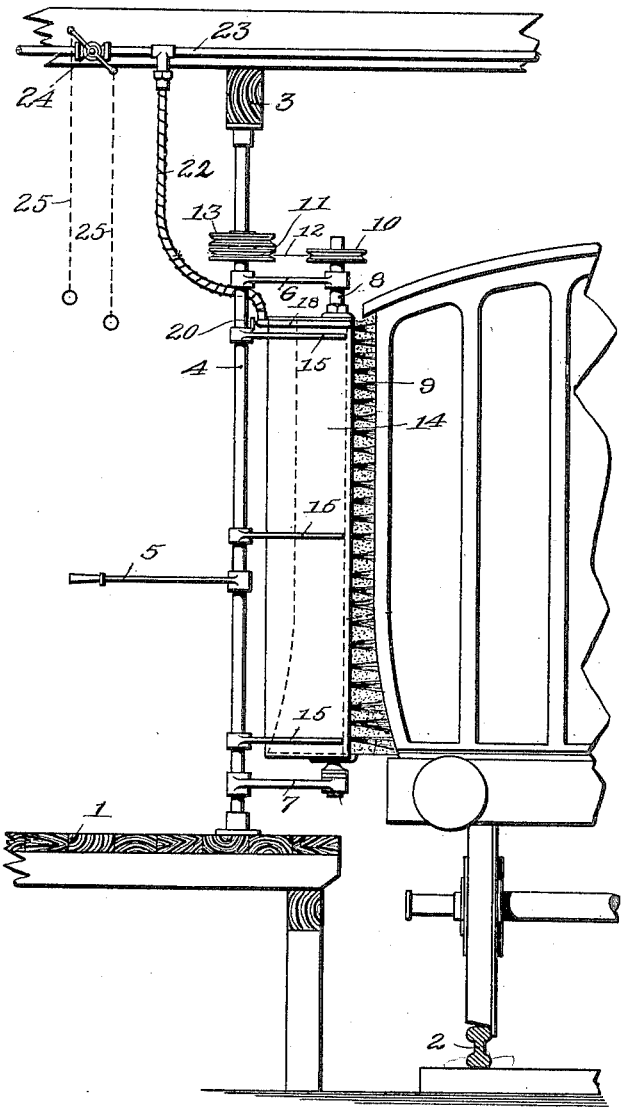
No. 649,786. Patented May 15, 1900.

C. A. WHEELER.

APPARATUS FOR WASHING RAILWAY CARS.

(No Model.) (Application filed Feb. 20, 1899.) 6 Sheets—Sheet 1.

Fig. 1.



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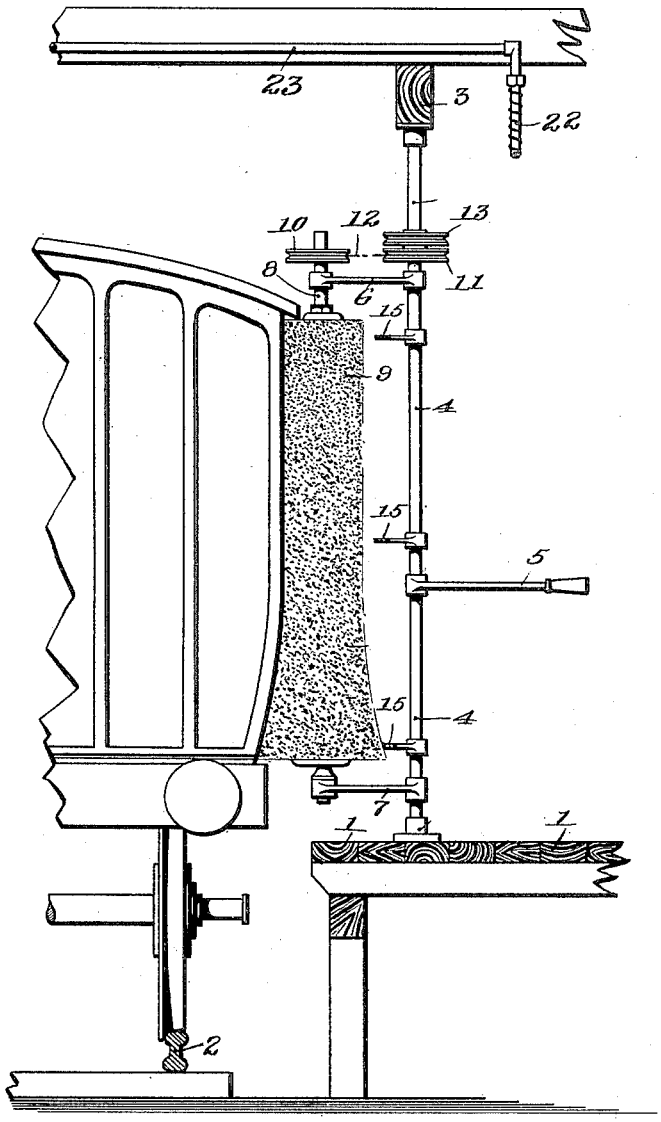
(No Model.) 6 Sheets—Sheet 2.

Fig. 2.



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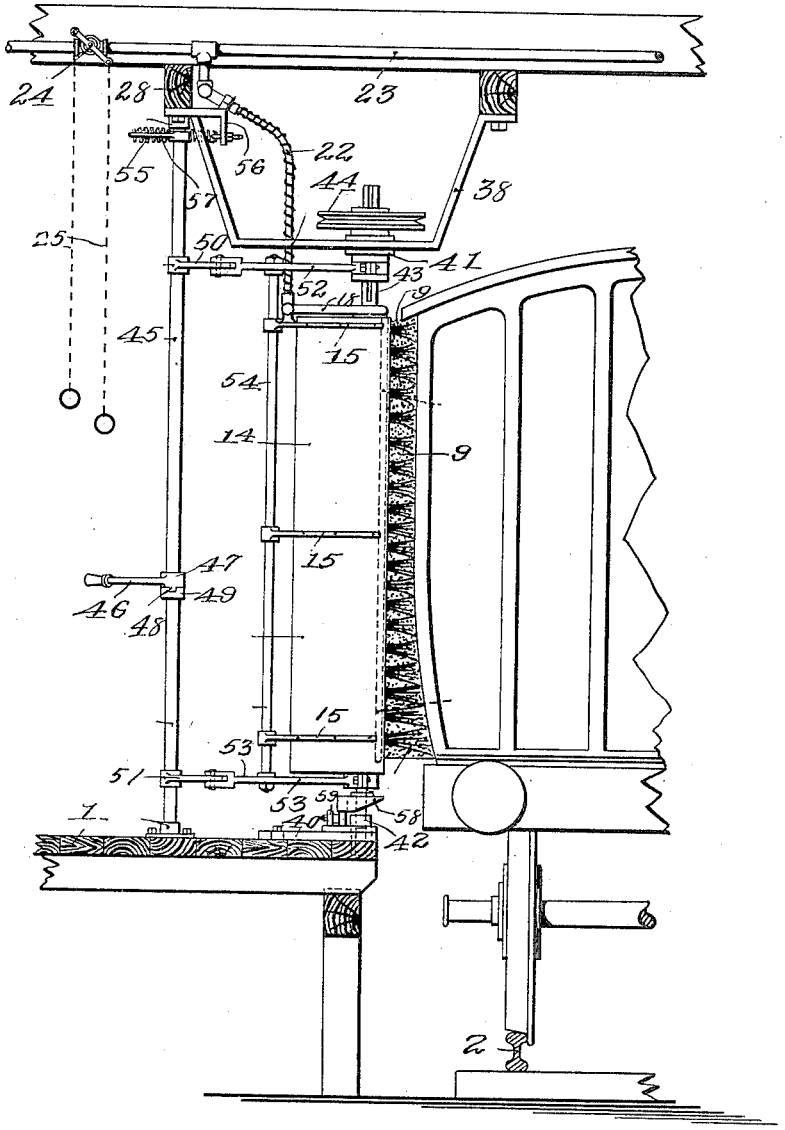
(No Model.) (Application filed Feb. 20, 1899.)

6 Sheets—Sheet 3.

Fig. 3.



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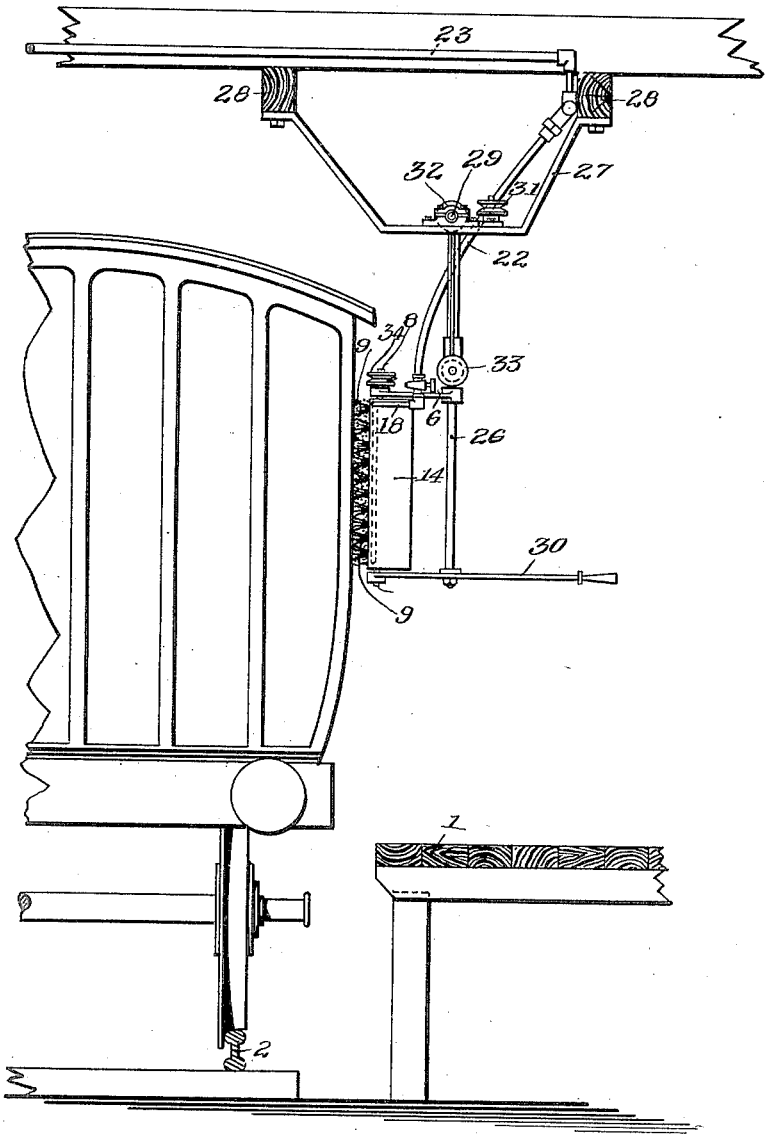
APPARATUS FOR WASHING RAILWAY CARS.

(No Model.) (Application filed Feb. 20, 1899.)

6 Sheets—Sheet 4.

Fig. 4.



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APPARATUS FOR WASHING RAILWAY CARS.

(No Model.) (Application filed Feb. 20, 1899.) 6 Sheets—Sheet 5.

Fig. 6.

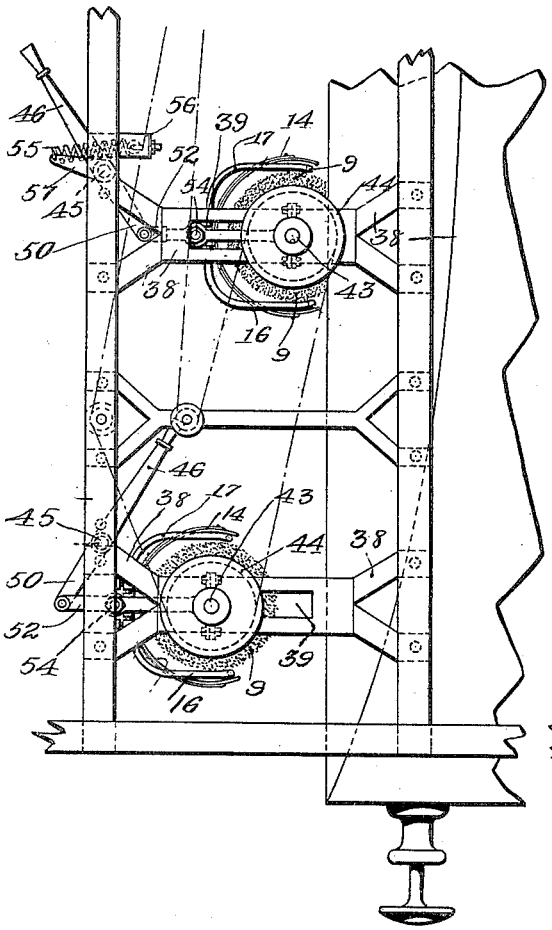
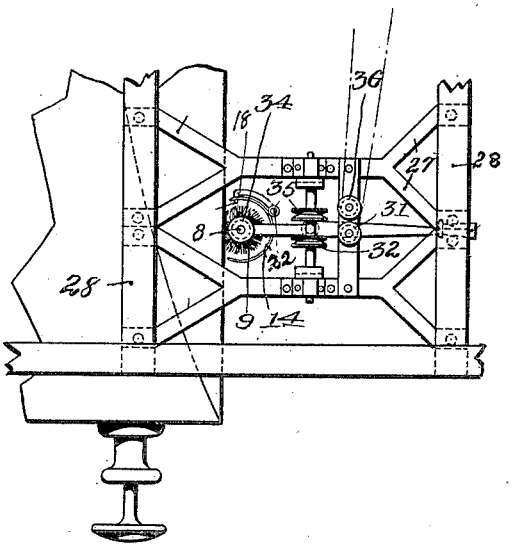


Fig. 5.



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No. 649,786. Patented May 15, 1900.

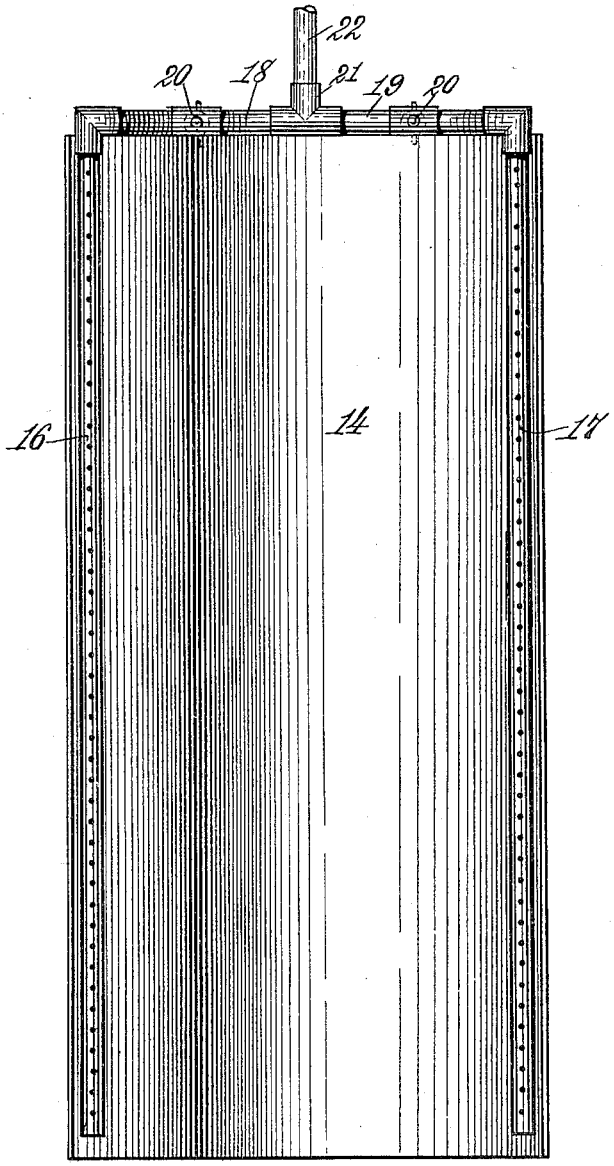
C. A. WHEELER.

APPARATUS FOR WASHING RAILWAY CARS.

(Application filed Feb. 20, 1899.)

(No Model.) 6 Sheets—Sheet 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES ALEXANDER WHEELER, OF LONDON, ENGLAND.

APPARATUS FOR WASHING RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 649,786, dated May 15, 1900.

Application filed February 20, 1899. Serial No. 706,225. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALEXANDER WHEELER, a subject of the Queen of Great Britain, residing at 14 Harley road, Willesden, London, county of Middlesex, England, have invented certain new and useful Improvements in Apparatus for Washing Railway-Cars, of which the following is a specification.

My invention relates to washing apparatus for railway-cars and the like, the object of the same being to provide new and improved means whereby the sides of railway-cars may be thoroughly washed and cleansed without the use of hand labor, which is now commonly employed for this purpose.

The invention comprises rotary brushes adapted to be moved into engagement with the sides of the car, shields partially inclosing said brushes and movable therewith, spraying-pipes for water mounted upon and carried by said shields, and flexible connections between said pipes and a water-supply pipe.

The invention also consists in certain features and details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 is an end elevation of a car, showing my improved washing device applied thereto. Fig. 2 is a similar view showing the brush on the opposite side of the car with the shield and the flexible coupling for the water-pipe carried thereby removed. Fig. 3 is an end elevation showing a modified construction of mounting and operating the brushes. Fig. 4 is also an end elevation showing another form of the invention. Fig. 5 is a plan view of the construction shown in Fig. 4. Fig. 6 is a similar view of the construction shown in Fig. 3, and Fig. 7 is a detail elevation of one of the shields looking at the inner side thereof.

Like reference-numerals indicate like parts in the different views.

My improved washing apparatus is preferably mounted in a shed or other inclosing structure located on a track-siding, in which the cars may be conveniently passed, and provided with a platform 1 on each side of the rails 2. Mounted to turn in bearings in the platform 1 and in cross-beams 3 at the upper part of the structure are vertical shafts 4, having operating-levers 5 thereon, by which said shafts may be turned. Each of the shafts 4 carries laterally-extending arms 6 7, in the free ends of which is mounted a shaft 8, carrying a rotary brush 9. The upper end of the shaft 8 is provided with a pulley 10, driven from a pulley 11, loose on the shaft 4, through a belt 12 or other suitable means of connection. The pulley 11 is formed integral with or otherwise secured to a pulley 13, also loose upon the shaft 4 and deriving its motion from any suitable source of power. By this means a rotatory movement may be imparted to the brush 9. Embracing and partially inclosing each of the brushes 9 is a shield 14, which is supported from the shaft 4 by means of the arms 15, secured to said shaft. The said shield incloses all sides of the brush 9, except that which lies directly opposite the car which is to be cleaned. Secured to the shield 14 on its inner surface and along its side edges are vertical water-spraying pipes 16 17, each provided with perforations throughout its length and connected at their upper ends by cross-pipes 18 19, having cocks or cut-offs 20 therein. An inverted-T coupling 21 connects the inner ends of the horizontal pipes 18 and 19, and to this is attached a flexible hose or pipe 22, which in turn is connected with the main water-supply pipe 23, leading entirely across the upper part of the shed or inclosure in which the apparatus is located and provided with a controlling-valve 24, adapted to be actuated for the purpose of cutting off or turning on the water by means of the cords 25 25. By this construction it will be observed that upon rotating the shaft 4 by means of the lever 5 thereon the brushes 9, the shield 14, and the pipes 16 and 17, carried by said shield, may be caused to approach or recede from the side of the car. The valves 24 and the cocks 20 being turned on and the brushes 9 being rotated through the means described, a supply of water will be sprayed upon the side of the car from the pipe 16 in advance of the brush 9 and a supply of water will be sprayed upon the car behind the brush 9 from the pipe 17. A thorough cleansing of the car may be thus readily effected, and when completed the brushes, shields, and spraying-pipes may be moved out of the way. The rotation of the

shaft 4, carrying the brushes, shield, and water-supply pipes, also adapts the apparatus to be used upon cars of different widths. The cocks 20 further provide for cutting off the water from one of the pipes 16 and 17 and supplying the same to the other, whereas the valve 24 provides for cutting off or supplying water to both of said pipes.

In the form of my invention illustrated in Figs. 4 and 5 of the drawings I dispense with the shafts 4, which are mounted in bearings at the upper and lower ends thereof, and substitute therefor a shaft 26, which is suspended from a bracket 27, secured to cross-beams 28 28 in the upper part of the shed or other structure in which the apparatus is mounted. This shaft 26 is mounted in bearings 29 in the bracket 27, so that it is capable of being swung to and from the car. The operating-lever 30 for the rotary brush, which is mounted on the shaft 26, also serves as a bearing for the lower end of the shaft 8, which carries the brush 9. The upper end of the shaft 8 is mounted in the arm 6, projecting laterally from the shaft 26, similar to the arm 6 on the shaft 4. In other respects the construction is identical with that disclosed in Figs. 1 and 2 of the drawings, except that the particular form of gearing for operating the brush 9 is somewhat different. In this case the operating cord or belt for the brush 9 passes around a horizontal pulley 31 on the bracket 27, thence around a vertical pulley 32 on said bracket, thence down and around a pulley 33 on the shaft 26, around pulley 34 on the shaft 8, back around a pulley corresponding to the pulley 33 on the shaft 26, up around a pulley 35 on the bracket 27, and out around a pulley 36 on said bracket.

In the two forms of my invention just described the rotary brush and the shield carrying the water-spraying pipes are mounted upon laterally-extending arms on a shaft, so that they are adapted to swing toward and from the sides of the car to be washed.

In the form of my invention illustrated in Figs. 3 and 6 of the drawings the brushes and the parts carried thereby are caused to reciprocate in a vertical plane to and from the sides of the car instead of swinging upon transverse arms on a supporting-shaft. In this form of my invention a bracket 38, similar to the bracket 27, heretofore referred to, is secured to the upper part of the framework of the structure in which the apparatus is mounted and is formed with an elongated slot 39 in the lower cross-bar thereof. A similar slotted plate 40 is secured to the platform 1, directly beneath the bracket 38, and the bearings 41 and 42 of the shaft 43, which carries the brush 9, are mounted in the slots in said bracket and plate, respectively, as clearly shown. The upper end of the shaft 43 is provided with a pulley 44, by means of which power may be transmitted to said shaft for rotating the brush 9. A vertical shaft 45, mounted in the platform 1 and in a cross-beam at the upper part of the inclosing structure and similar to the shaft 4, (shown in Figs. 1 and 2 of the drawings,) is provided with an operating-lever 46, having a sleeve 47 thereon, which loosely embraces the shaft 45 and is provided with a tooth 48, adapted to fit within a corresponding groove or notch in the collar 49, fixed to said shaft. By this construction the lever 46 may be thrown into or out of engagement with the shaft 45 for the purpose of obtaining a grip on said shaft at different points and preventing interference of said lever with other operative parts of the apparatus. The shaft 45 has secured to it adjacent to its upper and lower ends arms 50 51, to which are pivoted the links 52 53, loosely connected to the shaft 43 at their opposite ends, so that said shaft may be raised and lowered independently of said links. A rod 54 connects the links 52 and 53 and is provided with supporting-arms 15 15 for the shield 14. By this construction it will be seen that by turning the shaft 45 through the agency of the operating-lever 46 the rotary brush 9, the shield 14, and the water-spraying pipes carried by said shield may be moved toward or away from the side of the car to be washed in a direct line, the shaft 43 being guided by its bearings 41 and 42 in the slotted bracket 38 and plate 40, respectively. The said brush and shield are held in their normal positions away from the side of the car and returned to their normal positions after having been moved toward the car by means of a spring 55, secured at one end to a bracket 56 on a stationary part of the structure and attached at its other end to an arm 57 on the shaft 45.

The lower end of the shaft 43 is provided with a cam 58, which is adapted to engage and ride over a vertically-disposed roller 59, so that during the rotation of said shaft a reciprocating up-and-down movement is imparted thereto. It will be noted that this vertical movement of the shaft 43 is permissible by reason of the fact that the lower bearing 42 is elongated, that the links 52 and 53 are loosely connected to said shaft, and that the pulley 44 is keyed to said shaft and is adapted to slide longitudinally thereon.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In washing apparatus for railway-cars and the like, the combination of a rotary brush, a shield partially surrounding the same, water-spraying pipes mounted on said shield, and means for moving said brush, shield and pipes toward and away from the car.

2. In washing apparatus for railway-cars, and the like, the combination of a rotary brush, a shield partially surrounding said brush, pipes secured to the inner surface of said shield adjacent to the vertical side edges thereof and provided with perforations, horizontal pipes provided with cocks connecting

said water-spraying pipes, a main supply-pipe for water, a flexible or hose connection between said main supply-pipe and said horizontal pipes, and means for moving said brush, screen and the pipes carried thereby toward and away from the car to be cleaned.

3. In washing apparatus for railway-cars and the like, the combination with a rotary brush, and means for causing a reciprocating up-and-down movement of said brush.

4. In washing apparatus for railway-cars and the like, the combination with a rotary brush, of means for automatically reciprocating the same.

5. In washing apparatus for railway-cars and the like, the combination with a rotary brush, and a shaft on which the same is mounted, of a cam upon the lower end of said shaft, and a stationary part engaged by said cam, whereby, during the rotation of said brush, a reciprocating up-and-down movement will be automatically imparted thereto.

6. In washing apparatus for railway-cars and the like, the combination with a rotary brush and the shaft on which said brush is mounted, of bearings for said shaft, guides in which said bearings are mounted, a vertical shaft provided with means whereby it may be turned, arms on said vertical shaft, and links connecting said arms with the shaft on which said brush is mounted, as and for the purpose set forth.

7. In washing apparatus for railway-cars and the like, the combination with a rotary brush and the shaft on which said brush is mounted, of bearings for said shaft, guides in which said bearings are mounted, a vertical shaft provided with means whereby it may be turned, arms on said vertical shaft, links connecting said arms with the shaft on which said brush is mounted, and a spring for normally holding said brush in one of its positions.

8. In washing apparatus for railway-cars and the like, the combination with a rotary brush and the shaft on which the same is mounted, bearings for said shaft, guides in which said bearings are adapted to be moved, a vertical shaft, means for turning the same, arms on said vertical shaft, links connecting said arms with the shaft on which said brush is mounted, a vertical rod connecting said links, a shield partially inclosing said brush and supported from said vertical rod, water-spraying pipes carried by said shield, and a flexible connection between said pipes and a source of water-supply, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES ALEXANDER WHEELER.

Witnesses:
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RICHARD CORE GARDNER.