

(No Model.)

2 Sheets—Sheet 1.

F. H. D. NEWHARD.

CAR BRAKE.

No. 348,040.

Patented Aug. 24, 1886.

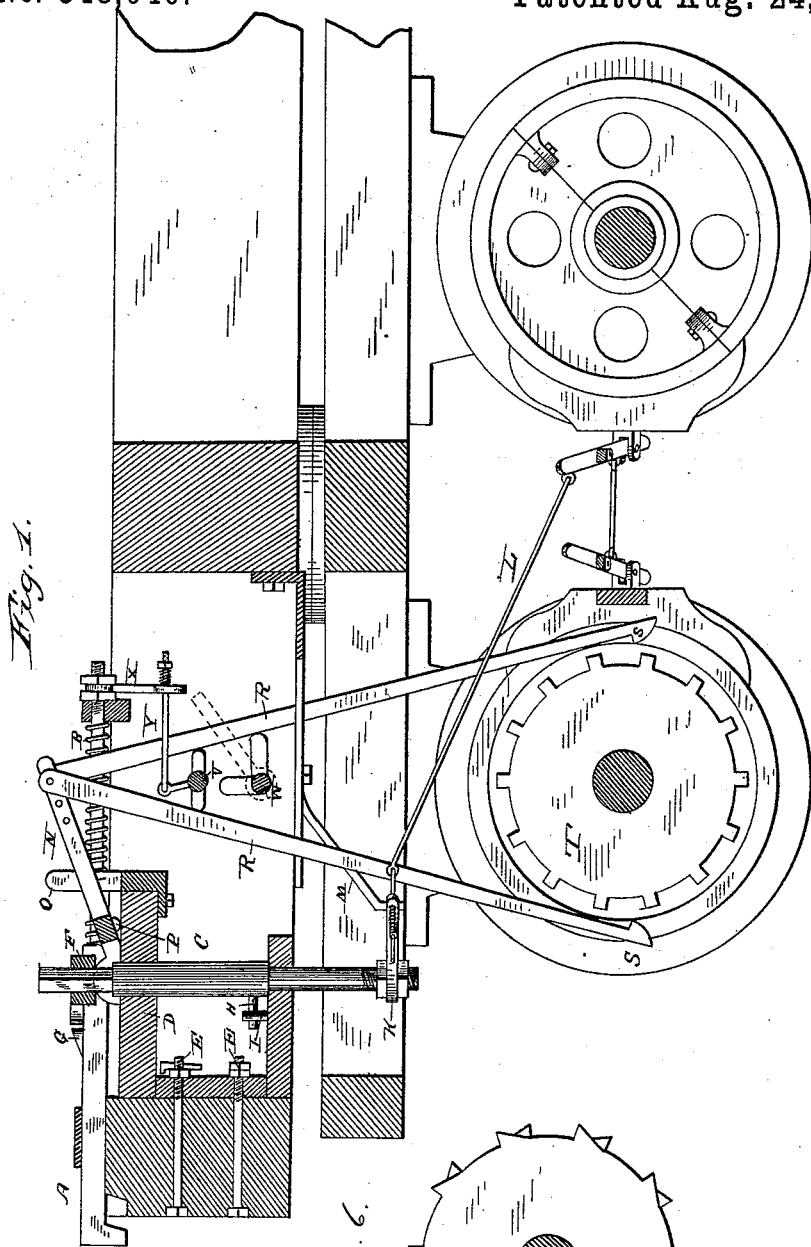
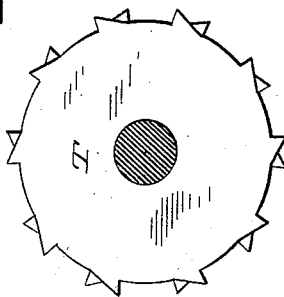


Fig. 6.



WITNESSES  
*John Jenkins*  
*Chas. H. Davis*

INVENTOR  
*F. H. D. Newhard*  
By *C. M. Alexander*  
his Attorney

(No Model.)

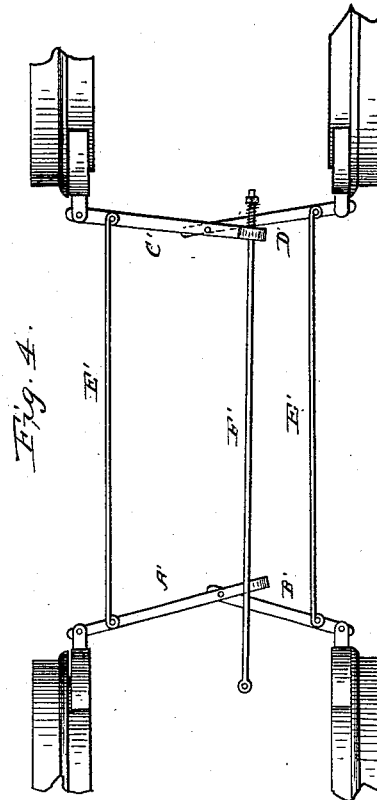
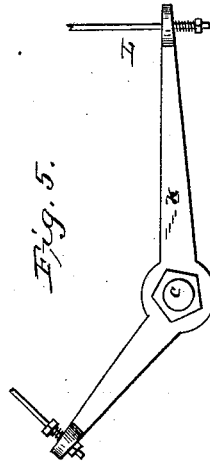
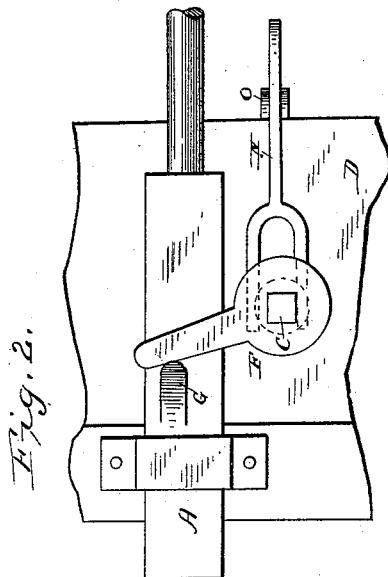
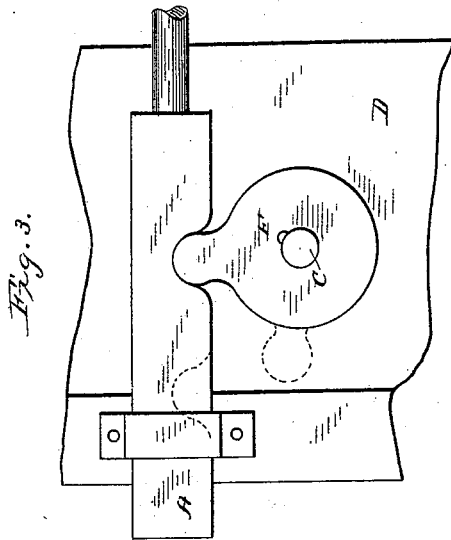
2 Sheets—Sheet 2.

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*John C. Jenkins*  
*C. Davis*

INVENTOR

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By *C. M. Alexander*  
His Attorney

# UNITED STATES PATENT OFFICE.

FRANKLIN H. D. NEWHARD, OF HOKENDAUQUA, PENNSYLVANIA.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 348,040, dated August 24, 1886.

Application filed June 9, 1886. Serial No. 204,639. (No model.)

### *To all whom it may concern:*

Be it known that I, FRANKLIN H. D. NEWHARD, a citizen of the United States, residing at Hokendauqua, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of car-brakes in which the operation of applying the brakes is performed by the contacting of the cars; and it consists in certain appliances, constructions hereinafter described, and the combinations set forth.

In the drawings, Figure 1 represents a longitudinal section of a portion of a car and one of the trucks, showing the improvements applied thereto; Fig. 2, a detail plan view of the buffer-bar and its connections; Fig. 3, a similar view of a modified form; Fig. 4, a plan view of a brake-connecting mechanism employed; Figs. 5 and 6, detail views.

I deem it unnecessary to describe the construction of the car frame and truck, as both, as shown, are of ordinary and common construction.

Projecting from the end of the car is the head of the buffer-bar A, which is distinct from and unconnected with the draw-bar, the latter not being shown in the drawings. The said bar A is provided with suitable bearings in the car-frame, so as to have a restricted longitudinal movement, and is provided also with a suitable spring, B, arranged to advance the bar after it has been forced inward from contact with the bar of the next succeeding car. The inward movement of the bar may be caused by a variety of causes, among which may be mentioned the slackening in speed or slowing up of the train preparatory to stopping.

To one side of the buffer-bar A is journaled an upright shaft, C. The bearings for this shaft may be of any suitable construction, and I have shown, as a construction I sometimes prefer, a U-shaped frame, D, having retaining-bolts E passing through its base and securing it to the car-frame, so that the arms project laterally. The shaft has its lower portion of less diameter than the upper portion, and the shoulder formed by the juncture of the two por-

tions bears on the lower arm of the U-shaped frame and supports the shaft, which projects through a suitable opening in the upper part of the said frame D, and is preferably squared beyond the said frame. Sometimes I may form the lower arm of the frame of a separate piece.

The shaft C carries on the squared portion an arm, F, the hub of which has a square hole for the passage of the shaft, whereby the shaft and arm will move simultaneously, while the arm has a longitudinal movement on said shaft.

I do not wish to confine myself to a square shaft, as a round-ended shaft with a suitable feather or key may be used, as also other well-known forms, for the purpose.

The arm such as shown in Figs. 1 and 2 is used when I apply an inclined stop, G, on top the buffer-bar; but sometimes I may notch or recess the side of the said bar, in which case I prefer to increase the diameter of the hub and shorten the projecting portion of the arm F, the said projecting portion engaging in the said notch or recess in the buffer-bar. Such a construction is shown in Fig. 3. I sometimes provide the shaft with a lateral pin, H, and place a vertical pin, I, on the frame D, so that the said pins may contact and prevent a too great travel of the said shaft. On the lower end of the shaft, by means of suitable nuts, I secure the angle-arm K, though sometimes the arm may be straight, one end of which connects, by means of a rod, L, to the brake mechanism proper, one form of which is shown in Fig. 4, and will hereinafter be described, though no claim is made to it. The other portion or end of the arm K engages with a stop, M, suitably supported, and which may be used in lieu of the pins H and I.

Embracing the shaft, between the top arm of the frame D and the hub of the arm F, is the bifurcated end of a lever, N, the other end extending between guides O, secured preferably to the free end of the upper arm of the frame D, and provided with a series of perforations. By preference the lever N is not secured at its fulcrum, but rests on a lug, P.

Depending from the lever N are the strips R, having hooked lower ends, S, which rest normally on either side of a toothed wheel, T,

secured to one of the axles U. Extending laterally between the said strips R, and arranged one above the other, are the rock-shafts V and W, the shaft V (the upper one) having 5 diametrically-projecting arms of sufficient length, when engaging the strips R, to carry their hooked ends from the toothed wheel T.

The inner end of the buffer-bar is provided with a downward projection, X, which, by 10 means of a rod, Y, having a recoil-spring, is connected to an arm on the shaft V in such manner that when the said bar A is forced backward it will rock the shaft V and carry the arms thereon from engagement with the 15 strips R. The shaft W carries arms at an angle one to the other, and of sufficient length to engage with the strips R and carry them from the toothed wheel, but being at an angle, the said arms can engage but one strip at a time. 20 The shaft W projects beyond the sides of the cars, and has operating-handles, as shown in dotted lines, Fig. 1.

Various styles of teeth may be used on the toothed wheel, as is seen from those shown in 25 Fig. 6, and which will be fully understood from inspection.

The brake mechanism, as shown in Fig. 4, consists of a lever, A', pivoted to one of the brake-shoes, a lever, B', pivoted to the other 30 brake-shoe of the same pair of wheels, and connected at its end to the lever A', near its end, similarly-pivoted levers C' and D' to the other pair of wheels of the truck. The levers A' C' and the levers B' D' are connected together by rods E', pivoted to them near their 35 connection with the brake-shoes. From the arm K, passing through the extended end of lever C', and connected, with the addition of a recoil-spring, to the extended end of the lever A', is a rod, F'. As the arm K is moved 40 by the mechanism before described, it carries the end of the lever A' with it. This forces the ends of the levers A' B', carrying the brake-shoes, toward the wheels. The shoes engaging against the wheels, or, as is preferred, the disks secured to the wheels or on the axle, and being prevented from further movement thereby, the rods E' are caused to move longitudinally and force the levers C' and D' to carry 50 the brake-shoes carried by them against the corresponding wheels or disks. A further movement of the lever A' will cause the engagement of all the shoes against the wheels or disks. The rods E' may connect directly 55 to the rod by which the shoes carried by the levers C' and D' are connected, if so desired.

The operation of the invention is as follows: As the buffer-bar is forced rearward the stop thereon engages with the arm on the upright 60 shaft, or, as in Fig. 3, the notch or recess on the side of said bar engages the said arm and causes the shaft to rotate, and, by means of the arm at the lower end thereof and the connecting-rod to the brakes, applies the latter. 65 The stops on the shaft, or the one engaging with the arm on the lower end thereof, prevents a too great movement of said shaft and

obviates undue strain on any part of the mechanism employed. Simultaneously with the movement of the shaft the connections at the rear of the buffer-bar operate the shaft V, 70 to carry the arms thereon from the hooked strips. Previously to the starting of the car on its trip the lower shaft, W, is so placed (by hand) as to bring one of the short arms 75 thereon in engagement with the hooked strip, which would be the forward one, relatively to the direction in which the car was to travel. Supposing the car to have come to a standstill, and was about to be forced backward, 80 the hooked arm, as the car started to move, would engage with the toothed wheel and be drawn downward, carrying with it the end of the lever N, thus causing the forked end of said lever to force upward the arm F, out of 85 engagement with the buffer-bar. The shaft, being thus relieved from engagement, will partially rotate and release the wheels from the brakes. When the buffer-bar is released from its rearward position, the spring will force 90 it forward, and the inclined stop will easily pass under the arm F. The shaft V will also be partially rotated and carry the hooked strips from the toothed wheel preparatory to the forward movement of the car. 95

Without limiting myself to the precise construction shown, I claim—

1. An automatic brake-applying mechanism consisting of a suitable sliding buffer-bar, a vertical rock-shaft having connections with 100 the brake-lever, an arm located upon said rock-shaft and engaging with the buffer-bar, and means, substantially as shown, for disengaging said arm from the buffer-bar by moving it upon the vertical rock-shaft, for the 105 purpose herein set forth.

2. The combination, with a suitable buffer-bar, of a rock-shaft with an arm engaging therewith, and having a longitudinal movement on said shaft, a lever having one end 110 engaging under said arm, pendent hooked strips pivoted to the other end of said lever, and a toothed wheel on the axle and adapted to engage one of the strips, the shaft having connection to the brakes, substantially as and 115 for the purpose specified.

3. The combination, with a suitable buffer-bar, of a rock-shaft with connections to the brakes, and an arm engaging with the buffer-bar and having a longitudinal movement on 120 said shaft, a lever having one end engaging under said arm, pendent strips with hooked ends pivoted to the other end of said lever, a toothed wheel on the axle, and means, such as a shaft carrying short arms, for keeping 125 one or the other of the hooked strips out of engagement with the said wheel, substantially as and for the purpose specified.

4. The combination, with a suitable buffer-bar, of a rock-shaft with connections to the 130 brakes, and carrying an arm engaging with the buffer-bar and adapted to be moved longitudinally on said shaft, a lever having one end engaging under said arm, pendent hooked

strips pivoted to the other end of said lever,  
a toothed wheel on the axle, a shaft carrying  
oppositely-projecting arms and connected to  
the buffer-bar and located between the said  
5 strips, and a shaft similarly located and pro-  
vided with arms projecting at an angle one to  
the other, substantially as and for the purpose  
set forth.

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

FRANKLIN H. D. NEWHARD.

Witnesses:

JAMES B. SNYDER,  
THOMAS F. BUTZ.