

Feb. 6, 1951

J. F. HORVATH
LAUNDRY MACHINE CASING

2,540,884

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4 Sheets-Sheet 1

Fig. 1.

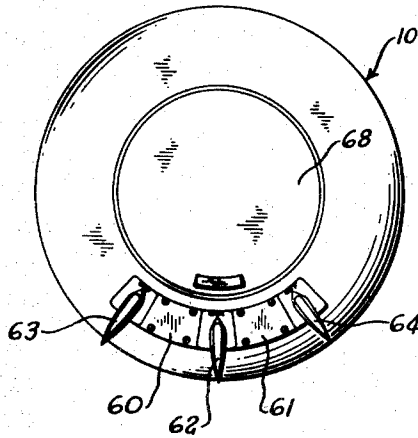
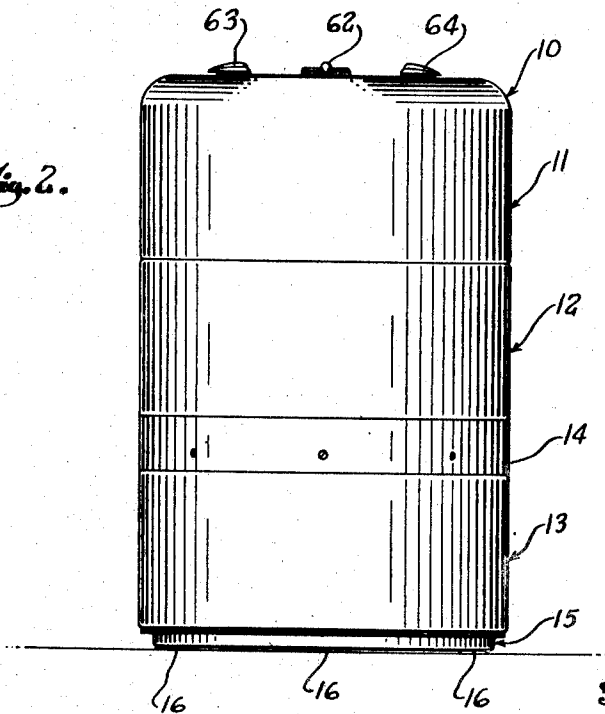


Fig. 2.



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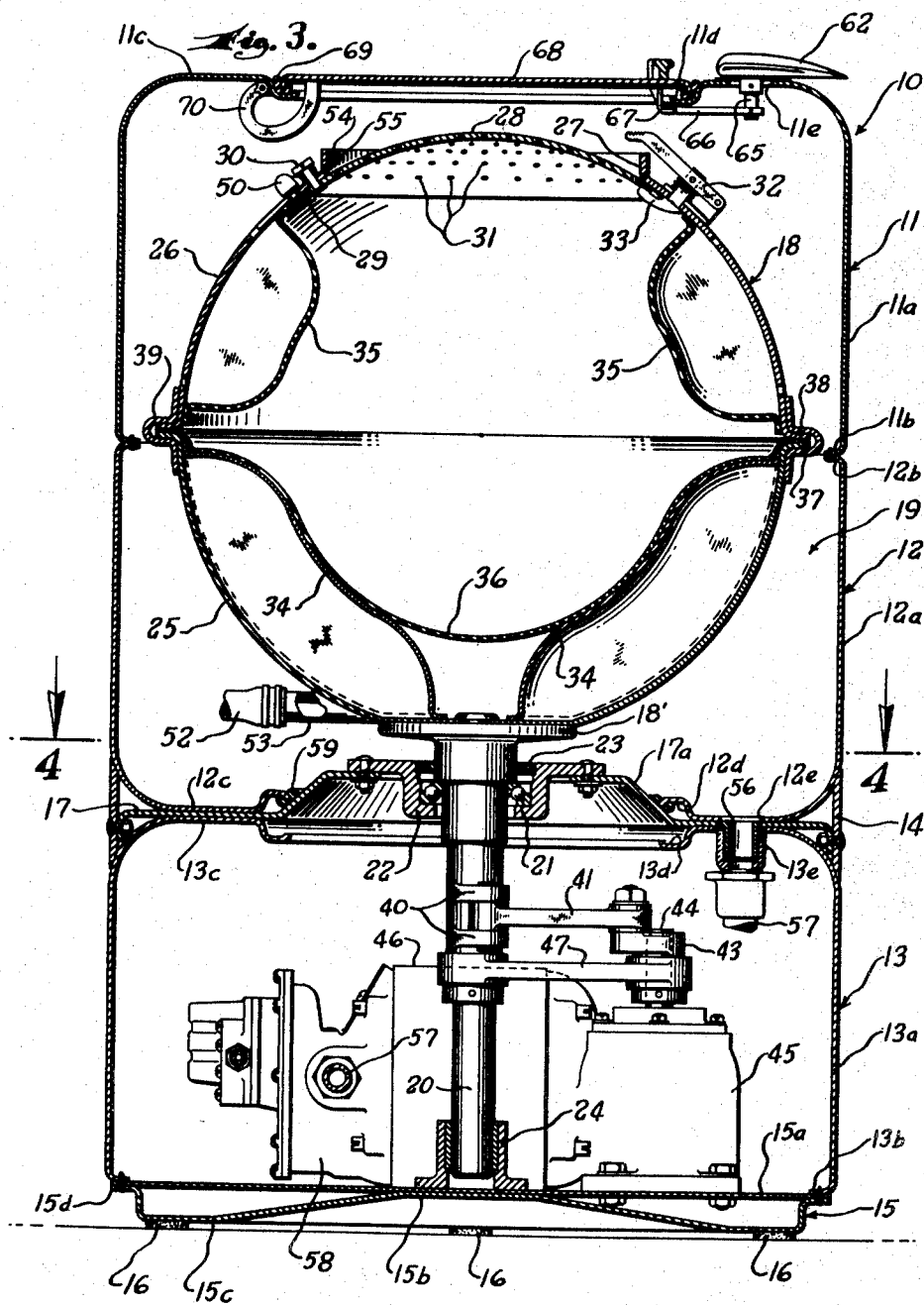
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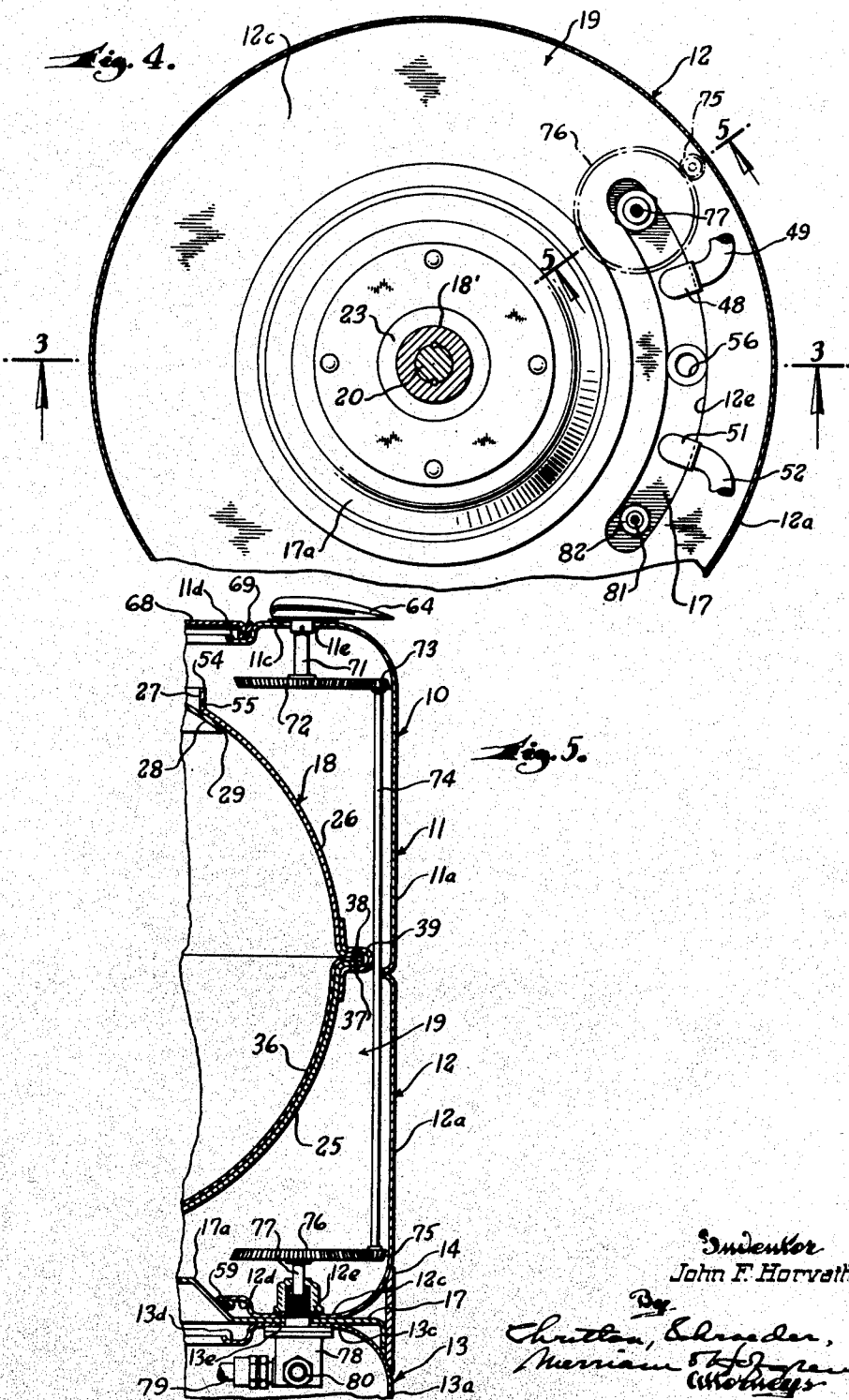
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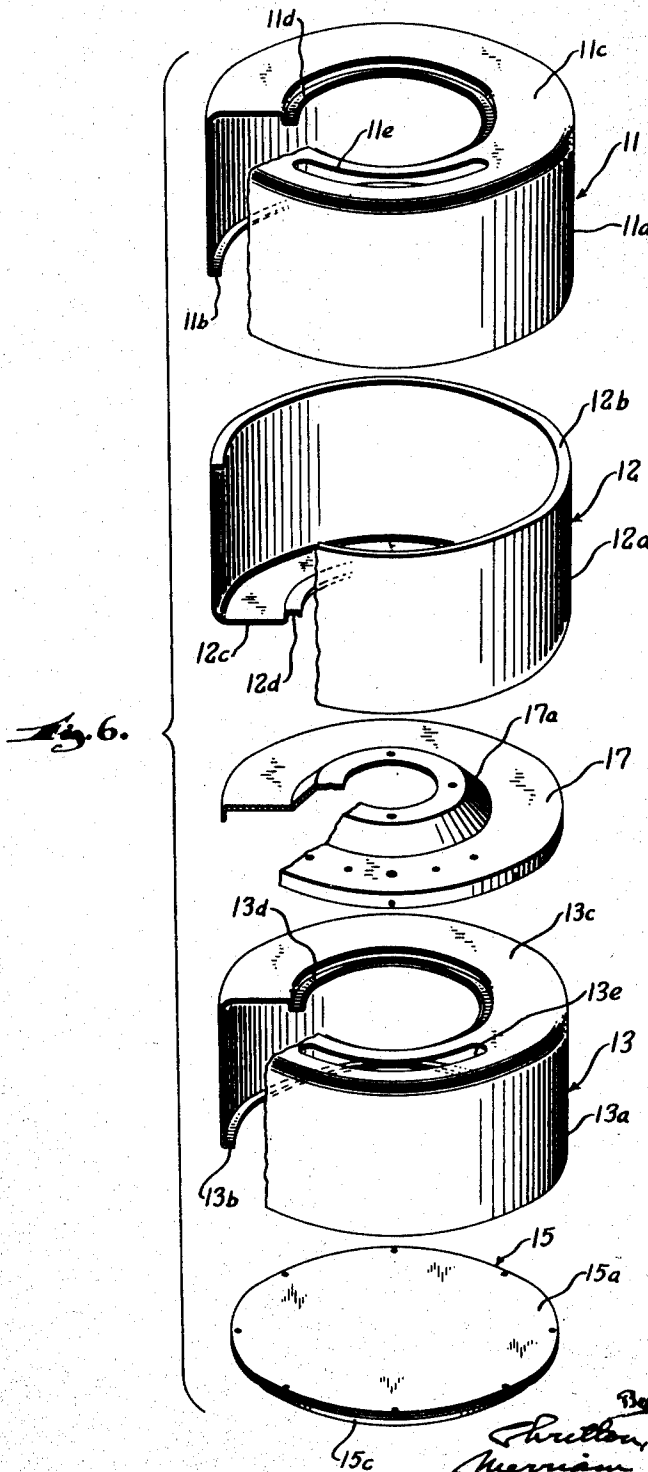
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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

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LAUNDRY MACHINE CASING

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9 Claims. (Cl. 68—3)

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The present invention relates to a laundry machine, and more particularly to a casing for a laundry machine of the domestic type.

The invention is particularly adapted for use in a washing and extracting machine of the kind disclosed in my co-pending application, Serial No. 637,964, filed December 29, 1945 (now abandoned), in which an automatic machine for washing, rinsing, and drying textiles is disclosed and claimed but may be used with machines of other kinds and types.

An object of the invention is to provide a casing for a laundry machine wherein the casing is made of three identical stampings, two of which are joined together to provide a housing for the tub or cleaning apparatus, and the other of which provides a housing for the operating mechanism, such as the motor, pumps, timer, fluid conduits, valves, and the like.

Another object of the invention is to provide a casing for a laundry machine which is economical to manufacture and which may be easily and quickly assembled.

A further object of the invention is to provide a casing which will be sturdy and of attractive appearance.

Further objects will become readily apparent from the following detailed description taken in connection with the accompanying drawings illustrating a preferred form of the invention wherein:

Fig. 1 is a top plan view of a laundry machine embodying the invention.

Fig. 2 is a side view.

Fig. 3 is an enlarged vertical sectional view taken on the line 3—3 of Fig. 4.

Fig. 4 is a fragmentary sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a perspective view of the various members making up the casing with parts broken away or in section for purposes of clarity.

While the invention is susceptible of embodiment in various forms, there is shown in the drawings and herein described in detail, a preferred form, with the understanding that it is to be considered as an exemplification of the principles of the invention. The scope of the invention will be pointed out in the appended claims.

In the drawings there is shown a casing 10 made of identical sections 11, 12 and 13, sections 11 and 12 being joined together in such manner as to house the tub or cleaning unit while section 13 houses the bulk of the operating mechanism.

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An ornamental band 14 is preferably placed around the point of juncture between sections 12 and 13. Section 13 is mounted on a circular base member 15.

Each of the sections 11, 12 and 13 comprises a cylindrical body section 11a, 12a and 13a, respectively, a short internal flange 11b, 12b and 13b at one end thereof, and an inwardly extending end wall 11c, 12c and 13c at the other end. The inner end of each end wall terminates in a trough 11d, 12d and 13d, the trough providing an edge for a circular opening in the center of the wall. The end walls are also each provided with an elongated arcuate slot 11e, 12e and 13e on one side thereof.

The base member 15 comprises a flat circular plate 15a on which much of the operating mechanism is mounted, and underneath which is a circular member 15b which contacts the plate 15a in its central portion, then extends downwardly to form an annular base proper 15c, and then rises and terminates in an outwardly extending flange 15d. The casing section 13 is placed upon this base member with the flange 13b resting on the outer edge of said member and a plurality of threaded bolts or screws are inserted through suitable openings in the flange 15d of the base member, the edge of the base member 15a and the flange 13b, to secure the members together. A plurality of cushion members 16 are suitably secured to the annular base member proper 15c.

Above the casing section 13 is provided a circular partition member 17, provided with a central opening. The sections 11 and 12 are placed together so that the flanges 11b and 12b are adjoining and are then secured together by a plurality of threaded bolts or screws extending through said flanges. These sections are then placed upon the partition member 17 and the members 13, 17 and 12 are secured together by any suitable means in such manner that the slots 12e and 13e are in registry, the ornamental band 14 having first been bolted to a flange on the outer edge of the partition member 17.

The cleaning and oscillating mechanism shown in the drawings is of the type disclosed in my aforementioned application, Serial No. 637,964 and reference should be made to such application for a more complete understanding of its construction and operation. As shown herein, a generally spherical container 18 is positioned in the compartment 19 formed by the casing sections 11 and 12 and is supported for oscillation about an upright axis by means of a member 18' secured to the container and the upper end of a shaft

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20 which is supported in a bearing 21, in a bearing member 22 bolted to the partition member 17, a seal 23 preferably being provided above the bearing 21. The lower end of the shaft is supported in a bearing 24 secured to the base member 15a.

The container 18 as illustrated herein consists of a lower substantially semi-spherical part 25 and upper part 26 provided with a central opening 27. A closure or cover 28 for the opening 27 has its peripheral edge 29 located within the part 26 and is movably supported thereon by means of a pivot 30. The cover 28 is perforated by a plurality of apertures 31. The cover may be swung about the pivot 30 to an open position, giving access to the container for the purpose of inserting and withdrawing clothes or other materials. The cover may be provided with a handle (not shown) and with a latch 32 pivotally attached to a bracket on the exterior of the tub member 26 and having a finger member 33 which extends through an opening in said tub part 26 and fits into a suitable notch in the underside of the cover 28 when the cover is in its closed position.

Internally the container 18 has a pair of ribs 34 extending inwardly from the lower part 25, and a pair of ribs 35 extending inwardly from the upper part 26. These ribs are preferably in the same vertical plane and function during an oscillatory movement of the container to produce a washing action of liquid on the clothes or other materials placed in the container. A flexible member 36 is arranged normally to fit against the inner surface of the lower part 25 and snugly over the ribs 34. The edge of this flexible member, which may be of rubber or other suitable material, is secured intermediate radially extending flanges 37 and 38 on the container parts 25 and 26 respectively, and is securely clamped in such position by means of an annular clamping ring 39.

The container 18 is arranged to be oscillated continuously throughout the washing, extracting and rinsing operations. To accomplish this, the shaft 20 carries a pair of spaced crank arms 40 adapted to receive one end of a link 41, the other end of which is connected to a crank arm 43 mounted on a shaft 44. This shaft 44 extends from a gear type speed reducer 45 supported on one end of an electric motor 46. During the rotation of the motor continuously in one direction, the crank 43 is rotated by the shaft 44, and during such rotary movement operates through the link 41 to oscillate the shaft 20 and container 18 through an angle of approximately 90°. As shown, the speed reducer-motor unit is bolted to the plate 15a of the base member 15. In order to insure smooth operation, a spacing member 47 is preferably provided between the shafts 44 and 20, the spacing member carrying bearings surrounding each of said shafts and operating to maintain a constant distance therebetween.

During a washing operation, a cleansing fluid such as water, is brought to the tub through a pipe connection 48 in the partition 11, a hose 49 and another pipe 50, the latter pipe having a portion extending through an opening in the upper part of the tub section 26. A detergent and the clothes or other materials to be washed are then placed in the tub and the machine is put in operation. The motor oscillates the tub, whereupon the ribs cause the material in the tub to be agitated and thereby washed. Upon completion of the washing operation, the flexible member 36 is forced upwardly by admitting water

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or other liquid under pressure to the space between the bottom of the container and the flexible member, the liquid flowing through a fitting 51 in the partition 17, a hose 52, to a pipe 53 which is suitably connected to the bottom of the container. As the member 36 moves upwardly, the washing liquid is discharged through the apertures 31 in the cover until finally the clothes are pressed against the cover and the top part of the container. As the pressure of the liquid in the bottom of the container is increased, the liquid in the clothes is extracted, or expressed out of them and forced through the apertures 31. To insure substantially complete drainage, the upwardly extending lip 54 around the opening 27 is provided with discharge apertures 55. The ribs 35 in the upper tub section 26 are formed of flexible material, such as rubber, so that they will be compressed against the wall of the container during the extracting operation, and thereby avoid injury to the clothes.

The water forced out of the tub 18 will flow down the sides thereof onto the floor of the compartment 19 where it will drain out of an opening in a fitting 56 which extends through an opening in the partition member 17 where it is connected to a pipe 57, which in turn leads to the drain pump 58 attached to and driven by the motor 46. In order to insure drainage, the partition member 17 has a raised portion 17a in its central portion. In order to prevent leakage between the partition member 17a and the casing section 12, a rubber gasket 59 is preferably placed between the two parts at the point of juncture. Any water leaking onto the bearing member 22 or the partition member 17a will therefore flow downwardly to the end wall 12c of the section 12 and thence to the drain opening 56.

The slot 11e formed in the end wall of the casing section 11 is adapted to receive an instrument panel which, as shown in Figure 1, comprises plates 60 and 61 secured to the edges of the slot by screws or threaded bolts, and between which is a plate in which is rotatably mounted a lock handle 62. In the slot and wedged against each end thereof by the plates 60 and 61 respectively are two plates, one bearing an operating handle 63 for the motor and the other bearing a handle 64 for a mixing valve. The lock handle 62 is connected to a downwardly extending stud 65 to the lower end of which is attached a latch member 66 comprising an elongated arm, the outer end of which is cut out and adapted to overlap a catch member 67 attached to the bottom of the casing cover 68, which is provided with an annular rubber gasket 69 adapted to be received in the trough 11d of the upper casing section 11. The cover 68 is hinged to the casing by means of an arm 70 mounted on the underside of the wall 11c of the casing section 11.

The handle 64 for the mixing valve, as shown in Fig. 5, is mounted on the top of a stud 71 which in turn carries a gear wheel 72 which meshes with a small gear 73 on a shaft 74 in the tub compartment 19, and which is suitably journaled in a bracket (not shown) attached to a part of the inner wall of said compartment. At the lower end of this shaft is mounted a small gear 75 in mesh with a large gear wheel 76 connected to a shaft 77 which operates a valve in the mixing chamber 78 to control the temperature of the water flowing to the tub. A hot water pipe (not shown) and a cold water pipe 79 lead to this mixing chamber, the

outlet 80 of which is connected to the pipe connection 48 for the tub fluid supply line.

The handle 63 operates a switch (not shown) which controls the circuit to the motor through a wire 81 extending from the switch to the motor and passing through a connection 82 in the partition 17.

It will thus be seen that the novel casing is constructed of three identical casing sections adapted to be joined together in such manner as to provide a large housing for the tub or cleaning apparatus and a smaller housing for the operating mechanism. The central opening in the upper section provides means for permitting access to the cleaning apparatus, and the trough around this opening provides means for receiving the casing cover. The central opening in the other two sections provides a means for receiving the shaft for oscillating the tub and means for directing the overflow from the tub to the drain opening. The slot in the upper section provides a means for receiving an instrument panel and the slots in the other two members permit communication between the two housings of the other connections necessary for the operation of the cleaning apparatus. The flange on one end of each section provides means for attaching the two sections together and for attaching the lower section to the base member. The construction furthermore provides for a leak-proof upper chamber which is usually necessary in a domestic washing machine.

While the casing resulting from the present invention is particularly adapted for use with a laundry machine of the type illustrated, it is readily adapted for use with laundry machines or washing machines of other types and kinds and may be used with the partition member and base member shown, or without the partition and with a base of a different type. The casing sections shown are cylindrical metal stampings, but the invention includes sections of other shapes and materials. If it is desired to provide access to the operating mechanism, a portion of the outer wall 13a of the casing section 13 may be cut out and hinged to such section to provide a service door therefor.

I claim:

1. A casing for a laundry machine provided with a tub and operating mechanism therefor, comprising, three identical casing sections, two of which are fastened together to provide a housing for the tub, and the other provides a housing for the operating mechanism, said sections being cylindrical stampings having an end wall portion with a circular central opening, and means for fastening said sections together.

2. A casing for a laundry machine provided with a tub and operating mechanism therefor, comprising, three identical casing sections, two of which are fastened together to provide a housing for the laundry tub, and the other provides a housing for the operating mechanism, said sections being cylindrical stampings having an internal flange at one end, and means for fastening said sections together.

3. A casing for a laundry machine provided with a tub and operating mechanism therefor, comprising, three identical casing sections, two of which are fastened together to provide a housing for the laundry tub, and the other provides a housing for the operating mechanism, a base member on which said other section is mounted,

and a partition between said other section and the first two sections, and means for attachment of said sections to each other and to said base and partition.

4. A casing for a laundry machine provided with a tub and operating mechanism therefor, comprising, three identical casing sections, two of which are fastened together to provide a housing for the laundry tub, and the other is fastened to said first two sections and provides a housing for the operating mechanism, said sections being cylindrical stampings provided with an internal flange at one end and an inwardly extending wall at the other end, said wall being provided with a central opening and an elongated slot.

5. The device claimed in claim 4 including an instrument panel and wherein the slot in one section is adapted to receive the instrument panel and the slots in the others when aligned provides a passageway between the two housings.

6. A casing for a laundry machine provided with a tub, comprising, two identical casing sections fastened together to provide a housing for the laundry tub, said sections being cylindrical stampings each provided with an internal flange at one end and an inwardly extending wall at the other end, said wall having formed therein a central opening and an elongated slot.

7. A section for a laundry machine casing, comprising, a stamping provided with an internal flange at one end and an inwardly extending wall at the other, said wall having an arcuate elongated slot therein, and an instrument panel mounted in said slot.

8. A casing for a laundry machine provided with a tub and operating mechanism therefor, comprising, three identical casing sections, two of which are fastened together to provide a housing for the laundry tub, and the other providing a housing for the operating mechanism, and a partition between said other section and the first two sections, means for attachment of said sections to each other and to said partition, said partition having an upwardly and inwardly inclined annular portion at the upper end of which is formed an inwardly extending portion, said inwardly extending portion of the partition having a central opening therein.

9. A casing for a laundry machine provided with a tub and operating mechanism therefor, comprising, a plurality of identical casing sections adapted to be fastened together to provide a housing for the tub and a housing for the operating mechanism, and means for fastening said sections together, each of said sections being formed with an internal flange at one end and an inwardly extending wall at the other end.

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