

(No Model.)

H. F. BRAUN.  
CAR BRAKE.

No. 464,847.

Patented Dec. 8, 1891.

Fig. 1.

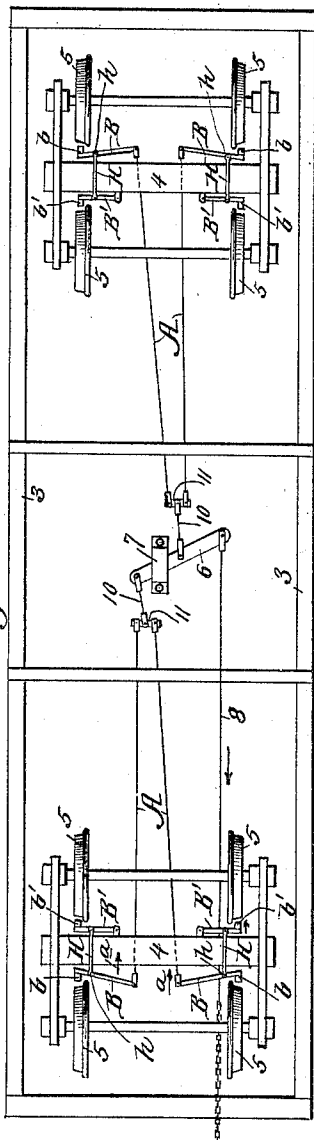


Fig. 3.

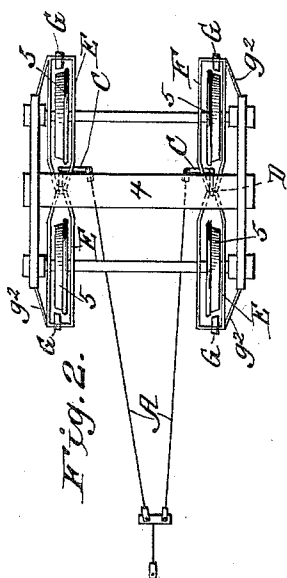
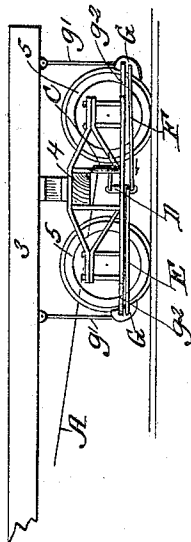
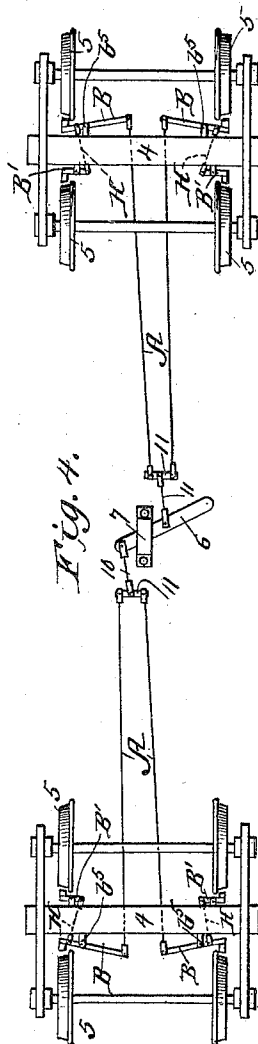


Fig. 4.



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## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 464,847, dated December 8, 1891.

Application filed August 17, 1891. Serial No. 402,920. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY F. BRAUN, residing at Denison, in the county of Grayson and State of Texas, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention has for its object to provide certain car-brake mechanism wherein the ordinary brake-beams are dispensed with and wherein the several brake-shoe-carrying levers will be self-adjusting and in which the operation will be positive and effectual.

It further has for its object to provide mechanism of this character which will be simple in construction and which can be readily adapted to car-bodies now in general use without the necessity of changing their construction.

With these ends in view my invention consists in the novel arrangement and peculiar combination of parts, all of which will be fully described in the annexed specification and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a car-frame with my improvements applied. Fig. 2 is a similar view of a truck-frame, showing a modified arrangement of the parts. Fig. 3 is a side view of the construction shown in Fig. 2, and Fig. 4 is a plan view of a modification hereinafter specifically referred to.

In the accompanying drawings, 3 indicates the car-frame, 4 the truck-holding cross-beams, and 5 5 the car-wheels. 6 indicates a lever-arm loosely held and guided in a bracket 7, secured to the under side of the car-body centrally thereof, to one end of which is connected the brake chain or rod 8, which extends to the forward end of the car and connected with the usual brake-rod and wheel. (Not shown.)

10 10 indicate rods, which are pivoted at their inner ends to the main lever-arm 6, as shown, while their outer ends are centrally pivoted to short bars 11, to the outer ends of each of which are connected a pair of lever-rods A A, which extend in opposite directions and connect with the brake mechanism. By reference to Fig. 1 it will be noticed that the outer ends of said rods A are connected to the in-

ner ends of transversely-disposed levers B, which are loosely held and connected with a second set of levers B' by means of the links or rods H, such levers B' having a fixed bearing at their inner ends on the bar 4, as shown at g. It will also be noticed that the levers B and B' are extended beyond the points of connection of the rods H, and have their ends provided with brake-shoes b b', which shoes are in the present construction arranged to bear against the inner adjacent faces of the wheels 5 5, as shown.

By the aforesaid construction the levers B have a free and independent support from the car-frame, and are therefore capable of adjusting themselves to take up the wear upon the shoes, their arrangement also providing for a quick and effective operation of the brakes. The manner in which the improved brake mechanism operates is as follows: When the rod 8 is pulled in the direction indicated by the arrow, the lever 6 will draw the two pairs of rods A toward each other. At the same time the rods A will pull the levers and brake-shoes in the direction indicated by the arrows a, which levers, through the rods H, will swing the shoes b' on the levers B' B' up against the inner set of wheels 5. At this time the rods H will be held from further movement in the direction stated, and the pivotal points h, with the levers B, will become the fulcrum upon which the levers B will then swing, a continued pull forward of the rods A serving, then, to swing the outer ends of the levers B, with their shoes b, against the outer pair of wheels, the rods H at this time forming a rigid connection with such levers, an increased pull upon the rods A serving to make an increased bearing of the shoes b b' on the wheels.

In Figs. 2 and 3 I have shown a somewhat modified arrangement of the parts, in which they are shown especially adapted for applying the shoes to the outer faces of the wheels 5 5. In this construction the rods A are connected to the upper end of short vertical levers C, which are fulcrumed upon the cross-bar 4, the lower ends of which are connected to short arms D, to which are linked the oppositely-extending longitudinal rods E F, which connect with the shoes G G, which are

hung in the pendent rods  $g' g'$ , such shoes being further supported by brace-rods  $g^2$ , which are connected with the truck-frame, as shown. By this construction it will be seen that when the rods A are drawn forward the levers C will be swung in the direction indicated by the arrow, which in turn will pull upon the arms D, and which in turn draw upon the rods E and F and apply the brake-shoes.

In Fig. 4 I show the same arrangement of brake mechanism shown in Fig. 1, except that the levers B are not loosely or independently connected with the several brake-operating rods. In this construction the levers B are fulcrumed to the beam 4 at  $b^5$  and the rod H connected with the outer ends of the levers B', which have their fulcrums between such ends and the shoe-carrying ends. The operation of this construction will be readily understood from the drawings.

It is obvious that the brake-operating lever-rod 8 can be arranged to be operated by air-pressure, if desired.

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

1. In a car-brake, the combination, with the operating brake-rods and independently-arranged brake-shoes, of fixed lever-arms hav-

ing a fixed pivotal bearing with the car-frame and independent lever-arms connected with the brake-shoes, the fixed lever-arms, and with the operating-rods, said independent lever-arms arranged to transmit the brake-power to the shoes, substantially in the manner shown and described.

2. In a car-brake mechanism, the combination, with the rods A, the shoe-carrying levers B', fixedly pivoted to the car-frame, and means for operating the rods, as shown, of the lever-arms B, provided with brake-shoes at their outer ends, their inner ends pivotally connected to the rods A, and the rods H, connecting the levers B B' at a point intermediate their pivots and the shoes, as and for the purpose described.

3. The combination, with the beam 4 and the shoe-levers B B', pivotally connected thereto, as shown, of the rods A A, pivotally connected to the levers B, and the rods H, connecting the levers B B', and means for operating the rods A, substantially as shown, and for the purpose described.

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