Aug. 4, 1959 H. E. SEVERSON 2,898,093

SPRAYING AND CLEANING APPARATUS

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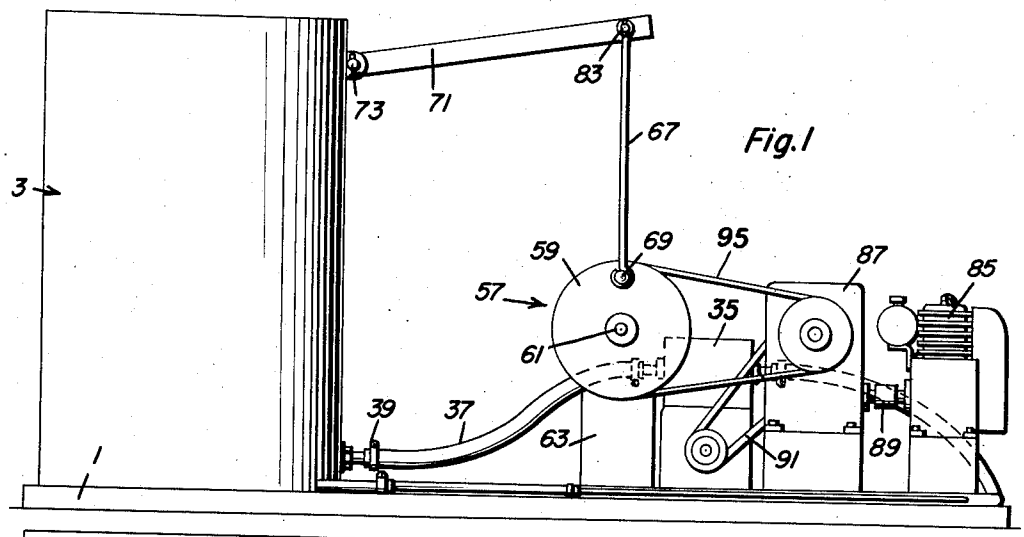


Fig.1

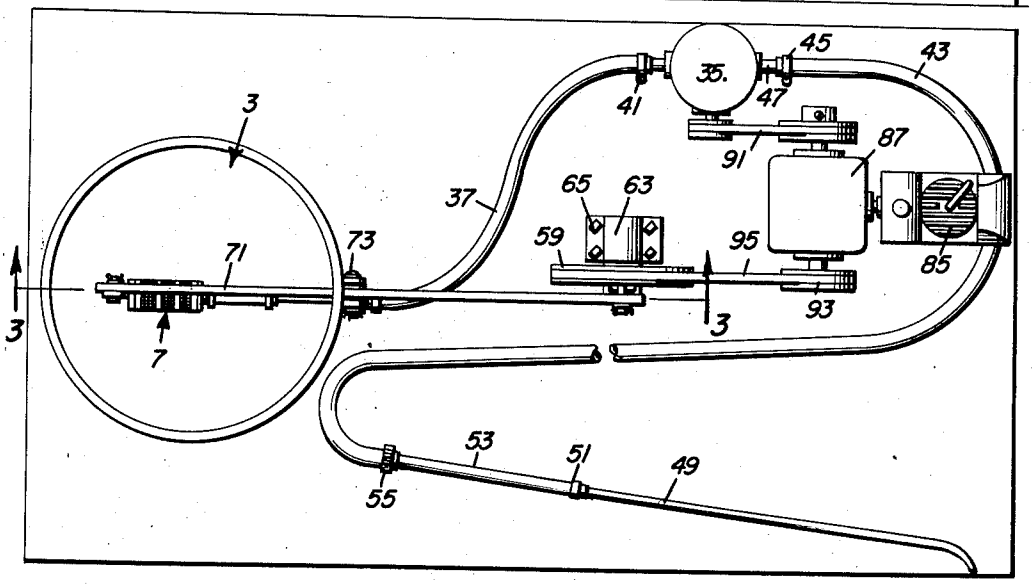


Fig.2

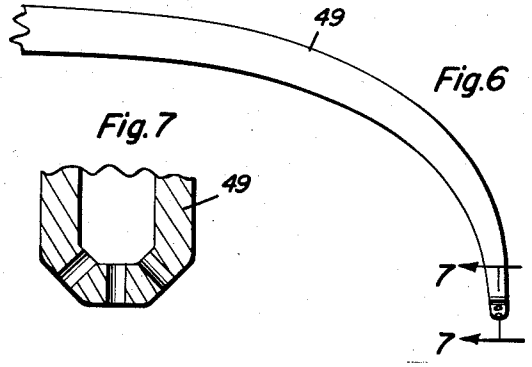


Fig.6

Fig.7

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Fig.3

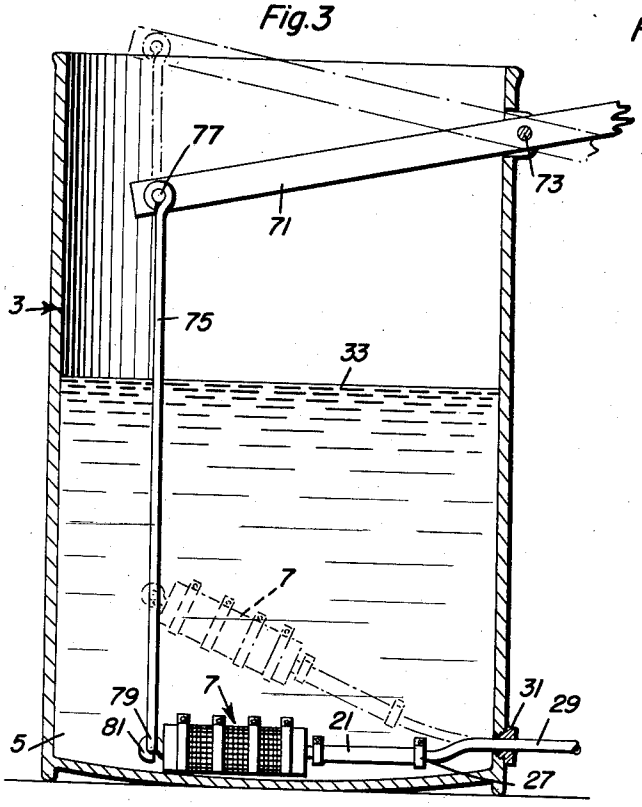


Fig.8

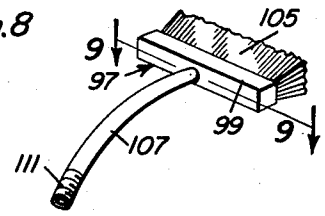


Fig.5

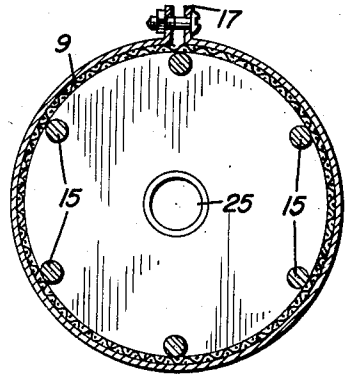


Fig.4

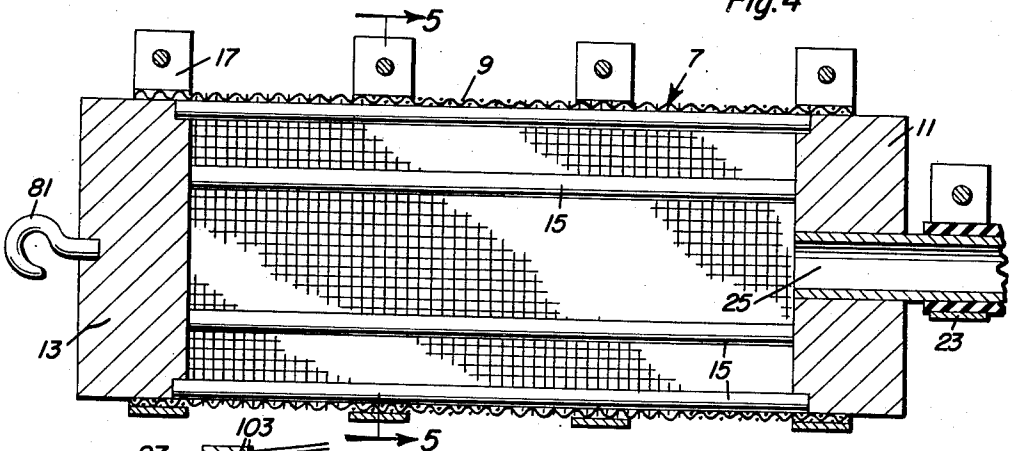
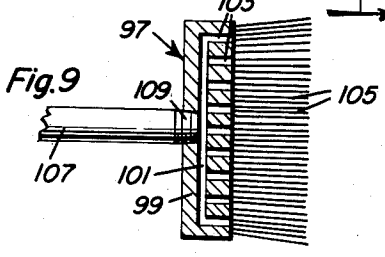


Fig.9



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United States Patent Office 2,898,093 Patented Aug. 4, 1959

2,898,093

SPRAYING AND CLEANING APPARATUS

Helmer E. Severson, Chetek, Wis.

Application October 1, 1957, Serial No. 687,545

2 Claims. (Cl. 259—39)

My invention relates to combined spraying and cleaning apparatus for cleaning paint and whitewash off buildings, especially barns, and repainting or whitewashing the same.

The primary object of my invention is to provide efficient portable apparatus for quickly removing old paint or whitewash from such buildings and spraying on fresh paint or whitewash evenly and which is readily convertible for either of such uses and will save time and labor and paint or whitewash.

Another object is to provide apparatus for the above purposes which will maintain paint or whitewash thoroughly mixed to prevent clogging of the apparatus during spraying, is not liable to get out of order and is inexpensive to manufacture, use and service.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a view in side elevation of the apparatus converted for use in spraying;

Figure 2 is a plan view of the same;

Figure 3 is an enlarged fragmentary view in vertical section taken on the line 3—3 of Figure 2;

Figure 4 is an enlarged fragmentary view in longitudinal section of a strainer and agitator for the paint or whitewash;

Figure 5 is a view in vertical cross section taken on the line 5—5 of Figure 4;

Figure 6 is an enlarged fragmentary view in side elevation of a spray nozzle forming part of the apparatus when converted for spraying;

Figure 7 is an enlarged fragmentary view in vertical section taken on the line 7—7 of Figure 6;

Figure 8 is a fragmentary view in perspective of an air brush head for use in converting the apparatus for cleaning; and

Figure 9 is an enlarged view in horizontal section taken on the line 9—9 of Figure 8.

Referring to the drawings by numerals my improved apparatus comprises an oblong rectangular base panel 1 having suitably fixed on one end thereof a cylindrical open top supply and mixing tank 3 for liquid paint or whitewash and which is provided in its bottom portion 5 with a vertically pivotally oscillating strainer and mixer member designated generally by the numeral 7.

The strainer and mixer member 7 comprises a cylindrical screen 9 of suitable mesh wire extending transversely in the tank 1 and closed at its ends by front and rear end disks 11, 13 connected together by rods 15 spaced circumferentially around and supporting the screen 9 and mortised into the disks 11, 13. Conventional split ring clamps 17 surround the screen 9 and disks 11, 13 and secure the screen 9 in place.

The strainer and mixer member 7 is swingably mounted for vertical oscillation by means of a flexible hose section 21 connected at one end by a hose clamp 23 to an axial discharge nipple 25 in the front disk 11, said hose section 21 being connected at its other end by a hose clamp 27 to a liquid discharge pipe 29 extending out of the bottom portion 5 and one side of the tank 3 through a packing gland 31 in said tank. The member 7 is oscillated by means presently described.

When the apparatus is used for spraying the liquid paint or whitewash designated 33 is drawn from the tank 3 through the strainer and mixing member 7 by means of a conventional pump 35 suitably fixed on the panel 1, at one side thereof and in front of the tank 3, and a suction hose section 37 detachably connected by hose clamps 39, 41 to the discharge pipe 29 and to the intake side of the pump, respectively. The pump 35 forces the liquid through a pressure discharge hose line 43 connected at one end by a hose clamp 45 to the output side 47 of the pump 35 and terminating in an elongated spray nozzle 49 detachably connected by a coupling 51 to a tubular handle 53 coupled to the pressure discharge line 43 by a conventional coupling 55. The spray nozzle 49 is longitudinally curved for convenient manipulation as shown in Figure 6 and terminally perforated as shown in Figure 7.

The means for oscillating the strainer and mixing member 7 comprises a pitman 57 including a peripherally grooved crank disk 59 rotatable on a horizontal shaft 61 on an upstanding bracket 63 bolted as at 65 on the base panel 1, said disk 59 having a vertical pitman rod 67 terminally pivoted as at 69 thereto. The pitman 57 is operatively connected to said member 7 by means of a transverse vertically rocker lever 71 extending into the upper portion of the tank 1 and pivoted, as at 73, to said tank, said lever 71 being terminally connected at one end to said member 7 by a link 75 pivoted as at 77 to said lever, and pivoted as at 79 to a hook 81 on the rear end disk 13 of said member 7, said lever 71 having the pitman rod 67 pivoted as at 83 to its other end.

Power means is provided for driving the pump 35 and the crank disk 59 simultaneously comprising a conventional internal combustion engine 85 suitably fixed on the base panel 1, a conventional reduction drive 87 to which said engine 85 is operatively connected as at 89, a belt and pulley drive 91 from the reduction gear drive 87 to said pump 35 and a belt and pulley drive 93 from said reduction drive 87, the belt 95 of which is trained around the crank disk 59.

For cleaning purposes a brush 97 is provided comprising a back 99 having a manifold air duct 101 and air discharge ducts 103 in said back leading from said manifold duct into bristles 105 on one side of said back 99. A tubular shank 107 is threaded at one end as at 109 in the other side of said back into communication with the manifold duct 101 and is provided with threads 111 on its other end for coupling the same to the handle 53 when the spray nozzle 49 is detached whereby to convert the apparatus for use for cleaning purposes in a manner presently more fully described.

When the apparatus is converted for cleaning use by detaching the spray nozzle 49 and attaching the air brush 97 the suction hose section 37 is detached from the pump 35 and suitably plugged so that with the engine 85 operating the pump 87 atmospheric air is pumped by said pump through the pressure discharge hose line 43 and brush head 97 and bristles 105 so that said brush 97 may be manipulated to brush loose paint and whitewash off a building and blow such paint or whitewash away.

The apparatus is converted for use as a sprayer by replacing the spray nozzle 49 and reconnecting the suction hose section 37 to the pump. When thus converted

and the engine 85 running the strainer and mixer member 7 is oscillated vertically by the described pitman 59, lever 71 and link 75, as shown in broken and full lines in Figure 3. This agitates and strains the paint or whitewash 33 in the tank 3 to blend and thereby mix the ingredients thereof and prevent sediment from settling in the tank 3 and passing into the suction hose section, the pump 35 and pressure discharge hose line 43 and clogging the same and the spray nozzle 49. At the same time the paint or whitewash 33 is drawn through the strainer and mixer 7 and through the hose section 37 by the pump 35 and forced out of the spray nozzle in spray form for application to a building.

When the apparatus is being used for cleaning purposes the strainer and mixing member 7 oscillates idly to agitate and strain paint or whitewash if such be in the tank 3.

The suction hose section 37 may be left attached to the pump 35 when the apparatus is used for cleaning and the tank 3 is empty of paint or whitewash and the atmospheric air drawn by the pump through the tank 3 and the strainer and mixing member to issue out of the pressure discharge hose line 43 and the air brush 97. In this connection it is to be noted that the air brush back 99 functions in cleaning as a multiple discharge port air blast nozzle.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those

skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In apparatus for applying fluid spray to objects, an open top fluid containing tank having a fluid discharge suction pipe at its bottom and one side thereof, a foraminous hollow fluid strainer and mixer member in the bottom of said tank, a fluid suction hose communicating with the interior of said member and connecting said member to said discharge pipe in communication therewith, said suction hose providing for vertical oscillation of the member bodily in said tank, a rocker lever pivoted on the upper portion of the tank, operating connections between said lever and member for oscillating the member in response to rocking of the lever, and power means for rocking said lever.

2. The combination of claim 1, said member comprising a foraminous cylinder having opposite ends, and said flexible hose connected to one end thereof, said operating connections being connected to the other end of the cylinder.

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