Jan. 1, 1929. 1,697,534

G. A. MACREADY ET AL

CAR CLEANING DEVICE

Filed March 18, 1925 2 Sheets-Sheet 1

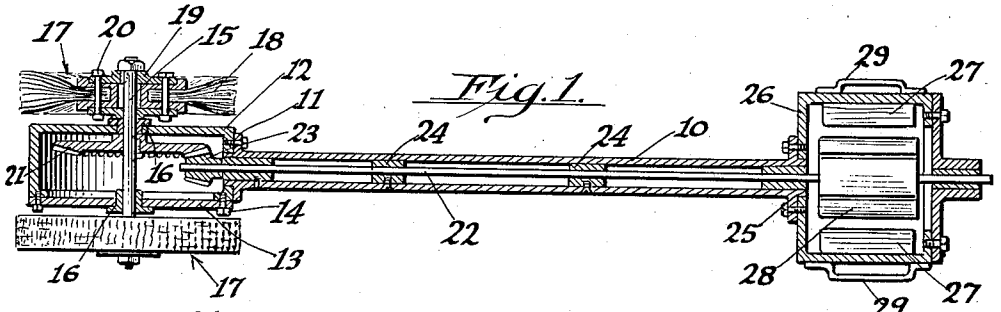


Fig. 1.

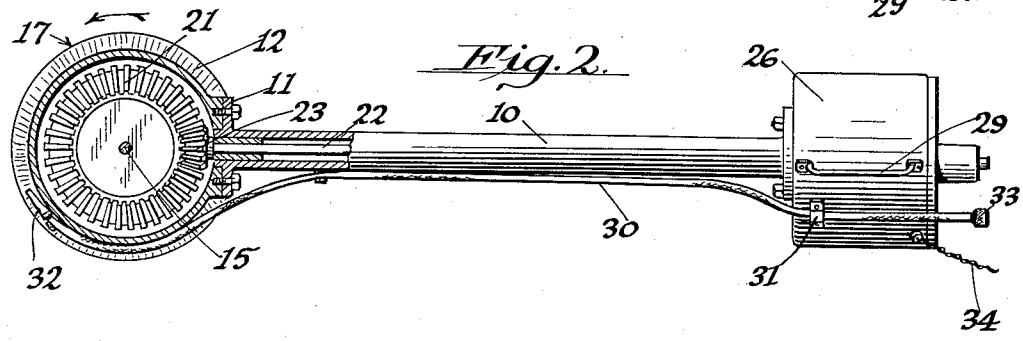


Fig. 2.

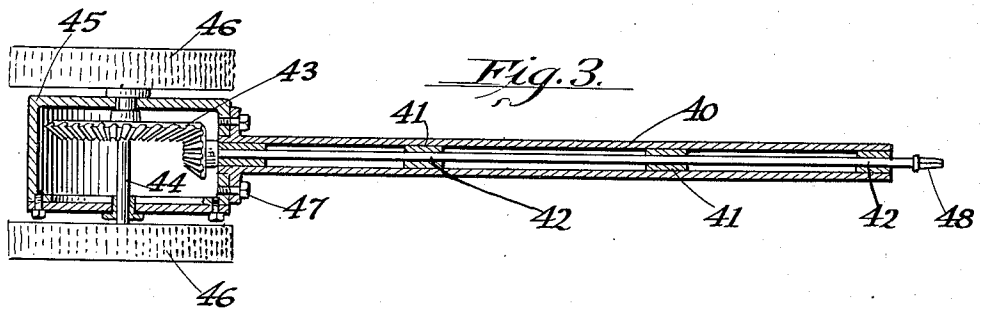


Fig. 3.

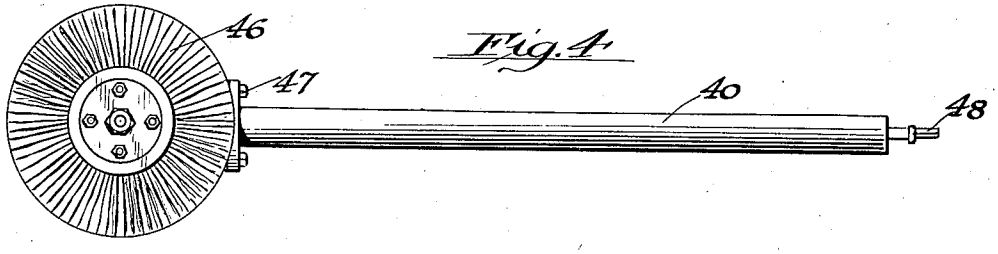


Fig. 4.

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Fig. 5.

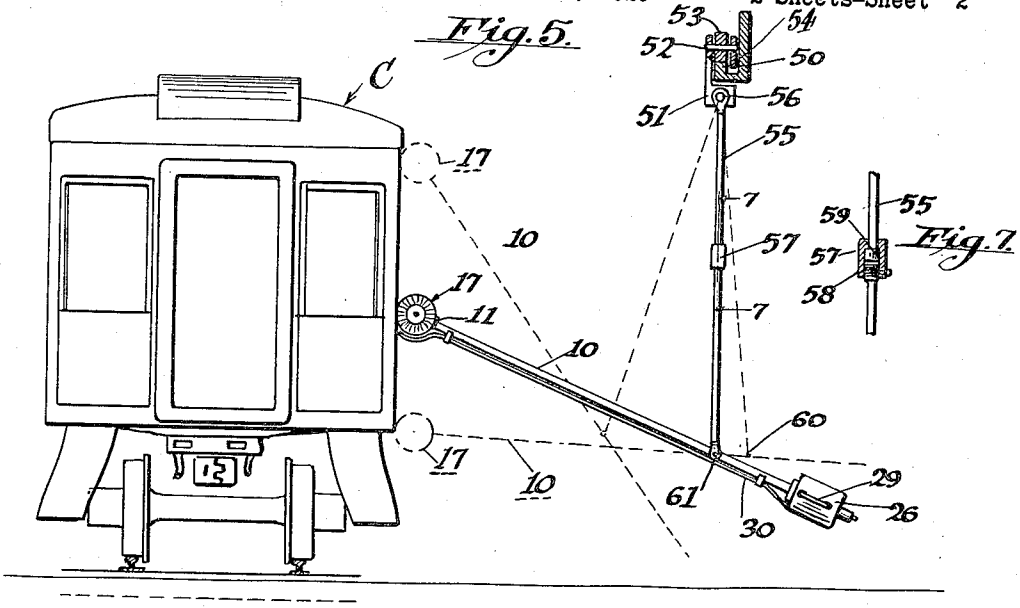
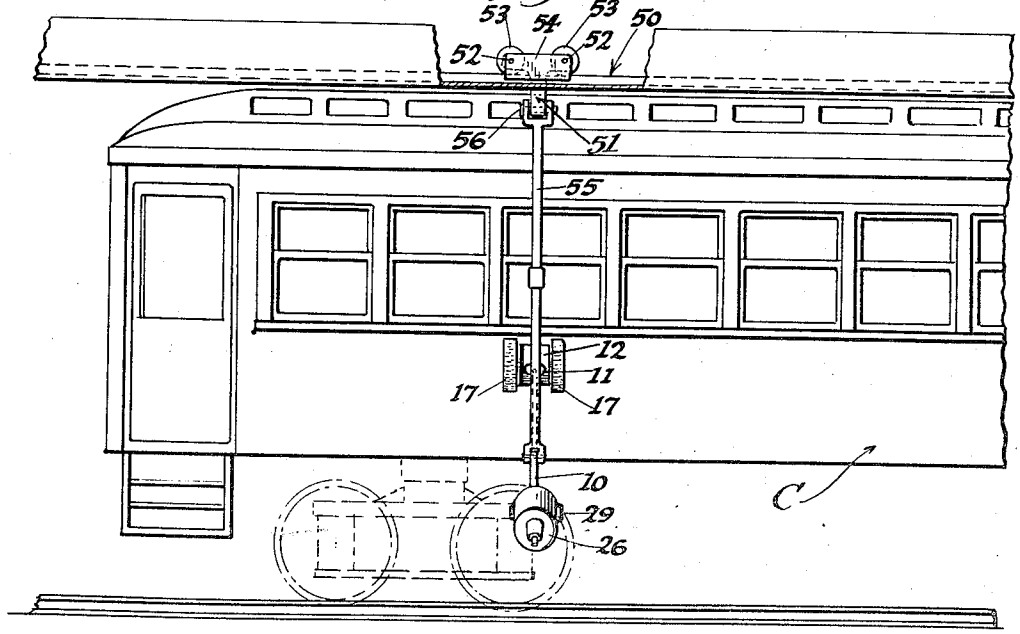


Fig. 7.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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CAR-CLEANING DEVICE.

Application filed March 18, 1925. Serial No. 16,357.

This invention relates to improvements in cleaning devices and especially to that class of cleaning devices adapted to clean vertical surfaces, such as the sides of railroad cars, street cars and the like.

An object of this invention is to provide an improved cleaning device which is portable and which is especially adapted to clean vertical surfaces. The device consists essentially of an elongated handle upon one end of which is mounted a plurality of rotary brushes. The handle is portable and means is provided for rotating the rotary brushes and also for discharging a fluid adjacent them. In this manner the handle may be moved about so as to place the brushes against the vertical surface to be cleaned, such as the side of the railroad car, and fluid may be discharged against the surface adjacent the brushes so as to efficiently clean the surface.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a horizontal section through one form of the improved cleaning device;

Fig. 2 is a side elevation, parts being broken away and shown in section, of the form of cleaning device shown in Fig. 1;

Fig. 3 is a horizontal section through a modified form of cleaning device;

Fig. 4 is a side elevation of the device shown in Fig. 3;

Fig. 5 is a view showing a railroad car in end elevation and a still further modified form of cleaning device as applied to the railroad car in cleaning it;

Fig. 6 is a side elevation of the railroad car shown in Fig. 5 and showing the improved cleaning device of the modified form shown in Fig. 5 in end elevation; and

Fig. 7 is a detail of the swivel employed in the modified form shown in Fig. 5.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the modification shown in Figs. 1 and 2 is provided with an elongated hollow handle 10, one end of which is provided with a flange 11 to which may be secured a gear case 12. The gear case 12 is shown as being provided with a removable side 13 which is secured to the body of the case as by bolts 14. A spindle 15 extends through the gear case 12 and bearings 16 are provided in the sides of the gear case through which the spindle 15 extends. The spindle is adapted to carry one or more rotary brushes or buffers, which are generally designated at 17. These brushes or buffers may be of any suitable construction, and may be formed of cloth, canvas, bristles, hair, wire, leather, or other suitable material. In Fig. 1, the material forming the brush is indicated at 18 and is clamped between two hubs 19 which are tightentd together as by bolts 20. The hubs 19 may be keyed or otherwise rigidly secured to the spindle 15. A beveled gear 21 is keyed upon the spindle 15 within the gear case 12. Within the hollow handle 10 there is disposed a shaft 22 which is rotatable therein and which extends into the gear case 12. A beveled pinion 23, which meshes with the beveled gear 21, is keyed upon the end of the shaft 22 which is disposed within the gear case 12. Alignment bearings 24 are mounted within the handle 10 about the shaft 22 at suitable intervals to prevent vibration of the shaft. It will be understood from the above construction that the shaft 22 is adapted to be rotated, rotating the beveled pinion 23, which drives the beveled gear 21 and rotates the spindle 15, rotating the rotary brushes or buffers 17.

In the form of the invention shown in Figs. 1 and 2, the means for driving or rotating the shaft 22 consists of an electric motor, and the end of the handle 10 opposite from the gear case 12 is provided with flanges 25, upon which is secured the motor housing 26, carrying stator parts or field parts 27 arranged about the rotor or armature 28. The armature 28 is mounted upon the shaft 22, or may have its shaft rigidly coupled up to the end of the shaft 22. It will be understood that the motor may be of any conventional construction, either alternating current or direct current and the housing 26 is preferably provided with handles 29. A conduit 30 may be associated with the handle 10 and may be secured to the housing 26, the handle 10 and to the gear case 12 as by clamps 31. The conduit 30 is provided at its end with a nozzle 32 which is directed upwardly between the brushes 17. This conduit is provided with a coupling 33, whereby the conduit can be connected to a hose. The electric

current, which operates the electric motor, is supplied through an electrical conductor 34. Preferably the brushes are adapted to rotate in the direction of the arrow upon Fig. 2, so that when they engage the surface to be cleaned, the brushes will pass downwardly over the surface, tending to aid in supporting the cleaning device and also brushing the dirt upon the surface toward the bottom. The nozzle 32 is preferably directed upwardly so that water or other cleaning fluid can be directed against the surface to be cleaned and will flow towards the sides beneath the brushes. The device shown in Fig. 1 is adapted to be carried around by the worker who is cleaning the surface and is carried by the handles 29.

In the modification shown in Figs. 3 and 4, a handle 40 is similar in construction to the handle 10, having alignment bearings 41 disposed therein in which a shaft 42 is rotatable. A beveled gear 43 is mounted upon the spindle 44 extending transversely through the gear case 45 and upon which is mounted the brushes 46. The beveled gear 43 is driven by the beveled pinion 47, all of which construction is similar to the construction shown in Figs. 1 and 2. In the modification shown in Figs. 3 and 4, the end of the shaft 42 opposite the gear case 45 is adapted to be connected to a flexible shaft which may be disposed within a flexible tube which is of conventional construction. The means for connecting the shaft 42 to the flexible shaft (not shown) is indicated at 48. It will be understood that the shaft 42 can be driven by any suitable type of flexible shaft and that the tube which covers the flexible shaft can be connected directly to the end of the handle 40. This device is adapted to be carried about by the worker and may also be provided with a conduit for discharging water or cleaning fluid similar to the conduit 30.

In the modification shown in Figs. 5 and 6, an elevated track 50 may be mounted adjacent a siding or other suitable locality in a railroad yard. A member 51 is disposed adjacent the track and extends therebelow and this member carries spindles 52 upon which are rotatable wheels 53 which are adapted to roll upon the track. Each spindle may be provided with a member 54, which prevents removal of the wheels 53 from the track under ordinary circumstances. The member 51 with its spindles 52 and rollers or wheels 53 constitutes a carriage which is movable over the elevated track 50. A link 55 is pivoted to the member 51, as at 56, and depends therefrom. The link 55 is provided with a swivel 57 having a box 58 in which is rotatable a head 59, it being understood that the box is threaded onto the lower section of the link 55, whereas the head 59 is formed on the upper section of the link 55, providing a swivel joint between the upper and lower sections of the link. The cleaning device, generally designated at 60 in these figures, may be of the construction shown in either of Figs. 1 or 3, and is pivoted to the lower end of the link 55, as at 61. It will readily be understood from an inspection of Figs. 5 and 6 that the carriage may be moved along the elevated track 50 to the desired locality opposite the railroad car C. The cleaning device 60 can readily be swung from side to side because of the swivel 57, and may also be moved in a vertical plane because of the pivotal connections 56 and 61, enabling the brushes upon the cleaning device to engage any portion of the surface upon the side of the railroad car C from top to bottom thereof, thus greatly facilitating the cleaning of the car. Heretofore it has been customary for workmen to employ ladders to clean off the sides of railroad cars by hand. It will be readily appreciated from the above description that a great deal of labor is eliminated by the improved cleaning device, which will efficiently, thoroughly and quickly clean off the side of the railroad car. In the forms of the invention shown in Figs. 1 to 4 inclusive, the workmen carry the cleaning devices around with them in cleaning the cars. In the modification shown in Figs. 5 and 6, it is merely the duty of the workmen to guide the brushes. It will be understood that any suitable type of carriage may be employed upon the elevated track 50.

It will be understood that various changes in the detail of construction may be made without departing from the spirit or scope of the invention as defined by the appended claims.

We claim:

1. A car cleaning device comprising an elevated track a carriage movable thereon, a suspending member secured to the carriage, said suspending member having a swivel, an elongated handle pivoted to the suspending member, a transverse spindle rotatably mounted upon the handle adjacent one end thereof, a plurality of brushes of the same diameter mounted upon said spindle, said brushes being arranged symmetrically with respect to the handle and being adapted to rotate in planes parallel thereto, a means for rotating said spindle.

2. A car cleaning device comprising an elevated track, a carriage movable thereon, a suspending member pivoted to the carriage and provided with a swivel, a handle pivoted to the suspending member, a shaft rotatable in the handle, a transverse spindle rotatably mounted upon the handle adjacent one end thereof and gearedly connected to said shaft so as to be driven thereby and a plurality of brushes of the same diameter mounted upon said spindle, said brushes being arranged on both sides of the handle.

3. A car cleaning device comprising a track,

a carriage movable thereon, a member pivoted to the carriage and provided with a swivel, a handle pivoted to the member, a shaft rotatable in the handle, a spindle rotatably mounted upon the handle adjacent one end thereof and gearedly connected to said shaft so as to be driven thereby, and a brush mounted upon said spindle.

4. A car cleaning device comprising a carriage, a member pivoted to the carriage and provided with a swivel, a handle pivoted to the member, a shaft rotatable in the handle, a spindle rotatably mounted upon the handle adjacent one end thereof and gearedly connected to said shaft so as to be driven thereby, and a brush mounted upon said spindle.

In testimony whereof we have signed our names to this specification.

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