(No Model.) 3 Sheets—Sheet 1.

T. HERSEE.

CAR BRAKE.

No. 267,079. Patented Nov. 7, 1882.

Fig. 1.

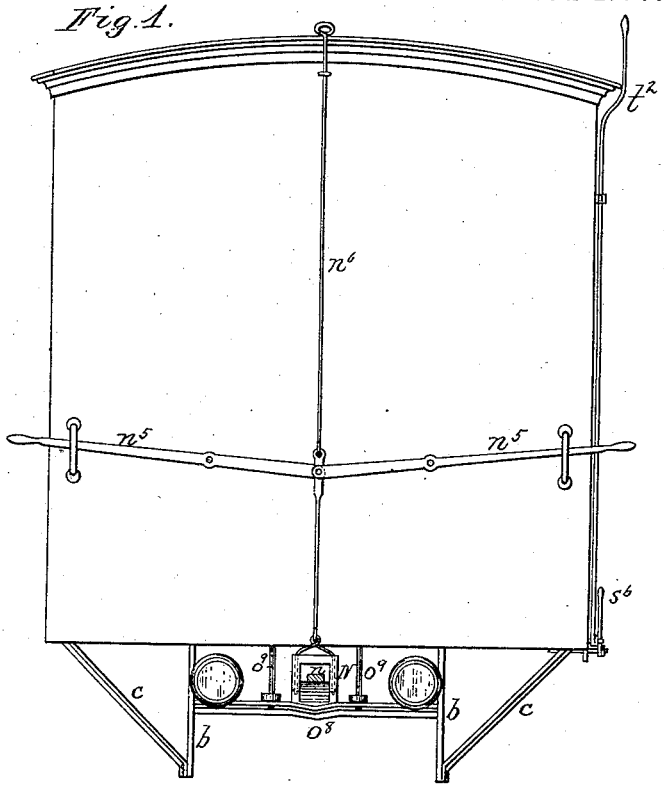


Fig. 3.

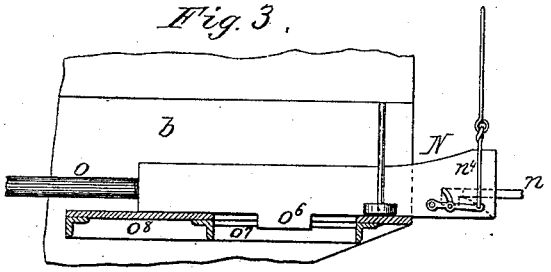
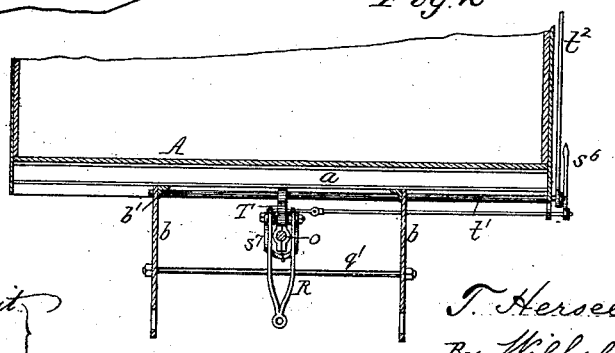


Fig. 2.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 4

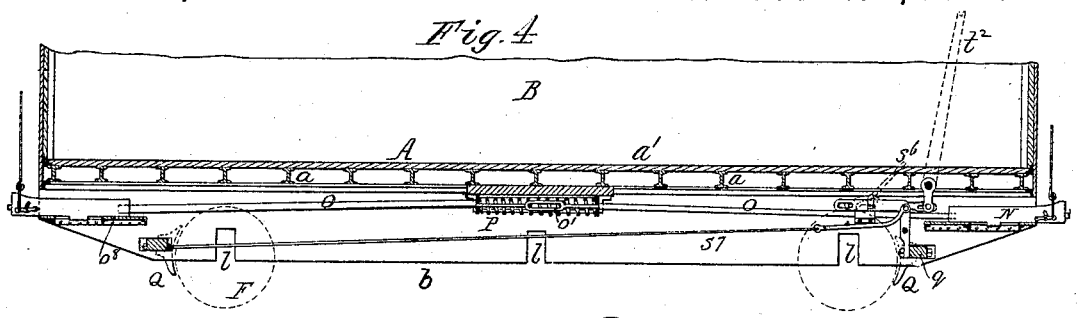


Fig. 5

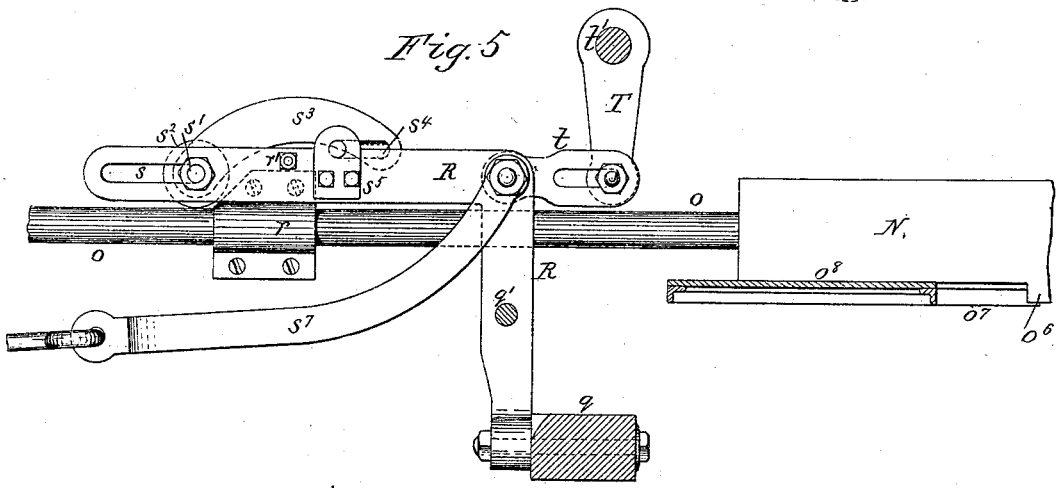
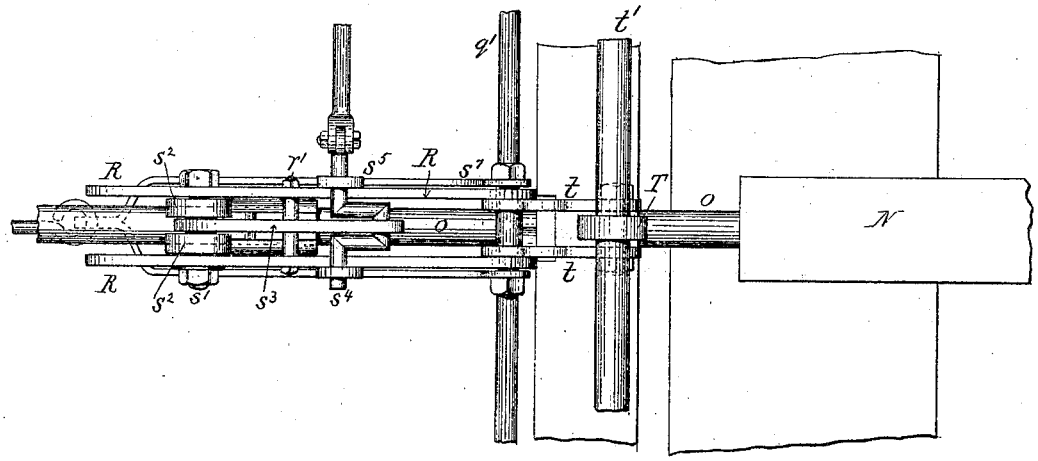


Fig. 6



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(No Model.) 3 Sheets—Sheet 3.

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Fig. 7

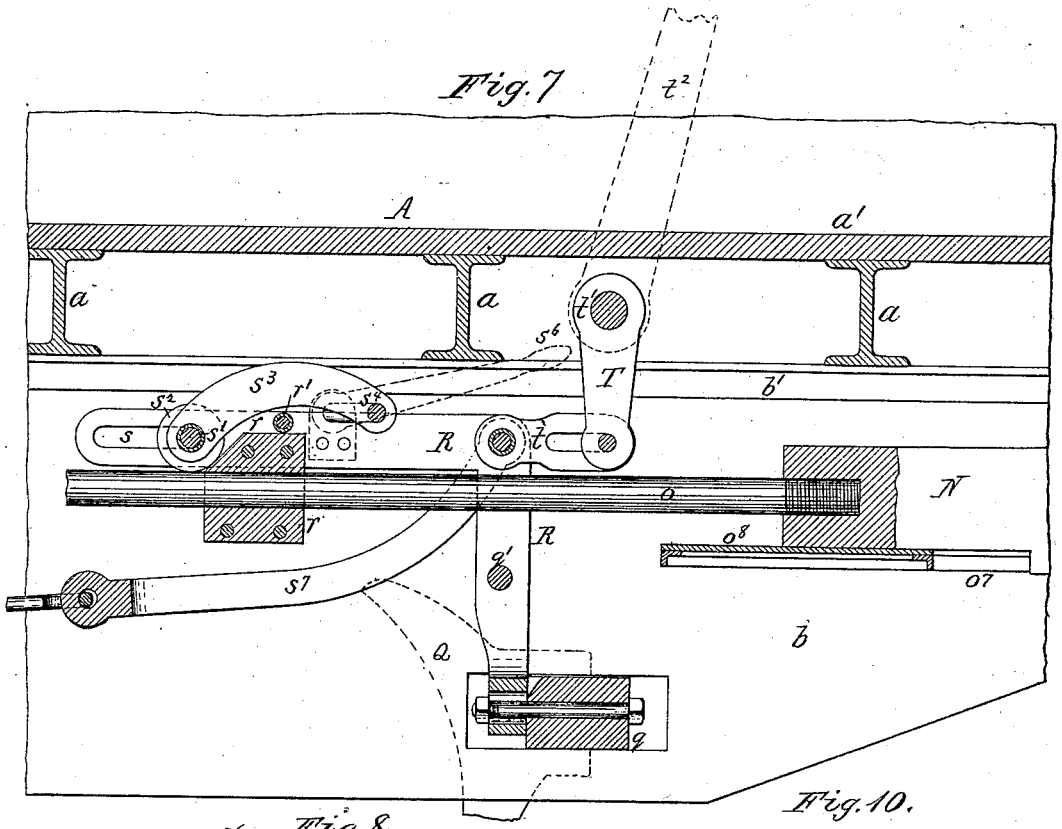


Fig. 8

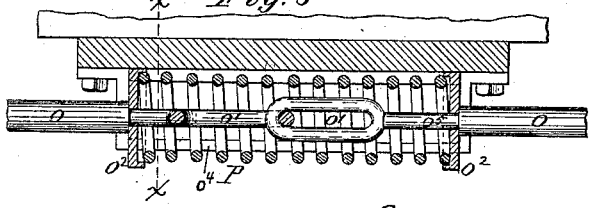


Fig. 10.

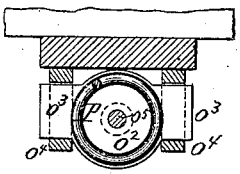
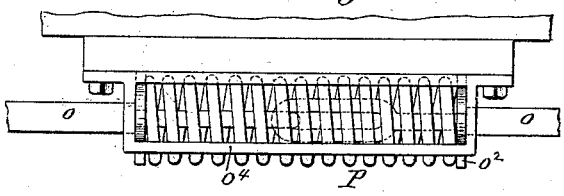


Fig. 9.



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UNITED STATES PATENT OFFICE

THOMPSON HERSEE, OF BUFFALO, NEW YORK.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 267,079, dated November 7, 1882.

Application filed January 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMPSON HERSEE, of the city of Buffalo, in the county of Erie, in the State of New York, have invented new and useful Improvements in Brakes for Railway-Cars, of which the following is a specification.

This invention relates more particularly to improvements in the brake mechanism for railway-cars, and has for its object to facilitate the application of the brakes.

My invention consists of a brake mechanism which may be applied either automatically or by hand, as will be hereinafter fully set forth.

In the accompanying drawings, consisting of three sheets, Figure 1 is an end view of the car with the axles removed. Fig. 2 is a cross-section of the lower part of the car. Fig. 3 is a side elevation of one of the draw-heads and connecting parts. Fig. 4 is a longitudinal sectional elevation of the lower part of the car. Fig. 5 is an enlarged side view of the brake-lever and connecting parts. Fig. 6 is a top view thereof. Fig. 7 is a sectional elevation of the brake-lever and connecting parts. Fig. 8 is a longitudinal sectional elevation of the inner ends of the draw-bars and spring. Fig. 9 is a side elevation thereof. Fig. 10 is a cross-section in line *x x*, Fig. 8.

Like letters of reference refer to like parts in the several figures.

A represents the floor, and B the sides, of a railway-car. The floor A is composed of cross-beams *a*, constructed of rolled iron, preferably of I shape, and flooring *a'*, which is bolted or otherwise secured to the upper sides of the beams *a*, and which runs lengthwise of the car. The cross-beams *a* are connected by two longitudinal stringer-plates, *b*, secured to the under side of the beams *a* by angle-irons *b'*, and running from end to end of the car.

c represents lateral diagonal braces arranged at suitable distances apart, and secured with their lower ends to the plates *b*, and with their upper ends to the ends of the cross-beams *a*.

N represents the draw-heads, which may be of any suitable and well-known construction but I prefer to construct them to receive a flat coupling-bar, *n*, provided with shoulders or enlargements at its ends, which engage behind shoulders of the draw-head, and which is disengaged from the shoulder of the draw-head by a lever, n^4, which is pivoted to the side of the draw-head, and which is operated by hand-levers n^5, terminating near the sides of the car, and a rod, n^6, extending to the roof, so as to be in convenient reach.

o represents rods which are secured to the inner ends of the draw-heads N, and which are connected at their inner ends by means of two links, *o'*, so that each draw-head and the bar *o* attached thereto, can be pushed back without moving the other draw-head and rod. The inner ends of the rods *o* can be connected by a telescopic joint instead of the links *o'*, whereby the same results are obtained.

P is a spiral or other suitable spring, which surrounds the inner ends of the rods *o*, and which is seated at both ends in two followers, o^2. The latter are provided with the laterally-projecting ears o^3, which are guided in ways composed of slotted horizontal bars o^4, secured to the under side of the car-body. The ears o^3 support the followers and prevent them from turning, and the followers retain the spring in its proper position. The rods *o* are constructed with reduced portions or necks o^5, which pass through the followers o^2, and which form shoulders bearing against the outer sides of the followers. Upon pushing a draw-head back the shoulder on the rod *o* presses the follower o^2 back and compresses the spring against the other follower, which is in turn held against the ends of the slots in the bars o^4. The end of one rod *o* slides upon that of the other during this movement by the links *o'*. Upon drawing a draw-head outward the motion is communicated by the links *o'* from one rod to the other. The neck o^5 of the rod *o* which is drawn slides through its follower, and the shoulder on the other bar presses against the follower and the latter compresses the spring. In this manner the draft is communicated from one draw-head to the other without abrupt pulls, and each draw-head is enabled to be pushed back without affecting the other draw-head.

o^6 represents a shoulder formed on the lower side of each draw-head and playing in a longitudinal slot, o^7, formed in the supporting-plate o^8 of the draw-head. The slot o^7 arrests the movement of the draw-head in either di-

rection before the spring P is compressed to an undue degree, while permitting a limited movement of the draw-head back and forth on its supporting-plate. The under side of the draw-head is preferably made V-shaped, and the supporting-plate of a corresponding form, so that the draw-head will tend to return to a central position after having been drawn out of its central position in going around a curve or otherwise. The lateral movement of the draw-head is limited by stops o^9, which are preferably provided with horizontal rollers, as shown in Fig. 1. The spring P and connecting parts permit of a limited lateral movement of the draw-head between the stops o^9.

Q represents the brake-shoe attached to bars q, and R represents the brake-lever, constructed in the form of a bell-crank lever, the upright arm of which turns on a transverse rod, q', which is secured to stringer-plate b, and upon which the brake-lever slides during lateral movements of the draw-head.

r represents a wedge or inclined or curved projection secured to the rod o and adapted to engage with the horizontal arm of the brake-lever R. The latter is composed of two parallel bars similar in form and secured together side by side by a bolt, r'.

s represents a horizontal slot formed in the end of both parts of the upper arm of the brake-lever, and s' is a bolt which slides in this slot.

s^2 represents two rollers mounted on the bolt s' between the two parts of the upper arm of the brake-lever, and s^3 is an arm pivoted on the bolt s' between the rollers s^2. The opposite end of the arm s^3 is attached to a crank-shaft, s^4, which is journaled in bearings s^5, attached to both parts of the upper arm of the brake-lever. The shaft s^4 is provided with a hinged extension running to the side of the car, where it is provided with a hand-lever, s^6. By turning the shaft s^4 by means of the hand-lever s^6 the bolt s' is moved through the slot s by the arms s^3. Upon placing the crank in the position shown in Fig. 7 the bolt s' is held in the outer end of the slot s, where the rollers s^2 will come in contact with the wedge r on the rod o. Upon turning the crank toward the left in Fig. 7 the bolt s' is moved to the opposite end of the slot, where the rollers s^2 cannot be reached by the wedge r.

s^7 represents a rod which connects the upper end of the brake-lever R with one or more of the brake-shoes applied to the wheels under the middle or under the opposite end of the car.

Assuming the parts to be in the position shown in Figs. 5, 6, and 7, the wedge r will raise the rollers s^2 when the draw-head is pushed back, thereby swinging the upper arm of the brake-lever R toward the right and the lower arm toward the left, whereby the shoes Q are pressed against the wheels. In this manner the brakes are applied simultaneously on all the cars of the train by the backward movement which the draw-head receives when the speed of the locomotive is reduced. When the draw-head to which the brake-lever R is connected happens to be at the forward end of the car the resistance of the car next forward pushes the draw-head back and applies the brake. When this draw-head happens to be at the rear end of the car the momentum of the next following car presses the draw-head back and applies the brake. As the draw-head returns to its former position the brake-lever is released from the projection r and returned to its open position by the overhanging weight of its upper arm. When the bolt s' and rollers s^2 are placed at the opposite end of the slot s from that in which they are shown in Fig. 5 the rollers cannot be reached by the incline r, and the movement of the draw-heads will not apply the brakes. t represents a slotted link or links attached to the upper arm of the brake-lever R, and connecting the same with an arm, T, which is mounted on a horizontal shaft, t'. The slot in the link t is long enough to permit the upper arm of the brake-lever to swing forward and back, when actuated by the wedge r, without interference of the arm T. The shaft t' extends to the side of the car, where it is provided with a hand-lever, t^2, or any other suitable contrivance, reaching to the roof of the car, and which enables the brake to be applied by hand when desired.

It is obvious from the foregoing that the brake can be either applied by hand or by the movement of the draw-heads without one mode interfering with the other; but whenever desired the mechanism for applying the brake by means of the draw-heads can be thrown out of gear by shifting the bolt s' and rollers s^2, as previously explained.

I claim as my invention—

1. The combination, with two draw-heads, N, of rods o, extending inwardly from the draw-heads, and having their inner ends connected by links o', followers o^2, fitted against shoulders on the inner ends of both rods o, and a spring, P, interposed between the followers o^2, substantially as set forth.

2. The combination, with the draw-heads N, of the rods o, connected at their inner ends, as specified, and provided with reduced inner portions, o^5, followers o^2, fitted on the reduced portions o^5 of the rods, and constructed with ears, o^3, sliding in ways o^4, and a spring, P, arranged between the followers o^2, substantially as set forth.

3. The combination, with a draw-head, N, of the rod o, provided with a projection, r, the pivoted brake-lever R, adapted to be operated by the projection r, and brake-shoes connected with the brake-lever R on opposite sides of its fulcrum, substantially as set forth.

4. The combination, with the rod o, provided with a projection, r, of the pivoted brake-lever R, having its upper arm provided with rollers s^2, and means whereby said rollers can be adjusted so as not to be operated by said projection when the brake is to be operated by hand, substantially as set forth.

5. The combination, with the brake-lever R, provided with one or more slots, *s*, of the arms s^3, provided at one end with one or more rollers, s^2, and a bolt, *s'*, sliding in the slot *s*, and connected with its opposite end to a crank-shaft, s^4, substantially as set forth.

6. The combination, with the brake-lever R and mechanism whereby the brake can be applied from the draw-head, of a slotted link, *t*, connecting the lever R with mechanism whereby the brake can be applied by hand, substantially as set forth.

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