears being arranged in spaced relation to the ears 25 and perforated for receiving the
105 110

axles 26 of the wheels 27. The ears 25 and 29, therefore, afford means for attachment of the wheels 27 to the machine frame.

Extending upwardly from the extremities 5 of the bracing strut 28 is a pair of inclined brace bars 30. The lower ends of these bars are suitably fastened, as by bolts 31, to the bracing strut 28 at the ends of the latter, and said fastenings 31 serve to connect the 10 bars 30, the strut 28 and the wheel supporting bar 34, thus affording rigid connection between these elements, and tying the same into the frame structure. The upper ends of the brace bars 30 are bolted, as at 15 32, or otherwise suitably connected, to the gear casing 10, and in this manner serve to brace the lower portion of the frame with respect to that casing.

At the side of the gear casing 10 which 20 is opposite to the side from which the arm 16 projects is a horizontally extending supporting plate 33 having at its lower face a transversely extending channel 34 into which the head of the bracing strut 28 is fitted. 25 This supporting plate 33 is integral with the casing 10, and is braced with respect thereto by a vertically disposed strengthening web 35.

Arranged beneath the supporting plate 33, 30 and suitably fastened thereto, as by bolts 36, is an electric motor 37 of any approved type. The attaching feet 38 of said motor span the channel 34 of the plate 33, and thereby hold the head of the bracing strut 28 with- 35 in said channel and anchored with respect to the supporting plate.

At the lower end of the gear casing 10, which tapers downwardly, is a shaft connection 39, said shaft being aligned with 40 the armature shaft 40 of the motor 37. A slip joint connection 41 of any suitable form, is interposed between the shafts 39 and 40, said joint serving to prevent damage to the motor and to the gearing in the event that 45 excessive resistance arises to the action of the motor in the operation of the machine.

Extending vertically from the gear chamber 17 is a supporting column 42 the lower end of which is stepped in a conical bearing 43 suitably fastened, as by bolts or 50 screws 44, to said chamber 17.

A swinging wringer 45 of any appropriate construction is arranged at the upper end of the column 42 and is movable about said 55 column by means of a rotatable supporting head 46 which surrounds the upper end of the column 42. Thus the wringer 45 may be swung at various angles to the tub 11 in the usual manner characteristic of the present day construction of swinging wringers. 60 A locking device 47 is included in the construction of the swinging wringer for holding the latter at the desired positions of adjustment when positioned therein. The rolls 65 of the wringer 45 are controlled in their

movement by means of any usual or customary form of reversing clutch mechanism housed within the supporting head 46 and controlled by a lever mechanism 48, and 70 when the latter is properly actuated, rotation of the rolls of the wringer, in the desired direction of movement, is effected.

The swinging wringer 45, the locking device 47, the reversing mechanism within the head 46, and the controlling lever mechanism 48 being of any usual and approved 75 construction, it is unnecessary to illustrate the details thereof herein.

For controlling operation of the gearing within the casing 10 a hand lever 49 is employed. This is pivotally mounted on the 80 gear chamber 17, a connecting rod 50 extending therefrom to a crank arm 51, which, in turn, has operative relation with the gearing disposed within said casing 10. By the 85 manipulation of the hand lever 49, and its operative relation with the gearing at the inside of said casing 10, the movement of the tub 11 is controlled.

The holder 15 is in the form of a spider 90 frame, including a series of radially projecting arms 52 which extend outwardly from a hub member 53. At the outer extremity of one of said arms 52 is a sliding clamp member 54 having an upwardly extending engaging 95 hook 55, said hook being adapted to embrace the peripheral edge portion of the bottom of the tub 11, its body portion being received between the end of the arm 52 and a bearing block 56 suitably held in 100 the extremity of the arm 52. At the inner end of the clamp member 54 is located a downwardly extending contact lug 57 against which impinges the inner end of a fastening screw 58 which is threadably engaged with the bearing block 56. 105

The extremities of the other arms 52 are provided with fixed engaging hooks 59, said hooks also being designed to embrace the peripheral portions of the tub 11. Therefore, when such engagement of the hooks 59 110 is effected with the edge portions of the tub 11, and the screw 58 is properly manipulated so that by its impingement against the lug 57 the clamp member 54 is moved inwardly, the engaging hook 55 of that member 115 is locked into engagement with the peripheral edge portion of the tub 11, and the latter effectually held upon the support 15.

It will be apparent that the herein described machine assembly provides an effect- 120 ual organization of the tub or container and the frame structure which insures proper distribution of strain, and likewise balances the machine so as to prevent overturning or tilting of the machine in its entirety. It will be understood that the 125 wringer 45 is actuated from the motor 37 through suitable gearing connections between the wringer and the gearing within 130

the casing 10, such gearing connections being concealed within the arm 16 and the column 42. With such concealment of that gearing, as well as the gear connections between the motor and the operative connection 14, liability to injury of the operator, by contact with the gearing, is precluded. The only moving parts of the machine which are exposed are the tiltable tub 11 and the support 15.

I claim:

1. In a washing machine, the combination with a vertically-disposed tub-supporting frame member, of an arm extending laterally from said tub-supporting frame member, a supporting column for wringer mechanism extending upwardly from said arm, a supporting leg for sustaining the weight of said supporting column, an outwardly extending motor supporting plate carried by the tub-supporting frame member at the side thereof opposite to the laterally extending arm, and means for tying said supporting leg to said tub-supporting frame member.

2. In a washing machine, the combination with a vertically-disposed tub-supporting frame member, of a horizontal arm extending laterally from one side of said tub-supporting frame member, a vertically disposed supporting column for wringer mechanism sustained by said horizontal arm, a supporting leg connected to said horizontal arm and positioned below the supporting column for sustaining the weight of the latter, an outwardly extending supporting plate carried by the tub-supporting frame member at the side thereof opposite to the laterally extending arm, and means for tying said supporting leg to said tub-supporting frame member.

3. In a washing machine, the combination with a tub-supporting frame member, an arm extending laterally from said tub-supporting frame member, a supporting column for wringer mechanism extending upwardly from said arm, a supporting leg connected to said arm for sustaining the latter and said supporting column, tie bars connected to said supporting leg, a wheel frame connected to said tie bars, and bracing connections between said wheel frame and the tub-supporting frame member.

4. In a washing machine, the combination with a tub-supporting frame member, an arm extending laterally from said tub-supporting frame member, a supporting column for wringer mechanism extending upwardly from said arm, a supporting leg connected to said arm for sustaining the latter and said supporting column, tie bars connected to said supporting leg, a wheel frame connected to said tie bars, a motor supporting plate carried by said tub-supporting frame member, a bracing strut connected to

said motor supporting plate and the wheel frame, and bracing connections between said wheel frame and the tub-supporting frame member.

5. In a washing machine, the combination with a tub-supporting frame member, an arm extending horizontally from one side of said tub-supporting frame member, a vertically disposed supporting column for wringer mechanism sustained by said arm, a supporting leg connected to said arm for sustaining the latter and said supporting column, tie bars connected to said supporting leg, a wheel frame connected to said tie bars, a motor supporting plate carried by said tub-supporting frame member at the side thereof opposite to the horizontally extending arm, an inverted V-shaped bracing strut connected to said motor supporting plate and the wheel frame, and bracing connections between said wheel frame and the tub-supporting frame member.

6. In a washing machine, the combination with a tub-supporting frame member, of an arm extending horizontally from one side of said tub-supporting frame member, a vertically disposed supporting column for wringer mechanism sustained by said arm, a supporting leg connected to said arm for sustaining the latter and said supporting column, a pair of tie bars connected to said supporting leg and arranged in divergent relation thereto, a wheel frame connected across the ends of said divergent tie bars, a motor supporting plate carried by said tub-supporting frame member at the side thereof opposite to the horizontally extending arm, a V-shaped bracing strut connected to said motor supporting frame and having its ends connected to the wheel frame, and bracing connections between said wheel frame and the tub-supporting frame member.

7. In a washing machine, the combination with a tub-supporting frame member, comprising an arm extending horizontally from one side of said tub-supporting frame member, a vertically disposed supporting column for wringer mechanism sustained by said arm, a supporting leg connected to said arm for sustaining the latter and said supporting column, a pair of horizontal tie rods connected to said supporting leg and arranged in divergent relation thereto, a wheel frame connected across the ends of said divergent tie bars, a motor supporting plate carried by said tub-supporting frame member at the side thereof opposite to the horizontally extending arm, a V-shaped bracing strut connected to said motor supporting frame and having its ends connected to the wheel frame, and brace bars connected to said bracing strut and also to the tub-supporting frame member.

8. In a washing machine, the combination with a tub-supporting frame member, com-

prising an arm extending horizontally from one side of said tub-supporting frame member, a vertically-disposed supporting column for wringer mechanism sustained by said arm, a supporting leg connected to said arm for sustaining the latter and said supporting column, a pair of tie bars connected to said supporting leg and arranged in horizontal divergent relation thereto, a wheel frame connected across the ends of said divergent tie bars, a motor supporting plate carried by said tub-supporting frame member at the side thereof opposite to the horizontally extending arm, said motor supporting plate having a transversely extending channel, a substantially V-shaped bracing strut having its head seated in the channel of said motor supporting plate and also having its ends connected to the wheel frame, a motor suspended from said supporting plate and spanning the head of said V-shaped bracing strut to maintain the latter in said channel, and

bracing connections between said wheel frame and the tub-supporting frame member.

9. In a washing machine, a triangular metallic frame structure, a vertically disposed support column at one point of the frame structure, roller means adjacent remaining points of the triangular frame, a tub supporting casing having a laterally extending arm supported by said column, a channeled plate member associated with said casing providing a motor support, and an inverted V-shaped bracing strut having its base engaging said channeled plate and its ends engaging portions of the frame structure, and a wringer supporting casing vertically supported at the end of the laterally extending arm.

In testimony whereof I have hereunto signed my name.

JOHN TEDELL.