April 22, 1947. J. R. FROHOFF ET AL 2,419,397

SPRAYING RACKS FOR RAILWAY CARS

Filed Feb. 26, 1944 3 Sheets-Sheet 1

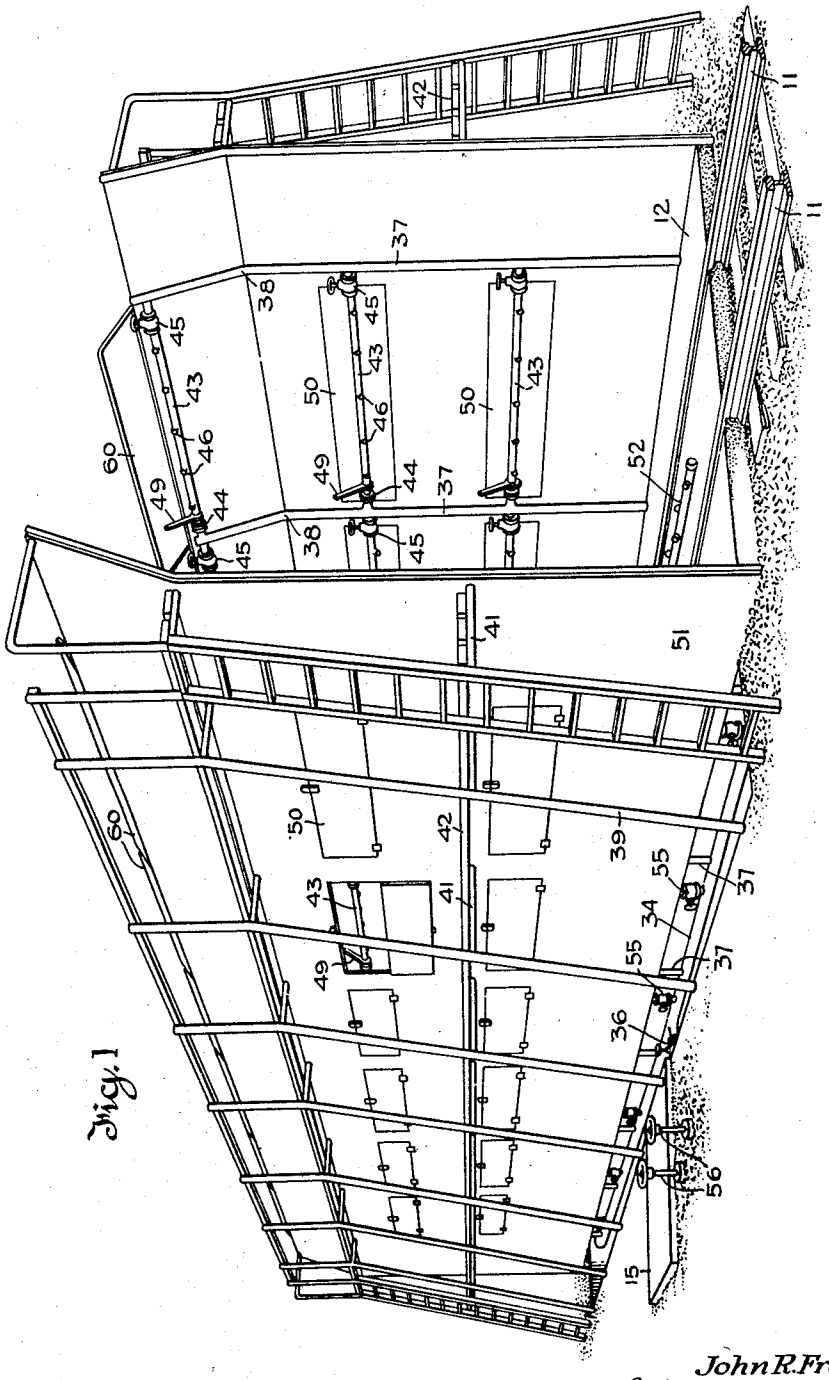


Fig. 1

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Filed Feb. 26, 1944 3 Sheets-Sheet 2

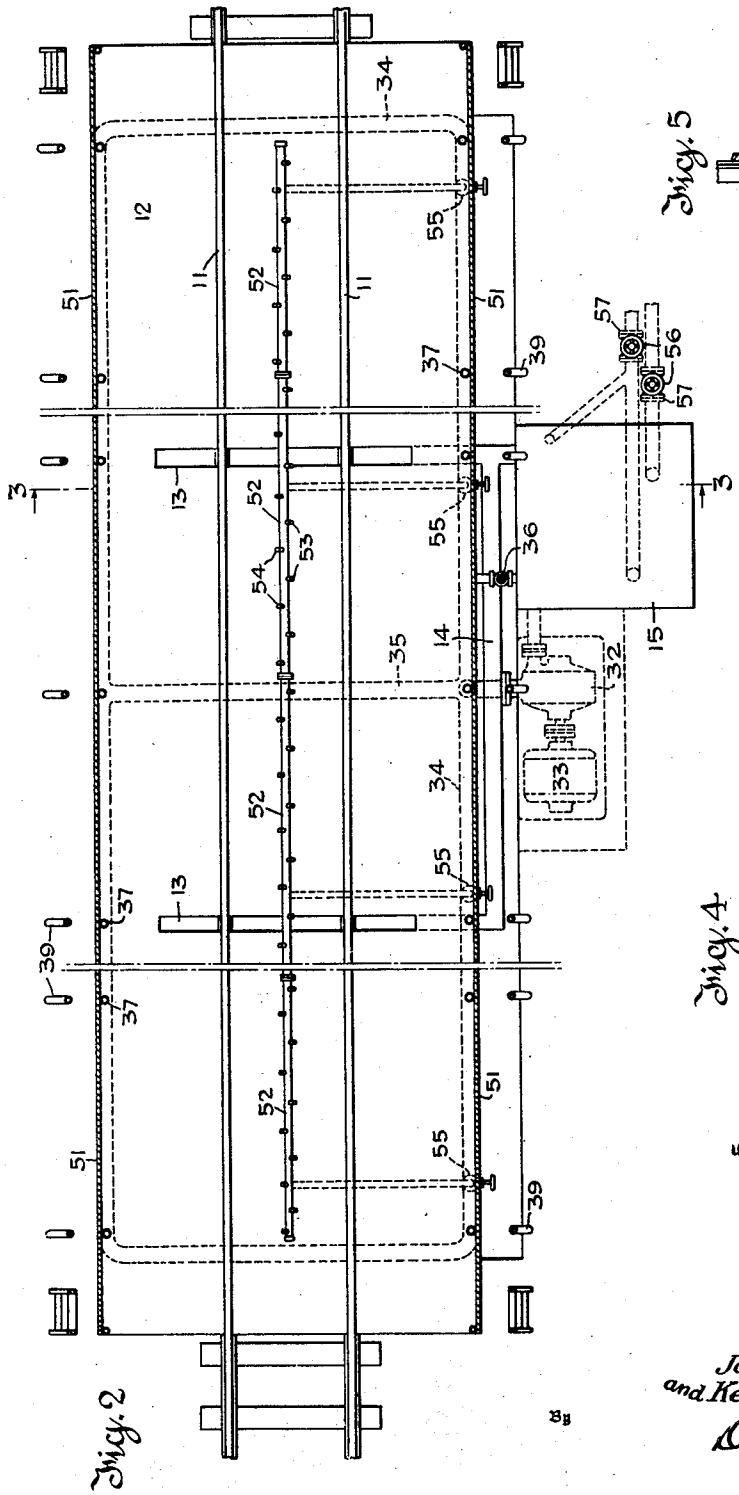


Fig. 2

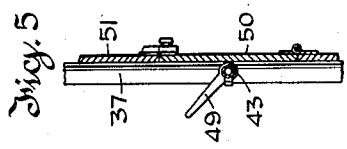


Fig. 5

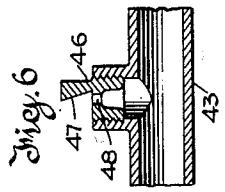


Fig. 6

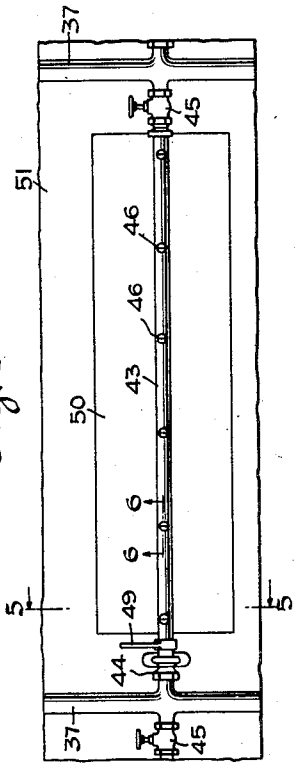


Fig. 4

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April 22, 1947. J. R. FROHOFF ET AL 2,419,397

SPRAYING RACKS FOR RAILWAY CARS

Filed Feb. 26, 1944 3 Sheets-Sheet 3

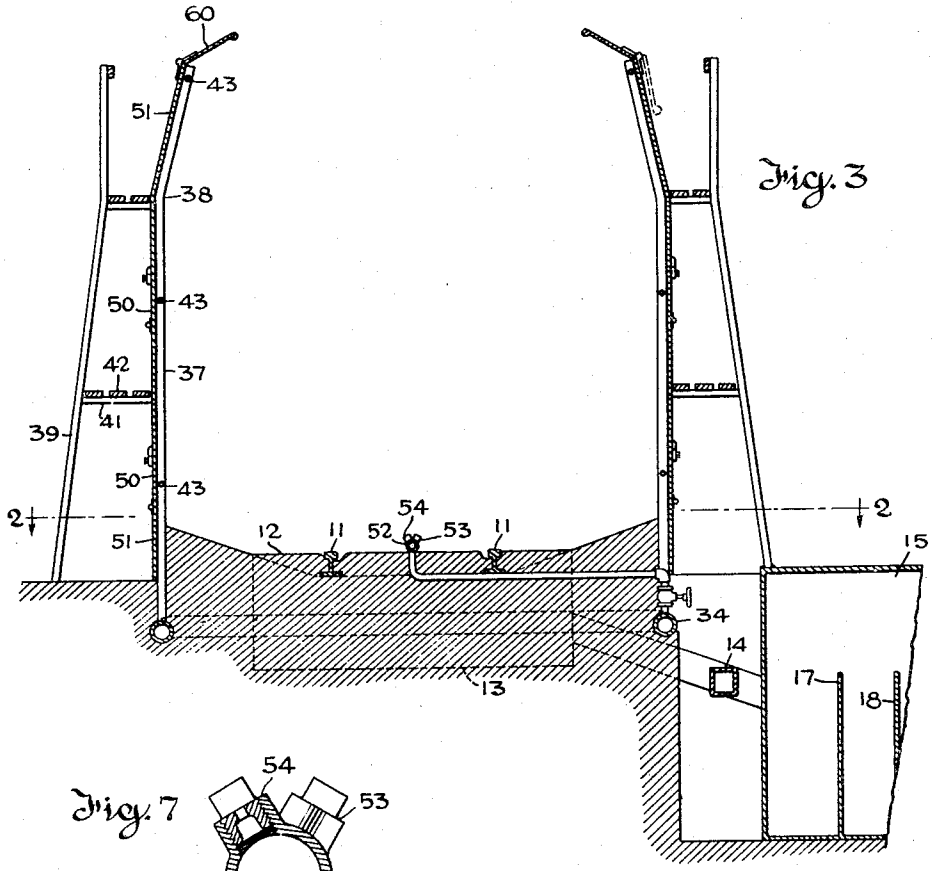


Fig. 3

Fig. 7

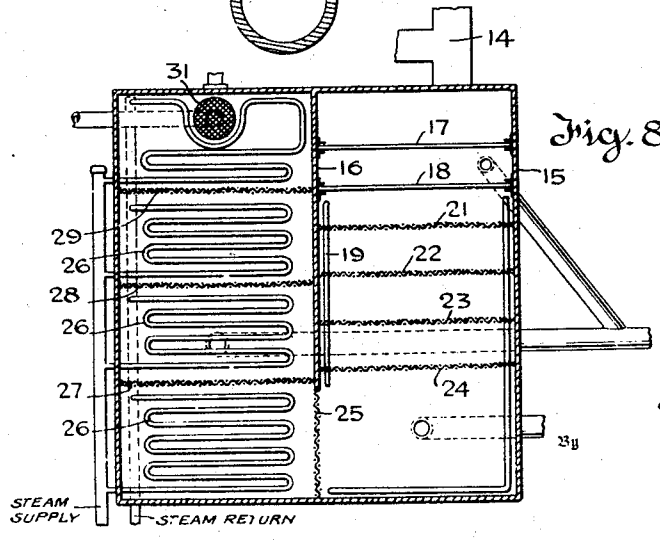


Fig. 8

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UNITED STATES PATENT OFFICE

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SPRAYING RACK FOR RAILWAY CARS

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Application February 26, 1944, Serial No. 524,140

3 Claims. (Cl. 134—123)

1

This invention relates to devices for removing grease and paint from railway rolling stock.

The practice of stripping grease and paint by the use of sprays of hot alkaline solutions is known. The invention provides an inexpensive structure suited to this use, which conserves substantially all the solution for reuse, protects the operators while permitting them full control of the sprays, provides for cleaning the under parts of the running gear, and requires much less manual labor than do prior art devices for the contemplated purpose.

The device may be used to clean passenger cars, tank cars, various types of freight cars, locomotives and locomotive tenders. It can operate on all parts of the longest vehicle at one time and the sprays are arranged in units so that each unit may be set to treat to best advantage the particular part of the vehicle opposite to each unit. Individual units may be shut down. Further the bottom sprays are divided into successive sections or units, considered along the length of the vehicle, and each such section may be shut down individually, or operated at any desired flow rate, independently of the others.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which

Figure 1 is a perspective view of the complete device.

Figure 2 is a view partly in plan and partly in horizontal section on the line 2—2 of Figure 3.

Figure 3 is a vertical transverse section on the line 3—3 of Figure 2.

Figure 4 is a fragmentary elevation looking from within the enclosure at one of the spray units and showing the adjusting handle and the unit-controlling valve.

Figure 5 is a section on the line 5—5 of Figure 4.

Figure 6 is a section on the line 6—6 of Figure 4 and on a larger scale than Figures 4 and 5 showing one of the spray nozzles in place.

Figure 7 is a transverse section through the bottom-washing spray pipe showing two nozzles.

Figure 8 is a schematic plan of the screening and heating tank to which sprayed stripping liquid drains, and in which it is conditioned for reuse.

The track rails 11, for the length of the device are imbedded in a concrete base 12 forming a liquid retaining basin pitched toward cross-drains 13, two of which are shown and any suitable number of which may be used. These

2

drains deliver by way of a drain 14 to the reconditioning tank indicated in Fig. 2 at 15, and shown in greater detail in Fig. 8.

Referring to Fig. 8 the tank 15 is divided by a vertical longitudinal partition 16 so as to form a U-shaped flow path. The liquid entering from 14 flows over two weirs 17 and 18 designed to intercept the larger solids. Then it flows through a series of vertical screens 21, 22, 23 and 24 which may be graduated as to mesh, say 4-mesh, 8-mesh, 12-mesh and 16-mesh, respectively. Heating pipes 19 are located along the sides of the tank as indicated.

Thence the liquid passes through a 12-mesh screen 25 to the storage part of the tank. In the bottom of the storage portion are further heating coils 26 in compartments divided by vertical screens 27, 28, and 29 which desirably are graduated from 14-mesh to 16-mesh. Finally the liquid passes through a screened intake 31 to a pump 32 driven by a motor 33.

The pump delivers under considerable pressure to a manifold 34 large in cross section, which extends clear around the base of the device to supply liquid to all the spray units hereinafter described. A cross connection 35 is provided to assure even flow under all conditions. Associated with the pump discharge is a suitable relief valve (not shown) to limit the pressure developed. Any preferred means to effect this purpose may be used.

The manifold 34 is pitched toward a normally closed valve 36 (Fig. 2) which may be opened to drain the manifold and all connected spray piping back to the tank 15 when the device is not in use.

Welded to the manifold 34 along each side of the track are a series of riser pipes 37. These are vertical through most of their height but are bent inward (i. e. toward the track) near their tops as indicated at 38. Their extreme upper ends are plugged.

The riser pipes serve also as supporting structural members and are braced by struts 39, cross members 41 and two decks 42.

Bridging the intervals between the risers 37 and swiveled by means of unions on nipples welded to the risers are spray pipes 43. The swivel nipple 44 at one end is blind and that at the other end includes a valve 45 used to control flow from the adjacent riser 37 to the corresponding spray pipe 43. Three horizontal rows of such spray pipes are shown, the pipes in the various rows being alined, and each being provided with a row of spray nozzles 46.

The nozzles may be inexpensively formed from pipe plugs, by cutting away the usual wrench grip to form an inclined deflecting surface 47 toward which a drilled port 48 is directed. Any suitable nozzles may be substituted.

To swivel the spray pipes handles 49 are welded thereto.

To conserve sprayed liquid, brace the risers and protect operatives, sheathing walls 51 are attached to the outer sides of the risers. There is an access door 50 behind each spray pipe 43. These doors are hinged at their lower edges and are so located that they need be opened through only a comparatively small angle to give access to valves 45 and handles 49. When so opened the doors still protect the operatives from spray. Splash boards 60 are hinged in sections along the tops of the sheathing and may be swung back to afford clearance for entering rolling stock.

A spray pipe divided into sections 52 extends along the base at the center of the track. The sections each carry splayed pairs of spray-nozzles 53, 54. The supply of liquid to each section 52 is controlled by a valve 55 accessible outside the sheathing. (See Figs. 1 and 2.)

Ladders are provided, as shown to afford access to the decks.

The valve handles 56 (Fig. 1) are to actuate drain valves 57 by means of which different portions of tank 15 may be drained to a sewer or the like. The connections are indicated in dotted lines in Fig. 2.

To use the device, a car or locomotive is moved into the stall while the splash boards 60 are swung back to assure plenty of clearance. After the vehicle is positioned the splash boards are positioned and the pump 32 is put into operation as soon as solution is suitably heated. Some or all of the spray pipes 43 and bottom spray sections 52 may be put into action by manipulating valves 45 and 55. The doors 50 permit adjustment of the pipes 43 and observation of results, while spraying continues.

Thus the entire vehicle may be quickly cleaned of paint and grease preparatory to repair, repainting or other treatment.

What is claimed is:

1. In a spraying device for rolling stock, the combination of a basin-forming base provided with liquid drains; side walls enclosing a passageway for the rolling stock to be treated, said walls being provided with rows of doorways; decks external to said walls affording access by personnel to said doorways; doors normally closing said doorways; a plurality of swiveled, nozzle-carrying pipes; valves controlling said pipes, and means for swiveling said pipes each accessible through said doorways; and means for delivering hot liquid under pressure to said spray pipes under control of said valves.

2. In a spraying device for rolling stock, the combination of a basin-forming base provided with liquid drains; side walls enclosing a passageway for the rolling stock to be treated, said walls being provided with rows of doorways; decks external to said walls affording access by personnel to said doorways; doors normally closing said doorways; a plurality of swiveled, nozzle-carrying pipes; valves controlling said pipes, and means for swiveling said pipes each accessible through said doorways; means for delivering hot liquid under pressure to said spray pipes under control of said valves; and a series of spray deflectors, hinged to the top edge of each wall, and independently shiftable from an outward inactive position to an inward position in which they overhang a portion of said passageway.

3. In a spraying device for rolling stock, the combination of a basin-forming base provided with liquid drains; side walls enclosing a passageway for the rolling stock to be treated, said walls being provided with horizontal rows of doorways; a plurality of swiveled nozzle carrying pipes adjacent respective doorways; valves controlling flow to said pipes, and means for swiveling said pipes each accessible through the adjacent doorway; doors one for each doorway each hinged along its lower edge and arranged to open outward, whereby each door when partially open affords protection while affording access to said valves and swiveling means; and means for delivering hot liquid under pressure to said spray pipes under the control of said valves.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
2,250,238	Smith	July 22, 1941
1,122,018	McIntosh	Dec. 22, 1914
1,748,161	Whitemore	Feb. 25, 1930
1,907,411	Timoney	May 2, 1933
1,682,902	Gibson	Sept. 4, 1928
1,866,197	Cunningham	July 5, 1932
1,872,507	Saunders et al.	Aug. 16, 1932