

No. 766,138.

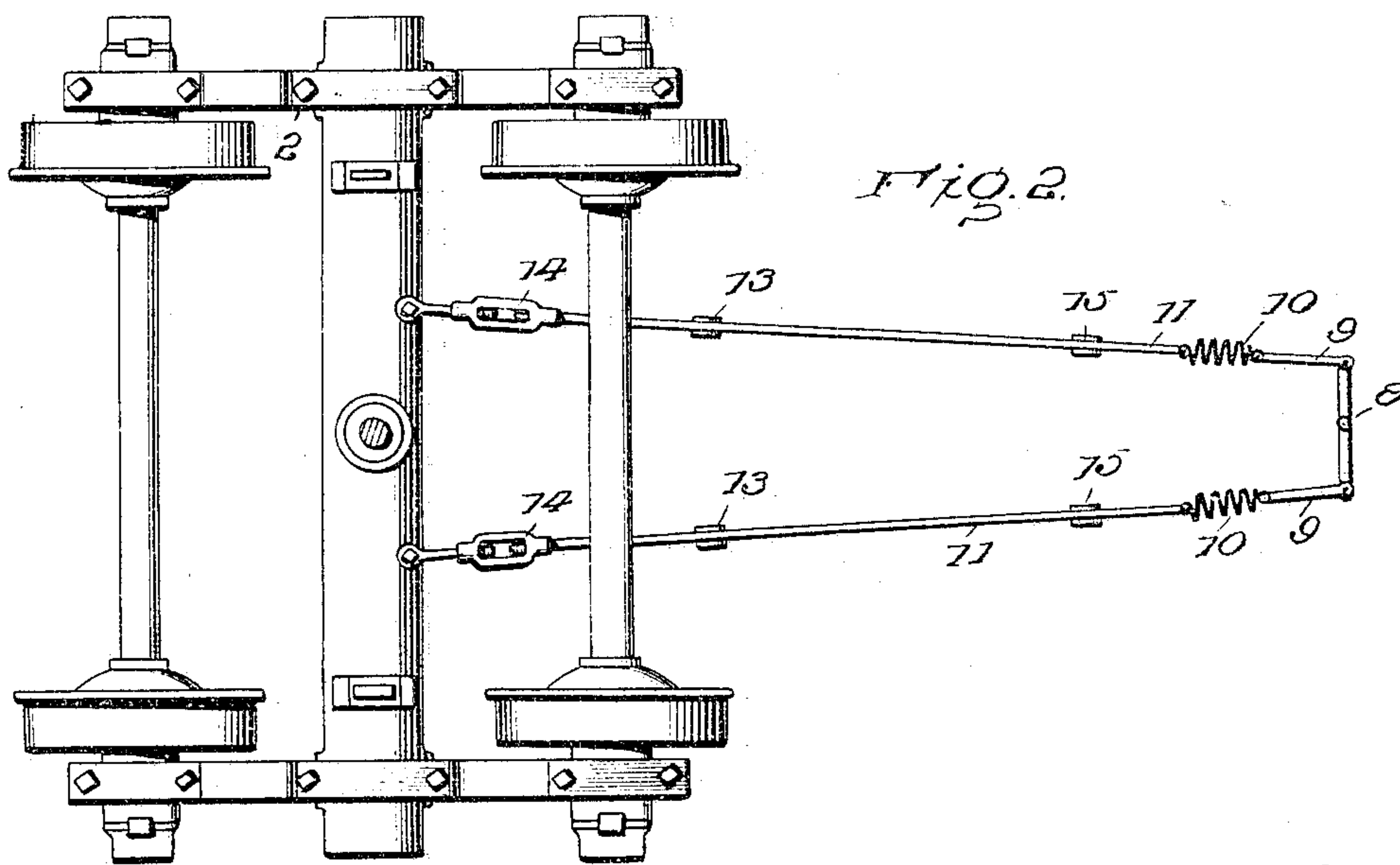
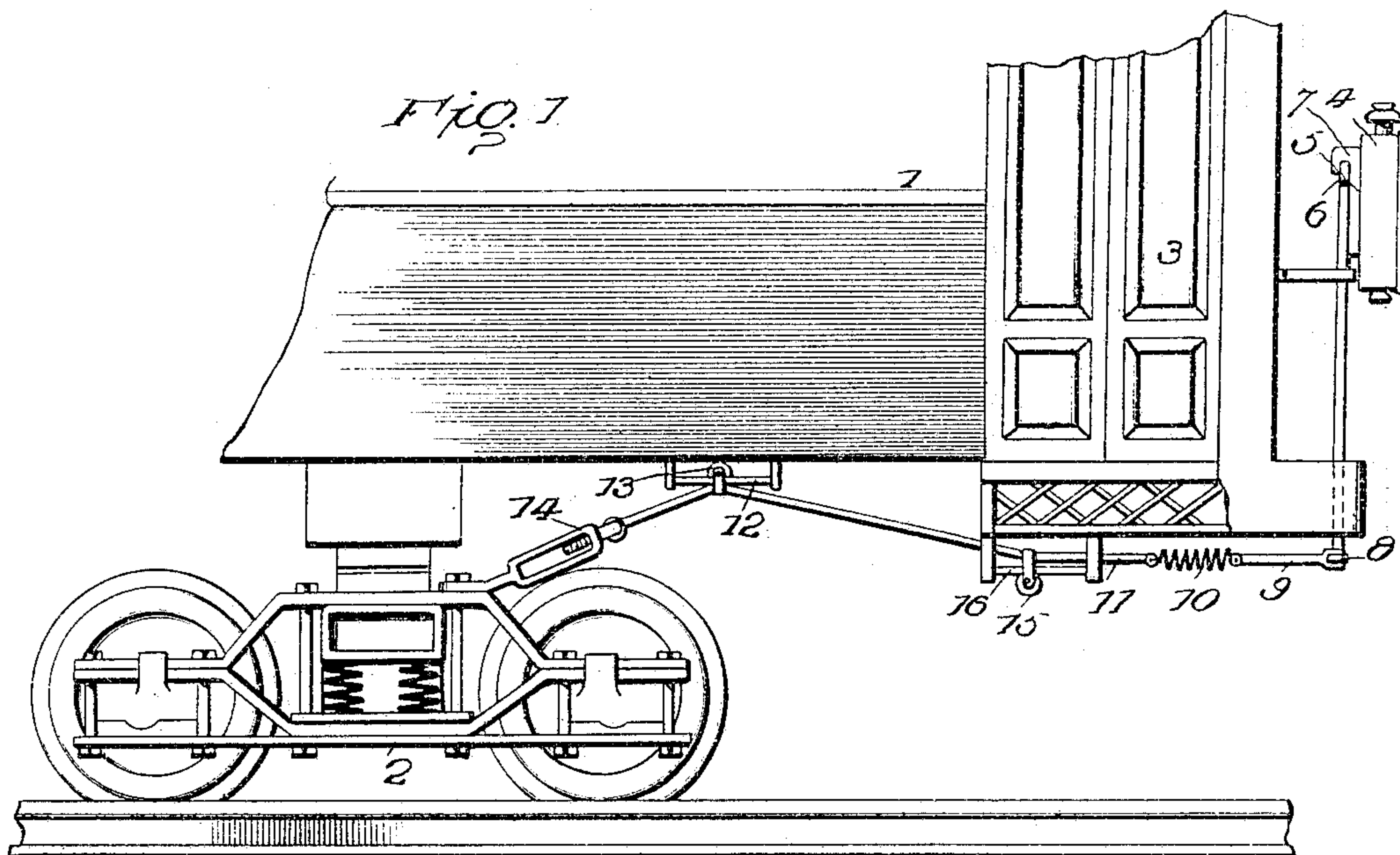
PATENTED JULY 26, 1904.

G. F. CHAPMAN.
DEVICE FOR OPERATING HEADLIGHTS.

APPLICATION FILED JUNE 13, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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Attorney

Witnesses

Wm. J. Jacobi

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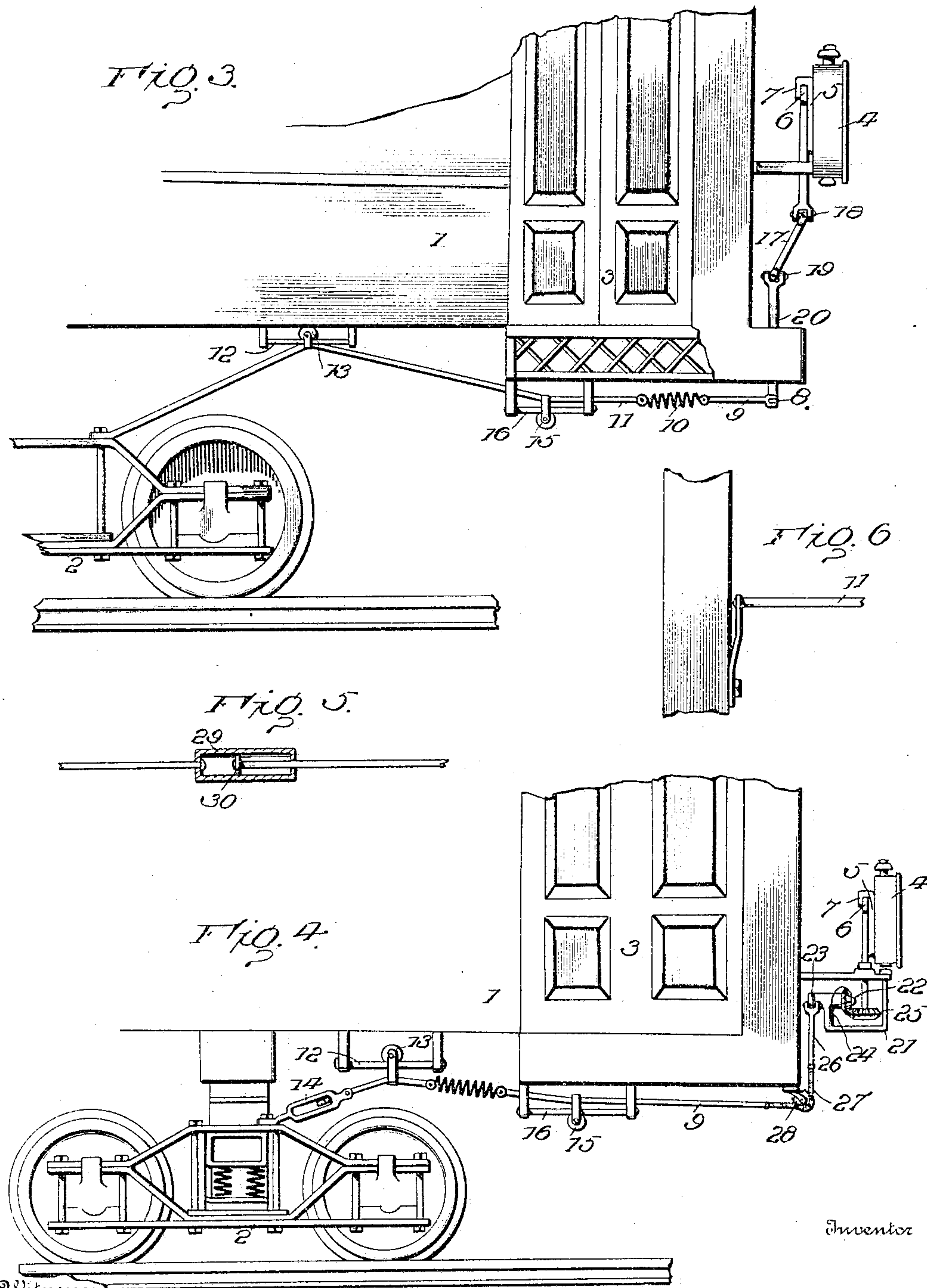
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UNITED STATES PATENT OFFICE.

GEORGE F. CHAPMAN, OF MARLBORO, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF TO LEVI WALLACE, OF AYER, MASSACHUSETTS.

DEVICE FOR OPERATING HEADLIGHTS.

SPECIFICATION forming part of Letters Patent No 766,138, dated July 26, 1904.

Application filed June 13, 1902. Serial No. 111,559. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. CHAPMAN, a citizen of the United States, residing at Marlboro, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Devices for Operating Headlights; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in devices for automatically operating headlights for electric cars, locomotives, and such other vehicles wherein a light is used to illuminate the path of travel; and it consists, essentially, of a new and novel connection between the headlight and a truck of the vehicle whereby the headlight is turned or shifted to either side of a right line as the direction of the vehicle is changed, so that the light from said headlight or lamp will at all times be thrown directly between the rails of the track.

The invention further consists in the construction, arrangement, and combination of the several parts, as will be hereinafter described, and pointed out in the claims.

The principal object of the invention is to provide a simple and effective device by means of which the light will at all times be positively directed and maintained on the path of travel without strain or shock on the light-shifting connections, and consequently no displacement or breakage of any of the parts will occur.

Other objects and advantages of the invention will become apparent upon a more detailed description thereof.

In the drawings, Figure 1 is a side elevation of a portion of a car, showing my improved device applied thereto. Fig. 2 is a top plan view of the device, the car-body being removed. Figs. 3 and 4 are modified forms of the mechanism connected to the headlight. Figs. 5 and 6 are modified forms of the compensating device.

Referring to the several views, the numeral 1 indicates the car-body, 2 the truck, and 3 the vestibule or platform of an ordinary car.

The numeral 4 indicates an ordinary headlight, which is detachably secured to the arms 5 5 of a T-head rod 6 by means of hooks 7 7 on the back of said headlight. The T-head rod 6 is suitably mounted in the buffer-head of the platform and is provided on its lower end with a cross-bar 8. Attached to each end of the cross-bar 8 is a short rod 9, having secured to its free end a compensating spring 10, the other end of the compensating spring being attached to a bent rod 11, supported from the car-body by means of a bracket or track 12, and a pulley 13, secured to said rod and traveling on said track 12. The other end of each rod 11 is attached to a turnbuckle 14, which in turn is secured to the truck-frame. The rod 9 is guided at its forward end by means of a pulley 15, attached to said rod, running on a track or bracket 16, similar to the track 12, attached to the under side of the platform.

By interposing the springs 10 or other compensating devices in the connections between the headlight and the truck I have provided against injury to said connections incident to the independent longitudinal shifting of the car-body in the stopping and starting of the car, it being well known that there is considerable play about the king-bolt which holds the car-body to the truck. The compensating devices may be interposed in said connections at any suitable point between the truck-frame and the cross-bar 8.

By the use of the turnbuckles it will be evident that the connections can be so tensioned that the light from the headlight will be thrown directly in a right line in front of the car, and when so regulated it will be clear that in rounding a curve the headlight will be immediately shifted or turned to throw the light on the track between the rails thereof or in the path of travel.

In the modification shown in Fig. 3 the T-head rod 6 instead of passing down through the buffer-head is considerably shortened and has its end attached to a link 17 by means of

a gimbal-joint 18, the other end of the link being attached by a gimbal-joint 19 to one end of a rod 20, journaled in bearings on the buffer-head. The lower end of the rod 20 is
5 provided with cross-bar 8, as hereinbefore described.

In the modification shown in Fig. 4 the numeral 21 indicates a suitable bracket, secured to the front of the car or locomotive
10 at any convenient point, provided with a downward, rearward, and upward extension 21, in which is mounted in suitable bearings a short shaft 22, carrying at one end a cross-bar 23 and at the other end a beveled gear 24.
15 The T-head rod 6, which is made short, is provided at its lower end with a beveled gear 25, meshing with the gear 24, as shown. To each end of the cross-bar is pivotally attached one end of a short rod 26, the other end of
20 each rod being attached to a short sprocket-chain 27, running over a sprocket-wheel 28, secured to the frame of the car or locomotive. The other end of each sprocket-chain is attached to the rod 9, heretofore described.
25 The operation of this construction will be obvious.

It will be evident that other compensating devices, such as shown in Figs. 5 and 6, may be employed instead of the springs 10. In
30 the modification shown in Fig. 5 the compensating device consists of a cylinder 29 and a piston 30, interposed at any point between the truck-frame and the cross-bar 8 and having a rubber or other buffer therein. The
35 modification shown in Fig. 6 covers a leaf-spring secured to the frame of the truck, and

each has its free end secured to one of the bent rods 11.

It will be obvious that other changes or modifications may be made in the details of
40 construction of my invention without departing from the spirit or sacrificing the principle thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Pat-
45 ent, is—

1. The combination with the truck of a car, and a car-body thereon, of a headlight supported on an upper rod rotatably attached to the car-body, a lower rod rotatably mounted
50 in suitable bearings on the car-body, a double gimbal-joint interposed between said rods, connections attached to each side of the truck and to a cross-bar carried by the lower rod, and means interposed in said connections for
55 automatically varying their length in unison with the independent movements of the car-body and car-truck.

2. The combination with a car-truck, a body thereon, and a headlight, of suitable
60 connections between the headlight and truck for turning said headlight, springs interposed in said connections, and means for movably supporting said connections from the car-
65 body.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE F. CHAPMAN.

Witnesses:

LEVI WALLACE,

GEORGE W. SANDERSON.