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591,480, Nov. 2, 1962.

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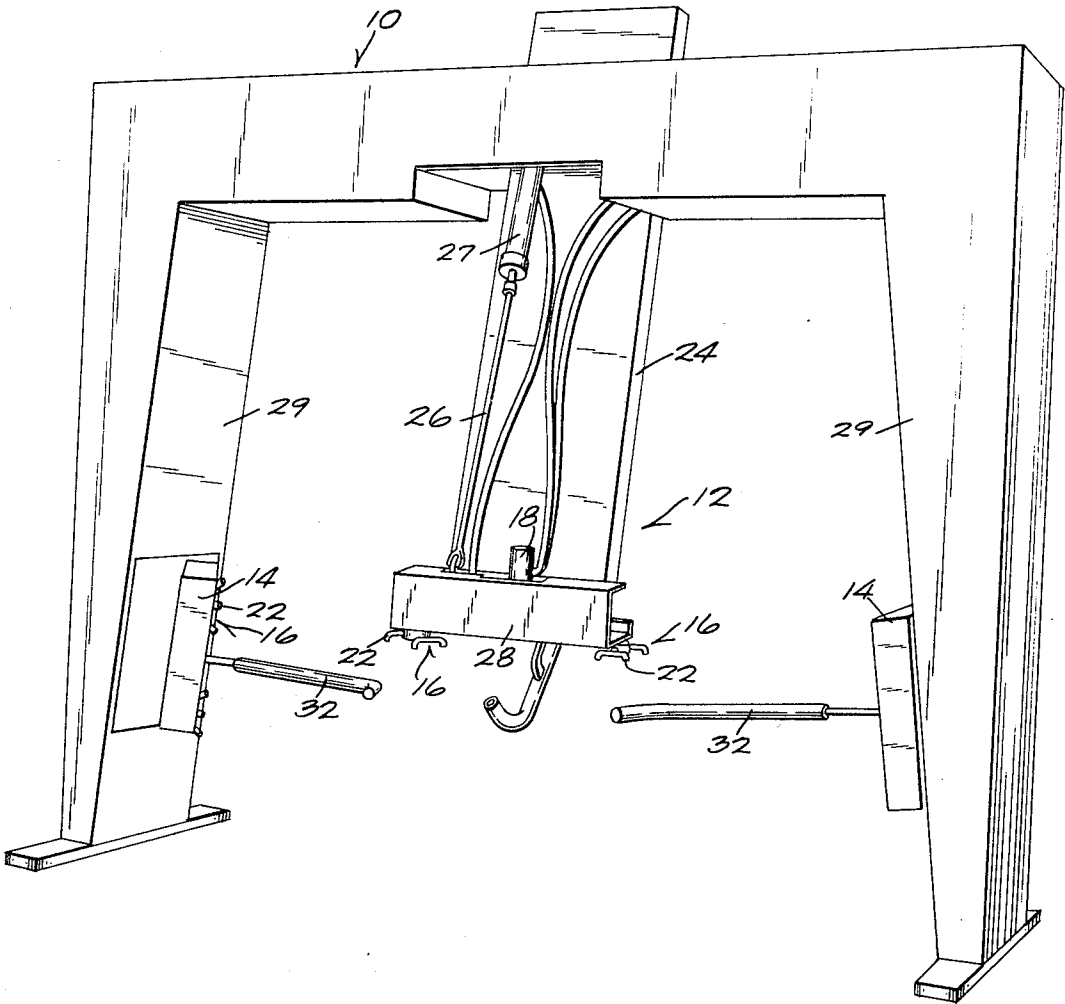
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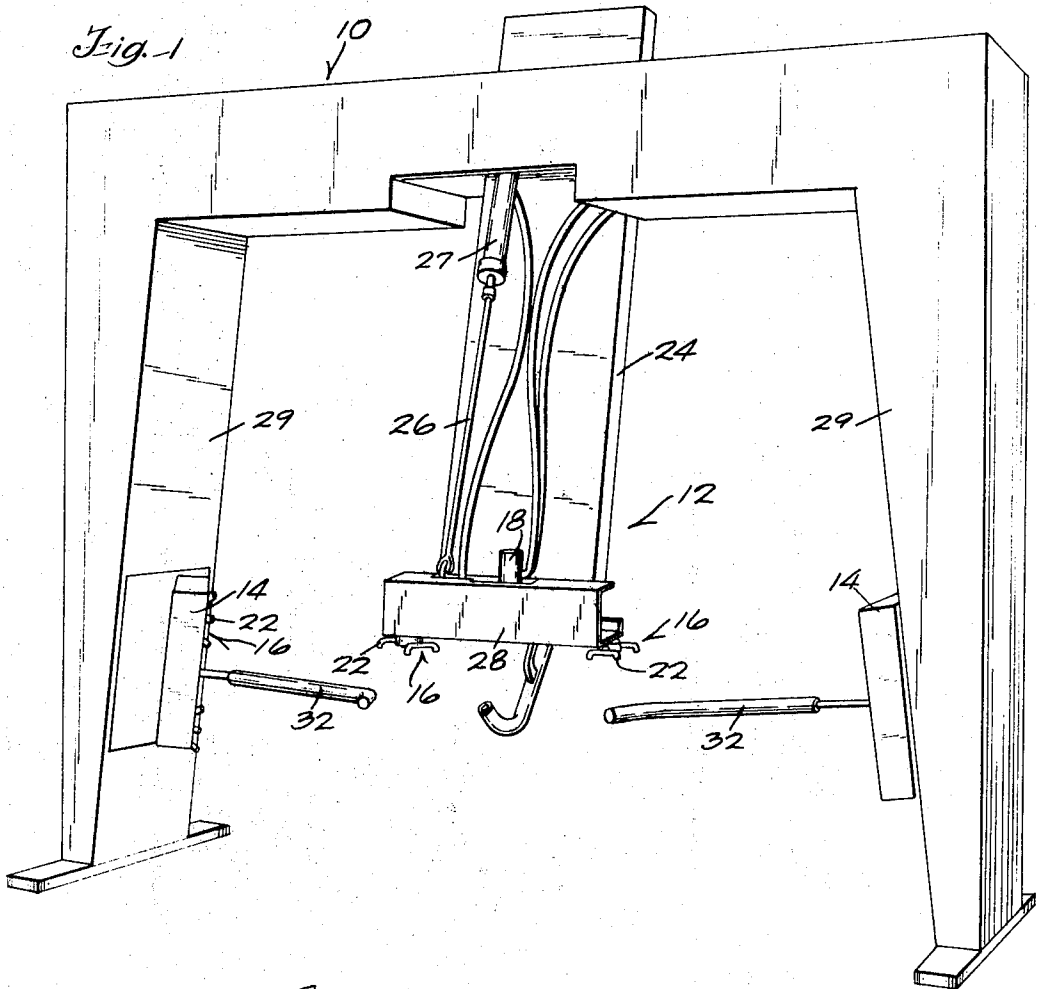
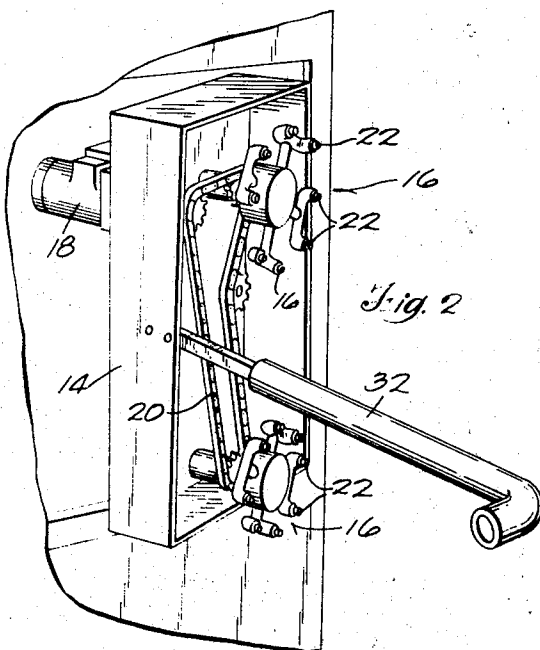
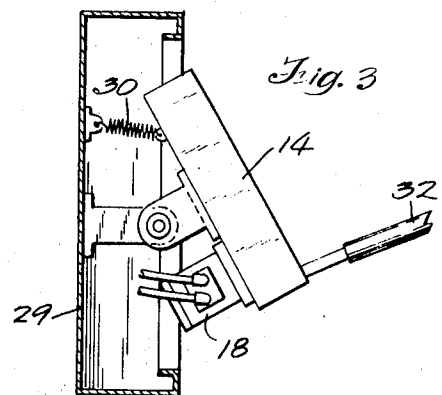
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[54] **CAR WASHING INSTALLATION**
7 Claims, 5 Drawing Figs.

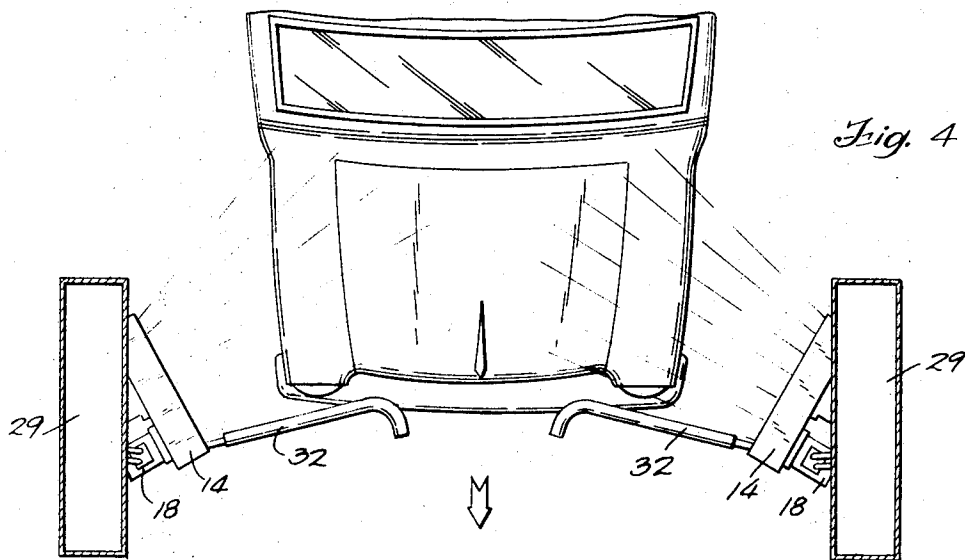
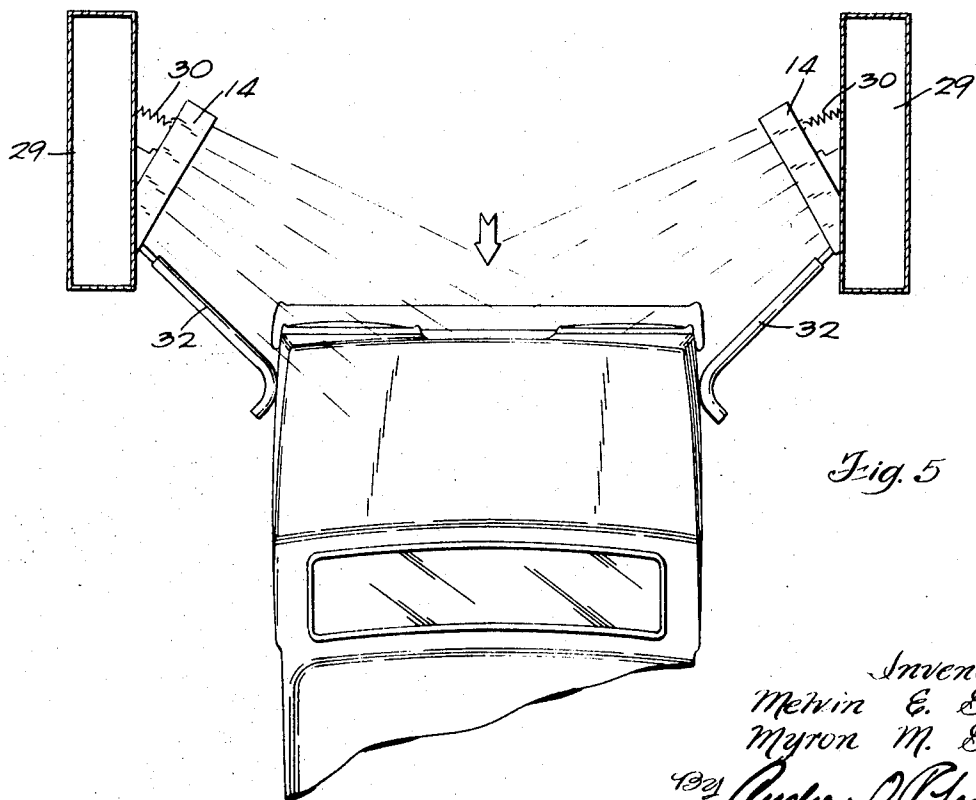
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134/181
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ABSTRACT: An arch-type car washing installation having spraying nozzles which are directed normally inwardly and towards the entrance of the arch and which are pivoted, as the car passes through the arch, to a position pointing inwardly and towards the exit of the arch.





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CAR WASHING INSTALLATION

CROSS REFERENCES

This application is a continuation-in-part of our application entitled, "ROTARY NOZZLE BRACKET," Ser. No. 591,480, filed Nov. 2, 1962, which is directed to the rotating clusters of nozzles which are disclosed in the present application. This application is also copending with our application entitled "AUTOMATICALLY ADJUSTABLE TOP SPRAYING UNIT FOR CAR WASHING INSTALLATIONS," Ser. No. 729,670, filed May 16, 1968, which is directed to the top follower mechanism which is disclosed in the present application.

BACKGROUND OF INVENTION

The field of invention pertains to automatic car washing installations and particularly to mechanisms which are adapted to change the direction of the washing spray during the washing cycle.

In almost all presently used car washing installations a car is moved through several spraying arches which are provided with spraying nozzles at the top and at both inside faces of the arch. The one disadvantage in using arches of this type is that the spray is directed from the sides and the top of the arch and, therefore, does not provide as effective washing action on the frontal and rear surfaces of the car as is provided on the top and side surfaces. Because of this characteristic of the arch-type car washing installations, fairly extensive manual labor has been required to clean the frontal and rear surfaces of the car.

SUMMARY OF INVENTION

The essence of the present invention resides in directing the washing spray towards the car as it approaches the arch and in changing the direction of spray as the car passes through the arch so that the spray is directed towards the sides of the car as it passes through the arch and towards the rear surface of the car as it leaves the arch. This result is attained by providing several rotating clusters of nozzles at each side of the arch and by biasing the clusters to a partially forwardly facing position, and by providing appropriate follower members which will come in contact with the car as it passes through the arch and will swing the clusters to a partially rearwardly facing position. The follower members are so designed that they will maintain the nozzles in the latter position for a time period after the car has passed through the arch so that the rear surface of the car may receive a sufficient amount of washing action by the rotating clusters of nozzles.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a car washing arch embodying the present invention;

FIG. 2 is a perspective fragmentary view of the left-hand nozzle-carrying panel;

FIG. 3 is a cross-sectional top plan view of one leg of the arch showing the nozzle-carrying panel in its normal partially forwardly facing position;

FIG. 4 is a top plan view of the car washing installation showing a car entering an arch embodying the present invention; and

FIG. 5 is a view similar to FIG. 4 but showing a car leaving the installation.

The major components of an arch embodying the present invention are best shown in FIG. 1. The arch 10 is of standard design and is provided with a top follower mechanism 12 and two side panels 14, 14. The top follower and the side panels are provided with clusters of nozzles 16 which are rotated by associated motor and chain means, 18 and 20, in a known manner. At least some of the nozzles 22 are directed slightly outwardly in respect to the axis of rotation of their respective cluster so as to assure some overlapping with the spray from the adjacent cluster. The top follower 12 is described in detail

in our copending application Ser. No. 729,670. It is designed to follow the top contour of the car which passes through the arch. The top follower may incorporate a simple parallelogram linkage, comprised of links 24 and 26, which function to maintain a constant distance between the nozzles and the top surface of the car. If desired, the top follower may incorporate a control (not shown) by means of which a cylinder 27 can be actuated to lengthen link 26 and thus tilt the nozzle carrying member 28 towards a car which approaches the arch, and to shorten link 26 as the car leaves the arch to thereby tilt the carrying member 28 towards the rear of the car.

Each of the side panels is pivotally mounted within the side columns 29 of the arch and is biased towards a partial forwardly facing position by a spring 30. In this position each rotating cluster of nozzles produces a whirling spray which is directed towards the front of or entrance to the arch. As a car approaches the arch the whirling spray of each of the clusters will impinge on the grill and other frontal surfaces of the car when the car is a considerable distance away from the entrance to the arch. This type of washing action will continue until the car will have advanced to the position shown in FIG. 4. At that point the car will engage the follower arms 32, and upon further advance, will pivot the panels to the partially rearwardly facing position shown in FIG. 5.

The panels will remain in the latter position throughout the passage of the car through the arch. During this time the whirling spray will, of course, impinge upon the side surfaces of the car. As the car leaves the arch the panels will remain in the partially rearwardly facing position until the follower members 32 have cleared the car. Since the followers remain in contact with the car after it has passed through the arch, the panels will remain in the partially rearwardly facing position for a sufficiently long time to cause the whirling spray to properly wash the rear bumper and trunk surfaces of the car. As the car proceeds further, the followers clear the car and the panels are moved by the springs back to their original partially forwardly facing position.

Although but a single embodiment of the present invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. A car washing installation adapted to apply liquid spray to a car as it passes through the installation, comprising: spray means positioned adjacent the path of the car through the washing installation; said spray means including nozzle means by means of which liquid spray may be directed to the car to be washed; means normally maintaining said nozzle means in a first position in which said nozzle means produce a spray which is directed towards said path and forwardly (towards the car entering the installation) in respect to the installation in order to cause the spray to impinge on the frontal surfaces of the car as it approaches the installation; and sensing means connected to said spray means and responsive to the passage of the car through the installation to change the position of said nozzle means to a second position in which said nozzle means produce a spray which is directed towards said path and rearwardly (towards the back of the car as it leaves the installation) in respect to the installation in order to cause the spray to impinge on the rear surfaces of the car as it leaves the installation.
2. A car washing installation according to claim 1 wherein said sensing means is comprised of follower means which partially projects into said path and which is engaged by the car as it enters the installation and is moved to thereby move said nozzle means to said second position as the car passes through the installation.
3. A car washing installation according to claim 2 wherein said follower means remains in engagement with the car for a time period after the car has passed through the installation to

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thereby retain said nozzle means in said second position for such time period.

4. A car washing installation according to claim 3 wherein said spray means includes a nozzle carrying member which is pivotally connected to a fixed member of the installation, and wherein said carrying member is pivoted to move said nozzle means from said first to said second position as said follower member is engaged and moved by the car passing through the installation.

5. A car washing installation according to claim 4 wherein said nozzle carrying member is normally maintained in a partially forwardly facing position by spring means and wherein

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said follower means is a lever which intercepts the car as it enters the installation, and which is moved by the car (as it passes through the installation) to cause said carrying member to pivot to a partially rearwardly facing direction.

6. A car washing installation according to claim 5 wherein said nozzle means is comprised of a plurality of clusters of nozzles and motor means for rotating said clusters.

7. A car washing installation according to claim 6 wherein each of said clusters contains at least some nozzles which are directed at an outwardly facing angle in respect to the axis of rotation of the cluster.

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