2 Sheets--Sheet 1.

J. N. SAWKINS.
Car-Brake.

No. 168,585. Patented Oct. 11, 1875.

FIG. 1.

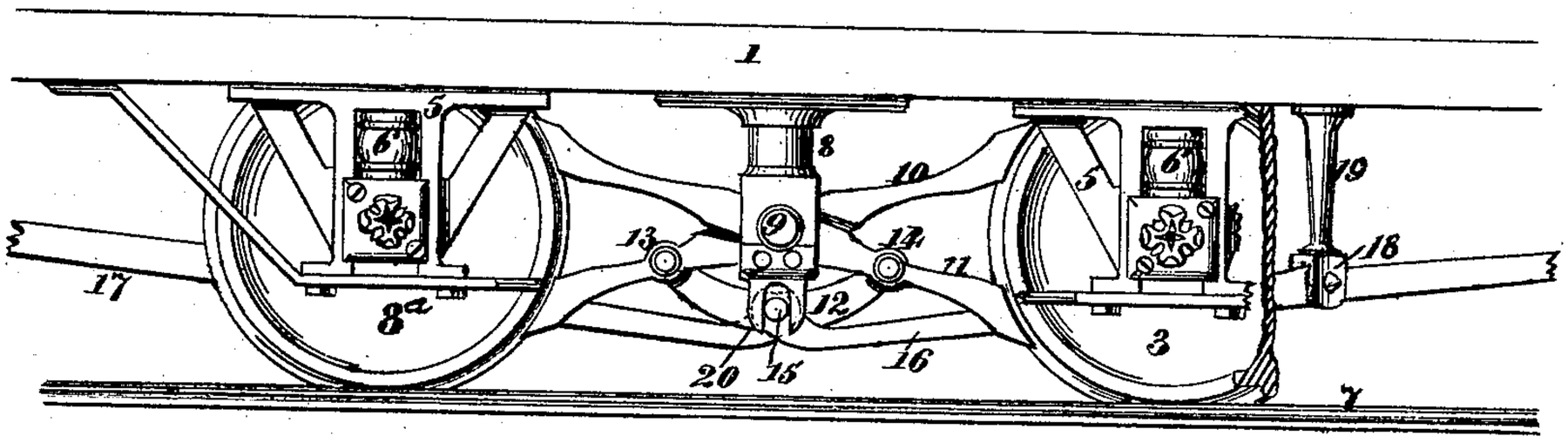

FIG. 2.

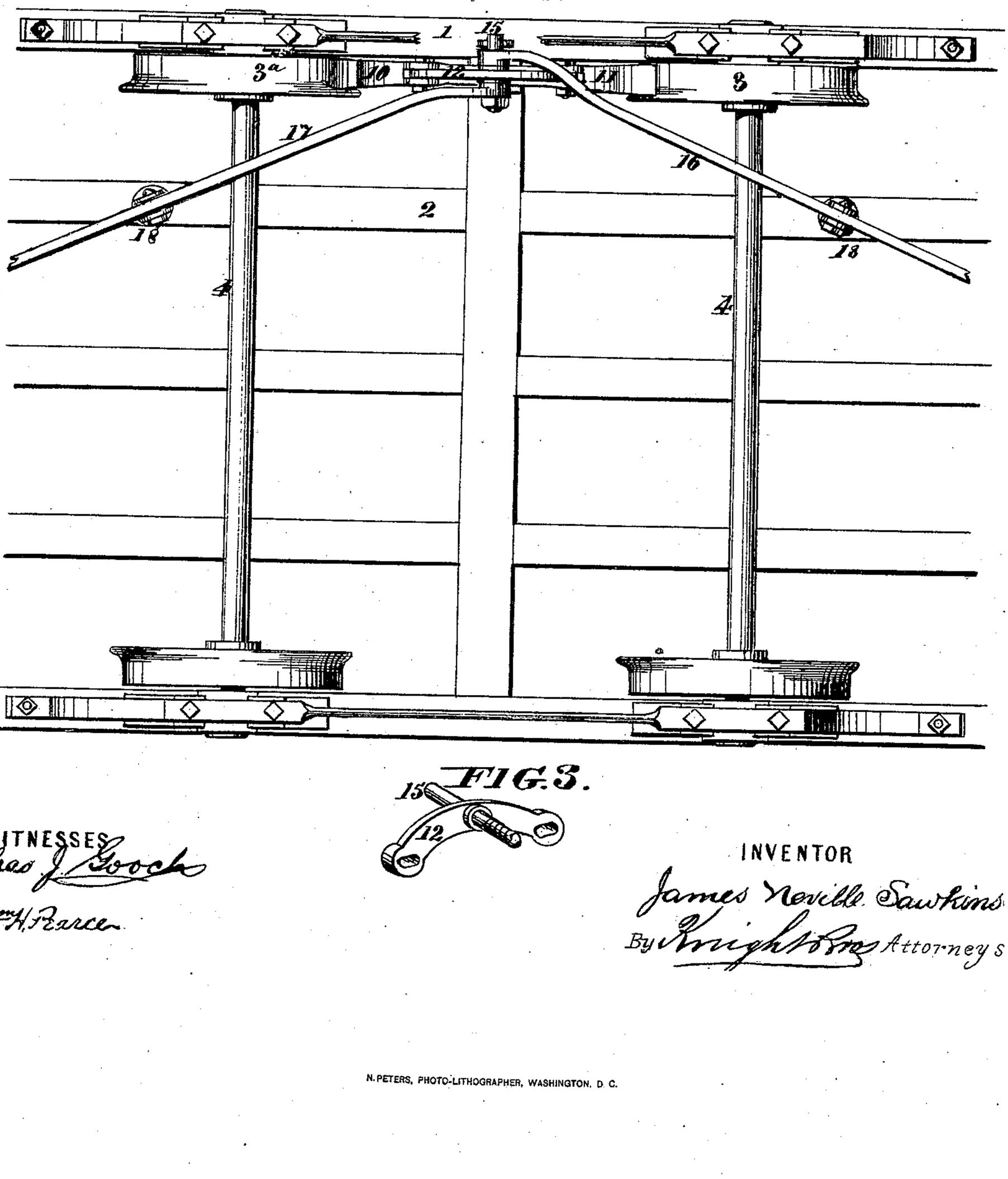

FIG. 3.

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2 Sheets--Sheet 2.

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FIG. 4.

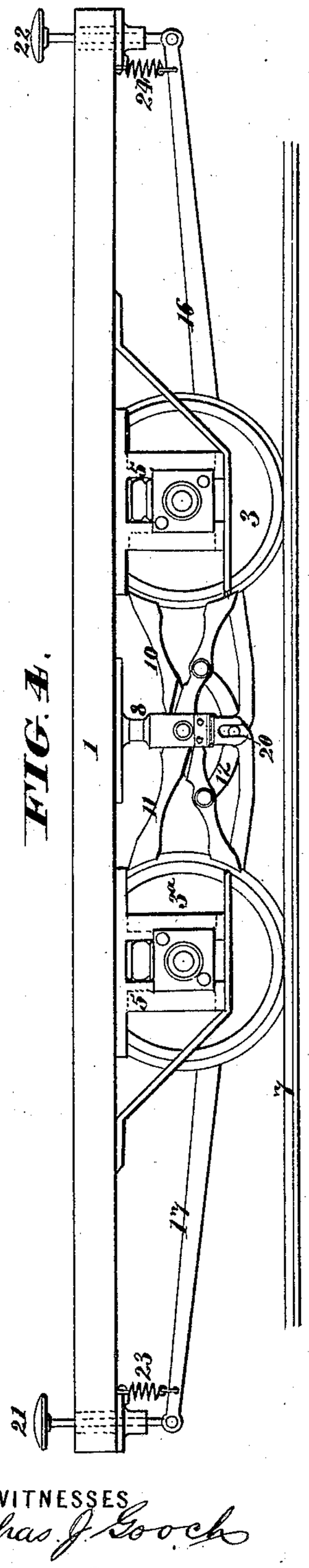


FIG. 5.

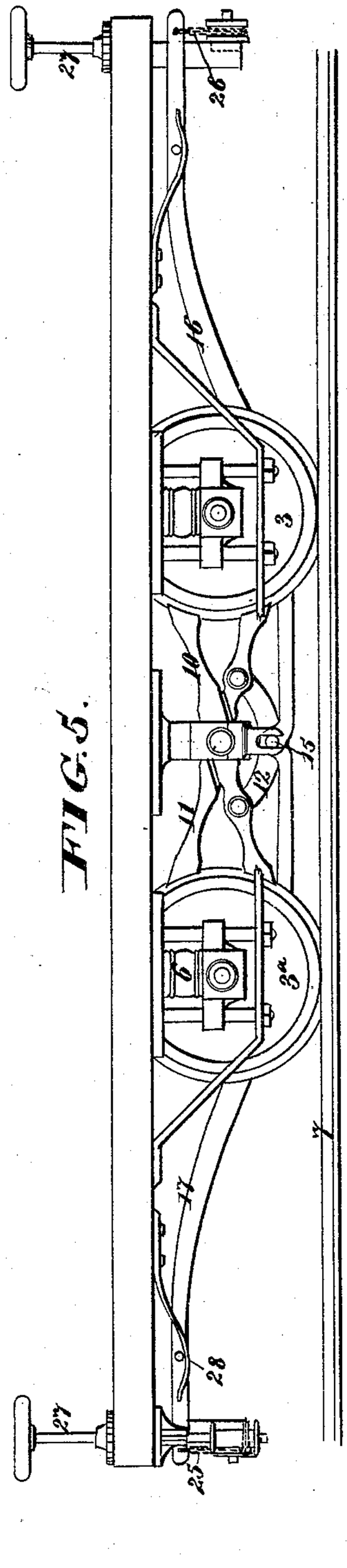
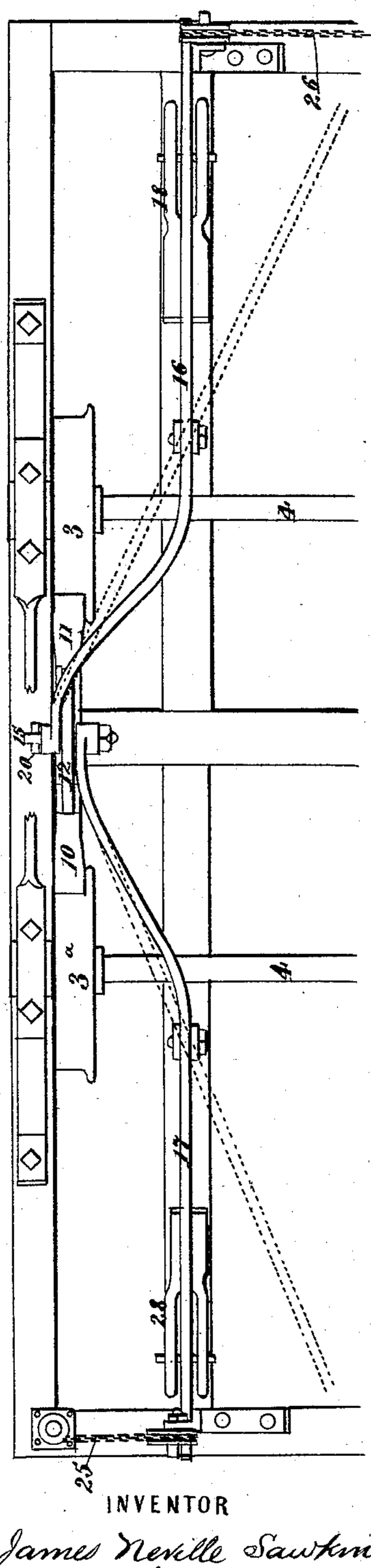


FIG. 6.



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UNITED STATES PATENT OFFICE.

JAMES NEVILLE SAWKINS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **168,585**, dated October 11, 1875; application filed June 15, 1875.

To all whom it may concern:

Be it known that I, JAMES NEVILLE SAWKINS, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification:

My improved brake is constructed with two rocking cramp-bars, located between two adjacent wheels of a car, and operated by a peculiar system of levers and connecting-links, these bars being so proportioned and applied that when the said cramp-bars, or either of them, are moved on their pivots toward a horizontal position the ends will come in contact with the surfaces of the wheels, and will, by friction of the wheel-surfaces, be pressed in the same direction, so as to cramp between the wheels, as hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of part of the running-gear, illustrating the application of the invention to horse-cars. Fig. 2 is an under-side view of the same. Fig. 3 is a perspective view of a connecting-link for operating the cramp-bars. Fig. 4 is a side elevation of the entire running-gear of the car on a smaller scale. Fig. 5 is a side elevation of the car-truck, illustrating a modification, which is applicable also to steam-cars. Fig. 6 is an under-side view of a part of the said truck.

1 2 may represent portions of the frame of a car or car-truck; 3 3ª, the wheels; 4, the axles; 5, the pedestals; and 6, the springs. 7 may represent rails. All the before-named parts may be of usual construction. Midway between two adjacent wheels on one side of a car or car-truck, as the case may be, is a pillar or pendant, 8, constituting the bearing or attachment of a horizontal stud, 9, on which are pivoted a pair of rocking-bars, 10 11, which are connected by their lower members by means of a link or bar, 12, pivoted to the said cramp-bars at 13 14, and connected by a pivot, 15, to one or more levers, 16 and 17, fulcrumed at 18 to suitable lugs or pendants 19, or otherwise connected with the main frame. The pivot 15 works within guides 20, projecting downward from the pillar 8, so as to confine the connecting-bar 12 to a vertical path as it is moved up or down by the lever 16 or 17. The cramp-bars 10 11 are crossed on their pivot 9, as shown, and are so proportioned and disposed that when brought toward a horizontal position by the upward movement of the connecting-bar 12, in the illustrations here shown, their ends will come in contact with the adjacent surfaces of the two wheels. It will now be seen, that, supposing the car to be running from right to left, in the illustration given in Fig. 1, the rear end of the bar 10, coming in contact with the front surface of the wheel 3, above the center of the said wheel, will be forced downward by the friction of the said wheel, and, at the same time that the forward end of the same bar coming in contact with the rear surface of the forward wheel 3ª will be forced upward, tending to press the bar toward a horizontal position and causing it to cramp and tightly lock the wheels. The friction against the ends of the bar 11 will operate also to arrest the wheels, but with less force. The bar 11 serves to operate with its full effect when the car is running in the opposite direction.

In Fig. 4 the levers 17 18 are shown as operated by pedals 21 22, and retracted by springs 23 24. This mode of applying the invention is convenient and effective for horse-cars. A slight pressure of the foot, either by the driver or conductor, at either end of the car, will suffice to throw both the cramp-bars 10 11 in contact with the surface of the wheels, as already explained, and that which is adapted by the direction of the motion of the car, to cramp and lock the wheels, will be thrown instantly into effective operation. The lever may be connected, as shown in Figs. 5 and 6, by chains 25 26 with the customary winch or winding-shaft 27, and the retracting-springs may be arranged as shown at 28, or in any other preferred manner, to act upon the levers or directly upon the cramp-bars 10 11 or their connecting-bars 12, as preferred.

The invention is equally applicable to use in connection with air-brakes, a single connection of the piston-rod of the air-cylinder of the brake with a horizontal cross-bar connecting the links or bars 12 on opposite sides of the car sufficing to operate all the levers simultaneously.

For applying the invention to steam-cars,

the cramp-bars and their connections should be applied on both sides of the car, as with brakes in common use, levers of customary height, of any suitable construction and arrangement being employed to operate the cramp-bars 10 11 on both sides of both brakes simultaneously. With horse-cars they may be applied on one or both sides, as preferred, and if on both sides they may be operated simultaneously by a single lever from either end of car, attached to a cross-bar pivoted at its respective ends to the connecting-bars 12.

The following is claimed as new:

The combination of two cramp-bars, 10 11, pivoted to the pendant 8, connecting-bar 12, and two adjacent wheels, 3 3ª, on which said cramp-bars operate, substantially as set forth.

JAMES NEVILLE SAWKINS.

Witnesses:

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WM. A. THORP.