Feb. 7, 1928. 1,658,086

W. D. HUFF

MACHINE FOR OILING OR PAINTING EXPOSED RAILROAD STRUCTURES

Filed Feb. 23, 1924 2 Sheets-Sheet 1

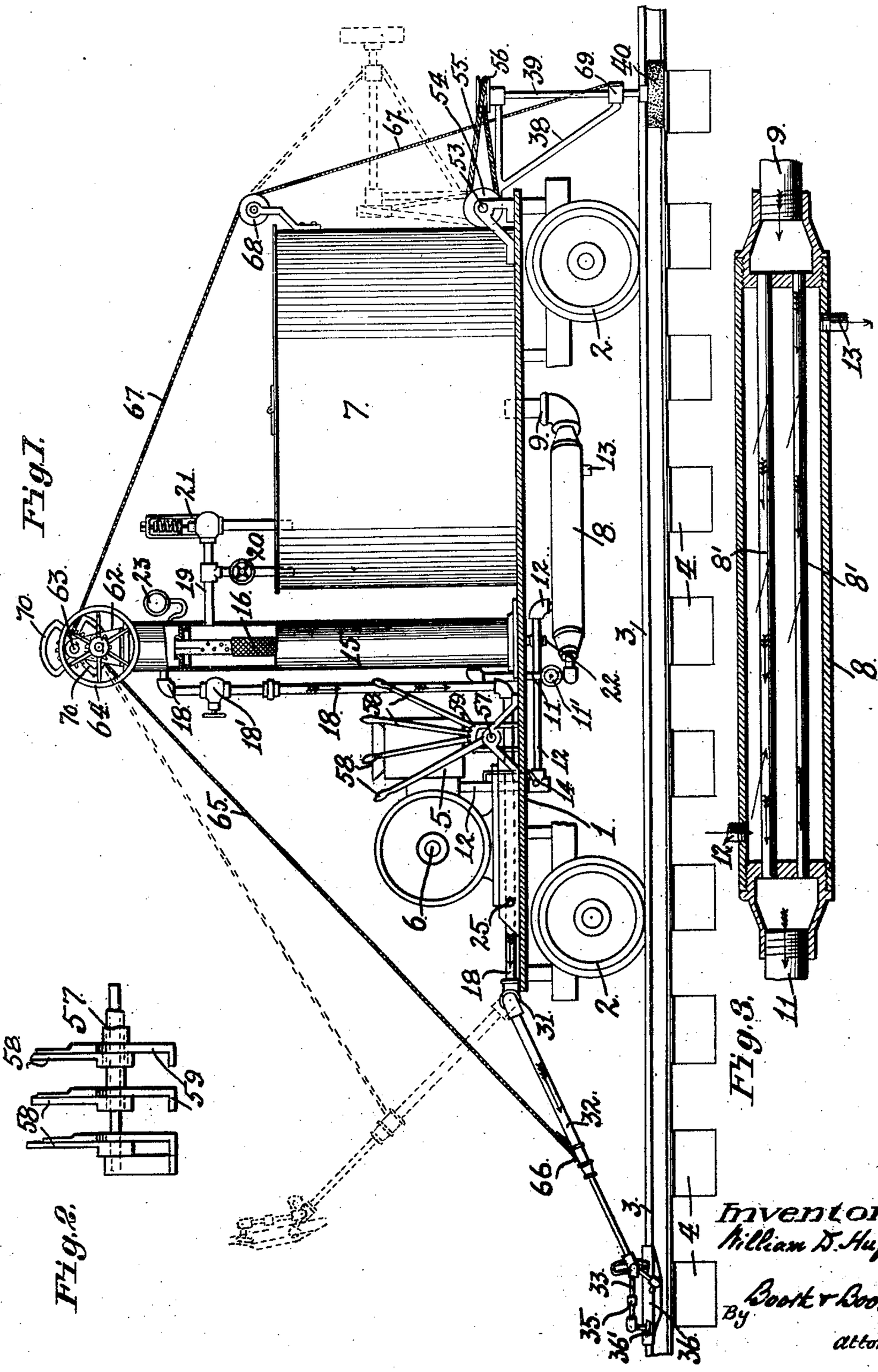


Fig. 1.




Fig. 2.

Fig. 3.

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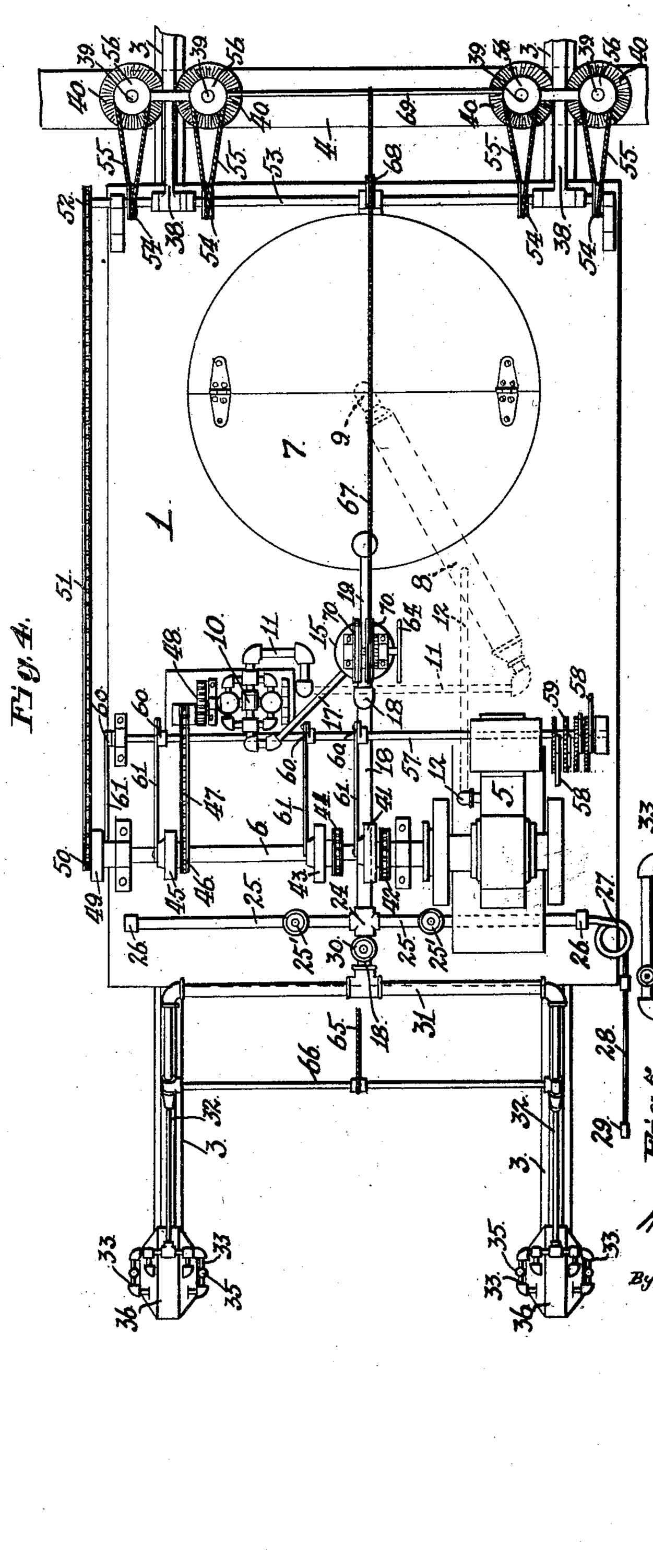

Fig. 4.

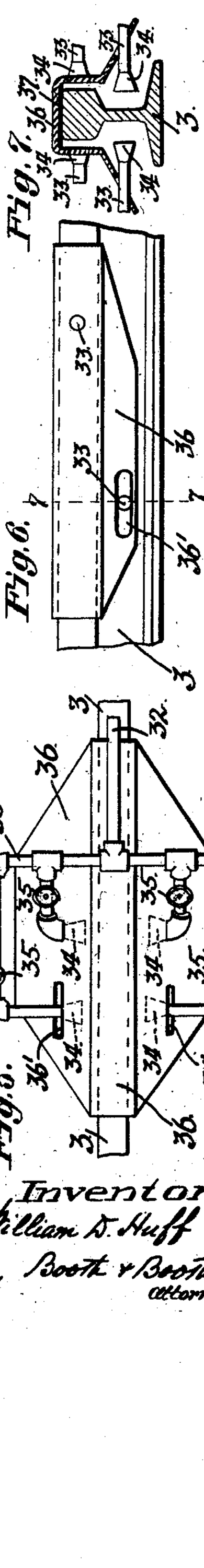

Fig. 5.



Fig. 6.



Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR OILING OR PAINTING EXPOSED RAILROAD STRUCTURES.

Application filed February 23, 1924. Serial No. 694,799.

My invention relates, in general, to railroad appliances, and, in particular, to a machine for oiling or painting rail-track fastenings, switches and other railroad structures.

The object of my invention is to provide a simple and effective machine for this purpose, with resulting economy in the matter of protecting and prolonging the life of exposed structures on railroads.

To this end my invention consists in the novel machine which I shall hereinafter fully describe by reference to the accompanying drawings, it being understood that various changes may be made in the construction, both in detail and arrangement, of the machine and its several parts without departing from the spirit of the invention as defined by the claims hereunto appended.

In the drawings—

Fig. 1 is a side elevation of my machine.

Fig. 2 is a detail of the concentric nested members 57 which operate the several clutches of the driving shaft 6.

Fig. 3 is a longitudinal section, enlarged, of the preheater.

Fig. 4 is a plan view of my machine.

Fig. 5 is a plan view, enlarged, of the rail protecting slide-shoe and associated spraying members.

Fig. 6 is a side view of the same.

Fig. 7 is a section on the line 7—7 of Fig. 6.

Referring to Figs. 1 and 4 the numeral 1 is a car with wheels 2 adapted to run on the track rails 3 of a railroad bed 4. The car is driven by a suitable internal combustion engine 5 having a drive shaft 6.

Upon the car is mounted the reservoir 7 for containing the oiling or painting liquid-medium.

The car also carries the preheater 8 for rendering the liquid medium sufficiently limpid for use. The preheater comprises a shell, through which pass tubes 8′ as seen in Fig. 3. These tubes communicate at one end through a connection 9 with the interior of the reservoir 7, and at the other end they communicate with the suction side of a pressure pump 10 Fig. 4, through a connection 11 fitted with a controlling valve 11′. The liquid-medium is thus drawn from the reservoir 7, through the tubes 8′ of the preheater 8, into the pump 10. The interior of the shell of the preheater, around the tubes, is in communicative relation with the exhaust 12 of the engine 5, so that the exhaust gases in passing through said shell to their outlet at 13, heat the liquid-medium in the tubes 8′. A cut-out 14 is provided in the exhaust 12, Fig. 1.

Carried upon the car is a pressure-chamber 15, within which is a hollow filter 16, Fig. 1. The discharge side of the pump 10 connects through a pipe 17 Fig. 4, with the pressure chamber 15; while the filter 16 communicates with a pipe line 18, Fig. 1, controlled by a valve 18′; said line leading to the several devices, hereinafter described, for applying the liquid medium to the parts to be protected. Thus said pump delivers the liquid medium to the pressure chamber 15, and said medium passes through the filter 16 into the pipe line 18.

The pressure chamber 15 communicates directly with the reservoir 7 through a by-pass 19 fitted with a pressure regulating valve 20, and a safety relief valve 21, Fig. 1, to automatically maintain a predetermined pressure in said chamber when the pump is in motion, even though all other openings from said chamber be closed.

The bottom of the pressure chamber is provided with a drain 22, and the top chamber of the filter is fitted with a pressure gauge 23.

Coupled by means of a union at 24 Fig. 4, to the pipe line 18, near its rear end is a pipe 25 which extends across the car 1 at its rear. The pipe 25 has valves 25′ and is fitted with a coupling 26 at each end, for a flexible hose 27, carrying a nozzle 28 with a spraying tip 29, of any suitable construction. Beyond the union of the cross pipe 25 with the pipe line 18, said pipe line is fitted with a controlling valve 30, Fig. 4; and beyond said valve, the pipe line 18 is coupled to a header pipe 31 which is mounted across the rear of the car 1, said header pipe being rotatable upon its axis. Coupled to each end of the cross header pipe 31 is a rearwardly extending pipe 32. The rear extremity of each pipe 32 has coupled to it a system of branch pipes 33 each branch carrying a suitable spraying appliance indicated in Figs. 5 and 7 at 34. Four such branch pipes 33 are here shown, and each has a controlling valve 35. See Figs. 5, 6 and 7.

Associated with these spraying members and carried by them are the slide shoes 36,

made of suitable sheet iron, bent and cut to form, adapting them, to slide and normally rest their weight upon the heads of the track rails 3 and freely envelop the sides of said heads and a portion of the webs of the rails, Fig. 7. The shoes 36 are lined with wood fibre or other electrically insulating material, as shown at 37 in Fig. 7 upon such portion of their inner surfaces as contacts with the rails, both to give said shoes a good wearing surface and to insulate them when moving over tracks, the rails of which are used for electric circuits, as in block-signal or bell districts. These slide shoes have openings in their sides as seen at 36′ and through these openings the spraying appliances 34 operate to deliver the liquid medium. In the assemblage here shown one of the spraying appliances on each side delivers against the side of the rail head and one on each side delivers against the web of the rail as seen in Fig. 7, while the top of the shoe effectually protects the tread of the rail head.

Upon the front of the car are carried brackets 38 pivotally mounted to swing in an arc in a vertical plane. There is one of these brackets near each side of the car front as seen in Fig. 4, and each bracket carries a pair of rotatable vertical shafts 39, the lower end of each shaft carrying a brush 40. These brushes when lowered to functional position operate upon the outer and inner sides of the track rails to clean them, and when lifted they are enabled to pass obstructions.

It will now be seen primarily that the car must be self-propelled preferably at variable speeds, say two; and secondarily, that the assemblages of spraying appliances 34 at the rear of the car, and the cleaning brushes 40 at the front of the car must be adapted to be lowered into functional positions and lifted from such positions either when the car is running without the necessity for their operation, or to enable them to pass obstructions. It will also be seen that the pump must be run to operate the spraying appliances 34 and the flexible hose sprayers 28 and that the cleaning brushes 40 must be rotated. To these ends any suitable controllable transmitting connections may be employed, and I have herein shown the following mechanisms, more or less diagrammatically illustrated.

Upon the engine shaft 6 as shown in Fig. 4 is a clutch 41 and a sprocket 42 adapted, by means of a driving chain, not shown, for the higher speed of the car. Said shaft 6 also has a clutch 43 and a sprocket 44 for the lower driving speed. The engine shaft also carries a clutch 45 and a sprocket 46, the latter driving, through a chain 47 and gearing 48, the pump 10.

Finally, as seen in Fig. 4, the engine shaft has a clutch 49, and a sprocket 50. From the sprocket 50 extends a chain 51 to a sprocket 52 on the end of a shaft 53 mounted transversely on the front of the car. The shaft 53 carries the pulleys 54 from which belts 55 extend to pulleys 56 on the vertical shafts 39, whereby the brushes 40 are driven.

For the selective control of the several clutches on the engine shaft there is, as seen in Fig. 2, a system of independently rotatable concentrically nested shafts or rods mounted upon the car and indicated as a whole by 57, each shaft having its own lever 58, with controlling pawl-rack 59, and each shaft having its own crank 60, from which extend the individual connecting rods 61 to their respective clutches, Fig. 4.

Mounted upon a supporting member 62 on top of the pressure chamber 15 is a windlass 63 having geared to it a hand wheel 64. From the windlass, a cable or line 65 passes rearwardly down to a cross bar 66, Fig. 4, extending between and connecting the two rearwardly extending pipes 32, which carry the spraying appliances 34 and the slide shoes 36. By means of this line 65 said appliances and shoes may be lowered into and raised from functioning position as shown by the respective full and dotted lines in Fig. 1. From the windlass 63 a cable or line 67 passes forwardly and down over a guide pulley 68 to a cross bar 69 connecting the brackets 38. By means of this line the brushes 40 may be lowered to and lifted from functioning positions as shown by the full and dotted lines in Fig. 1. A point to be specially noted in connection with the windlass 63 and the lines 65 and 67 is that by means of two suitably relatively shaped and positioned cams 70, Fig. 1, on the windlass, the line 67 is first drawn up in order to lift the brushes 40 to pass an obstruction while leaving the spraying appliances 34 and shoes 36 down in functioning position to continue to operate close up to the obstruction before they are lifted, the brushes being meanwhile again lowered after passing said obstruction.

The operation of the machine is as follows:—when the car is running free without functioning, the several operative members are lifted out of the way, and the higher propelling speed may be used. When ready to function, the lower speed is thrown in, and the operative members are depressed for use. The pump is thrown into gear and the treating liquid is drawn from the reservoir 7, through the preheater 8, and pump 10 and by said pump is forced into the pressure chamber 15 and through the filter 16 and into the pipe line 18. If the situation requires the use of the flexible hose sprayers 28 only, the valve 30 is closed, and one or both valves 25′ are opened. If the spraying appliances 34 are to be used, the valve 30 is

opened and the treating liquid is applied to the rails. Meanwhile the brushes 40 are cleaning the rails in advance.

I claim:

1. A machine for the described purpose comprising a rail-running car; a reservoir carried thereby for a treating medium; members carried at the rear end of said car for applying the treating medium to the rails; a conduit system connected with said applying members; means communicating with said reservoir for supplying the treating medium under pressure to said conduit system; a flexible conduit connected with said system; a spray nozzle associated with said flexible conduit and adapted for manual operation; members carried by the forward end of the car for cleaning the rails; and means for raising and lowering said applying members and said cleaning members in timely succession to enable them to pass obstructions.

2. A machine for the described purpose comprising a car; a reservoir carried thereby for a treating medium; vertically movable members carried at the rear end of the car for applying the treating medium; means communicating with said reservoir for supplying the treating medium under pressure to said applying members; vertically movable cleaning members carried by the forward end of the car; a windlass mounted on the car; and means connecting said windlass with said cleaning and applying members, said windlass and said connecting means being adapted to successively elevate said cleaning members and said applying members to enable them to pass obstructions.

3. A machine for the described purpose comprising a car having an engine for propelling it; a reservoir for a treating medium, carried by said car; a pump carried by the car and driven by the propelling engine thereof, said pump drawing the treating medium from the reservoir; members carried by the car adapted for applying the treating medium supplied by the pump; cleaning members carried by the car in advance of said medium applying members, and means on the car for successively moving said cleaning members and said medium applying members out of functioning position to enable them to pass obstructions.

4. A machine for the described purpose comprising a car adapted for travel upon a railroad track; a reservoir on the car, for a treating medium; spraying appliances carried by the car; slide-shoes associated with said spraying appliances, said shoes slidably fitting upon the heads of the track rails, and overlapping and spaced from the sides of said heads and the webs of the rails, said spraying appliances operating through said overlapping portions of the shoes; and means on the car communicating with said reservoir for supplying the treating medium to said spraying appliances.

5. A machine for the described purpose comprising a car adapted for travel upon a railroad track; a reservoir on the car, for a treating medium; spraying appliances carried by the car; slide-shoes associated with said spraying appliances, said shoes slidably fittting upon the heads of the track rails and electrically insulated therefrom and overlapping in spaced relation the sides of said heads and the webs of the rails, said spraying appliances operating through said overlapping portions of the shoes; means on the car for moving said spraying appliances into and out of functional position; and means on the car communicating with said reservoir for supplying the treating medium to said spraying appliances.

6. A machine for the described purpose comprising a car adapted for travel upon a railroad track; a reservoir on the car, for a treating medium; members carried by the car for applying the treating medium to the rails of the track; rail-cleaning members carried by the car in advance of the medium applying members; means on the car communicating with said reservoir for supplying the treating medium to said medium-applying members; and means on the car for lifting said rail cleaning members and said medium-applying members in timely sucession to pass obstructions.

In testimony whereof I have signed my name to this specification.

WILLIAM D. HUFF.