

(No Model.)

H. PHINNEY.
CAR SIGNAL.

No. 571,885.

Patented Nov. 24, 1896.

Fig. 1.

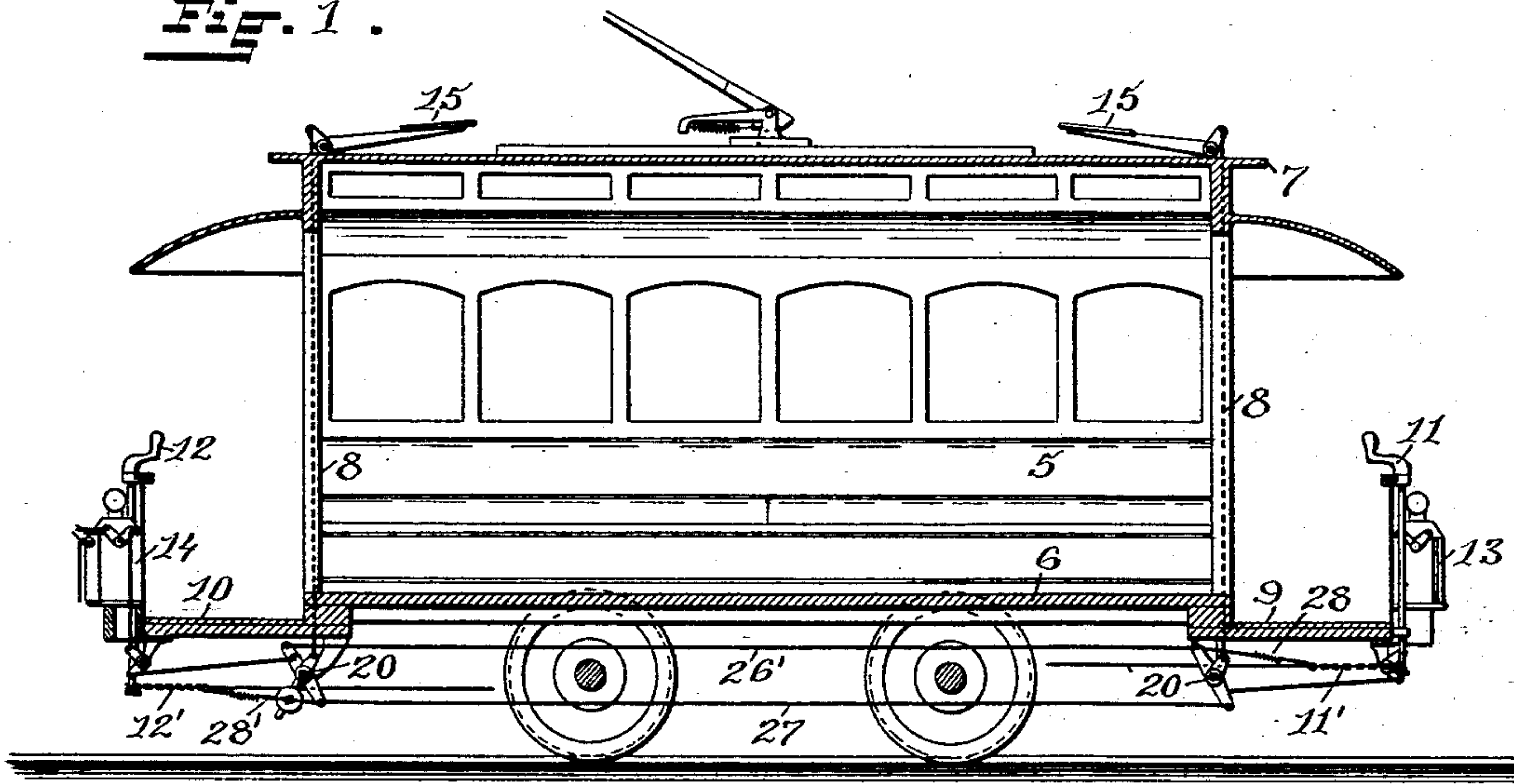


Fig. 4.

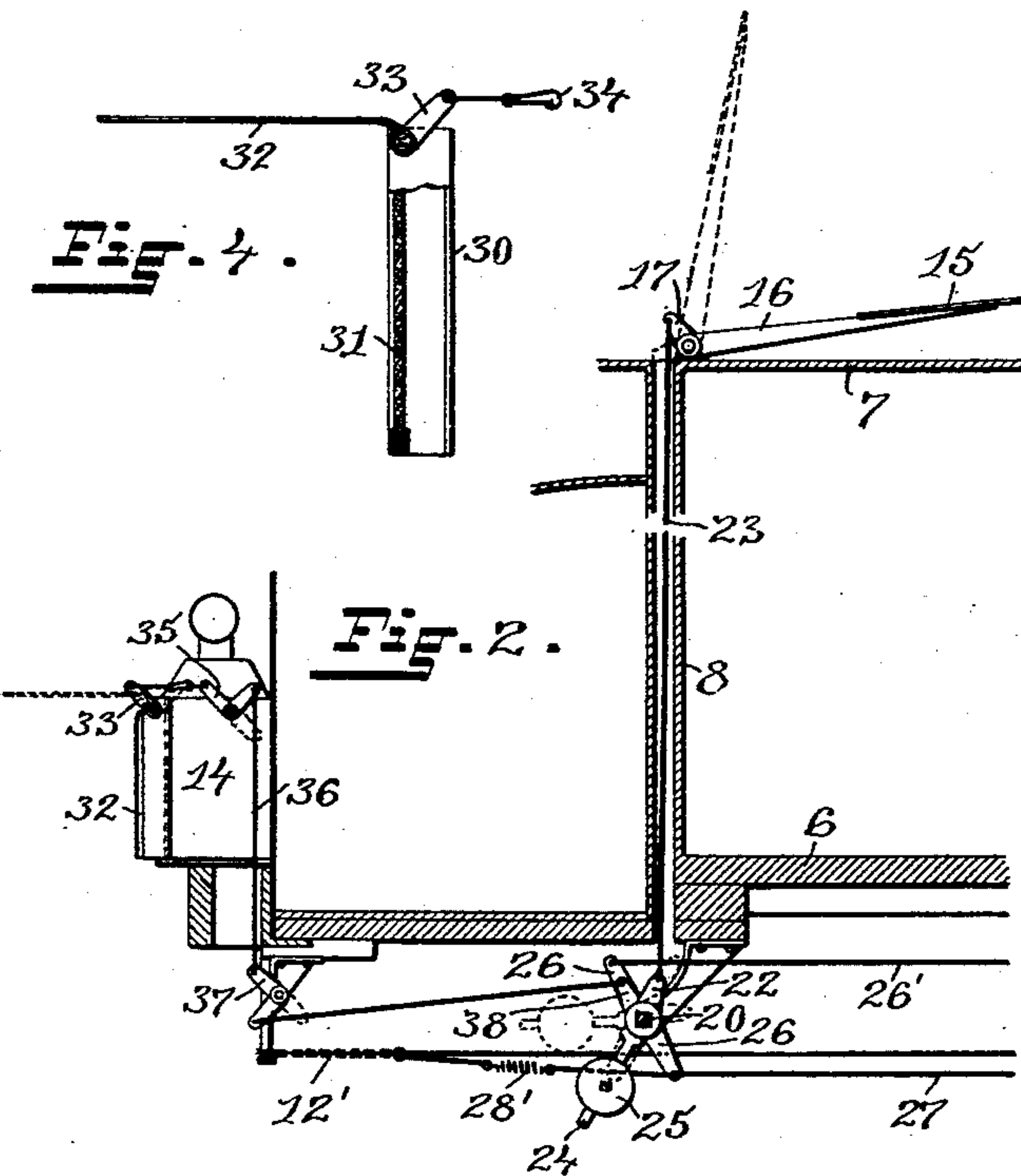
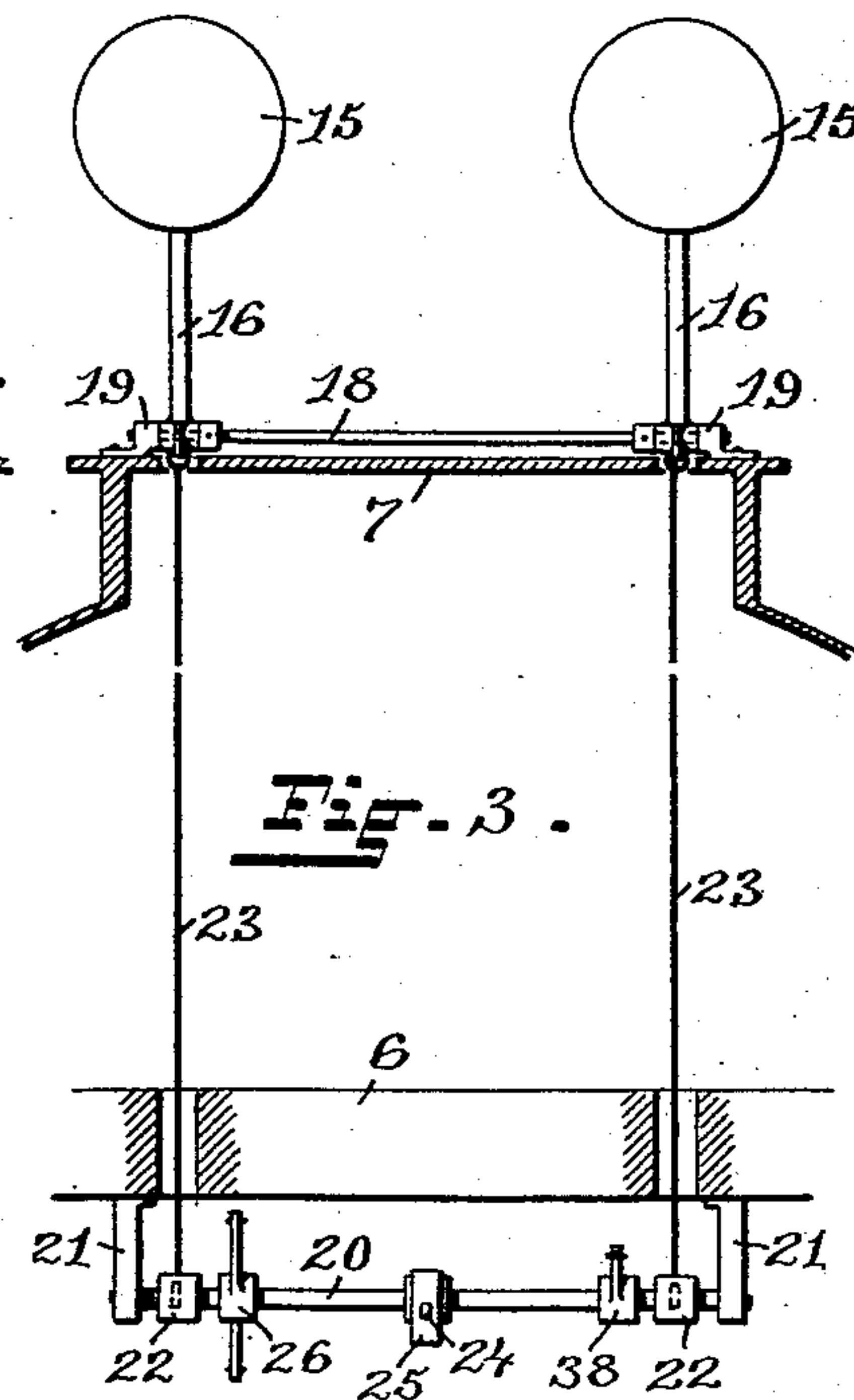


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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CAR-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 571,885, dated November 24, 1896.

Application filed February 26, 1896. Serial No. 580,837. (No model.)

To all whom it may concern:

Be it known that I, HORATIO PHINNEY, of the city of Providence, county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Street-Cars; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

10 This invention has reference to an improved signal adapted for street-cars, whereby on the stopping of the car or the application of the brakes to retard the speed of the car a signal may be automatically made to inform the person controlling any following car.

15 Street-cars, no matter by what means they may be operated, require to follow each other closely, particularly in the central portions of cities. By the use of electricity and mechanical power for propelling street-cars their speed has been greatly increased and the danger of end collisions multiplied.

20 The object of this invention is to provide suitable signals which give notice to other cars when the speed is slackened or the brakes are applied to stop the car, so that the party controlling the following car is notified of the change in the speed of the preceding car and can so control his car as will avoid collisions.

25 Figure 1 is a longitudinal sectional view of a street-car provided with my improved automatic signals. Fig. 2 is an enlarged sectional view of parts of the end of a car provided with my improved signals. Fig. 3 is a transverse sectional view of the roof and floor of a car, showing the connections with the roof-signals. Fig. 4 is an enlarged sectional view of the signal attachment for the headlights.

30 Similar numerals of reference indicate corresponding parts in all the figures.

35 In the drawings, 5 indicates the body of a street-car; 6, the floor, and 7 the roof, of the car; 8 8, the ends of the body of the car; 9, the front platform, and 10 the rear platform, of the car; 11, the brake-handle at one end, and 12 the brake-handle at the other end, of the car; 13, the headlight, and 14 the rear light, of the car.

40 In the drawings two semaphore-signals 15 15 are shown at each end of the car connected

by means of bell-crank levers with the brakes at both ends of the car, so that the operation of either one of the two brakes will operate all the signal-semaphores. I do not wish to 55 confine myself to this particular arrangement, because the brake at one end may be readily connected with the signal on the other end, so that the front brake will always, no matter in what direction the car is running, operate the rear semaphore-signals, or one of 60 them.

The semaphore-signals 15 are secured to the arms 16, having at their lower ends the short levers 17. The arms 16 at their lower 65 ends are pivotally supported in suitable bearings secured to the roof of the car. In the preferred form shown in the drawings, two arms 16 are secured to the shaft 18, which is pivotally supported in the brackets 19, secured to the roof of the car. 70

Below the floor 6 of the car the shafts 20, one at each end, are supported pivotally in the brackets 21. On the shaft 20 are secured the arms 22 22, and these are connected with 75 the levers 17 by the rods 23. To each shaft 20 is secured an arm 24, on which the weight 25 is adjustably secured, so as to be raised when the semaphores are raised and cause them to be lowered when the brake is released. 80 The same result will be produced if the semaphore-arms 16 are connected with the roof of the car by a spiral spring or are weighted, so as to descend by gravity.

The double arms 26, one extending above 85 and the other below the shafts 20, are also secured to the shafts 20, and, as shown in the drawings, are connected, the upper arms by the rod 26' and the lower by the rod 27. The upper arm 26 on the forward end is connected 90 by the rod 28 with the brake-chain 11', and the other end by a similar rod 28' with the other brake-chain, 12'. When now the brake-chain is wound up on the brake-rod, in setting the brakes from either the brake 11 or 95 12, the shafts 20 are partially rotated and the semaphores 15 15 on both ends are raised.

The rod 26' may be connected directly with the brake-chain 11' and the rod 27 directly with the brake-chain, so that the winding up 100 of the brake-chain in setting the brake on one end of the car will operate the shaft 20

and with it the semaphores on the other end of the car, or if only one is connected with the shaft 20 it will operate one semaphore-signal at the end of the car opposite to the
5 end at which the brake is operated.

The night-signal consists of the frame 30, which is made of such size and shape that it will cover the opening in the headlight 13 and 14 and be easily attached to the same.
10 It is provided with the colored, preferably red, glass panel 31 and with the shutter 32. To this shutter the lever 33 is secured and with the end of the lever the snap-hook 34. This box 30 is secured to the rear light and is
15 shown in Fig. 1 connected with the light 14, and if the direction of the car is reversed can be quickly connected with the light 13. The snap-hook 34 is connected with the bell-crank lever 35 at one arm. The other arm is con-
20 nected by the rod 36 with one arm of the bell-crank lever 37, the other arm of which is connected with the arm 38, secured to the shaft 20.

The same bell-crank connection for operating the shutter 32 is provided at both ends
25 of the car, and when the box 30 is moved to the opposite end of the car the snap-hook 34 is connected with the same.

By the use of my improved signals, when the speed of a car is reduced by the applica-
30 tion of the brakes or the car is stopped by the brakes, one or more semaphore-signals will be raised to notify the following car or the person controlling the same of this fact, and at night when the box 30 is attached a
35 preferably red light will be exposed at the rear of the car.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. In a car, the combination with the brake- 40
chain and two semaphore-signals supported pivotally on a transverse rod above the roof, of a transverse shaft supported in bearings below the floor of the car, levers secured to the transverse shaft, connections between the 45
semaphore-signals and the levers on the transverse shaft, and connections between the levers and the brake-chain, whereby on the setting of the brakes from the front brake-handle two semaphore-signals are set on the 50
top of the car, as described.

2. The combination with a street-car, of the detachable box 30 provided with the panel 31 and the shutter 32, and the bell-crank connections between the shutter and the brake- 55
chain whereby the shutter is operated to expose the light on the setting of the brake, as described.

3. The combination in a street-car with the semaphore-signals 15 15 mounted on the rods 60
18 18 above the car, the shafts 20 20 having the levers 26 and 22 22 secured thereto, of the brake-chains 11' and 12', the counterbalance-weight 25, and the rods connecting the levers with the semaphore-signals and the 65
brake-chains, whereby on winding the brake-chains on the brake-shaft the signals are automatically set, as described.

In witness whereof I have hereunto set my hand.

HORATIO PHINNEY.

Witnesses:

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M. F. BLIGH.