

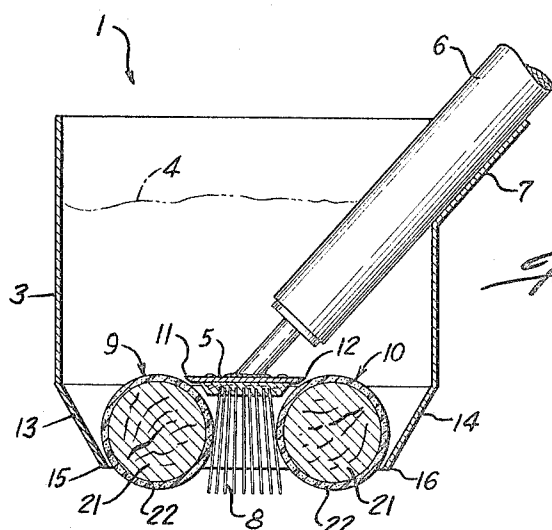
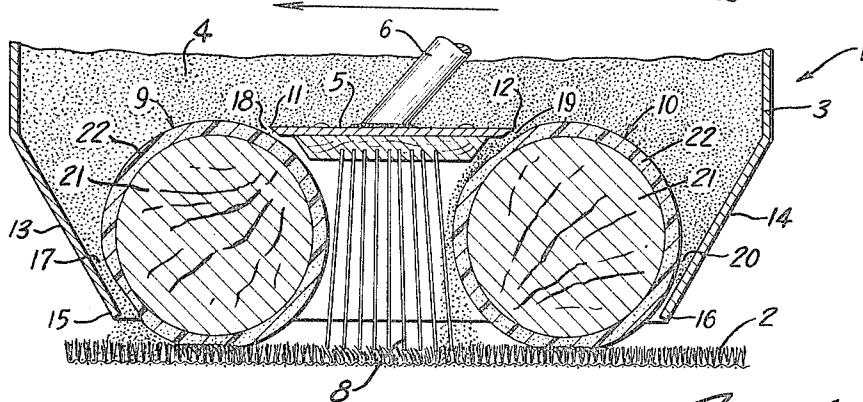
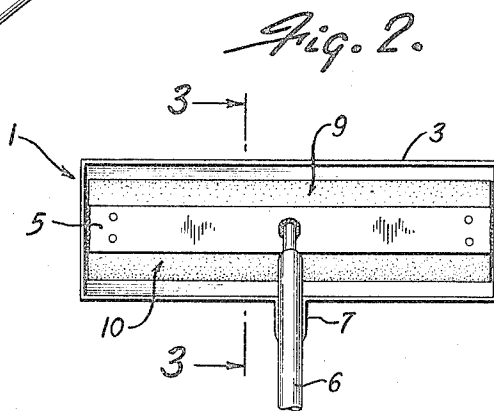
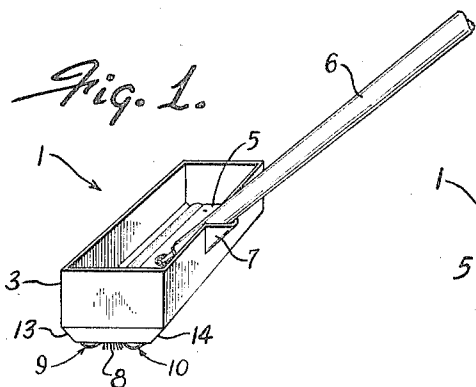
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DRY RUG SHAMPOO APPLICATOR

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DRY RUG SHAMPOO APPLICATOR

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This invention relates to a dry rug shampoo applicator, and more particularly to a manual device for applying and working an essentially dry rug cleaning agent into a rug or the like.

Generally, in accordance with the invention, the device comprises a hopper for receiving a quantity of fine powdery rug shampoo. A roller is mounted in the lower portion of the hopper and a handle is secured to the latter for manual forward and backward translation of the device over a rug to be cleaned.

More specifically, the hopper is provided with a longitudinal edge which is disposed adjacent the outer circumferential roller surface, to permit feeding of the shampoo downwardly therebetween. In addition, flexible resilient compressible means are provided to substantially reduce clogging of the shampoo along the roller in the area of feed.

The accompanying drawing illustrates the best mode presently contemplated by the inventor for carrying out the invention.

In the drawings:

FIGURE 1 is a perspective view of a dry rug shampoo applicator constructed in accordance with the invention; FIG. 2 is a top plan view of the applicator with the handle broken away;

FIG. 3 is a section taken on line 3—3 of FIG. 2; and FIG. 4 is a view similar to FIG. 3 and showing the operation of the clogging-preventing means.

As shown in the drawings, the device 1 of the invention is adapted to be translated over a rug 2 or the like and comprises a generally elongated hopper 3 adapted to receive a desired quantity of dry fine powdery shampoo 4 of suitable type. Hopper 3 is shown as having an open top, although a suitable removable cover, not shown, may be utilized.

Hopper 3 is of suitable depth for retaining the shampoo. A narrow hopper plate 5 of a width less than the hopper width is disposed in the lower central portion of the hopper and is fixedly secured to the end walls of the hopper to form a part of the hopper construction. In the embodiment shown, plate 5 serves as a support for a handle 6 which is secured thereto and which extends upwardly at suitable angle for holding by the operator. The hopper may be formed to support the handle, as at 7. Also in this embodiment a rug-contacting brush 8 is secured to the under surface of plate 5 and extends therealong for purposes to be described. Brush 8 may be of strip or tufted type, but is preferably a separated bristle type of a suitable plastic composition.

In accordance with the invention, means are provided to continuously feed shampoo 4 from hopper 3 to rug 2 as the device is translated thereover. For this purpose, a pair of feed rollers 9 and 10 are mounted in the lower portion of hopper 3, generally on opposite sides of plate 5 and coextensive with the fixed front and rear edges 11 and 12 of the plate. Rollers 9 and 10 are shown as having their axes below plate 5, but the rollers extend slightly above edges 11 and 12.

The front and rear walls of hopper 3 are inclined inwardly at their lower ends, as at 13 and 14, and extend to closely adjacent the lower portions of the respective rollers, thus providing fixed lower edges 15 and 16, respectively, which are coextensive with the rollers. Edges

15 and 16 are disposed below edges 11 and 12 and are disposed on opposite sides of the respective roller.

As the device is translated over a rug in a forward direction, rollers 9 and 10 will rotate in one direction. Front roller 9 will feed shampoo 4 downwardly past hopper edge 15, while rear roller 10 will feed shampoo downwardly past plate edge 12. The shampoo will be deposited on the rug and worked in by a combination of roller and brush action. Rearward translation of the device will cause the rollers to rotate in the opposite direction. In this instance, front roller 9 will feed shampoo downwardly past plate edge 11 and rear roller 10 will feed shampoo downwardly past hopper edge 16.

The characteristics of a dry powdery rug shampoo are such that the particles thereof tend to cling together and could interfere with feeding to the rugs. To partially prevent this problem, a slight space may be provided between each roller and its respective hopper and plate edge. In the embodiment shown there are four such slot-like spaces, designated at 17, 18, 19 and 20 from front to rear. These spaces will permit a sufficient quantity of shampoo to pass therethrough during movement of the rollers relative to the fixed edges, but the shampoo will bridge over and not pass through the slots when the device is at rest.

In some instances, as where shampoo 4 has collected moisture, the shampoo may tend to build up in bunches along the spaces 17—20, and thus clog the device. In accordance with the invention, there is provided means responsive to the downward pressure of undesirable amounts of shampoo trying to pass through two of the respective spaces 17—20, depending upon the direction of rotation, to automatically vary the effective opening between the rollers and edges and thus relieve the pressure and eliminate clogging. For this purpose, and in the embodiment shown, rollers 9 and 10 have hard cores 21 and are provided with a thin resilient cover 22 thereover.

Covers 22 may be made of any suitable resilient flexible compressible material, such as polyurethane foam, which is porous in nature on its surface. These pores will pick up the shampoo in the hopper and release it upon progressive flexing of the cover at the rug surface.

If clogging of the shampoo occurs between the fixed edges and the roller surface moving downwardly by the edges, covers 22 will compress inwardly adjacent thereto to increase the effective opening and permit the shampoo to squeeze therethrough. Such compression during forward translation is shown in FIG. 4. When the clogging tendency is reduced, the effective opening will be reduced.

The device of the invention provides a novel structure which is easy to operate, and which provides continuous feed of the shampoo to the rug. Clogging of the device is substantially eliminated.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

We claim.

1. In a device for shampooing rugs and the like:

- (a) a hopper for receiving dry rug shampoo material,
- (b) said hopper providing a fixed edge,
- (c) a rotatable roller disposed inside the lower portion of said hopper for supporting the device upon a rug,
- (d) said roller having a circumferential surface spaced slightly from and coextensive with and movable past said edge during translation of said device over a rug to feed shampoo from said hopper downwardly onto said rug,
- (e) and pressure responsive means to automatically increase the effective opening between said fixed

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edge and said roller surface during said translation in accordance with an increase in the downward pressure applied by the shampoo being fed therebetween.

2. The device of claim 1 in which said means (e) comprises: a resilient compressible material disposed in the effective opening between the said fixed edge and the said roller.

3. The device of claim 2 in which said resilient compressible material comprises the surface of the said roller.

4. In a device for shampooing rugs and the like:

- (a) a hopper for receiving dry rug shampoo material,
- (b) said hopper providing a fixed edge,
- (c) a rotatable roller disposed inside the lower portion of said hopper for supporting the device upon a rug,

- (d) said roller having a hard core and having circumferential surface spaced slightly from and coextensive with and movable past said edge during translation of said device over a rug to feed shampoo from said hopper downwardly onto said rug,

- (e) and a thin resilient flexible cover on said roller and providing the outer surface thereof,

- (f) said cover being porous on its surface so that the pores will pick up the shampoo in the hopper and release the shampoo upon flexing of the cover at the rug surface,

- (g) said cover being compressible to automatically increase the effective opening between said fixed edge and said roller surface during said translation in accordance with an increase in the downward pressure applied by the shampoo being fed therebetween.

5. In a device for shampooing rugs and the like:

- (a) a hopper for receiving dry rug shampoo material,
- (b) a plate disposed centrally in the lower portion of said hopper and extending between the ends thereof,
- (c) said plate forming a first pair of fixed edges,

- (d) the bottom of said hopper forming a second pair of fixed edges spaced from said first edges,

- (e) a pair of rotatable rollers mounted in the lower portion of said hopper for supporting the device upon a rug and with each roller disposed between one of said first edges and one of said second edges,

- (f) each roller having a resilient, compressible, circumferential surface closely adjacent to and coextensive with and movable past said first and second edges during translation of said device over a rug,

- (g) the construction being such that translation of the device in any one direction causes each said roller to feed shampoo downwardly from the hopper past only one of the adjacent edges to the rug,

- (h) the construction being such that downward pressure of shampoo at said edge causes said roller surface to be compressed to increase the effective opening between the respective edge and the roller surface to relieve the pressure and permit continuous feeding of the shampoo.

6. The device of claim 5 which includes:

- (a) a brush mounted to the underside of the said plate between the said rollers and disposed to contact said rug during translation of the device,

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- (b) and a handle secured to the top side of said plate for manual manipulation of the device.

7. In a device for shampooing rugs and the like:

- (a) a hopper for receiving dry rug shampoo material,
- (b) said hopper providing a pair of fixed edges in its lower portion,

- (c) and a rotatable roller disposed in the lower portion of said hopper between said edges for supporting the device upon the rugs, the surface of said roller being spaced from said edges to form a pair of openings,

- (d) said roller having a flexible compressible porous circumferential surface movable past said edges of said openings so that the pores of said surface continuously pick up said dry rug shampoo material in said hopper and, upon progressive flexing of said roller surface at said rug, release the said material upon the rug during forward and rearward translation of the device over the rug.

8. In a device for shampooing rugs and the like:

- (a) a hopper for receiving dry rug shampoo material,
- (b) said hopper providing a fixed edge,

- (c) means disposed inside the lower portion of said hopper for supporting the device upon a rug,

- (d) said means providing a surface spaced slightly from and coextensive with and movable past said edge during translation of said device over a rug to feed shampoo from said hopper downwardly onto said rug,

- (e) and pressure responsive means to automatically increase the effective opening between said fixed edge and said surface during said translation in accordance with an increase in the downward pressure applied by the shampoo being fed therebetween.

9. In a device for shampooing rugs and the like:

- (a) a hopper for receiving dry rug shampoo material,
- (b) said hopper providing a pair of fixed edges in its lower portion,

- (c) and means disposed inside the lower portion of said hopper between said edges for supporting the device upon a rug,

- (d) said means having a flexible compressible porous circumferential surface spaced from and movable past said edges so that the pores of said surface continuously pick up said dry rug shampoo material in said hopper and, upon progressive flexing of said surface at said rug, release the said material upon the rug during forward and rearward translation of the device over the rug.

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