(No Model.)

W. B. ESSICK.

CAR BRAKE.

No. 590,038. Patented Sept. 14, 1897.

Fig. 1.

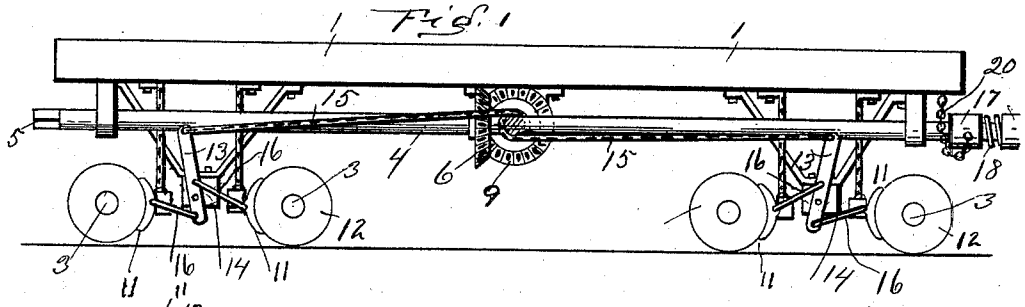


Fig. 2.

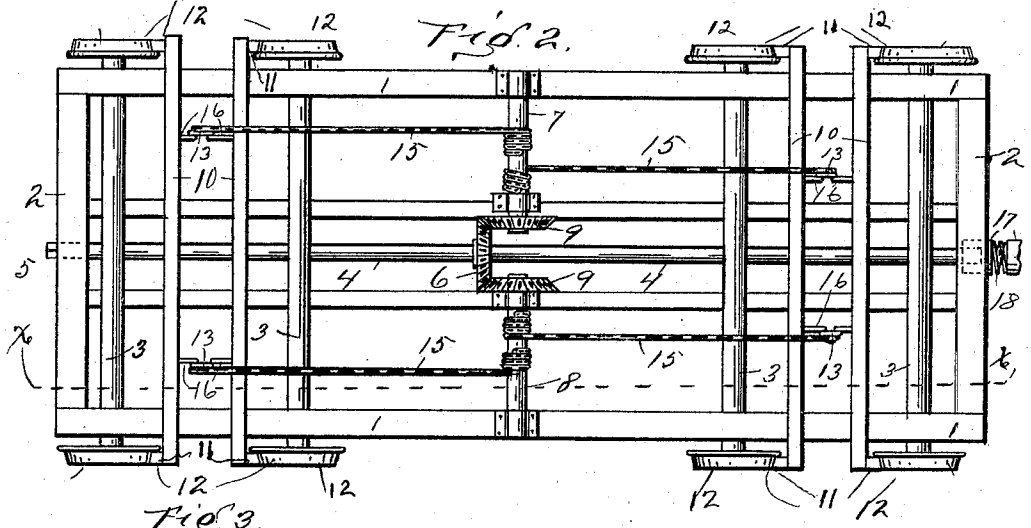


Fig. 3.

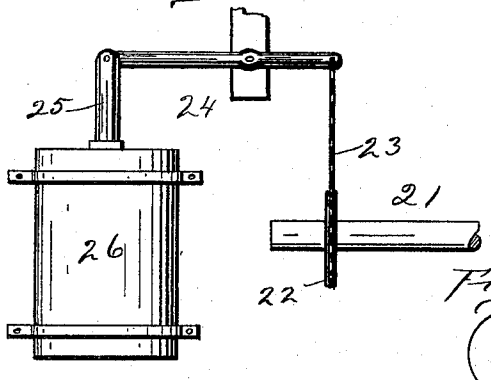


Fig. 4.

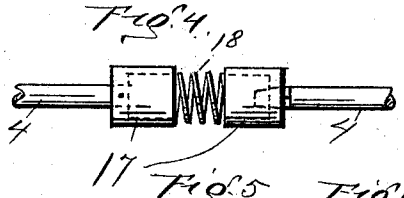


Fig. 5.

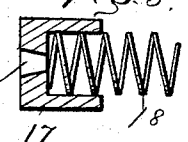


Fig. 6.

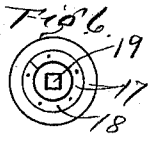
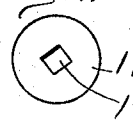


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 590,038, dated September 14, 1897.

Application filed July 6, 1897. Serial No. 643,646. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. ESSICK, a citizen of the United States, residing at Snodes, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a longitudinal section on line X X, Fig. 2. Fig. 2 is a top view of the car, showing the floor removed. Fig. 3 is a detached view of a cylinder, which may be either an air or steam cylinder, also showing a lever properly connected to the piston. Fig. 4 is a view showing two shaft-sections coupled together. Fig. 5 is a detached view of the spring designed to connect the shaft-heads together. Fig. 6 is an end view of one of the shaft coupling-heads, showing the spring attached thereto. Fig. 7 is an end view of one of the shaft coupling-heads, showing the opposite end from that shown in Fig. 6.

The present invention has relation to car-brakes; and it consists in the different parts and combination of parts, hereinafter described, and particularly pointed out in the claims.

Similar numbers of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the car-sills, and 2 represents the end sills, to which sills ordinary trucks may be attached in any convenient and well-known manner.

In the drawings the trucks are not shown, inasmuch as they do not form any particular part of the present invention; but it will be understood that trucks are to be employed to support the car and to provide means for properly journaling the car-axles 3.

The cars to be provided with my improved brakes are each provided with a shaft, such as 4, which is formed of a length to correspond substantially with the length of the car, which shaft is properly journaled to suitable bearings supported or suspended in proper position to hold the shaft 4 in proper position. The ends of the different shafts, such as 4, are each provided with angular portions, such as 5, which angular portions are for the purpose hereinafter described. Upon each of the shafts 4 are located bevel car-wheels, such as 6, which bevel-wheels are securely attached in any convenient and well-known manner to the shafts 4. At right angles to the shafts 4 are located the transverse shafts 7 and 8, which shafts are properly journaled to suitable bearings and are provided with beveled wheels 9.

The brake-bars 10 are located in usual positions and are provided with the ordinary brake-shoes 11, which brake-shoes are so arranged that they will press or bear against the peripheries of the car-wheels 12 when operated upon, as hereinafter described. Between the brake-bars 10 are located the pivoted levers 13, which levers may be pivoted to blocks, such as 14, or to other fixed objects, as it will be understood that the only object is to provide a means for pivotally attaching the levers 13. To the upper ends of the levers 13 are connected the cables or chains 15, which cables or chains are wrapped around the transverse shafts 7 and 8, and are so wrapped that when the shafts are rotated, as hereinafter described, they will wind the cables or chains around the shafts and thereby draw or pull the top or upper ends of the levers 13 toward each other. To the levers 13 are pivotally connected the bars 16, one set of said bars 16 being located or attached below the pivotal points of the levers 13 and the other set being attached above the pivotal points of said levers 13, so that when the levers 13 are pulled toward each other at their top or upper ends the brake-bars 10, together with their brake-shoes 11, will be forced away from each other or toward the wheels 12.

For the purpose of providing a rotating shaft that will extend in sections throughout the entire length of a train the shafts 4 are coupled together between the ends of the cars. The shaft coupling-heads 17 may be substantially of the form shown in the drawings and are coupled together by means of the spring 18, the convolutions of said spring 18 being composed of flat or rectangular portions, and are so formed for the purpose of preventing any slack motion between the sections of the shafts 4, or, in other words, to cause all of the

sections of the shafts 4 to rotate in unison when power is applied, as hereinafter described.

It will be understood that by forming the convolutions of the spring 18 flat or rectangular in cross-section a sufficient amount of elasticity will be provided to allow a train of cars to pass around a curve, or, in other words, to permit the sections of the shaft 4 to turn horizontally at an angle to each other without any loss of motion.

In use, when two cars are coupled together the coupling-heads 17 are to be in the position illustrated in Fig. 4. This is accomplished by holding the coupling-heads 17 in such a position that the angular portion 5 will enter the angular aperture 19, which angular aperture is formed in each of the coupling-heads 17.

It will be understood that one of the coupling-heads 17 can be placed in position before the cars are brought together to be coupled, by which arrangement it is only necessary to place one of the coupling-heads upon the angular end of the shaft 4 at the time the coupling is made.

For the purpose of preventing the coupling-heads 17 from becoming lost one of said coupling-heads can be securely connected to the body of the car at any desired point by means of a chain, such as 20. When the cars are uncoupled and free to part from each other, one of the coupling-heads 17 will be withdrawn from the angular portion of the shaft 4, or perhaps both of the heads may be withdrawn and be suspended upon the chain 20.

For the purpose of applying power to the shaft-sections 4 a shaft, such as 21, is properly journaled to the tender or engine and is provided with a wheel, such as 22, around which wheel is wrapped a chain or cable 23, which chain or cable is connected to the lever 24, which lever may be pivotally attached to any fixed part of the tender or engine and extends beyond its pivotal point and connects with the piston-rod 25.

The cylinder 26 is provided with an ordinary piston, to which the piston-rod 25 is attached in the ordinary manner. It will be understood that when steam or air is applied the piston-rod 25 will be moved endwise, which in turn will rotate the shaft 21 by means of the lever 24 and the chain or cable 23, and when the steam or air is released the pull of the chain or cable 23 will be removed, thereby permitting the sections of the shaft 4 to assume their normal positions, or, in other words, to become slack, permitting the brake-shoes to be freed from the peripheries of the wheels 12.

I have not shown in detail the mechanism for operating or rotating the shaft-sections 4, inasmuch as I do not desire to be confined to any particular way of rotating the shaft-sections 4 to apply the brake-shoes.

It will be understood that the beveled gear-wheels 6 and 9 may be varied as to their diameter, or they may have different diameters—that is to say, one of said wheels may be larger than the other.

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

1. In a car-brake, the combination of a car, a shaft 4, provided with angular ends 5, coupling-heads 17, provided with the angular apertures 19, the spring 18, connected to the coupling-heads 17, transverse shafts 7, and 8, having wound thereon cables, levers 13, pivotally attached, the rods 16, connected to the levers and means for rotating the shaft-sections 4, substantially as and for the purpose specified.

2. The combination of a car, the longitudinal shaft 4, cross or transverse shafts 7, and 8, cords or cables wound around the transverse shafts and connected to the pivoted levers 13, the pivoted levers 13, and means for operating the brake-bars and brake-shoes, coupling-heads 17, removably attached to the shaft-sections 4, a spring connected to two of the coupling-heads, and means for rotating the shaft-sections, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM B. ESSICK.

Witnesses:
HORACE T. SMITH,
JOS. LEUTZEN.