(No Model.)

J. I. STAFFORD.

CAR BRAKE.

No. 430,895. Patented June 24, 1890.

Fig. 1.

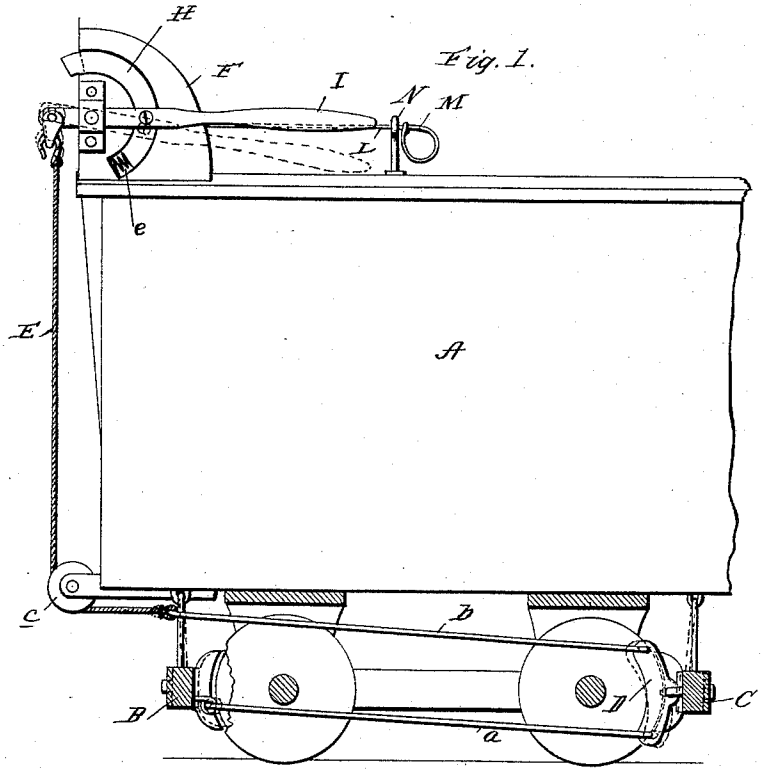


Fig. 2.

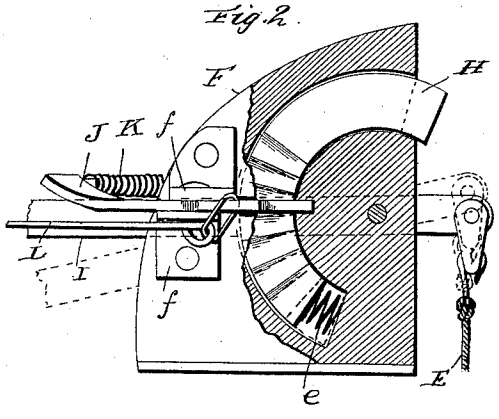


Fig. 3.

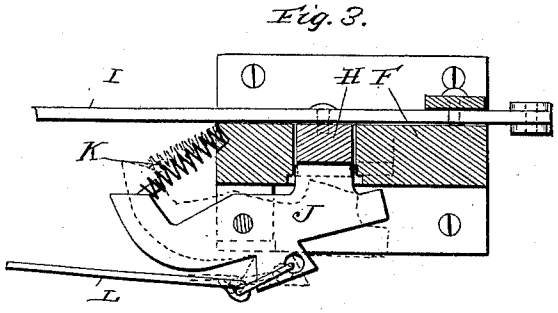
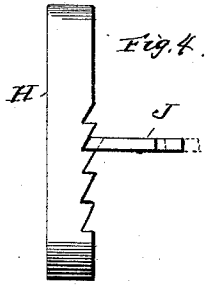


Fig. 4.



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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 430,895, dated June 24, 1890.

Application filed May 2, 1890. Serial No. 350,301. (No model.)

To all whom it may concern:

Be it known that I, JOHN I. STAFFORD, a citizen of the United States, residing at Ramsey, in the county of Fayette and State of Illinois, have invented certain new and useful Improvements in Car-Brakes; 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.

My invention has relation to improvements in railway-car brakes, and the novelty will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a railway-car bearing my improvements, the running-gear thereof being shown in section to illustrate the connection between the respective brake-bars of the truck. Fig. 2 is a side elevation, partly in section, of the casing carrying the segmental piston and its component parts. Fig. 3 is a horizontal sectional view of the casing and segmental piston, the pivoted pawl engaging the latter being shown in plan, and Fig. 4 is a detail end elevation of the segmental piston and pawl engaging the teeth of the same.

In carrying out my invention the car A and its respective parts may be of any ordinary or approved construction. The brake-bars B and C may also be of any approved construction, and they are connected to the car-bottom in any suitable manner which, while allowing them to swing forwardly and rearwardly, will prevent lateral play, thus keeping the shoes of said bars in line with the car-wheels. The bar C, which bears from the rear upon the inner wheels of the truck, has suitably connected to it at a point adjacent to its middle a lever or swinging arm D. This lever D has connected to it at its lower end a bar or rod *a*, which is attached in turn at its other end to the forward or outer brake-bar and serves to connect the same with the inner bar.

The upper end of the lever D has connected to it a bar *b*, which leads forward through suitable guides, if desired, and is connected at its forward end with a chain or rope, presently to be described, which in turn is connected to the improved brake-operating apparatus.

The chain or rope E, which connects the outer end of the bar *b* with the operating mechanism, passes under a sheave or guide-pulley *c*, which is journaled in standards projecting from the end of the car at the bottom thereof, and the said chain E is provided at its free end with a hook or other attaching medium, which engages and is secured in a clevis or other suitable device attached to the end of the operating-lever, presently to be described.

The casing F, which carries and has attached to it the component parts of the operating mechanism, is preferably attached to the top of the car at the end and in the lateral center thereof, as it will be seen that by this placement of the same the necessity of going to the side of the car to brake the same is obviated. This casing F, which is formed of two side walls connected to an intermediate wall or boxing, is preferably of a size in proportion as illustrated, so as to freely pass beneath bridges and the like when the car is in motion. The central wall or boxing of the casing is provided with a forwardly-curved slot or opening, which extends from the forward edge thereof in and down in a curved line and receives the segmental curved rack H, which moves therein, and is shouldered to prevent its lateral displacement.

The segmental rack H is constructed of any suitable metal, and it is provided for a sufficient portion of its length upon one of its sides with ratchet-teeth of a form to allow the pawl, presently to be described, to ride over them when the segmental piston is depressed.

A spring *e* of preferable construction is placed within the curvilinear slot of the boxing at the base thereof, and bears against the lower end of the curvilinear piston, serving to insure the upward and outward movement of the same and the relaxation of the brake when the pawl is disengaged from the teeth of said piston.

At a short distance from the inner end of the piston H, I secure thereto a lever-arm I, which is fulcrumed on a bolt extending laterally from the casing at a point in front of the

curvilinear slot therein. The outer end of this lever I, as has been described, is provided with a suitable device to effect its connection with the chain E, for the purpose described.

The pawl J, which engages the ratchet-teeth of the curvilinear piston, is attached in a pivoted manner and horizontal position to the side of the casing opposite to the lever I, and at a point slightly in rear of the curved slot, suitable laterally-extending brackets or standards *f* being provided to receive said lever-pawl.

The pawl I is provided in its forward portion with an inwardly-directed extension, which is sharpened upon its edge and engages the teeth of the curvilinear piston, a horizontal slot being cut in the wall of the casing for the passage of said projecting portion. At a point adjacent to the pivotal or fulcrum point of the pawl is provided an outwardly-extending portion having an eye to receive an operating-rod, presently to be described.

The inner end of the pawl-lever is bent inwardly in an oblique direction, and the inner corner of the said inwardly-bent portion is provided with a lug-shaped portion which seats one end of a spring K, the opposite end of which is seated in a depression cut in the rear end of the casing F.

L indicates the horizontal bar, which is connected to the lever-pawl and operates the same. This rod L is provided at its free end with a handle portion M, a suitable rest N being provided for the support and guidance of the rod.

In applying the brake the inner end of the lever I, connected to the curvilinear piston, is depressed a sufficient distance, and the teeth of said piston are engaged by the pawl J and the lever held in its depressed position. The depression of the inner end of lever I raises the outer end thereof, which draws the bar *b* forward and applies the brakes upon the forward and rear wheels of the truck simultaneously. To release or relax the brakes, the rod L is pulled backward, which draws the pawl from engagement with the teeth of the segmental piston, which being released is forced upward by the spring *e* and the brake released.

I do not wish to be understood as confining myself to the exact form of construction described, as it is obvious that I may materially alter the same without departing from the gist or spirit of my invention.

Having described my invention, what I claim is—

1. In a car-brake, the combination, with a brake-chain, of a curvilinear rack supported on a rounded bearing, a hand-lever connected with said rack and one end connected with the brake-chain, and pivoted or fulcrumed at a point between its attachment with the chain and its attachment with the rack, substantially as specified.

2. In a car-brake mechanism, the combination, with a suitably-supported curvilinear rack, of a spring for normally advancing the rack, a spring-pressed pawl adapted to engage the teeth of the rack, and a lever connected with the brake-chain, and also connected with the rack-bar, substantially as specified.

3. The combination, with the casing having a lateral curvilinear slot, of a curvilinear bar having one of its sides provided with ratchet-teeth, a bearing for said bar, a spring arranged beneath the lower end of the bar, a spring-actuated pawl adapted to engage the teeth of the bar, and a lever connected in advance of its fulcrum with a brake-chain and connected in rear of said point with the curvilinear rack-bar, substantially as specified.

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

JOHN I. STAFFORD.

Witnesses:
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