

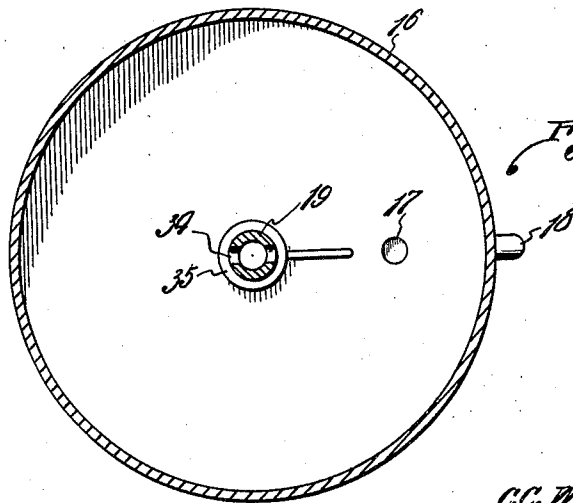
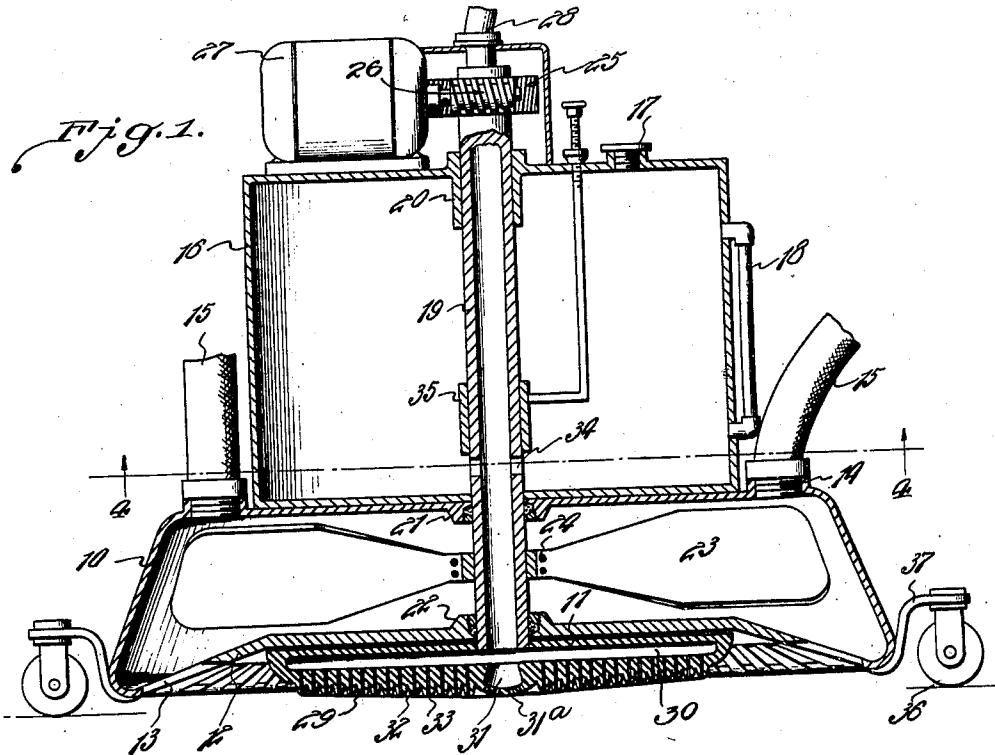
June 17, 1924.

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C. C. WINCHESTER
RUG AND FABRIC CLEANING DEVICE

Filed March 23, 1923

3 Sheets-Sheet 1



W. Markward

WITNESS:

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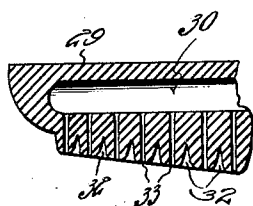
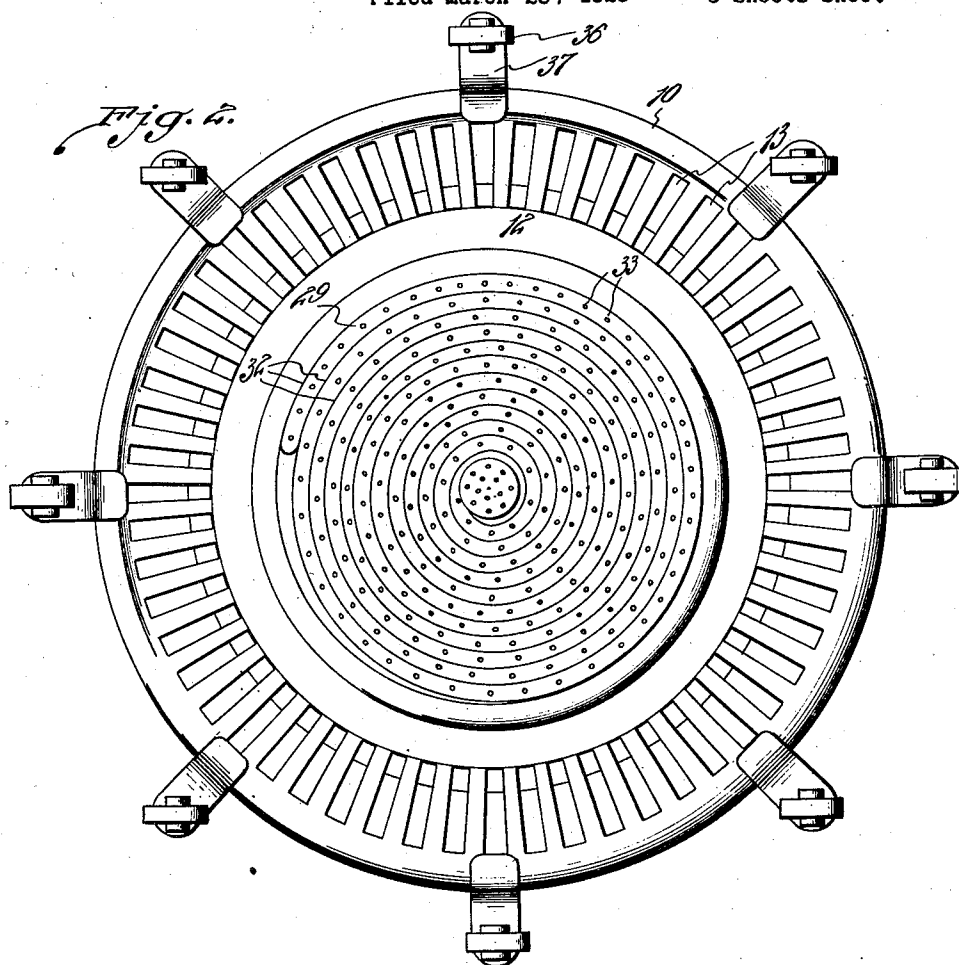


Fig. 6.

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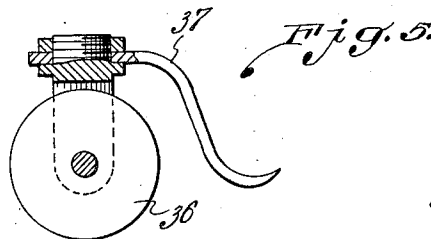
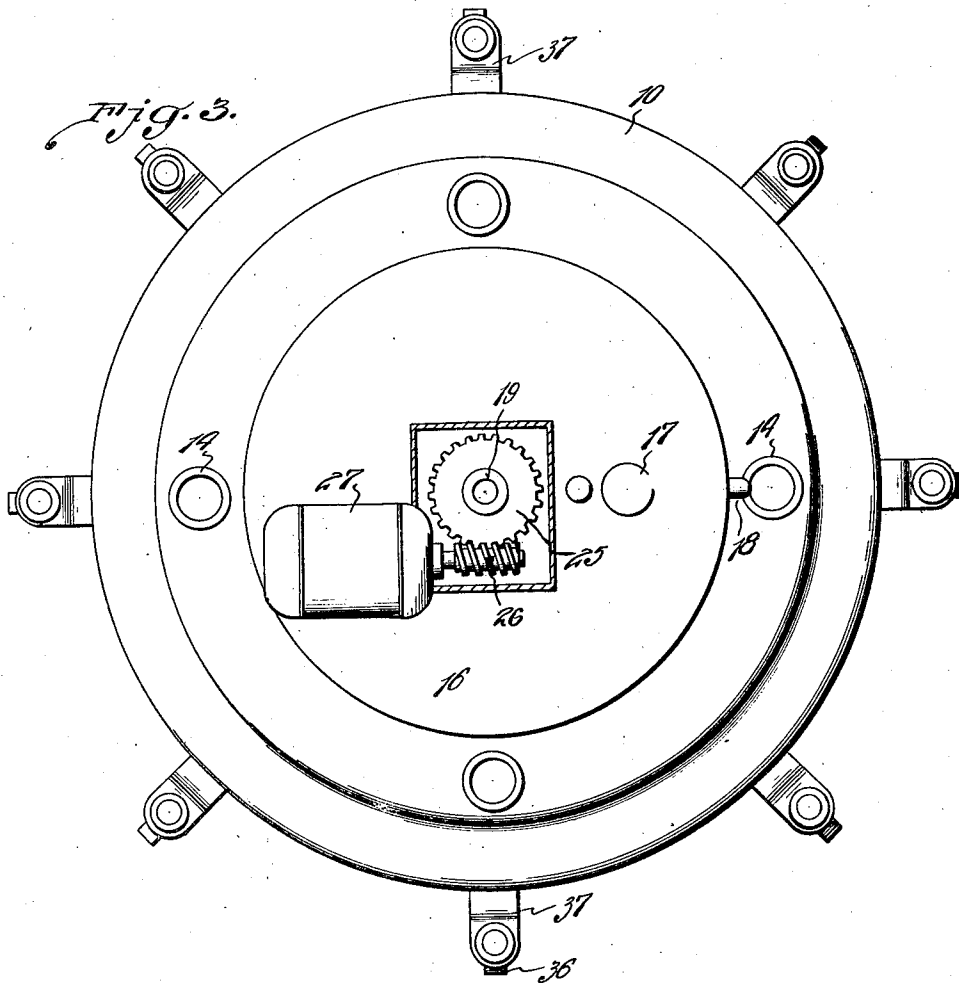
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RUG AND FABRIC CLEANING DEVICE

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3 Sheets-Sheet 3



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WITNESS:

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UNITED STATES PATENT OFFICE.

CAREY CARTER WINCHESTER, OF ATLANTA, GEORGIA.

RUG AND FABRIC CLEANING DEVICE.

Application filed March 23, 1923. Serial No. 627,165.

To all whom it may concern:

Be it known that I, CAREY CARTER WINCHESTER, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Rug and Fabric Cleaning Devices, of which the following is a specification.

This invention relates to cleaning apparatus and has for its object the provision of a novel motor driven device designed to be moved about over a rug, carpet or other fabric to be cleaned, and including means for brushing up the nap and at the same time forcing liquid soap through the nap so as to effect a cleaning action, the soap being subsequently removed by means of a vacuum.

An important object is the provision of a device of this character including a soap fountain having discharge openings leading through blunt nap engaging members, these members operating to pick up the nap and loosen the dirt so that it may be effectually removed.

Another object is the provision of a device of this character which includes a rotary nozzle adapted to be moved over and through the nap of the rug or carpet without touching the warp thereof, this nozzle or rubbing element operating below a chamber provided with means for producing a vacuum which will draw the cleansing liquid through the fabric and into the chamber from whence it will be discharged.

An additional object is the provision of a device of this character which will be comparatively simple and inexpensive to manufacture, easy to control and operate, positive in action, efficient and durable in service and a general improvement in the art.

With the above and other objects and advantages in view the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a longitudinal section through the complete device,

Figure 2 is a bottom plan view,

Figure 3 is a top plan view,

Figure 4 is a detail cross section on the line 4-4 of Figure 1,

Figure 5 is a detail view of one of the supporting roller structures,

Figure 6 is an enlarged fragmentary detail section.

Referring more particularly to the drawings the numeral 10 designates a casing which is circular and preferably upwardly tapered as shown and which may be constructed of any size and of any suitable materials. The bottom 11 of this casing has its central portion offset upwardly as shown whereby to provide a space between it and the surface over which the device is used. The offset central portion 11 is connected with the peripheral portion of the casing by an inclined wall 12 formed with a plurality of radial slots 13. This casing 10 defines a vacuum chamber within which is located a fan mechanism to be described, and the top of the casing is provided with suitable outlet nipples or connections 14 to which may be connected hoses 15 or the like leading to any power driven suction device which may be used in conjunction with the present apparatus and in addition to the fan mechanism to be described.

Mounted upon the casing 10 is an upstanding cylindrical casing 16 designed as a reservoir for liquid soap and provided at its top with a normally closed filling opening 17 through which the casing may be filled. There is no communication whatever between the casings 10 and 16, the latter being merely supported upon and suitably secured to the former. At one side of this casing 16 is a gage glass 18 which will indicate the level of the liquid soap within the device.

Journaled through the center of the casings 10 and 16 is a hollow shaft 19 which passes through suitable bearings 20, 21 and 22 and upon which is secured, within the casing 10, a fan structure including a plurality of blades 23 radiating from a central hub 24. This shaft 19 is provided above the casing 16 with a worm wheel 25 driven by a worm 26 operated by an electric motor 27 mounted on the casing 16. The hollow shaft 19 is further intended for the inlet of water and for this purpose its upper end is provided with a connection 28 upon which may be engaged a hose or other flexible conduit leading from a suitable source of water supply.

Carried by the lower end of the shaft 19 is a rubbing or scrubbing nozzle designated broadly by the numeral 29 and this nozzle is located in the space below the upwardly off-

set central portion 11 of the bottom of the casing 10. This rubbing nozzle is formed of a disk like shape and is hollow or formed with a chamber, as indicated at 30. The hollow pipe 19 communicates with this hollow portion or chamber and immediately below the end of the hollow pipe the nozzle is formed with a depression or bowl 31 provided with perforations 31^a. The underside of this rubbing nozzle is convex and formed with a spiral groove 32, the successive convolutions of which define a plurality of blunt ridges through which are formed passages 33 communicating with the chamber 30. The lower surface of the nozzle is not straight, or in other words the highest points of the ridges 32 are at different levels or heights above the surface to be treated, so that a greater degree of rubbing action will be produced at the center than at points farther away. The shaft 19 is formed with openings 34 which communicate with the bottom portion of the casing 16 for permitting passage of soap from this casing through the shaft to the nozzle.

It is of course highly desirable that means be provided for regulating the feed of the soap and in carrying out this feature I provide a sleeve 35 which surrounds the hollow shaft 19 and which is adapted to be projected downwardly to cover the openings 34 to a greater or less extent, depending upon the desired rate of feed. Any preferred means may be provided for shifting the position of this sleeve.

In order to support the weight of the device and make it readily movable from place to place during its operation, I provide a plurality of casters 36 upon which are mounted springs 37 secured to the lower portion of the casing 10. These springs are of a leaf like nature as shown and should have sufficient strength to support practically all of the weight of the device with the extreme lower edge of the casing 10 bearing upon the surface to be cleaned.

In the operation it will be seen that when soap is within the casing 16 and a suitable water hose is connected to the connection 28, and the motor 27 is in operation, the water and soap will mix at the points 34 and will pass together into the hollow nozzle and be discharged therefrom through the passages 33 and perforations 31. The fan is of course rotated by the connection of the motor as is also this rubbing nozzle 29. Owing to the fact that the lower edge of the casing 10 bears upon the surface of the rug, carpet or other fabric of a similar nature to be cleaned, it is apparent that the hollow space at the bottom of the casing is substantially sealed. The result of this is that the suction caused by rotation of the fan will draw the soap and water through the rug or other fabric and into and through the slots 13 to the cas-

ing 10 from which this matter, together with the dirt washed out of the rug or carpet will pass through the hoses 15 and be discharged at any desired point. It is of course true that a certain amount of air is drawn in through the soap and water and the effect will be to produce suds which will effectually clean the rug or carpet when shot into the nap thereof while the latter is being brushed up or rubbed by the rotary nozzle.

When desired, the soap valve may be closed and clear water alone be used for effecting rinsing the rug, carpet or other fabric.

In case the fan is not sufficiently strong to create all the suction desired, suction may be applied to the hoses 15 by means of any suitable pump, blower or other device.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simply constructed, inexpensive and easily operated device which will efficiently perform all the functions for which it is intended. Owing to the fewness of the parts it is apparent that there is little to get out of order so that the device should have a long life and satisfactorily perform all of its functions.

While I have shown and described the preferred embodiment of the invention it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention I claim:

1. A cleaning device of the character described comprising a casing having the center of its bottom upwardly offset and having a plurality of slots located near its periphery, a casing above said first named casing and adapted to contain liquid soap, a vertically disposed hollow shaft rotatably mounted through both of said casings and formed with openings communicating with the second named casing, means for rotating said shaft, a fan on said shaft within the first named casing, and a nozzle carried by the shaft below the first named casing and formed with a plurality of outlet passages.

2. A cleaning device of the character described comprising a casing having the center of its bottom upwardly offset and having a plurality of slots located near its periphery, a casing above said first named casing and adapted to contain liquid soap, a vertically disposed hollow shaft rotatably mounted through both of said casings and formed with openings communicating with the second named casing, means for rotating said shaft, a fan on said shaft within the first named casing, and a nozzle carried by the shaft below the first named casing and formed with a plurality of outlet passages,

said nozzle having its under surface convex and grooved to define a plurality of blunt ridges of different heights adapted to pass through and scrub the nap of fabric being cleaned.

3. A cleaning device of the character described comprising a casing having the center of its bottom upwardly offset and having a plurality of slots located near its periphery, a casing above said first named casing and adapted to contain liquid soap, a vertically disposed hollow shaft rotatably mounted through both of said casings and formed with openings communicating with the second named casing, means for rotating said shaft, a fan on said shaft within the first named casing, and a nozzle carried by the shaft below the first named casing and formed with a plurality of outlet passages, said first named casing being provided with outlet nipples adapted to have suction hoses connected therewith for supplementing the action of said fan.

4. A cleaning device of the character described comprising a casing having the center of its bottom upwardly offset and having a plurality of slots located near its periphery, a casing above said first named casing and adapted to contain liquid soap, a vertically disposed hollow shaft rotatably mounted through both of said casings and formed with openings communicating with the second named casing, means for rotating said shaft, a fan on said shaft within the first named casing, and a nozzle carried by the shaft below the first named casing and formed with a plurality of outlet passages, and a sleeve valve surrounding said hollow shaft and movably mounted whereby to par-

tially cover or uncover the openings in the hollow shaft.

5. A cleaning device of the character described comprising a casing having the center of its bottom upwardly offset and having a plurality of slots located near its periphery, a casing above said first named casing and adapted to contain liquid soap, a vertically disposed hollow shaft rotatably mounted through both of said casings and formed with openings communicating with the second named casing, means for rotating said shaft, a fan on said shaft within the first named casing, and a nozzle carried by the shaft below the first named casing and formed with a plurality of outlet passages, the outer edge of the bottom of said first named casing engaging upon the surface being treated, and casters having spring connection with the first named casing for sustaining the major portion of the weight of the device.

6. A cleaning device of the character described comprising a casing having a downwardly projecting edge designed to engage upon a surface to be cleaned for forming a substantial seal, a rotary scrubbing nozzle rotatably mounted at the bottom of the casing for scrubbing the nap of fabric, said nozzle being formed with a plurality of passages, means for supplying liquid soap, water and air into the nozzle, and means for creating suction at the outer portion of the bottom of the casing for drawing the soap, water and air through the fabric, the bottom of the casing being formed with outlet openings.

In testimony whereof I affix my signature.
CAREY CARTER WINCHESTER.