

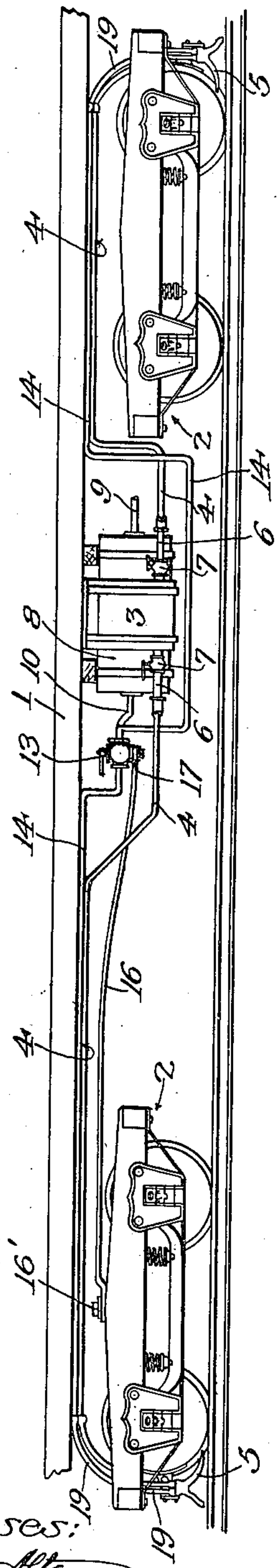
995,645.

J. L. WILLIAMS.  
AUTOMATIC FLANGE OILER.  
APPLICATION FILED APR. 3, 1909.

Patented June 20, 1911.

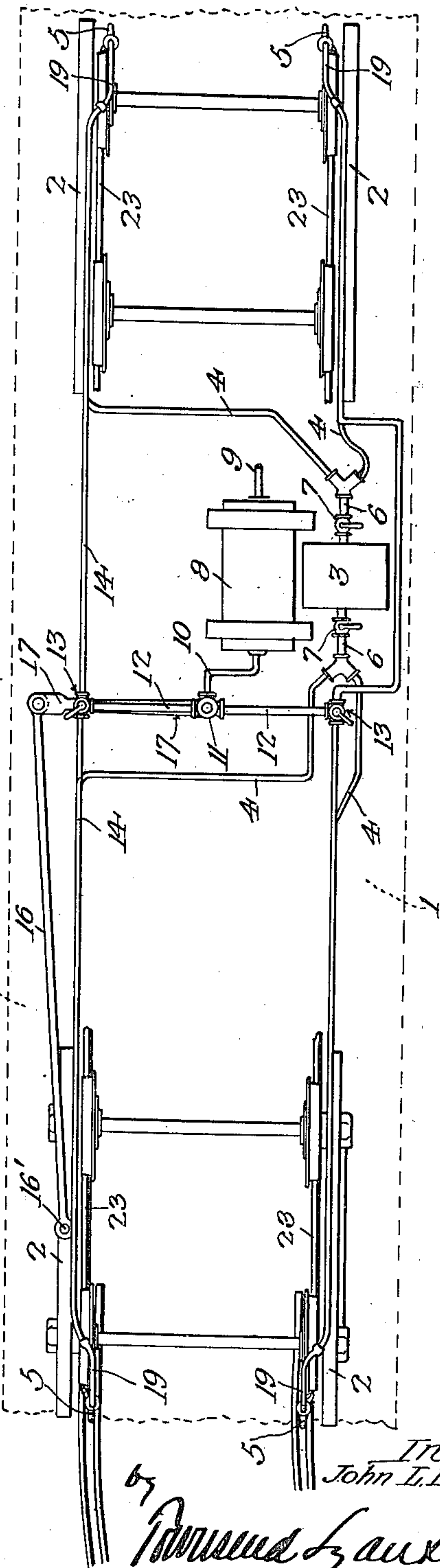
2 SHEETS-SHEET 1.

Fig. 1.



Witnesses:  
Lute S. Allen  
Frank L. Kahan

Fig. 2.



Inventor:  
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2 SHEETS—SHEET 2.

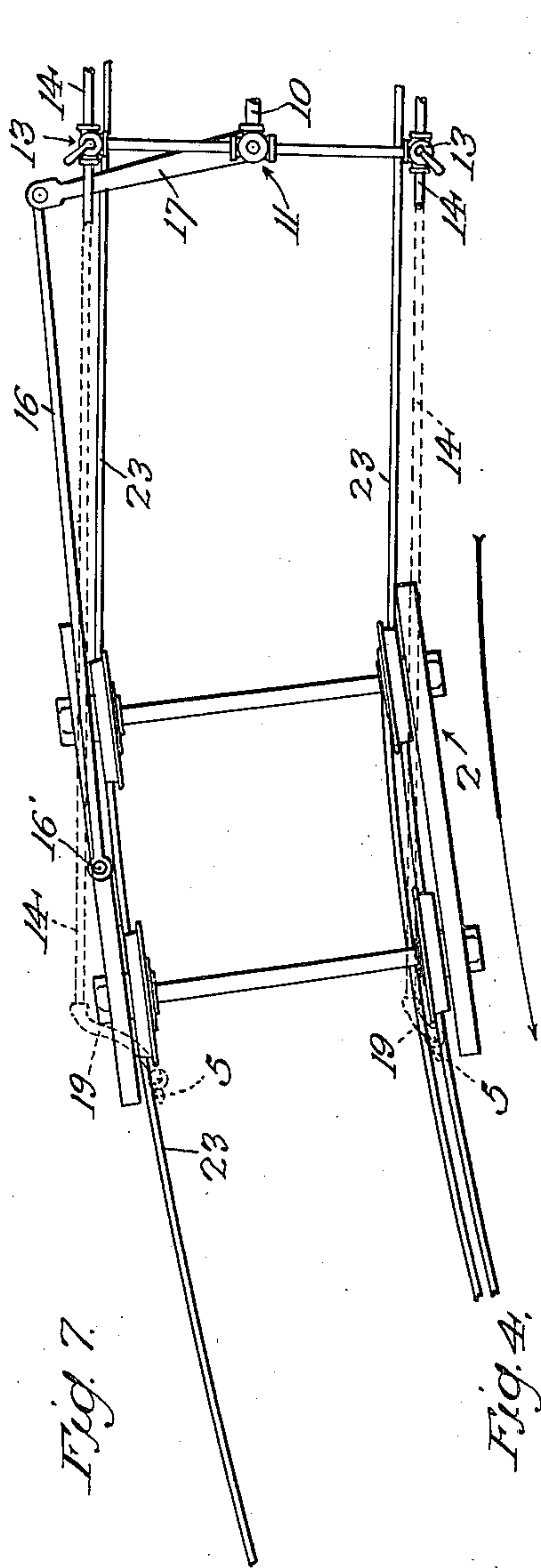


Fig. 7.

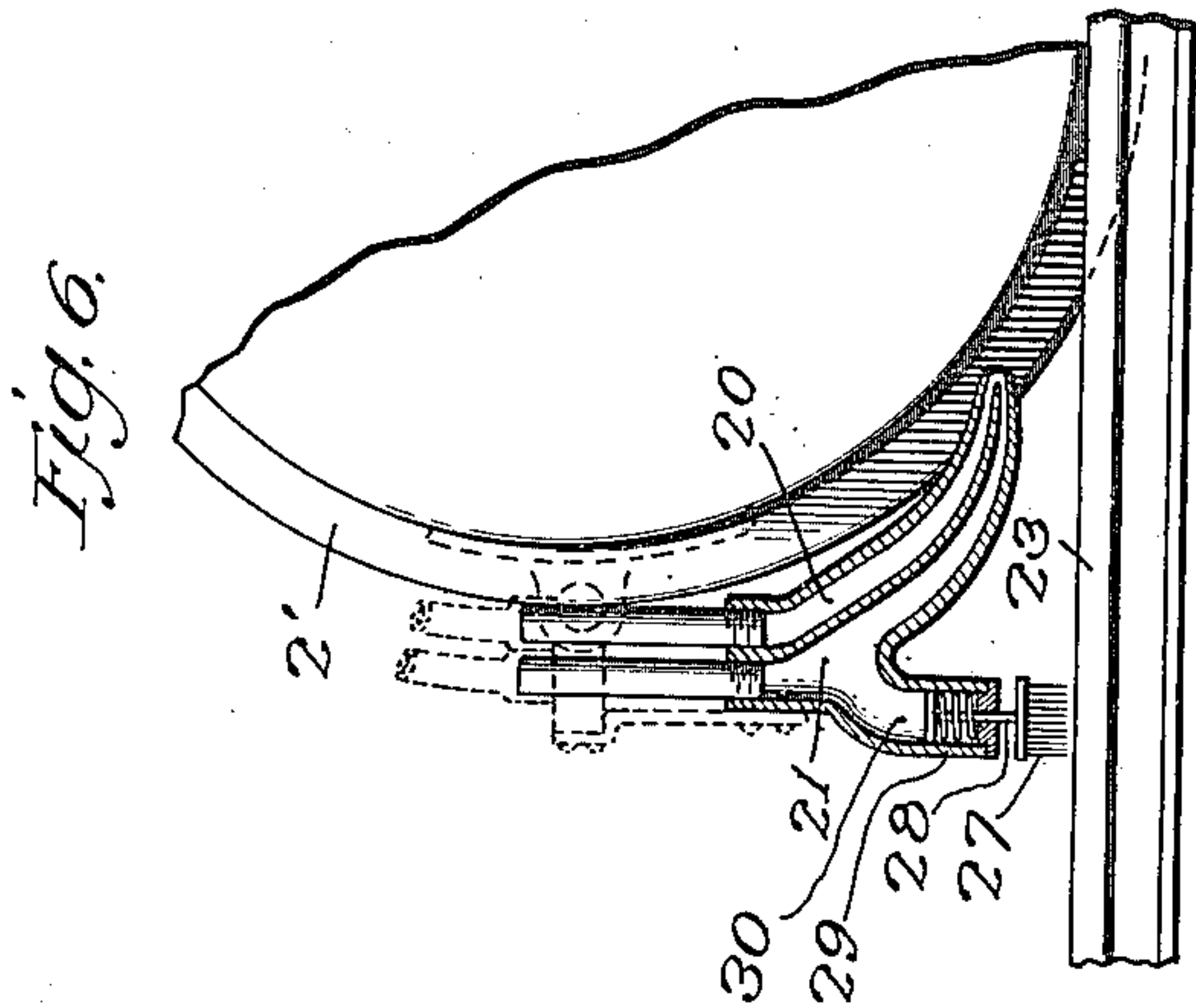


Fig. 6.

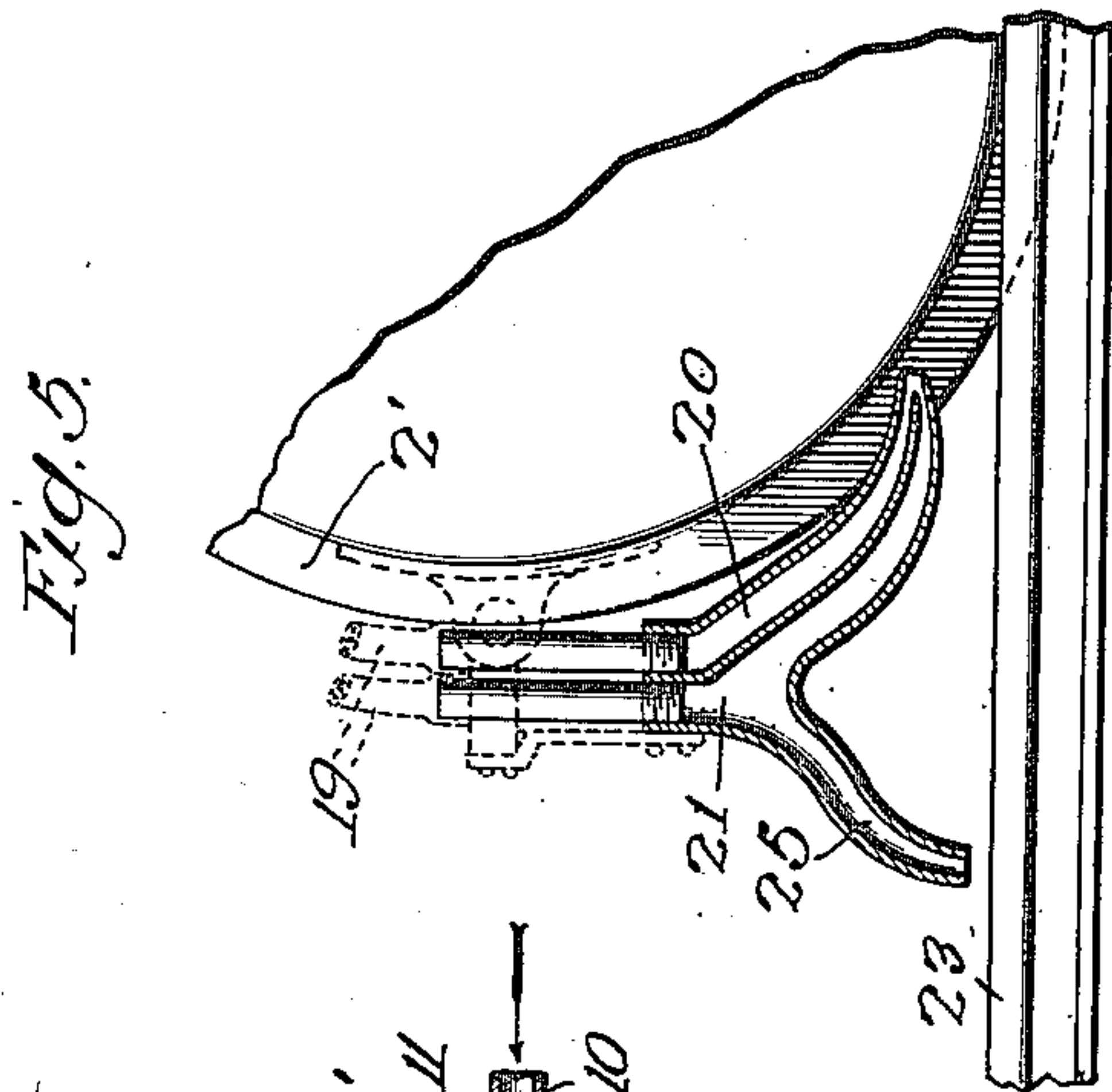


Fig. 5.

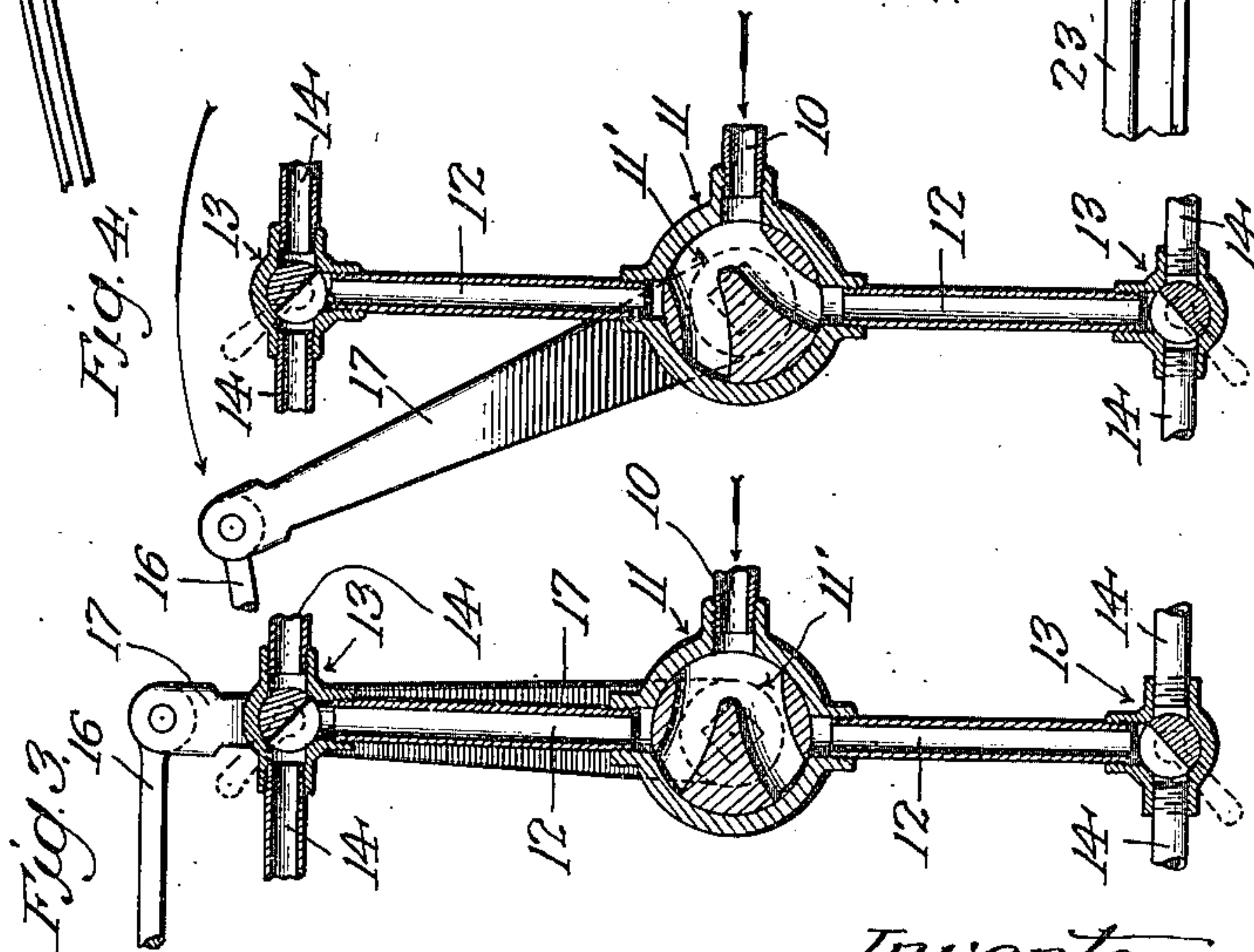


Fig. 4.

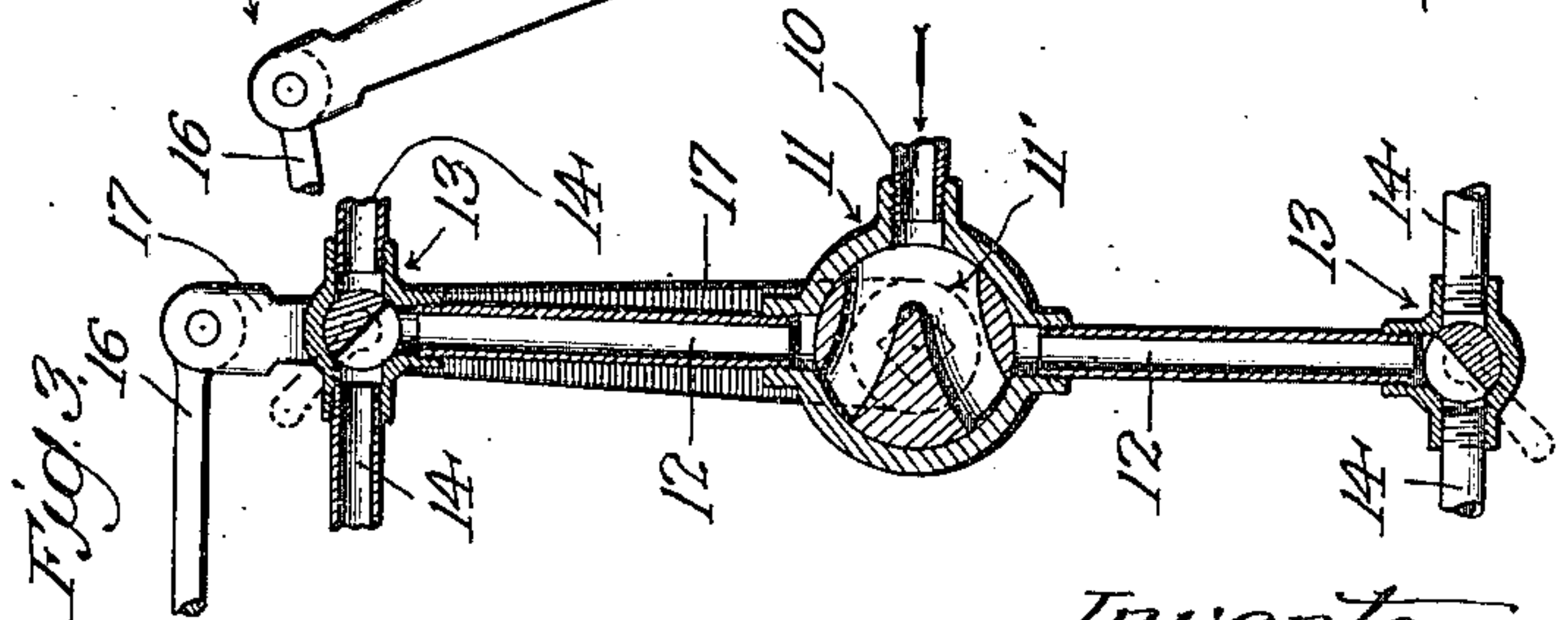


Fig. 3.

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 Lute S. Allen.  
 Paul L. Mahan.

Inventor:  
 John L. Williams.  
 By *Paul L. Mahan* atty.



# UNITED STATES PATENT OFFICE.

JOHN L. WILLIAMS, OF LOS ANGELES, CALIFORNIA.

## AUTOMATIC FLANGE-OILER.

995,645.

Specification of Letters Patent. Patented June 20, 1911.

Application filed April 3, 1909. Serial No. 487,814.

*To all whom it may concern:*

Be it known that I, JOHN L. WILLIAMS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Automatic Flange-Oiler, of which the following is a specification.

The main object of the present invention is to provide means for applying oil to the car wheels for distribution to the rail flange in such manner that there will be a minimum waste.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation of a street railway car frame and trucks provided with the invention. Fig. 2 is a plan thereof. Fig. 3 is a horizontal section of the automatic valve on a larger scale showing the same in normal position. Fig. 4 is a similar view of the said valve in operative position. Fig. 5 is a vertical sectional view of one form of the oil distributing nozzle or means. Fig. 6 is a similar view of another form thereof. Fig. 7 is a plan of a truck and adjacent parts in operative position.

Referring to Figs. 1 and 2, the car frame is indicated at 1 and two trucks thereof at 2. Mounted on the bottom of the car frame is an oil supply tank 3 from which pipes 4 lead to distributing nozzles 5 located adjacent to each of the outer pair of wheels of each truck; that is to say, the forward pair of wheels of the forward truck and the rear pair of wheels of the rear truck, or vice versa, according to the direction of movement of the car. The two pipes 4 leading to each end of the car may be connected to the oil tank 3 by a common pipe 6 provided with a manual shut-off valve 7.

As a means of ejecting or controlling the supply of oil to the rail flanges, I prefer to use compressed air, it being understood that the oil used is extremely viscous and requires to be forcibly supplied to the rails. For this purpose an air tank 8 is mounted in suitable position, for example, on the car body 1 and is supplied with compressed air through a pipe 9 from any suitable source, not shown. An outlet pipe 10 from this air tank leads to an automatic controlling valve 11 from which branch two pipes 12 leading respectively to opposite sides of the car, each pipe 12 being connected to a manual three-way valve 13 from which two pipes 14 extend respectively to opposite ends of the

car. The plug 11' of valve 11 is formed for example as shown in Fig. 3 to normally cut off the supply of air from the pipe 10 to each of the pipes 12 and to admit air from the pipe 10 to one or the other of the pipes 12, according to whether the valve 11 is turned in one direction or the other. Such movement of valve 11 is effected by means controlled by the swinging or turning movement of the trucks 2 in rounding a curve, said means comprising for example a link or bar 16 pivoted to one of the trucks 2 at 16' and pivotally connected at its other end to an arm 17 attached to the plug 11' of valve 11.

The outer end of each pipe 14 leads to a flexible pipe or tubular connection 19 connected to the nozzle 5. Said nozzle is provided with an oil passage 20 and with an air passage 21 adjacent thereto and opening into the oil passage at or near the outlet thereof. The said nozzle extends obliquely downward and rearward under the tread of the car wheel 2' with its outlet close to the running point of the wheel and to the rail flanges 23.

The means for cleaning the rail may comprise a supplementary nozzle 25 extending obliquely downward and forward from the air passage 21 in nozzle 5 and into proximity with the flange of the rail, as shown in Fig. 5. Or as shown in Fig. 6, the cleaning means may consist of a brush 27 carried by a piston 28 in a cylinder 29 connected by passage 30 with the air passage 21 in the nozzle 5. In either case the cleaning means is controlled and brought into operation by the same pneumatic means that controls the delivery of oil.

The operation is as follows: Normally, that is to say, when the car is running on a straight track, the automatic valve 11 is closed and no air is delivered to any of the pipes 14. The valve 13 will be turned as indicated in Figs. 2, 3 and 4 to direct the flow of air toward one end or the other of the car, according to the direction of running of the car, it being understood that the oiling and cleaning operation is preferably accomplished at the front end of the car. On rounding a curve the bar 16 operates the arm 17 to turn the valve 11, as shown in Fig. 4, and thereby opens up communication through valve 11 from air pipe 10 to pipe 12 at one side of the car and thence through valve 13 and pipe 14 to the nozzle



5 at the forward end of the car and at the side thereof which is at the inside of the curve. The air issuing through the nozzle blows out oil and deposits the same on the 5 flange of the wheel or of the track rail, this flange being on the inside curve. If the car is turning in the reverse direction, the air will be delivered to the opposite side of the car which in that case corresponds to the 10 inside curve. If the motion of the car is reversed, the valves 13 will be turned to direct the flow to the other end of the car, namely, the forward end. In any case the air supply control, as stated, will operate 15 through the pneumatic connections 12 and 14 to operate the pneumatic cleaning means 25 or the cleaning brush 27 in obvious manner.

What I claim is:

20 1. The combination with a street railway car of flange oiling means comprising oil supply means, compressed air supply means, a nozzle located adjacent to the track on which the car runs, said nozzle provided 25 with an oil delivery outlet and a connection from said air supply means to the said oil

delivery outlet, said connections including a valve, and mechanism connected to a truck and operated by the swinging movement of the truck relatively to the frame to open the 30 said valve when the car is rounding a curve, thereby causing the compressed air to eject the oil from the nozzle.

2. The combination with a street railway car frame and truck of flange oiling means 35 adjacent to each truck and having nozzles, oil supply means connected to said nozzles, manual valves controlling supply to the nozzles at respective ends of the car, compressed air supply means, an automatic valve con- 40 nected thereto and to said nozzles to supply compressed air to the nozzles for ejecting the oil, and mechanism connected with a truck and to said automatic valve to operate the valve when the car is rounding a curve. 45

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 27th day of March, 1909.

JOHN L. WILLIAMS.

In presence of—

G. T. HACKLEY,  
P. H. SHELTON.