June 10, 1969 M. CADEMARTORI 3,448,479

ROLLER APPLICATOR PARTICULARLY ADAPTED FOR COATING ROUGH SURFACES

Filed Oct. 9, 1963

Fig. 1.

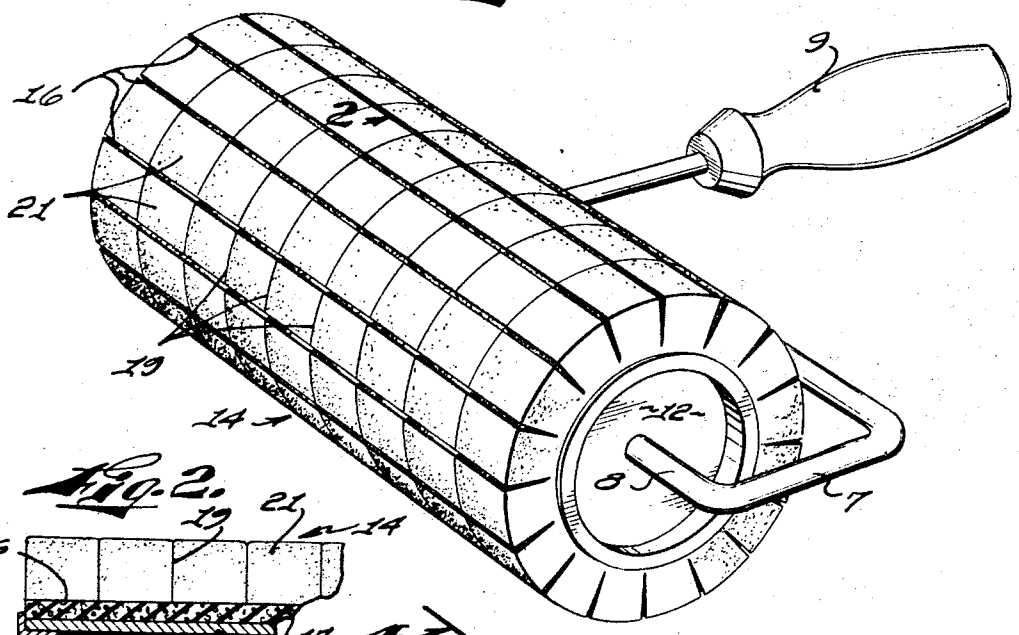


Fig. 2.

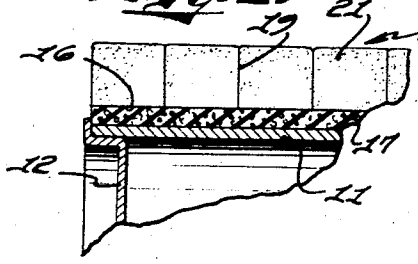


Fig. 3.

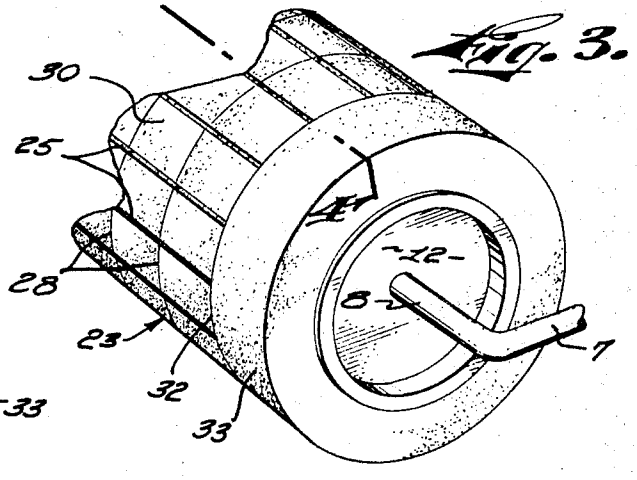
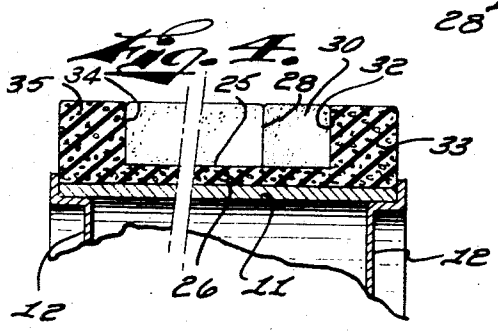


Fig. 4.



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United States Patent Office 3,448,479 Patented June 10, 1969

3,448,479

ROLLER APPLICATOR PARTICULARLY ADAPTED FOR COATING ROUGH SURFACES

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Filed Oct. 9, 1963, Ser. No. 314,926
Int. Cl. B05c 1/08; A46b 3/00; A47l 13/46
U.S. Cl. 15—230.11 1 Claim

This invention relates to applicating apparatus, and more specifically to a roller applicator particularly well suited for applying a coating such as paint to a rough surface of a friable substance having projections which are easily broken off.

The ceiling of many, if not most, new residential dwellings being constructed are coated with a rather porous acoustical substance which is sprayed on. This substance has the advantage that it is very inexpensive to apply, is attractive and deadens sound in the room significantly. However, in use, the material tends to become dirty and is impossible to clean.

This is because, in order to facilitate sound deadening the material is sprayed on so as to present a rough surface. Additionally, the material is soft and tends to crumble as well as being absorbent. Therefore, large quantities of the material are knocked off the ceiling if a person tries to clean it with a rag, or brush, and a cleaning fluid.

Since the dirt cannot be effectively removed, it is desirable to paint over the dirt to present an attractive appearance once more. However, the rough texture, combined with the friable nature of the material have presented a formidable obstacle prior to the present invention.

Embodiments of the present invention most widely incorporate having a frame having an axle and a handle extending at generally a right angle to the axle. Rotatably mounted on the axle is bearing means in the form of a drum rotatably mounted on the axle. The drum receives therearound a cylindrical sleeve of a resilient material which has the ability to adsorb the coating material, e.g., paint which is to be applied to the ceiling.

I have found that sponge material, e.g., polyurethane foam, is satisfactory if it is further characterized by a large number of slits criss-crossing each other to present a very large number of individual applicator pads. The sponge material has the basic qualities of absorbing the paint and being resilient. However, without the slits, the sponge sleeve will not push the paint into the recesses of the acoustical material without pressures on the applicator which knock off projections on the acoustical material.

Roller applicators having a sleeve of deep pile wool have been suggested. However, such applicators tend to mat, to knock off too much acoustical material and leave an excess of paint in the recesses of the acoustical material while failing to cover adequately the projections. These last two disadvantageous characteristics increase the amount of paint necessary to accomplish the task.

With the foregoing in mind it is a major object of this invention to provide an improved roller applicator.

Another object of this invention is to provide applicating apparatus which can accommodate very rough surfaces although little force is used to press the applicator against the surface.

A further object of this invention is to provide a roller applicator which is inexpensive to produce.

Still another object of this invention is to provide a roller applicator for quickly applying a coating, such as paint to a rough surface which has a tendency to crumble.

It is a still further object of this invention to provide a light weight, easily used roller applicator for coating rough surfaces.

Other and further objects of this invention will become apparent in the detailed description below in conjunction with the accompanying drawings wherein:

FIGURE 1 is a pictorial view of one embodiment of the present invention;

FIGURE 2 is an enlarged fragmentary cross-sectional view taken along line 2—2 in FIGURE 1;

FIGURE 3 is a fragmentary pictorial view of a second embodiment of my invention; and

FIGURE 4 is an enlarged fragmentary cross-sectional view of the roller applicator taken along line 4—4.

Referring now to FIGURES 1 and 2 where is shown a first embodiment of my invention. This particular embodiment comprises a frame **7** having an axle portion **8** and a handle **9** extending generally at a right angle from the axis of the axle **8**.

In order to enable the paint carrying portion of the applicator to rotate on the axle **8**, there is provided a drum comprising a cylinder **11** having end plates **12** at either end thereof. Each of the end plates **12** have a hole therethrough to receive the axle portion **8** for rotation around the axle portion.

Received around the drum is a sleeve of sponge material designated generally by the arrow **14**. The sponge material is preferably made of polyurethane foam. However, materials such as sponge rubber would also be satisfactory.

The sleeve **14** is further characterized by a plurality of longitudinal slits **16** extending the length of the sleeve. These slits **16** extend substantially all the way through the sleeve, however there is left an uncut portion **17** (see FIGURE 2) in order to facilitate manufacture of the sleeve and assembly on the applicator. For best results, I have found that with the normal applicator having an outside diameter of approximately two and three-quarters inches in diameter the slits should be spaced apart approximately one-half inch. And the slits should be approximately one-half inch deep. That is, the slits should be approximately as deep as the distance between them.

Extending circumferentially around the sleeve **14** is a plurality of circumferential slits **19**. These slits **19** are spaced apart a distance approximately equal to the spacing of the longitudinal slits **16**. And, the circumferential slits **19** are preferably the same depth as the longitudinal slits.

With the longitudinal slits **16** and the circumferential slits **19** crossing each other as shown a large number of individual applicator pads **21** are provided. With the large number of applicator pads the operating surface, i.e., the exterior surface of the sleeve **14**, deforms quite readily to accommodate the rough texture of the acoustical ceiling without excess pressures on the ceiling.

The roller applicator is used very similarly to prior roller applicators. That is, the paint is placed in the special tray having the inclined surface thereon. Then the roller applicator is dipped in the paint roll on the inclined surface to spread the paint evenly over the operating surface of the applicator.

At that time the paint is applied to the acoustical ceiling by rolling the applicator over it.

In this operation I have found that sometimes the paint tends to ooze out of the ends of the longitudinal slits **16**. Although this characteristic is not an insurmountable obstacle to the use of embodiments of my invention, I have discovered a simple way of counteracting this characteristic. A preferred embodiment of this improved applicator sleeve is disclosed in FIGURES 3 and 4.

The second embodiment of the invention also uses a frame **7** having an axle portion **8** which is received through holes in end plates **12** as in the first embodiment.

The second embodiment has a sleeve indicated generally by the arrow **23** formed of a sponge material such as polyurethane foam. The sleeve **23** is characterized by a plurality of longitudinal slits **25** preferably extending parallel to the axis of rotation of the sleeve. As in the first embodiment, the slits **25** preferably are spaced apart approximately one-half inch and are approximately one-half inch deep. Similarly to the first embodiment the slits **25** do not extend all the way to the sleeve **23**, but rather terminate in an uncut portion **26**.

Extending circumferentially around the sleeve **23** is a plurality of circumferential slits **28** which are preferably spaced approximately one-half inch apart and are of a depth equal to the longitudinal slits **25**.

The second embodiment of the invention differs from the first embodiment in that there is provided a first circumferential slit **32** adjacent the near end of the sleeve **23** and all of the longitudinal slits **25** terminate at that first circumferential slit. Because of this the sleeve **23** presents an edge ring **33** at the near end of the sleeve. The far end of the sleeve is exactly the same as the near end of the sleeve and therefore, is not shown. More specifically, the far end of the sleeve has a second circumferential slit **34** (see FIGURE 4) adjacent the far end and the longitudinal slits **25** terminate at that second circumferential slit. Thereby, the sleeve **23** presents an edge ring **35** at the far end of the sleeve which applicator ring is exactly the same as the edge ring **33**.

While only a few embodiments of my invention have been shown and described in detail it will be apparent to those skilled in the art that such is by way of illustration only. For example, in the preferred embodiments I formed the longitudinal and circumferential slits by special cutting tools. However, the same result can be accomplished by molding the separations formed by the slits right in the sleeve. Additionally, one, or a few, helical circumferential slits may be used instead of the many illustrated circumferential slits, each of which extends at a right angle to the axis of rotation of the sleeve.

Further, the longitudinal slits need not be parallel to the axis of rotation, nor is it critical that they be exactly at a right angle to the circumferential slits. The essential thing is that the slits criss-cross each other at substantial angles to provide a large number of individual applicator pads. Merely providing the large number of longitudinal slits or a large number of parallel circumferential slits will not accomplish the intended function.

Accordingly, it is my intention that the present invention should be limited solely by the scope of the appended claim.

I claim:

1. A roller applicator comprising: a handle; a drum connected to said handle and mounted for rotation; a sleeve encircling said drum; at least four circumferential slits in said sleeve encircling the drum, one of said slits being adjacent one end of said sleeve, a second of said slits being adjacent the opposite end of said sleeve; a plurality of longitudinal slits entending between said one circumferential slit and said second circumferential slit and crossing said circumferential slits between said one and second slits at a substantial angle, said circumferential and longitudinal slits being spaced substantially equidistant apart, said slits being of a depth substantially equal to the distance between slits, and said longitudinal slits terminating at said one and second circumferential slits.

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DANIEL BLUM, *Primary Examiner.*

U.S. Cl. X.R.

15—187, 244; 29—121