

March 27, 1951

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2,546,288

BRUSH CARRYING DEVICE FOR CLEANING ARTICLES OF CLOTHING

Filed Sept. 15, 1947

2 Sheets-Sheet 1

Fig. 1

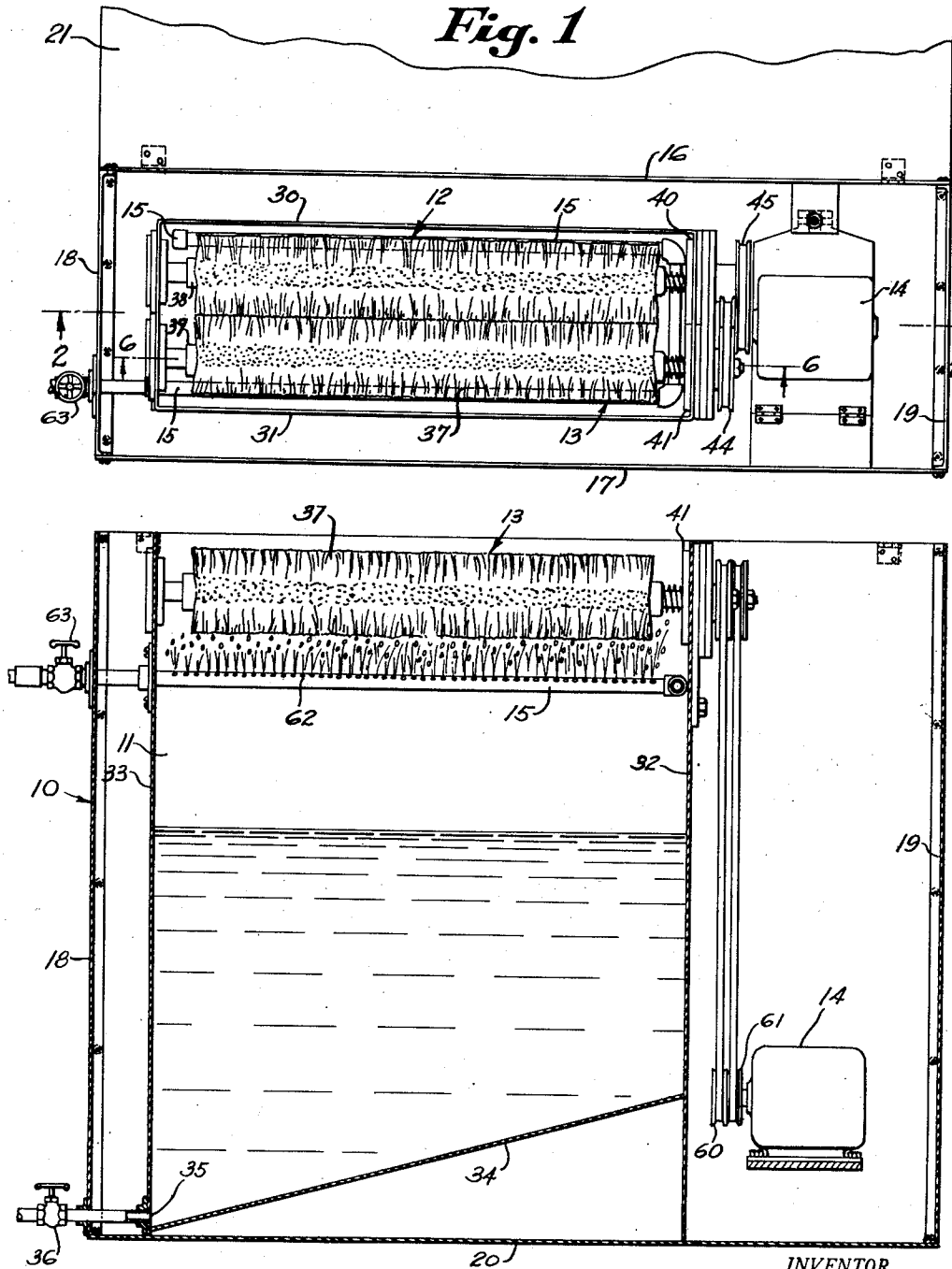


Fig. 2

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Fig. 3

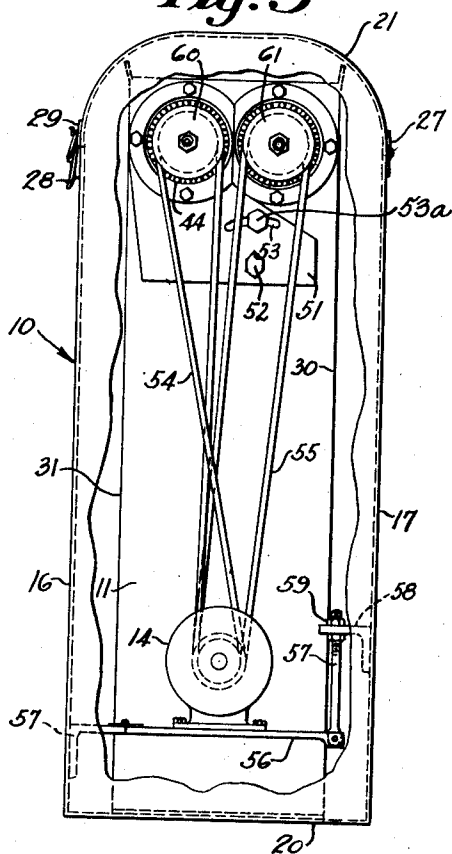


Fig. 4

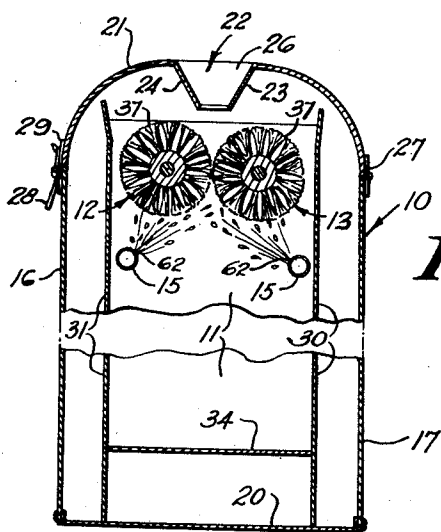
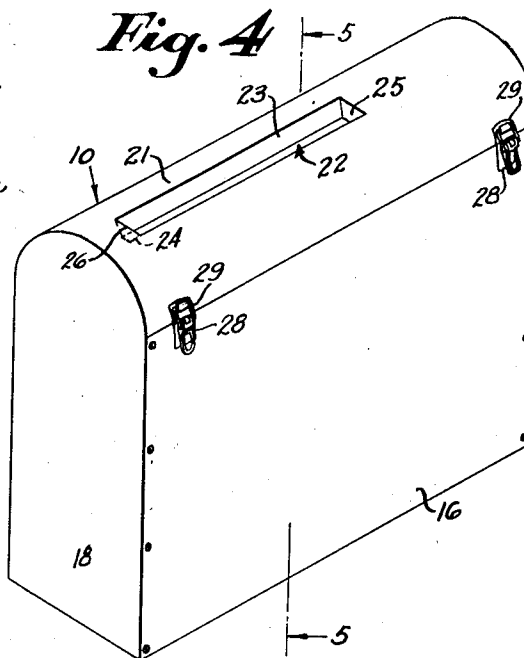


Fig. 5

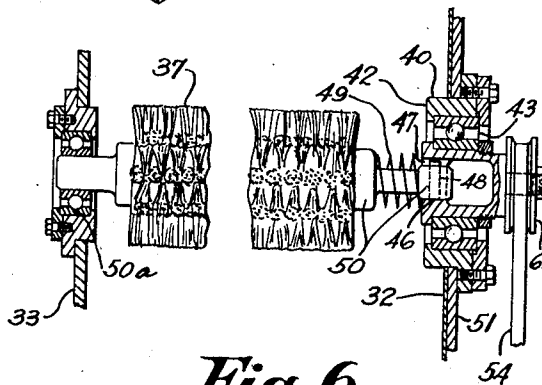


Fig. 6

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BRUSH CARRYING DEVICE FOR CLEANING
ARTICLES OF CLOTHING

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2 Claims. (Cl. 68—85)

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This invention relates to devices for cleaning articles of clothing such as men's trousers.

It is an object of the instant invention to provide a cleaning device in which the labor element is comparatively slight.

Another object is to so form the device that it applies in one operation the physical and chemical requisites for cleaning.

Other objects will become apparent in the course of the following specification.

In the attainment of these objectives, the cleaning device is formed of a housing surrounding a tank. In the tank are two brushes substantially tangentially and rotatably supported in bearings of special design. The bearings are of special design to provide a means for insertion and removal of the brushes as well as adjustment. Driving belts over pulleys on one end of the brush rotors drive the brushes in opposite directions tangentially and inwardly toward the interior of the tank which facilitates the cleaning operation and provides substantially trouble free operation. Perforated pipes attached below the brushes along the inside surface portions of the tank direct a cleaning fluid, such as soap and water, under pressure against the brush bristles and the garment. The used cleaning liquid is then carried to the bottom of the tank where a false bottom inclined between the tank ends co-acts with an outlet pipe for draining. A motor for driving the brush members is adjustably mounted in one end of the housing. A longitudinal slot in the cover of the housing above the brush members provides a means for inserting the garment and swishing it up and down between the brush members. Downwardly extending members around the periphery of the slot co-acting with upwardly extending and outwardly flaring opposing side members of the tank substantially confine the cleaning liquid within the tank.

The invention will appear more clearly when taken in connection with the accompanying drawings showing by way of example a preferred embodiment of the inventive idea.

In the drawings:

Figure 1 is a top plan view of the cleaning device with cover broken away constructed in accordance with the principles of this invention.

Figure 2 is a sectional view along the line 2—2 of Figure 1.

Figure 3 is an end view with part of the housing broken away.

Figure 4 is a perspective view of the cleaning device shown in Figure 1.

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Figure 5 is a sectional view along the line 5—5 of Figure 4.

Figure 6 is a fragmentary sectional view along the line 6—6 of Figure 1.

Referring now in greater detail to the drawings in which like reference numerals indicate like parts, reference numeral 10 indicates the housing, 11 the tank, 12 and 13 the brushes, 14 the motor and 15 the perforated pipe.

The housing 10 comprises the opposing side members 16 and 17 (Figs. 3 and 5), opposing end members 18 and 19 (Fig. 2), base 20, and hinged mounted cover 21 (Figs. 3, 4, and 5).

The hinged mounted cover member 21 (Figs. 3, 4, and 5) of arcuate form as shown is provided with the longitudinal slot 22 (Figs. 4 and 5) along the periphery of which are disposed the downwardly inclined members 23, 24, 25, and 26 (Fig. 4) which provide a tunnel like opening to the brushes 12 and 13 for the introduction of the garment to be cleaned. Any suitable hinge mounting means 27 (Fig. 3) may be used to attach the cover 21 along the top edge of the opposing side member 17 while along the top edge of the opposing side member 16, the latch members 28 co-act with the retaining members 29 on the cover member 21 to removably secure said cover in position.

The tank 11 comprises the opposing side members 30 and 31 (Figs. 3 and 5), the opposing end members 32 and 33 (Fig. 2), the base 34 and open top. At the bottom of the tank 11, the base member 34, really constituting a false bottom, inclined toward the opposing end member 33 downwardly substantially to the base thereof. At the low point above the base 34, the outlet pipe 35 (Fig. 2), provided with the shut-off valve 36, is inserted to drain off the contents of the tank 11 when desired. The opposing side members 30 and 31 flare upwardly and outwardly at the top into the cover member 21 in closed position in order to confine the subsequently described cleaning liquid within said tank.

At the top of the tank 11 are two rotatably mounted brush members 12, and 13 which comprise the bristles 37 (Figs. 1 and 6) inserted in the rotors 38 and 39.

Bearing members 40 and 41 adapted for longitudinal adjustment of brush rotors 38 and 39 are inserted in the opposing end member 32 of the tank 11 by any suitable means and comprise the bearing support 42 (Fig. 6), the rotatable bearing 43 at the extreme end of which are keyed the pulleys 44 and 45. In the center of each of the rotatable bearing members 43 (Fig. 6) is a cir-

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cular aperture 46 of substantially the same diameter as the end of the brush rotors adapted to be inserted therein. At the front, the aperture 46 is of smaller diameter than at the back as shown in Figure 6. A keyway 47 extends longitudinally through the aperture of smaller diameter, which provides angular velocity to the brush rotors 38 and 39 when the key 48 is inserted in said rotors and, protruding thereabove, is inserted into said keyway 47. The spiral spring 49, inserted between the flanges 50 on the rotors of the brush members and the inside surface portion of the bearing members 40 and 41, provides a means for retaining the brush members 12 and 13 in position unless sufficient longitudinal force is applied to the rotor to force the key 48 out of the keyway 47 into the aperture of largest diameter.

At the opposite end of the rotor 39 the usual type bearing member 50^a is inserted in the end member 33. The rotor 38, on the other hand, while having the usual type bearing member 50^a has it mounted in a pivotally adjustable plate 51 (Fig. 3). The pivot pin 52 in the opposing end member 33 thus permits moving the brush rotor 38 toward or away from the brush rotor 39 and may be locked in place with the nut 53^a over a co-acting stud in opposing end member 33 adapted to move in a slot 53 in the pivotally mounted plate 51.

In the base of the housing 10 (Fig. 3) is the adjustably mounted motor 14 for driving the rotors 38 and 39. The adjustable mounting means for the motor 14, essential for the adjustment of the subsequently described belts 54 and 55, comprises the base 56 hingedly mounted by any suitable means along one edge to the horizontal member of the bracket 57 attached to the inside surface portion of the opposing side member 16 of the housing 10. To the opposite end of the base 56, the upright member 57 is pivotally attached by any suitable means. The top of the upright member 57 is threaded and adapted to be inserted through an aperture in the horizontal member of the bracket 58 attached to the opposite opposing side member 17. A nut 59 screwed on the threaded end of the upright member 59 against the top surface portion of the horizontal member of the bracket 58 provides a means for moving the motor 14 and varying the tension of the subsequently described driving belts 54 and 55.

Driving pulleys 60 and 61 (Fig. 2) are keyed to the shaft of the motor 14 and the driving belts 54 and 55 (Fig. 3) are inserted thereover and over the pulleys 44 and 45 keyed to the shafts of the rotors 38 and 39. By crossing the driving belt 54 in the manner shown in Figure 3, the brush rotors 38 and 39 rotate in opposite directions inwardly at the point of tangency.

The perforated pipe 15 is extended along the inside surface portion of the opposing side member 31 of the tank 11, thence along the opposing end member 32, and finally along the opposing side member 30. Perforations 62 in pipe 15 directed toward the brush bristles 37 provide a spraying means for directing cleaning fluid under pressure thereagainst under control of shut-off valve 63.

The operation is as follows:

The motor 14 is started which revolves the brush rotors 38 and 39 in the manner previously described. The cover 21 of the housing 10 is closed and secured by the fasteners 28. The shut-off valve 63 is opened to permit the cleaning liq-

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uid to fill the pipe 15 and finally to be forced through the perforations 62 against the bristles 37 of the brush members 12 and 13. The garment is then inserted through the longitudinal slot 22 between the downwardly revolving brush members 12 and 13 and swished up and down therebetween. The used cleaning fluid falls to the bottom of the tank 11 where it collects to be drawn off through the outlet 35 under control of the shut-off valve 66.

It is apparent that the specific illustrations shown above have been given by way of illustration and not by way of limitation and that the structures above described are subject to wide variation and modification without departing from the scope or intent of the invention, all of which variations and modifications are to be included within the scope of the present invention.

What is claimed is:

1. A device for cleaning articles of clothing and the like comprising a housing; the housing comprising opposed end members, the upper edges of said end members being of upwardly directed arcuate form, opposed side members, a base member, said members being secured along corresponding edges, a cover member hingedly disposed along the upper edge of one of the opposed members, the cover member being of arcuate cross section and adapted to coact with the upper edges of the opposed members and having a longitudinal slot formed therein substantially along the longitudinal center line thereof; the device further comprising a tank with open top disposed in the housing, the tank comprising opposed end members, opposed side members, and a base member, said members being secured along corresponding edges and in spaced relationship with corresponding members of the housing, the upper portions of the opposed members of the tank flaring upwardly and outwardly in the cover member of the housing when in the closed position; the device further comprising two cylindrical brushes rotatably disposed in the opposed end members of the tank, the brushes making longitudinal contact with each other along the center line of the slot in the cover member when closed and substantially below the same, means rotating one end of the axis of one brush relative to the other, means rotating said brushes inwardly into the tank along the line of contact of said brushes, means applying cleaning fluid against the brushes, and means removing the spent cleaning fluid from the tank.

2. In a device for cleaning articles of clothing and the like, the device having a tank with opposed end members and two cylindrical brushes, each brush having a rotor; a rotatable mounting means for the brush rotors comprising a bearing support for one end of each brush rotor disposed in one end of the tank, a bearing disposed on one end of each brush rotor and adapted to rotate in said bearing support, means maintaining said bearings in said bearing supports; the rotatable mounting means further comprising a bearing support for the free ends of each brush rotor disposed in the opposite end of the tank, said bearing supports being adapted to maintain the brushes in longitudinal contact, a bearing for the free end of each brush rotor and adapted to rotate in the bearing support for the free ends of the brush rotors, two of said bearings having a central opening constricted on the side toward the brush and a longitudinal keyway along the

constricted portion, a key disposed on the free

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end of each brush rotor and adapted to coact with the keyway, a spring member disposed between the rotor and bearing and adapted to releasably maintain the rotor of each brush in the bearing, means maintaining the bearing in the bearing support, and means adapted to rotate the end of at least one rotor relatively to the other rotor.

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