A. A. WRIGHT.
CAR WASHER.
APPLICATION FILED APR. 18, 1921.

1,411,321.

Patented Apr. 4, 1922.

2 SHEETS—SHEET 1.

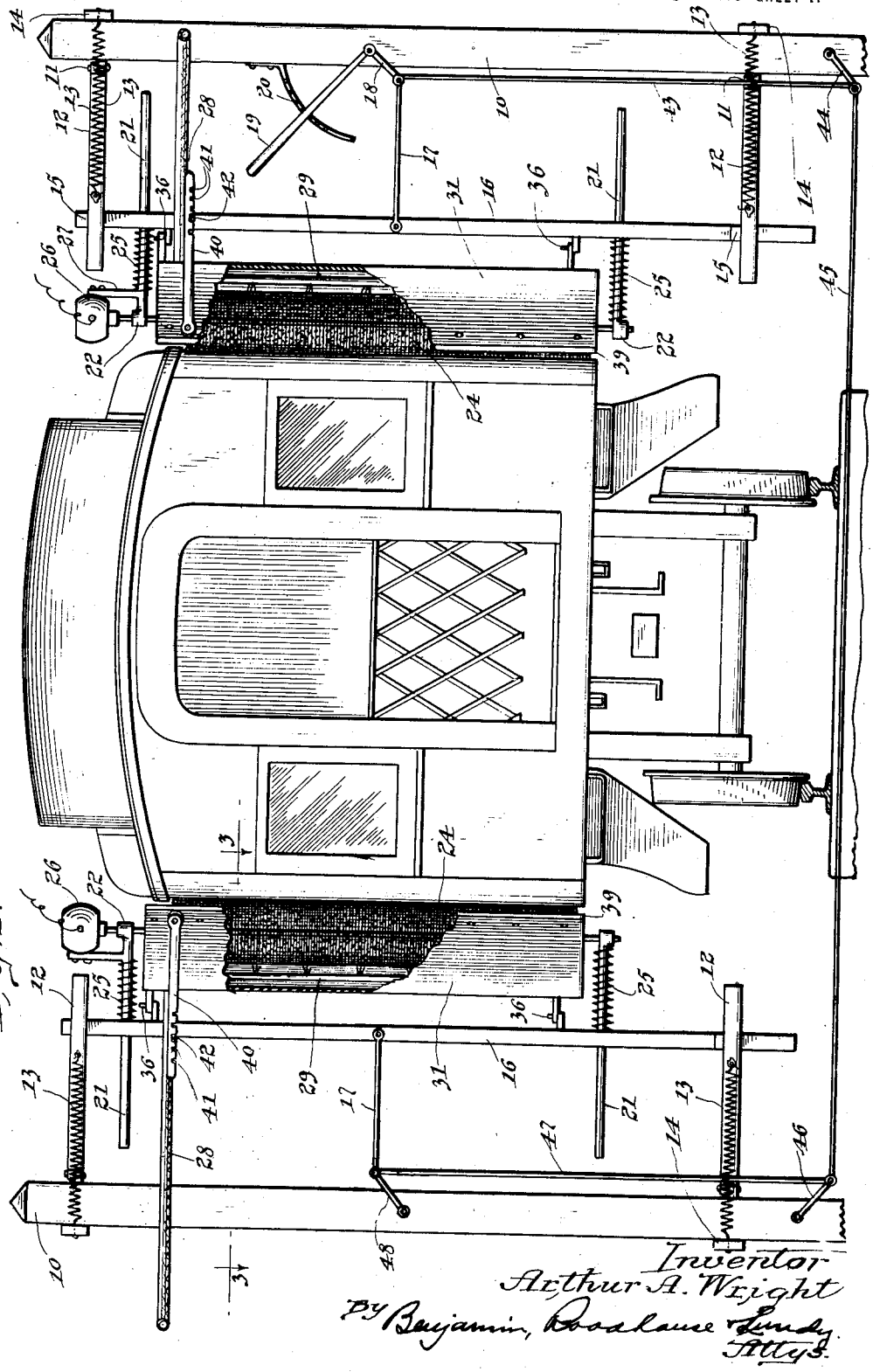


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

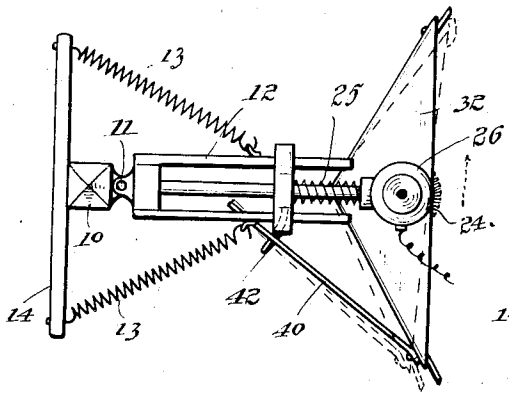
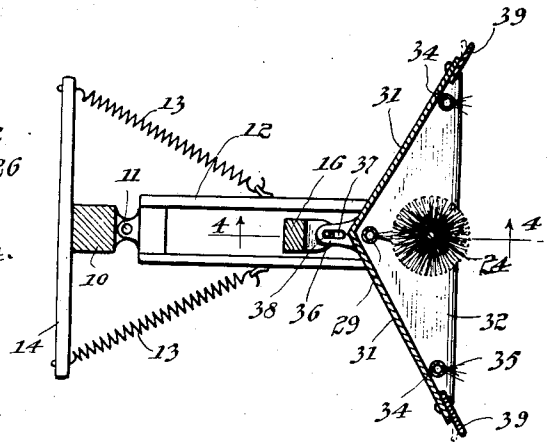


Fig. 3.



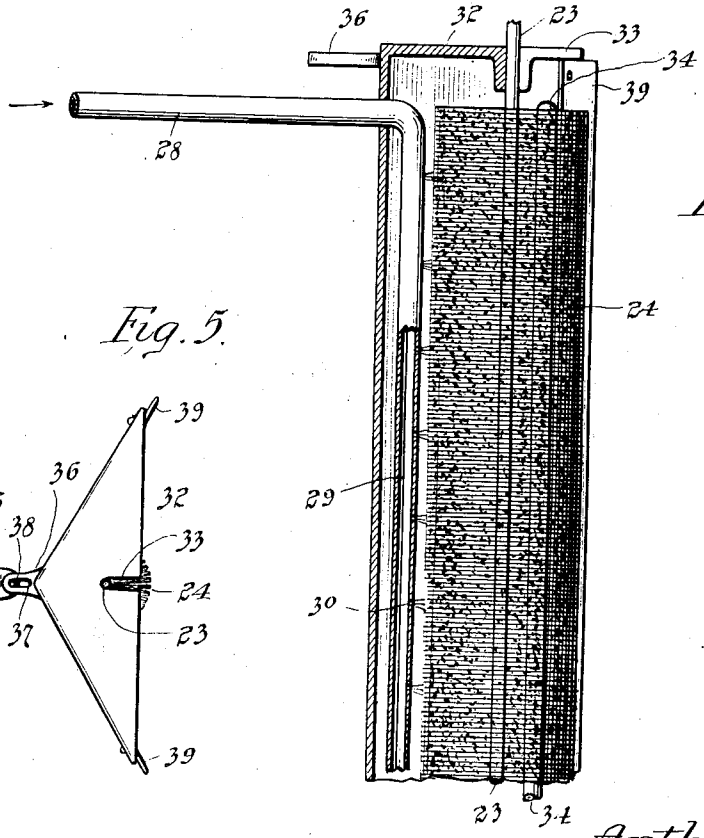


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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CAR WASHER.

1,411,321. Specification of Letters Patent. Patented Apr. 4, 1922.

Application filed April 18, 1921. Serial No. 462,228.

To whom it may concern:

Be it known that I, ARTHUR A. WRIGHT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car Washers, of which the following is a specification.

My invention relates to an apparatus for mechanically washing railway and similar cars, and is especially adapted for use while the car is in movement past the location of the apparatus.

Among the objects of my invention are the provision of an apparatus of this type that will wash, rinse and wipe the exterior side walls of all the cars of a train while the latter is in motion or moving slowly past the apparatus, and the arrangement of the structure is such that I am able to perform this function upon the end or transverse walls and the vestibules of each car. Also, I have provided means whereby the structure will automatically swing horizontally to avoid breaking the parts in the event it comes into contact with parts of the cars protruding beyond the planes of the sidewalls. Further objects of my invention consist in the provision of an apparatus that is capable of ready installation upon the roadbed of the railway right-of-way; that is easy and simple to operate; that is compact in the arrangement and disposition of the parts so that it may be operated by one mechanic, and which is quick and efficient in its operation.

I prefer to carry out my invention in substantially the manner hereinafter fully described, and as more particularly pointed out in the claims, reference being now had to the accompanying drawings that form a part of this specification, in which—

Figure 1 is a vertical elevation showing the installation of my apparatus upon the road-bed with a car in position between the oppositely arranged structures.

Figure 2 is a top plan of the structure upon one side of the car.

Figure 3 is a transverse horizontal section on line 3—3, Figure 1.

Figure 4 is a vertical longitudinal section through the hood and brush, the view being taken on line 4—4, Figure 3, and enlarged, only the upper portions of the hood and brush being shown.

Fig. 5 is a top plan of one of the hoods and brushes detached from its standard and with the driving mechanism for the brush removed for clearness.

The drawings are, in a sense, merely diagrammatic for the purpose of illustrating the embodiment of my invention, and in these drawings I have used like reference characters to designate the same parts throughout the several views.

Referring first to Figure 1, it will be seen I carry out my invention by providing a standard 10 set upright in the road-bed or just outside the same, for supporting the parts of my apparatus, and as it is desirable to clean both sides of the cars at the same time, I have provided a similar standard or post upon the opposite side of the road-bed. I will, however, describe but one of these structures as they are substantially duplicates, and it will be understood that the description of one will suffice for both.

Mounted upon the upper and lower portions of the standard by suitable hinge elements 11 are laterally projecting arms or carriers 12 that comprise parallel spaced pieces connected by suitable spacing blocks, and the outer portions of these arms are connected by coiled contraction springs 13 to opposite ends of arms 14 secured to the adjacent upper and lower portions of standards 10.

Mounted between the outer portions of arms 12 and supported thereon by cross-pieces 15 is a vertical member 16 that is adapted to be moved horizontally toward and away from the car by means of a link 17 actuated by a bell-crank 18 through the medium of a handle 19, and may be locked in position by the engagement with a toothed segment 20 mounted upon the adjacent portion of post or standard 10. Reciprocable horizontally in suitable bearings in the upright element 16 are the plungers 21 that have bearings 22 upon their outer ends to receive the adjacent upper and lower ends of the arbor or shaft 23 of a rotatable brush 24. Between the bearing bosses 22 and upright element 16 these plungers 21 are surrounded by coil expansion springs 25 so that they are yieldingly pressed outwardly toward the car so as to engage brush 24 with the side walls thereof. The upper end of arbor 23 is elongated beyond its bearing and is connected in any suitable manner to a motor 26, deriving its power from any source of

supply, and which motor is mounted upon an upright bracket 27 extending from the upper plunger 21. The brush 24 is of the rotary type, and when upright element 16 has been moved forward toward the car the brush will yieldingly engage the side walls of the latter in the manner desired, springs 25 assisting in this function.

The brush is sprayed with a strong soapsuds or a solution of oxalic-acid and water through a pipe 28 which has a vertical arm 29 that extends vertically down along the side of the brush and is provided with a plurality of discharge orifices 30. The rotation of the brush is rapid, and I have designed a suitable hood to enclose the portion of the brush opposite the segment which is in contact with the car to prevent the splashing or spraying of the solution away from the car, and this hood comprises a pair of converging walls 31, as seen in Fig. 3 of the drawings, that are connected by triangular shaped top and bottom walls 32. The arbor 23 of the brush is movable in and out of a slot 33 in these top and bottom walls 32, and the vertical portion 29 of the fluid supply pipe is positioned in the vertex of walls 31, as seen in Figs. 3 and 4 of the drawings. After the brush has washed the sides of the car, the strong solution is rinsed by providing pipes 34 that are provided with spray orifices 35, and which are positioned in the hood adjacent the outer ends of walls 31. Clear water is discharged through pipes 34 against the sides of the car and perform the rinsing operation.

The hood is preferably mounted by means of hinged members 36 upon the vertical element 16 heretofore mentioned, and in order to provide a slight bodily movement of the hood, I have provided an elongated slot 37 in the hinged bracket to receive pintle 38 to permit of this movement. It is desirable, after the rinsing has taken place, to wipe the sides of the car as it passes, and for this purpose I have provided the outer edges of walls 31, of the hood with strips of rubber 39 that will act in the manner of the well-known squeegee. Assuming the car is traveling in the direction indicated by the arrow in Figure 2, the squeegee and clear water spray 34 in the upper end only are used, and to bring this about, I have provided a rod 40 connected at its outer end to the edge portions of wall 31 and the opposite end is provided with a plurality of notches 41 to engage a pin 42 upon an adjacent portion of the structure so that the operator may lift rod 40, and by moving the same in the proper direction the desired squeegee and rinsing pipe may be brought into proper relation to the moving car.

The plungers 21 extend from the side of vertical element 16 a distance sufficient to permit springs 25 to expand and extend brush 24 out of the hood so as to engage the brush with the end walls of the car vestibule, and the car in moving past the brush will have a tendency to pull the same laterally, which is overcome by the action of springs 13 which permit the entire structure to swivel upon structure 11.

In order that the two oppositely arranged structures for washing both sides of the car may be operated simultaneously by one mechanic, I have connected bell-crank 18 by a vertical link 43 to an arm 44 pivoted adjacent the lower end of standard 10, and I have connected arm 44 with an elongated rod 45 to a corresponding arm 46 upon the opposite post, as seen in Fig. 1, and the link 47 connects this latter arm with a bell-crank or arm 48 upon the post so as to operate the horizontally movable link 17 upon this side of the structure, it being understood that member 45 extends from one side of the road-bed to the other below the rails and preferably between the ties or in a suitable culvert, which may be conveniently provided. It will also be understood that the leads of pipes for conveying the solution and clear water to the structure are flexible tubes so that the apparatus will have considerable flexibility of movement. By mounting the structure upon a suitable concrete base and draining the same the cleaning solution may be drawn off into a receptacle or cistern and then filtered or refined so that the solution may be used over again a number of times, thus affording a considerable saving.

What I claim as new is:—

1. An apparatus for washing railway cars comprising a standard, horizontal arms hinged thereto, cross member adjacent said arms, springs connecting opposite ends of said cross members to said arms, a vertical carrier slidable horizontally upon said arms, horizontally disposed yielding plungers mounted upon said carrier, a rotatable brush the shaft whereof is journaled in the outer ends of said plungers, means for rotating said brush, a hood partially enclosing said brush and hingedly connected to said carrier, and means within said hood for supplying said brush with a suitable cleansing fluid.

2. An apparatus for washing railway cars comprising a vertical carrier movable horizontally towards and away from the car, a vertically disposed rotatable brush yieldingly mounted upon said carrier, and means for mounting said structure whereby the same may be bodily swung in a horizontal plane.

3. An apparatus for washing railway cars comprising a vertical carrier movable horizontally towards and away from the car, horizontally yielding plungers mounted in the upper and lower portions of said carrier, a vertically disposed rotatable brush the

shaft whereof is journaled in the outer portions of said plungers, and a hood partially enclosing said brush.

4. An apparatus for washing railway cars comprising a vertical carrier movable horizontally towards and away from a car, a vertically disposed rotatable brush adapted to be moved into engagement with the wall of a car, a hood partially enclosing said brush, and means for mounting said brush whereby the same is adapted to be bodily moved out of said hood and returned thereto.

5. An apparatus for washing railway cars comprising a suitable carrier movable towards and away from a car, a brush yieldingly mounted upon said carrier, a hood partially enclosing said brush consisting of oppositely arranged oblique walls that are hinged at their apex to said carrier, means for adjustably moving said hood to divers positions upon its hinges, and flexible strips secured to and projecting beyond the outer edges of said walls.

6. An apparatus for washing railway cars comprising a fixed support, a suitable carrier movable towards and away from a car, and having an independent arcuate movement with respect to said support, a rotatable brush adapted to engage a wall of the car, and means for moving said brush towards the car independently of the movement of said carrier.

7. An apparatus for washing railway cars comprising a standard, arms hinged thereto and extending horizontally therefrom, a carrier slidable longitudinally upon said arms, means for moving said carrier, a rotatable brush, and means for yieldingly mounting said brush upon said carrier whereby said brush may be moved bodily away from said carrier independently of the movement thereof.

8. An apparatus for washing railway cars comprising a standard, arms hinged thereto and extending horizontally therefrom, a carrier slidable longitudinally upon said arms, means for moving said carrier, a rotatable brush, means for yieldingly mounting said brush upon said carrier whereby said brush may be moved bodily away from said carrier independently of the movement thereof, cross-pieces upon said standard adjacent said arms, and springs connecting said cross-pieces to the respective arms whereby the aforesaid structure may be bodily moved horizontally upon the hinges of said arms.

9. An apparatus for washing railway cars comprising suitable carriers arranged to move towards and away from opposite sides of a car, a rotatable brush adapted to engage opposite walls of the car, means for simultaneously moving said carriers, and devices for moving said brushes towards opposite walls of the car independently of the movement of their respective carriers.

10. An apparatus for washing railway cars comprising vertical standards positioned upon opposite sides of a railway track, arms hinged to respectively the upper and lower portions of said standards and extending horizontally therefrom towards each other, carriers slidable longitudinally upon the arms on each standard, means for moving said carriers simultaneously, a rotatable brush for each carrier, and means for yieldingly mounting each brush upon its respective carrier whereby said brushes may be moved bodily towards each other independently of the movement of their respective carriers.

Signed at Chicago, county of Cook, and State of Illinois, this 14th day of April, 1921.

ARTHUR A. WRIGHT.