Jan. 3, 1928. 1,654,664

H. D. PARKER

APPARATUS FOR CLEANING VEHICLE BODIES

Filed June 14, 1926 3 Sheets-Sheet 1

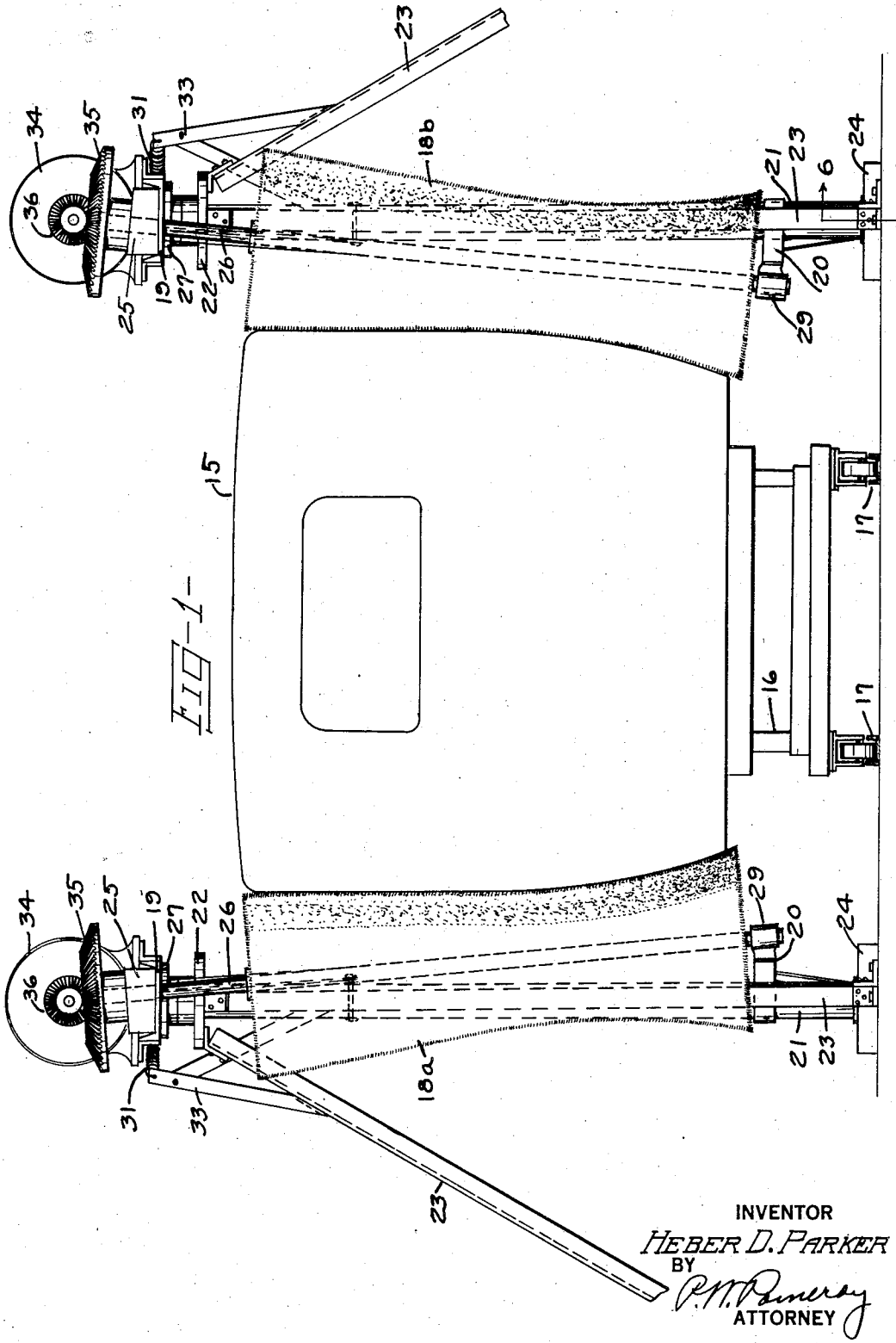


FIG-1-

INVENTOR
HEBER D. PARKER
BY
P. P. Pomeroy
ATTORNEY

Jan. 3, 1928. 1,654,664

H. D. PARKER

APPARATUS FOR CLEANING VEHICLE BODIES

Filed June 14, 1926 3 Sheets-Sheet 2

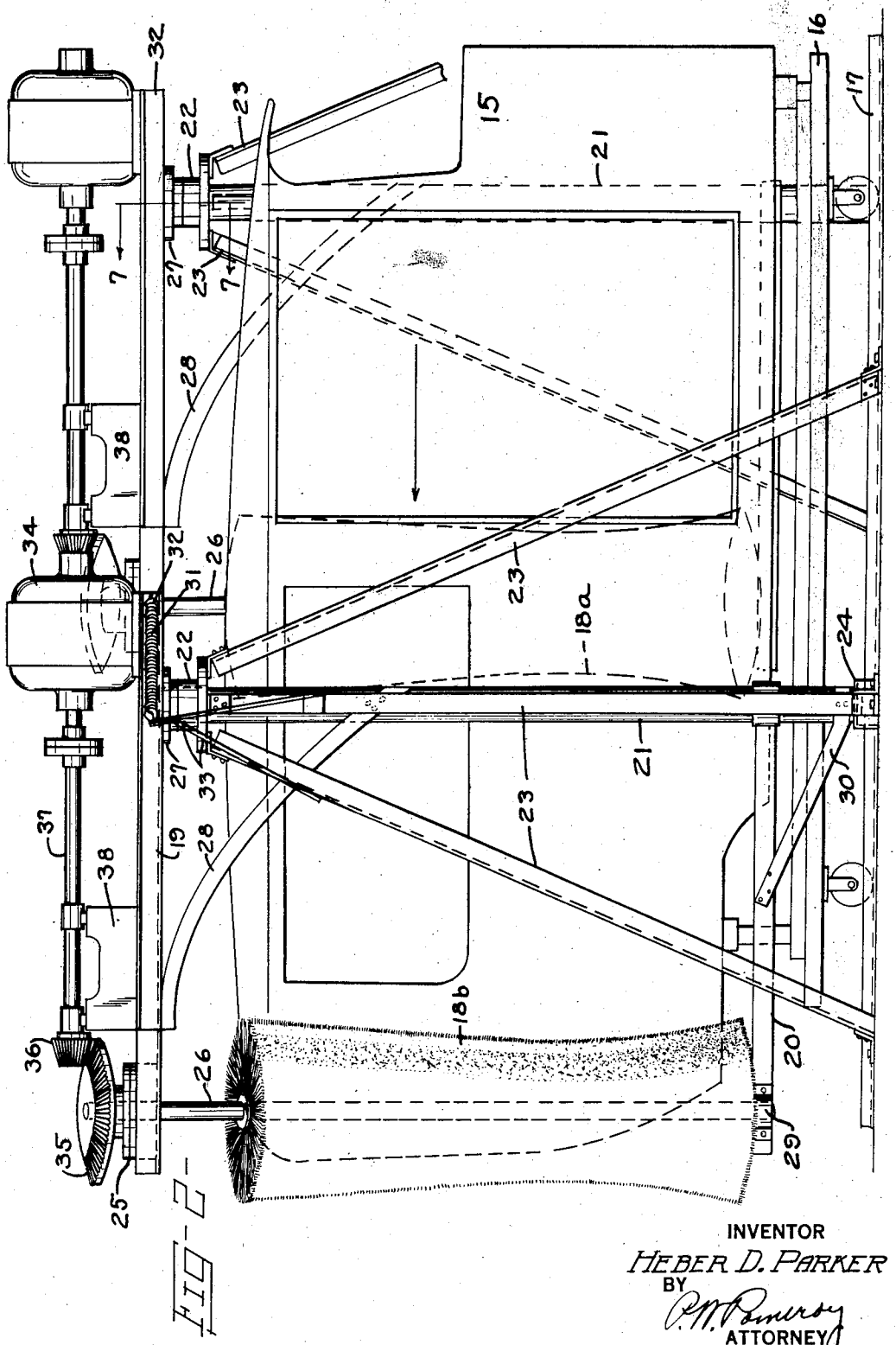


FIG. 2.

INVENTOR
HEBER D. PARKER
BY
C. M. Pomeroy
ATTORNEY

Jan. 3, 1928. 1,654,664

H. D. PARKER

APPARATUS FOR CLEANING VEHICLE BODIES

Filed June 14, 1926 3 Sheets-Sheet 3

FIG-3-

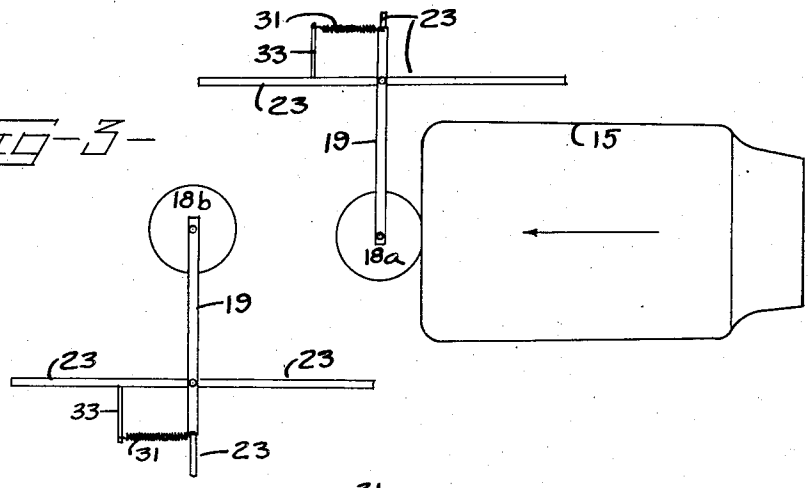


FIG-4-

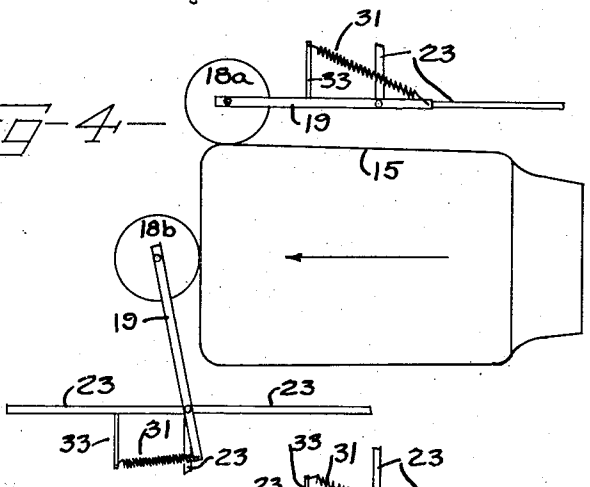
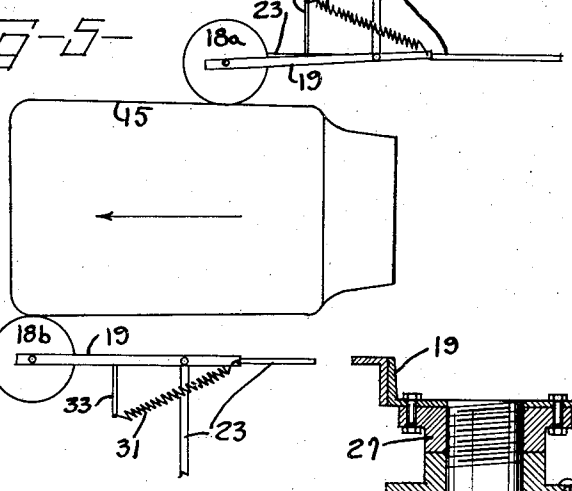


FIG-5-



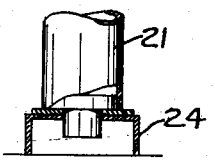


FIG-6-

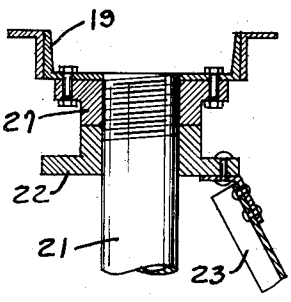


FIG-7-

INVENTOR
HEBER D. PARKER
BY
ATTORNEY

Patented Jan. 3, 1928. 1,654,664

UNITED STATES PATENT OFFICE.

HEBER D. PARKER, OF NILES TOWNSHIP, BERRIEN COUNTY, MICHIGAN, ASSIGNOR TO THE STUDEBAKER CORPORATION, OF DETROIT, MICHIGAN, A CORPORATION OF NEW JERSEY.

APPARATUS FOR CLEANING VEHICLE BODIES.

Application filed June 14, 1926. Serial No. 115,925.

This invention relates to the cleaning of automobile bodies and particularly to a new and novel means for removing substances used in the cleaning of rust and other foreign substances from the same preparatory to the painting thereof.

Before vehicle bodies are painted it is necessary that the surfaces be entirely freed of all rust, dirt and the like. Various methods and cleaning substances are used which efficiently and effectively clean these surfaces. One method in particular consists in coating the bodies to be painted with an aqueous paste-like substance, such as those embodying raw sienna and carbon, which after drying are inclined to come off in flaky masses. After the body is sprayed or coated with this substance it is placed in a heated drying chamber and allowed to bake until the substance has completely dried thereon. It is then taken from the drying chamber and the dried cleaning substance is removed from the surfaces, taking with it all undesirable foreign matter, and leaving a very clean surface. This dried substance as mentioned before is in the form of flaky masses and is apt to come off rather hard after being baked, which entails considerable time and manual labor with wire brushes and the like tending to retard quantity production.

In view of the above, it is the principal object of the present invention to provide an economical and labor saving means for removing body cleaning substances from vehicle bodies which are to be painted or lacquered, or for removing any other relatively loose material therefrom as may be desired.

Another object is to provide a means for mechanically removing cleaning or other substances from vehicle bodies.

Still another object is to provide mechanically operated brushes for removing body cleaning compounds or other substances from vehicle bodies.

A further object is to provide a pair of rotatable brushes adapted to contact with the sides and ends of a vehicle body, whereby to remove body cleaning substances or other matter therefrom in order to prepare the same for painting.

These, being among the objects of the present invention, the same consists of certain features of construction and combinations of parts to be hereinafter described with reference to the accompanying drawings, and then claimed, having the above and other objects in view.

Referring to the accompanying drawings which illustrate a suitable embodiment of the present invention:

Figure 1 is an end elevation of the body cleaning apparatus showing the cleaner brushes contacting with the sides of a vehicle body.

Figure 2 is a side elevation of the parts shown in Figure 1.

Figure 3 is a diagrammatic plan view showing a vehicle body just as it is about to be passed between the brushes and showing one of the brushes contacting with the rear of the body.

Figure 4 is a diagrammatic view such as Figure 3 except that the brush is contacting with the side of the body and the brush on the opposite side is in contact with the rear end of the body slightly past the point where the first mentioned brush contacted.

Figure 5 is a diagrammatic view showing both brushes contacting with the sides of the vehicle body.

Figure 6 is a section taken on the line 6—6 of Figure 1 showing the method of supporting the bottom of the swingable post.

Figure 7 is an enlarged section taken on the line 7—7 of Figure 2 more clearly showing the method of supporting the upper end of the swingable post.

In the drawings, in which like numerals refer to like parts throughout the several different views, a body 15 which is in the operation of being cleaned, is shown mounted on a truck 16 which is adapted to be guided by and moved along in the channel tracks 17. The body 15 may be merely cleaned of the accumulation of foreign substances which adhere thereto during storage, or of a cleaning substance which has been applied thereto by coating or spraying the body with a cleaner solution that has dried thereon and is to be removed after the method of the present invention, the description of which follows.

Positioned on each side of the tracks 17 in staggered relation to each other are two vertically positioned rotatable brushes 18^a and 18^b of such a length as to extend completely over the height of the body 15. Each

brush is rotatably supported between the free ends of horizontally extending upper and lower arms 19 and 20 respectively, each of which is secured at its opposite end to a shaft 21 which is rotatably supported at its upper end in a collar 22 anchored in place by angle braces 23 clearly shown in Figure 7, and at its lower end in a support 24 positioned on the floor, as shown in Figure 6.

The upper arm 19 may be channel-shaped in section as shown in Figure 1 to house a bearing 25 for the shaft 26, which supports the brush at its extreme free end, and is secured at the other end to a pipe flange 27 which is threaded or otherwise secured to the upper end of the shaft 21. A brace 28 helps support the arm 19. The lower arm 20 is likewise provided with a bearing 29 at its outer end for the brush shaft 26 and is suitably secured to the vertical shaft 21. The brace 30 like the brace 28 helps support the arm 20.

The general contour of the sides and rear end of the body 15 is at an angle to the vertical and the brushes 18^a and 18^b are set at a corresponding angle so that the diameter of the same may be reduced, otherwise the bottom portions thereof would have to be of considerably larger diameter so that they would properly contact with lower portions of the sides and rear end of the body 15. By setting the brushes 18^a and 18^b in such a position, considerable saving is realized in the cost thereof due to the reduced diameter.

The normal inoperative position of the brushes 18^a and 18^b is shown in Figure 3 and in order to draw the same back to this position after the body 15 has been cleaned by passing between the brushes as shown in Figure 5, coil springs 31 are secured to the ends 32 of the upper arms 19 and to brackets 33 extending upwardly from the legs 23. The tension in the springs 31 will pull the brushes from the position shown in Figure 5 to the position shown in Figure 3.

It was previously stated that each brush 18^a 18^b is rotatable and the means shown in Figures 1 and 2 comprises an electric motor 34 which drives the shaft 26 through the bevel gear 35 secured to this shaft, and the bevel pinion 36 which is secured to a shaft 37 that is connected directly to the motor 34. The shaft 37 is held in position by a support 38 secured to the arm 19, and the motor 34 is preferably mounted on the shorter end of the arm 19 to even up or counterbalance the weight of the brush 18^a or 18^b thereby to allow easier rotation of the post 21 and preventing binding of the same.

It is to be understood that the details of the supporting structure may be varied and that any type of drive applicable to this device may be used equally as well as the motor 34.

In operation, the body 15 may be pushed through manually or may be carried between the brushes by a conveyor in the direction of the arrow, it being guided by the tracks 17. The body 15 first meets the first brush designated in Figures 3, 4 and 5 as 18^a which contacts with the rear end slightly past the center thereof and as the body is carried forward the brush 18^a is caused to swing outwardly and clean that half of the rear end of the body adjacent thereto. By the time the body has assumed the position shown in Figure 4 the brush 18^a is contacting with the side of the body and the brush 18^b has contacted with and is beginning to clean the other half of the rear end of the body starting where the brush 18^a started to clean. As the body continues farther as shown in Figure 5 both brushes 18^a and 18^b contact with sides of the body and clean the same. After the body has progressed farther through, the brushes go out of contact therewith and are drawn back to the position shown in Figure 3 by the springs 31.

The motor may be driven at a fairly high rate of speed but it is preferable that the body be moved past the brushes slowly to effect a better cleaning thereof. The brushes will thoroughly remove all traces of the cleaning substance and all the dirt and rust loosened up by the same.

It may be desirable in cleaning the bodies to moisten the same with water or other liquid, in which case any suitable means may be provided for that purpose.

The advantages of this method of cleaning dust and dirt remover from vehicle bodies are readily apparent, the main advantage being that considerable time and labor are saved as the operation is purely mechanical and manual rubbing of the body with wire brushes and the like is substantially eliminated.

Formal changes may be made in the specific embodiment of the invention described without departing from the spirit and substance of the broad invention the scope of which is commensurate with the appended claims.

What I claim is:

1. In a device for cleaning a vehicle body moving along a definite path, a generally vertical rotatable brush mounted between a pair of arms swingable about an axis outside the path of movement of said body, said arms being swingable to move said brush to a point beyond the center of the line of movement from said body, and yieldable means for urging said brush toward the center line of movement of said body.

2. In a device for cleaning a vehicle body, a pair of spaced rotatably mounted brushes between which a body is adapted to pass, each of said brushes being mounted for swinging movement toward each other into the path of movement of said body, and

each brush being swingable to a point beyond the center line of the path of said body.

3. A device for cleaning a vehicle body, comprising a pair of generally vertically positioned rotatable brushes between which a body is adapted to pass, each of said brushes being swingably mounted about a line eccentric to the axis thereof and movable to a point beyond the center line of the path of said body, one of said brushes being movable into the path of movement of said body in advance of the other brush.

4. In a device for cleaning a vehicle body while moving on a guiding track, a rotatable brush swingably mounted on each side of said track, said brushes being staggered transversely with respect to said track and movable to overlapping relationship with respect to the center line thereof, and means for urging said brushes toward the path of movement of said body, said means being yieldable to allow said brushes to swing out of the path of movement of said body upon passage of the same therebetween, whereby said brushes will engage a full end surface of said body and both side surfaces thereof.

Signed by me at South Bend, Indiana, U. S. A., this 11th day of June, 1926.

HEBER D. PARKER.