April 8, 1941. A. B. FRAME ET AL 2,237,984

CLEANING AND FUMIGATING DEVICE

Filed Oct. 11, 1938

Fig. 1.

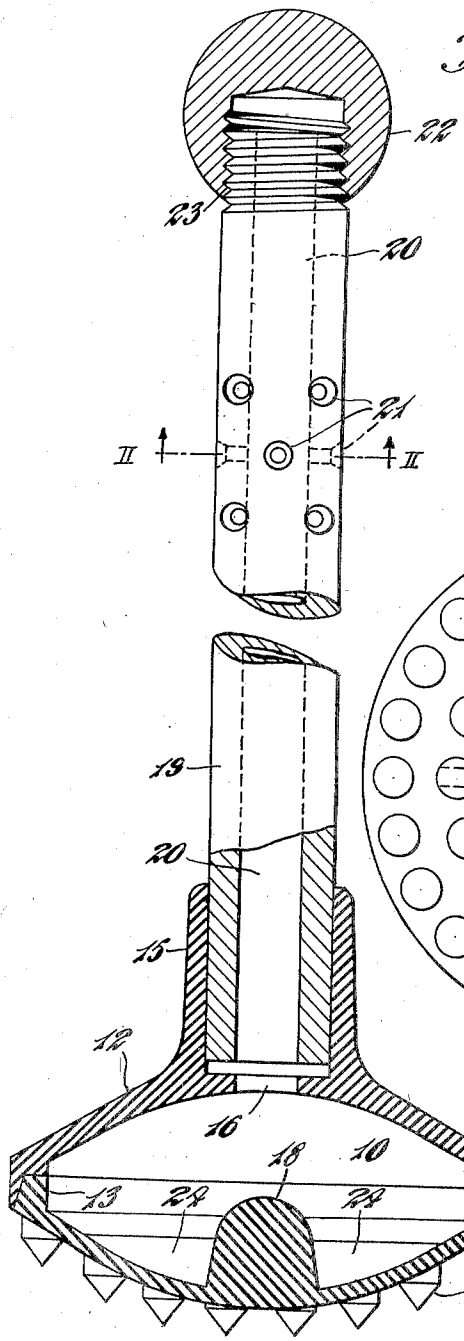


Fig. 2.

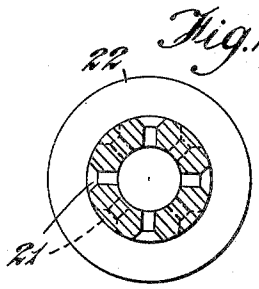
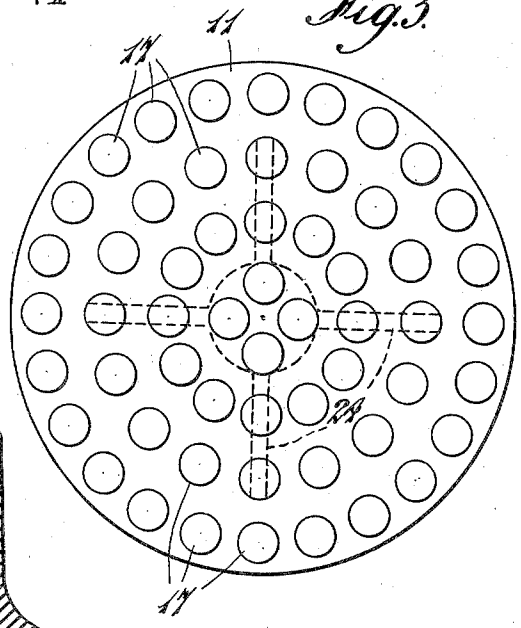


Fig. 3.



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Patented Apr. 8, 1941

2,237,984

UNITED STATES PATENT OFFICE

2,237,984

CLEANING AND FUMIGATING DEVICE

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Application October 11, 1938, Serial No. 234,466
In Great Britain October 18, 1937

6 Claims. (Cl. 15—105)

This invention relates to brushes, scrubbers or the like cleaning or scouring devices intended particularly for domestic uses.

One object of the invention is to provide a brush or scrubber having one or more operative faces which readily conform during operation to the article being cleaned.

A further object of the invention is to provide a flexible brush or scrubber adapted during operation to act automatically as a disinfecting and/or deodorizing device.

Another object of the invention is to provide a flexible brush or scrubber which is adapted during operation to rock or move freely about a manipulating handle to provide an improved cleaning action.

These and other objects and advantages will be perceived from the following description read in conjunction with the accompanying drawing forming a part of this specification.

In the drawing:

Fig. 1 is an elevation partly in section of a scrubber intended for cleaning lavatory pans or the like;

Fig. 2 is section on the line II—II of Fig. 1;

Fig. 3 is an underneath plan view of the body of the scrubber.

Referring to the drawing the body of the scrubber is denoted generally by 10 and comprises a hollow element of general flattened spherical form. The body 10 is constituted by two members 11, 12 of rubber or similar material, the lower member 11 being of curved form and the upper member 12 of general conical shape. This construction as two members is preferred to facilitate the moulding process of the hollow body. The members 11, 12 are each provided with a peripheral flange 13, 14 which intergage and which are vulcanized to form a tight joint.

Secured to or preferably formed integrally with the upper member 12 is a socket or sleeve element 15 which communicates with the interior of the body 10 through an opening 16. The lower member 11 is provided on its exterior face with a plurality of projections 17 of general conical form. These are preferably moulded on to the outer face during manufacture. Other forms of projections such as ribs, serrations, bristle tufts, or the like may if desired be formed on or secured to said outer face, depending on the purpose for which the brush or scrubber is used.

Secured to or integral with the inner face of the member 11 is an abutment or spacing element 18 which preferably is disposed opposite the opening 16 and serves a purpose more fully described hereinafter.

In order to ensure adequate strength and resiliency of the hollow body it may be preferable to provide transverse ribs 24 as shown in Figs. 1 and 3. These assist in returning the hollow body to its original form after collapsing or distortion.

A handle 19 of generally tubular form is adapted to fit into and engage with the sleeve 15. The handle may be formed of metal, wood, synthetic resin, fibre or the like and is so dimensioned relatively to the sleeve 15 as to fit tightly into the latter and possibly to distend the same.

The handle 19 is provided with a bore or the like 20 and towards its outer end is formed with a plurality of orifices or openings 21 which provide communication between the bore 20 and the outer atmosphere. The bore 20 preferably extends to the outermost extremity of the handle 19 and the opening is covered at this end by a cap 22 formed of synthetic resin or the like and preferably secured to the handle by means of a thread 23.

In operation for example for cleaning lavatory pans the brush or scrubber is moved up and down against the surface being cleaned. This action causes the projections 17 on the outer face of the member 11 to rub against and cleanse the pan. This action also causes the flexible body to collapse inwardly on each downward stroke and to expand on each upward stroke so that the air within the hollow body is expelled through the bore 20 of the handle and subsequently drawn in through the orifices 21 and the hollow handle 19 back into the interior of the flexible body. The outer face of the upper member 12 may also be used to clean other surfaces.

This construction enables the outer cleaning surface of the brush to conform substantially to the surface being treated or cleaned since the body as a whole can rock or move freely about its point of connection to the handle, that is about the lower end of the sleeve 15. In this way an improved cleaning action is produced.

When perfuming or disinfecting, volatilizable material is placed within the hollow body or within the bore of the handle the expulsion of the air on manipulation of the brush or scrubber causes the vapour of the substance to be forced into the outer atmosphere. As abovementioned, the expansion of the hollow body will draw further air into its interior. In this way, the brush or scrubber on operation automatically acts as a perfuming or disinfecting device.

The volatilizable material may be introduced either in the form of crystals or powder or in the form of liquid through the upper end of the bore 20 by unscrewing the cap 22. The abutment member 18 is provided for the purpose of limiting the inward collapsing of the body member 10 and thus preventing the crushing of any crystalline substance which may be present within the hollow body.

It is to be understood that the details of construction, the shape of the body element and of the projections 17, as well as the shape of the handle, and the manner in which the same is secured to the hollow body may be modified as desired.

What we claim is:

1. A scouring device of the character specified which includes a scouring member comprising a readily flexible and distortable hollow body element formed of a resilient material which allows collapse and deflation of said body and also renders said body self-inflatable, a rigid manipulating handle mounted on said body having a bore in permanent communication with the interior of said body, the walls of said body being otherwise imperforate and the handle being formed with at least one opening providing permanent free communication between said bore and the outer atmosphere.

2. A scouring device of the character specified which includes a scouring member comprising a readily flexible and distortable hollow body element formed of a resilient material which allows collapse and deflation of said body and also renders said body self-inflatable, a rigid manipulating handle mounted on said body having a bore in permanent communication with the interior of said body, the walls of said body being otherwise imperforate and said handle having an opening adapted to allow the introduction of a fumigating substance into said bore and said bore being in permanent free communication with the outer atmosphere.

3. A scouring device of the character specified which includes a scouring member comprising a readily flexible and distortable hollow body element formed of a resilient material which allows collapse and deflation of said body and also renders said body self-inflatable, a rigid manipulating handle mounted on said body having a bore in permanent communication with the interior of said body, the walls of said body being otherwise imperforate and said handle being formed with at least one opening providing permanent communication between said bore and the outer atmosphere, and with at least one opening adapted to allow charging of said bore with a fumigating substance and means for closing said latter opening.

4. A scouring device of the character specified which includes a scouring member comprising a readily flexible and distortable hollow body element formed of a resilient material which allows collapse and deflation of said body and also renders said body self-inflatable, the wall of said body being formed with a socket communicating with the interior of said body, the walls of said body being otherwise imperforate and a rigid tubular manipulating handle having one end engaging within said socket, said handle having a bore which communicates with the interior of the hollow body through said socket and being provided with perforations spaced from said end, which perforations form air inlet and outlet orifices.

5. A scouring device of the character specified which includes a scouring member comprising a readily flexible and distortable hollow body element of resilient material which allows collapse and deflation of said body and also renders said body self-inflatable, said body comprising a lower member of part-spherical shape and an upper member of generally conical shape, said members being inter-connected at their peripheral edges, a rigid manipulating handle mounted substantially centrally of the upper member of said body having a bore in permanent communication with the interior of said body, the walls of said body being otherwise imperforate and said handle having at least one opening providing permanent free communication between said bore and the outer atmosphere.

6. A scouring device of the character specified which includes a scouring member comprising a readily flexible and distortable hollow body element formed of a resilient material which allows collapse and deflation of said body and also renders said body self-inflatable, an abutment member within said hollow body limiting the collapsability of said body, a rigid manipulating handle mounted on said body having a bore in permanent communication with the interior of said body, the walls of said body being otherwise imperforate and said handle having at least one opening providing permanent free communication between said bore and the outer atmosphere.

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