April 13, 1943. L. GARIN 2,316,326

WASHING DEVICE

Filed Aug. 22, 1941

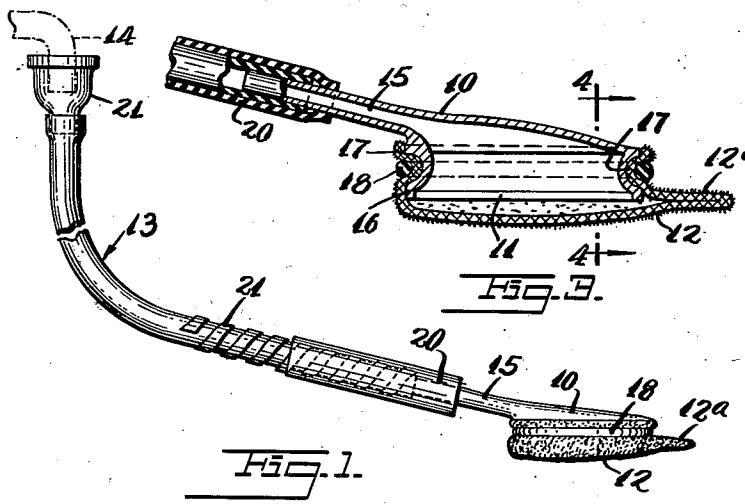


Fig. 3.

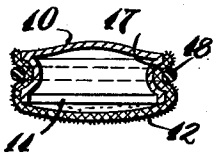


Fig. 4.

Fig. 1.

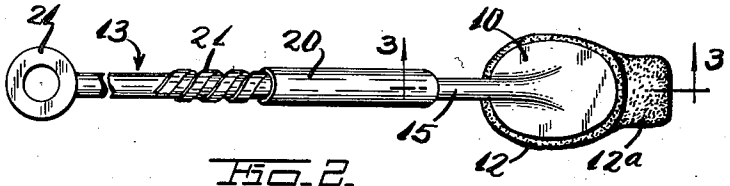


Fig. 2.

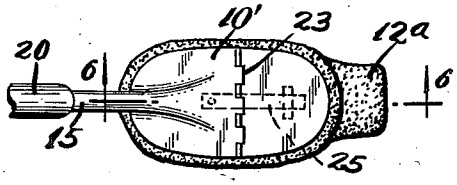


Fig. 5.

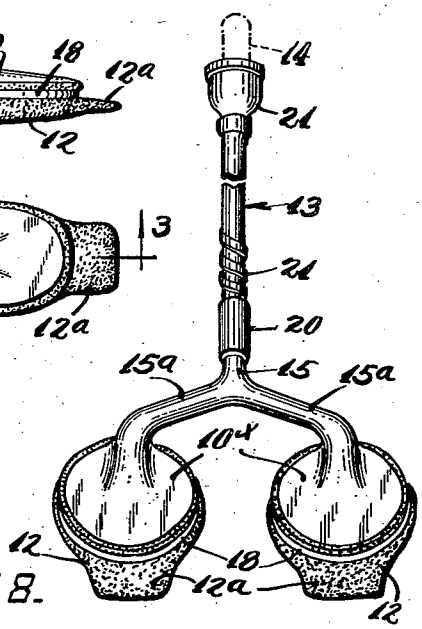


Fig. 8.

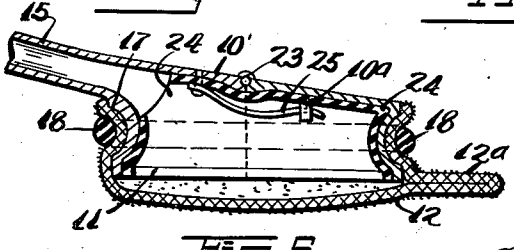


Fig. 6.

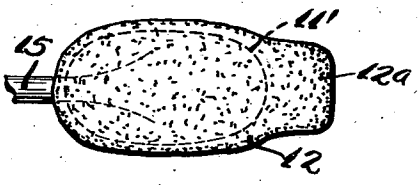


Fig. 7.

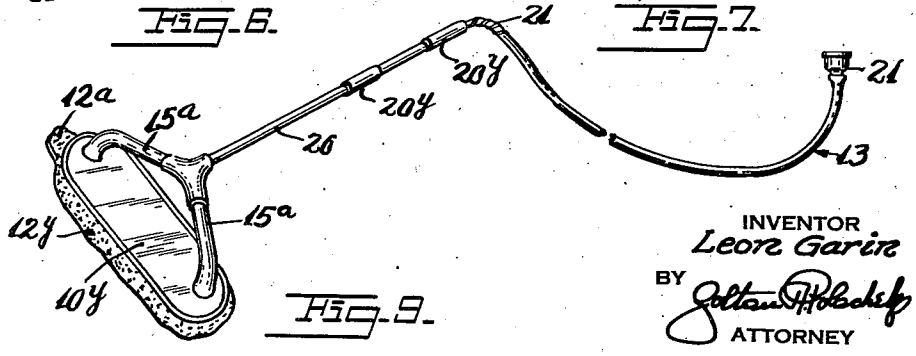


Fig. 9.

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2,316,326

WASHING DEVICE

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Application August 22, 1941, Serial No. 407,843

5 Claims. (Cl. 15—128)

This invention relates to new and useful improvements in a washing device.

More particularly, the invention proposes a washing device which is characterized by a hollow casing with a holding tube which may be manually gripped and moved, and having an open side upon which a flexible porous cleaning member is mounted and to which a flexible tube or other medium by which water or cleaning fluid may be supplied, is connected.

For washing or cleaning of any object it is not sufficient to pour water or other cleansing liquid upon this object. It is necessary to add a mechanical action, namely friction, in order to tear away the very sticky dirt or grease. A usual dish cloth or brush or other cleaning device absorbs dirt, grease, etc., and only displaces this dirt and grease over the surface of the object to be cleaned, even if water is poured upon it.

In order to make possible the friction of the object to clean, without soiling the cleaning device and with supply of water or other liquid to the point to be cleaned, the following arrangement or device will be applied:

Water or other liquid is flowing under pressure into a closed pouch, composed of (1) an impermeable material for the part of the closed pouch which does not serve for cleaning and (2) a porous material which permits the flow of water or other liquid, for the part of the closed pouch serving to rub the object to be cleaned.

The porosity of the material used for this purpose and the size of the rubbing surface has to correspond to the available pressure of water or the other liquid and to the minimum use of this water or liquid. The impermeable part of the pouch serves to avoid waste of water or liquid through this non-rubbing part and to increase the pressure inside the pouch.

Of course, the pouch may be made of any shape, size, or material. For example, the pouch may be made entirely of a porous material or as a rigid hollow casing with one open side covered by a porous cloth or as a frame with two open sides covered by a porous material, etc.

The quite considerable pressure inside the pouch pushes the water or other liquid through the porous part with considerable force and does not allow grease, dirt or other substances to penetrate or to stick to the surface of this porous part.

This pouch must be provided with an arrangement permitting an easy hand-gripping and a sufficient hand-pressing upon the object to be cleaned to accomplish the cleaning. The porous part of the pouch is made of flexible porous material, which under pressure becomes inflated like a balloon, and conforms to any shape of the object to clean, even to hollow spots, which are cleaned as well.

This device can be used for many different purposes for example, for washing dishes or automobiles or tile floors or sidewalks or for washing of bodies in bath rooms or for washing horses, etc.

Depending on the object to clean, only the shape, the size or the material change, but not the principle which is always the same and unchangeable and which reads as follows:

Water or other liquid is flowing under pressure into a closed pouch and this pouch is rubbed against an object to be cleaned; the cleaning is a result of this friction combined with flowing water or other liquid; the rubbing surface of the pouch remains clean always, as the water or other liquids flows under pressure through the porous material.

To show, as an example, how to materialize this device technically, I present one of the countless possibilities, namely a washing device for dishes.

Still further the invention contemplates a novel arrangement by which the porous cleaning member is held in position, particularly in a way that it may be easily removed and replaced, or replaced with a new cleaning member.

The invention also proposes that the flexible connection for supplying the cleaning fluid be characterized by a flexible hose and a connector by which this hose may be easily mounted upon the end of a faucet, valve, or supply pipe.

Still further the invention proposes modifications of the washing device in which more than one porous cleaning member is used at a time.

Still further the invention proposes a modification in which it is possible to place portions of the cleaning member with greater force against the article being cleaned.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevational view of a washing device constructed in accordance with this invention.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 is a fragmentary enlarged sectional view taken on the line 3—3 of Fig. 2.

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

Fig. 5 is a fragmentary plan view of a washing device constructed in accordance with a modified form of the invention.

Fig. 6 is a fragmentary enlarged sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a bottom view of Fig. 5.

Fig. 8 is a perspective view of a washing device constructed in accordance with still another form of the invention.

Fig. 9 is another perspective view of a washing device constructed in accordance with this invention.

The washing device, in accordance with this invention, includes a hollow casing 10 having an open side 11. A flexible porous cleaning member 12 is mounted on said casing across said open side 11. A flexible connection 13 is connected with the casing 10 and is adapted to be connected with a supply of water or other cleaning fluid which is capable of passing through the flexible porous member 12 during the operation of the device. The flexible connection 13 may be connected with the end of a faucet or pipe, schematically indicated by the dot and dash lines 14 on the drawing.

The casing 10 has a tubular inlet stem 15 to which the flexible connection 13 is connected. The open side 11 is surrounded by a flange 16. This flange 16 is formed with a circumferential groove 17. The porous cleaning member 12 is in the form of a sack having an open top portion. This open top portion is engaged around the flange 16. An elastic band 18 is engaged over the edge portion of the cleaning member 12 and engages against the groove 17 for firmly holding the cleaning member in position. The cleaning member 12 is slightly longer than the length of the open side 11 of the casing so that there is a loose portion 12^a which permits the bottom of the cleaning member to be freely drawn or rubber over an article which is being cleaned.

The flexible connection 13 is in the nature of a flexible tube. One end is forced onto the stem 15. A heat insulating holding tube 20 engages over this end and over a portion of the stem for holding the washing device in one's hand. The other end of the tube is provided with a connector 21 which may be connected with the end of a faucet or valve. One end portion of the flexible tube is also provided with a spiral surface portion 21 which may be embossed thereon and which will assist the tube 20 in firmly holding the flexible connection connected with the stem 15.

The operation of the device is as follows:

The casing 10 is provided with an insulating holding tube which may be gripped by the user. The water supply or cleaning fluid supply may be turned on so that it flows through the flexible connector 13 and through the casing 10. This fluid then passes through the porous cleaning member 12 and onto the article being cleaned. The water or fluid will have a tendency to blow up the porous cleaning member 12, particularly if the water or fluid is supplied at a greater rate than it is discharged through the pores of the member 12. The pressure of the cleaning fluid may then be increased by pressing downwards on the casing 10 so that the porous member 12 is pressed against the article being cleaned. Then the casing is moved backwards and forwards over an article to be cleaned. Cleaning substances such as soaps and powders may be rubbed onto the article or onto the porous member 12 prior to or during the cleaning operation.

In Figs. 5 to 7 inclusive a modified form of the invention has been disclosed which is very similar to the prior form, distinguishing merely in the fact that the casing 10' of the washing device is provided with a movable front section 10^a. This front section 10^a is formed of separate material from the back section and is movably connected therewith by a hinge 23. This hinge is located across the top of the casing 10'. A rubber sheet 24 is mounted within the casing 10' and has a portion extending across the hinge 23 to prevent leakage of water or cleaning fluid out from the joint between the casing sections. This sheet of rubber 24 or other flexible waterproof material is cemented upon the inner face of the casing 10'. A spring 25, or other resilient device is mounted upon the casing 10' across the hinge 23 and acts to normally hold the casing sections in aligned positions. In other respects this form of the invention is similar to the previous form and like parts are identified by like reference numerals.

The device illustrated in Figs. 5 to 7 is used in a manner identical to that of the previous form, except that when desired the front section 10^a of the rigid casing 10' may be pressed downwards because of the hinge construction 23, so that only the front portion of the porous member 12 is pressed hard against the article being cleaned. With this arrangement the rear portion of the porous cleaning member 12 is free so that the water or cleaning fluid may pass unrestricted through the pores at the rear and on the object being cleaned.

In Fig. 8 still another form of the invention has been disclosed which is very similar to the form shown in Figs. 1 to 4, distinguishing merely in the fact that the device has a stem 15 which is connected with the flexible connection 13 at one end and its other end connects with branch stem portions 15^a which connect with a pair of casings 10^x. Each of these casings 10^x is provided with a porous cleaning member 12. In other respects this form is similar to the previous forms.

In accordance with this form of the invention the stem 15 is manually gripped, or the branch portions 15^a thereof, and the washing device is manipulated so that the porous cleaning elements 12 are moved over the object or objects being cleaned.

In Fig. 9, still another form of the invention has been disclosed, in which the branch stem portions 15^a connect with an enlarged casing 10^y which is provided with a corresponding size of porous cleaning member 12^y. In this form of the invention, the holding tubes 20^y are engaged over an elongated handle or stem 26 of sufficient length to permit the washing of tile floors, sidewalks or other comparatively distant places. In other respects this form is similar to the previous forms.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I

claim as new, and desire to secure by United States Letters Patent is:

1. A washing device, comprising a hollow casing of impermeable material having an open side, a flexible porous cleaning member mounted across said open side, and a flexible connection connected with said casing and adapted to be connected with a supply of water or other cleaning fluid which is capable of passing through the porous member and inflate the same, said casing having a movable front section, and means for waterproofing the joints between the sections of said casing, said sections being hingedly connected, said waterproofing including a flexible waterproofed sheet cemented on the inner face of said casing.

2. A washing device, comprising a hollow casing of impermeable material having an open side, a flexible porous cleaning member mounted across said open side, and a flexible connection connected with said casing and adapted to be connected with a supply of water or other cleaning fluid which is capable of passing through the porous member and inflate the same, said said casing having a movable front section, and means for waterproofing the joints between the sections of said casing, said sections being hingedly connected, said waterproofing including a flexible waterproofed sheet cemented on the inner face of said casing, and resilient means for urging said section of the casing into a normal position.

3. A washing device, comprising a hollow casing of impermeable material formed of separate sections pivotally connected together and having an open side, a flexible porous cleaning member mounted across the open side of said casing, means for supplying water or other cleaning fluid to said casing under pressure to inflate and pass through said porous member, means for waterproofing the adjacent edges of said casing sections in all pivoted positions thereof, a leaf spring having one of its ends fixedly attached to the inside face of one of said sections and its free end projected to the inside face of the other of said sections, and means slidably attaching the free end of said leaf spring to the inside face of its respective section for urging said sections into a normal closed position.

4. A washing device, comprising a hollow casing of impermeable material formed of separate sections pivotally connected together and having an open side, a flexible porous cleaning member mounted across the open side of said casing, means for supplying water or other cleaning fluid to said casing under pressure to inflate and pass through said porous member, means for waterproofing the adjacent edges of said casing sections in all pivoted positions thereof, a leaf spring having one of its ends fixedly attached to the inside face of one of said sections and its free end projected to the inside face of the other of said sections, and means slidably attaching the free end of said leaf spring to the inside face of its respective section for urging said sections into a normal closed position, said first means, comprising a sheet of rubber extended across and cemented to the inside faces of the sections of said casing.

5. A washing device, comprising a hollow casing of impermeable material formed of separate sections pivotally connected together and having an open side, a flexible porous cleaning member mounted across the open side of said casing, means for supplying water or other cleaning fluid to said casing under pressure to inflate and pass through said porous member, means for waterproofing the adjacent edges of said casing sections in all pivoted positions thereof, a leaf spring having one of its ends fixedly attached to the inside face of one of said sections and its free end projected to the inside face of the other of said sections, and means slidably attaching the free end of said leaf spring to the inside face of its respective section for urging said sections into a normal closed position, said latter means, comprising a loop formed on the inside face of said latter casing section and through which the free end of said leaf spring is extended.

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