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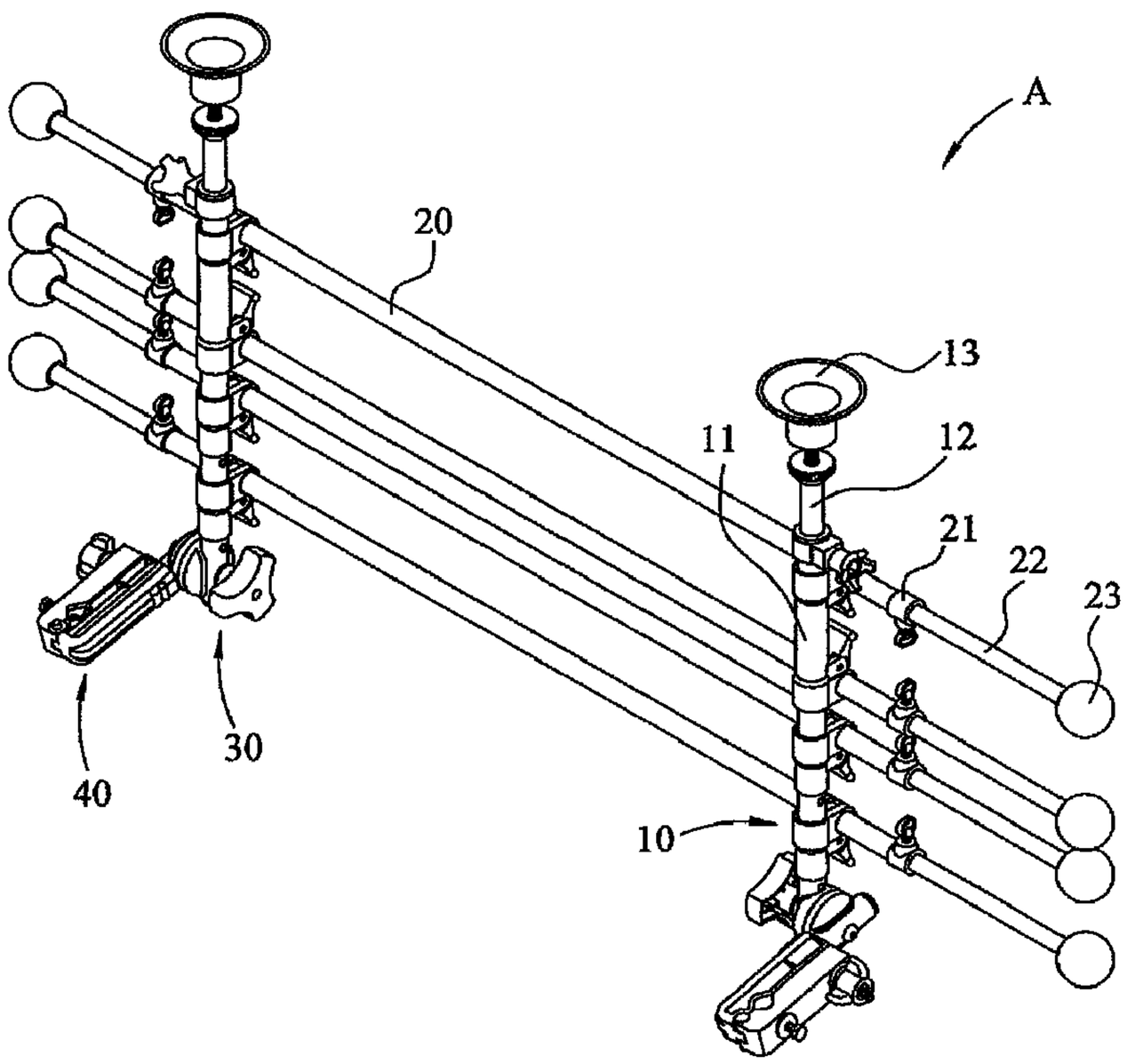
(54) Titre : DISPOSITIF DE RACCORDEMENT D'UNE BARRIERE D'HABITACLE D'AUTOMOBILE A DES POTEAUX A APPUIS-TETE

(54) Title: CONNECTION DEVICE FOR CONNECTING CAR BARRIER TO HEAD RESTRAINT POSTS



(57) Abrégé/Abstract:
A car barrier includes two posts and a plurality of bars are connected between the two posts. Each bar includes a retractable inner tube. Two respective top ends of the two posts are in contact with a vehicle ceiling and two respectively lower ends of the two posts are connected with two respective connection devices. Two clamping units are connected to the two connection devices and each clamping unit includes two members and each member has a notch defined in an inner surface thereof. The first member and the second member clamp a support rod of a head restraint between the first and second notches.

ABSTRACT OF THE DISCLOSURE

A car barrier includes two posts and a plurality of bars are connected between the two posts. Each bar includes a retractable inner tube. Two respective top ends of the two posts are in contact with a vehicle ceiling and two respectively lower ends of the two posts are connected with two respective connection devices. Two clamping units are connected to the two connection devices and each clamping unit includes two members and each member has a notch defined in an inner surface thereof. The first member and the second member clamp a support rod of a head restraint between the first and second notches.

CONNECTION DEVICE FOR CONNECTING CAR BARRIER TO HEAD RESTRAINT POSTS

FIELD OF THE INVENTION

The present invention relates to a car barrier which is connected to the support rods of the head restraint so as to save space.

BACKGROUND OF THE INVENTION

A conventional car barrier 70 is shown in Figs. 9 and 10, and generally includes two posts 72 and each of which is adjustably connected with a sleeve 71. A plurality of bars 80 are connected between the two posts 72 and U-shaped members 82 are used to be connected between any two of the bars 80 by locking units 81. A top member 73 and a bottom member 74 are respectively connected to two ends of each of the two posts 72 so as to contact with the ceiling and floor of the car. The barrier 70 separates the space between the drivers/passengers and the pets. It is noted that the barrier 70 occupies a lot of space because the posts 72 are located between the ceiling and the floor of the car. Besides, the pets usually hit the lower sections of the posts 72 regularly to make a lot of noise and the barrier 70 needs to be secured often.

The present invention intends to provide a barrier which is connected between to the posts of the head restraints and the ceiling so as to save a lot of space and reduce the times that the pets hit the barrier.

SUMMARY OF THE INVENTION

The present invention relates to a car barrier that comprises two posts and a plurality of bars are connected between the two posts. Two respective top ends of the two posts are in contact with a vehicle ceiling and two respectively lower ends of the two posts are connected with two respective connection devices. Two clamping units are connected to the two connection devices and each clamping unit includes a first member and a second member. The first member has a first notch defined in an inner surface thereof and the second member has a second notch defined in an inner surface thereof. The second notch faces the

first notch. The first member and the second member clamp a support rod of a head restraint between the first and second notches.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view to show the car barrier of the present invention;

Fig. 2 shows the car barrier viewed from another angle;

Fig. 3 is an exploded view to show the connection device of the car barrier of the present invention;

Fig. 4 shows another embodiment of the car barrier of the present invention;

Fig. 5 shows that the car carrier is connected to the post of the head restraint;

Fig. 6 is a side view to show that the car carrier is connected between the car ceiling and the post of the head restraint;

Fig. 7 is a rear view to show a pet is separated from the driver by the car carrier of the present invention;

Fig. 8 shows the clamping unit can be angle adjustable;

Fig. 9 shows a conventional car barrier, and

Fig. 10 shows the conventional car barrier is installed in a car.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figs. 1 to 3, the car barrier "A" of the present invention comprises two posts 10 and a plurality of bars 20 are connected between the two posts 10. Each of the posts 10 includes a retractable inner tube 12 which can be positioned relative to the outer tube 11 by a locking unit (not numbered). A top member 13 is connected to the top end of each post 10 so as to be in contact with the car ceiling. Two respectively lower ends of the two posts 10 are connected with two respective connection devices 30. Each bar 20 includes two retractable inner tubes 22 inserted into two ends thereof and the inner tubes 22 can be positioned relative to the bar 20 by two respectively locking units 21. A

ball-shaped end member 23 is connected to the distal end of each inner tube 22 so as not scrub the glass of inner surface of the car. It is noted that the bars 20 can also be the type as shown in Fig. 4 wherein a U-shaped member 24 is connected between two ends of any two bars 20.

Each of the connection devices 30 is rotatable relative to the posts 10 and the clamping units 40 are pivotable to the connection devices 30 respectively. A connection tube 34 is connected between the connection device 30 and the first member 41.

Each connection device 30 includes a first disk member 31 and a second disk member 32, the first disk member 31 has a first toothed surface 311 which is removably engaged with a second toothed surface 321 of the second disk member 32. A spring 33 is biased between the first and second disk members 31, 32. A first groove 312 is defined in an outer surface thereof so as to receive the post 10 therein and a second groove 322 is defined in an outer surface of the second disk member 32 so as to receive an end of the connection tube 34. A bolt 35 extends through the connection tube 34, the second disk member 32, the spring 33, the first disk member 31, the post 10 and is connected with another knob 36.

Two clamping units 40 are connected to the two connection devices 30 and each clamping unit 40 includes a first member 41 and a second member 50. The first member 41 has a first notch 45 defined in an inner surface thereof and the second member 50 has a concavity 53 defined in an inner surface thereof. The first notch 45 faces the concavity 53. A clamping member 54 is movably engaged with the concavity 53 and a second notch 541 is defined in the clamping member 54. A bolt 55 extends through the second member 50 and is threadedly connected to the clamping member 54.

The first member 41 has a first recess 42 defined in the inner surface and a first end thereof and a through hole 44 is defined through a wall of an outer surface of the first member 41 and communicates with the first recess 42. The connection tube 34 has the other end inserted into the first end of the first member 41 and an elongate hole 341 is defined through the connection tube 34. The second member 50 has a second recess 51 which is located corresponding

to the first recess 42, a bolt 56 extends through the through hole 44 of the first member 41, the elongate slot 341 of the connection tube 34, the first recess 42 of the first member 41, the second recess 51 of the second member 50 and is connected with a knob 57.

It is noted that two protrusions 43 extend from an outer surface of the first member 41 and the through hole 44 is located between the two protrusions 43. A C-shaped flange 52 extends from an outer surface of the second member 50. The bolt 56 has an engaging end 561 which is perpendicular to an axis of the bolt 56 and is engaged with a space between the two protrusions 43 so that the bolt 56 is not rotated relative to the first member 41. The bolt 56 includes a threaded section 562 which is threadedly connected to the knob 57 which is engaged with the annular flange 52. A pin pivotably connects the two respective second ends of the first and second members 41, 50. Further referring to Fig. 5, the first member 41 and the second member 50 clamp a support rod 62 of a head restraint 61 between the first and second notches 45, 541.

As shown in Figs. 6 and 7, the barrier "A" is connected between the ceiling and the support rod 62 of the head restraint 61 so that a space between the floor and the seatback of the seats of the driver and the passenger is available to the pet. Besides, the pet tends not to hit the barrier "A" because the lower side of the barrier "A" is ended at the support rod 62 of the head restraint 61.

As shown in Fig. 8, the clamping unit 40 can be angle adjustable relative o the post 10 when the inclination of the seatback is adjusted. The knob 36 is slightly loosened and the second disk member 32 is slightly pushed away from the first disk member 31 by the spring 33, and the second disk member 32 is then rotated an angle so that the whole clamping unit 40 is moved with the connection tube 34 engaged with the second groove 322 of the second disk member 32. By the adjustment, the clamping unit 40 can properly clamp the support rod 62 of the head restraint 61.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

WHAT IS CLAIMED IS:

1. A car barrier comprising:

two posts and a plurality of bars connected between the two posts, two respective top ends of the two posts adapted to be in contact with a vehicle ceiling, two respectively lower ends of the two posts connected with two respective connection devices, two clamping units connected to the two connection devices and each clamping unit including a first member and a second member, the first member having a first notch defined in an inner surface thereof and the second member having a second notch defined in an inner surface thereof, the second notch facing the first notch, the first member and the second member adapted to clamp a support rod of a head restraint between the first and second notches.

2. The barrier as claimed in claim 1, wherein each of the connection devices is rotatable relative to the posts and the clamping units are pivotable to the connection devices respectively.

3. The barrier as claimed in claim 1, wherein a connection tube is connected between the connection device and the first member.

4. The barrier as claimed in claim 3, wherein the first member has a first recess defined in the inner surface and a first end thereof and a through hole is defined through a wall of an outer surface of the first member and communicates with the first recess, the connection tube includes an elongate hole defined therethrough, the second member has a second recess which is located corresponding to the first recess, a bolt extends through the through hole of the first member, the elongate slot of the connection tube, the first recess of the first member, the second recess of the second member and is connected with a knob.

5. The barrier as claimed in claim 4, the first and second members are pivotably connected to each other at two respective second ends thereof.

6. The barrier as claimed in claim 4, wherein two protrusions extend from an outer surface of the first member and the through hole is located between the two protrusions, a C-shaped flange extends from an outer surface of the second member, the bolt has an engaging end which is perpendicular to an axis of the bolt and is engaged with a space between the two protrusions, the bolt includes a threaded section which is threadedly connected to the knob which is engaged with the annular flange.

7. The barrier as claimed in claim 1, wherein the second member has a concavity defined in the inner surface thereof and a clamping member is movably engaged with the concavity, the second notch is defined in the clamping member, a bolt extends through the second member and is threadedly connected to the clamping member.

8. The barrier as claimed in claim 1, wherein each connection device includes a first disk member and a second disk member, the first disk member has a first toothed surface which is removably engaged with a second toothed surface of the second disk member, a spring is biased between the first and second disk members, a first groove is defined in an outer surface thereof so as to receive the post therein and a second groove is defined in an outer surface of the second disk member so as to receive the connection tube, a bolt extends through the connection tube, the second disk member, the spring, the first disk member, the post and is connected with a knob.

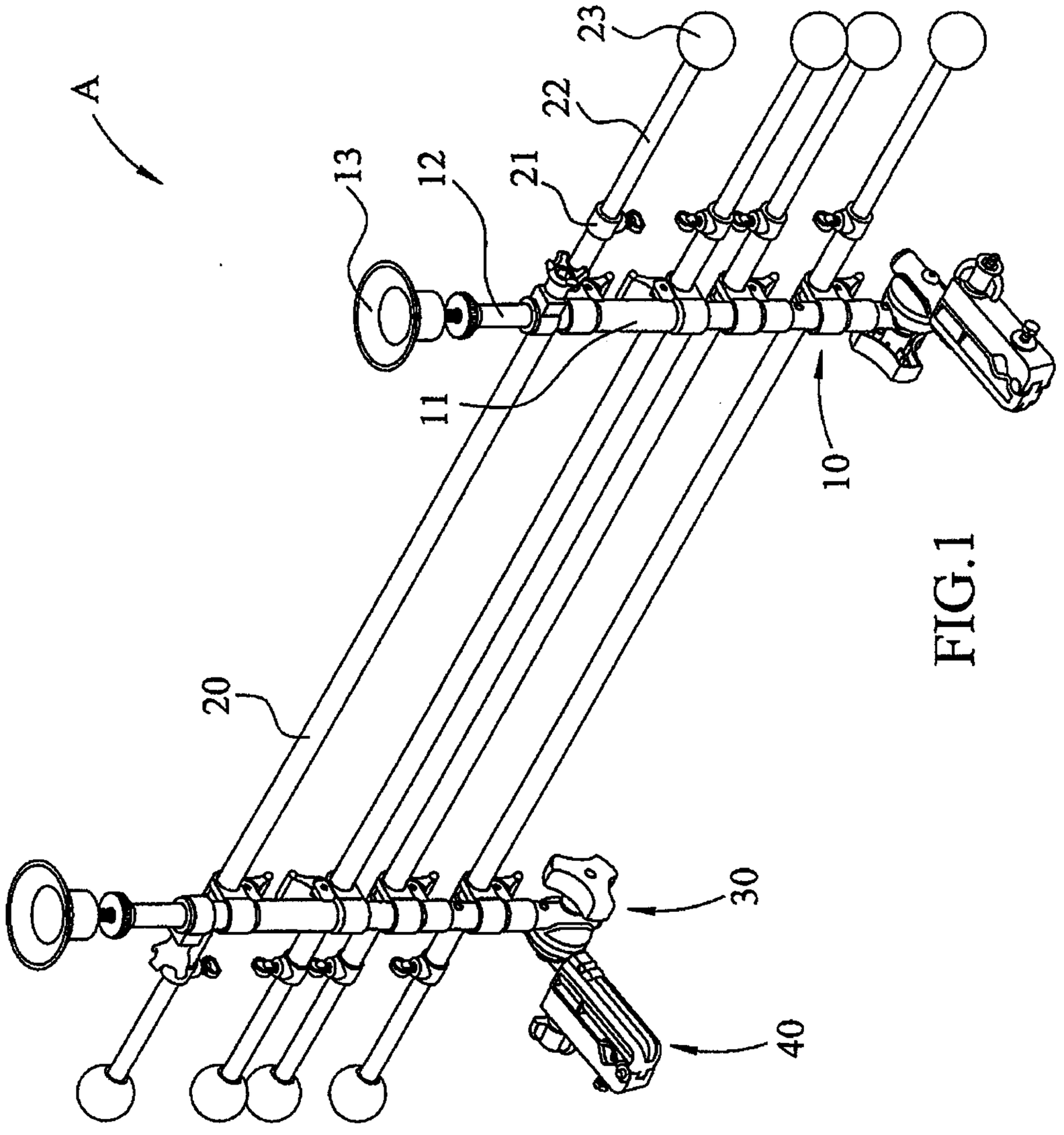


FIG.1

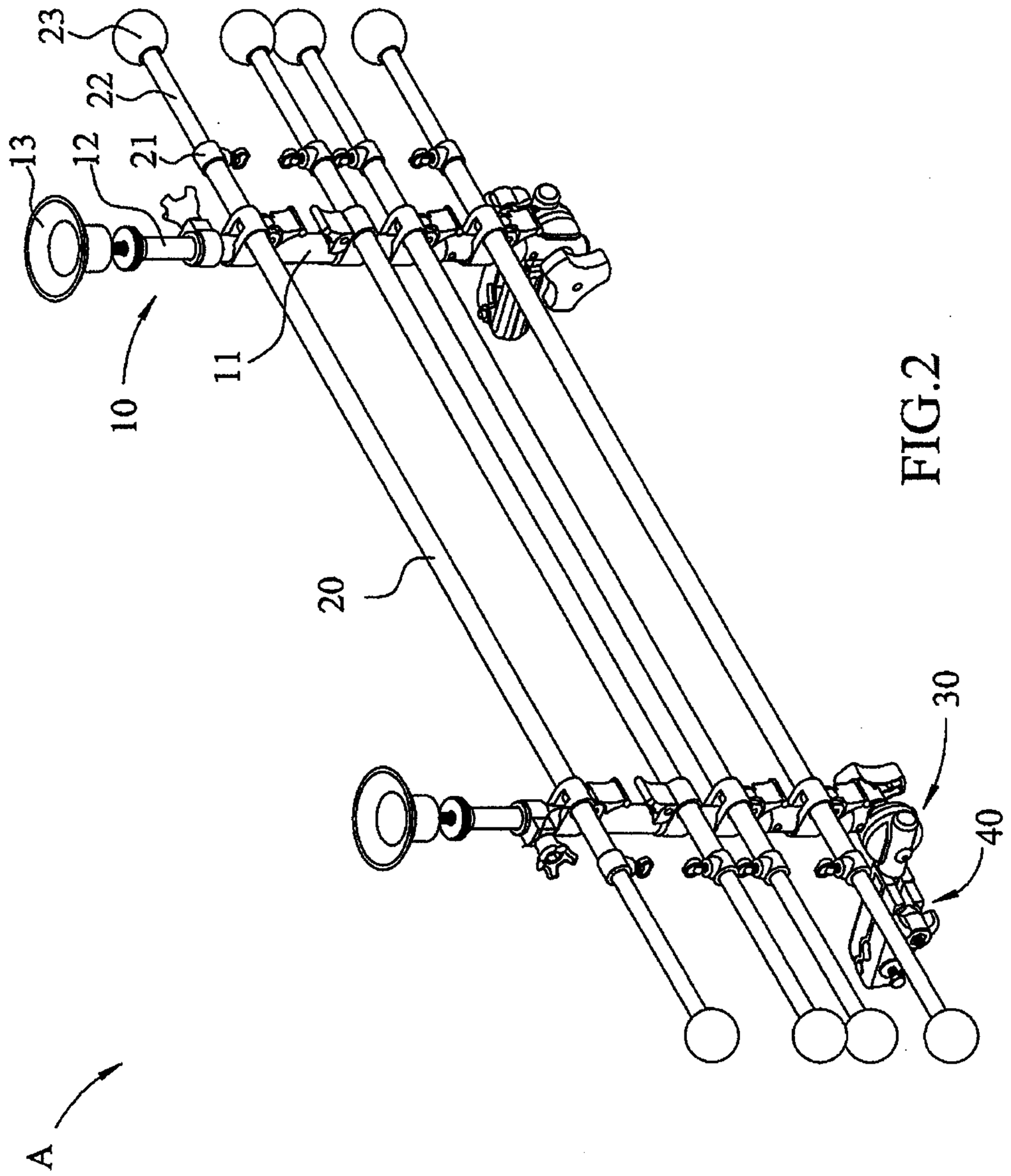


FIG.2

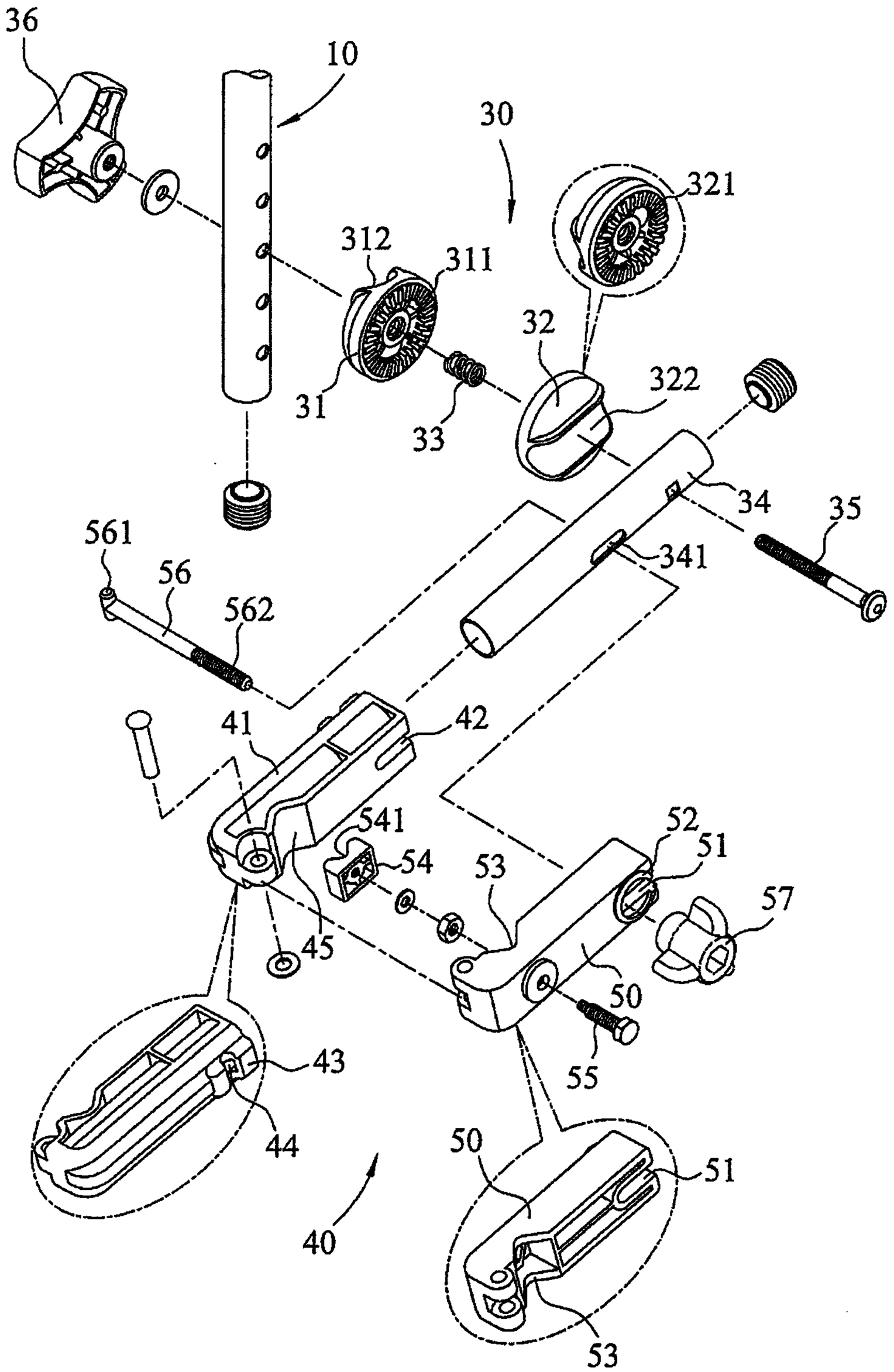

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FIG.3

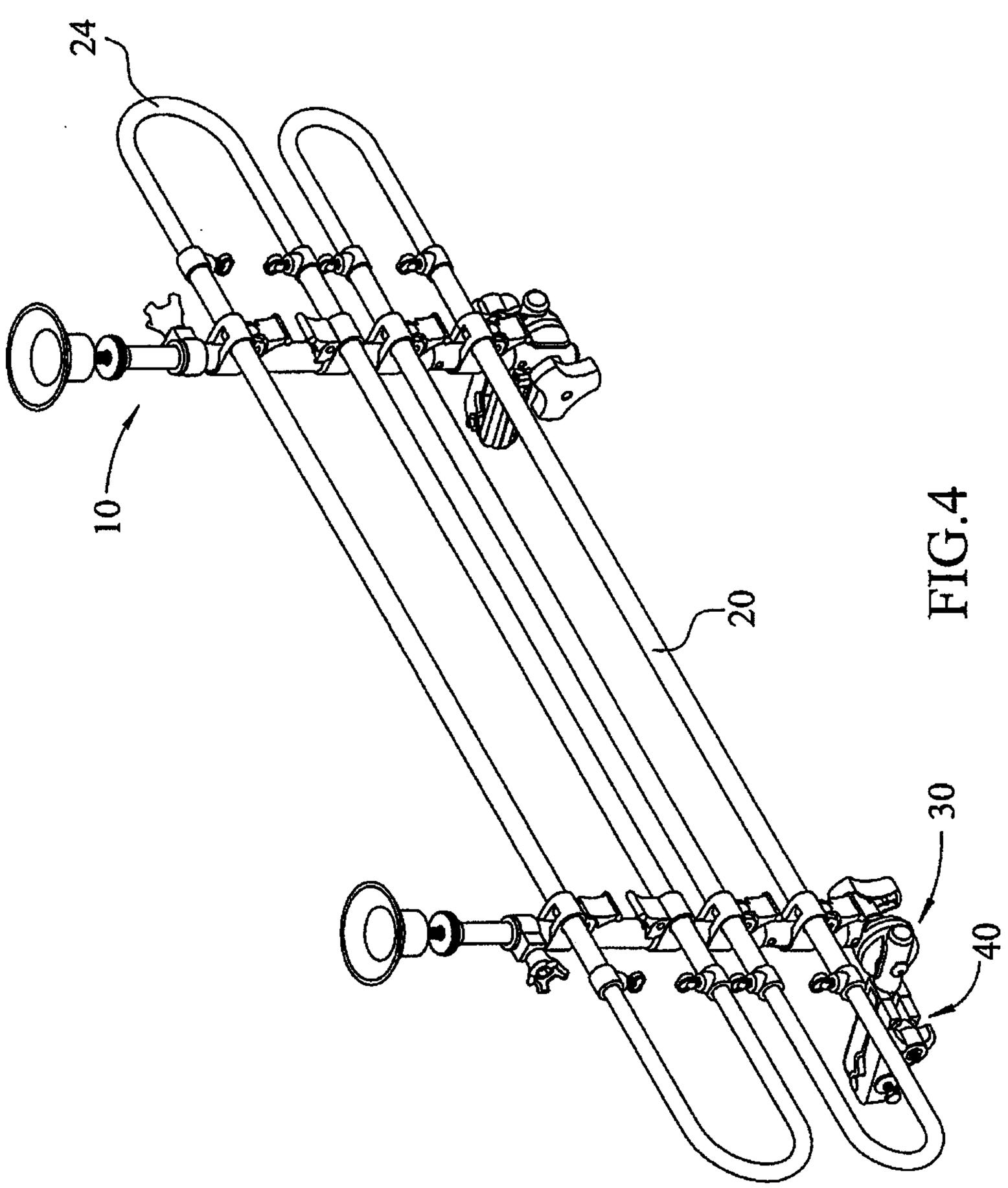


FIG.4

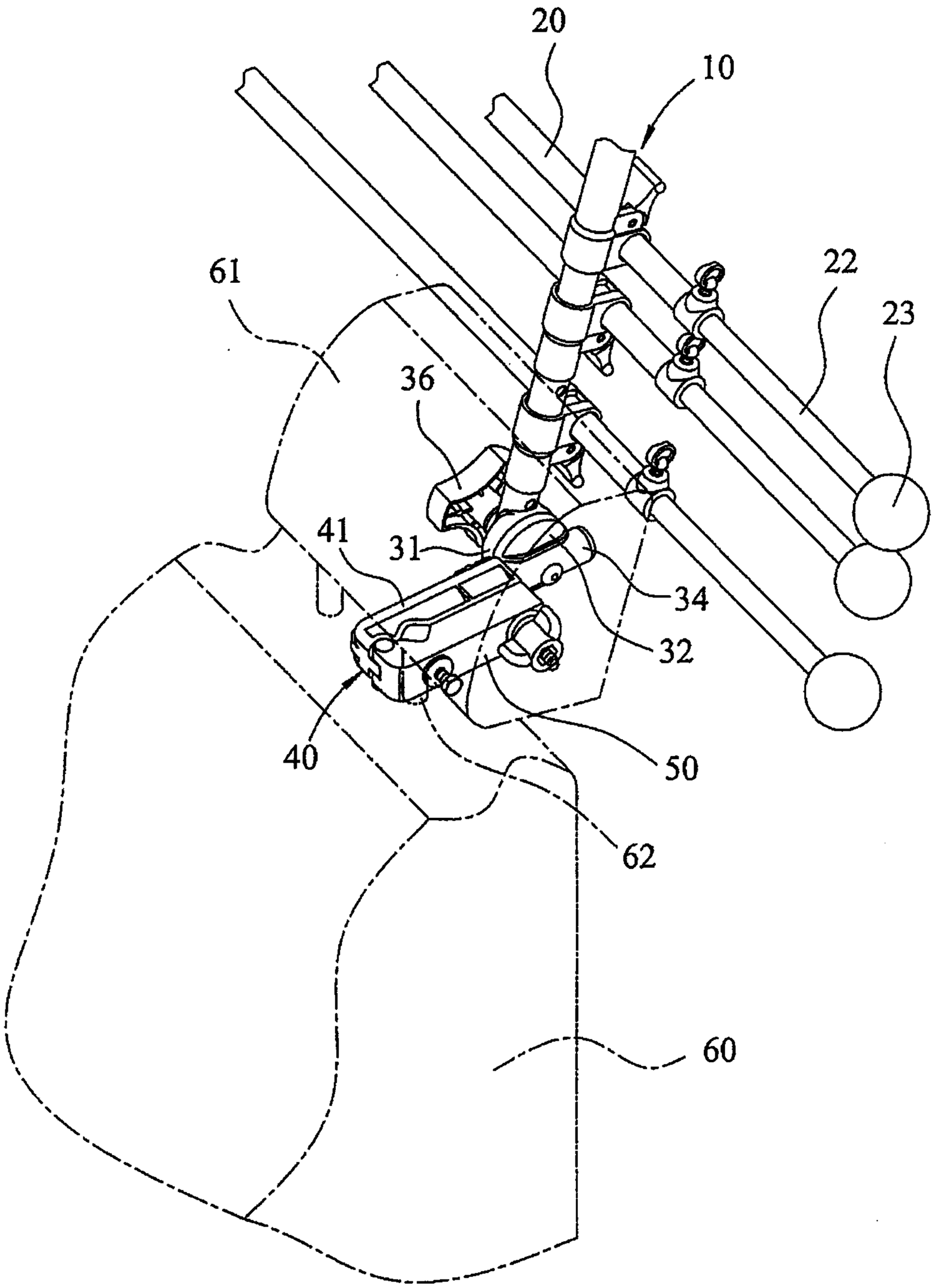


FIG.5

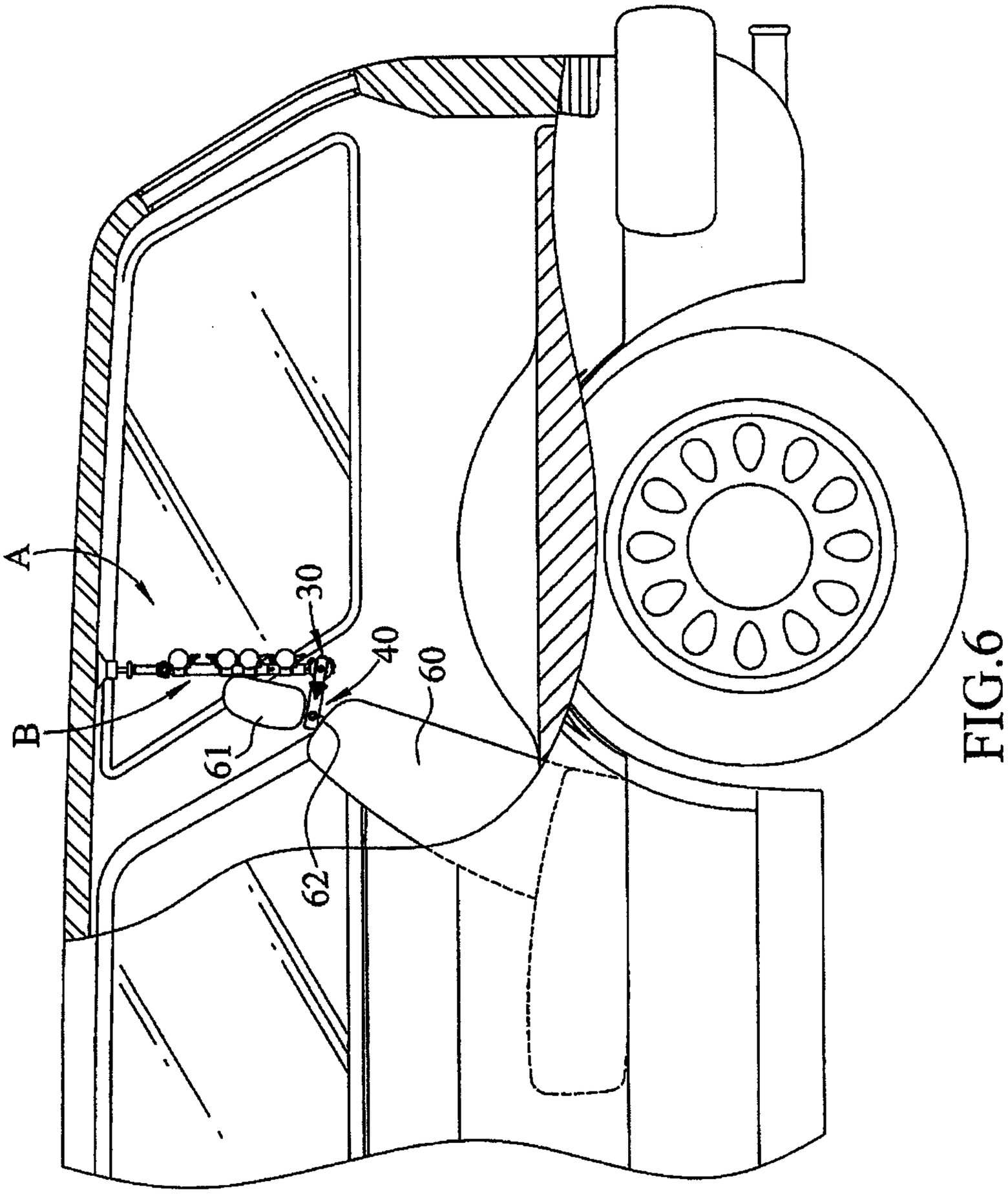


FIG.6

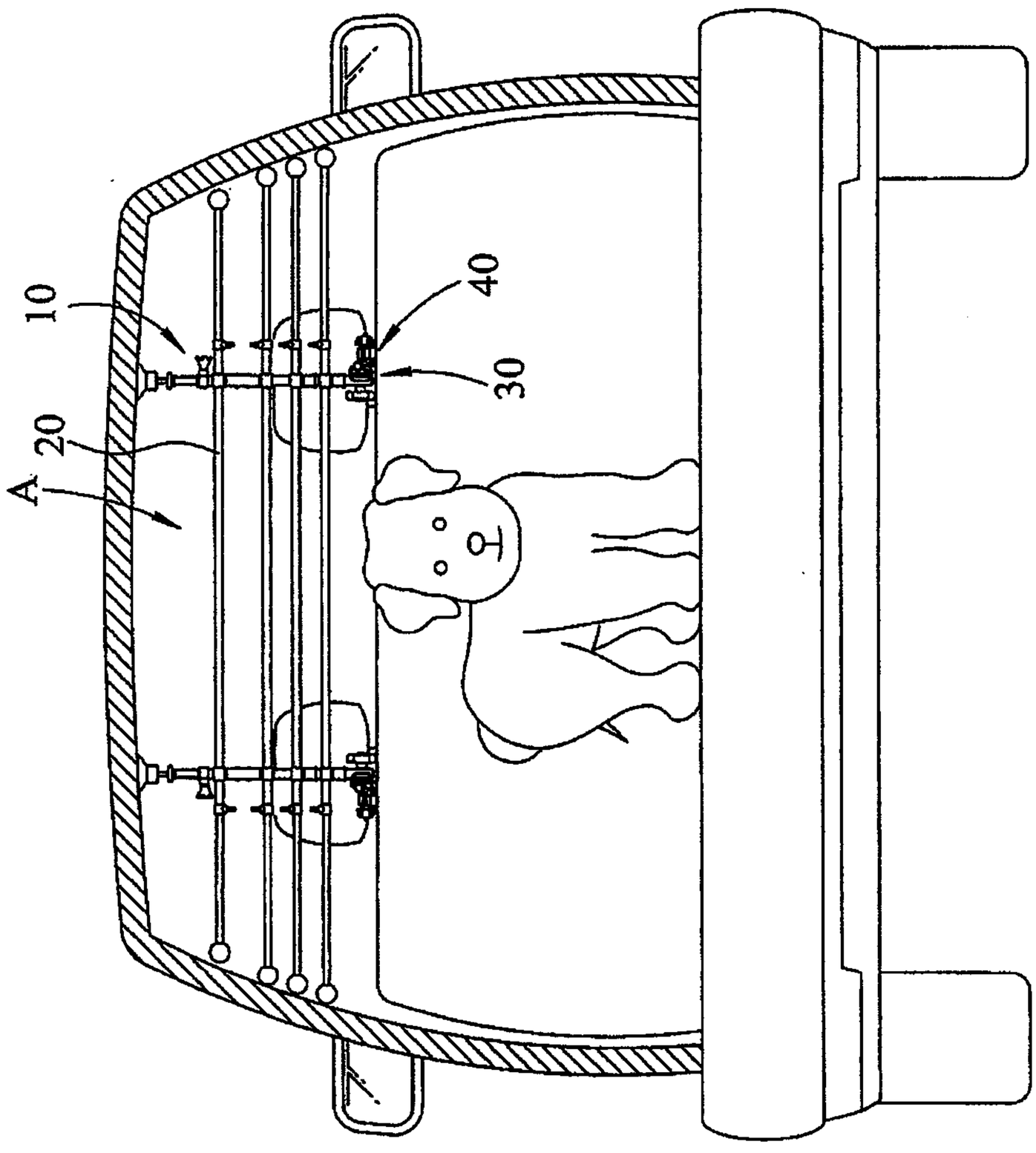


FIG.7

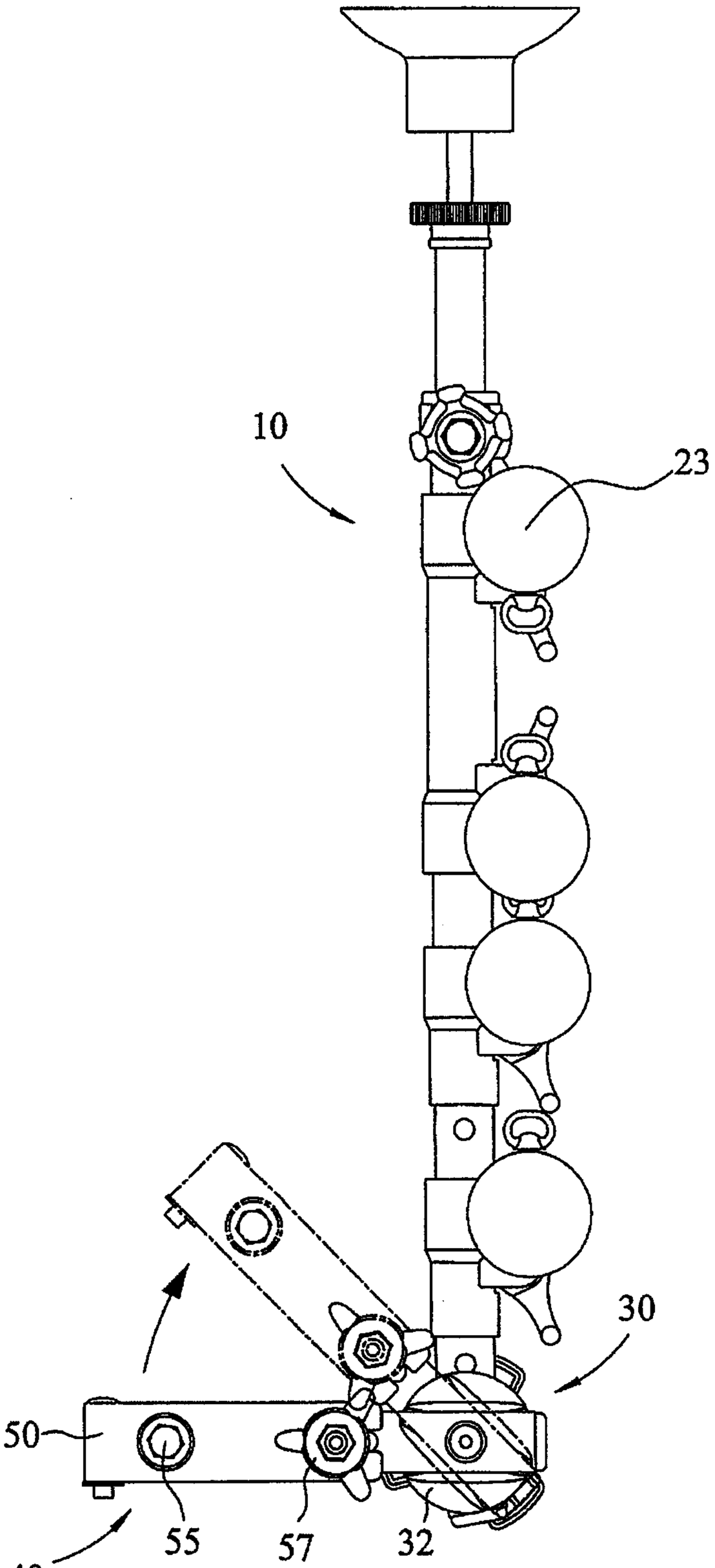


FIG.8

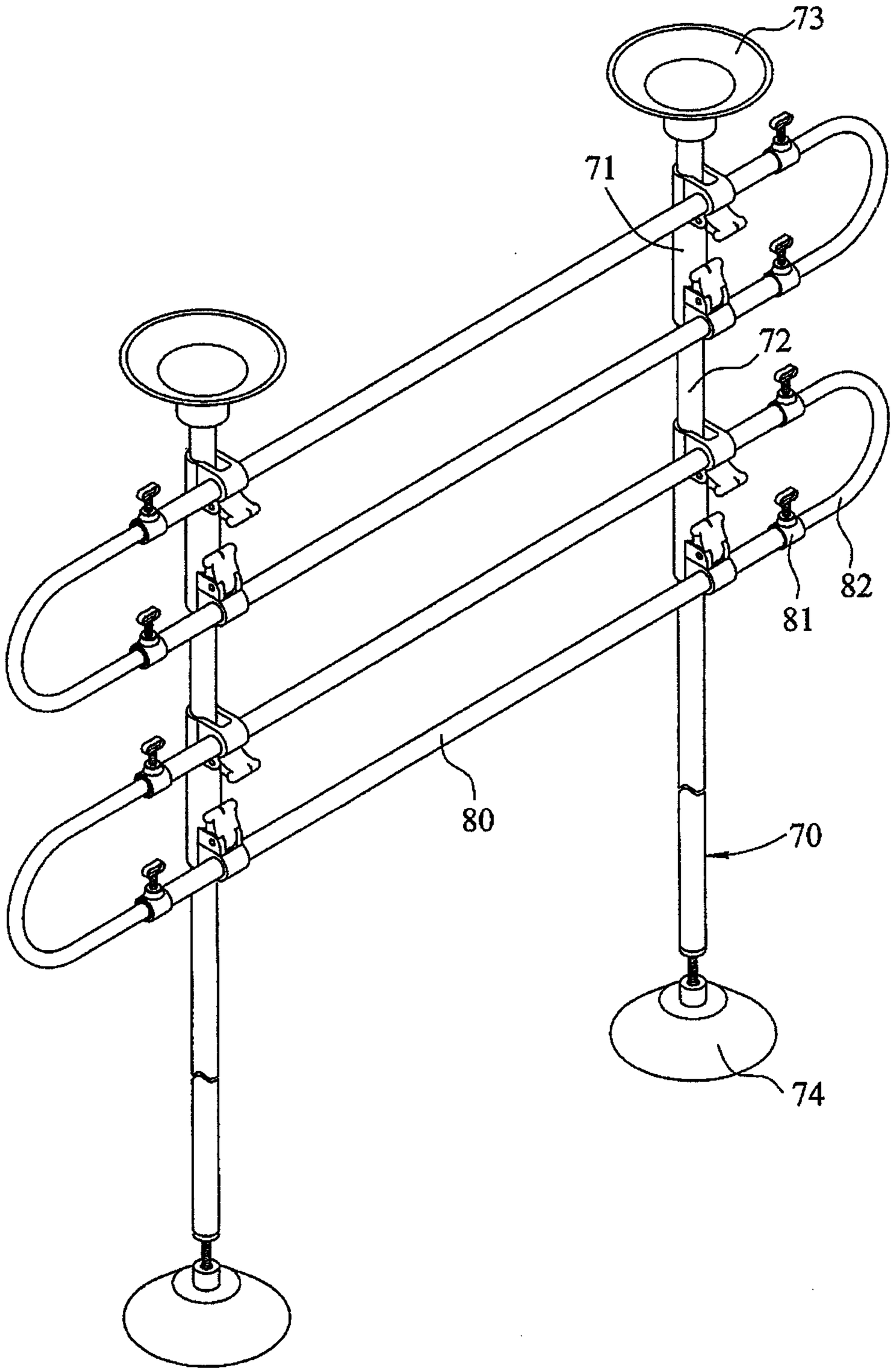


FIG.9
PRIOR ART

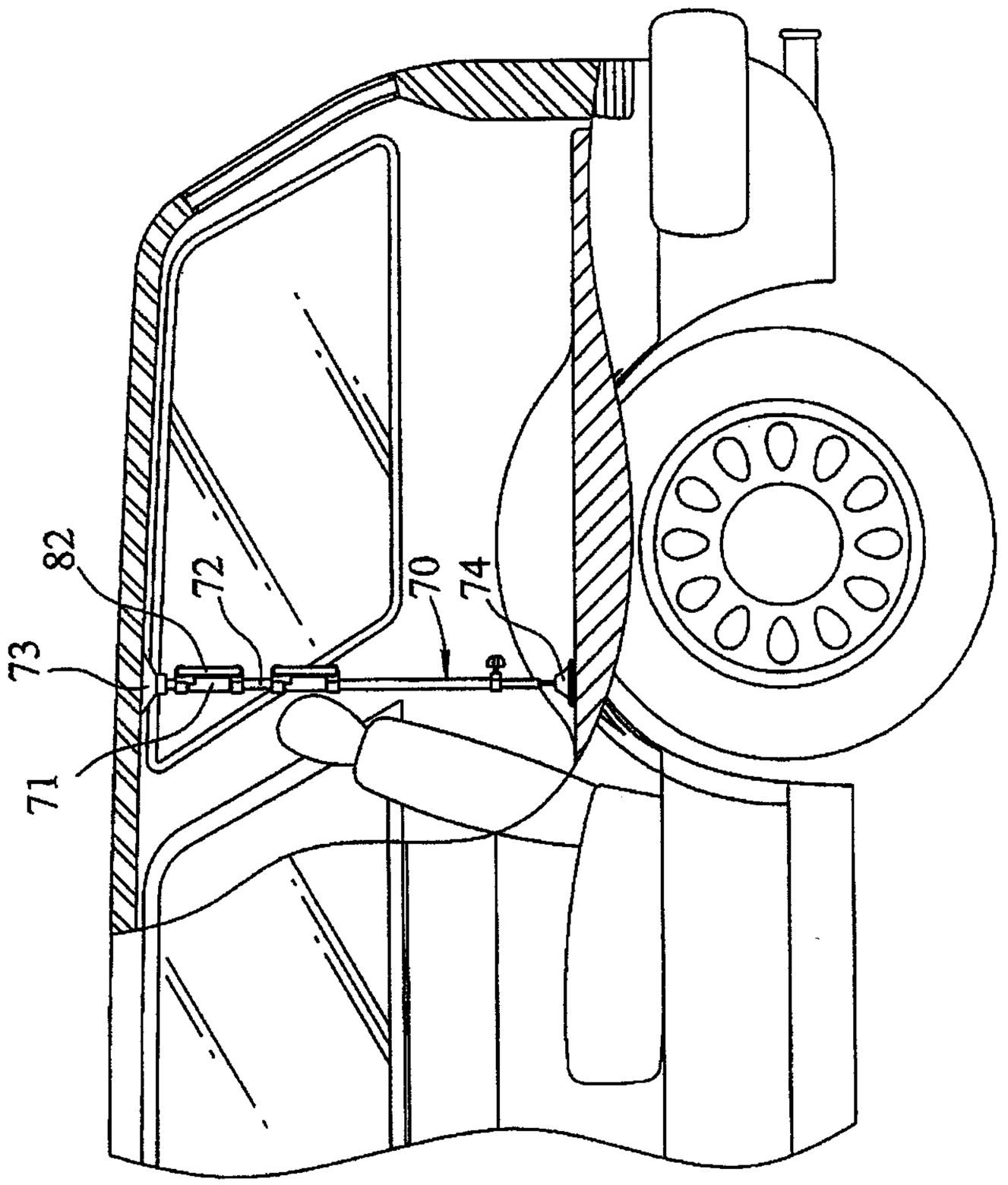
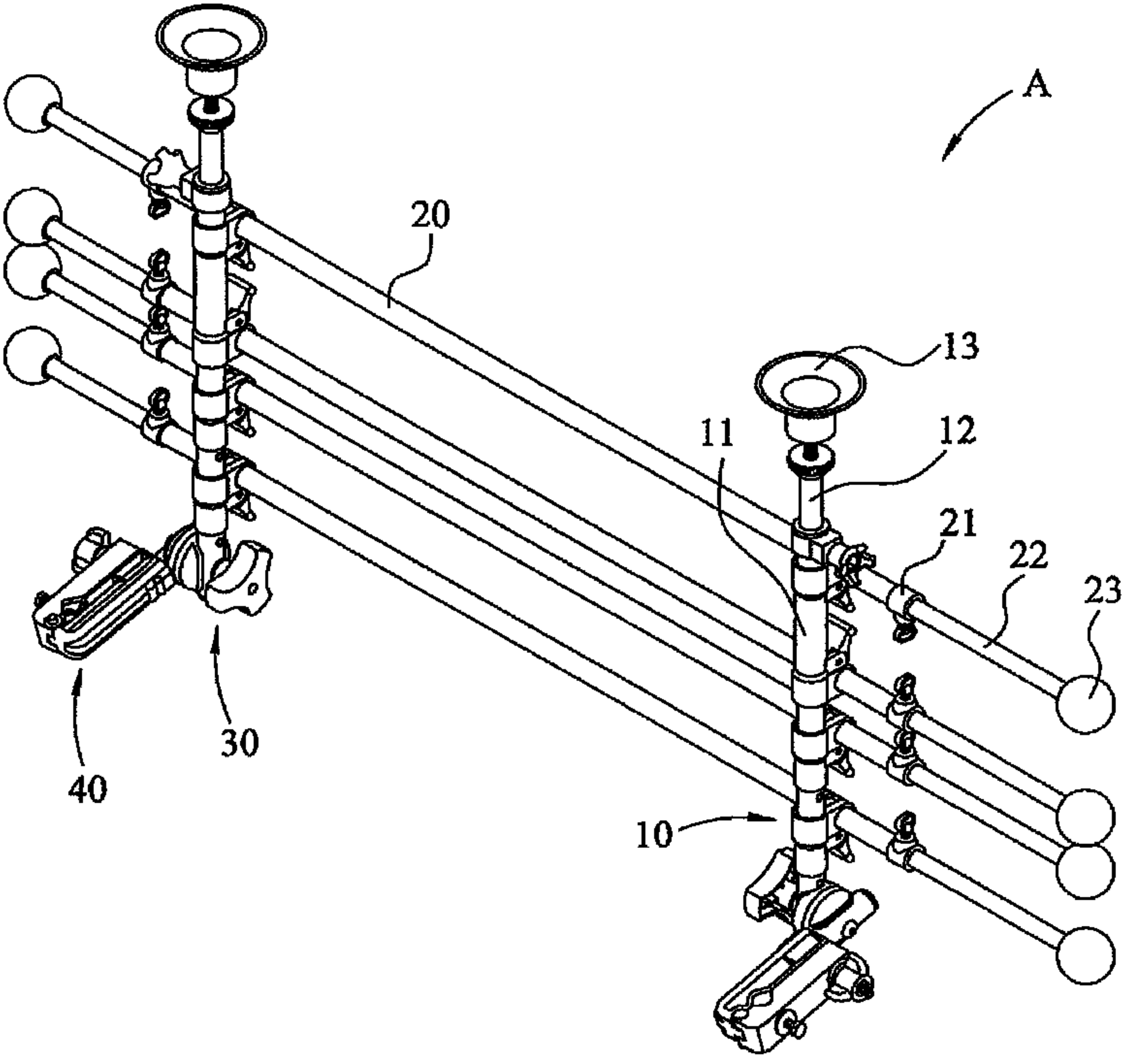


FIG.10
PRIOR ART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