Feb. 10, 1953 G. W. GUDZE 2,627,620

LIQUID APPLICATOR OF THE ROLLER TYPE

Filed Feb. 17, 1950

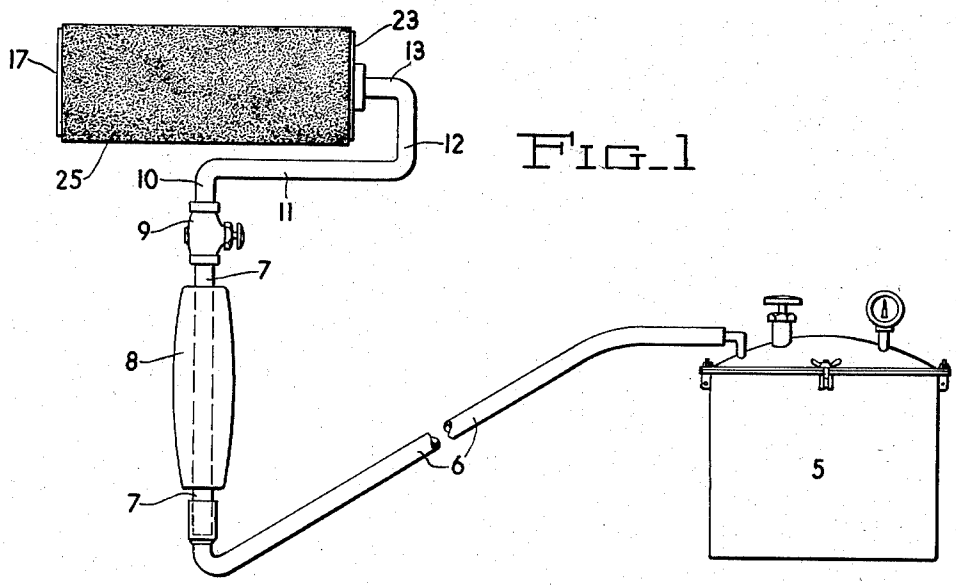


FIG_1

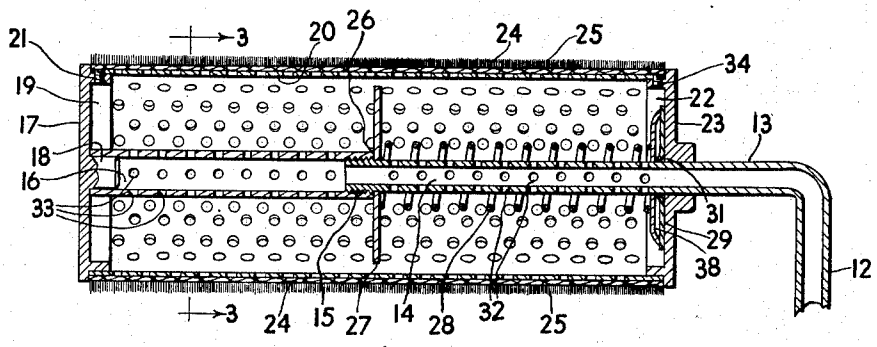


FIG_2

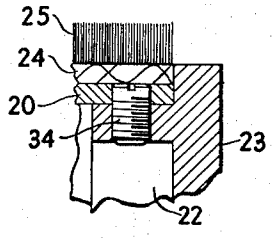


FIG_4

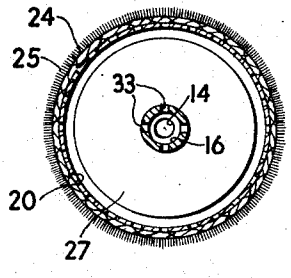


FIG_3

Inventor
GEORGE W. GUDZE

By Jas. C. Nobesmith
Attorney

Patented Feb. 10, 1953

2,627,620

UNITED STATES PATENT OFFICE

2,627,620

LIQUID APPLICATOR OF THE ROLLER TYPE

George W. Gudze, Philadelphia, Pa.

Application February 17, 1950, Serial No. 144,711

4 Claims. (Cl. 15—128)

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This invention relates to liquid applicators, and it relates more particularly to that type of applicator in which a liquid, such as paint, kalsomine, or the like, is fed to a hollow foraminous roller, the outer surface of which is provided with a covering of textile material having a pile like face.

The principal object of the present invention is to provide a liquid applicator, of the character aforesaid, in which liquid will be uniformly fed to the surface of the roller.

A further object of the invention is to provide a device, of the character aforesaid, which may be readily dismounted for the purpose of cleansing should the same be required, and thereafter reassembled easily and expeditiously.

A further object of the invention is to provide a device, of the character aforesaid, which may be inexpensively made, but which will be simple and efficient in its action.

The nature and characteristic features of the present invention will be more readily understood from the following description, taken in connection with the accompanying drawing forming part hereof, in which:

Figure 1 is a front elevation of a liquid applicator embodying the main features of the present invention, the same being shown connected to a pressurized supply tank of an ordinary type for feeding the liquid to the applicator;

Fig. 2 is a transverse section, enlarged, of a liquid applicator embodying the main features of the present invention;

Fig. 3 is a transverse section thereof, taken on the line 3—3 of Fig. 2; and

Fig. 4 is an enlarged detail view, illustrating a portion of the structure, which is so arranged to permit the ready separation and dismounting of the parts.

It should, of course, be understood that the description and drawing herein are illustrative merely, and that various modifications and changes may be made in the structure disclosed without departing from the spirit of the invention.

Referring now more particularly to Fig. 1 of the drawing, there is shown a pressurized tank 5 adapted to receive and maintain a supply of the liquid under pressure to be fed to the applicator for applying the same to a wall or other surface. The tank 5 is of any well known construction, such as is commonly used in connection with paint applicators, either of the present type, or of the spray type.

The tank 5 is connected by a flexible supply tube 6 to a pipe 7 which extends through a handle 8. A control valve 9 is provided in the pipe 7 adjacent the handle 8 for control of the feed of the liquid by the operator.

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Beyond the valve 9 there is an extension 10 of the pipe line which preferably extends approximately at right angles as at 11 to the axis of the handle; then parallel thereto as at 12, then being bent backwardly as at 13, which portion of the pipe line is also substantially at right angles to the axis of the handle.

The end part 14 of the portion 13 of the pipe line extends into the interior of the applicator proper, and the portion 13 forms a means for journalling the applicator at one end thereof as will be hereinafter more fully set forth.

The end of the portion 14 of the pipe line is threaded as at 15, and an extension 16 of the pipe line is thus mounted thereon. The end of the extension 16 serves as a means for journalling the far end of the applicator proper.

This end of the applicator is provided with a closure head 17 having a cylindrical boss 18 extending inwardly from the center thereof into the end of the extension 16 of the pipe line whereby to provide a journal for that end of the applicator. The head member 17 is entirely closed and will thus prevent leakage at the journal at that end.

The head member 17 is provided with an inwardly extending flange 19 upon which a foraminous cylinder 20 is mounted, the end thereof being held in place by means of set screws 21 passing through the cylinder and threaded in the flange of the head member.

The other end of the foraminous cylinder 20 is mounted on an inwardly extending flange 22 of a head member 23 provided at the end of the applicator. The head member 23 is journalled on the portion 13 of the pipe line. This end of the foraminous cylinder 20 is secured to the head member 23 by suitable set screws 34 arranged in a manner similar to the set screws 21 at the other end of the cylinder.

Upon the outer face of the foraminous cylinder 20 there is mounted a textile covering sleeve 24 having a pile face 25 which may be made of a suitable grade of velvet carpet of sufficient porosity to permit the liquid to pass therethrough.

At the point where the extension 16 of the pipe line is threaded on the end of the portion 14 of the pipe line, there is thus provided a shoulder 26 upon which a disc or washer 27 is mounted. This disc or washer 27 is of a diameter less than the internal diameter of the foraminous cylinder 20.

A coil spring 28 is mounted on the pipe 14 and

bears at one end against the washer 27, and at its other end against a dished washer 38, the periphery of which bears against a sealing washer 29, preferably made of leather or the like, and impels the same against the inner face of the head member 23.

The central portion of the sealing washer 29 is formed to extend inwardly, as at 31, and lap against the outer surface of the pipe 13 to prevent leakage at the point where the head member 23 is journalled on said pipe.

The inner end of the pipe 14 within the applicator is provided with a series of holes 32, and likewise the extension member 16 of the pipe line which is threaded on the end of the pipe 14 is provided with a series of holes 33, the foregoing arrangement being such that when the liquid is fed through the pipe 13, the liquid will pass through the aforesaid holes 32 and 33 to the interior of the applicator, the operator actuating the valve 9 whenever it becomes necessary to replenish the supply of liquid within the applicator.

It should, of course, be understood that it will not ordinarily be necessary to keep the applicator filled with the liquid, as the rolling action thereof will, during the operation, cause the liquid to be distributed through the foraminous cylinder 20 to the pile face 25 of the textile cylinder 24 which covers the same.

The operation of the device will, of course, be readily understood. The liquid supplied is forced, in the usual manner, from the interior of the tank 5 through the flexible tubing 6 to the pipe 7 which passes through the handle 8 of the applicator, the liquid being controlled by the operator by means of the valve 9. Whenever the valve 9 is opened, a portion of the liquid will pass through the parts 10, 11, 12, 13, 14 and 16 of the piping, to the interior of the applicator, passing through the holes 32 and 33 in the pipes 14 and 16, and being distributed over the interior of the foraminous cylinder 20, and thence fed to the porous envelope 24 provided by the textile cylinder 24 mounted on the exterior of the surface of said foraminous cylinder.

It is, of course, well understood that the materials, commonly used in applicators of the character aforesaid, are of such nature as to quickly harden and clog up the various parts and thereby render the applicator inoperative, but in an applicator, of the character herein described, it is usually only necessary to first remove the textile cylinder 24 and cleanse the same with a suitable solvent, depending on the particular liquid used, and the interior parts may ordinarily be cleansed by the passage therethrough of a small quantity of a suitable solvent.

Should, however, a more complete cleansing of the parts be required, this may be accomplished by the mere removal of the set screws 21, whereupon the various parts of the applicator may be removed and separated from each other for a thorough and complete cleansing.

I claim:

1. A liquid applicator comprising piping for supplying liquid thereto, a rotatable foraminous cylinder, head members forming closures at each end of the cylinder, means for detachably securing the ends of the foraminous cylinder to said head members, one of said head members being entirely closed and having a portion journalled at the end of the piping, and the other of said head members being journalled on another portion of said piping, a coil spring on a portion of the piping which extends into said cylinder, an abutment within the cylinder against which one end of the spring bears, a sealing washer disposed within the cylinder and pressed against the inner face of one of the head members by the other end of said spring, said sealing washer having a lip portion extending inwardly around the piping to seal the place where one of the head members is journalled thereon, the portion of the piping which extends into the cylinder being perforated to permit the liquid to flow through said piping to the interior of said cylinder, and the outside of the cylinder having a tubular porous textile envelope removably mounted thereon.

2. A liquid applicator comprising piping for supplying liquid thereto, a rotatable foraminous cylinder, head members forming closures at each end of the cylinder, means for detachably securing the end of the foraminous cylinder to said head members, one of said head members being entirely closed and having a portion journalled in the end of the piping, and the other of said head members being journalled on another portion of said piping, means carried by the piping providing a shoulder intermediate the ends of the foraminous cylinder, a coil spring on a portion of the piping which extends into said cylinder having one end bearing against said shoulder, a sealing washer disposed within the cylinder and pressed against the inner face of one of the head members by the other end of said spring, said sealing washer having an inwardly extending lip portion around the piping to seal the place where one of the head members is journalled thereon, the portion of the piping which extends into the cylinder being perforated to permit the liquid to flow through said piping to the interior of said cylinder, and the outside of the cylinder having a tubular porous textile envelope removably mounted thereon.

3. A liquid applicator comprising piping for supplying liquid thereto, a rotatable foraminous cylinder, head members forming closures at each end of the cylinder, means for securing the ends of the foraminous cylinder to said head members, one of said head members being entirely closed and having an inwardly extending portion journalled in the end of the piping, and the other of said head members being journalled on another portion of said piping, means carried by the piping providing a shoulder intermediate the ends of the foraminous cylinder, a coil spring on a portion of the piping which extends into said cylinder having one end bearing against said shoulder, a washer against which the other end of said spring presses, a sealing washer bearing against the inner face of one of the head members and against which the spring pressed washer bears, said sealing washer having an inwardly extending lip portion around the piping to seal the place where one of the head members is journalled thereon, the portion of the piping which extends into the cylinder being perforated to permit the liquid to flow through said piping to the interior of said cylinder, and the outside of the cylinder having a tubular porous textile envelope removably mounted thereon.

4. A liquid applicator comprising piping for supplying liquid thereto, a rotatable foraminous cylinder, head members forming closures at each end of the cylinder and each having an inwardly extending flange, means for detachably securing the ends of the foraminous cylinder to said flanges, one of said head members being entirely

closed and having an inwardly extending cylindrical boss journalled in the end of the piping, and the other of said head members being journalled on another portion of said piping, means carried by the piping providing a shoulder intermediate the ends of the foraminous cylinder, a coil spring on a portion of the piping which extends into said cylinder having one end bearing against said shoulder, a dished washer against which the other end of said spring bears, a sealing washer bearing against the inner face of one of the head members and against which the peripheral edge of the dished washer bears, said sealing washer having an inwardly extending lip portion around the piping to seal the place where the head member is journalled thereon, the portion of the piping which extends into the cylinder being perforated to permit the liquid to flow

through said piping to the interior of said cylinder, and the outside of the cylinder having a tubular porous textile envelope removably mounted thereon.

GEORGE W. GUDZE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,281,773	Kollmann	May 5, 1942
2,325,867	Matsakas	Aug. 3, 1943
2,357,763	Pratt	Sept. 5, 1944
2,478,318	Raub	Aug. 9, 1949
2,509,954	Barnes et al.	May 30, 1950