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SPRAY GUN AND CUP CLEANER

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Fig. 1

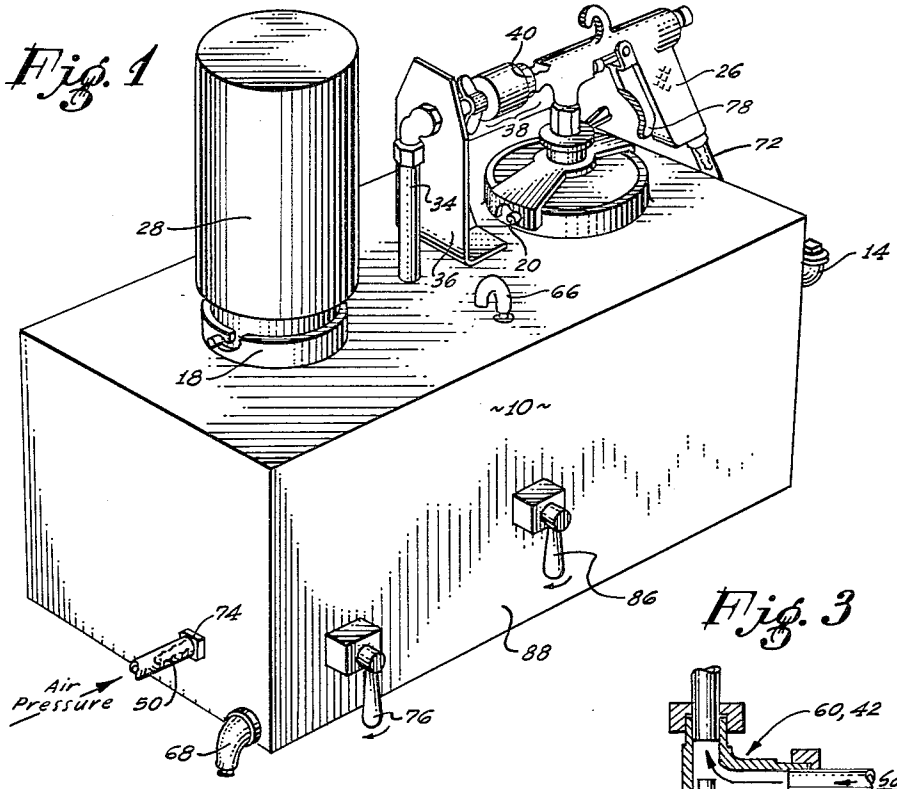
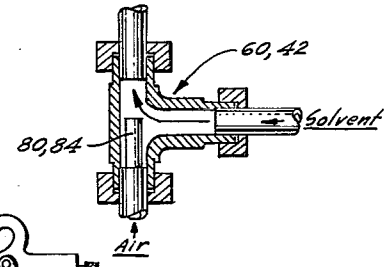


Fig. 3



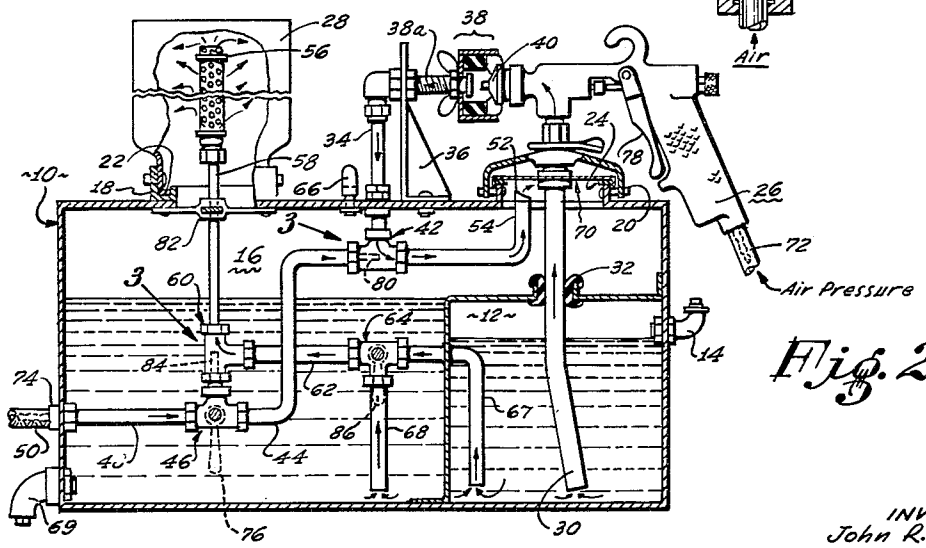


Fig. 2

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SPRAY GUN AND CUP CLEANER

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This invention relates to a new and useful apparatus for cleaning spray guns, and more particularly to a means to clean, wash and dry a spray gun nozzle, stem, head and cup in a continuous operation.

Heretofore, in order to thoroughly clean a spray gun of the kind adapted to be connected to an air hose and comprising a nozzle in a head assembly and having a suction stem depending into a paint cup detachably mounted on the nozzle head assembly, it has been necessary to clean the residue paint from the gun nozzle, stem, head and cup by immersing them in a solvent, and then brushing and rinsing in a clean solvent, and finally attaching an air hose to the gun and siphoning clean solvent through it.

Besides requiring a compartively great amount of time, handling, and solvent, open containers are necessary for cleaning which allow toxic fumes to be breathed by the operator. In the present invention the solvent container can be closed, and permanently secured to a bench.

The above-mentioned difficulties are overcome by utilizing the novel spray gun and cup cleaner apparatus of the present invention.

In broad terms, the present invention comprises an apparatus for cleaning a conventional spray gun, paint cup detachable therefrom, and both gun and cup mounted by readily detachable means on the cover of a two-compartment tank containing both used and clean solvent, and air pressure valve means to enable the cup to be washed first with used solvent spray and then with clean solvent spray, and the nozzle, underside of head and stem of the spray gun to be cleaned with a spray of clean solvent, the used solvent and the clean solvent draining into the used solvent compartment of the tank.

An object of the present invention is to provide a means, which is quickly operable, to successively clean, wash, and air dry a paint spray gun and cup in one operational set-up.

Another object of the invention is the provision of means for effecting a drainage of the cleaning solution into the used solvent compartment for re-use.

Advantages of the present invention are as follows: the flush thinner is used over and over; work can continue while device cleans; cleans all mixing pots or containers without excessive cost or time; cleans non-immersible hot cups; will do good work with the cheapest thinners; does away with soaking, and the like.

Other more specific objects and advantages of the present invention will appear from the disclosure of the following detailed description thereof, having reference to the accompanying drawings which illustrate a preferred embodiment thereof and constitute a part of said disclosure.

In the drawings:

Figure 1 is a perspective view of an apparatus embodying the invention.

Figure 2 is a side elevation partly in section showing the components embodied in one form of the invention.

Figure 3 is a view in vertical section of air jet aspirators as used in Figure 2 at the points indicated by arrows 3.

Referring to the figures, the spray gun and cup cleaning device herein disclosed comprises a rectangular metal casing 10 of sufficient dimensions to accommodate the work load required, one of the compartments 12 provided with an intake 14 being adapted to contain clean solvent, and of lesser volume than other compartment 16 which is adapted to contain used solvent.

On top of the casing 10 suitable latches 18 and 20 and gaskets 22 and 24 are provided for detachably mounting a spray gun nozzle head assembly 26, and a paint cup 28 in an inverted position for cleaning, the suction stem 30 of the spray gun 26 extending through a neoprene gromet 32 in the top wall of the compartment 12 into the clean solvent.

A drainage pipe 34 supported by a bracket 36 secured to the casing 10, is provided with a fitting 38 mounted on a length of threaded tube 38*a* and movable toward and from the spray gun nozzle 40 so that a shaped neoprene gasket mounted in the fitting may be pressed into fluid tight relation with the nozzle. The fitting is provided with a bore aligned with the nozzle. The pipe 34 connects with air jet T 42, which communicates through a first conduit or pipe 44, having in series with it a 3-way valve 46, to an air pressure supply conduit 48 adapted to be connected with a source of air pressure. Air jet T 42 also connects to nozzle 52 through pipe 54.

A nozzle 56 connects through pipe 58 with air jet T 60 which connects with a second conduit or pipe 62 that has a 3-way valve 64 in series with it communicating through pipe 67 to the clean solvent compartment 12, and through pipe 68 to the used solvent compartment 16. Air jet T 60 also connects to 3-way valve 46.

An air vent 66 and a used solvent drain cock 69 are fitted on the casing 10.

In use, a spray gun 26 is mounted on the casing 10, its suction tube 30 extending through neoprene gromet 32 into the clean solvent compartment 12, and the cover head 70 attached to the latch mounting fixture 20. The spray nozzle 40 is attached to fixture 38.

The paint cup 28 is attached in an inverted position to the latch mounting fixture 18.

An air pressure supply hose 72 is attached to the spray gun 26 and a second air pressure supply hose 50 is attached by coupling 74 to air pressure supply conduit 48. The 3-way valve 46 is moved to the closed position by means of handle 76.

A quantity of clean solvent is introduced to the clean solvent compartment 12 through the intake 14. Handle 76 of the 3-way valve 46 is then moved to a position connecting the air pressure supply from hose 50 and pipe 48 through pipe 44 to air jet T 42. When the spray gun air valve trigger 78 is pressed, pressure air from hose 72 rushes through the spray gun nozzle and a suction is created in the suction tube 30, drawing the clean solvent upwardly from the clean solvent compartment 12 and discharging solvent through the nozzle 40 into the drainage pipe 34, which supplies solvent to the air jet T 42 which receives its air supply through a passage 80 in the air jet. Air thus discharged through the passage 80 creates a suction through the latter and discharges solvent spray upwardly against the underside of the spray gun cover head 70 through conduit 54 and nozzle 52. The solution after striking the underside of the cover head 70 drains down into the used solvent compartment 16. When the spray gun air valve trigger 78 is released the clean solvent ceases to be fed to the air jet T 42 allowing air blast only to flow through conduit 54 for drying the underside of the spray gun cover head 70 through nozzle 52.

A combination air and spray nozzle 56 is supported by the casing 10 at 82, and extends inside the paint cup

28, to direct air or solvent spray against the inner side of the cup 28 for cleaning and drying. The nozzle 56 is connected to a conduit 58, which has an air jet T 60 disposed in series with it, arranged as an injector which receives its air supply from a passage 84, which passage communicates through 3-way valve 46. Valve handle 76 is next positioned to put the valve 46 in series with air pressure supply hose 50, and air thus discharged through the passage 84 creates a suction through a conduit 62 and 3-way valve 64, which is set to communicate with the clean solvent compartment 12. The clean solvent is discharged upwardly against the underside of the paint cup 28; alternatively the valve 64 may be set to draw used solvent from compartment 16. The solution after striking the inner side of the paint cup 28 drains down through the chamber into the used solvent compartment 16.

When it is desired to utilize the air blast only from the nozzle 56 to dry the cup 28 after a cleaning and washing operation, the vent line 62 from the suction passage is closed at the valve 64, by means of valve handle 86, so that only air will discharge through the nozzle 56.

From the foregoing description and explanation of the present invention it will be readily seen that a spray gun and paint cup can be thoroughly and quickly cleaned by sequent manipulation of the valve position handles 76 and 86 on an exterior control panel 88 of the device, and that the means specifically illustrated can be easily assembled and economically produced by anyone skilled in the art.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise a preferred form of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

What is claimed is:

1. Apparatus for cleaning spray guns of the kind having a nozzle assembly and paint cup, comprising: a casing having separate clean solvent and used solvent compartments; an opening in said casing above the level of the clean and used solvent therein; means for mounting the spray gun nozzle assembly, with cup head and air hose attached, on the casing with the underside of the head of the spray gun secured in fluid tight relation over said opening and with the suction tube thereof projecting into the clean solvent compartment and in substantially fluid tight relation with the wall of said compartment; a drainage conduit extending from an opening in the wall of the casing to an end positioned immediately below said spray gun head and directed toward the underside of the head; means for detachably connecting said drainage conduit in fluid tight relation to the nozzle of the spray gun; an air supply conduit in said casing connected to the casing at one end and connected to the drainage conduit; a pressure air conduit connected to said air supply conduit at the end thereof connected to the casing; a pipe for cup-washing liquid connected to both the clean solvent and used solvent compartments to draw liquid therefrom; a second opening in the casing; means for mounting the spray gun cup with its mouth in liquid tight relation over said second opening, one end of the pipe for cup-washing liquid delivering into said cup; said air supply conduit having a branch connected to said pipe for cup-washing fluid; valve means controlling said air supply conduit at the branch thereof; further valve means selectively controlling said pipe for cup-washing liquid; and a vent for releasing air from said casing.

2. Apparatus as set forth in claim 1 and in which said valve controlling the flow of air in said air supply conduit is of three-way type whereby air may be selectively shut off, admitted only to said pipe for cup-washing liquid, or cut off from said pipe and admitted to impinge against the underside of said nozzle head assembly.

3. Apparatus as set forth in claim 1 and in which the said valve controlling the flow of air in said air supply conduit is of three-way type whereby air may be selectively shut off, admitted only to said pipe, or cut off from said pipe and admitted to impinge against the underside of said nozzle head assembly; and the valve means selectively controlling the admission of solvent to said pipe for cup-washing liquid is of three-way type whereby solvent may be selectively cut off from said pipe, clean solvent admitted thereto, or used solvent admitted thereto.

4. Apparatus as set forth in claim 1 and in which an injector is arranged in said air supply conduit at the junction of said drainage conduit in a position effective to project solvent leaving the drainage conduit, as a spray against the underside of the head assembly.

5. Apparatus as set forth in claim 1 and in addition comprising an elongated spray nozzle mounted on the pipe for cup-washing liquid and extending into the cup in position to direct solvent delivered from said pipe as a spray against the interior of said cup.

6. Apparatus as set forth in claim 4 and in addition comprising an injector arranged in the branch of said air supply conduit at the junction of said pipe for cup-washing liquid in a position to cause flow of solvent through said pipe into the cup.

7. Apparatus for cleaning parts of a spray gun of the kind having a nozzle assembly and paint cup, comprising: a casing having separate clean solvent and used solvent compartments; means on the casing for mounting the spray gun nozzle assembly, with cup head and air hose attached, in fluid tight assembly with the casing and over an opening therein, with the suction stem thereof projecting through a wall of the clean solvent compartment; sealing means around the opening in the wall of the clean solvent compartment, through which the suction stem projects, to prevent passage of used solvent into the clean solvent compartment; a tubular fitting on said casing adjustable to engage the outlet end of the nozzle in fluid tight relation; a first conduit opening at one end under and directed against the cup head within the casing, and with its other end connected with the wall of the casing; a drainage conduit connecting said tubular fitting to the side of said first conduit near the opening end; means on said casing for connecting the mouth of the cup of the spray gun in fluid tight assembly with the casing and over an opening therein; a second conduit passing into the clean solvent compartment at one end in fluid tight relation with the wall of said compartment and opening toward the bottom end of said compartment; a pipe for admitting used solvent connected to said second conduit intermediate its ends; valve means selectively controlling the access of clean solvent and used solvent to said second conduit; a conduit for air under pressure connected to the end of said first conduit which is connected to the casing; valve means selectively controlling the passage of air through said first conduit; a pipe for cup-washing liquid connected at one end to said first conduit and opening at its other end into said cup, the other end of said second conduit being connected to said pipe for cup-washing liquid intermediate its connection to said first conduit and the open end of said pipe; an inlet for clean solvent on said casing; and a vent to release air from said casing.

No references cited.