

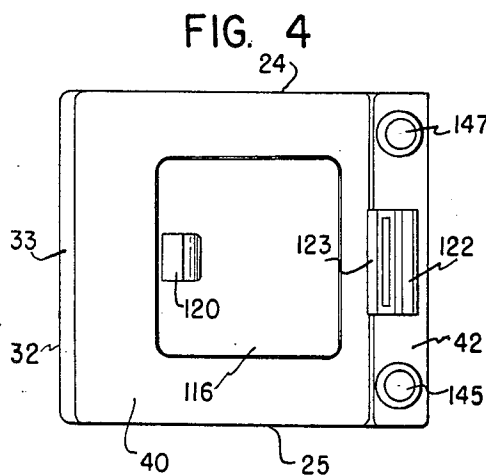
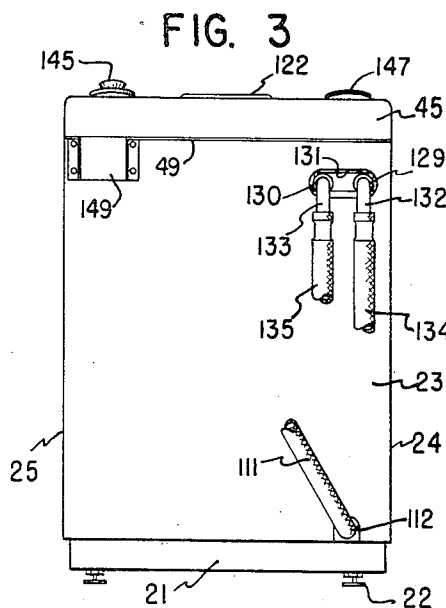
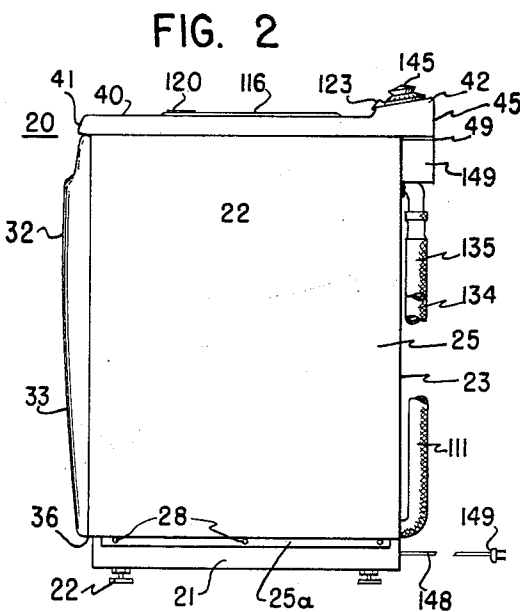
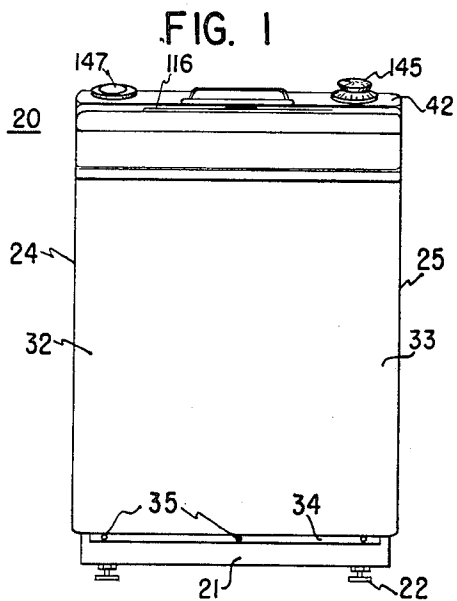
Aug. 31, 1954

J. C. SHARP ET AL
CLOTHES WASHING MACHINE

2,687,633

Filed Oct. 14, 1950

4 Sheets-Sheet 1



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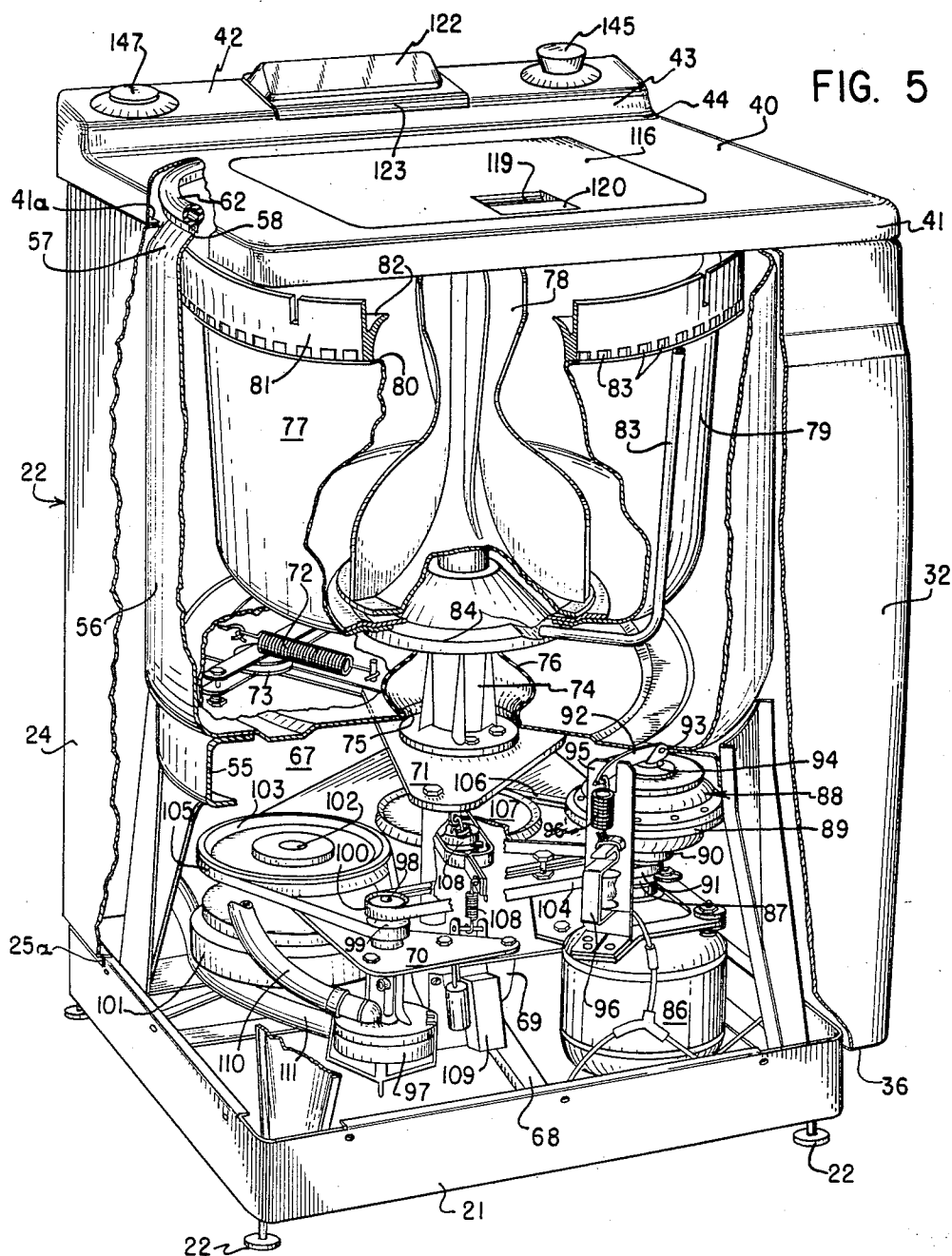


FIG. 5

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FIG. 6

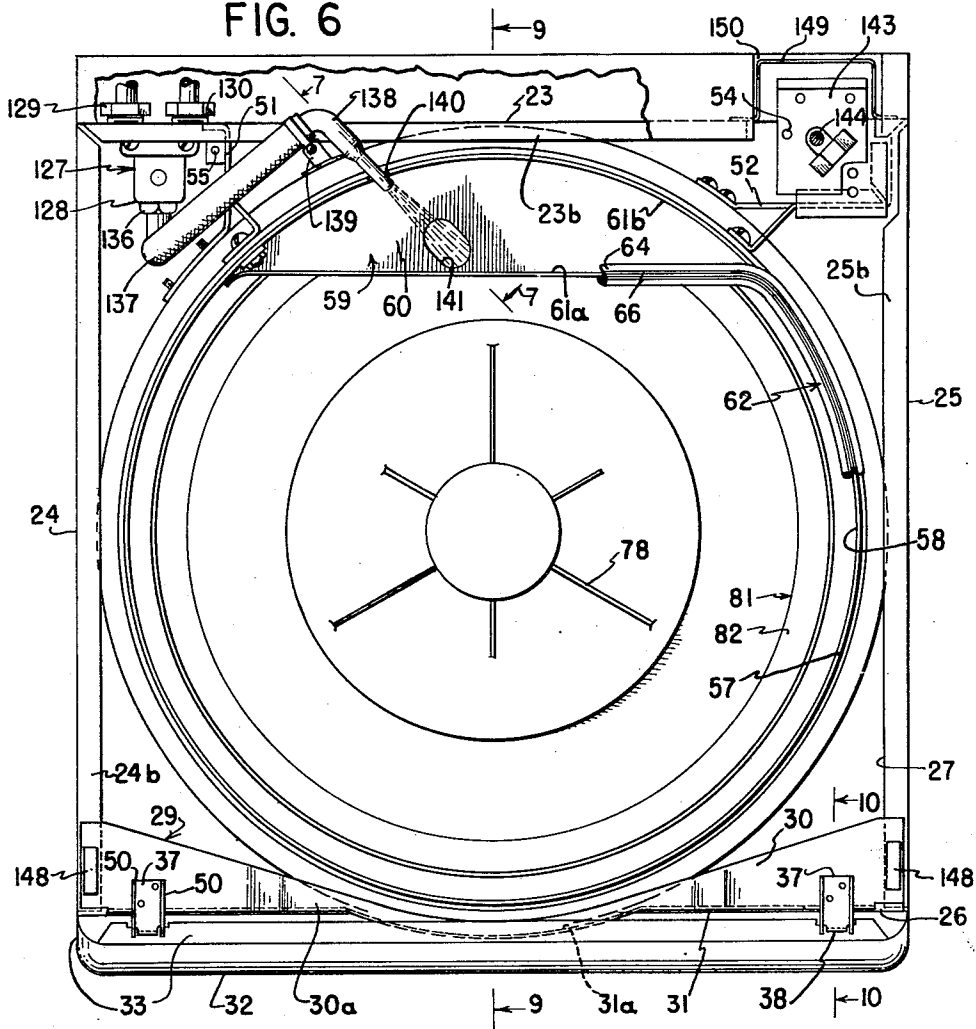


FIG. 7

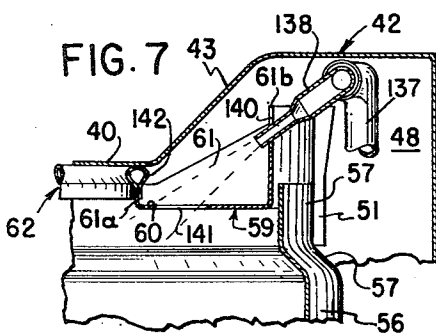
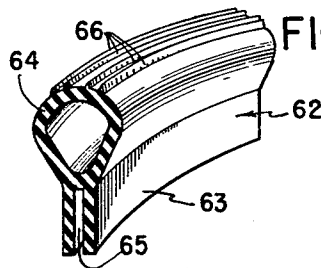


FIG. 8



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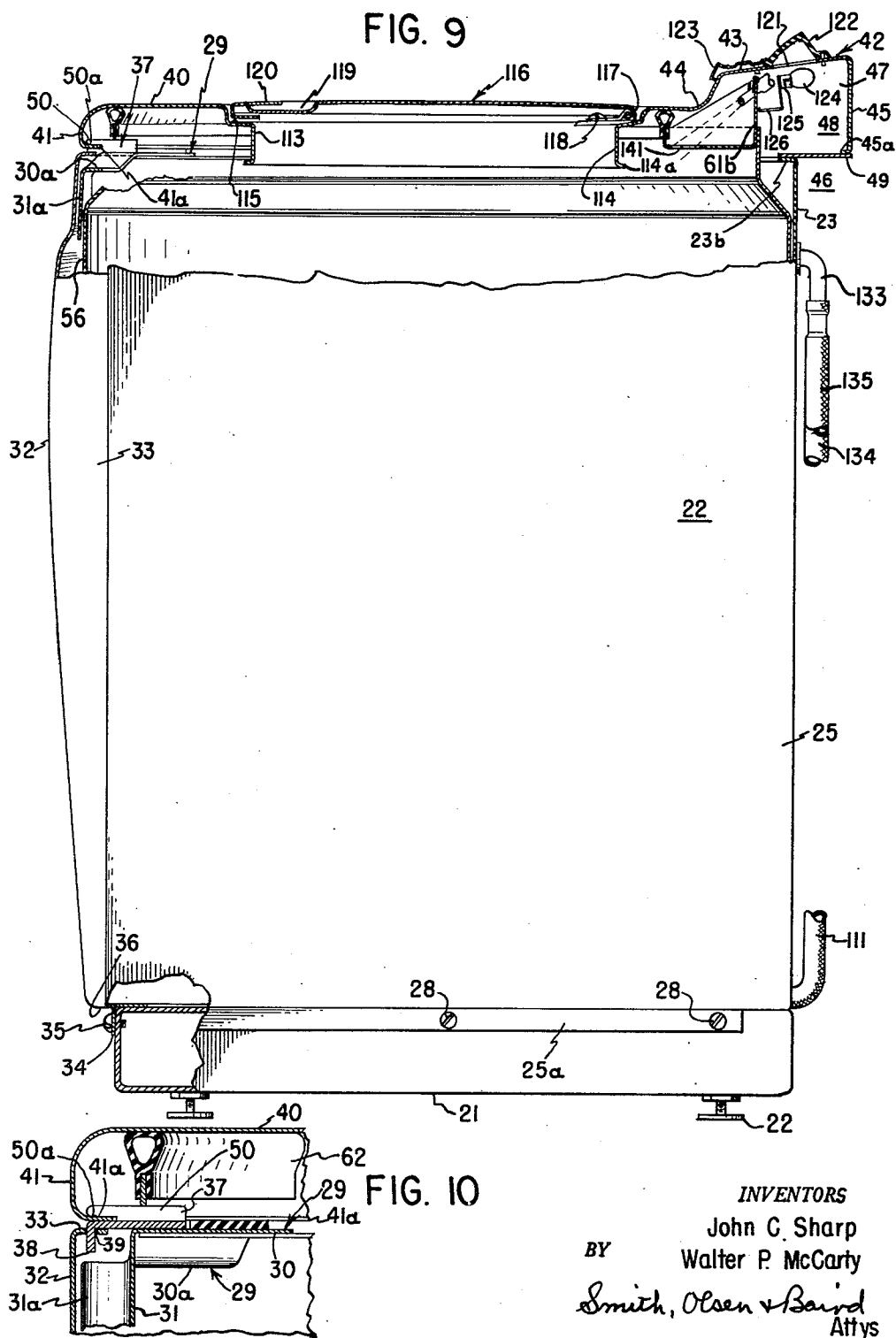
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UNITED STATES PATENT OFFICE

2,687,633

CLOTHES WASHING MACHINE

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Application October 14, 1950, Serial No. 190,144

11 Claims. (Cl. 68—23)

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The present invention relates to clothes washing machines of the type in which the clothes are washed, rinsed and centrifugally dried in a receptacle or tub, and more particularly to improved cabinet structure for such a machine.

It is an object of the present invention to provide in a clothes washing machine of the type noted, improved cabinet structure that includes a casing provided with front and top openings and removable front and top walls permitting ready access to the tub and to the machinery housed in the casing.

Another object of the invention is to provide in a clothes washing machine improved cabinet structure including top and rear walls wherein the top wall projects rearwardly of the rear wall to define an upstanding space disposed below the top wall and behind the rear wall and arranged to accommodate the plumbing connections to the machine when the machine is arranged closely adjacent to the wall of a laundry room.

Another object of the invention is to provide in a clothes washing machine, improved cabinet structure including a top wall that terminates adjacent to the rear thereof in an upwardly directed backplash upon which there is mounted a control device for governing the operation of the machine.

Another object of the invention is to provide in a clothes washing machine of the type noted, including cabinet structure provided with a top wall having a top opening, a drain tub arranged in the cabinet structure and having a top opening, and a spin tub arranged in the drain tub and having a top opening accessible from the exterior through the top openings in the drain tub and in the top wall, an improved sealing arrangement between the top wall and the top of the drain tub that is disposed about the top openings therein.

A further object of the invention is to provide a clothes washing machine of the type noted, including a base, removable cabinet structure carried by the base, a drain tub arranged in the cabinet structure and carried by the base, a spin tub arranged in the drain tub and carried by the base, and machinery arranged within the cabinet structure and carried by the base, whereby the fundamental operating elements of the machine are carried and supported as a complete assembly upon the base independently of the cabinet structure.

Further features of the invention pertain to the particular arrangement of the elements of the clothes washing machine, whereby the above-

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outlined and additional operating features thereof are attained.

The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following specification taken in connection with the accompanying drawings, in which Figure 1 is a front elevational view of a clothes washing machine embodying the present invention; Fig. 2 is a side elevational view of the clothes washing machine shown in Fig. 1; Fig. 3 is a rear elevational view of the clothes washing machine shown in Figs. 1 and 2; Fig. 4 is a plan view of the clothes washing machine shown in Figs. 1 to 3, inclusive; Fig. 5 is an enlarged front perspective view, partly broken away, of the clothes washing machine shown in Figs. 1 to 4, inclusive; Fig. 6 is an enlarged top view, partly broken away, of the clothes washing machine, with the top wall thereof removed; Fig. 7 is a further enlarged fragmentary vertical sectional view of the water supply arrangement incorporated in the clothes washing machine, taken along the line 7—7 in Fig. 6; Fig. 8 is a greatly enlarged fragmentary perspective view of the flexible sealing gasket that is incorporated between the drain tub and the top wall of the clothes washing machine; Fig. 9 is an enlarged side elevational view, partly in section, of the clothes washing machine, the sectionalized portion being taken along the line 9—9 in Fig. 6; Fig. 10 is a further enlarged fragmentary vertical sectional view of the junction between the front wall and the top wall of the cabinet structure of the clothes washing machine, taken along the line 10—10 in Fig. 6.

Referring now to the drawings, there is illustrated a clothes washing machine 20 embodying the present invention and comprising a substantially rectangular base 21 that is supported upon independently adjustable feet 22 arranged to engage the floor or other supporting surface. Removably secured to the base 21 is a casing 22 that includes a rear wall 23 and opposed substantially parallel spaced-apart side walls 24 and 25 defining both a front opening 26 and a top opening 27. Preferably the casing 22, including the rear wall 23 and the side walls 24 and 25, is formed of a one-piece wrap-around construction, the rear wall 23 being disposed substantially flush with the rear of the base 21 and joining the upper rear portion thereof; while the side walls 24 and 25 are disposed slightly outwardly from the respective sides of the base 21 and joining the upper side portions thereof.

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Specifically the lower portion of the side wall 25 terminates in an inwardly and thence downwardly directed flange 25a that is secured to the adjacent upper portion of the side of the base 21 by a plurality of screws 28; and the lower portion of the side wall 24 is of a like construction, not shown. The upper portion of the rear wall 23 terminates in an inwardly directed flange 23b; and the upper portions of the side walls 24 and 25 respectively terminate in inwardly directed flanges 24b and 25b. In order to lend rigidity to the casing 22, a laterally extending bracket 29 is arranged adjacent to the upper front portion thereof, the opposite ends of the bracket 29 being rigidly secured by welding, or the like, to the front portions of the flanges 24b and 25b respectively carried by the side walls 24 and 25. As best shown in Figs. 6, 9 and 10, the bracket 29 is of generally angular form including a top flange 30 and a front flange 31. The central portion of the top flange 30 projects downwardly as indicated at 30a; and the central portion of the front flange 31 projects outwardly as indicated at 31a in order that the bracket 29 does not interfere with a drain tub that is arranged in the casing 22, as explained more fully hereinafter.

The casing 22 is provided with a removable front wall 32 that normally closes the front opening 26, the front wall 32 being provided with a rearwardly directed marginal boundary flange 33 including top, bottom and side portions. The top portion of the boundary flange 33 is disposed substantially flush with the flanges 24b and 25b respectively carried by the side walls 24 and 25; and the side portions of the boundary flange 33 are disposed substantially flush with the respective side walls 24 and 25. The lower portion of the boundary flange 33 is provided with a downwardly extending tab 34 that is secured to the adjacent upper portion of the front of the base 21 by a plurality of screws 35. Accordingly the principal portion of the front wall 32 is disposed forwardly of the front of the base 21 so that the lower portion of the boundary flange 33 defines a laterally extending toe-receiving recess 36 disposed below and rearwardly of the front wall 32 and forwardly of the front of the base 21. The top portion of the boundary flange 33 is removably secured in place by an arrangement including a pair of laterally spaced-apart fixtures 37 that are secured to the bracket 29 adjacent to the opposite ends thereof. More particularly each of the fixtures 37 comprises a body portion secured to the top flange 30 of the bracket 29, which body portion of the fixture 37 terminates in a downwardly projecting tongue 38 that extends through a cooperating hole 39 provided in the top portion of the boundary flange 33 of the front wall 32. When the front wall 32 is in place, the opposite sides of the top portion of the boundary flange 33 are disposed substantially flush with the opposite ends of the top flange 30 of the bracket 29, while the central section of the top portion of the boundary flange 33 extends over the central portion 30a of the top flange 30 of the bracket 29. Also the central portion 31a of the front flange 31 of the bracket 29 projects beneath the central section of the top portion of the boundary flange 33 due to the outward projection of the central portion 31a of the front flange 31 of the bracket 29. This arrangement and cooperation between the boundary flange

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33 provided on the front wall 32 and the central portion of the bracket 29 provides for the support of the principal weight of the front wall 32 upon the bracket 29. Accordingly it will be understood that the front wall 32 may be readily placed and removed with respect to the front of the casing 22 and with respect to the front opening 26 by appropriate manipulation of the screws 35 and the holes 39 cooperating with the tongues 38 that are carried by the fixtures 37.

The casing 22 is provided with a removable top wall 40 that normally closes the top opening 27, the top wall 40 being provided with a downwardly directed marginal boundary flange 41, including front and side portions that are provided with inturned edges 41a. The inturned edge 41a provided on the front of the boundary flange 41 is disposed above the top portion of the boundary flange 33; and the inturned edges 41a provided on the side portions of the boundary flange 41 are respectively disposed above the flanges 24b and 25b respectively provided on the side walls 24 and 25. The front portion of the boundary flange 41 is disposed substantially flush with the upper portion of the front wall 32, and the side portions of the boundary flange 41 are respectively disposed substantially flush with the upper portions of the side walls 24 and 25.

The rear of the top wall 40 terminates in a laterally extending backsplash 42 that includes an upwardly and rearwardly sloping wall element 43 disposed above the rear portion of the top wall 40 and joined thereto by a curved wall element 44. Also the backsplash 42 includes a downwardly directed wall element 45 that is disposed well behind the rear wall 23 in order to provide an upstanding space 46 disposed below the rear of the backsplash 42 and behind the rear wall 23, as well as the rear of the base 21. Finally the backsplash 42 includes laterally spaced-apart side wall elements 47 joining the top wall element 43 and the rear wall element 45, the side wall elements 47 merging into the side portions of the marginal flange 41. Thus the backsplash 42 is hollow providing a cavity 48 therein, wherein at least a portion of the cavity 48 is disposed above the plane of the top wall 40 and at least a portion of the cavity 48 is disposed rearwardly of the plane of the rear wall 23. Finally the opening defined between the upper portion of the rear wall 23 and the lower portion of the rear wall element 45 and communicating with the interior of the cavity 48 is closed by a plate 49 extending between the flange 23b provided on the rear wall 23 and an inturned flange 45a provided on the lower portion of the rear wall element 45. Preferably the front edge of the plate 49 is rigidly secured to the flange 23b and the rear edge of the plate 49 engages the flange 45a. Thus the plate 49 closes the cavity 48 provided in the backsplash 42 preventing the entry of foreign objects thereinto.

The front portion of the top wall 40 is removably secured in place by the fixtures 37. More specifically, each of the fixtures 37 comprises two laterally spaced-apart upstanding flanges 50 having slots 50a formed therein that receive the inturned edge 41a of the front portion of the marginal flange 41. The rear portion of the top wall 40 is removably secured in place by an arrangement including two laterally spaced-apart brackets 51 and 52 that are disposed within the casing 22 and supported by a drain tub arranged therein in a manner more fully explained hereinafter. At the present time, it is noted that the bracket 51 is arranged in the upper portion of the casing

22 adjacent to the junction of the side wall 24 and the rear wall 23; and that the bracket 52 is arranged in the upper portion of the casing 22 adjacent to the junction of the side wall 25 and the rear wall 23. A first screw, not shown, is arranged to project through a hole provided in the left-hand side of the top wall element 43 of the backplash 42 and to be received in a threaded opening 53 provided in structure carried by the bracket 51. A second screw, not shown, is arranged to project through a hole provided in the right-hand side of the top wall element 43 of the backplash 42 and to be received in a threaded opening 54 provided in structure carried by the bracket 52. Thus it will be understood that the top wall 40 may be readily placed and removed with respect to the top of the casing 22 and with respect to the top opening 27 by appropriate manipulation of the first and second screws mentioned with respect to the cooperating threaded openings 53 and 54 and by an appropriate manipulation of the inturned edge 41a of the front portion of the marginal flange 41 with respect to the slots 50a provided in the front of the flanges 59 carried by the fixtures 37.

In view of the foregoing description of the machine 20, it will be understood that the base 21 carries the composite cabinet structure including the casing 22, the front wall 32 and the top wall 40; that the casing 22 includes the rear wall 23, the side walls 24 and 25 and the plate 43; and that the top wall 40 includes the upwardly directed backplash 42.

Referring now more particularly to Fig. 5, upstanding supporting structure 55 is arranged in the lower portion of the casing 22 and carried by the base 21; which supporting structure 55 carries an upstanding substantially cylindrical drain tub 56 arranged in the upper portion of the casing 22. The drain tub 56 is provided with an inwardly directed annular marginal throat 57 that terminates in a top opening 58 disposed below the top wall 40. As best shown in Figs. 6 and 7, an overflow baffle 59 is arranged in the upper rear portion of the top opening 58 and within the throat 57. The baffle 59 includes a bottom wall 60 disposed below the top edge of the throat 57 and an upstanding boundary flange 61, the upper edge of the front portion 61a of the boundary flange 61 being disposed substantially flush with the top edge of the throat 57 and the upper edge of the rear portion 61b of the boundary flange 61 being disposed well above the top edge of the throat 57 and projecting upwardly into the cavity 48 provided in the backplash 42. The front portion 61a of the boundary flange 61 is substantially straight and extends laterally between corresponding portions of the throat 57, while the rear portion 61b of the boundary flange 61 is curved to fit within the adjacent portion of the throat 57. A substantially annular flexible sealing gasket 62 surrounds the top opening 58 in the throat 57 and is directly carried by the top edge of the front portion of the throat 57 and by the top edge of the front portion 61a of the overflow baffle 59. As best shown in Fig. 8, the sealing gasket 62 is preferably formed of rubber, or the like, and includes a lower body portion 63 and an upper hollow tubular head or bead portion 64. The body portion 63 has a slot 65 formed therein that receives and frictionally engages the top edge of the front of the throat 57 and the top edge of the front portion 61a of the overflow baffle 59; while the bead portion 64 is provided with a plurality of spaced-apart fins 66 on the topmost por-

tion thereof. The fins 66 provided on the topmost portion of the head 64 directly engage the lower surface of the top wall 40, and the head portion 64 of the sealing gasket 62 is retained under compression in order to perfect a seal about the top opening 58 and between the drain tub 56 and the top wall 40. This arrangement positively prevents the normal escape of wash water from the drain tub 56 into the interior of the casing 22, as explained more fully hereinafter.

The bottom wall of the drain tub 56 is spaced well above the base 21 to define a machinery compartment 67 arranged in the lower portion of the casing 22. Also the base 21 carries additional supporting structure 68 upon which the principal machinery disposed in the machinery compartment 67 is mounted. Specifically an upstanding support 69 is pivotally mounted at the lower end thereof to the structure 68, which upstanding support 69 comprises, among other structure, two vertically spaced-apart plates 70 and 71 arranged substantially centrally in the machinery compartment 67. The plate 71 is operatively connected to the upstanding structure 55 by a plurality of resilient springs 72 and associated snubber devices 73, whereby the upstanding support 69 is normally centered along a substantially vertical axis but is capable of gyratory movement about its pivotal mounting upon the structure 68. The plate 71 carries an upstanding bearing bracket 74 that projects through a substantially centrally disposed opening 75 provided in the bottom wall of the drain tub 56, which bracket 74 is sealed to the portion of the bottom wall of the drain tub 56 surrounding the opening 75 by an arrangement including an upstanding flexible boot 76 formed of rubber, or the like.

An upstanding spin tub 77 is arranged within the drain tub 56 and supported by a tub sleeve, not shown, that is mounted in the bearing bracket 74 for rotation about a substantially vertical axis; and an upstanding agitator 78 is arranged within the spin tub 77 and supported by an agitator shaft, not shown, that is mounted in the tub sleeve for oscillation about the substantially vertical axis mentioned. The spin tub 77 is provided with an upwardly and outwardly flared side wall 79 that terminates in a top opening 80 disposed below the top wall 40 and arranged in substantial alignment with the top opening 58. The top rim of the spin tub 77 carries an annular balance ring 81 that is provided with an inwardly directed annular clothes retaining flange 82, a plurality of openings 83 being arranged through the balance ring 81 adjacent to the top rim of the side wall 79. Also the bottom wall of the spin tub 77 is provided with an annular sediment trap 84 disposed below the base of the agitator 78, the sediment trap 84 communicating with the interior of the drain tub 56 by an arrangement including two upstanding drain conduits 85 disposed substantially diametrically opposite each other and carried by the spin tub 77.

An electric drive motor 86 is mounted upon the plate 70 and provided with an upwardly directed operating shaft 87 upon the upper end of which there is mounted a clutch and fluid drive unit 88. Preferably the clutch and fluid drive unit 88 is of the construction and arrangement disclosed in the copending application of Kemper M. Hammell and John D. Warhus, Serial No. 196,917, filed November 21, 1950. The unit 88 comprises a rotatably mounted housing 89 carrying a pulley 90 and an independently rotatable drive element, not shown, carrying a pulley 91. Also clutch

mechanism, not shown, is arranged within the housing 89 and operable between clutched and declutched positions, for a purpose more fully explained hereinafter, the clutch mechanism including an operating member 92, the inner end of which is pivotally mounted upon a bracket 93 that is supported in ball bearing structure 94 arranged in the upper portion of the housing 89. Also the plate 70 carries an upstanding support 95 upon which an electromagnet 96 is mounted, the movable armature of the electromagnet 96 being operatively connected to the outer end of the operating member 92 by an arrangement including a coil spring 96'.

Also a drain pump 97 is mounted upon the plate 70 and provided with an upwardly directed operating shaft 98, upon the upper end of which two pulleys 99 and 100 are rigidly secured. Further a motion-translating mechanism 101 is mounted upon the plate 70 and provided with an upwardly directed drive shaft 102, upon the upper end of which there is rigidly mounted a pulley 103. The pulley 91 that is carried by the drive element of the unit 88 is directly belted by a flexible V-belt 104 to the pulley 100 that is carried by the operating shaft 98 of the drain pump 97; and the pulley 99 that is carried by the operating shaft 98 of the drain pump 97 is directly belted by a flexible V-belt 105 to the pulley 103 that is carried by the drive shaft 102 of the motion-translating mechanism 101. The pulley 90 that is carried by the housing 89 of the unit 88 is directly belted by a flexible V-belt 106 to a pulley 107 that is carried by the tub sleeve, not shown, that is supported within the bearing bracket 74 and directly connected to the spin tub 77. Moreover the motion-translating mechanism 101 includes a driven shaft, not shown, that is selectively connectable by a clutch mechanism 108 to the agitator shaft, not shown, that is arranged in the tub sleeve mentioned and directly connected to the agitator 78. The clutch mechanism 108 is adapted to be selectively operated for clutch control purposes by the movable armature of an associated electromagnet 109 carried by the plate 70.

The drain pump 97 is provided with a flexible inlet conduit or hose 110 that communicates with the lower portion of the drain tub 56 and a flexible discharge conduit or hose 111 that projects through an opening 112 provided adjacent to the lower left-hand corner of the rear wall 23, as shown in Fig. 3, the discharge conduit 111 being arranged in the upstanding space 46 disposed below the back-splash 42 and behind the rear wall 23 and communicating with drain plumbing, not shown.

Considering in greater detail the construction and arrangement of the top wall 40, it is noted that a top opening 113 is formed therein in substantial alignment with the top opening 58 formed in the drain tub 56 and the top opening 80 formed in the spin tub 77, the top opening 113 being substantially circular and provided with a downwardly projecting annular throat flange 114. The lower end of the throat flange 114 extends into the opening 58 provided in the throat 57 of the drain tub 56 and terminates in an outwardly directed annular edge 114a in order to insure a smooth throat opening from the exterior through the top opening 113 and the throat flange 114 into the interior of the spin tub 77. The upper end of the throat flange 113 terminates in a counter-recess 115 formed in the top wall 40 and disposed below the plane thereof, the counter-

recess 115 being substantially rectangular in plan. A movable top cover or door 116 is arranged in the counter-recess 115 and provided with a downwardly turned marginal flange 117. The rear edge of the top cover 116 is suitably mounted for pivotal movement into closed and open positions with respect to the top opening 113 by an arrangement including two laterally spaced-apart hinge mechanisms 118 provided with leaves removably secured to the counter-recess 115 and to the top cover 116. The front central portion of the top cover 116 is provided with a downwardly depressed recess 119 in which a handle 120 is arranged, the handle 120 being substantially flush with the plane of the top cover 116. When the top cover 116 occupies its closed position, the plane thereof is substantially flush with that of the top wall 40. Thus it will be understood that the top cover 116 is mounted upon the hinge mechanisms 118 for movement toward and away from the backplash 42 into respective open and closed positions with respect to the top opening 113. When the top cover 116 occupies its open position with respect to the top opening 113, the interior of the spin tub 77 is readily accessible from the exterior so that the clothes may be readily placed and removed.

Also an elongated laterally extending hole 121 is arranged substantially centrally in the wall element 43 of the backplash 42, which hole 121 is closed by a transparent or translucent window pane 122 arranged in covering relation therewith and secured in place by an ornamental trim element 123. Arranged below the hole 121 is an electric lamp 124 disposed within the cavity 48, the electric lamp 124 being removably secured in a suitable socket 125 that is supported by a bracket 126 that is carried upon the rear portion 61b of the overflow baffle 59. Thus it will be understood that when the electric lamp 124 is illuminated that light is projected through the hole 121 and the transparent window pane 122 in order to illuminate the backplash 42 and the top wall 40 of the machine 20.

Considering now the water supply system for the machine 20, inlet valve mechanism 127 is mounted upon the bracket 51 and arranged within the casing 22 below the top wall 40 exteriorly of the drain tub 56 and adjacent to the junction between the side wall 24 and the rear wall 23. The inlet valve mechanism 127 is supported by the bracket 51 and comprises a housing 128 that includes a cold water inlet fixture 129 and a hot water inlet fixture 130 projecting through a hole 131 formed in the upper left-hand portion of the rear wall 23, as best shown in Figs. 3 and 6. The cold water inlet fixture 129 and the hot water inlet fixture 130 project rearwardly of the rear wall 23 and below the backplash 42 and are respectively provided with downwardly turned elbows 132 and 133 arranged in the upstanding space 46. The cold water elbow 132 is suitably connected to a flexible cold water hose 134 and the hot water elbow 133 is connected to a flexible hot water hose 135; the hoses 134 and 135 being suitably respectively connected to cold water and hot water supply plumbing, not shown.

In view of the foregoing description, it will be understood that the drain hose 111, the cold water hose 134 and the hot water hose 135 are disposed in the upstanding space 46 arranged below the backplash 42 and behind the rear wall 23, whereby there is ample room for the hoses 111, 134 and 135 between the rear wall 23 of the

machine 20 and the wall of a laundry room in which the machine 20 is located, even though the machine 20 is placed closely adjacent to the wall of the laundry room. This arrangement is very advantageous as it permits the rear wall element 45 of the backsplash 42 to be located in abutting relation with the wall of the laundry room and in alignment with other appliances, such as an electric clothes dryer, or the like, and with the hoses 111, 134 and 135 in concealed and protected positions.

Further the housing 128 of the inlet valve mechanism 127 is provided with a discharge fixture 136 that is connected by a flexible hose 137 to a nozzle 138 that is mounted upon a bracket 139 carried by the upper portion of the drain tub 56. As best shown in Figs. 6 and 7, the nozzle 138 is arranged in the cavity 48 provided in the backsplash 42 and is positioned well above the upper edge of the throat 57 of the drain tub 56. More particularly, the nozzle 138 is arranged in a downwardly and forwardly directed position, the lower end thereof projecting through a slot 140 formed in the upper edge of the rear portion 61b of the overflow baffle 59, and the opening in the nozzle 138 being arranged in alignment with a hole 141 formed in the bottom wall 60 of the overflow baffle 59. The inlet valve mechanism 127 is of the solenoid controlled type including a cold water solenoid, not shown, and a hot water solenoid, not shown, as well as corresponding cold water valve mechanism, not shown, and hot water valve mechanism, not shown. Moreover both the cold water valve mechanism and the hot water valve mechanism are normally biased to their closed positions. Thus when the cold water solenoid is energized, the cold water valve mechanism is operated into its open position so that cold water from the cold water hose 134 may be supplied into the nozzle 138; and when the hot water solenoid is energized, the hot water valve mechanism is operated into its open position so that hot water from the hot water hose 135 may be supplied into the nozzle 138. Of course when both of the solenoids mentioned are energized, both cold water from the cold water hose 134 and hot water from the hot water hose 135 are supplied to the nozzle 138 in order to obtain a mixture thereof constituting warm water. The water that is supplied to the nozzle 138 is projected forwardly and downwardly through the hole 141 provided in the bottom wall 60 of the overflow baffle 59 and through the top opening 58 provided in the drain tub 56 and through the top opening 80 provided in the spin tub 77, whereby the spin tub 77 may be readily filled with cold water, or hot water, or warm water.

It will be understood that the cold water hose 134 and the hot water hose 135 are normally connected to respective sources of cold water and hot water under gauge pressure, whereby a gauge pressure is normally present in the nozzle 138 when either one of the valve mechanisms mentioned occupies its open position. However should the abnormal condition of a subatmospheric pressure exist in the water supply plumbing there is no danger that wash water from the spin tub 77 or from the drain tub 56 is withdrawn therefrom through the nozzle 138 back into the supply plumbing by virtue of the fact that the lower end of the nozzle 138 is arranged well above the marginal wall 61 of the overflow baffle 59. Thus it will be understood that in the event the drain tub 56 should be filled to overflowing with wash water that the wash water

would rise into the overflow baffle 59 through the hole 141 provided in the bottom wall 60 thereof, which wash water would then spill over the marginal wall 61 of the overflow baffle 59 adjacent to the front portion 61a thereof, since the top of the marginal wall 61 adjacent to the front portion 61a thereof is disposed well below the top wall 40 to provide an overflow passage 142 therebetween, as illustrated in Fig. 7. Accordingly in the event the drain tub 56 should be filled to overflowing the wash water would overflow through the overflow passage 142 from the overflow baffle 59 between the drain tub 56 and the casing 22 onto the floor of the laundry room. This arrangement of the nozzle 138 and the overflow baffle 59 is very advantageous as it positively prevents back-siphoning of the wash water from the drain tub 56 into the supply plumbing, as explained above. Specifically, it is important that the vertical distance between the lower end of the nozzle 138 and the bottom of the overflow passage 142 be at least 1" so as positively to provide the vacuum-break or anti-back-siphoning arrangement described above.

Considering now the electric timer control arrangement for the machine 20, a combination electric timer and control switch 143 is mounted upon the bracket 52 and arranged within the casing 22 below the top wall 40 exteriorly of the drain tub 56 and adjacent to the junction between the side wall 25 and the rear wall 23. The timer and control switch 143 is arranged selectively to control the cold water solenoid and the hot water solenoid of the inlet valve mechanism 127, as well as the electric drive motor 36 and the electromagnets 96 and 109, and is provided with an upstanding operating shaft 144 that projects through a hole, not shown, provided in the right-hand portion of the top wall element 43 of the backsplash 42, a control dial or knob 145 being mounted upon the upper end of the operating shaft 144 adjacent to the right-hand side of the backsplash 42, as best shown in Figs. 5 and 6. Also an ornamental trim element or dial 147 is mounted on the left-hand side of the backsplash 42 in order to balance in appearance the control knob 145 and to lend a pleasing and finished appearance to the backsplash 42. The timer and control switch 143 is connectable via an electric cable 148 terminating in a plug 149, as shown in Fig. 2, to a suitable source of single-phase 110 volts A. C. supply.

Considering now the operation of the machine 20, it will be understood that when it is placed in a laundry room, the drain hose 111 is connected to suitable drain plumbing, not shown; the cold water hose 134 and the hot water hose 135 are connected to respective sources of cold water supply and hot water supply, not shown; and the plug 149 is connected to a suitable electric supply outlet. At this time, the clothes to be washed may be placed within the spin tub 77 after the top cover or door 116 is moved into its open position with respect to the top opening 113. Thereafter the top cover 116 is returned to its closed position and the control knob 145 is selectively rotated or manipulated in order to bring about the filling of the spin tub 77 with cold water, or hot water, or warm water as the character of the fabrics to be washed requires. The manual manipulation of the control knob 145 selectively controls the cold water solenoid and the hot water solenoid of the inlet valve mechanism 127 in the manner previously explained, whereby the spin tub 77 is supplied via

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the nozzle 138 with the charge of wash water. During the filling of the spin tub 77 with the charge of wash water, operation of the electric drive motor 86 is initiated. More particularly, the drive motor 86 rotates its operating shaft 87, whereby the operating element, not shown, of the unit 88 is rotated so as to effect rotation of the pulley 91; however, the housing 89 and the pulley 90 of the unit 88 are not rotated by virtue of the circumstance that the unit 88 normally occupies its declutched position. The rotating pulley 91 rotates the pulley 100 via the flexible drive connection including the belt 104, whereby the operating shaft 98 of the drain pump 97 is rotated. The rotating operating shaft 98 of the drain pump 97 rotates the pulley, whereby the pulley 103 is rotated via the drive connection including the flexible belt 105 effecting rotation of the drive shaft 102 of the motion-translating mechanism 101. When the drive shaft 102 of the motion-translating mechanism 101 is thus rotated, the driven shaft thereof, not shown, is oscillated; however, the agitator shaft, not shown, connected to the agitator 78 is not oscillated since the clutch mechanism 108 normally occupies its declutched position. Moreover since the housing 89 of the unit 88 is not rotated, the tub sleeve, not shown, connected to the spin tub 77 is not rotated. Accordingly at this time, during the filling of the spin tub 77 with the charge of wash water, the spin tub 77 and the agitator 78 remain stationary. However, since the drain pump 97 is operating any wash water present in the drain tub 56 would be pumped to the exterior via the inlet conduit 110 and the drain hose 111, whereby there is no danger of flooding of the laundry room should the spin tub 77 be filled to overflowing. More particularly, should the spin tub 77 be inadvertently filled to overflowing, the wash water would overflow the openings 83 provided between the open top of the spin tub 77 and the balance ring 81 and fall into the drain tub 56 where it would be pumped to the exterior via the drain hose 111 since the drain pump 97 is operating at this time.

Incident to filling the spin tub 77 with the wash water, a suitable charge of detergent is normally placed in the spin tub 77 prior to movement of the top cover 116 into its closed position. Thereafter the control knob 145 is manipulated to initiate the automatic timed cycle of the machine 20, whereby the machine 20 performs automatically and in predetermined timed relationship, a washing step followed by the two rinsing steps and a final centrifugal drying step. When the cycle of the machine 20 is thus completed, the timer and control switch 143 is operated into its open position arresting operation of the electric drive motor 86 and the other electrical elements. A suitable electric control circuit of the character described that may be incorporated in the machine 20 is disclosed in the copending application of Walter P. McCarty, Serial No. 122,321, filed October 19, 1949, now Patent No. 2,646,673.

In passing, it is noted that when the control knob 145 occupies other than its off position, the timer and control switch 143 effects lighting of the electric lamp 124 for the purpose of illuminating the back splash 42 and the top wall 40. During the course of the cycle of operation of the machine 20, the timer and control switch 143 selectively controls the electromagnets 109 and 96 so as to obtain the washing, rinsing and centrifugal drying steps previously noted.

More particularly, in effecting the washing step, the timer and control switch 143 governs the elec-

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tromagnet 109, whereby the clutch 108 is operated into its clutched position so that the oscillating driven shaft, not shown, of the motion-translating mechanism 101 is effectively connected to the agitator shaft, not shown, supporting the agitator 78, whereby the agitator 78 is oscillated to effect the washing step. In effecting the centrifugal drying step, the timer and control switch 143 governs the electromagnet 96, whereby the unit 88 is moved into its clutched position through the coil spring 96' and the operating member 92. When the unit 88 is moved into its clutched position, a hydraulic drive connection is established between the operating element thereof, not shown, and the housing 89, whereby the pulley 90 is rotated in order to effect rotation of the pulley 107 through the drive connection including the flexible drive belt 106. The rotated pulley 107 effects rotation of the tub sleeve, not shown, whereby the spin tub 77 is rotated or spun so as to effect the centrifugal drying step noted. In passing, it is pointed out that the electromagnets 109 and 96 are not simultaneously energized by the timer and control switch 143 as it is undesirable that the agitator 78 be oscillated while the spin tub 77 is rotated. Of course it will be understood that following the washing step, the spin tub 77 is rotated in order centrifugally to discharge the wash water therefrom; and following each rinsing step, the spin tub 77 is rotated in order centrifugally to discharge the rinse water. Following the final rinsing step, the spin tub 77 is rotated throughout a considerable time interval in order to obtain the centrifugal drying step mentioned. As the spin tub 77 is rotated, wash water or rinse water is centrifugally discharged therefrom through the openings 83 provided between the open top of the spin tub 77 and the balance ring 81 which water is caught in the drain tub 56 and pumped to the exterior by the drain pump 97 in the manner previously explained.

As more fully disclosed in the copending Ham-mell and Warhus application mentioned, the clutch and fluid drive unit 88 effects a very gradual acceleration of the spin tub 77 when the unit 88 is moved into its clutched position by virtue of the fluid drive coupling between the vaned elements, not shown, that are arranged within the housing 89 of the unit 88. Moreover the final spinning speed of the spin tub 77 is determined by the load imposed through the drive connection including the unit 88 upon the electric drive motor 86, whereby the final spinning speed of the spin tub 77 is reduced in the event of an unbalanced condition of the spin tub 77 and the load of clothes therein due to an uneven distribution of the clothes in the spin tub 77. As the rinse water is discharged from the clothes contained in the spin tub 77, the inherent unbalance mentioned is reduced, whereby the spinning speed of the spin tub 77 is automatically increased, the unit 88 serving to compensate the speed of the spin tub 77 in response to the unbalance thereof. This arrangement positively prevents excessive vibration of the spin tub 77 within the drain tub 56 in the event of the unbalanced condition noted. Of course, it will be understood that the spin tub 77 is capable of gyratory movement along with the upstanding support 69 upon the supporting structure 68 by virtue of the mounting arrangement including the centering springs 72 and the snubber devices 73.

In view of the foregoing description of the construction and arrangement of the machine 20,

it will be understood that in order to remove the top wall 40, it is necessary to remove the control knob 145 from the upper end of the operating shaft 144 of the timer and control switch 143 and then to remove the screws that are received in the threaded openings 53 and 54 respectively provided in the structures carried by the brackets 51 and 52. After the screws mentioned have been removed, the top wall 40 may be moved forwardly in order to cause the intumed edge 41a of the front portion of the marginal flange 41 to disengage the slots 50a provided in the flanges 50 carried by the fixtures 37. At this time, the top wall 40 may be completely removed from the top of the casing 22 in order to render the interior thereof accessible through the top opening 27. This arrangement is very advantageous and flows from the circumstance that all of the operating apparatus provided in the casing 22 is supported directly upon the base 21 or upon the base 21 through the drain tub 56 or the structures 55 and 58. After the top wall 40 has thus been removed from the casing 22, the front wall 32 may be removed therefrom in the manner previously explained by removing the screws 35 and by disengaging the tongues 38 from the holes 39 provided in the top portion of the marginal flange 33. After both the top wall 40 and the front wall 32 have thus been removed, the interior of the casing 22 is readily exposed through the top opening 27 and the front opening 26 so that the machinery compartment 67 is readily accessible from the exterior. However in the event it is necessary to make some major repair to the machine 20, the casing 22, as a whole, may be removed from the base 21 by the removal of the screws 28, etc.

In passing, it is noted that when the top wall is removed from the top of the casing 22, the top cover or door 116 is removed therewith since the top cover 116 is directly hinged upon the top wall 40. Further it is noted that a pair of resilient pads 148 formed of rubber, or the like, are secured to the opposite ends of the bracket 29 and arranged to engage the intumed edges 41a of the side portions of the marginal flange 41 carried by the top wall 40 so as to prevent any rattling of the top wall 40 when it occupies its normal assembled position upon the top of the casing 22. In view of the foregoing description of the manner in which the top wall 40 and the front wall 32 are disassembled from the casing 22, it will be appreciated that the front wall 32 and the top wall 40 may be readily reassembled in the order named in a substantially reverse manner to that described above. When the top wall 40 is again replaced upon the top of the casing 22, it is pressed downwardly before the screws mentioned are finally set in the threaded openings 53 and 54 respectively carried by the brackets 51 and 52 so that the sealing ring 62 is compressed by the lower surface of the top wall 40 in order positively to insure sealing of the top opening 53 and the throat 57 of the drain tub 56 to the lower surface of the top wall 40 about the top opening 113 provided in the top wall 40.

Finally in conjunction with the arrangement of the timer and control switch 143, it is noted that the rear portion thereof extends rearwardly from the rear wall 23 below the backplash 42, and that a housing is provided for the rear portion of the timer and control switch 143 by an arrangement including a substantially U-shaped plate 149 that is secured in a downwardly offset depression 150 formed in the plate 49. Specifi-

cally the downwardly offset depression 150 formed in the plate 49 closes the bottom of the housing mentioned; while the U-shaped plate 149 closes the rear of the housing mentioned; whereby the timer and control switch 143 is completely enclosed within the casing 22. The rear extremity of the plate 149 is disposed substantially flush with the rear wall element 45 of the backplash 42 so that the housing thus provided for the timer and control switch 143 does not interfere with the placement of the machine 20 closely adjacent to the wall of a laundry room.

In view of the foregoing, it is apparent that there has been provided in a clothes washing machine of the type in which the clothes are washed, rinsed and centrifugally dried in a receptacle or tub, improved cabinet structure that includes a supporting base, removable cabinet carried by the base, and a removable front wall and a removable top wall carried by the casing. Also there has been provided an improved top wall that cooperates with the rear wall of the casing to define an upstanding space disposed below the top wall and behind the rear wall of the casing, which upstanding space is adapted to receive the water supply and drain hoses for the tub of the machine. Further the top wall comprises an improved arrangement defining the backplash adjacent to the rear thereof that mounts the control device for the machine. Further the machine comprises an improved arrangement for sealing the open top of the drain tub arranged in the casing to the top wall so as to prevent water centrifugally discharged from the drain tub from obtaining access to the interior of the casing exteriorly of the drain tub. Finally the water supply arrangement that is incorporated in the machine positively prevents back-siphoning of wash water from the drain tub in the event of the abnormal condition of a sub-atmospheric pressure in the water supply plumbing.

While there has been described which is at present considered to be the preferred embodiment of the invention, it will be understood that various modifications may be made therein, and it is intended to cover in the appended claims all such modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A washing machine comprising a substantially rectangular base adapted to carry an upstanding tub provided with a top opening, an upstanding casing formed of sheet metal and carried by said base and adapted to enclose said tub and provided with integral rear and side walls defining both a front opening and a top opening, the lower portion of said rear wall joining the upper rear of said base and the lower portions of said side walls joining the upper sides of said base, a front wall formed of sheet metal and removably carried by said casing and closing the front opening in said casing, the upper portion of said front wall being disposed substantially flush with the upper portions of said side walls and the side portions of said front wall being disposed substantially flush with said side walls, the lower portion of said front wall joining the upper front of said base, a substantially rectangular top wall formed of sheet metal and removably carried by said casing and closing the top opening in said casing, the front of said top wall being disposed substantially flush with the upper portion of said front wall and the sides of said top wall being disposed substantially flush

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with the upper portions of said side walls, said top wall being provided with a top opening and carrying a surrounding downwardly extending throat flange adapted to project into the top opening provided in said tub, and a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall.

2. A washing machine comprising a substantially rectangular base adapted to carry an upstanding tub provided with a top opening, an upstanding casing formed of sheet metal and carried by said base and adapted to enclose said tub and provided with integral rear and side walls defining both a front opening and a top opening, the lower portion of said rear wall joining the upper rear of said base and the lower portions of said side walls joining the upper sides of said base, a front wall formed of sheet metal removably carried by said casing and closing the front opening in said casing, said front wall being provided with rearwardly directed top and bottom and side marginal flanges, said top marginal flange being disposed substantially flush with the upper portions of said side walls and said side marginal flanges being disposed substantially flush with said side walls, said bottom marginal flange joining the upper front of said base to provide a toe-receiving recess disposed below and rearwardly of said front wall and forwardly of the front of said base, a substantially rectangular top wall removably carried by said casing and closing the top opening in said casing, said top wall being provided with downwardly directed front and side marginal rims, said front marginal rim being disposed substantially flush with the upper portion of said front wall and said side marginal rims being disposed substantially flush with the upper portions of said side walls, said top wall being provided with a top opening and carrying a surrounding downwardly extending throat flange adapted to project into the top opening provided in said tub, and a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall.

3. A washing machine comprising a substantially rectangular base adapted to carry an upstanding tub provided with a top opening, an upstanding casing formed of sheet metal and carried by said base and adapted to enclose said tub and provided with integral rear and side walls defining both a front opening and a top opening, the lower portion of said rear wall joining the upper rear of said base and the lower portions of said side walls joining the upper sides of said base, a bracket extending laterally between the upper front portions of said side walls and secured thereto in order to lend rigidity to said casing, a front wall formed of sheet metal and closing the front opening in said casing, the upper portion of said front wall being disposed substantially flush with the upper portions of said side walls and the side portions of said front wall being disposed substantially flush with said side walls, means removably securing the upper portion of said front wall to said bracket, the lower portion of said front wall joining the upper front of said base, means removably securing the lower portion of said front wall to the upper front of said base, a substantially rectangular top wall formed of sheet metal and closing the top opening in said casing, the front of said top

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wall being disposed substantially flush with the upper portion of said front wall and the sides of said top wall being disposed substantially flush with the upper portions of said side walls, means removably securing the front portion of said top wall to said bracket, means removably securing the rear portion of said top wall to said casing, said top wall being provided with a top opening and carrying a surrounding downwardly extending throat flange adapted to project into the top opening provided in said tub, and a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall.

4. A washing machine comprising a substantially rectangular base adapted to carry an upstanding tub provided with a top opening, an upstanding casing formed of sheet metal and carried by said base and adapted to enclose said tub and provided with integral rear and side walls defining both a front opening and a top opening, the lower portion of said rear wall joining the upper rear of said base and the lower portions of said side walls joining the upper sides of said base, a bracket extending laterally between the upper front portions of said side walls and secured thereto in order to lend rigidity to said casing, a front wall closing the front opening in said casing, said front wall being provided with rearwardly directed top and bottom and side marginal flanges, said top marginal flange being disposed substantially flush with the upper portions of said side walls and said side marginal flanges being disposed substantially flush with said side walls, a pair of laterally spaced-apart fixtures carried by said bracket, means including said fixtures cooperating with said top marginal flange for removably securing the upper portion of said front wall to bracket, said bottom marginal flange joining the upper front of said base to provide a toe-receiving recess disposed below and rearwardly of said front wall and forwardly of the front of said base, means cooperating between said bottom marginal flange and the upper front of said base for removably securing the lower portion of said front wall to said base, a substantially rectangular top wall formed of sheet metal and closing the top opening in said casing, said top wall being provided with downwardly directed front and side marginal rims, said front marginal rim being disposed substantially flush with the upper portion of said front wall and said side marginal rims being disposed substantially flush with the upper portions of said side walls, means including said fixtures cooperating with said front marginal rim for removably securing the front portion of said top wall to said bracket, means removably securing the rear portion of said top wall to said casing, said top wall being provided with a top opening and carrying a surrounding downwardly extending throat flange adapted to project into the top opening provided in said tub, and a top door carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall.

5. A washing machine comprising an upstanding casing formed of sheet metal and including front and rear and side walls defining a top opening, a substantially rectangular top wall formed of sheet metal and removably carried by said casing and closing the top opening in said casing, said top wall being provided with downwardly directed front and side marginal rims, said front marginal rim being disposed substantially flush

with the upper portion of said front wall and said side marginal rims being disposed substantially flush with the upper portions of said side walls, the rear of said top wall projecting behind said rear wall to define an upstanding unenclosed space disposed below the rear of said top wall and behind said rear wall and readily accessible from the exterior, an upstanding tub formed of sheet metal and arranged within said casing and provided with a top opening, said top wall being provided with a top opening arranged above and in alignment with the top opening in said tub, a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall, and a plumbing connection carried by said casing and extending through a hole provided in said rear wall and communicating with said tub, said plumbing connection including a flexible hose arranged in said upstanding space.

6. A washing machine comprising a substantially rectangular base, an upstanding casing formed of sheet metal and carried by said base and provided with integral rear and side walls defining both a front opening and a top opening, the lower portion of said rear wall joining the upper rear of said base and the lower portions of said side walls joining the upper sides of said base, a front wall formed of sheet metal and removably carried by said casing and closing the front opening in said casing, the upper portion of said front wall being disposed substantially flush with the upper portions of said side walls and the side portions of said front wall being disposed substantially flush with said side walls, the lower portion of said front wall joining the upper front of said base, a substantially rectangular top wall formed of sheet metal and removably carried by said casing and closing the top opening in said casing, the front of said top wall being disposed substantially flush with the upper portion of said front wall and the sides of said top wall being disposed substantially flush with the upper portions of said side walls, the rear of said top wall projecting behind said rear wall to define an upstanding unenclosed space disposed below the rear of said top wall and behind said base and said rear wall and readily accessible from the exterior, an upstanding tub formed of sheet metal and arranged within said casing and carried by said base, said tub being provided with a top opening, said top wall being provided with a top opening arranged above and in alignment with the top opening in said tub, a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall, and a plumbing connection carried by said casing and extending through a hole provided in rear wall and communicating with said tub, said plumbing connection including a flexible hose arranged in said upstanding space.

7. A washing machine comprising an upstanding casing formed of sheet metal and including front and rear and side walls defining a top opening, a substantially rectangular top wall formed of sheet metal and removably carried by said casing and closing the top opening in said casing, said top wall being provided with downwardly directed front and side marginal rims, said front marginal rim being disposed substantially flush with the upper portion of said front wall and said side marginal rims being disposed substantially flush with the upper portions of said side

walls, the rear of said top wall terminating in an upwardly directed backplash, said backplash being provided with rearwardly and downwardly directed side flanges and a downwardly directed rear flange, said side marginal rims merging into said side flanges, said rear flange being disposed behind said rear wall so that said backplash defines an upstanding unenclosed space disposed below said backplash and behind said rear wall and readily accessible from the exterior, a wall member formed of sheet metal and cooperating between the upper portion of said rear wall and the lower portions of said side flanges and the lower portion of said rear flange to close the interior of said backplash from the upper portion of said upstanding space, an upstanding tub formed of sheet metal and arranged within said casing and provided with a top opening, said top wall being provided with a top opening arranged above and in alignment with the top opening in said tub, a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall, a manually operable washing cycle control device mounted upon said backplash carried by said casing and extending through a hole provided in said rear wall and communicating with said tube, said plumbing connection including a flexible hose arranged in said upstanding space.

8. A washing machine comprising an upstanding casing formed of sheet metal and including wall structure defining a top opening and provided with an inturned marginal flange, a top wall formed of sheet metal and including a downwardly directed marginal rim provided with an inturned marginal flange, said top wall being removably secured to the top of said casing to close the top opening in said casing and with said inturned marginal flange on said marginal rim overlying said inturned marginal flange on said wall structure and in close proximity thereto, an upstanding tub formed of sheet metal and arranged within said casing and provided with a top opening surrounded by an upwardly directed marginal rim terminating below and adjacent to said top wall, a flexible gasket frictionally secured to said marginal rim on said tub and provided with a hollow head compressed into engagement with the lower surface of said top wall and sealing the top opening in said tub to said top wall, said top wall being provided with a top opening arranged above and in alignment with the top opening in said tub, a downwardly extending throat flange carried by said top wall and surrounding the top opening in said top wall and projecting into the top opening in said tub, the upper portion of said throat flange being formed integrally with said top wall and the lower portion of said throat flange terminating in an integral outturned marginal rim in order to provide a smooth throat opening between the interior of said tub and the exterior through the top opening in said top wall, and a top door formed of sheet metal and carried by the upper surface of said top wall and movable between open and closed positions with respect to the top opening in said top wall.

9. A washing machine comprising a substantially rectangular base, an upstanding casing formed of sheet metal and carried by said base and including front and rear and side walls defining a top opening and provided with inturned marginal flanges, a substantially rectangular top wall formed of sheet metal and including a down-

wardly directed marginal rim provided with an intumed marginal flange, said top wall being removably secured to the top of said casing to close the top opening in said casing and with said intumed marginal flange on said marginal rim overlying said intumed marginal flanges on said front and rear and side walls and in close proximity thereto, upstanding structure arranged in said casing and carried by said base, an upstanding substantially cylindrical tub formed of sheet metal and arranged in said casing and supported by said structure, said tub being provided with a top opening surrounded by an upwardly directed marginal rim terminating below and adjacent to said top wall, a flexible gasket frictionally secured to said marginal rim on said tub and provided with a hollow head compressed into engagement with the lower surface of said top wall and sealing the top opening in said tub to said top wall, said top wall being provided with a top opening arranged above and in alignment with the top opening in said tub, and a top door formed of sheet metal and carried by the upper surface of said top wall and movable between open and closed positions with respect to the top opening in said top wall.

10. A washing machine comprising a substantially rectangular base, an upstanding casing formed of sheet metal and removably secured to said base and including front and rear and side walls defining a top opening, a substantially rectangular top wall formed of sheet metal and removably secured to the top of said casing and closing the top opening in said casing, an upstanding substantially cylindrical tub formed of sheet metal and arranged in said casing and carried by said base, said tub being provided with a top opening, said top wall being provided with a top opening arranged above and in alignment with the top opening in said tub, a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall, a washing cycle control device arranged in said casing below said top wall and in the space between said tub and the junction between two of said cabinet walls, said control device being supported upon said tub and provided with an upwardly directed operating shaft projecting through a hole provided in said top wall, and a manual control knob removably secured to the upper end of said operating shaft above and adjacent to said top wall and accessible from the exterior for selectively operating said control device.

11. A washing machine comprising a substantially rectangular base, an upstanding casing formed of sheet metal and removably secured to said base and including front and rear and side walls defining a top opening, a substantially rectangular top wall formed of sheet metal and removably secured to the top of said casing and closing the top opening in said casing, the rear of said top wall terminating adjacent to said rear wall in an upwardly directed backsplash, an upstanding substantially cylindrical tub formed of sheet metal and arranged in said casing and carried by said base, said tub being provided with a top opening, said top wall being provided with a top opening arranged above and in alignment with the top opening in said tub, a top door formed of sheet metal and carried by said top wall and movable between open and closed positions with respect to the top opening in said top wall, a washing cycle control device arranged in said casing below said backsplash and in the space between said tub and the junction between said rear wall and one of said side walls, said control device being supported upon said tub and provided with an upwardly directed operating shaft projecting through a hole provided in said backsplash, and a manual control knob removably secured to the upper end of said operating shaft above and adjacent to said backsplash and accessible from the exterior for selectively operating said control device.

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