

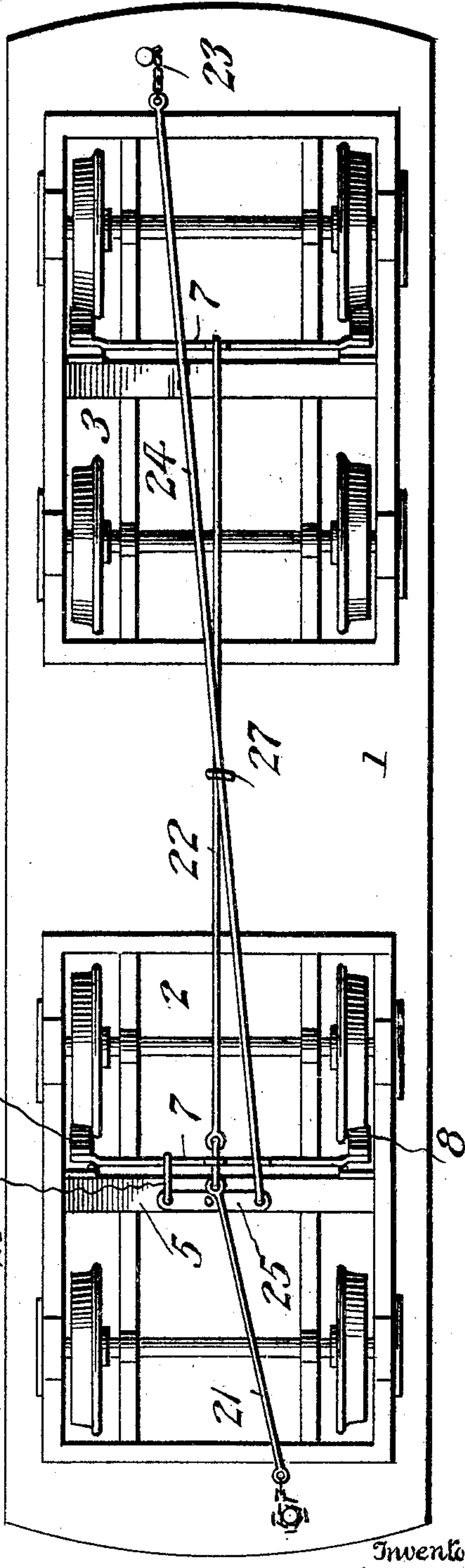
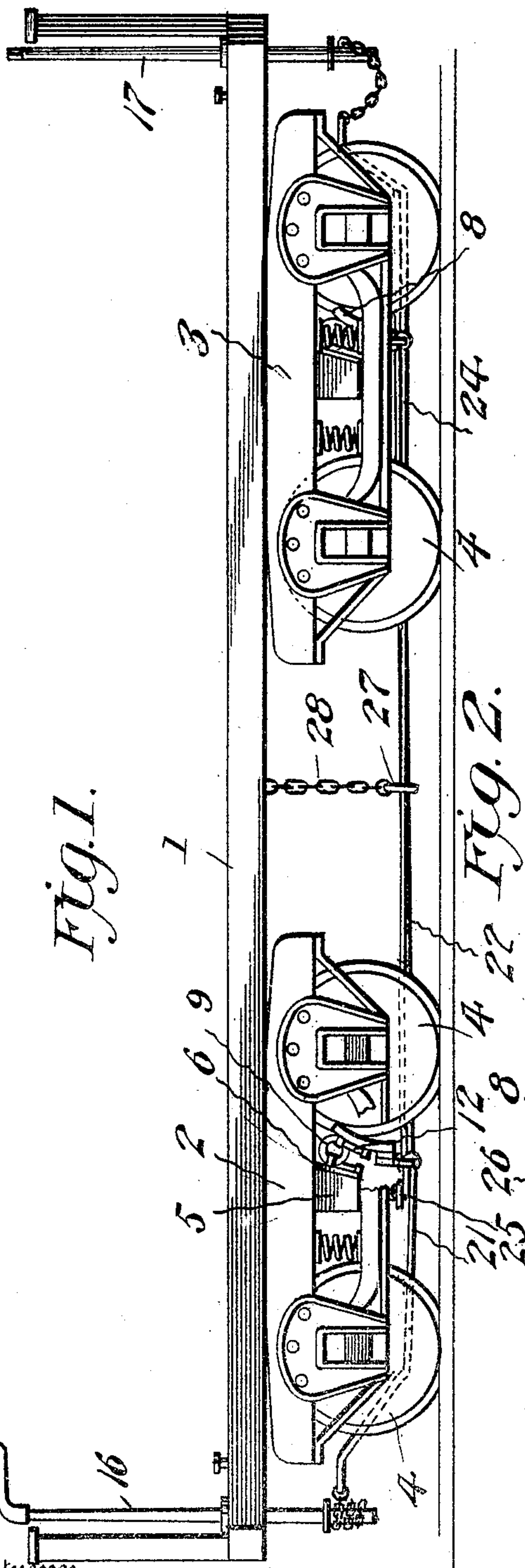
No. 806,711.

PATENTED DEC. 5, 1905.

J. H. PIERCY.
BRAKE.

APPLICATION FILED JUNE 9, 1905.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

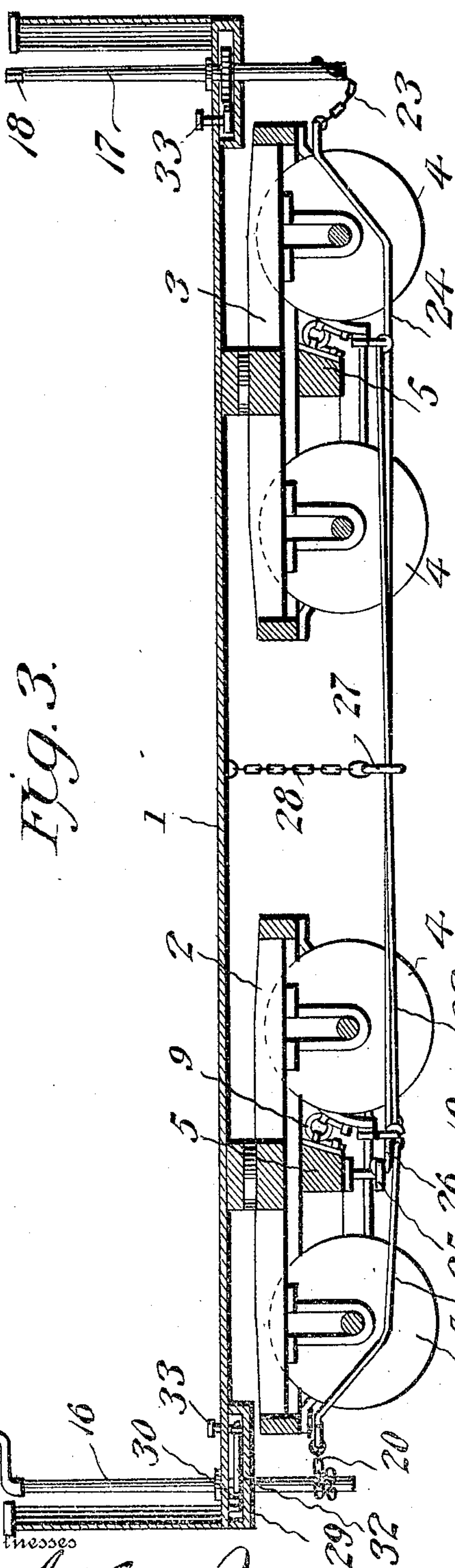


Fig. 3.

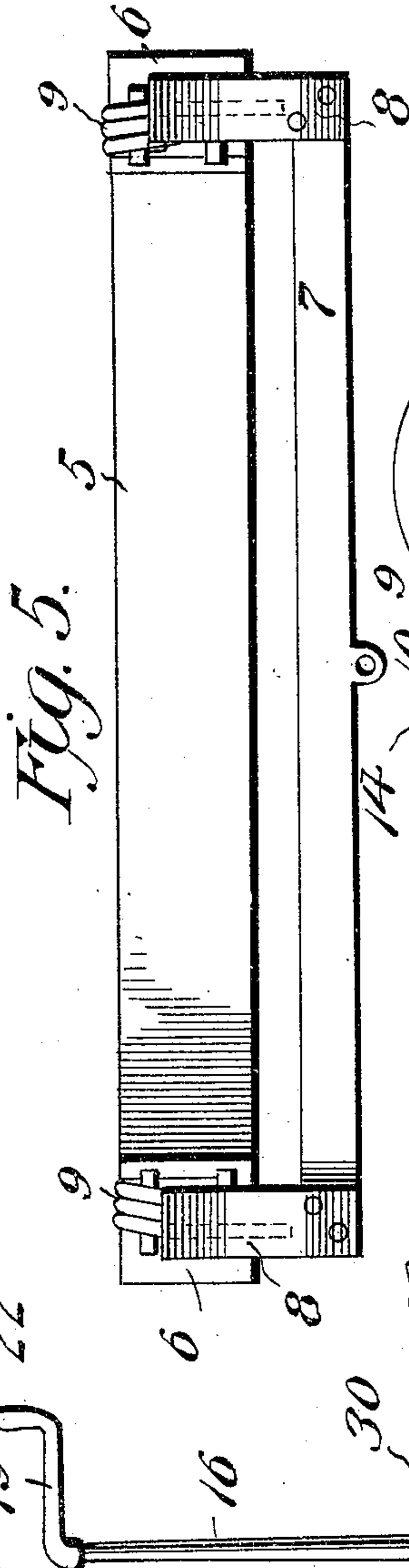


Fig. 5.

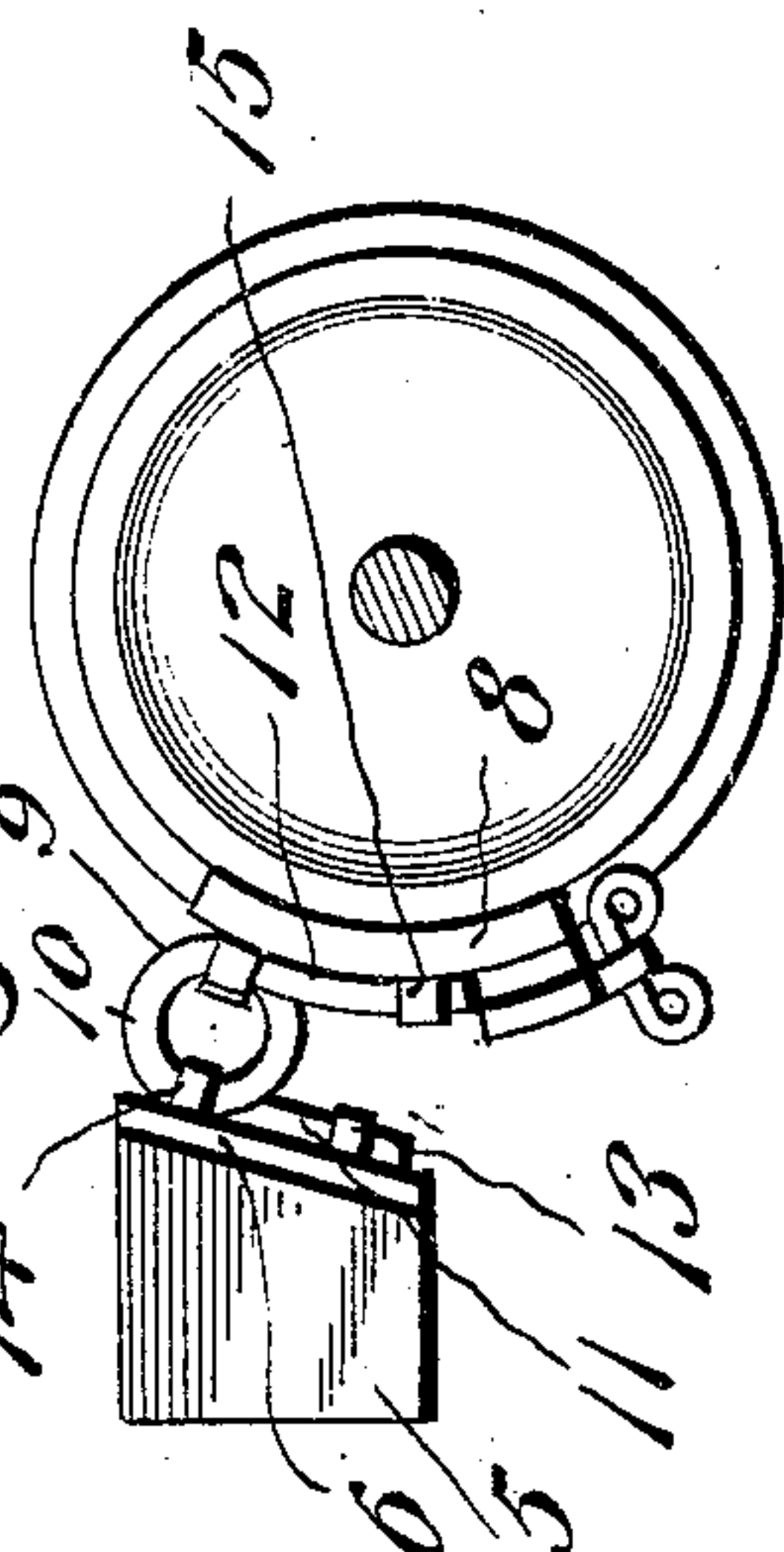


Fig. 6.

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Fig. 4.

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BRAKE.

No. 806,711.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed June 9, 1905. Serial No. 264,459.

To all whom it may concern:

Be it known that I, JOHN H. PIERCY, a citizen of the United States of America, residing at Baltimore, in the State of Maryland, have
5 invented new and useful Improvements in Brakes, of which the following is a specification.

This invention relates to improvements in car-brakes, the object of the invention being
10 to provide a construction of brake mechanism especially designed for street-cars and wherein the brake-shoes are adapted to be thrown automatically and instantaneously into engagement with the wheels to bring the car to
15 a quick stop.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of the
20 bottom and platform portions of a car and the brake mechanism constituting the invention, the brake-shoes being shown held out of engagement with the wheels. Fig. 2 is a bottom plan view of the same. Fig. 3 is a central longitudinal section. Fig. 4 is a detail
25 view of one of the brake-shafts and the pawl-and-ratchet mechanism associated therewith. Fig. 5 is a front elevation of one of the brake-beams and cooperating parts; and Fig. 6 is a
30 detail end view of the parts illustrated in Fig. 5, showing the adjacent brake-shoe in engagement with a wheel.

Referring now more particularly to the drawings, the numeral 1 represents the bot-
35 tom of a car of any ordinary or preferred construction, and 2 and 3 the swiveled trucks of the car, upon which the wheels 4 are mounted in any known or desired manner.

Mounted upon each truck between the sets
40 of wheels carried thereby is a transverse bar or beam 5, carrying at its ends, upon one side thereof, bracket-plates 6. Arranged parallel with the bar 5 is a brake-beam 7, carrying at its opposite end brake-shoes 8 to engage
45 one of the set of wheels carried by the truck. These brake-shoes are adapted to be normally thrown into braking engagement with the wheels by actuating-springs 9, each of said springs comprising a stiff spring rod or wire
50 bent centrally to form a coil 10 and having its end portions 11 and 12 projecting beyond the coil for respective engagement with the cooperating bracket 6 and brake-shoe 8. As shown, the end portion 11 and coil 10 of the
55 spring are respectively connected by clips or other attaching devices 13 and 14 to the

bracket-plate 6, while the opposite end of the spring and opposite side of the coil are connected by a clip 15 or other suitable fastening to the rear side of the brake-shoe 8, the end
60 12 of the spring thus being normally thrown outward by the action of the coil portion 10 to hold the brake-shoe in engagement with the periphery of the car-wheel. All of the brake-shoes are operated in this manner and are
65 therefore normally adapted to engage the wheels to hold the same from movement.

Journaled in the opposite ends or platform portion of the bottom 1 of the car are vertical brake-shafts 16 and 17, which extend above
70 and below the platform, each shaft being provided with an angular upper end 18 to receive a detachable operating crank-handle 19. Secured to the lower end of the shaft 16 is a chain 20, which connects at one end to a
75 brake-rod 21, attached at its opposite end to the brake-beam 7 on the truck 2. The said beam 7 on the truck 2 is directly connected by another brake-rod 22 with the brake-beam 7 on the truck 3, whereby the two brake-
80 beams are adapted to be controlled in unison from the brake-shaft 16. To the lower end of the brake-shaft 17 is attached a chain 23, which is connected to the outer end of a brake-rod 24, said rod being pivotally con-
85 nected at its inner end to one of the arms of a centrally-pivoted brake-lever 25, mounted on the transverse bar 5 of the truck 2, the other arm of said lever 25 being attached by suitable connections 26 to the adjacent brake-
90 beam 7. By this construction both brake-beams are also adapted to be controlled through the medium of the brake-shaft 17. The brake-rods 22 are crossed, as clearly shown in Fig. 2, to permit them to swing
95 with the trucks without interfering and without varying the position of the brake-beams. The rods are guided at their point of crossing by a guide-ring 27, suspended by a chain
100 28 from the bottom of the car, which guide-ring prevents them from having undue lateral movement.

Arranged below each end or platform portion of the car is a casing 29, through which the adjacent brake-shaft passes, and mounted
105 in this casing on the shaft is a ratchet-wheel 30, adapted to be engaged by a pawl 31, pivoted to the bottom wall of the casing. The tooth of the pawl is normally held in engagement with the ratchet-wheel by a spring 32,
110 and the pawl is provided with a knob or projection 33, extending upwardly through an

opening in the platform and adapted to be laterally swung by the foot of the motorman to throw the pawl out of engagement with the ratchet-wheel, thus permitting the brake-shaft to be turned to wind up the connecting draft-chain 20 or 23, as the case may be.

When the car is moving in one direction, the brake-shaft at that end is turned to wind up the draft or connecting chain 20 or 23 thereon, while the other winding-shaft is loosened to slacken the cooperating chain, whereby the brake-beams will all be moved outwardly by the wound-up draft-chain to hold the brake-shoes out of engagement with the wheels. When it is desired to bring the car to a gradual stop, the pawl of the operating brake-shaft may be released and the shaft permitted by the motorman to turn slowly in a retrograde direction to permit the actuating-spring of the shoes to throw them gradually into braking engagement. The shoes may then be retracted by winding the shaft in the proper direction in the manner before described. When it is desired to bring the car to an immediate stop, the pawl of the operating brake-shaft is released and held out of engagement with the ratchet-wheel thereof, thus permitting the shaft to turn in a retrograde direction without resistance and the springs to throw the brake-shoes instantly into engagement with the wheels. It will be seen that the construction is such that either brake-shaft may be rendered operative and the other inoperative at will, so that the operation of the brake-shoes may be controlled by either shaft, according to the direction of motion of the car. The invention thus provides a brake mechanism which is simple of construction, reliable and efficient in operation, and by which the brakes may be gradually or instantaneously thrown into braking engagement with the car-wheels. Moreover, it will be apparent that if any of the chains or operating

connections should break the shoes will be automatically thrown into engagement with the wheels and quickly stop the car.

Having thus described the invention, what I claim is—

1. In a brake mechanism for cars, a car-body, spring-projected shoes, an operating-shaft, a connection between said shaft and the brake-shoes, a casing arranged upon the under side of the car-body, a ratchet-wheel on the shaft inclosed within said casing, a pivoted spring-actuated pawl also arranged within said casing and adapted to engage the ratchet-wheel, and a foot-piece projecting upwardly through the car-platform and movable laterally therein to release said pawl.

2. In a brake mechanism for cars, a support carrying a bracket-plate, a brake-shoe, a spring having a central coil disposed between the bracket and brake-shoe, and clips for fastening the coil and extremities of the spring to the bracket-plate and brake-shoe.

3. In a brake mechanism for cars, the combination with a car-body, of trucks mounted thereon, cross-bars applied to said trucks, brake-beams carrying shoes to engage the car-wheels, springs carried by the cross-bars and connected with the brake-beams to normally throw the brake-shoes into engagement with the wheels, operating connections attached to the brake-beams, operating-shafts actuating said connections to move the brake-shoes out of engagement with the wheels, ratchet-wheels applied to said shafts, spring-actuated pawls to engage the ratchet-wheels, and foot-pieces for releasing the pawls from engagement with said wheels.

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

JOHN H. PIERCY.

Witnesses:

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