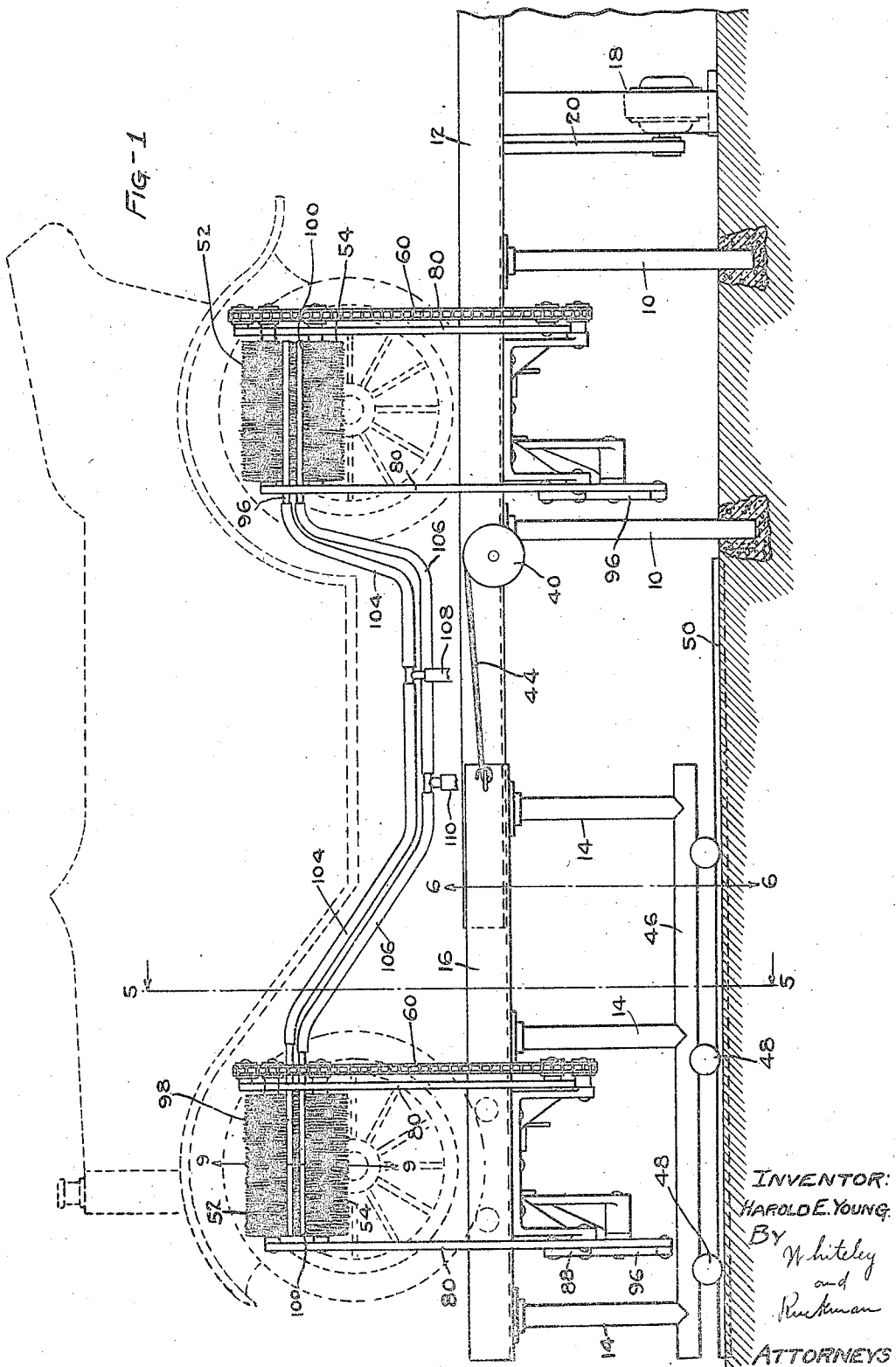


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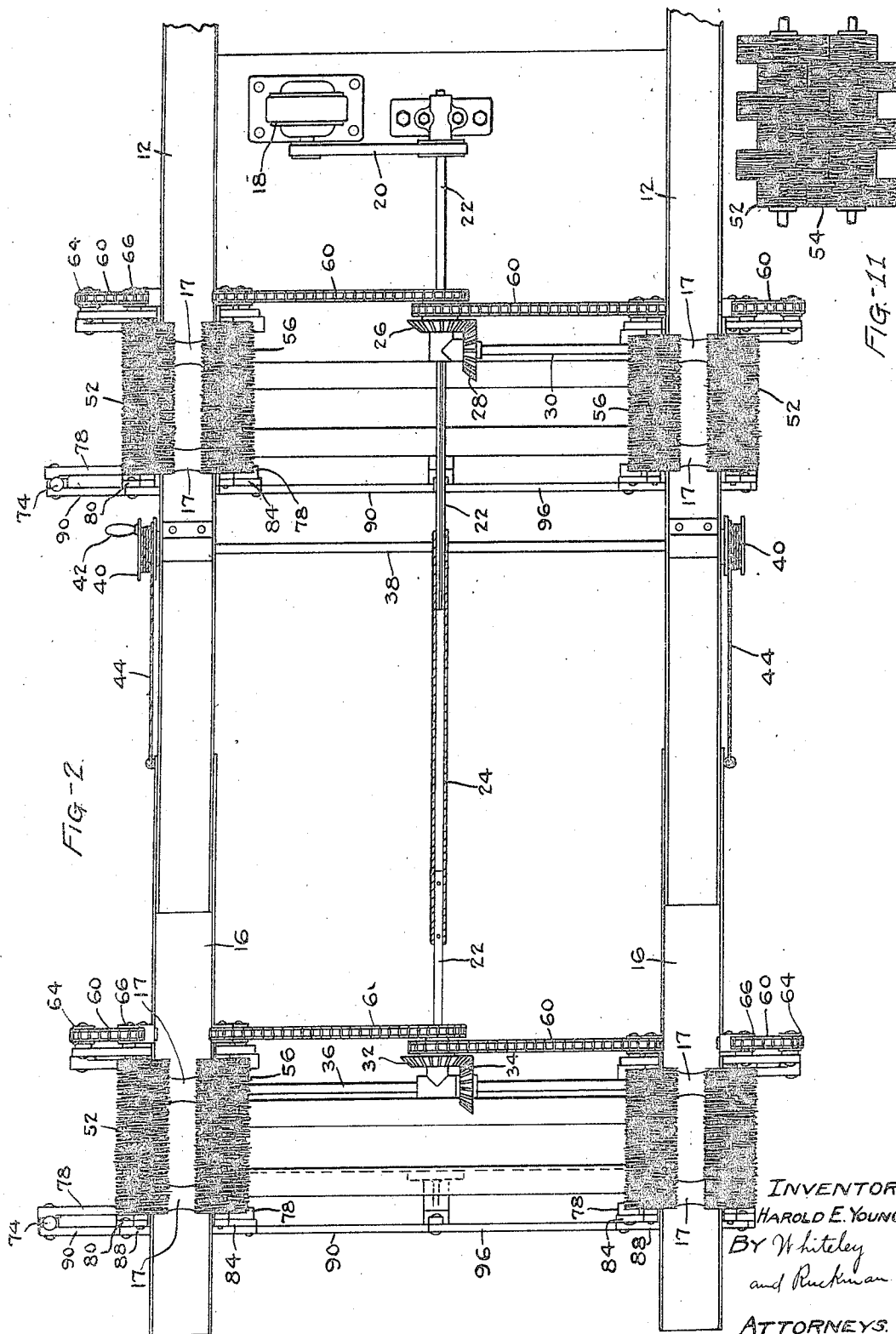


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 APPARATUS FOR WASHING AUTOMOBILES.
 APPLICATION FILED MAY 15, 1920.

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4 SHEETS—SHEET 2.

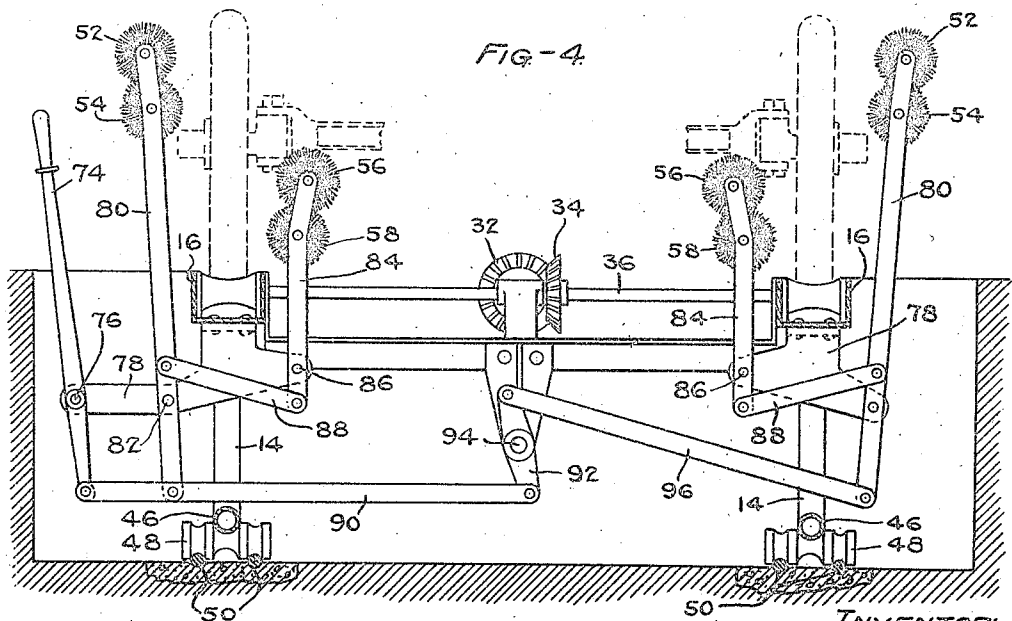
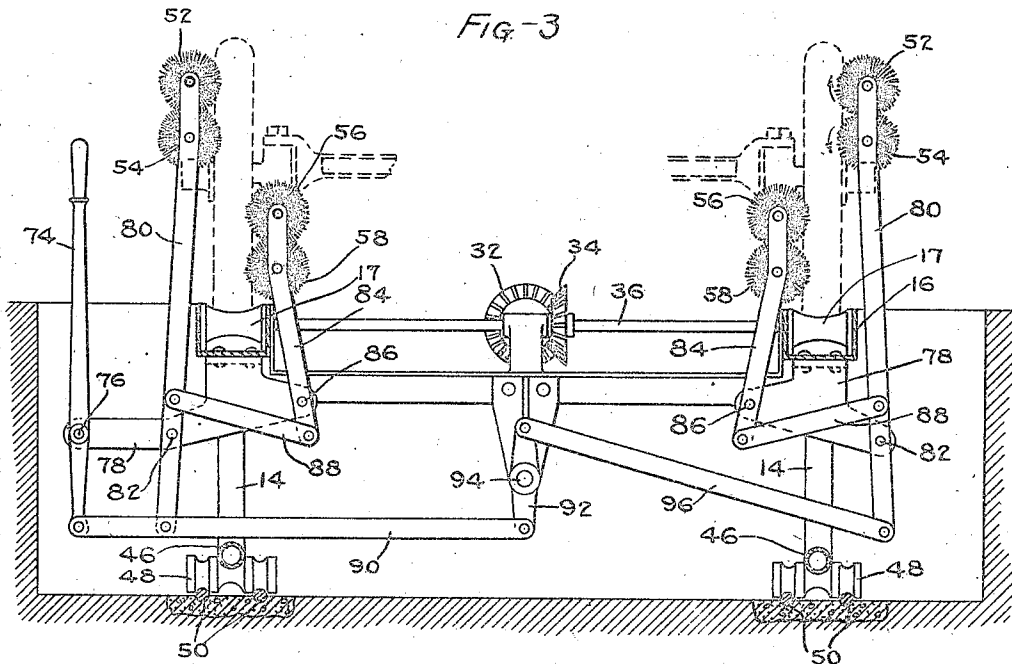


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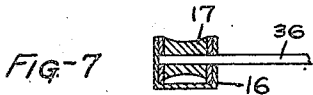
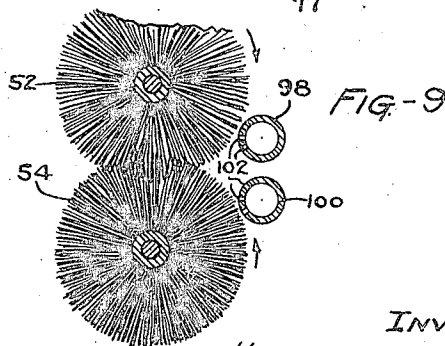
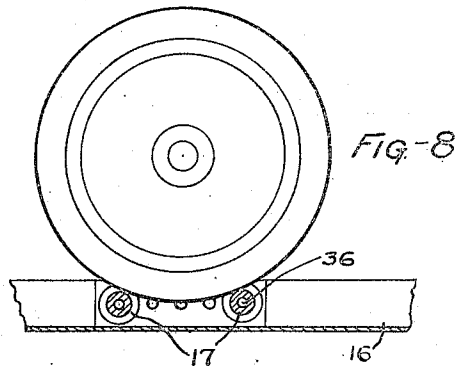
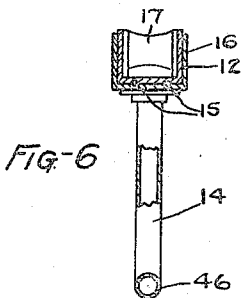
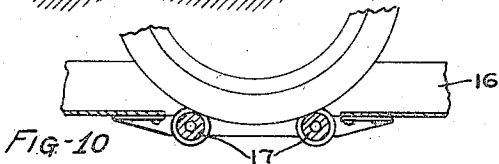
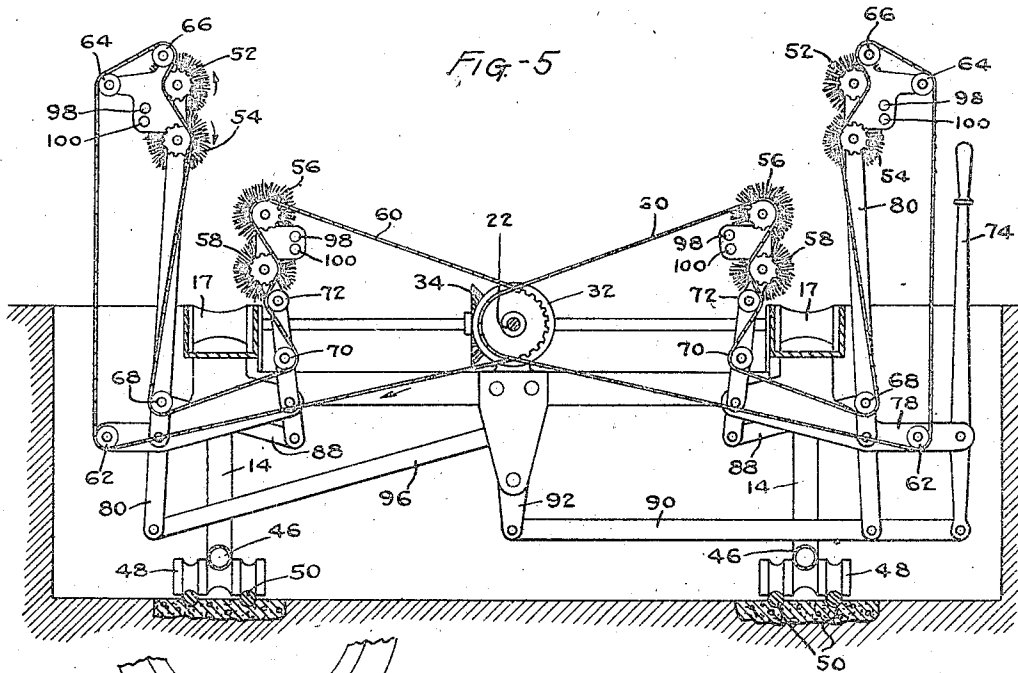
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APPARATUS FOR WASHING AUTOMOBILES.

1,412,732.

Specification of Letters Patent. Patented Apr. 11, 1922.

Application filed May 15, 1920. Serial No. 331,659.

To all whom it may concern:

Be it known that I, HAROLD E. YOUNG, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Apparatus for Washing Automobiles, of which the following is a specification.

My invention relates to apparatus for washing automobiles and an object is to provide an apparatus by means of which the hubs, spokes and rims of automobile wheels may be automatically washed in an efficient and expeditious manner while the body of the automobile is being washed either by hand or in a semi-automatic manner by means of a brush held in the hands and rotated by water pressure. In washing cars by hand a large amount of time is required to thoroughly clean the various parts of the wheels since these have numerous surfaces which have to be gone over. In carrying out my invention I provide a supporting frame or platform upon which automobiles may be run and the wheels rotated while the automobile remains at rest. As the wheels rotate they are acted upon on both sides thereof by rotating brushes supplied with water so that the washing is accomplished in a fraction of the time that is required when performed by hand.

The full objects and advantages of my invention will appear in connection with the detailed description thereof and the novel features embodied in my inventive idea will be particularly pointed out in the claims.

In the accompanying drawings, which illustrate the application of my invention,—

Fig. 1 is a view in side elevation of the apparatus with an automobile shown in position for washing the same. Fig. 2 is a top plan view of the apparatus. Fig. 3 is a front elevational view in which the front wheels of the automobile are shown in dotted lines. Fig. 4 is a view similar to Fig. 3 but showing the cleaning brushes moved out of engagement with the wheels. Fig. 5 is a view in section on the line 5—5 of Fig. 1. Fig. 6 is a view in section on the line 6—6 of Fig. 1. Fig. 7 is a detail view. Fig. 8 is a longitudinal sectional view showing the manner in which an automobile wheel is supported. Fig. 9 is a sectional detail on the line 9—9 of Fig. 1. Fig. 10 is a detail view of a slight modification.

Fig. 11 is a side view of a brush construction.

In carrying out my invention I provide a support for the apparatus or a pit in one end portion of which is placed a stationary supporting frame which includes vertical members 10 and horizontal members 12, the latter constituting part of a trackway. In the other end portion of the pit is a movable supporting frame which includes vertical members 14 and longitudinal members 16, the latter constituting part of a trackway. As shown, the members 12 and 16 are channel bars and are aligned so that the members 16 can slide upon the members 12, and in order to reduce friction between the same ball bearings 15 may be provided as shown in Fig. 6. The members 12 and 16 are provided with pairs of rollers 17 each pair being adapted to receive one of the automobile wheels as best shown in Fig. 8. Mounted in any convenient position, as at one end of the pit, is a motor 18 the driving shaft of which is connected by a belt 20 with a pulley secured to a longitudinal shaft 22 consisting of two parts telescoping with each other at 24. Secured to the shaft 22 near one end thereof is a bevel gear 26 in mesh with a bevel gear 28 secured to a transverse shaft 30 upon the outer end of which is secured one of the rollers 17. Secured to the shaft 22 near the other end thereof is a bevel gear 32 in mesh with a bevel gear 34 secured to a shaft 36 upon each of the outer ends of which is secured one of the rollers 17. It is, of course, obvious that the shaft 30 may in similar manner be extended to both sides of the apparatus so as to operate a roller 17 at both of its ends, but this is not necessary in case the automobile is so positioned that its rear is always brought above the shaft 30 since the rotation of one of the rear wheels will rotate the other one. The members 16 are made slidable upon the members 12 to accommodate the apparatus to automobiles having different wheel bases. The stationary members 12 are provided with a shaft 38 on each end of which is secured a reel or spool 40. One or both of these spools is provided with a handle 42 which when turned winds up cables 44 the free ends of which are attached to the members 16. If desired oppositely-attached cables may be used to pull the members 16

in the opposite direction, but this is not necessary since when cars of different wheel bases are to be run upon the apparatus for washing, the members 16 may be drawn up so that the respective rollers 17 are at a less distance from each other along the track than the length of the wheel base. When the front wheels drop between pairs of the rollers 17 the movable frame will be carried along by the movement of the car until the rear wheels drop between pairs of the rollers 17. In order that the movable frame may readily move in either direction it is provided with tubular horizontal members 46 adapted to fit into central peripheral grooves in rollers 48 adapted to roll upon rods 50 which fit into spaced peripheral grooves in the rollers 48. Mounted for rotation in contact with the wheels of the automobile when in washing position are pairs of upper brushes 52 and 54 and pairs of lower brushes 56 and 58. The brushes 52 and 54 engage the portion of the wheel which is outward and is in upper position when rotating, while the brushes 56 and 58 engage the portion of the wheel which is inward and is in lower position when rotating. The brushes are rotated by means of chains 60 running around sprocket wheels secured to the shaft 22, these chains also running around sprocket wheels on the shafts of the brushes and over guide rollers 62, 64, 66, 68, 70 and 72. In order that the brushes may not be in the way when the automobile is run on to the apparatus they are preferably mounted, as best shown in Figs. 3 and 4, so that the two pairs of brushes which operate upon a wheel can be moved toward and away from the wheel on opposite sides thereof by operating a lever 74 pivoted at 76 to a bracket 78. The brushes 52 and 54 are mounted on arms 80 pivoted at 82 on the bracket 78, while the brushes 56 and 58 are mounted on arms 84 pivoted at 86 on the bracket 78. The arms 80 and 84 are connected by links 88 attached to the arms 80 above the pivots 82 and attached to the arms 84 below the pivots 86. The operating lever 74 is pivoted at its lower end to a link 90, this link being pivoted to the lower end of one of the arms 80 and the link 90 being extended and pivoted to one end of a rocker arm 92 pivoted at 94 and the other end of which is pivoted to a link 96 connected to the lower end of arm 80 on the side of the apparatus opposite the operating lever 74. On account of these various connections it will be apparent that when the handle is in the position shown in Fig. 3 the brushes will be in engagement with the wheels, and when the lever is moved to the position shown in Fig. 4 the brushes will be moved away from the wheels. As shown in the drawings, the operating mechanism for the brushes is the same at both ends of the apparatus. It is necessary to supply water to the brushes in order that they may thoroughly clean the wheels of the car, and it is also desirable to supply water containing soap or other cleaning agent. I therefore provide two tubes 98 and 100 for each pair of brushes, these tubes lying adjacent the brushes and extending parallel to the axes thereof. As shown in Fig. 9 the tubes are provided with a plurality of perforations 102 for directing water upon the brushes. One of the tubes is supplied with plain water and the other is supplied with water containing soap or other cleaning agent by means of flexible tubing 104 and 106 connected to the tubes 98 and 100, respectively, the tubing being supplied by pipes 108 and 110 leading from any suitable source of supply, such as the water main, for the plain water and a tank elevated to provide a sufficient head for the soapy water and the supply being controlled by suitable cocks. In Fig. 10 the rollers for supporting the automobile wheels are shown mounted lower down in the channel members, the base portions of the latter being cut out for this purpose. Fig. 11 shows a desirable form of brush construction in which each pair of brushes such as 52 and 54 is made by winding mop cords upon the axes of the brushes to form alternate large and small sections in such manner that the large and small sections of the pairs of brushes will come opposite each other respectively.

The operation and advantages of my invention will be readily understood from the foregoing description. The automobile which is to be washed is run upon the supporting structure while the brushes for each wheel are in their separated position, as shown in Fig. 4, whereupon the levers 74 are operated to bring the brushes into the position shown in Fig. 3. The motor is then started to rotate the brushes and the wheels, and the cocks are opened in order that water and soapy water may be supplied to the brushes. The simultaneous rotation of the wheels and the brushes results in thoroughly and quickly cleaning all parts of the wheels.

I claim:

1. An apparatus for washing automobiles comprising a support, means for rotating the wheels of the automobile while on said support, inner and outer brushes for each of said wheels, means for rotating said brushes, and means for supplying water to said brushes.
2. An apparatus for washing automobiles comprising a support, means for rotating the wheels of the automobile while on said support, inner and outer brushes for each of said wheels, means whereby the inner and outer brushes of each set may be moved toward and away from each other, means for

rotating said brushes, and means for supplying water to said brushes.

3. An apparatus for washing automobiles comprising stationary and movable supports for the rear and the front wheels of an automobile, means for rotating the automobile wheels while on said supports, and means for cleaning said wheels while they are rotated.

4. An apparatus for washing automobiles comprising stationary and movable supports for the rear and the front wheels of an automobile, means for adjusting the position of said movable support with relation to said stationary support, pairs of rollers mounted on said supports adapted to receive the four automobile wheels, means for operating said rollers to rotate said wheels, and means for cleaning said wheels while they are rotated.

5. An apparatus for washing automobiles comprising stationary and movable supports for the rear and the front wheels of an automobile, means for adjusting the position of said movable support with relation to said stationary support, pairs of rollers mounted on said supports adapted to receive the four automobile wheels, means for operating said rollers to rotate said wheels, brushes for each of said wheels, means for rotating said brushes, and means for supplying water to said brushes.

6. An apparatus for washing automobiles comprising stationary and movable supports for the rear and the front wheels of an automobile, means for rotating said wheels when in position upon said supports, inner and outer brushes for each of said wheels, means whereby the inner and outer brushes of each set may be moved toward and away from each other, means for rotating said brushes, and means for supplying water to said brushes.

7. An apparatus for washing automobiles comprising stationary and movable supports for the rear and the front wheels of an automobile, pairs of rollers mounted on said supports adapted to receive the four automobile wheels, transverse shafts, means for driving said shafts, each of said shafts having one of said rollers secured upon its outer end, inner and outer brushes positioned above each of said pairs of rollers, means whereby the inner and outer brushes associated with

each pair of rollers may be moved toward and away from each other, means for rotating said brushes, and means for supplying water to said brushes.

8. An apparatus for washing automobiles comprising stationary and movable supports for the rear and the front wheels of an automobile, means for adjusting the position of said movable support with relation to said stationary support, pairs of rollers mounted on said supports adapted to receive the four automobile wheels, transverse shafts, means for driving said shafts, each of said shafts having one of said rollers secured upon its outer end, inner and outer brushes positioned above each of said pairs of rollers, pivoted arms upon which said inner and outer brushes are mounted respectively, connections between said pivoted arms whereby the inner and outer brushes associated with each pair of rollers may be moved toward and away from each other, means for rotating said brushes, means for supplying water to said brushes, and means for supplying water containing a cleaning agent to said brushes.

9. An apparatus for washing automobiles comprising stationary and movable supports for the rear and the front wheels of an automobile, means for adjusting the position of said movable support with relation to said stationary support, pairs of rollers mounted on said supports adapted to receive the four automobile wheels, a longitudinally-extending driving shaft, transverse shafts driven by said driving shaft, each of said transverse shafts having one of said rollers secured upon its outer end, two pairs of rotary brushes positioned above each of said pairs of rollers pivoted arms upon which said brushes are mounted, connections between said arms whereby the two pairs of brushes associated with each pair of rollers may be moved toward and away from each other, means for rotating said brushes from said driving shaft, means for supplying water to said brushes, and means for supplying water containing a cleaning agent to said brushes.

In testimony whereof I hereunto affix my signature.

HAROLD E. YOUNG.