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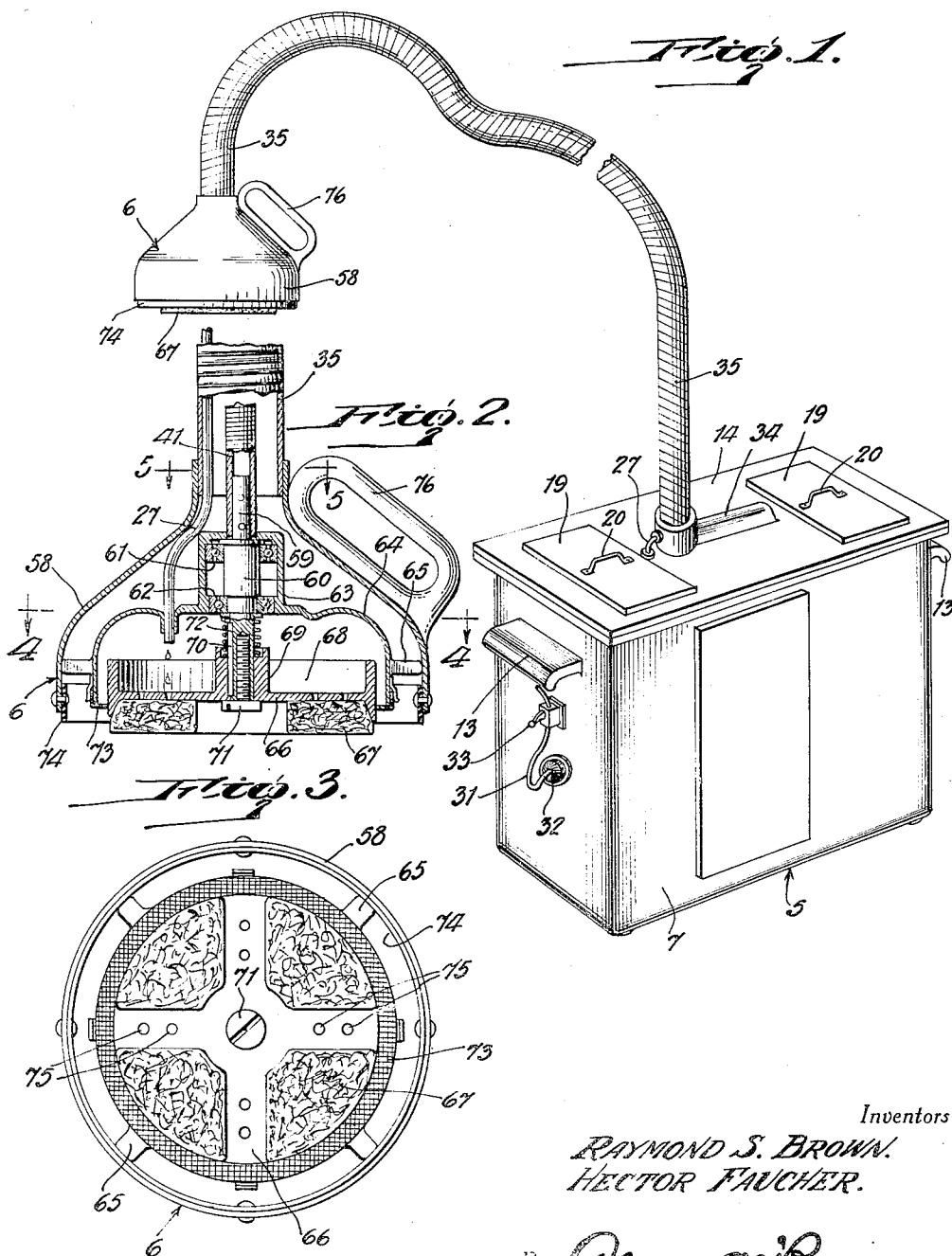
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1,929,345

UPHOLSTERY WASHER

Filed June 16, 1932

3 Sheets-Sheet 1



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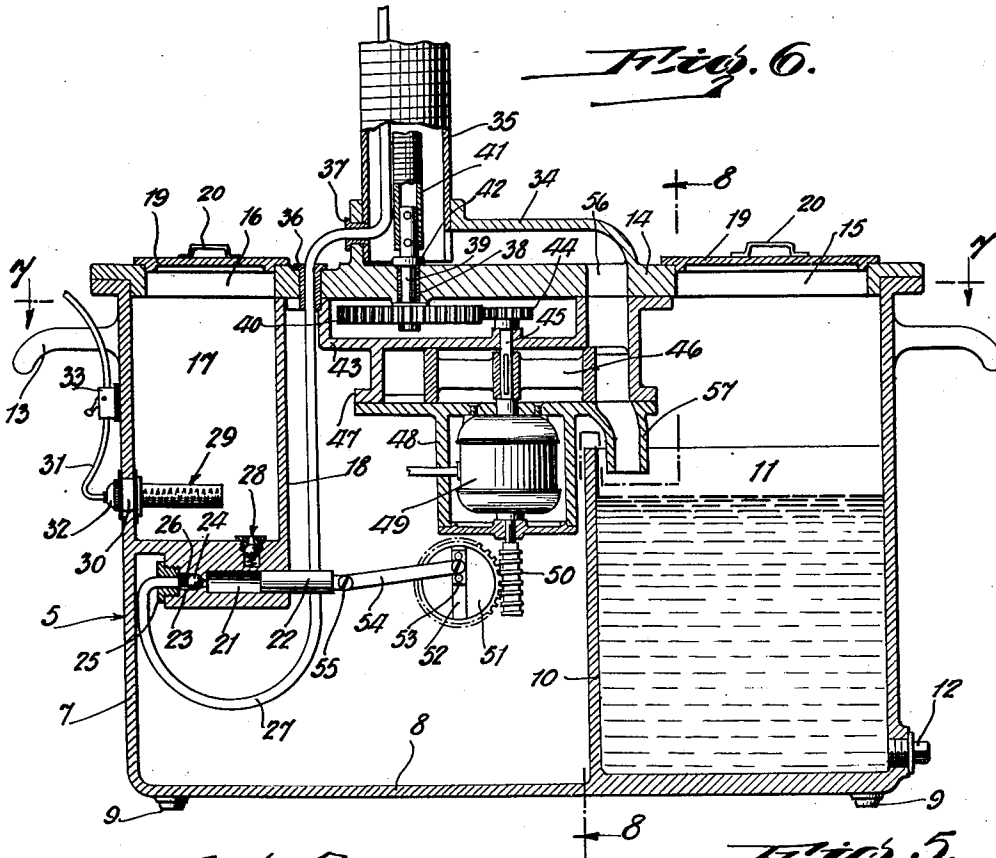


Fig. 4.

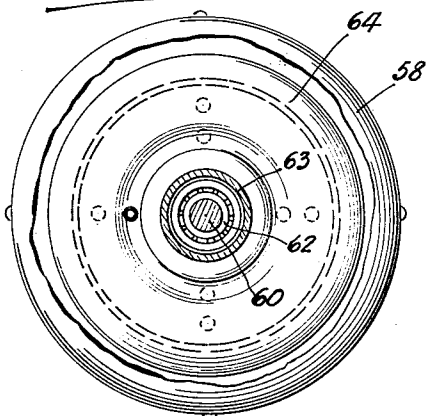
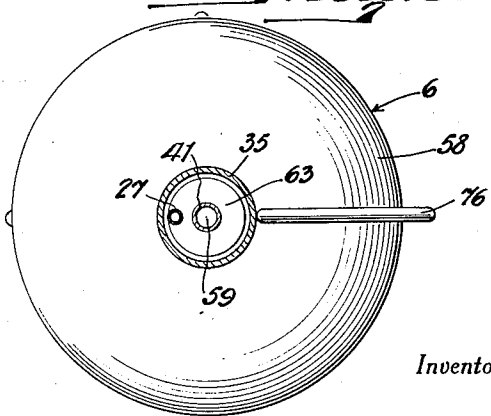


Fig. 5.



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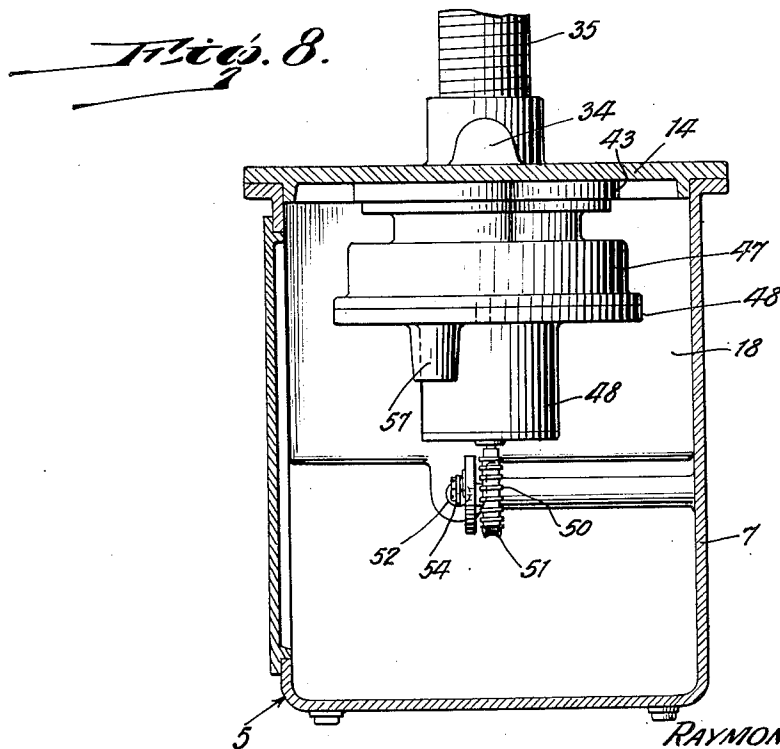
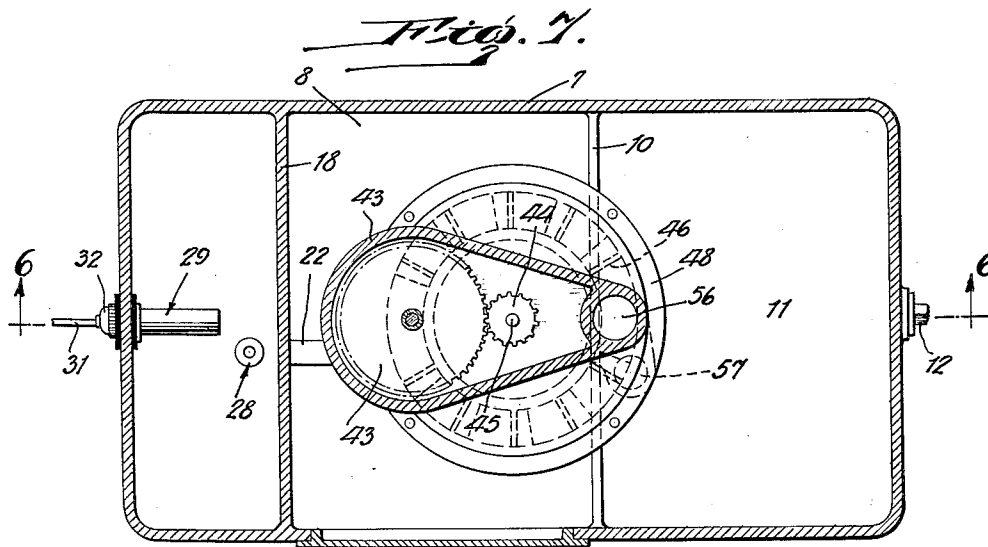
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UNITED STATES PATENT OFFICE

1,929,345

UPHOLSTERY WASHER

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Application June 16, 1932. Serial No. 617,630

1 Claim. (Cl. 15—50)

This invention relates to new and useful improvements in upholstery washers and more particularly to a washer for efficiently cleansing the surface of upholstered furniture in a quick and easy manner.

A highly important object of the invention is to provide a washer employing a liquid detergent which can be removed from the upholstery after application thereof.

During the course of the following specification and claim, other important objects and advantages of the invention will readily become apparent to the reader.

In the drawings:—

Figure 1 represents a perspective view of the device in its entirety.

Fig. 2 represents a fragmentary detail sectional view of the cleaning element.

Fig. 3 represents a bottom plan view of the cleaning element.

Fig. 4 represents a sectional view taken substantially on the line 4—4 of Fig. 2.

Fig. 5 represents a sectional view taken substantially on the line 5—5 of Fig. 2.

Fig. 6 is a fragmentary detail edge sectional view through the reservoir and suction apparatus.

Fig. 7 represents a horizontal sectional view taken substantially on the line 7—7 of Fig. 6.

Fig. 8 represents a sectional view taken substantially on the line 8—8 of Fig. 6.

Referring to the drawings wherein like numerals designate like parts, it can be seen that this apparatus includes a semi-portable unit generally referred to by numeral 5 in which the original detergent liquid is stored and into which the used detergent liquid is returned, and in which the pump and suction means is located for forcing the detergent to the washer unit generally referred to by numeral 6 and return the same to a different reservoir in the unit 5 respectively.

The unit 5 includes the casing 7 provided with the bottom 8 supported by the studs 9. The partition 10 in the casing 7 divides the interior of the casing to provide a reservoir 11 where the used detergent liquid is stored after being returned from the washer unit 6. A drain 12 is provided for this compartment 11. Each end of the casing 7 is provided with a handle 13, while the open top of the casing is provided with a closure plate 14, which can be secured to the casing by any suitable means (not shown). This cover plate 14 is provided with openings 15 and 16 therein located above the tanks 11 and 17 re-

spectively, the tank 17 being defined by the wall structure 18.

Each of the openings 15 and 16 is provided with a lid 19 having a handle 20. The bottom of the wall structure 18 of the tank 17 is relatively thick and has a bore 21 therein into which the plunger 22 is operative. Numeral 23 represents the outlet for the bore 21 restricted to provide a seat for the ball valve 24. A bushing 25 is threaded into one end of the bottom of the wall structure 18 on a line with the bore 21 so as to urge the spring 26 against the ball 24 to normally maintain the same seated. A tube 27 extends from this plug 25 to the washer unit generally referred to by numeral 6. A similarly constructed check valve, generally referred to by numeral 28 is interposed between the tank 17 and the bore 21 in the bottom of the wall structure 18 so that the detergent liquid may be sucked from the tank 17 to the bore 21 on the suction stroke of the plunger 22. An electrical heating unit generally referred to by numeral 29 is mounted to project into the tank 17 and is connected to a receptacle (electrical) 30 exposed on the outside of the casing 7. An electrical conductor 31 equipped with a plug 32 can be engaged with this receptacle 30 when the machine is to be used.

The conductors 31 preferably pass through a switch 33 whereby the heater can be controlled. It is furthermore understood that this switch 32 may be of the thermostatic type so that the heater can be cut off at a predetermined temperature.

The plate 14 is provided with a raised shell 34 from which the flexible tubular housing 35 extends. The plate 14 and the shell 34 are provided with bushings 36 and 37 through which the tube 27 is trained. On a line with the housing 35 the cover plate 14 is provided with an opening 38 in which a bushing is located for journally receiving the stub shaft 39, the lower end of which has a gear 40 keyed thereto, while the upper end is secured to the flexible shafting 41 trained through the housing 35.

A thrust collar 42 is provided at the intermediate portion of the stub shaft 39 for engagement against the top side of the cover plate 14. A gear housing 43 is provided for the gear 40 and the pinion 44 which meshes therewith. This pinion 44 is on the armature shaft 45 which carries the suction fan 46 located in the depending wall structure 47 on the housing 43. Another housing 48 is secured to the wall structure 47 and depends therefrom for protecting the electrical motor 49. The lower end of the armature

shaft on the lower side of the motor 49 is equipped with a worm gear 50 meshing with the gear wheel 51 which is provided with the diametrically disposed guide slot 52 in which the block 53 is adjustable. A pitman 54 has one end pivotally connected to this block 53 while the opposite end thereof is pivotally connected as at 55 to the outer end of the plunger 22.

It can be seen that the cover plate 14 is provided with an additional opening 56 communicating with the interior of the shell 34, which communicates with the interior of the housing 35, with the interior of the wall structure 47, said structure 47 containing the fan 46, the blades 15 of which are so formed as to draw air from the tubular housing 35, shell 34, through the opening 56 and force the air through the nozzle 57. This creates a suction in the tubular housing 35 to draw the liquid from the washing unit 20 6 as will be hereinafter described. A nozzle 57 depends from the motor housing 48 and into the tank 11 for taking care of the discharge of the used detergent attracted by the fan 46. The above is a detailed description of the unit 5 and the following will be a detailed description of the washer unit.

A flared shell 58 is open at its large end and connected at its small end to the outer end of the flexible housing 35. Into this shell 58 extends the flexible shafting 41 connecting to the stub shaft 59, which has its intermediate enlarged portion 60 disposed through the bearings 61 and 62 confined within the box 63 extending upwardly from the dome 64. This dome is maintained in spaced relation from the shell 58 by the spacers 65.

The washing element proper is provided with a head 66 which is provided with upwardly and downwardly extending peripheral circumferentially extending flanges, the lower circumferential flange assisting in retaining the scrubbing elements 67 while the upper flange serves as a wall in defining a chamber 68 into which the detergent liquid is discharged from the end of the tube 27 projecting through the dome 64. The head 66 is provided with a hub 69 slidable on the lower portion of the shaft 59 by a splined connection 70. A screw having a substantially large head 71 is threaded into the lower end of the shaft 59, so that the head will serve as a thrust

bearing for the head 66 of the element. A coiled spring 72 is interposed between the bearing structure 62 and the hub 69 so as to exert a downward tension on the washer element. A retaining annulus 73 is provided on the free edge of the dome 64 to stabilize the head 66 when in operation. A packing ring of flexible material is noted by numeral 74 and is provided to engage the work when the washing element is forced back into the shell 58 by engagement against the work. It can furthermore be seen that the head 66 is provided with apertures 75 through which the detergent liquid can feed to the elements 67. The shell 58 is provided with a handle 76 whereby the same can be manipulated conveniently.

It can now be seen that by operating the switch 33 the detergent liquid in the tank 17 can be heated, and by starting the motor 49 both the pump including the plunger 22 and the fan 46 will be operated simultaneously for delivering the detergent liquid to the washer element 67 and sucking the used liquid through the space between the dome 64 and the shell 58, through the housing 35 to be returned through the nozzle 57 to the tank 11.

The foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having thus described our invention, what we claim as new is:—

In a device of the class described, a casing, a tank therein, the top of the casing having an opening therein, a suction conduit connected with said opening, a housing located in the casing and depending from the top thereof and having a passage therein, the upper end of which is in communication with the opening and the lower end of which discharges into the tank, said housing having a chamber therein, a part of which intersects an intermediate part of the passage, a rotor in the chamber having portions extending into the said intermediate portion of the passage for creating a suction in the passage and conduit and means for rotating said rotor.

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