

No. 754,829.

PATENTED MAR. 15, 1904.

M. TOLTZ.  
BRAKE FOR PASSENGER CARS.  
APPLICATION FILED MAY 17, 1902.

NO MODEL.

Fig. 1

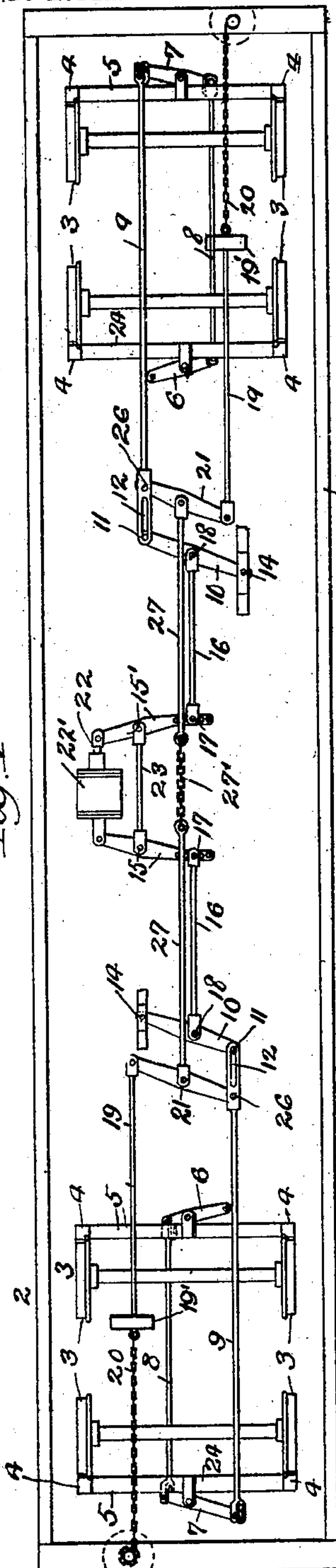


Fig. 2

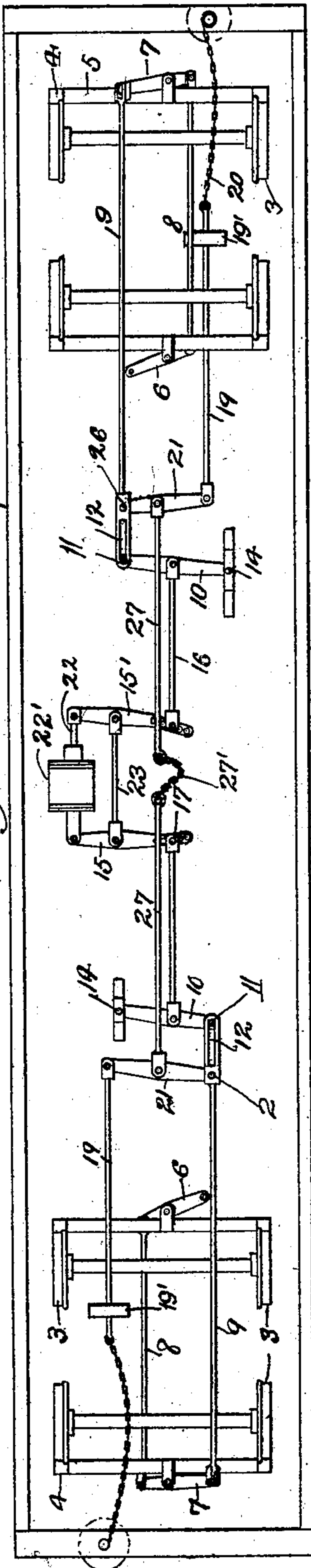
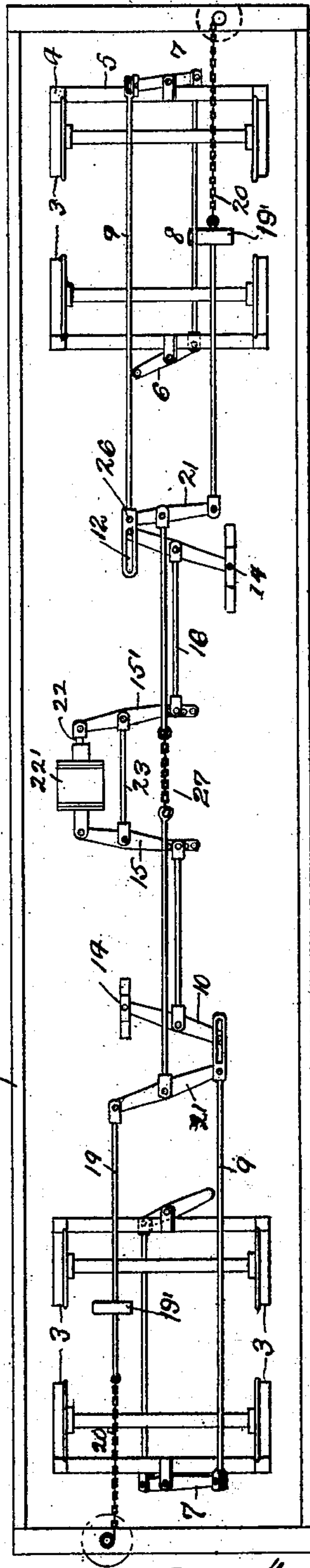


Fig. 3



Witnesses:  
David E. Smith  
J. H. Beckstrom

Inventor:  
Max Toltz  
By C. Hawley Atty.



# UNITED STATES PATENT OFFICE.

MAX TOLTZ, OF ST. PAUL, MINNESOTA.

## BRAKE FOR PASSENGER-CARS.

SPECIFICATION forming part of Letters Patent No. 754,829, dated March 15, 1904.

Application filed May 17, 1902. Serial No. 107,749. (No model.)

*To all whom it may concern:*

Be it known that I, MAX TOLTZ, a resident of St. Paul, Ramsey county, Minnesota, have invented certain new and useful Improvements in Brakes for Passenger-Cars, of which the following is a specification.

This invention relates to brakes on railway-cars, and has particular reference to the joining of the hand and automatic brakes to the end that they may be used simultaneously without opposing one another. The brake systems that are generally used are of the type in which the power or automatic brakes being set the brake-stands cannot be used without first releasing the automatic brakes, and vice versa. It frequently occurs that the automatic brakes release their hold after a car or train has stood for a length of time, and when this happens on a grade serious damage may result before the air or automatic brakes can be released and the hand-brakes set, and even in case the hand-brakes are finally set the car will sometimes gain such momentum as to make the hand-power ineffective.

The particular object of my invention is to improve brake systems for railroad-cars to the extent of enabling the simultaneous use of the automatic and hand brake powers, so that the power of one may be added to that of the other at any time and to accomplish this result without rendering the automatic and hand brakes interdependent.

Briefly stated, my invention consists in a brake-operating system for cars, and particularly for passenger-cars, which system includes both automatic and hand brake operating means, said means being connected with the truck-levers for operation in the same direction and themselves connected by means permitting lost motion between them, to the end that one may be operated without disturbing the other or both operated at the same time.

My invention further consists in particular constructions and in combinations of parts, all as hereinafter described, and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a plan view, seen from above, of

a brake system for passenger-cars embodying my invention. Fig. 2 is a similar view showing the brakes set by the air mechanism. Fig. 3 is a similar view showing the brakes set by the hand mechanism.

In the drawings, 2 represents the frame of the car; 3, the wheels; 4, the brake-shoes; 5, the brake-beams; 6 and 7, the truck-levers; 8, the truck-rods, and 9 the lever-rods. The rods 9 are provided with slotted ends. (See 12.) In other respects all of these parts may conform to or may take the form of any of the well-known appliances. The brake-stands are indicated at the ends of the car. 20 20 65 are the hand-brake chains, connecting with the rods 19, which have the stationary stops 19'. The rods 19 are pivoted on the ends of the levers 21, the opposite ends of which are pivoted at points 26 to the rods 9. The levers 21 are joined by the rods 27 to the chain 27', said rods being connected to intermediate points on the levers 21. It is obvious that when either of the brake-stands is operated the corresponding lever 21 will be thrown and will exert draft force on its connected rod 9 and related brake-shoes. The throw and pull of the first lever 21 is communicated to the opposite lever 21 through the rods 27 and connecting-chain, and said opposite lever 21 pulling upon the fulcrum provided by the then stationary rod 19 and brake-stand will exert a pull upon its rod 9 and related brake-shoes.

22' represents the air-brake cylinder, 22 85 the piston-rod thereof, and 15 15' the air-brake levers, connected by the usual link 23. The air-brake levers 15 15' are connected to corresponding levers 10 by the rods 16. The levers 10 are pivoted at points 14, which are stationary on the car-body. The free ends of the levers 10 are provided with pins which work in the slots 12 of the rods 9. When the piston of the air-brake cylinder is forced out to operate the air-brake levers 15 15', the levers 10 will be thrown to exert simultaneous draft forces upon the brake-rods 9 and apply the brakes upon both trucks. At this time if the hand-brakes have been previously set as above described, in which case the parts will appear as shown in Fig. 3, the pins 11 of levers 10 will travel in the slots 12



until engagement with the rods 9 is effected, after which the pull of the air-brake or automatic brake device will be added to the pull of the hand-brake stand previously set. If the hand-brakes are in a released condition, the operation of the air-piston will result in the immediate movement of the rods 9 and the setting of the brakes, with an incidental movement of the levers 21 and the slackening of the hand-brake chains 20, as shown in Fig. 2. It is obvious that after the automatic brakes have thus been set the hand-brakes may still be applied by operating either of the brake-stands. It will be evident that either brake-operating power—to wit, the air or hand power—may be released without reference to the other.

As numerous modifications of my invention will readily suggest themselves to one skilled in the art, I do not confine my invention to the specific constructions herein shown and described.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A brake system for railway-cars, comprising an air-cylinder with its levers, truck-levers and lever-rods, brake rods and stands, in combination with a pair of floating levers, each connected with said brake-rods at one end and with said lever-rods at the other, a collapsible connection between said air-cylinder levers and said lever-rods, and a collapsible connection between said floating levers, substantially as described.

2. In a brake system for railway-cars, an air-cylinder with its levers, truck-levers, lever-rods, brake rods and stands, combined with a pair of levers, one of which is floating and the other pivotally fixed at one end to the body of the car, said floating lever being connected to said brake-stand at one end and to said lever-rod at the other and operable by said brake-stand independently of the fixed lever, said fixed lever being collapsibly connected with said lever-rods at its free end, and being intermediately coupled to the air-cylinder levers, substantially as described.

3. In a brake apparatus for railway-cars, the combination of the air-cylinder with its levers and rods, the truck levers and rods, the brake stand and rods, with the stationary stops, 19', the levers, 21, fulcrumed on said stationary stops, and tied to the lever-rods, and the levers, 10, collapsibly connected with the lever-rods and coupled to the air-cylinder levers, substantially as described.

4. In a brake for railway-cars, the combination with the air-brake apparatus, of levers, 10, fixed pivots therefor on the body of the car, rods, 9, having in their ends, pivot-slots, 12, auxiliary levers, 21, and the flexibly-joined tie-rods, 27, connecting said levers, 21, substantially as described.

5. In a brake apparatus for railway-cars,

the combination comprising air-cylinder, 22', with its levers and rods, the rod, 16, the lever, 10, the draft-rod, 9, having the pivotal slot connection, 12, with said lever, 10, and the lever, 21, having pivotal connections at or near the end of said rod, 9, substantially as described.

6. In a hand-brake apparatus for railway-cars, the combination comprising air-cylinder, 22', with its associated parts, rods, 16, draft-rods, 9, levers, 10, fixed at one end thereof, having at the other end a flexible connection with said draft-rods, 9, tie-rods, 27, and chain connection, 27', and levers, 21, pivoted to said rods, 9, and to said tie-rods, 27, substantially as described.

7. In a brake system for railway-cars, the air-cylinder with its levers and rods, the usual brake-stands, chains, and rods, 19, in combination with draft-rods, 9, connecting-rods, 27, a flexible connection, 27', between said rods, 27, lever, 10, levers, 21, pivoted intermediately to rods, 27, pivotal connections at one end of levers, 21, with said rods, 9, and at the other end of said levers, 21, with hand-brake rods, 19, and flexible connections between said rods, 9, and said lever, 10, substantially as described.

8. A brake system for railway-cars, comprising the usual air-cylinder with its levers, the truck levers and rods and brake-stands, in combination with levers, 21, rods, 27, chain connections, 27', levers, 10, coupled to levers, 21, and connections between levers, 21, and brake rods and stands and flexible connections with the air-brake mechanism, substantially as described.

9. A brake system for passenger-cars and the like comprising the usual truck-levers and draft-rods, brake-stands and automatic brake mechanism, in combination with the levers 21, collapsibly connected with respective brake-stands and pivotally connected with respective draft-rods, the collapsible connection or tie between said levers 21, and the levers 10 having fixed pivots and connected with said automatic mechanism and said draft-rods, substantially as described.

10. A brake system for passenger-cars and the like comprising the usual truck levers and rods, brake-stands, and air-brake mechanism, in combination with levers 21 connected with the brake-rods and brake-stands, a chain connection between said levers 21, levers 10 having fixed pivots and having slot and pin connections with said brake-rods and rods connecting said levers 10 to the air-brake mechanism, substantially as described.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, this 17th day of April, 1902.

MAX TOLTZ.

In presence of—

C. G. HAWLEY,

A. E. HAWLEY.