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CAR CLEANING APPARATUS
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Inventor,

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Att'y.
The invention relates to improvements in car cleaning apparatus as described in the present specification and shown in the accompanying drawings that form a part of the same.

The invention consists essentially of the novel construction and arrangement of parts whereby the various operations in car cleaning are performed simultaneously during the passage of the car through a structure provided with the necessary implements.

The objects of the invention are to provide means whereby cars may be cleaned while in motion, to reduce to a minimum the cost of washing railway and other cars, to eliminate the necessity of having to lay up the cars for a lengthy period as is frequently a necessity where numbers of cars are to be washed or where it is difficult to obtain labour, and generally to provide means for cleaning cars which will be inexpensive of construction, simple and efficient in operation and durable.

In the drawings Figure 1 is a side view of a portion of the structure through which the cars pass during the cleaning process, the wall of said structure being broken away to disclose the various parts of the cleaning mechanism.

Figure 2 is an end view of Figure 1 with the car removed.

Figure 3 is a cross sectional view taken on the line A—A of Figure 1.

Figure 4 is a detail partly in section showing the method of rotatably supporting the bracket on which the polishing element is mounted.

Figure 5 is a cross sectional view taken on the line B—B of Figure 1.

Figure 6 is a vertical sectional view taken on the line C—C of Figure 1.

Like numerals of reference indicate corresponding parts in the various figures.

Referring to the drawings, the various implements and their operating means are preferably housed in a structure which may be built over a portion of a main line track or over a portion of a switch as desired.

2 are vertically arranged water pipes one of which is located at each side of the tracks 30, each of said pipes being provided with inwardly projecting nozzles 2 by means of which water is sprayed on to the sides of the car. These nozzles are preferably arranged in two longitudinal series along the pipe, with the nozzles in one series directed substantially opposite to those of the other series so that in the process of cleaning the water will be sprayed along the side of the car in place of striking directly against the car as would be the case were the nozzles at right angles to the direction of travel of the car.

5 are valves interposed in the pipes 2 for the purpose of regulating the supply of water from the source of supply to which said pipes are connected.

6 are water pipes of which there are two, one located at each side of the track 3 a considerable distance in advance of the pipes 2, said pipes supporting adjacent to their top ends branch pipes 7 extending rearwardly on a horizontal plane and terminating just short of said pipes 2.

8 are nozzles supported at intervals along the branch pipes 7 and projecting inwardly therefrom and preferably having their ends turned downwardly slightly so as to deflect the water downwardly over the car surface.

10 are rods each secured at one end to the top end of the corresponding pipe 6 and at its other end being secured to the outer end of the corresponding branch pipe 7, said rods forming supports for said branch pipes.

11 are crank shafts oppositely disposed in relation to one another and rotatably mounted in suitable bearings in brackets 12 located adjacent to the track 3 and between the pipes 2 and 6, said shafts being rotated by means of one or more motors.

14 are rods mounted on the crank shafts 11 and carrying at their outer ends brushes 15 adapted on the rotation of said crank shafts to be reciprocated in a vertical direction against the car body, water being supplied to said brushes by means of the nozzles 2 located thereabove, so that upon the reciprocation of said brushes the sides of the car will be thoroughly scrubbed.

The height of the various brushes may be governed by the length of the rods 14, as
shown in Figure 1 of the drawings, or the depths of the eccentric portions of the crank shafts 11 may be varied to give this result.

15° are horizontal brackets forming supports for the rods 14 in their inoperative positions, said brackets comprising a rod having their ends turned downwardly at right angles and pivoted in brackets 15°.

15° are uprights located adjacent to one of the turned ends of the brackets 15° and pivotally supporting latch members 13 adapted to engage said turned ends and thus hold the brackets to their operative position, that is to say in position to support the rods 14 when not in position against the car.

When the brushes are in operation the brackets 15° simply rest against the car.

19 are standards mounted on opposite sides of the track 3 in advance of the air pipes 16 and being provided with flanged collars 20 rigidly mounted thereon adjacent to the lower ends thereof.

21 are comparatively narrow platforms rotatably mounted in the collars 20 respectively and forming supports for the polishing apparatus, handles 22 being rigidly secured to said platforms for the purpose of rotating same on their supports.

23 are brackets mounted on the platforms 21 respectively, adjacent to the outer ends thereof, the outer walls 24 of the said brackets being vertical and the inner end walls being turned backwardly at an angle as at 25.

26 are polishing elements having rigid extensions 27 forming shafts, the lower extensions extending through openings in the respective angle portions 25 of the brackets 23 and carrying bevel gears 28 and the top extensions having collars 29 rigid therewith and carrying rigid caps 30 rotatably mounted on the top ends of the respective standards 19, said polishing elements or brushes being adapted on rotation to polish the car sides.

31 are motors mounted on the platforms 21 and having shafts 32 extending through bearings in the walls 24 and carrying bevel gears 33 meshing with the bevel gears 28 of the polishing elements for the purpose of rotating said elements.

While the brushes 26 are shown in the drawings as being set at angle in relation to a vertical line through the car body, it must of course be understood that these brushes may be set in any desired position to engage the car surface and that the method of supporting these brushes may be altered accordingly without departing from the spirit of this invention.

In the use of this invention the car to be cleaned is run preferably at a slow rate of speed through the cleaning apparatus entering between the water pipes 2 and as the nozzles from said pipes are set at an oblique angle the water therefrom will be sprayed into all corners and crevices thus thoroughly wetting the sides of the car. As the car advances past the pipes 2 the water is turned in the pipes 6 and the brushes 15 are set in motion by turning the motors 13 thus thoroughly spraying the car with clean water from the nozzles 8 and as said nozzles are located above said brushes the water will fall on said brushes, which owing to the reciprocating motion imparted thereto by the cam shafts 11 will thoroughly scrub the sides of the car. Immediately upon passing the nozzles 8 and brushes 15 the car body will come into the path of the nozzles 17 of the air pipes 16 which will thoroughly dry said body and prepare it for polishing. As the car approaches the polishing apparatus the brushes 26 are swung into position for engagement with the sides of the car by simply pulling outwardly on the handles 22 and said brushes are then set in motion by means of the motors 31, and as they lightly engage the car body a smooth finish will be imparted thereto.

It will have been apparent from the foregoing description that a simple and efficient means is provided whereby trains may be cleaned in transit and while occupied by passengers thus reducing to a minimum the cost and inconvenience in washing cars.

While I have thus described the preferred construction, combination and arrangement of parts which constitute the present invention, it is obvious that others skilled in the arts of which this appertains, may make various changes without departing from the spirit and scope of the invention as contained in the claims for novelty following.

What I claim is:

1. In a car cleaning apparatus, a track, a water pipe located adjacent to said track and provided with horizontally arranged nozzles, scrubbing brushes adapted for reciprocating movement adjacent to said water pipe, means for reciprocating said brushes, means for delivering water to said brushes, air spraying apparatus located adjacent to said scrubbing members and a polishing element.

2. In car cleaning apparatus, a track, a water pipe located adjacent to said track and provided with horizontally arranged nozzles, a crank shaft rotatably journalled in brackets to the rear of said pipe, rods mounted on said crank shaft and carrying brushes adapted for vertical reciprocation, means for rotating said shaft, means for delivering water to said brushes, air spraying apparatus, a rotatable polishing element and means for rotating said polishing element.

3. In car cleaning apparatus, a track, a vertical water pipe located adjacent to said track and having horizontal nozzles, a crank shaft rotatably journalled in brackets pos.
tioned to the rear of said pipe, rods mounted on said crank shaft and adapted for vertical reciprocation on the rotation of said shaft, brushes carried by said rods respectively, means for rotating said shaft, means for delivering water to said shaft, air spraying apparatus positioned to the rear of said brushes, a rotational polishing element, means for rotating said polishing element and means for altering the position of said polishing element in relation to said trackway.

4. In car cleaning apparatus, a track, a vertical water pipe located adjacent to said track and carrying nozzles trained in the direction of said car, brushes adapted for vertical reciprocation over a car body, means for reciprocating said brushes, a water pipe having nozzles spraying a car body above said brushes, means for spraying air against a car body subsequent to the operation of said brushes, and polishing elements adjustable to engage a car body.

5. In car cleaning apparatus, a track, means for spraying opposite sides of a car simultaneously, crank shafts rotatably mounted parallel with said tracks and carrying brushes adapted on the rotation of said shafts to be reciprocated over a car body subsequent to spraying, means for supplying water to said brushes, an air pipe provided with nozzles adapted to spray opposite sides simultaneously of said car subsequent to the operation of said brushes, polishing elements, and means for bringing said polishing elements into and out of engagement with said car body.

6. In car cleaning apparatus, a track, vertical water pipes located on opposite sides of said track and carrying horizontally arranged nozzles trained in the direction of said car, brushes adapted for vertical reciprocation along the sides of a car, means for reciprocating said brushes, means for supporting said brushes in a disengaged position, water pipes located on opposite sides of said track and carrying branch pipes, nozzles carried by said branch pipes and spraying a car body above said brushes, means for spraying air against the body of a car subsequent to the operation of said brushes, and polishing elements.

7. In car cleaning apparatus, a track, vertical water pipes located on opposite sides of said track and carrying nozzles trained in the direction of said car, crank shafts rotatably mounted parallel with said track, on opposite sides thereof, rods mounted on said shafts and adapted for vertical reciprocation, scrubbing elements carried by said rods, water pipes positioned on opposite sides of said tracks and provided with branch pipes carrying nozzles spraying a car above said brushes, air pipes supplying air to said body subsequent to the operation of said brushes and polishing elements adjustable in relation to said car body.

8. In car cleaning apparatus, a track, means for spraying opposite sides of a car simultaneously, brushes adapted for vertical reciprocation over a car body, means for reciprocating said brushes, brackets adjustably mounted and supporting said brushes in their inoperative positions, vertical water pipes positioned on opposite sides of said tracks, branch, pipes supported on a horizontal plane from said vertical pipe and carrying nozzles adapted to spray a car body above said brushes, air pipes supplying the body subsequent to the operation of said brushes, standards positioned on opposite sides of said tracks and carrying rigid flanged collars adjacent to the lower ends thereof, platforms rotatably mounted in said collars respectively, brackets rigidly supported by said platforms, polishing elements journaled at their lower ends in bearings in said brackets respectively and at their upper ends carrying caps rotatable on the top ends respectively of said standards, and means for rotating said polishing elements.

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Witnesses:
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