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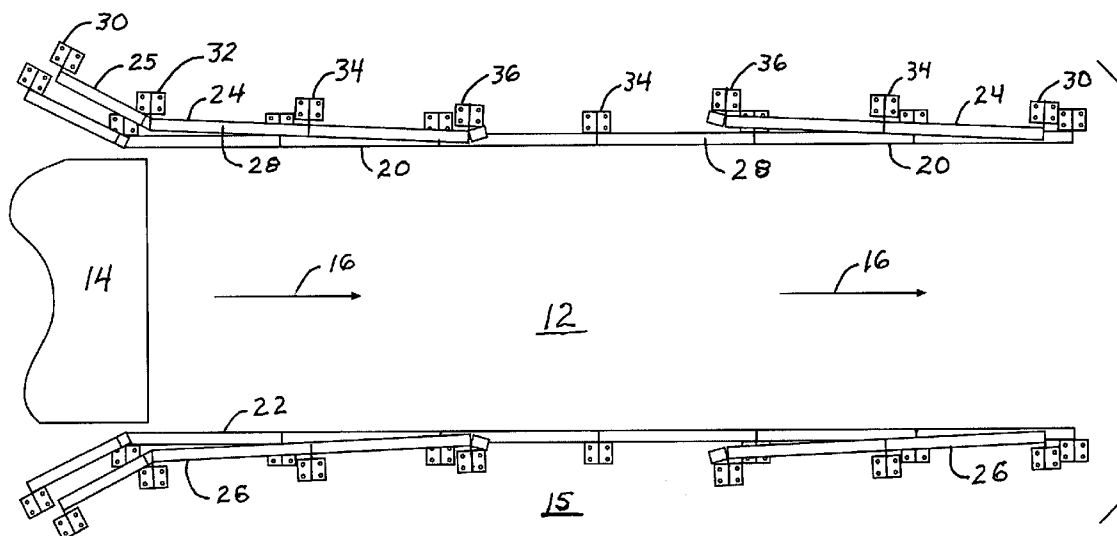
(19) **United States**(12) **Patent Application Publication****Ennis**(10) **Pub. No.: US 2006/0219127 A1**(43) **Pub. Date: Oct. 5, 2006**(54) **DUAL GUIDE RAIL SYSTEM FOR A
VEHICLE WASHING APPARATUS**(52) **U.S. Cl. 104/165**(76) **Inventor: G. Thomas Ennis, Inglewood, CA (US)**(57) **ABSTRACT**

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(2006.01)

A dual guide rail system for a vehicle washing apparatus having a predetermined path of a vehicle to be washed includes standard curb rails mounted on both sides of the path at a first height and upper curb rails mounted outside of the standard rails at a second height greater than the first height of the standard curb rails. The upper curb rails are skewed inwardly in a direction of travel of a vehicle being washed with respect to a standard curb rail. Each of the standard and curb rails is provided with a plurality of rollers along its length thereof which tend to rotate inwardly when contacted by a wheel of a vehicle.



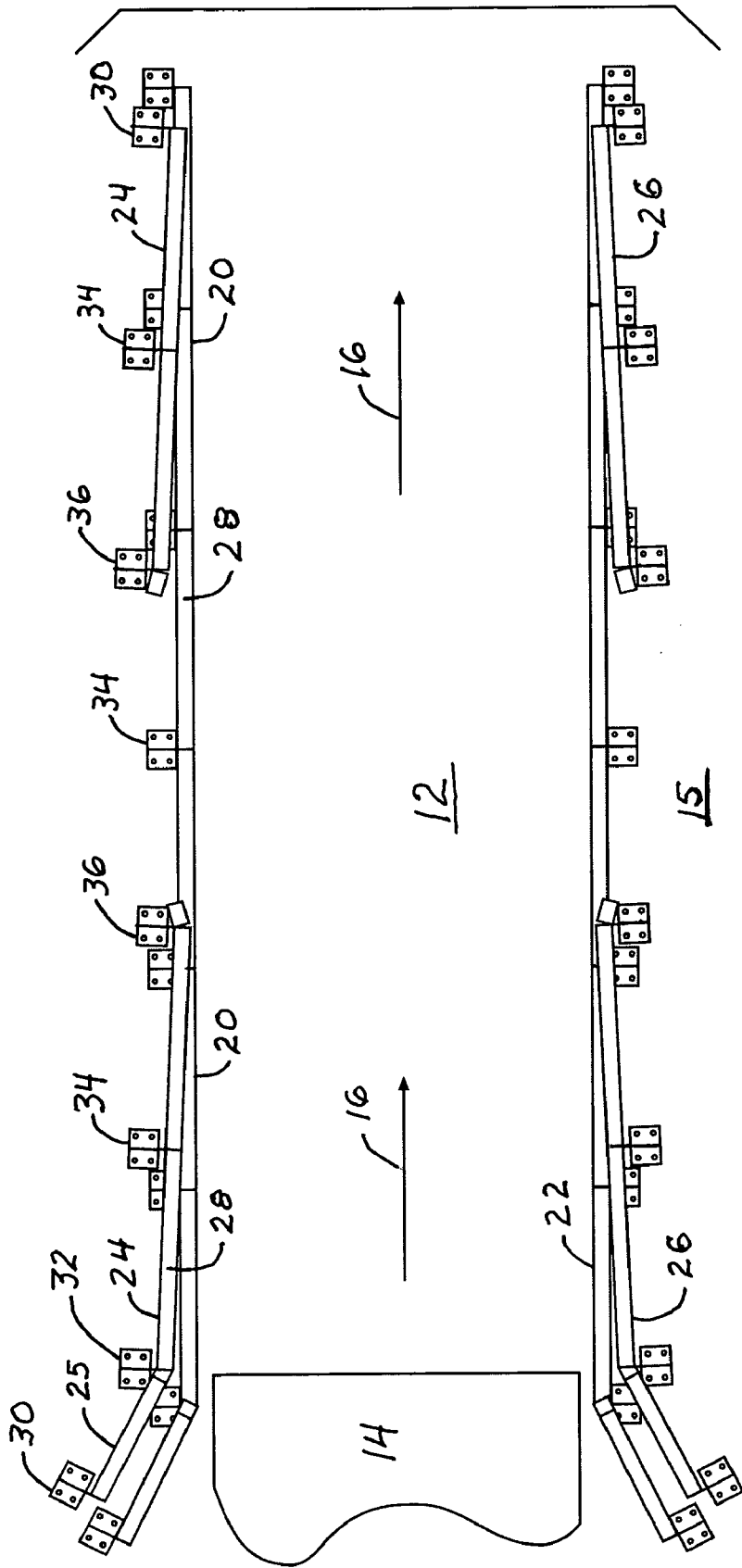


FIG. 1

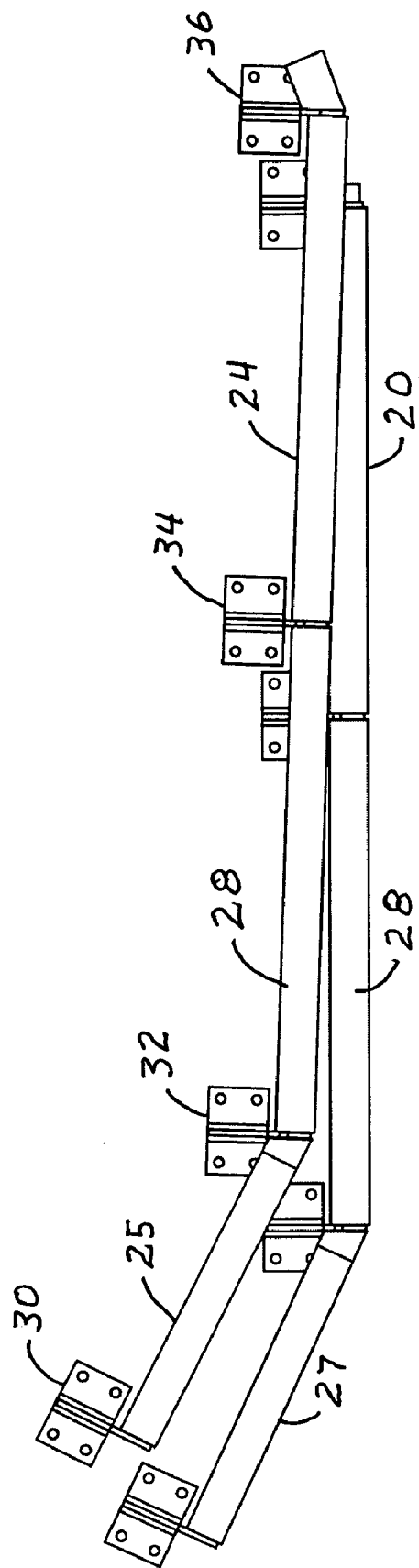


FIG. 2

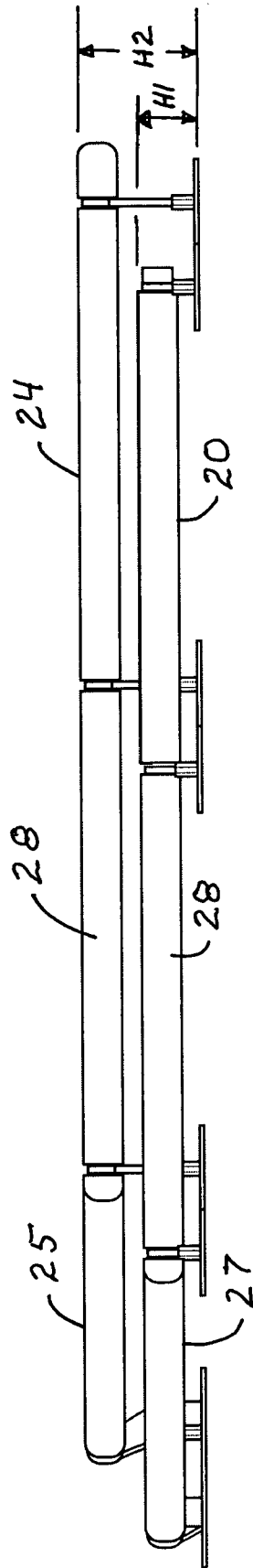
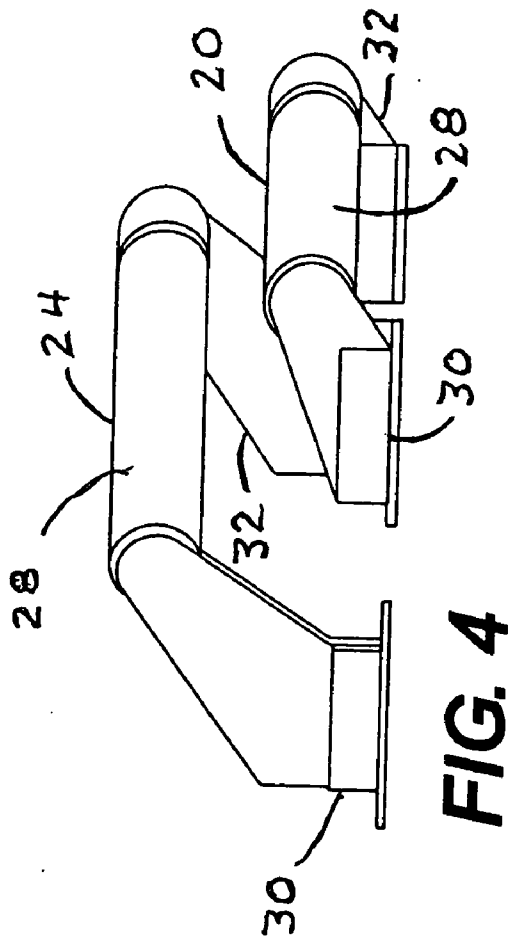
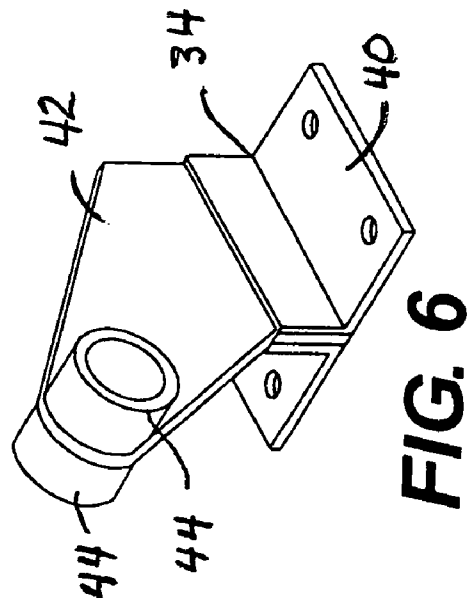
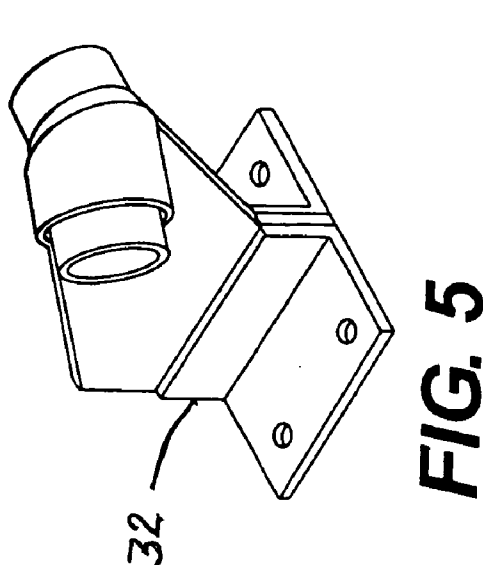


FIG. 3



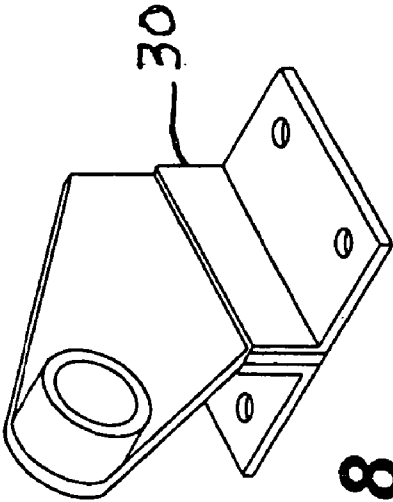


FIG. 8

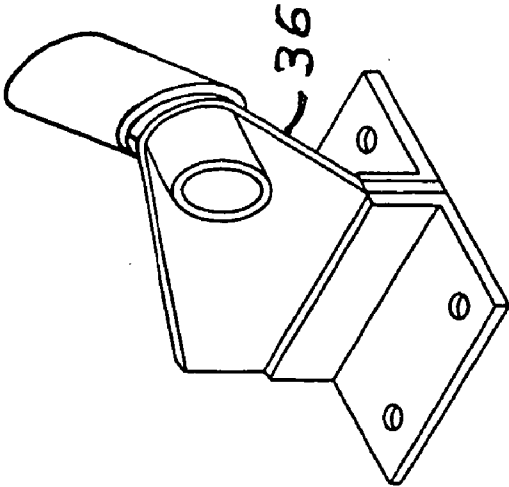


FIG. 7

DUAL GUIDE RAIL SYSTEM FOR A VEHICLE WASHING APPARATUS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention relates to a vehicle washing apparatus and, more particularly, to a dual guide rail system for a vehicle washing apparatus which guides and maintains the wheels of a large vehicle such as a bus in a predetermined path during a washing operation.

[0003] 2. Description of the Related Art

[0004] It is conventional in vehicle car washing devices to employ a standard curb rail on both sides of the path of a vehicle to be washed in order to maintain and guide a vehicle through the predetermined path during a washing operation. In connection with a vehicle washing apparatus of the type wherein a vehicle is driven through the washing apparatus during the washing operation rather than being conveyed through the apparatus by an automatic conveyor system, operators of the vehicle often tend to drive on top of a standard curb rail, thus causing damages to the rail such as bending and the like or causing the vehicle to go out of the predetermined path.

[0005] When washing large vehicles, particularly buses, if the driver of the large vehicle drives the vehicle on top of a standard curb rail, the damage caused by the vehicle traveling on top of the rail can be serious since the rail is often bent or otherwise deformed and must be replaced. Accordingly, there is a need for a guide rail system for a vehicle washing apparatus which makes it difficult for drivers of large vehicles such as buses, to drive on the top of a standard curb rail with one or more wheels.

SUMMARY OF THE INVENTION

[0006] It is object of the present invention to provide a dual guide rail system for a vehicle washing apparatus that employs an upper curb rail in addition to a standard curb rail on each side of the path of a vehicle to be washed in order to make it difficult for or preclude the driver of a vehicle such as a bus from driving on top of the standard curb rail.

[0007] It is another object of the present invention to provide a dual guide rail system for a vehicle washing apparatus having a standard curb rail and an upper curb rail mounted outside of and above the standard curb rail on each side of a predetermined path of the vehicle to be washed wherein the rails are provided with rollers which rotate inwardly and which tend to force the tires of a vehicle into the predetermined washing path.

[0008] It is a further object of the present invention to provide a dual guide rail system for a vehicle washing apparatus having both a standard curb rail and an upper curb rail on each side of a predetermined path of the vehicle to be washed and wherein the curb rails are both disposed at an outward angle away from the path at the entrance to the path.

[0009] The present invention achieves the above and other objects by providing a dual guide rail system for a vehicle washing apparatus having a predetermined path of a vehicle to be washed which comprises a first standard curb rail mounted adjacent one outer edge of the path at a first height above a vehicle supporting surface and a second standard

curb rail mounted adjacent an opposite outer edge of the path at the first height above the vehicle supporting surface to define the predetermined path therebetween. The system further includes a first upper curb rail mounted outside of the first standard curb rail and positioned at a second height higher than the first height of the standard curb rail above the vehicle supporting surface and a second upper curb rail mounted outside of the second standard curb rail and positioned at the second height higher than the first height of the standard curb rail above the vehicle supporting surface. Each of the standard and upper curb rails are provided with rollers which are freely rotatable and tend to rotate inwardly when contacted by a tire of a vehicle in the path being washed. Each of the standard curb rails and the upper curb rails are disposed at an outward angle away from the path of the vehicle to be washed adjacent an entrance to and an exit from the path. Moreover, the upper curb rail on each side may be slightly skewed inwardly with respect to the standard curb rail so that the upper curb rail and the standard curb on each side are in a non-parallel relationship when viewed from above.

[0010] The system further includes first brackets for mounting the standard curb rails at the first height and second brackets for mounting the upper curb rails at the second height with each of the brackets comprising a base, a flange upstanding from the base and means fixed to an outer end of the flange for rotatably mounting an end of one of the rollers. The flange of each bracket is angled inwardly toward the path of the vehicle being washed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] **FIG. 1** is a top plan view of a dual guide rail system for a vehicle washing apparatus according to the present invention;

[0012] **FIG. 2** is a top plan view of one side of an entrance section of the dual guide rail system;

[0013] **FIG. 3** is a side elevational view of the entrance section of **FIG. 2**;

[0014] **FIG. 4** is a front view of the entrance section of **FIG. 2**;

[0015] **FIG. 5** is a perspective view of a mounting bracket at the inner end of the entrance section and an exit section for connecting an angled portion with a straight portion of a standard or an upper curb rail;

[0016] **FIG. 6** is a perspective view of a mounting bracket for connecting two straight sections of either a standard or an upper curb rail;

[0017] **FIG. 7** is a perspective view of a mounting bracket at the inner end of an upper curb rail section at the entrance and at the inner end of the exit section of the dual guide rail system; and

[0018] **FIG. 8** is a prospective view of a mounting bracket at the entrance and the exit ends of the standard and upper curb rails of the dual guide rail system.

DETAIL DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] Illustrated in **FIGS. 1-8** is a dual guide rail system, generally indicated by the numeral **10**, for a vehicle washing

apparatus having a predetermined path 12 of a vehicle 14 to be washed and which is mounted on a vehicle supporting surface 15. The direction of travel of the vehicle 14 through the guide rail system is indicated by the arrows 16 in FIG. 1.

[0020] The dual guide rail system includes a first standard curb rail 20 mounted adjacent an outer edge of the path 12 of a vehicle to be washed and a second standard curb rail 22 mounted adjacent an opposite outer edge of the path 12.

[0021] The dual guide rail system further includes a first upper curb rail 24 mounted outside of the first standard curb rail 20 and a second upper curb rail 26 mounted outside of the second standard curb rail 22. Moreover, as shown in the top plan view of FIG. 1, the upper curb rail 24, 26 on each side at the entrance section preferably is slightly skewed inwardly in the direction of vehicle travel so that the upper curb rail and the standard curb rail are in a non-parallel relationship when viewed from above. This construction forces a tire of vehicle back into the predetermined path 12 if the tire jumps the lower curb rail in an outer direction. The upper curb rail at the exit end on each side is also skewed inwardly in the direction of travel of a vehicle in a manner similar to that at the entrance section.

[0022] As shown in FIG. 3, the first and second standard curb rails are mounted at a first height H1 and the first and second upper curb rails are mounted at a second height H2 which is higher than the first height H1. Suitable heights for H1 and H2 in a vehicle washing apparatus designed for use with large vehicles such as buses, are approximately 6 and $\frac{5}{8}$ inches for H1 measured to the top of the standard curb rail and approximately 14 inches for H2 measured to the top of the upper curb rail.

[0023] As shown in FIG. 4, each upper curb rail 24 or 26 is mounted higher and outside of a standard curb rail 20, 22 so that the two curb rails have the effect of forming an inwardly directed slant therebetween at an angle of approximately 45° from the horizontal surface supporting the vehicle at the entrance to the predetermined path 12. Because of the skewed position of the upper curb rails, the angle of slant increases in the direction of travel of a vehicle.

[0024] Each of the standard curb rails 20, 22 and the upper curb rails 24, 26 are provided with a plurality of rollers 28.

[0025] As shown in FIG. 1, the upper curb rails 24, 26 extend for a distance of 15 to 20 feet from the entrance to the vehicle path and a distance of 15 to 20 feet at the exit end of the path of the vehicle to be washed. Moreover, each upper curb rail is provided with an angled portion 25 at its entrance ends with the angle being disposed outwardly away from the path of the vehicle. A front end of each upper curb rail at the exit end is also provided with a short angled outwardly section.

[0026] Similarly, each standard curb rail is provided with an angled portion 27 at the entrance, with the angled portion being disposed at an outward angle away from the path of the vehicle. Each angled portion 25 of each upper curb rail is disposed outwardly at a greater angle than each angled portion 27 of each standard curb rail.

[0027] The standard and upper curb rails are secured in place by a plurality of brackets secured to the vehicle

mounting surface 15. The brackets for the upper curb rails are greater in height than the brackets for the standard curb rails.

[0028] Shown in FIG. 8 is a bracket 30 for mounting the entrance and exit ends of each of the standard and upper curb rails. FIG. 5 illustrates a mounting bracket for connecting the inner ends of the angled portions 25 and 27 at the entrance of each standard and upper curb rail, to a straight section of a rail.

[0029] Illustrated in FIG. 6 is a bracket 34 for mounting the ends of two straight sections of the standard and upper curb rails. FIG. 7 illustrates a mounting bracket 36 at the inner ends of the entrance and exit sections of each upper curb rail.

[0030] Each bracket 30, 32, 34, 36 has the same general construction configuration with the brackets supporting the upper curb rails being higher than the brackets supporting the standard curb rails. Thus, as shown in FIG. 6, for example, each bracket has a base 40 having an upstanding flange 42 securely attached thereto. The flange 42 is angled inwardly towards the path of the vehicle being washed. Attached to the inner upper end of the flange 42 is a pair of tubular members 44 which constitute means for rotatably mounting ends of the rollers. The bracket 34 shown in FIG. 6 has a tubular member 44 extending in each direction while the bracket 30 shown in FIG. 8 has only one tubular member extending from the flange since it is an end section bracket. FIGS. 5 and 7 illustrate brackets 32 and 36, respectively, which have one straight tubular member and one angular tubular member since they connect straight sections with angular sections of the rollers.

[0031] During a washing operation, if a tire of a vehicle traveling through the path while the vehicle is being washed, travels over a standard rail, it will come in contact with an upper curb rail where upon the roller on the upper curb rail will rotate inwardly and caused the wheel to move back towards a predetermined path so that a roller on the standard curb rail will also rotate inwardly and the vehicle will be directed back towards the center of the path. Accordingly, the guide rail system of the present invention provides a simple and economic means for guiding and maintaining a vehicle being washed in a predetermined path as it travels through the path during a washing operation.

[0032] While preferred embodiments have been set forth with specific details, further embodiments, modifications and variations are contemplated according to the various aspects of the present invention.

I claim:

1. A dual guide rail system for a vehicle washing apparatus having a predetermined path of a vehicle to be washed comprising:

- a first standard curb rail mounted adjacent an outer edge of said path at a first height above a vehicle supporting surface;
- a second standard curb rail mounted adjacent an opposite outer edge of said path at said first height above the vehicle supporting surface;

a first upper curb rail mounted outside of said first standard curb rail and positioned at a second height higher than said first height above the vehicle supporting surface;

a second upper curb rail mounted outside of said second standard curb rail and positioned at said second height higher than said first height above the vehicle supporting surface; and

wherein each of said standard and upper curb rails is provided with a plurality of rotatable rollers along its length thereof.

2. A dual guide rail system according to claim 1, wherein both said standard curb rails and said upper curb rails are disposed at an outward angle away from said path adjacent an entrance thereof.

3. A dual guide rail system according to claim 2, wherein each of said auxiliary curb rails is disposed outwardly at a greater angle than each of said standard curb rails.

4. A dual guide rail system according to claim 1, which includes a plurality of first brackets for mounting said

standard curb rails at said first height and a plurality of second brackets for mounting said upper curb rails at said second height, each of said brackets comprising:

a base,

a flange mounted to and upstanding from said base; and

means fixed to an upper end of said flange for rotatably mounting an end of one of said rollers.

5. A dual guide rail system according to claim 4, wherein said means comprises a tubular member.

6. A dual guide rail system according to claim 4, wherein said flange is angled inwardly toward said path.

7. A dual guide rail system according to claim 1, wherein each upper curb rail is skewed inwardly with respect to a standard curb rail in a direction of travel of a vehicle being washed.

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